Impacts of the 2008 global financial crisis on securities market supervision and implications for emerging markets: regulatory perspectives

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IMPACTS OF THE 2008 GLOBAL FINANCIAL CRISIS ON SECURITIES MARKET SUPERVISION AND IMPLICATIONS FOR EMERGING MARKETS: REGULATORY PERSPECTIVES

By

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DECLARATION AND STATEMENT OF ORIGINIAL AUTHORSHIP

I certify that the work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted, either in whole or in part, for a degree at this or any other university. I acknowledge that I have read and understood the University's rules, requirements, procedures and policy relating to my higher degree research award and to my thesis. I certify that I have complied with the rules, requirements, procedures and policy of the University (as they may be from time to time).

Phuong T. Duong

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Abstract

The research investigates the impacts of the 2008 GFC on the securities market supervision (SMS) by identifying how securities regulators have responded to the GFC, adapted to the post-crisis market conditions, and developed a more responsive supervisory structure. Implications for emerging markets are drawn based on research finding analysis.

Quantitative survey research and qualitative techniques with focus group interviews and documentary research are employed in a mixed-methodology under the paradigm of critical realism to generalize the crisis impacts on SMS. Findings of the research include: (i) the GFC has generated impacts on all areas of SMS framework. Discussion is focused on a paradigm shift in SMS philosophy, re-construction of SMS architecture, emerging of risk-based approach, involvement of securities regulators in macro-prudential supervision, disputable roles of self-regulatory organizations (SROs) in market conduct oversight, and re-regulation of securities products, market intermediaries, market gatekeepers and SROs; (ii) post-crisis SMS responsiveness improvement was a result of post-crisis policy reform; and (iii) developed markets and emerging markets followed the same trend of post-crisis SMS reform but their ways diverged in some areas. Post-crisis SMS paradigm shift, prevalence of integration model, choices of developed and emerging markets between twin-peaks and integration, post-crisis diminishing roles of SROs, emergence of central banks, divergence of developed markets and emerging markets in policies are explained. Critical implications were developed for emerging markets, including: (i) comprehending the post-crisis SMS paradigm shift and developing a new SMS philosophy; (ii) dealing with the dilemma of SMS restructuring post-crisis; (iii) identifying the tasks and challenges of applying risk-based approach; and, (iv) establishing a culture of responsive SMS.

Contribution of this research is significant in terms of theory, body of knowledge, methodology and literature: (i) the research is the first that describes a comprehensive theoretical framework of SMS, defines the concept of SMS responsiveness and develops a complete SMS framework. A new SMS philosophy is recommended through analysis of research findings; (ii) the research helps to reveal the actual impacts of the 2008 GFC on SMS, develops regulatory implications and recommends components of a responsive SMS framework.; (iii) the research outcomes justifies employment of mixed methodologies; and (iv) the research also provides qualitative and quantitative data that supplements the literature of the GFC and securities supervision. Empirical evidence of the research is theoretically justified, meaningful, realistic, and discrete and is capable of verification in any further research contexts.
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CHAPTER 1

INTRODUCTION
1.1. Introduction.

Far from the expectation of academics and practitioners, the 2008 GFC shocked the world and caused the collapse of ‘the whole intellectual edifice’ of financial supervision (Krugman, 2009 p.5). It has not only changed the way economics is taught (Shiller, 2010) but led to dynamic regulatory changes in financial markets in general and the securities markets in particular. The research aims to find out the impacts of the 2008 GFC on the securities market supervision framework by identifying how securities regulators have adjusted their supervisory system to reflect the lessons learnt from the GFC, to adapt to the post-crisis market conditions, and ultimately to develop a more responsive market supervisory system to cope with systemic risks and financial crises. Implications for setting up a relevant framework of securities market supervision for emerging markets are to be drawn based on analysis of the research outcomes.

The research first discusses the pre-crisis theoretical ground of the securities market supervision (SMS), develops a conceptual framework of SMS and examines the recent literature of market supervision. A landscape of post-crisis SMS is outlined, highlighting the crisis of SMS philosophy and unprecedented changes in supervisory architecture, supervisory approaches and the whole framework of supervisory activities. Research gaps are then identified to formulate three questions that address the most protuberant research issues: (i) What are the actual impacts the 2008 GFC generated on the SMS framework? (ii) Whether the crisis-induced policy responses made the SMS framework more responsive? and (iii) Whether the emerging markets followed the same trend of post-crisis SMS policy reform as developed markets?

In order to pursue the research objectives and answer the research questions, a mixed methodology of qualitative and quantitative research is used in a sequential mixed method design, allowing retroduction, triangulation, complementation, expansion and explanation at every stage of study. Outcomes of the research include but are not limited to: (i) a complete and comprehensive picture of the 2008 GFC impacts on eight components of SMS framework; (ii) diagnostic evaluation of the SMS responsiveness improvement as a result of crisis-induced policy responses; and (iii) recognition and explanation of convergence and divergence of developed and emerging markets in the post-crisis SMS policy reform.

Moreover, findings of new and interesting phenomena are generated by the research: (i) In spite of numerous discussions about the post-crisis supervisory paradigm shift and the need for a new SMS philosophy, an alternative comprehensive theoretical framework for SMS is missing in the extant literature of SMS post-crisis; (ii) Central bank supervisory involvement that was found as a factor causing fragmentation in financial supervisory architecture by some previous studies now became the mandate of post-crisis supervisory consolidation. The new era of
central banks has emerged after the 2008 GFC: central banks as prudential regulators in the
twin-peaks model and central banks as integrated supervisors of financial markets; (iii) the
biggest shock to the emerging market regulators after the crisis was that they were proposed to
re-regulate all the institutions and products which they had been recommended to deregulate
before the crisis; and (iv) the SROs that were assumed co-regulators in the securities markets
pre-crisis became subject of tough regulation post-crisis. Research outcomes help to
comprehend the shock of post-crisis paradigm shift, to overcome the SMS theoretical crisis by
establishing a new SMS philosophy, to build up the criteria of a responsive SMS culture and to
produce other meaningful policy implications relating to SMS architecture and approaches for
emerging markets.

1.2. Impacts of the 2008 Global Financial Crisis on Securities Market
Supervision

1.2.1. Incidence of the 2008 GFC

The 2008 Global Financial Crisis (GFC) happened 10 years after the 1997 Asian Financial
Crisis, at the time when ‘most of the financial regulators believed that more developed markets
were immune from the Asian-flu-type crisis’ (Hale, 2011). The GFC has been argued to be the
worst financial crisis since the Great Depression of the 1930s (K. Davis, 2011; Erskine, 2010a;
Pendery, 2009; Shiller, 2010), which originated from the “subprime crisis” (Doyle, 2009;
IOSCO, 2008a) or “credit crunch” (Mizen, 2008) in US in late 2007 and became a global
financial turmoil (Oplas, 2008) later on in Europe and all over the world. The 2008 GFC was
described as ‘a combination of shocks to global housing markets and sharp increases in risk
premia of firms, households and international investors’ (McKibbin & Stoeckel, 2009).

The crisis began with bankruptcy of 25 subprime lending banks in May 2007. The collapse of
Lehman Brothers in September 2008, following that of Bear Stearns, was the tragedy described
by Bernanke as a run of creditors and depositors (Bernanke, 2008, p. 3). Though central banks
in US, EU and some major economies such as Canada, Japan, Malaysia and China pumped
rescue packages, financial conditions became worse all over the world in late 2007 and 2008.
Giant financial conglomerates announced huge losses or bankruptcy. Within one year, the credit
crunch in US sent a wave of fear around the world financial markets. The key events of 2008
GFC from 2007-2011 are summarized in Appendix 1. The 2008 GFC resulted in the collapse
of large financial institutions, the bailouts by national governments, and downturns in stock
markets around the world. Many areas, especially the housing market, had suffered, resulting
in numerous evictions, foreclosures, prolonged vacancies, severe losses of wealth and
confidence and unexpected market failures (Erskine, 2010a, 2010b). The crisis contributed to the failure of key businesses, declines in consumer wealth estimated in the trillions of U.S. dollars, and a sizable decline in economic activity, leading to a severe global economic recession in 2008. The root causes of the 2008 GFC were summarized by G20 as follows:

“During a period of strong global growth, growing capital flows, and prolonged stability earlier this decade, market participants sought higher yields without an adequate appreciation of the risks and failed to exercise proper due diligence. At the same time, weak underwriting standards, unsound risk management practices, increasingly complex and opaque financial products, and consequent excessive leverage combined to create vulnerabilities in the system. Policy makers, regulators and supervisors, in some advanced countries, did not adequately appreciate and address the risks building up in financial markets, keep pace with financial innovation, or take into account the systemic ramifications of domestic regulatory actions. Major underlying factors to the current situation were, among others, inconsistent and insufficiently coordinated macroeconomic policies, inadequate structural reforms, which led to unsustainable global macroeconomic outcomes. These developments, together, contributed to excesses and ultimately resulted in severe market disruption” (G20, 2008, p. 1).

The main consequences of the 2008 GFC were in the financial markets of the United States of America (USA) and Europe. However, impacts of the crisis on emerging markets have ‘manifested themselves in different ways’ because emerging markets have become much ‘more integrated within the global financial system, and therefore are increasingly exposed to systemic risks and shock transmission in turbulent times’ (IOSCO, 2009k, p.5).

1.2.2. Perception of Securities Market Supervision

One of the central themes of neo-classical economics, which validates public policy, is market failure and government intervention. Market failure is the standard justification for government regulation and supervision. Supervision in financial markets in general and the securities market in particular is a public policy process that is a purposive and consistent course of governmental actions to respond to perceived problems of markets (Anderson, 2003). Five areas, which are covered in the securities regulation and supervision include: promoting investor protection, increasing market efficiency, completing market organizational market structure, capturing wealth and encouraging competition in the industry (Kitch 1999).

The approach of financial regulation in general and securities supervision in particular, was built upon the longstanding hypothesis that competitive markets will generally lead to optimal resource allocation through price signals (K. Davis, 2013). However, regulation is justified because in reality, markets may not be optimal if there are market failures such as classic
imperfections of externalities, imperfect information, or market monopoly (Keech, Munger, & Simon, 2012). Regulation in the financial sector and the securities markets is often designed around three well-known classical topics: financial stability, public investor protection and the danger of monopolistic behaviour (Grünbichler & Darlap, 2003). Supervision is a more qualitative process that involves inspection, enforcement and critical evaluation. Supervision ‘involves the safety and soundness of specific financial institutions, in the light of the general continuous review of the activities of the entire industry to ensure prudent operation and compliance with law and regulation’ (Patrikis, 1997 pp.1-2). The critical question of securities market supervision is: how free regulators should let the invisible hand of the market (A. Smith, 1776) do its jobs and how far they should intervene into the market to correct the market failures, protect public investors and contribute to financial stability?

In the light of responsive regulation (Ayres & Braithwaite, 1992; Baldwin & Black, 2007; Black & Baldwin, 2010; Braithwaite, 2006, 2011; Ford, 2012; D. Smith, 2011), responsiveness of SMS is the ability of the securities regulators to respond effectively to market behaviour, market context and market developments by using relevant supervisory tools and approaches in a specific supervisory structure.

The securities market supervision should be considered in its eight component framework, which comprises three factors that define how a securities market supervision system is designed and operated, including supervisory philosophy, supervisory architecture and supervisory approach, and five major groups of supervisory activities, including (i) macro-prudential supervision, (ii) supervision of market intermediaries or micro-prudential supervision, (iii) supervision of securities products, (iv) market conduct oversight and (v) supervision of market institutions and SROs.

1.2.3. Impacts of the 2008 GFC on Securities Market Supervision

It has been argued that the 2008 GFC ‘has far more to do with gaps in regulation than with drafting choices’ (Ford, 2009). Gaps in regulation, especially around prudential regulation of market members, were ‘the most obvious and consequential aspect of regulatory failure’ (Ford, 2009). Earlier and current studies on framework of securities market supervision were explored to identify impacts of the 2008 GFC on the eight SMS components. The literature of securities market after the crisis suggested the following phenomena in market supervision in the post-crisis time:

- There was a doubt in the regulatory community about present philosophy of SMS, which is recognized by Greenspan as a “shocked disbelief,” because “the whole intellectual edifice”
had “collapsed” (Krugman, 2009). After the crisis many academics and practitioners (Erskine, 2010b; Ert, Hunt, Isenko, & Bramley, 2013; Krugman, 2009; Leigh Caldwell, 2009; T. Richard, 2009; Shiller, 2010) came up with the idea that the Standard Finance and EMH, has to answer for the 2008 GFC. It was argued by Bernanke (2008) that after the crisis, a critical question for regulators and supervisors is what their appropriate "field of vision" should be? Consequently, the philosophy crisis led to a transition in the mindset of securities as to which economic theory should be used as the underlying theoretical framework of SMS (S. Morris & Shin, 2008);

- As the 2008 GFC had changed the securities regulators’ ideology of market supervision, definitely it also modified their perception about how the supervisory system should be constructed to perform an effective supervision and enforcement. The financial crisis has challenged all the designs of the supervisory settings, whether they are unified or not and policymakers and supervisors in all the countries were wondering if they need to reshape their supervisory regimes (Masciandaro & Quintyn, 2009, p. 188). The current structure of SMS was re-evaluated and re-constructed everywhere in post-crisis time;

- The financial crisis had also triggered momentum for re-evaluating and re-constructing of existing supervisory approaches as well as for adopting new practices for better supervision. After the incidence of 2008 GFC, there was an overwhelming doubt on the values of self-regulation (Austin, 2010; Catanach, 2009; Coffee & Sale, 2009; Erskine, 2010b; Ford, 2009; Frean, 2011; Haldane, 2009; IOSCO, 2010f; J. Kumar, 2011b; Rudd, 2009). Besides, the crisis prompted a number of fundamental questions about reputations of four broad categories of regulatory approach, including principle-based regulation, risk-based regulation, reliance on internal management and controls, and market-based regulation (J. Black, 2010). It was assumed that the 2008 GFC had led the legal debate focus on whether financial market regulation should be based on principles or rules (Anand, 2009) and the discussion about principle-based vs. rule-based has become ‘trans-Atlantic’(Walsh, 2008). It was observed that risk-based regulatory strategies are increasingly adopted in many countries and “risk-based regulators” have become much praised by policy reformers (J. Black & Baldwin, 2010);

- Securities market macro-prudential supervision has obtained a greater importance after the GFC and for the first time in history, securities regulators are supposed to take a role in financial macro-supervision. It was argued that policymakers should focus on better regulation with greater macro-prudential orientation rather than react to the characters and colours of the current crisis as the solution to the 2008 GFC is not more regulation, but
better regulation, though more comprehensive regulation may be required in some areas (Persaud, 2009a, pp. 8-9). Fundamental re-thinking about post-crisis securities regulation has begun in the macro-prudential regulation with detailed considerations being explored for managing systemic risk (Erskine, 2010a);

- Micro-prudential regulations have revealed their weaknesses, ineffectiveness and pernicious effects during the 2008 financial turmoil, partly because of their procyclicality and the diagnostic of its deficiency is largely shared in the academic community and among regulators now (Aglietta & Scialom, 2009b). Reform of micro-prudential supervision over financial institutions was taken as the efforts to address the too-big-to-fail problem and mitigating the threat to financial stability posed by systemically important financial firms (Bernanke, 2011, p. 2). Risk-based supervision was recommended by think tanks as an effective tool of supervision over market intermediaries (Balcom & Pargaonker, 2011; FSCB, 2016; Lewis, 2013; USAID, 2007). Also, hedge funds became subject to stronger supervision of securities regulators than before the crisis (Diplock, 2011; McCulley, 2009);

- Derivatives, especially securitized products are now subject to more supervision than before the 2008 GFC and there are also strong recommendations for moving of the OTC traded derivatives to organized markets with central clearing mechanism. Regulators were proposed to require all OTC derivatives (standard and non-standard) to be cleared centrally to maximize the benefits of netting and reduce systemic risk while making it easier for regulators to carry out stress tests (Hull, 2010, p. 1). Securities regulators also responded to the consequences of the GFC by requiring mandatory registration and disclosure for all the institutions, of which derivatives issuers, hedge funds and securitizers bore the maximum brunt of the regulations (Bhatia, 2011). Besides, the GFC has given additional impulsion to ensuring accounting and auditing standards are more transparent to provide uncomplicated guidance on accounting treatment (D'Aloisio, 2009);

- There is an observable trend of strengthening of market conduct oversight by securities regulators as a response to the 2008 GFC. Since the GFC, securities and financial regulators have taken prompt actions to strengthen market conduct oversight to restore market confidence and reinforce investor protection. Financial regulators were recommended to be equipped with strong, equivalent and deterrent sanction regimes to counter all types of financial crime (Larosière Group, 2009, p. 23);

- For the first time in the history of securities markets, SROs and credit rating agencies (CRAs) have been put under stringent supervision by regulators. CRAs were claimed to bear some responsibility for the 2008 GFC (BCBS, IOSCO, IAIS, & BIS, 2010a; FSA,
2009; IOSCO, 2009l, 2009m; Maris, 2009; Utzig, 2010). As a result of the crisis, a strong consensus emerged that further regulatory intervention was needed with respect to CRAs (IOSCO, 2010i). Having been no longer observed as ‘ethical standards that go beyond government regulations’ (IOSCO, 1998b, p. 13) after the crisis, self-regulation and SROs are now under scrutiny by securities regulators. Stronger supervision of SROs by government regulators has been ‘an almost universal response to greater conflicts at exchange SROs’ (Carson, 2011, p. 46).

The above listed phenomena were observed by the post-crisis literature of SMS and financial regulation. They are interesting facts and inspired development of research hypotheses and research questions for this study.

1.2.4. Scope of the Study

The extant literature review suggested that the 2008 GFC brought significant impacts on the securities market supervision, which caused fundamental changes in supervisory framework. However, there are still gaps that need to be studied for further identifying and evaluating the actual impacts of the 2008 GFC on SMS:

- First, there is no available empirical analysis, which provides a complete and precise landscape of what, how and why the changes in the securities market supervision were made as results from the impacts of the 2008 GFC;

- Second, there is no clear evidence on whether the changes in the supervisory system after the crisis are actually outcomes of policy responses to the impacts of the 2008 GFC;

- Third, there is a gap of literature between recommendations for reform and actual reforms in securities markets after the 2008 GFC;

- Fourth, there is a shortage of literature on how the policy responses and reforms improved the responsiveness of securities market supervision; and

- Finally, deeper study on why and how the changes were made in these markets is necessary to know whether developed markets and emerging markets follow the same trends of post-crisis SMS policy reforms.

Therefore, the research is conducted to fill in these gaps in the extant literature. The impacts of the 2008 GFC on the SMS framework are studied. The causal relationship between the changes in the eight components of SMS after the crisis and the responsiveness of supervisory system is explored. Trends of developed and emerging markets in performing post-crisis SMS policy reform are observed and analysed. Implications for the emerging markets are further examined.
1.3. Justification and Rationale of the Research

The quotation of International Organization of Securities Commissions (IOSCO) below elucidates the rationale for studying the impacts of the 2008 GFC on securities market supervision:

“It is often said that there is an opportunity in every crisis. In this instance, the crisis affords regulators an opportunity to revisit the design, structure and approach to regulating and developing their financial systems. One positive result of the crisis is a general willingness to examine existing policies and practices, and consider a wide range of alternatives.” (IOSCO, 2009k, p. 17)

There is a large volume of literature regarding the scope and reasons for the crisis. However, the literature still lacks an inclusive vision of the crisis impacts on SMS and policy responses by securities regulators to these impacts. This research would benefit the whole community of securities regulators by providing a comprehensive landscape of the 2008 GFC’s impacts on market supervision and implications for future supervisory strategy. In the context that ‘the post-crisis financial regulatory reform debate had focussed mainly on addressing the problems that have arisen in the financial systems of developed economies’ (IMF, World Bank, & FSB, 2011, p. 8), this research is justified by the implications for emerging markets.

In order to prevent another crisis and make the supervision system responsive, the critical question faced by securities regulators, especially the ones in emerging markets is: how to construct a supervisory framework that is resilient to financial crisis? Analysing impacts of the GFC and drawing implications for emerging markets is a shortcut to find out the answer to this question. Therefore, the research is justified by: (i) investigating the way the SMS philosophy, architecture and approaches were reconstructed after the crisis; (ii) identifying the changing roles of the self-regulatory organizations (SROs) in the supervision system in post-crisis time; (iii) examining the ways securities regulators responded to the crisis by restructuring their macro-prudential supervision and micro-prudential supervision systems; and (iv) scrutinizing the reforms of regulators in supervision of traded securities products, market conducts oversight and supervision of market institutions and SROs to cope with the regulatory gaps exposed by the crisis.

In short, the rationale of this research lies in its capability to develop a complete picture of the 2008 GFC impacts on SMS, to address unanswered questions about post-crisis SMS policy reforms and to draw out the theoretical and regulatory implications.
1.4. **Research Objectives, Hypotheses and Questions**

The objectives of the research are to investigate the actual impacts of the 2008 GFC on eight components of SMS, identify the correlational relationship between the crisis-induced policy responses undertaken by the securities regulators and the responsiveness of SMS system, and recognize the divergence and convergence between two groups of developed and emerging markets in the post-crisis SMS policy reform. Regulatory implications for emerging markets are then developed. The following hypotheses were developed for the research.

**Hypothesis 1:** The 2008 GFC caused fundamental changes in the eight components of SMS, namely market supervision philosophy, market supervision architecture, market supervision approach, macro-prudential supervision, micro-prudential supervision, supervision of securities products, oversight of market conduct and supervision of securities market institutions and SROs.

- Standard Finance, typically efficient markets theory (EMH) has no longer served as philosophy for securities market supervision;
- There is an emerging trend of financial supervisory architecture reform toward a more consolidated structure with twin-peaks of a prudential supervisor and a business conduct supervisor. The values of self-regulation are no longer supported. Hence there is a diminishing role of SROs in securities market supervision structure and increasing need for SRO’s supervision and direction from securities regulators;
- There is a trend of moving away from market-based approach to principle-based and risk-based approach after the crisis;
- Macro-prudential supervision, which was traditionally conducted by central banks and undervalued before the crisis, is now placed as a top priority with involvement of securities regulators;
- Supervision over market intermediaries is enhanced by strengthening of micro-prudential regulators with focus on hedge funds and risk-based supervision;
- Supervision of traded securities products, especially derivatives and structured financial instruments is strengthened by moving them from OTC to organized markets; compulsory information disclosure and consolidated accounting standards are applied;
- Market conduct oversight is enhanced with new rules of market integrity and more stringent enforcement and compliance activities;
- Market gatekeepers, especially CRAs and SROs are put under tougher supervision than before the crisis.

**Hypothesis 2:** Changes due to crisis impacts in the eight components of SMS led to more responsiveness of the supervisory system.

Within the scope of this research, responsiveness of SMS is defined as the ability of the securities regulators to respond effectively to market behaviour, market context and market developments by using relevant supervisory tools and approaches in a specific supervisory structure.

The 2008 GFC created momentum for securities regulators to reform their SMS system for more responsiveness in order to avoid or better cope with a possible future crisis. Policy reforms in post-crisis SMS philosophy, SMS architecture, SMS approach, macro- and micro-prudential supervision, supervision of traded securities products, market conduct oversight, and supervision of market institutions and SROs are supposed leading to more responsiveness of SMS.

**Hypothesis 3:** Emerging markets follow the same trend of SMS policy reform of developed markets after the crisis.

Within this research project, emerging markets are 85 stocks markets, of which securities regulators are the members of Growth and Emerging Market Committee of IOSCO. The number of emerging markets accounts for 77.3% of full population of member securities regulators of the IOSCO. It is supposed that emerging markets, though not seriously affected by the 2008 GFC, will follow the post-crisis policy reform of developed markets in the eight components of SMS.

To test the hypotheses, three research questions are identified for this research as follows:

**Research question 1:** What are the actual impacts the 2008 GFC generated on the securities market supervision?

**Research question 2:** Whether the policy responses to the crisis increased the responsiveness of the securities market supervision?

**Research question 3:** Whether the emerging markets followed the same trend of securities market supervision policy reform as developed markets after the crisis?
1.5. Overview of Research Methodology and Design

1.5.1. Research Methodology

Critical realism is adopted as a single paradigm for mixed methodology in this research with the ontology that “reality is real” and a social phenomenon to be studied is an external reality that exists independently of the researcher’s mind (Bhaskar, 1978; Harre & Madden, 1975; Magee, 1985). Within the paradigm of critical realism, employing mixed methods in this research is relevant because the approach not only considers the external reality of the 2008 GFC impacts on SMS by quantitative instruments but also acknowledges the complexities of crisis-induced policy developments that need to be investigated with in-depth qualitative research method (Sobh & Perry, 2006). Adapting the ideas from Zachariadis, Scott, and Barrett (2013) about purposes of using mixed methodology in critical realism, mixed methods approach is justified in this research for: (i) Complementarity: Mixed methods are used in order to gain complementary views about the same phenomena or events; (ii) Completeness: Mixed method research design is used to ensure a complete picture of the phenomenon under study; (iii) Developmental: Inferences of one type of research are being used as questions for another type of research; (iv) Expansion: Mixed methods are being implemented in order to provide explanations or expand the understanding obtained in previous research; (v) Confirmation: Mixed methods are used in order to confirm the findings from another study; (vi) Compensation: The weakness of one method can be compensated by the use of another; and (vii) Diversity: Mixed methods are used in order to obtain divergent views on the same phenomena.

The multiple impacts of the 2008 GFC on SMS should be identified and explained from divergent angles exposed by applying different methodologies. In this research, triangulation with mixing approaches enables the researcher to have more than one point of view (Olsen, 2004) about the paradigm shift of the securities regulators on SMS and other SMS policy reform after the crisis. Because the post-crisis changes in SMS policies are complex and multi-dimensional, the research aims to identify the causal relationship between the crisis and the policy changes by seeking a “family of answers” (Pawson & Tilley, 1997, p. 152) that cover a range of possible causes and gauge the various impacts of the crisis among these causes.

1.5.2. Research Design

Taking the stand point of critical realism as the paradigm of study, the research was designed in a way that allows triangulation in different stages of the study. The purpose of triangulation was to enhance the precision of the representation of crisis impacts on SMS by examining it
with different theories, methods and data sources (Bryman, 1988; Denzin, 1978; Modell, 2007). Triangulation is employed in this research for three main reasons: confirmation, completeness and retroduction (McEvoy & Richards, 2006; Risjord, Moloney, & Dunbar, 2001, 2002).

The overall research design may be described as a sequential mixed methods design spanning into three stage framework, where qualitative and quantitative methods are employed in a sequence with results from one feeding into the later one (Mingers, 2001).

**Stage One** was an exploratory qualitative research to establish the theoretical framework of SMS and define research issues. The primary objective of this stage is to define any research question that may arise around the SMS framework of developed and emerging markets due to impacts of the 2008 GFC. In this exploratory research, literature review was done to provide inputs for further research at Stage Two (Creswell & Clark, 2011; Greene, Caracelli, & Graham, 1989; Malhotra, 1993). Possible impacts of the 2008 GFC on SMS and the research gaps, identified by reviewing literature of SMS and financial regulation before and after the incidence of the crisis helped to formulate the research hypotheses and three research questions.

**Stage Two** was an empirical quantitative research, conducted through a cross-sectional structured survey questionnaire that provides data for descriptive, comparative and correlational causal comparative research strategies. The quantitative survey research strategy was chosen for this stage because the GFC is an extreme social event that is best depicted and explained by quantitative research designs through the employment of methodologies of deductive logic (Horna, 1994).

The survey aimed to identify the various impacts of the 2008 GFC on SMS, defining the trends of two groups of emerging and developed markets in SMS policies responses to the crisis impacts and recognizing the correlation between the post-crisis SMS policy reform and responsiveness of the SMS system. In order to pursue the mentioned research objectives within the complexity of the SMS framework and the GFC, statistical analysis and quantitative data are employed as they develop reliable descriptions and provide accurate comparisons (Gerhardt, 2004; McEvoy & Richards, 2006).

**Stage Three** was an explanatory qualitative research with focus group interviews and a documentary research for confirmation, completeness and retroduction of the findings from qualitative and quantitative research in two previous stages. Beside, Stage Three also tried to answer the questions arising from two previous stages for further deepening and extending of the research results. Because qualitative research is ‘valuable in its depth and its ability to uncover and interpret mechanisms behind behaviour’ (Gerhardt, 2004, p. 10), it was used to study the “behaviour” and momentum behind the “behaviour” of securities regulators to
respond to the crisis. The focus group interviews were conducted to explore the thinking of selected securities regulators and practitioners about what economic theory should be used as the post-crisis SMS philosophy because it is a relevant qualitative tool in the context ‘where a range of responses from a target group are useful’ (Glenn, 2010, p. 96). Research findings from this stage help to understand the mismatching of findings in Stage One and Stage Two about the SMS philosophy after the 2008 GFC. The documentary research was conducted in this stage to verify and validate the findings in Stage One and Two about the actual impacts of the 2008 GFC on the SMS framework. Moreover, documentary research provided data to understand and explain the divergence of emerging markets and developed markets in the SMS policy responses to the crisis impacts that were uncovered in quantitative research in Stage Two.

1.6. Implications and Contributions of the Research

1.6.1. Implications of the Research

This research has several important implications for securities regulators, especially the ones in emerging markets, including:

*First,* the research provides a significant implication on comprehending the post-crisis paradigm shift and developing a comprehensive SMS philosophy for emerging markets. Findings from the research show that there was an SMS paradigm shift post-crisis that induced securities regulators to depart from the conventional Standard Finance based theoretical framework to adopt more insights from Behavioural Finance in SMS. However, in spite of the inevitability of the paradigm shift, a complete post-crisis SMS philosophy has not been well developed yet and securities regulators ‘are picking and choosing’ ideologies from various theories in complementary to the current paradigm (K. Davis, 2013, p. 3; Erskine, 2014).

Given the context that emerging markets were not well prepared for the shock of paradigm shift and facing the crisis of SMS philosophy, this research provides analytical insights for comprehending post-crisis SMS paradigm shift and developing post-crisis SMS philosophy. The SMS paradigm shift needs to be understood by observing the real characteristics of markets and investors that were revealed by the 2008 GFC, including: (i) securities investors are not rational, they are human with biased behaviour and recognition errors (Shefrin, 2001; Shefrin & Statman, 1994, 1997) and they need more effective protection other than full-disclosure regime; (ii) the securities markets are not always efficient (Shiller, 2003, 2010; Shleifer, 2000; Statman, 2008) and price is not always right (Thaler, 2009). Markets are not always self-correcting nor self-regulating (Rudd, 2009), and self-regulation would turn out to be no regulation (Madhur, 2011); (iii) investor sentiment that reflects unrealistic optimism or
pessimism, leads to booms and busts of the securities markets (Keynes, 1930a, 1930b, 1936); (iv) the more securities market develops with sophisticated innovative products, the likelier it performs with the Minsky moments and Minsky journeys (Cassidy, 2008; Harcourt & Kriesler, 2013; McCulley, 2009; McCulley & Fuerbringer, 2007; Minsky, 1992, 2008); and (v) the securities market needs to be perceived as a network inside other complex networks with two emerged characteristics: complexity and homogeneity (Haldane, 2009).

In order to avoid the pre-crisis theoretical fallacy, a new and comprehensive SMS philosophy is recommended in the research within the framework of Keynesian regulation that is based on the central tenet that government intervention can stabilize the economy (Harcourt & Kriesler, 2013; Harvey, 2010; Keynes, 1936) by addressing the specific source of the market failures (Acharya, Cooley, Richardson, & Walter, 2009; Chaudhuri, 1990; Keech et al., 2012; Krugman, 2009; Krugman & Wells, 2006; Ledyard, 2008; Persaud, 2009b). The failures of securities market deliberated in this SMS philosophy include: behavioural biases of investors, information asymmetry, principal-agency problems, monopoly, de-merit goods, public goods and negative externalities. Insight from Keynesian Economics (Keynes, 1930a, 1930b, 1936), Behavioural Finance (Kattan, 2006; T. Richard, 2003; Sewell, 2007; Shefrin, 2000, 2001; Shefrin & Statman, 1994; Statman, 1995; Subrahmanyam, 2007), Financial Market Instability Hypothesis (Cassidy, 2008; Kregel, 2008; McCulley, 2009; Minsky, 1992, 2008), Financial Network Theory (Allen & Babus, 2007; Allen & Gale, 2000; Babus, 2007; Diplock, 2011; Haldane, 2009; Soramaki, 2010; Soramaki & Cook, 2016) and Agency Theory (Eisenhardt, 1989; Jensen & William, 1976) are employed to justify the SMS philosophy.

Second, the research provides a critical implication in dealing with the dilemma of post-crisis SMS architecture restructuring and role of SROs. Findings of the research implied that the major momentum for the crisis-induced policies to restructure SMS architecture is the requisite of harmonization of macro and micro-prudential supervision, changing supervisory approach to risk-based methodology, building up a comprehensive supervisory information base, reducing of regulatory arbitrage risks, and unifying of supervisory activities across interconnected sectors. Twin-peaks model was a choice for developed markets while integration was opted by several emerging markets to restructure their SMS setting to address the tasks. It is argued that there is no one-size-fit-all model of SMS architecture for emerging markets because they are a diverse group of jurisdictions where priorities for post-crisis regulatory reforms and applicability of specific policy measures may differ (FSB, World Bank, & IMF, 2012). It is recommended that the regulators in emerging markets should not let themselves be confused by the debates on twin-peaks or integrated models. What is most important is that the
regulators have clear lines of authority and have a regime of freely and continuously sharing information, and effective coordination of regulatory actions with other regulators in the financial markets. Further, that regime should ensure no administrative obstructions in performing prudential supervision and business conduct oversight (Duong, Eddie, & Liu, 2013). Research findings also implied that the information-related synergies between the central banking and the prudential supervisory function have placed central banks at the centre of the post-crisis supervisory restructure: central banks as prudential regulators in the twin-peaks model and central banks as integrated supervisors of financial markets. In the context that consolidated supervision is critical weakness of emerging markets (World Bank, 2013); supervisory integration under the central banks in emerging markets may be a responsive and cost-effective approach to efficiently supervise cross-sectoral financial institutions and to harmonize macro and micro-prudential supervision. However, the structure may imply a regulatory monopoly where the concentration of power could harm the democratic policies (Reddy, 2001). The pros and cons should be observed for any further plan of integration under central banks and during the course of functioning of this model by emerging markets. Research findings also indicated that in the SMS architecture, SROs are no longer privileged co-regulators and now they are subject to stringent supervision than ever before (IOSCO, 2013c). Its means that the post-crisis supervisory burden of the securities regulators is heavier due to the adding up of responsibility. In addition, the “quietness” of most emerging securities regulators about the role of SROs in the post-crisis securities supervisory reform plan indicated that emerging markets are still in the post-crisis shock of paradigm shift and might not know where to fit the current SROs, many of which were established as regulatory tools recommended by IOSCO, now proved inefficient by the GFC and strongly recommended as subject to critical supervision (IOSCO, 2013c), into their post-crisis supervisory systems. Therefore, it is recommended that the efficacy of self-regulation in a particular market should be facilitated in consideration of specific market circumstances and characteristics (Carson, 2009).

Third, the research produces important implications on supervisory approaches, providing an analytical framework of risk-based supervision to enable emerging market regulators to understand the definition, features, tasks and challenges of moving to risk-based approach. The research signified a new trend to move to risk-based approach by developed and emerging markets post-crisis. For emerging markets that largely relied on a rigid compliance-based approach before the crisis (IOSCO, 2009h), moving to risk-based supervision means the regulators are required to set up completely new supervisory methodology and process. Risk-based supervision refers to ‘pick[ing] important problems and fix[ing] them’ (Sparrow, 2008,
p. 5) approach that requires the ‘efficient allocation of supervisory resources to their most effective use’ (Lewis, 2013, p. 8). The five step framework of risk-based approach, including identifying risks, rating risks, responding to the risks, undertaking regulatory intervene and re-evaluating the risk (Lewis, 2013) is recommended. Moving to risk-based supervisory approach means that emerging markets are facing the challenges, including: (i) change in organizational culture and modes of interaction with market intermediaries; (ii) establishing of appropriate legal framework; (iii) reallocating of supervisory resources from low risk to high risk intermediaries and extensive organizational restructuring to perform the risk-based approach; (iv) arising of additional costs related to capacity building; (v) developing of market awareness on new supervisory approach; (vi) validating of efficiency of risk-based approach by different stakeholders; (vii) potential risks of ineffective performance; and (viii) requiring changes of market intermediaries in terms of compliance culture and available resources to comply with risk-based framework (IOSCO, 2009h).

Finally, the research signified the implication on establishing a culture of responsive securities supervision. In the context that unintended consequences of post-crisis financial market reform has become a concern of emerging market regulators (FSB, 2013; FSB et al., 2012; Mminele, 2013; World Bank, 2013), this research proposes a responsive SMS culture that may enable the securities regulators to address the concern and keep pace with the market developments. An SMS framework that respond effectively to the specific market behaviour, market context and market developments is argued to be relevant for bridging the gaps between regulation and market development, and advoiding the traditional path of following all the SMS policies of developed markets, which may not be suitable or lead to unintended consequences for the emerging markets. Adapting and extending the insight of responsive regulation (Baldwin & J. Black, 2007, 2010a; F. Black, Jensen, & Scholes, 1972; J. Black, 2014; J. Black & Baldwin, 2010), it is recommended that the responsiveness should be constructed as a culture of SMS that focusses on the securities regulator-regulated interaction, which is defined by seven criteria, including: (i) the behaviour and cultures of the securities market actors; (ii) dynamic interconnectivities of supervised market sectors and institutions; (iii) market innovations and developments; (iv) the organizational dynamics and institutional setting of the securities regulator within the financial regulatory architecture; (v) the different logics of supervisory approaches; (vi) the securities regulatory regime’s own performance over time; and (vii) changes in each of these elements.
1.6.2. Contributions of the Research

The research contributes to theory, the body of knowledge, research methodology and literature relating to SMS practices.

In terms of theoretical contribution, this research is the first to study the theoretical underpinning of SMS in a comprehensive and analytical framework. The research has not only described and analysed the imprints of economics theories in the SMS theoretical framework before the 2008 GFC but provided a critical explanation of the post-crisis SMS paradigm shift and constructed a comprehensive SMS philosophy for emerging markets. The insights of public policy, micro-economics in general, Keynesian Economics and the notions from Behavioural Finance, Network Theory, Agency Theory, and Minsky Financial Instability Hypothesis in particular were adapted and extended to justify the arguments on the SMS paradigm shift and SMS philosophy post-crisis. In addition, this research has established an all-encompassing conceptual framework of SMS with eight components and developed the concept of responsive SMS, contributing significantly to the economic theories in general and the conceptual framework of SMS in particular in terms of academic coherence, development and innovation.

In terms of the body of knowledge, this research has contributed by identifying and analysing the complete landscape of crisis-induced policy making by securities regulators in the period from 2008 to early 2016. In addition, the research largely contributed to understanding the convergence and divergence between developed and emerging markets in their SMS policy responses to crisis impacts as well as the reasons for the alike and different ways of policy making by the two groups. Moreover, the research has delivered ample data and information that would benefit the securities regulators in terms of perception of SMS philosophy; observation of the SMS paradigm shift provoked by the 2008 GF; conception of responsive SMS; understanding of different supervisory architecture; observing the restructure of SMS supervisory setting into integration and twin-peaks with emerged role of central banks; knowledge of various supervisory approaches, recognition of moving to risk-based approach; acquaintance of five key components of SMS and awareness of how the framework of SMS has been changed under the regulatory reform to respond to the crisis impacts.

In terms of contribution in research methodology, findings of the study have justified the usage of mix-methodology under the single paradigm of critical realism. The sequential three stage research design was proved efficiently to combine and complement qualitative and quantitative researches to generate reliable and valid findings. Triangulation and retroduction allowed by the mix-methods were attested rational in generalizing the comprehensive and profound research findings. Objectives of the combination of quantitative and qualitative research tools
have been extensively achieved, including complementarity, completeness, developmental, expansion, confirmation, compensation, and diversity.

In terms of contribution in literature, the research filled in the contextual gaps of the existing literature about the 2008 GFC’s impacts by depicting a full picture of SMS before and after the crisis, addressing the research gaps on what, how and why the changes in SMS were made as a result from impacts of the 2008 GFC. Given the context that most of the post-crisis literature identified the crisis as a reason for securities supervisory reforms without an empirical justification, this research verified and further expanded the literature by providing empirically proved evidence on the causal relationships between the crisis and post-crisis SMS policy reform. The research effectively contributed to the academic literature that identifies the paths of developed and emerging markets in SMS policy making. Moreover, this research has gathered discussion on responsiveness in securities supervision, analysed and incorporated it into the wider literature on responsive regulation. Therefore, from the exclusive analytical point of view, this research has overcome the fragmentation of the literature on securities supervision and the 2008 GFC. Qualitative and quantitative data of this research provides empirical evidence that was justified by relevant theories and can be verified in any further research.

1.7. Limitations of the Research

This study has some limitations that might affect the overall reliability and validity of the research findings, including:

First, due to the complexity of the SMS framework, the crisis impacts were to be measured on all eight areas of SMS and there were numerous research issues arising during the course of study. The limited resources of the research had to be allocated with a priority so that the most important research issues would be addressed first. This limitation might lead to the fact that some interesting issues such as unintended consequences of the SMS policy reform in emerging markets; new emerged risks and market intermediaries; and new technology and ethical aspects could not be included under the umbrella of this research. Moreover, the research discussion could not go on further details of the noteworthy crisis-induced supervisory policies on hedge funds and investment bankers due to limited timeframe and structure of the study;

Second, the quantitative research findings, based on self-reported cross-sectional data rather than longitudinal data might not dynamically reflect the ongoing and changing context of post-crisis SMS reform. Although the limitation was partly settled by the qualitative research with a wider timeframe from 2008 to March 2016, it might confine the generalisability of the
quantitative research and hence the qualitative research because the later was conducted to address the implications and research issues arising from the earlier.

Third, the logistic regression model of the quantitative research had failed to quantify the correlation coefficients between the improvement of SMS responsiveness and the crisis-induced SMS policies due to the limitation of quantitative data. Small sample size with nominal variables and a number of empty cells might have caused the model unstable and unable to deliver the expected results to support findings from descriptive analysis.

Finally, focus group interviews in the qualitative research, conducted with small number of interview participants might restrain the generalisability of the qualitative research in investigating points of view of the securities regulators about the post-crisis paradigm shift and the post-crisis SMS philosophy. Although the documentary research successfully addressed this research issue later, time and cost efficiency became a concern of the research because it took nearly two years to carry out the documentary research and to collect qualitative data for analysis.

1.8. Definition of Terms

The key terms relating the concepts of the securities market supervision are defined specifically in Chapter Two of this thesis. This section provides definition of the terms that are used widely but not defined elsewhere in the thesis.

**Complex Financial Products** refer to ‘financial products, whose terms, features and risks are not reasonably likely to be understood by a retail customer because of their complex structure, and which are also difficult to value. The term generally includes, but is not necessarily limited to, structured instruments, credit linked notes, hybrid instruments, equity-linked instruments and instruments whose potential pay-off is linked to market parameters, asset-backed securities (ABS), mortgage-backed securities (MBS), collateralized debt securities, and other financial derivative instrument’ (OSCO, 2013g).

**Corporate Governance** refers to ‘the procedures and processes according to which an organization is directed and controlled. The corporate governance structure specifies the distribution of rights and responsibilities among the different participants in the organization – such as the board, managers, shareholders and other stakeholders – and lays down the rules and procedures for decision making’ (OECD, 2005).

**Credit Rating Agency** is ‘an independent company that evaluates the financial condition of issuers of debt instruments and then assigns a rating that reflects its assessment of the issuer's ability to make the debt payments. Potential investors, customers, employees and business
partners rely upon the data and objective analysis of CRAs in determining the overall strength and stability of a company’ (Business Dictionary, nd).

**Derivative** is ‘a financial instrument whose value depends on some underlying financial asset, commodity index or predefined variable. Some of the main uses of derivative instruments are to fix future prices in the present (forwards and futures), to exchange cash flows or modify asset characteristics (swaps) and to endow the holder with the right but not the obligation to engage in a transaction (options)’ (OECD, 2001a).

**Disclosure** refers to ‘any standard or requirement for an intermediary to disclose information to the customer that could be material to the investment decision (including information on risks and costs). In a sense, disclosure is intended to assist the customer in making his/her decision, but is distinct from the requirement for a firm to make a determination of whether a particular product is suitable for the customer’ (IOSCO, 2013g).

**Emerging Markets** is the term defined by IMF in its World Economic Outlook. ‘The main criteria used by the IMF to classify the world into advanced economies and emerging market and developing economies are (1) per capita income level, (2) export diversification—so oil exporters that have high per capita GDP would not make the advanced classification because around 70% of its exports are oil, and (3) degree of integration into the global financial system’ (IMF, 2016). Within scope of this research, emerging markets are 85 stocks markets, which are the members of Growth and Emerging Markets Committee of IOSCO (IOSCO, 2016a).

**Hedge Fund** is ‘a pooled investment vehicle that is privately organized and is administered by professional investment managers. It is different from another pooled investment fund, the mutual fund, in that access is available only to wealthy individuals and institutional managers. Moreover, hedge funds are able to sell securities short and buy securities on leverage, which is consistent with their typically short-term and high risk oriented investment strategy, based primarily on the active use of derivatives and short positions’ (OECD, 2001b).

**Market Intermediary** means ‘a firm in the business of managing individual portfolios, providing investment advice, executing orders on behalf of third parties, dealing in or distributing securities, including carrying derivatives positions. In jurisdictions where banks are permitted to provide investment services, this term includes banks to the extent they are providing such services’ (IOSCO, 2013g).

**International Organization of Securities Commission (IOSCO)** established in 1983, is the acknowledged international body that brings together the world's securities regulators and is recognized as the global standard setter for the securities sector. IOSCO's membership regulates
more than 95% of the world's securities markets. At present, its members include over 120 securities regulators and 80 other securities markets participants (i.e. stock exchanges, financial regional and international organizations etc.). IOSCO is the only international financial regulatory organization which includes all the major emerging markets jurisdictions within its membership (IOSCO, 2015a). Know Your Client rule is a standard in the investment industry that ensures investment advisors know detailed information about their clients’ risk tolerance, investment knowledge and financial position. The rule protects both clients and investment advisors. Clients are protected by having their investment advisors know what investments best suit their personal situations. Investment advisors are protected by knowing what they can and cannot include in their client's portfolio (Investopedia, nd).

**Over-the-counter (OTC) market** refers to ‘a decentralized market, without a central physical location where market participants trade with one another through various communication modes such as the telephone, email and proprietary electronic trading systems. An OTC market and an exchange market are the two basic ways of organizing financial markets. In an OTC market, dealers act as market makers by quoting prices at which they will buy and sell a security or currency. A trade can be executed between two participants in an OTC market without others being aware of the price at which the transaction was effected. In general, OTC markets are therefore less transparent than exchanges and are also subject to fewer regulations’ (Investopedia, nd).

**Securities Market** is ‘the market where stocks, bonds and other securities are traded. In accordance with the principle of IOSCO, the words “securities markets” are used to refer compendiously to the various market sectors, including the derivatives markets’ (IOSCO, 2003a).

**Securitization** is ‘the process of taking an illiquid asset, or group of assets, and through financial engineering, transforming them into a security. A typical example of securitization is a MBS, which is a type of asset-backed security that is secured by a collection of mortgages’ (Gallant, 2016).

**Self-regulatory Organizations** (SROs) refer to ‘non-governmental organizations, which have limited regulatory functions to their members or their market places in the securities markets. Various models of self-regulation exist and the extent to which self-regulation is used varies. The common characteristics of SROs, in most jurisdictions are a separation from the government regulator although government oversight and authorisation generally exists, and the participation of business, industry and, if appropriate, investors in the operations of the SRO’ (IOSCO, 2003a).
Structured Finance Products (SFPs) refer to ‘the financial instruments that are based on a pooling of assets usually sold to a special purpose vehicle. The assets can be either cash instruments or credit derivatives. But the credit risk of the asset pool is de-linked from the special purpose vehicle. However there is also credit or maturity trenching of the liabilities backed by the asset pool. For the purpose of this research, SFPs include residential and commercial mortgage-backed securities, asset-backed securities, collateralized debt obligations, collateralized loan obligations, and asset-backed commercial papers’ (IOSCO, 2009n, p. 9).

1.9. Outline of the Thesis

This thesis is structured into seven chapters as outlined in Figure 1.1:

![Figure 1.1. Outline of the thesis](image)

Chapter 1-Introduction: This chapter introduces the research background, justifies the rationale of the research, discusses the research objectives, hypotheses and questions, summarizes the research design and methodology, identifies the research contributions, implications, addresses the research limitations, defines terms used in the study and outlines the thesis structure.
Chapter 2- Theoretical Framework and Conceptual Framework of Securities Market Supervision: This chapter discusses the theoretical framework of SMS and defines the conceptual framework of this process. In this chapter, SMS is identified as a public policy process, which has been imprinted by insights of Standard Finance and Behavioural Finance. The concept of responsive SMS is also studied in this chapter. The conceptual framework of SMS is defined with eight constituent components, including SMS philosophy, SMS architecture, SMS approach, macro-prudential supervision, micro-prudential supervision, supervision of traded securities products, market conduct oversight, and supervision of market institutions and SROs.

Chapter 3-Literature Review and Research Questions: This chapter reviews the literature of SMS before and after the 2008 GFC in order to identify research gaps, formulate research hypotheses and define the research questions.

Chapter 4-Research Design and Methodology: This chapter presents the research methodology, discusses the rationale of the research methods, justifies the research design, outlines the research quantitative and qualitative analysis strategies and addresses the limitations of the research methodology and design.

Chapter 5-Analysis and Findings of Quantitative Data: The primary purpose of this chapter is finding answers for the three research questions by analysing quantitative data collected from the survey research. This chapter describes how quantitative data had been analysed by descriptive analysis strategy to identify impacts of the 2008 GFC on philosophy, structure, approaches and five other components of market supervisory systems. It also discusses the data analysis involving the correlational causal relationship between the crisis-induced policies responses and SMS responsiveness improvement post-crisis and compares the trends of developed and emerging markets in responding to the crisis impacts on SMS.

Chapter 6-Analysis and Findings of Qualitative Data: This chapter presents analysis and findings of the explanatory qualitative research, including focus group interviews and documentary research, conducted for validation, explanation and triangulation of research findings from the qualitative exploratory and quantitative empirical research.

Chapter 7-Discussion of Research Findings, Implications and Conclusions: The final chapter of thesis summaries the previous chapters, discusses research findings, infers research implications, addresses the research contributions, identifies limitations of the research and comes up with research conclusions.

1.10. Conclusion
This chapter has laid the foundation for the study. Background, justification and rationale of the research were discussed. Research objectives, hypotheses and questions were identified. Research design and methodology were summarized. Contributions, implications, and limitations of the research were addressed. Terms were defined and outline of the research was presented.
CHAPTER 2

THEORETICAL AND CONCEPTUAL FRAMEWORK OF SECURITIES MARKET SUPERVISION
2.1. Introduction

This chapter discusses the theoretical and conceptual frameworks of SMS. Discussion of SMS theoretical framework focuses on aspects of supervision and the economic schools of thoughts that have been serving as theoretical underpinning of SMS. Whereas, discussion of SMS conceptual framework addresses the concepts and activities that constitute the whole body of market supervision. In order to understand impacts of the 2008 GFC on SMS, it is necessary to understand the theories, concepts and nature of supervisory activities in the securities markets. This chapter is structured into four sections: Section 2.2 examines the SMS theoretical framework with discussion on the concept of market supervision as a public policy process, responsiveness of SMS, Standard Finance versus Behavioural Finance and their influence to the securities regulators in framing SMS philosophy. Section 2.3 discusses the conceptual framework of SMS by identifying objectives of supervision and constituting an SMS framework for the literature review and further development of the research issues. Section 2.4 presents the conclusion. Figure 2.1 outlines the structure of this chapter with section number and their interrelationship.

Figure 2.1. Outline of Chapter 2-Theoretical and conceptual framework of securities market supervision

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2.2. Theoretical Framework of Securities Market Supervision

2.2.1. Securities Market Supervision as a Public Policy Process

Securities regulation and supervision is a field of public law that embraces every aspect of the securities industry (Kitch, 1999). Five areas, which are covered in the securities regulation and supervision include: investor protection, increasing market efficiency, completing of market organizational market structure, wealth capturing and encouraging competition in the industry.

One of the central themes of neo-classical economics, which validates public policy, is market failure and government intervention. Market failure is the standard justification for government action, or regulation and supervision. The theory has two parts. In the first part, the market ‘invisible hand’ (A. Smith, 1776) framework presumes that perfect competition leads individuals to make voluntary decisions that are in society’s interest, where price information will direct self-interested market participants to Pareto-optimum allocation of resources (Chaudhuri, 1990). The second part of the theory asserts that when competition is imperfect and the ‘invisible hand’ of the market works in such a way that individual choices do not lead to socially desirable outcomes, a market failure occurs. Then the consequent market failures can and should be corrected by government intervention (Keech et al., 2012). This is a social policy choice based on cost and benefit of intervention. Any time a market failure exists; there is a reason for government intervention into markets to improve the outcome. However, government intervention may not necessarily improve the situation because government policy can also fail. The politics of policy implementation is often slow or could lead to further problems in the market.

Supervision in financial markets in general and the securities market in particular is understood as a public policy process that is a purposive and consistent course of governmental actions in response to perceived problems arising in markets (Anderson, 2003). The critical question of market supervision is to what extent regulators should let the invisible hand of the market do its job and how far they should intervene into the market to correct market failures?

The approach of financial regulation in general and securities supervision in particular, was built upon the longstanding hypothesis that competitive markets will generally lead to optimal resource allocation through price signals (K. Davis, 2013). However, regulation is justified because in reality, markets may not be optimal if there are market failures such as externalities, imperfect information, or market monopoly. The ideology of securities supervision was stated clearly by IOSCO in one of its founding papers on the roles of securities commissions in 1990:
“According to microeconomic theory, the best resource allocation and its most efficient use stems from a market mechanism, based on which society maximizes production given a limited resources allowance. If so, why do market operations have to be overseen? The answer, particularly applied to financial industry, is that they are overseen and regulated in order to protect the investing public from malpractices; to spread risk-bearing among participants; to instill confidence and to promote stability in the system, all of which is necessary to encourage savings and the efficient allocations of resources.

But then, why must investors be protected and confidence enhanced? Among the basic assumptions of perfectly competitive markets, mention must be made of perfect information and of lack of monopolistic power. If the assumption of perfect information is dropped and risk and/or uncertainty are allowed for, perfect competition does not provide for an efficient dynamic solution. In ordinary words, this could mean that the economy by itself does not necessarily reach equilibrium continuously and smoothly in everyone’s interest; or that its balances automatically but not instantaneously. It is on these grounds that economic policies are required” (IOSCO, 1990, pp. 2,3).

In the securities industry, possession of inside information or exclusive rights to sophisticated services creates monopoly. In reality, dealers associations and stock exchanges have been known to use their power to limit entry of new members or set their fees. Beside the problems of imperfect information and monopoly, consideration of social justice (fair procedures or equal opportunities) might justify government intervention (IOSCO, 1990).

In order to clearly understand the concept of supervision in the securities market, it is necessary to identify sharp lines between the terms of regulation, supervision and oversight. The term regulation is used to refer to the process of ruling, which is more prescriptive and often quantitative (Patrikis 1997). Thinking about regulation, we think about the laws, regulations, rules and sanctions, which are prescribed to prohibit or prevent an activity in the markets. A pre-set minimum capital ratio is well understood as a tool of regulation. Regulation in the financial sector and the securities markets is often designed around three well-known classical topics: financial stability, protection for public investors and the danger of monopolistic behaviour (Grünbichler & Darlap, 2003).

Supervision is a more qualitative process that involves inspection, enforcement and critical evaluation. Supervision ‘involves the safety and soundness of specific financial institutions, in the light of the general continuous review of the activities of the entire industry to ensure prudent operation and compliance with law and regulation’ (Patrikis, 1997 pp.1-2). Supervision is the executive force in financial market control (Grünbichler and Darlap 2003). Supervisory activities are hence bound by the legal environment set by the regulations. Crockett (2003)
describes supervision as a part of the financial market infrastructure. This ‘infrastructure’, which financial markets rely on to function properly, includes laws, enforcement procedures, accounting practices and valuation standards, prudential regulations, effective supervision, appropriate public disclosure and well-functioning payment and settlement systems (Grünbichler & Darlap, 2003).

Oversight is a watchful process or a form of general supervision. This term is always used to refer to the monitoring of an institution by regulatory organizations. Oversight is considered much less intrusive than supervision and might be viewed as surveillance, normally conducted at a distance, while supervision involves close, first-hand, observation and analysis (Patrikis, 1997 pp. 1-2). That is why in the securities market, the term ‘oversight’ is used to refer to the monitoring activities undertaken by regulatory agencies to ensure the sound operation of market institutions and SROs. In the securities markets, when addressing supervision or oversight, we mean the compliance and enforcement aspect of securities regulation. In reality, the lines between three terms of regulation, supervision and oversight are not very sharp. The terms regulation and supervision are sometimes used similarly to define the governmental intervention into the securities market to correct market failures.

2.2.2. Responsiveness of Securities Market Supervision

This subsection discusses responsiveness of SMS, which is developed based upon notions of responsive regulation. One of the research objectives is to investigate whether the crisis-induced policies undertaken by securities regulators will lead to more responsiveness of SMS and hence securities regulation. Therefore the concept of responsive SMS are to be set within this subsection and SMS responsive criteria are developed in Chapter 7 of the research.

The theory of responsive regulation was articulated and expanded by Ayres and Braithwaite (1992). Ideas of Ayres and Braithwaite (1992)’s responsive regulation were popularly adopted by regulators (Braithwaite, 2006, 2011; Desai & Ramsay, 2011; Wood, Ivec, Job, & Braithwaite, 2010), applied and further developed by other scholars (Baldwin & Black, 2007; J. Black & Baldwin, 2010; Ford, 2012; D. Smith, 2011). However, Ayres and Braithwaite’s version of responsive regulation is considered the most sustained and influential account of how and why to combine deterrent and cooperative regulatory enforcement strategies (Nielsen & Parker, 2009).

Ayres and Braithwaite (1992) developed a regulation pyramid of six tiers, which reflect basic principles of responsive regulation. Advisory and persuasive measures are located at the base of the pyramid, mild administrative sanctions are in the middle and tougher punitive sanctions
are at the top (Figure 2.2). Regulators are recommended to focus most of their activity at the bottom and only escalate measures if necessary and de-escalate when possible.

**Figure 2.2. Regulation pyramid**

![Regulation Pyramid Diagram](image)

*Source: Ayres and Braithwaite (1992)*

Ayres and Braithwaite (1992) suggested that regulation should be responsive to industry structure so that different degrees and forms of regulation will be applied for different structures. Different motivations of regulated entities should be acknowledged and adapted by regulators. Effective regulators should speak to the diverse objectives of regulated firms, industry associations, and individuals within them.

According to Ayres and Braithwaite (1992), regulations themselves can affect industry structure and can affect motivations of the regulated. Further, the very behaviour of regulated industry or entities should redirect regulatory strategies to greater or lesser degrees of government intervention.

D. Smith (2011, p. 711) defined responsiveness of regulation as 'the ability of a regulator to respond purposively and effectively to the particular context of regulation, and persuade the regulated firm to do so too'.

Baldwin and J. Black (2007) developed the concept of “really responsive regulation” (RRR) as a regulatory framework, which responds to the firms ‘attitudinal settings and recognizes the significance of the institutional environment, which is aware of the differential logics of regulatory tools and strategies, which is performance sensitive and responds to changes’(Baldwin & J. Black, 2007 p.18).
Baldwin and J. Black (2007) and J. Black (2010) argued that the way regulators interact with regulated entities should be influenced by five key factors: (i) the behaviour, attitudes and cultures of regulatory actors; (ii) the organizational dynamics and institutional setting of the regulator within the regulatory regime; (iii) the different logics of regulatory tools and strategies: (iv) the regime’s own performance over time; and (v) finally, changes in each of these elements.

Ayres and Braithwaite (1992); Braithwaite (2006, 2011) recognized that it is impossible for any regulatory agency to identify and compel every breach of the law it administers and provides perceptions into how regulatory compliance can be achieved effectively. Responsive regulation has been ‘an influential policy idea because it comes up with a way of reconciling the clear empirical evidence that sometimes punishment works and sometimes it backfires, and likewise with persuasion’ (Braithwaite, 2006, p.887).

Though financial services sector has been recognized by Smith (2011, p. 711) as ‘a particularly difficult nut for responsive regulation to crack’, responsive regulatory framework is relevant for SMS. As discussed earlier in this Chapter, SMS is the compliance and enforcement aspect of securities regulation. And as Ayres and Braithwaite (1992 p.58) recognized, responsive regulation is ‘about enforcement and compliance, not prospective rule-making’.

Perhaps Baldwin and J. Black (2007; 2010 and 2014) are the ones who brought responsive regulation closest to securities markets when developing the concept of really responsive risk-based regulation (RBR) and really responsive regulatory (RRR) approach to financial markets regulating. J. Black (2014) defined five features of responsive risk-based regulation in financial markets, including (i) incorporating risk assessments and attitudes and compliance behaviour in the risk assessments; (ii) being responsive to the institutional and market environment; (iii) recognizing that regulatory tools can have conflicting logics; (iv) being sensitive to its own performance; and (v) being able to respond to change.

The concept of responsive SMS is developed within this research by adopting the insights of Ayers and Braithwaite (1992; 2006, 2011), Smith (2011), and Baldwin and J. Black (2007); (2014; 2010), as follows:

Responsiveness of SMS is the ability of the securities regulators to respond effectively to market behaviour, market context and market developments by using relevant supervisory tools and approaches in a specific supervisory structure.

Responsive SMS should not rely totally on a specific economic theory but insights of various economic theories should be adopted in relevant areas of securities supervision to settle the
problems arising in the interactive relationship between the securities regulators and securities market participants. In this research, responsiveness of SMS defines a culture of supervision that would enable the SMS framework to keep pace with market developments. Criteria for a responsive SMS system are further developed in Chapter 7 as one of the implications of this research.

2.2.3. Standard Finance vs Behavioural Finance and Their Influence on Philosophy of Securities Market Supervision

As a process of public policy, SMS activities are undertaken with a certain philosophy, which is built upon relevant economic theories. This section discusses the issues of Standard Finance and Behavioural Finance and their relationship to theoretical underpinnings of the financial regulation in general and of the SMS in particular. As one of the purposes of this research is exploring how the philosophy of the SMS has been changed after the 2008 GFC, unlike other research, the economic theories presented here will not serve as a framework for analysing the research results in later chapters. Instead, the research objective is to find out whether the securities regulators still use one or the other theory, or both as the philosophy in setting of policy and implementation of supervisory activities after the financial crisis.

2.2.3.1. Standard Finance

Standard Finance, introduced in the late 1950s and developed through over fifty years, has four foundation blocks, including (i) investors are rational; (ii) markets are efficient; (iii) investment portfolios should be designed in accordance with the rules of mean-variance portfolio theory; and (iv) expected returns are a function of risk alone (Statman, 2008).

Miller and Modigliani (1961) described investors as rational. Treynor (1961; 1962) discussed three issues of market value, time and risk and developed “theory of market value of risky assets” (Treynor 1962). Cootner (1964) described the random character of stock market price. At the same time Sharpe (1964) explored capital asset prices and proposed a theory of market equilibrium under conditions of risk (See Table 2.1. Appendix 2 for the list of scholars advocated EMH before Fama).

Fama (1965) described securities markets as efficient in “The Behaviour of Stock Market Prices” and subsequently “Efficient Capital Market: A Review of Theory and Empirical Work” (1970). Fama (1997) continued to argue that though the emerging Behavioural Finance literature produced many long term return anomalies, the evidence did not suggest that market efficiency should be abandoned.
Sharpe (1964) adopted the mean-variance portfolio that was prescribed and developed in full form by Markowitz (1959) as a description of investor behaviour and introduced the capital asset pricing model (CAPM). This model was further developed by F. Black et al. (1972) and supported by Fama and French (2004). Portfolio theory prescribed that differences in expected return are determined only by differences in risks, which is measured by beta.

Efficient Market Hypothesis and CAPM are two basic theories of Standard Finance. Fama’s EMH bases on the supposition that: ‘an ideal capital market is the market in which prices provide accurate signals for resource allocation: that is, a market in which firms can make production–investment decisions, and investors can choose among the securities that represent ownership of firms’ activities under the assumption that securities at any time ‘fully reflects’ all available information’ (Fama, 1970, p. 383). The EMH claimed that stock markets are efficient, prices are always right and investors are rational. There are three forms of capital market efficiency, including weak-form, semi-strong-form and strong-form.

The weak-form EMH assumes that price history and other information about trades is known. Therefore, if current price is based on past market development and future returns will be based on patterns of the market behaviour, then the patterns will be discovered by experienced traders. However, since all traders would have the same information no one would have an advantage in the game, and there is no advantage of merely watching trends (Fama, 1965, 1970).

The semi-strong-form EMH supposes that prices adjust exceedingly rapidly to price tendency, market features and to other publicly available information such as economic news. Therefore, if information about returns or information that effects returns are available then the market again includes that into the current price level for any stock that is impacted by the news (Fama, 1965, 1970).

The strong-form EMH assumes that stock prices fully reflect all available information. This form is viewed as a benchmark for determining of deviations from market efficiency. If one has inside information or special knowledge, which are not yet made public, and uses it to make a profit, the market begins to reflect the news with the first trade made by that person. Thus, the information, which is not yet public, has its impacts on the market as the market notices changing pattern of price, or the shift in the demand curve driven up by the transaction using inside information (Fama, 1970).

The EMH is associated with ideas of ‘random walk’ developed by Cootner (1964) and further supported by Malkiel (1973). The term of ‘random walk’ is used in the financial literature to characterize a price series where all subsequent price changes represent a random deviation from the previous price. According to Malkiel (2003, 1973) the logics of random walk idea is
that if flow of information is unimpeded, and information is reflected immediately in share prices then tomorrow’s prices will only reflect tomorrow’s news and will be independent from today’s price changes. But news is unpredictable and thus, stock price changes must be unpredictable and random.

Basically, different versions of CAPM are all set up to measure the relationship between risk and equilibrium expected returns in the stock market or sensitivity of an asset to non-systemic risks, which are supposedly not diversifiable. In the development of CAPM, it is assumed by F. Black et al. (1972) that: (i) all investors are rational and risk averse with the aim of maximizing economic utilities in a single period of investment and they can choose among portfolios solely on the basis of mean and variance; (ii) There are no market imperfection such as taxes, restrictions, or transactions costs; (iii) All investors are price takers and have homogenous expectations on parameters of the joint probability distribution of all security returns; (iv) Assets are fixed in terms of quantity and are marketable and perfectly divisible; (v) All investors can borrow and lend at a given riskless rate of interest; and (vi) All information is assumed available costless and simultaneously to all investors.

The Standard Finance theories for a long time have been the most influential ideas for the financial regulators. EMH and CAPM were considered a framework and standard financial tool, which provides a worldview for financiers and determine their decision making in the financial markets (P. Bell, 2010).

In the securities markets, assuming rationality of investors and efficiency of markets, regulators relied mostly on “full-disclosure” mechanism to protect their investors. Regulators assumed that stock market prices reflect all the stock related information and hence full-disclosure is adequate for rational investors to make rational investment decisions.

Markets were also assumed to be efficient enough to correct themselves. Market institutions and market intermediaries were expected to be self-regulated. Deregulation was encouraged to avoid government failures in interventions into the markets. In the securities markets, the terms such as “full-disclosure”, “sophisticated investors”, “self-regulatory organizations”, “deregulation” had been very popular in the regulatory and supervisory literature before the incident of 2008 GFC.

Since the early days of its establishment, the IOSCO (1990, p. 17) had called for a mechanism of market supervision, in which ‘any attempt of supervision must combine information disclosure, regulation and self-regulation in the proportion that particular circumstance and case might call for’. Inherently, the ideas of EMH and Standard Finance are behind the mindset. In many markets, market-based approach was suggested to empower investors and securities
regulation was recommended to be left to the stock exchanges where the firms are listed (Romano, 1998).

Bond, Goldstein, and Prescott (2006) assumed that the ideas of Standard Finance served as an economic premise, which underlined many policies and laws of the financial regulators. The premise is that financial markets aggregate useful information for regulators in making various policy decisions. According to Bond et al. (2006), the Sarbanes Oxley Act of 2002 called for the US Securities and Exchange Commission (SEC) to consider market data – namely share price volatility and price-earning ratios – when reviewing the legality of a firm’s disclosure. And the courts in United States also used market prices to determine damages in the class action litigation (Bond et al., 2006).

EMH was viewed as a theoretical basis for legal policy that impact doctrines in securities regulation litigation by Hammer and Groeber (2007). Hammer and Groeber (2007) analysed fraud-on-the-market theory of the Supreme Court in Basic Inc. v. Levinson, 485 U.S. 224 (Supreme Court, 1988) under the light of EMH. According to Hammer and Groeber, the court created this theory relied upon the EMH in a non-specific way, and did not explicitly indicate whether it endorsed a weak, semi-strong or strong version of the theory. They discussed:

“However, the court's opinion states, "Misleading statements will therefore defraud purchasers of stock even if the purchasers do not directly rely on the misstatements." The application of the theory in courts has required the counsel who wishes to advocate efficient markets to allege and prove the efficiency of the market” (Hammer & Groeber, 2007 p.17).

Hammer and Groeber (2007) also alleged that the court used the semi-strong version of EMH in the doctrine “Be Speaks Caution”.

In many guidelines and policy papers of IOSCO, the ideas of Standard Finance and EMH can be seen intrinsically. The concept of efficient market was adopted by IOSCO in its important document of “Objectives and Principles of Securities Regulation” in 2003:

“In an efficient market, the dissemination of relevant information is timely and widespread and is reflected in the price formation process. Regulation should promote market efficiency” (IOSCO, 2003a, p. 6).

Discussing the objective of investor protection, IOSCO (2003a, p. 5) alleged that ‘full-disclosure of material information to investors is most important means for ensuring investor protection’. In recognizing full-disclosure as most important means of investor protection, IOSCO (2003a) naturally assumed the ideas of EMH on market efficiency and full information disclosure is most essential for investment decision making.
In general, as concluded by Kattan (2006), lawyers, judges and other decision makers in the securities market assume that market participants’ knowledge and behaviour entirely based on the EMH and its “utility theory” underpinnings.

2.2.3.2. Behavioural Finance

According to Statman (2008), Behavioural Finance offers an alternative block for each of the foundation blocks of Standard Finance. In Behavioural Finance, ‘investors are “normal”, not rational. Markets are not efficient, even if they are difficult to beat. Investors design portfolios according to the rules of Behavioural Portfolio Theory, not Mean-variance Portfolio Theory, and expected returns follow behavioural asset pricing theory, in which risk is not measured by beta. Expected returns are determined by more than risk’ (Statman, 2008, pp. 2-3). Behavioural Finance helps to explain why and how markets might be inefficient (Sewell, 2007).

Behavioural Finance emerged at the end of 1990s. However, its roots can be traced to earlier studies of some economists in the 1970s. Studies of Kahneman and Tversky (1979;1974) discussed the bias of investment decisions under uncertainty and introduced the prospect theory. Prospect theory assumes that investment decision weight associated with an event will depend on the perceived likelihood of that event, which could be subject to major bias. Besides, decision weights may be affected by other considerations such as ambiguity or vagueness. Shiller (1981) raised the questions whether stock prices moved too much to be justified by subsequent changes in dividends. He argued that stock price indexes have too much volatility for the “efficient market model”, in which real stock prices are asserted to be equal to the present value of rationally expected dividends discounted by a constant real discount rate (Shiller, 1981).


Behavioural investors are normal people, even wealthy and famous, not stupid, but not rational as assumed by Modigliani and Miller (1958). Rational investors prefer more wealth to less and are never confused by frames. Rational investors are not affected by cognitive errors, they do not know the pain of regret, and they have no lapse of self-control (Statman, 1995). In contrast,
normal investors are affected by cognitive biases and emotions and are often confused by frames. Normal investors always ‘sell winners too early and ride losers too long’ (Statman, 1999). Normal investors know the pain of regret and the difficulty of self-control. Though normal investors always prefer more to less, sometime they are more social responsibility and willing to sacrifice wealth (Statman, 2008).

Behavioural Portfolio Theory, introduced in 1994, further developed in 1997 and 2000 by Shefrin and Statman is a goal based theory. The theory assumes that investors divide their money into many mental account layers in a pyramid of assets, which are associated with particular goals such as secure retirement, college education, or being rich enough for a cruise ship vacation. In that pyramid, attitudes toward risk vary across different layers (Shefrin & Statman, 1997). Normal investors are animated by aspirations, not attitudes toward risk. That is why they might behave as if they hate risk in the “downside protection” layer of the pyramid, which is designed to prevent them from being poor (buying insurance). Shefrin and Statman (1994, 1997) concluded that normal investors behave as if they love risk in the “upside potential” layer, which is designed to give investors a chance of being rich (buying a lottery ticket, for example).

In the behavioural capital asset pricing model (BCAPM) developed by Shefrin and Statman (1994), expected return of a stock is a function of market factor, book-to-market factor, market cap factor, momentum affect factor, social responsibility factor, status factor and more (Statman, 2008).

Standard Finance defines “efficient market” as a stock market where the price of a stock is always equal to its instrinsic value- the present value of cash flows the stock can reasonably be expected to generate, such as dividends. Statman (2008) observed that over time the definition of “market efficiency” became confused with the notion that market is efficient when it cannot be beaten by earning excess returns. To earn excess returns, then investors must find deviations of price from a stocks instrinsic value and then buy undervalued stocks and sell overvalued ones. Then the definition of “efficient market” in terms of price-equals –instrinsic value is understood as a market that cannot be beaten. However, Behavioural Finance argues that a market that cannot be beaten is not necessarily efficient. For example, stock prices in a bubble market deviate greatly from instrinsic value. Investors still cannot beat the market in bubble unless they are able to take advantage of the difference between value and price (Statman, 2008).

Shiller (2003, p. 102) claimed that Behavioural Finance helps to understand the stock market booms and crashes, and that the booms and crashes had their origins in human “foibles and
arbitrary feedback relations and must have generated a real and substantial misallocation of resources’.

Though not as influential to securities regulation as the ideas of the Standard Finance, some ideas of Behavioural Finance have been realized in the securities market regulation and supervision. Behavioural Finance ideas are considered as forces that shape financial regulation by Statman (1995). Statman (1995) named suitability regulations and merit regulations as the regulations that were affected by the Behavioural Finance’s ideas. However, Statman (1995) claimed that financial economists ignored them because they think the regulations are not important or because they are difficult to fit into the theory of Standard Finance.

Suitability regulations are about the responsibility of securities brokers to their clients. “Know your clients” (Investopedia 2006) is one of the principles in the code of conduct for brokers. Securities brokers should ascertain that the stocks or bonds recommended by them to their clients are suitable for the clients’ needs and financial conditions. Suitability regulations are important for the behavioural investors because they are the tools that help investors control the effects of their cognitive errors and self-control problems.

As in the case the suitability regulations, merit regulations are designed to protect investors from themselves. Merit regulations are predefined standards used by securities regulators as criteria to judge the conduct of market participants. The rationale behind merit regulations is that people are susceptible to their cognitive errors and they will overpay for the securities if they are left to their own decisions. However, merit regulations have for a long time been replaced by disclosure-based regulations, which were first introduced in the United States in 1933 and then became strongly recommended in the 2000s, after the the Asian Financial Crisis in 1997.

Another rule that is based on the ideas of Behavioural Finance is the rule to prevent market crash by “circuit breaker”. In all the stock exchanges, there is a requirement to install the device in trading systems that automatically stop securities transactions in case there is a severe drop of prices due to “herd philosophy” of investors.

Eventhough Behavioural Finance has become more and more influential, it has not played such an important role in policy making of the securities market regulators as Standard Finance. While the ideas of Standard Finance have been used as the primary philosophy for market regulation and supervision for a long time, the ideas of Behavioural Finance are only present in some regulations, mostly about the conduct of market participants. The fact was commented by Kattan (2006):
“Regulators always make assumption of market participants behaviour when elaborating policy, just like judges and lawyers do when appraising actions of these participants. One might therefore presume that Behavioural Finance would play a significant role in the regulation of securities markets because it is that very behaviour that needs to be facilitated, curtailed, or eliminated entirely. Unfortunately this entire body of research is completely absent from legislation as well as judicial decisions” (Kattan, 2006, p. 7).

This subsection concludes that SMS is a public policy process that bears the imprints of both Standard Finance and Behavioural Finance. However, Standard Finance has been more successful in playing the role of a conventional philosophy of SMS for a long time.

2.3. Conceptual Framework of the Securities Market Supervision System

In this section, a conceptual framework of SMS system is developed to formulate the issues to be researched and to create a map for building the rationale of the research questions and methodology. As the SMS is a complicated system, one needs to understand its components well before investigating the impacts of the crisis to the whole system of market supervision.

The framework SMS is developed to reflect basic components and functions of supervisory activities in the securities market. The SMS framework comprises three factors that define how a securities market supervision system is designed and operated, including supervisory philosophy, supervisory architecture and supervisory approach, and five major groups of supervisory activities, including (i) macro-prudential supervision, (ii) supervision of market intermediaries or micro-prudential supervision, (iii) supervision of traded products, (iv) market conduct oversight and (v) oversight of market institutions and SROs. The framework of SMS is shown in Figure 2.3.
2.3.1. Securities Market Supervision Philosophy

Searching online dictionaries for the word ‘philosophy’, it is easy to find out the definitions such as ‘philosophy is a belief or system of beliefs accepted as authoritative by some group or school’ or ‘the rational investigation of questions about existence and knowledge and ethics’\(^1\). Other definitions of philosophy that are more relevant for the research include: an underlying theory or set of ideas relating to a particular field of activity or to life as a whole\(^2\) and ‘a group of theories and ideas related to the understanding of a particular subject’\(^3\).

Within the framework of this research, *supervision philosophy* reflects a set of values or standards which based on an *economic rationale* back up the supervisory system and framework. That philosophy is the ‘theoretical underpinnings’ (K. Davis, 2011) or ‘ideology’ (Ward, 2008) of securities regulation. SMS philosophy include the notions, assumptions and explanations by securities regulators on what is an efficient securities market and how a supervision system should be set up and operated to ensure that efficient market. SMS

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\(^1\) Online Dictionary of Princeton University, at http://wordnetweb.princeton.edu/perl/webwn?s=philosophy


\(^3\) Cambridge Dictionaries Online, at http://dictionary.cambridge.org/dictionary/british/philosophy
philosophy is the “conventional wisdom” which is respected and followed by the securities regulators. The assumption that the securities market is self-stabilizing and market behaviour are rational (Erskine, 2010b) and hence full-disclosure is sufficient to work out conflicts of interest and deregulation should be emplaced to achieve market efficiency represented the conventional wisdom before the 2008 GFC. The SMS philosophy plays a decisive role in setting up the securities supervisory architecture and selecting the relevant supervisory approaches in each market.

2.3.2. Securities Market Supervision Architecture

SMS architecture is the structure where the securities regulator and SROs are put into relevant statutory positions so that they can perform their functions of supervision in an effective manner. Securities market supervisory architecture is often seen in a hierarchy, which reflect the areas and functions of market supervision involved in and taken by different units of the securities regulator and SROs. The SMS architecture cannot be analysed in isolation from the whole financial supervision structure and the position of SROs. The financial supervision structure in a certain economy may be set up according to one of four approaches of integrated, functional, institutional, or with twin-peaks (G30, 2008).

Each model has different arrangement of securities supervision. The integrated approach is the one in which a single universal regulator conducts both safety and soundness oversight and conduct-of-business regulation for all the sectors of financial services business (G30, 2008); The functional approach is the arrangement in which supervisory oversight is determined by the business that is being transacted by the entity, without regard to its legal status. Each type of business may have its own functional regulator (G30, 2008). The institutional approach is the structure in which a firm’s legal status (for example, a bank, broker-dealer, or insurance company) determines which regulator is tasked with overseeing its activity from both a safety and soundness and a business conduct perspective (G30, 2008). The twin-peaks approach, a form of regulation by objective, is the one where there is a separation of regulatory functions between two regulators: one that performs the safety and soundness supervision function and the other that focuses on conduct-of-business regulation (G30, 2008).

Self-regulation is a prominent concept in the securities market regulation and supervision. SROs can be defined as private sector organizations that share the same objectives of market integrity, market efficiency and investor protection with governmental regulators, having limited statutory authority to regulate the market participants and individuals under their jurisdiction. They may have limited extent of disciplinary power and must maintain the relevant framework to eliminate the conflicts of interests that may be caused by their commercial and
regulatory activities (P. Richard, 2006). SROs often play important roles in SMS. They are stock exchanges and professional organizations such as securities dealers associations, associations of investment fund management companies, or securities investors associations. The SROs normally are set up to take certain supervisory functions in the securities market, especially market surveillance, market entry requirements, professional adequacy and business conduct of their members. SRO and the securities regulators (usually securities commissions or financial supervisory authorities) together perform the functions of SMS. However, the borderline of SROs and the securities regulators in market supervision may be different from one to another market depending on their SMS architecture.

2.3.3. Securities Market Supervision Approaches

The SMS approaches mean the ways the supervisory activities are taken and they depend largely on the SMS philosophy which the securities regulators bear in mind. There are different approaches to SMS. Merit-based (Rhee, 2000) and disclosure-based (Frederick, 2000), market-based (Bond et al., 2006), rule-based and principle-based (Anand, 2009), risk-based (McCarthy, 2006) and evidence-based (FSA, 2007) approaches have been the concepts frequently cited in the literature on stock market supervision and regulation.

After the 1997 Asian Financial Crisis, there was a trend of moving from merit-based into full-disclosure based approach. In a merit-based approach, securities regulators use predefined merits as criteria to judge the conduct of market participants. This approach is based on the assumption that market regulators are better informed than investors and hence can better decide the merits of transactions on their behalf (Rhee, 2000, p. 2). Vice versa, the disclosure-based approach assumes that the market is better than the regulator in defining the merits of securities operations and hence full-disclosure is sufficient for investors to make informed decisions.

The premise of the market-based approach is that prices in the stock market reflect exactly the expected value of securities given the information available in the market (Bond et al., 2006, p. 3) and simultaneously affect and reflect the regulator’s action, so both the prices and the price-dependent action of the regulator will need to be consistent (Bond et al., 2006, p. 3). Followers of the market-based-approach argued that deregulation should be made to let the market stabilize itself and full-disclosure helps to deal with information asymmetries and conflicts of interest (Erskine, 2010b).

It should be noted that disclosure-based and market-based are not totally different from each other. In fact, disclosure-based or full-disclosure practice is a simplified version of the market-
based approach. In some markets, especially emerging ones, disclosure-based or full-disclosure are more popular regulatory terms and concepts. The securities regulators that use market-based approach definitely use the practices of full-disclosure, but not vice versa. With market-based approach, securities regulators rely on market self-stabilization and self-regulation, pursue deregulation, encourage full-disclosure and minimize intervention into markets. However, in some emerging markets like Viet Nam, full-disclosure is encouraged but securities regulators do not totally rely on market self-regulation.

**Figure 2.4. Different approaches of securities market regulation and supervision**

<table>
<thead>
<tr>
<th>Market is better than regulators to define criteria to judge conduct of market participants</th>
<th>Regulators are better than market to define criteria to judge conduct of market participants or there is a need for regulatory intervention</th>
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</thead>
<tbody>
<tr>
<td><strong>Institutional-based</strong></td>
<td><strong>Merits-based</strong></td>
</tr>
<tr>
<td><strong>Evidence-based</strong></td>
<td><strong>Rule-based</strong></td>
</tr>
<tr>
<td><strong>Market-based Disclosure-based</strong></td>
<td><strong>Principle-based Risk-based</strong></td>
</tr>
</tbody>
</table>

Source: developed for this research

Principle-based regulators set out high-level principles for market conduct and give market participants freedom to develop and manage internal compliance systems to achieve the regulatory outcomes articulated by those principles. Principle-based regulation refers to a broad set of standards that gesture in the direction of certain desired outcomes (Anand, 2009, p. 111). Guidelines about how to obtain outcomes are essential for market participants in principle-based regulation. Principle-based rules are broad, general and purposive which may or may not be elaborated in further rules or guidance, whereas rule-based regulation is characterized by specific provisions and detailed rules. In a rule-based approach, the efforts of securities regulators are focused on compliance with the rules and processes rather than on broader objectives and outcomes (Expert Panel, 2010a). A set of detailed rules that govern firms’
behaviour and enable them to “tick-the-box” to guarantee compliance with law are important for that approach (Anand, 2009, p. 111).

The terminologies of merit-based and disclosure-based are no longer popular. Instead, argument on rule-based and principle-based financial regulation has become a “trans-Atlantic” debate after the GFC (Walsh, 2008). A new approach that contained both principles and rules, namely “institutional-based regulation” was proposed by Walsh (2008, p. 382) in the US stock market. Walsh (2008) argued that in an institutional-based system, the government or industry self-regulators requires regulated entities to create certain internal institutions, in the US context typically including a chief compliance officer (CCO), written compliance policies and procedures, annual self-assessments, mandatory access for the CCO to the entity’s senior executives, and written codes of ethics. Regulators communicate their regulatory expectation through interpretation, guidance and personal statements rather than dictate operation of these institutions. However, Anand (2009) then criticized that in fact the “institution-based approach” is another version of principle-based approach rather than ‘a third paradigm within the principles-rules debate’ (Anand, 2009, p. 112).

It is not difficult to note that rule-based approach is just a further developed concept of merits-based approach; and disclosure-based, market-based and principle-based approaches seem to be modified versions of the same ideology (See the diagram in Figure 2.4).

While the above mentioned approaches of merit-based, disclosure-based, rule-based, principle-based and market-based approaches tend to have a wider extent of application to supervisory activities taken over the market as a whole, risk-based supervision is concerned more with prioritization of resource allocation in supervision of market intermediaries (McCarthy, 2006) and evidence-based approach is used when deciding new regulatory policy initiatives (FSA, 2007).

Risk-based approach is a process to identify crucial risks that confront market intermediaries such as securities firms and fund management companies via procedures of focused review by the securities supervisor to assess their potential financial vulnerability and the level they prepare themselves to encounter the risks. IOSCO (2009h, p. 7) defines risk-based supervisory approach as ‘the application of risk assessment methods such as sensitivity analysis, stress testing and other risk monitoring techniques to identify the likelihood of a negative event and its impact on the system in the process of the risk assessment and risk management’. Upon defined level of risk exposure by market intermediaries, relevant resources will be allocated for supervisory activities taken to each intermediary.
Evidence-based approach is employed when the securities regulators are likely to launch a new policy. Whenever there is a market failure which needs to be addressed, the regulators will consider whether regulation is the best way to deal with it and scrutinize costs and benefits of regulatory intervention before a policy action is taken. Market failure analysis (MFA) and cost-benefits analysis are two essential components of evidence-based regulation (Andrews, 2008).

The different approaches of SMS are used at the discretion of the securities regulators in each market, given their supervision philosophy, regulatory fields and market conditions. The FSA of UK strongly advocated the principle-based approach in generally while using the risk-based approach for market intermediary supervision and the evidence-based approach for policy making (FSA, 2007). Whereas, US securities regulators used the rule-based approach before the 2008 GFC and then after the crisis employed ‘institutional-based approach’, which was called by Walsh (2008, p. 382) as an approach to regulation that contain both principles and rules, but recognized by Anand (2009) as another type of principle-based approach.

2.3.4. Macro-prudential Supervision

Macro-prudential supervision ‘concerns itself with the stability of the financial system as a whole’ (Persaud, 2009b, p. 2) and aims to limit the systemic risks, which are often more than the aggregate of the risks of individual institutions. Systemic risk is defined by the OECD (2004) as ‘the risk that the inability of one institution to meet its obligations when due will cause other institutions to be unable to meet their obligations when due. Such a failure may cause significant liquidity or credit problems and, as a result, could threaten the stability of or confidence in markets’.

Another definition of macro-prudential supervision is: ‘Macro-prudential can be defined as policy that focuses on the financial system as a whole, and also treats aggregate risk as endogenous with regard to collective behaviour of institutions’ (P. Davis & Karim, 2009, p. 2). Macro-prudential supervision is concerned with systemic risk management. They are the same concepts about the activities taken by regulators to ensure the market integrity and to avoid the domino effect of financial disaster such as the 2008 GFC. For a long time before that GFC, macro-prudential supervision had been defined as the job of the central banks in monitoring structural trends in financial markets (P. Davis & Karim, 2009) to produce the alerts of financial instability. Yet after the GFC, securities regulators called for more active roles in systemic risk management as it is specified in the sixth IOSCO’s principle of securities regulations (IOSCO, 2011d).
2.3.5. Micro-prudential Supervision

The terminology of micro-prudential supervision is used to describe the supervisory activities which tackle the risks of market intermediaries. While macro-prudential supervision looks at the risks of the whole market system, micro-prudential supervision ‘concerns itself with the stability of individual entities’ (Persaud, 2009a, p. 2). In the securities market, micro-prudential supervision addresses the financial healthiness and sustainability of market intermediaries. Major market intermediaries in the securities market are securities firms and investment funds, whose roles in creating and transmitting systemic risks were considered ‘similar to those of banks but were not subject to a corresponding level of supervision’ (IOSCO, 2011d, p. 9) in pre-crisis time. The risk-based approach is often employed to supervise the financial integrity of market intermediaries.

2.3.6. Supervision of Securities Products

Securities, including stocks, bonds and derivatives such as futures, options and securitized products are the commodities of the securities market. The securities products listed on the organized market are subject to far more supervision than those traded on OTC markets. However, after the 2008 GFC the OTC market products, especially OTC derivatives were put under tougher supervision by market regulators. In September 2009, the G-20 leaders recommended that all standardized OTC derivatives should be traded on exchanges or electronic trading platforms with appropriate regulations, and cleared through central counterparties by the end of 2012 in order to improve transparency, to mitigate systemic risk, and to prevent market abuses in the derivatives markets (IOSCO, 2011i).

Corporate governance principles and ongoing disclosure are supposedly the major tools for the securities regulators to ensure that investors are able to exercise their rights and obligations in a fair manner and to have an adequate access to information of traded securities for their investment discretion. Besides, ratings from recognized CRAs are often used by securities investors as a reliable source of reference for their portfolio. Since the 1997 Asian Financial Crisis, enforcement of corporate governance principles and disclosure requirements has been emerging among the most important supervisory activities of securities regulators. IOSCO (1998a) affirmed that inadequate disclosure and weak corporate governance had allowed significant problems to emerge in the financial and corporate sectors of many of the worst-afflicted jurisdictions and contributed to the crisis but the attention had only been drawn to the factors as the crisis unfolded. This report also asserted that after the crisis, both public and private sectors in many countries were likely to have to promote and develop good corporate governance practices as well as high disclosure standards to restore confidence of investors.
However, operation of CRAs and their ratings had not been a focus of the regulators until the 2008 GFC. IOSCO (2009l, p. 2) admitted that ‘currently, credit rating agencies are not regulated in most jurisdictions’. Even the Joint Forum of BASEL, IOSCO, IAIS and BIS had raised the question whether the market regulators had unintentionally given CRAs an ‘official seal’ that discourages investors from taking their own due diligence by their regulations and supervisory policies (BCBS, IOSCO, IAIS, & BIS, 2009).

2.3.7. Oversight of Market Conduct

Market conduct needs to be overseen by regulators to ensure the integrity of the securities markets. Market integrity rules and market surveillance are the most important areas of market conduct oversight. Market integrity refers to a framework which allows investors to transact in a fair and informed market where prices reflect information (Comerton-Forde & Rydge, 2004). Market integrity can exist when the securities market is fair, efficient and transparent. Market integrity rules are the set of standards or requirements to ensure the stock market operates in a fair, efficient and equitable manner. They include trading rules (short selling, margin trading, or circuit breaker), and the rules to protect securities investors from unethical trading practices such as market manipulations, insider trading, front running and other types of market abuses. Market integrity rules cannot be enforced without relevant market surveillance. Market surveillance is a framework of activities taken on a regular basis or as required by the securities regulators and/or stock exchanges to identify market abuses and violations such as manipulation, insider trading, front running or securities frauds. Market surveillance is undertaken with several steps from identifying suspicious transactions out of daily trading data, requesting more information from market intermediaries, to carrying out on-site inspections and enforcement.

IOSCO (2009a) defined the framework of market conduct oversight and the key roles of market surveillance in maintaining market integrity:

“Market integrity is a core regulatory objective of securities regulators, and is critical for the well-functioning of any capital market. Having a transparent set of trading rules which are effectively enforced where parties have access to the same amount of information contemporaneously is critical in any market. The integrity of the market is maintained through a combination of surveillance, inspection, investigation and enforcement of relevant laws and rules.

Market surveillance, in particular, plays a significant role in anticipating the potential vulnerabilities to a capital market. It is seen as a pre-emptive measure aimed at detecting and deterring potential market abuse and avoiding disruptions to the market from anomalous trading
activity, including market and price manipulation, insider trading, market rigging and front running” (IOSCO, 2009a, p. 5).

Enforcement activities are the final stage of market surveillance, which are only undertaken if examinations and investigations lead to the conclusion that the suspicious trading or transactions are actually market abuses. The sanctions are then applied depending on the specific laws breached. The earlier steps of market surveillance can be taken by either Securities Commissions or Stock Exchanges, or both. However, higher juridical institutions such as prosecutors and courts may be involved in the later stage of enforcement.

2.3.8. Supervision of Market Institutions and SROs

Oversight of market institutions (MIs) and SROs finally comes into the picture of SMS. In the stock market, the terminology of market institutions often refers to stock exchanges, which provide trading platforms for different types of securities and are also in charge of regulating the markets and market members within their authority. The stock exchanges are the prominent form of SROs. In addition, there are other organizations which provide affiliate services such as depositories and custodian banks, auditors, clearing houses, CRAs, and the SROs such as securities dealers associations or associations of fund investment companies. Among them, stock exchanges, auditors and CRAs are conventionally seen as market gatekeepers. In its early version of Securities Regulations Objectives and Principles, IOSCO (2003a, p. 12) defined that ‘oversight of SROs should be ongoing’ and the securities regulators should ensure that the exercise of SRO powers is ‘in the public interest, and results in fair and consistent enforcement of application securities laws, regulations and appropriate SRO rules’ (IOSCO, 2003a, p. 12).

Oversight taken by securities regulators to MIs and SROs is to ensure that the institutions provide a level playing field, cost-efficient and best services for public investors.

2.4. Conclusions

This chapter has discussed the theoretical and conceptual framework of SMS. The perception of SMS as a process of public policy was adopted. The concept of responsiveness of SMS was defined. Standard Finance and Behavioural Finance were described as two major theories that have provided influential theoretical underpinnings for the pre-crisis financial market regulation in general and of the SMS in particular.

A conceptual framework of the SMS was developed in this Chapter to create a map for identifying the issues to be researched. The SMS framework comprises three factors that define how a securities market supervision system is designed and operated, including supervisory philosophy, supervisory architecture and supervisory approach, and five major groups of
supervisory activities, including (i) macro-prudential supervision, (ii) supervision of market intermediaries or micro-prudential supervision, (iii) supervision of traded products, (iv) market conduct oversight and (v) oversight of market institutions and SROs. Understanding this conceptual framework is a pre-requisite for identifying the research issues regarding the impacts of the 2008 GFC on SMS system.
CHAPTER 3

LITERATURE REVIEW AND RESEARCH ISSUES
3.1. Introduction

The purpose of this chapter is to identify the research issues by reviewing literature on SMS, recognizing the potential gaps for further research from this literature review, formulating the research hypotheses and setting up the relevant research questions.

In this chapter, Section 3.2 provides a review of the literature on the landscape of SMS before and after the 2008 GFC to define the possible impacts of the 2008 GFC on SMS system. The conceptual framework of SMS system discussed in Chapter 2 is used to map the literature review and formulate relevant research questions. After the literature review is completed, Section 3.3 identifies the potential gaps for further research, formulates research hypotheses and research questions. Finally, conclusions are presented in the Section 3.4. Structure of this chapter is described in Figure 3.1.

Figure 3.1. Outline of Chapter 5 –Literature Review and Research Issues
3.2. Literature Review of Securities Market Supervision Before and After the 2008 Global Financial Crisis

In this section, literature on eight components of SMS framework before and after the crisis is reviewed to reflect the post-crisis changing mind of securities regulators, to define possible impacts of the 2008 GFC on the SMS system and to identify the research gaps for this study project.

3.2.1. Market Supervision Philosophy Before and After the 2008 GFC

3.2.1.1. Pre-crisis Securities Market Supervision Philosophy

Before the 2008 GFC, Standard Finance, typically EMH has been long served as a theoretical framework of the SMS. It was a conceptual framework which made Greenspan asserted that “free, competitive markets are by far the unrivalled way to organize economies” and trying to regulate markets does not work (Ward, 2008, p.3).

An efficient market is a market in which prices always “fully reflect” available information (Fama, 1970). The EMH claimed that stock markets are efficient, prices are always right and investors are rational. There are three forms of capital market efficiency, including weak-form, semi-strong-form and strong-form (Fama, 1970, p. 383). The idea was then contributed to by many other economists and scholars. Twenty nine scholars and economists, who had advocated the ideas of efficient markets theory, including random walk of markets prices and capital market pricing model in their works for a period of 65 years were listed by Sewell (2004)(see Appendix 2).

Based on the EMH, the pre-crisis SMS philosophy supposed that securities regulators should facilitate the invisible hand of the market to do its job, leave rational investors to make justified investment decisions based on the full-disclosure of firms, rely on market self-correction, self-regulation and hence deregulate as much as they can. The EMH was not only the economic or philosophical underpinning of the securities and investments regulations in Australia but also formed the basis of the financial market regulation in the US, the UK and Europe (D’Aloisio, 2009).

It was indicated by Erskine (2010a) that the conceptual framework and operational assumption of securities regulation in pre-crisis time include: (i) a conceptual framework that assumes markets are self-stabilizing; (ii) A pro-market deregulatory mindset, where information asymmetry and conflict of interest were assumed would be adequately resolved by disclosure and fairness regulation, and risk appropriately assessed and allocated; (iii) Corporate governance and SROs as market gatekeepers could be relied on to minimizing risks and
maintaining of standards; (iv) Innovation in products and markets was to be welcomed for the purpose of completing the risk spectrum and facilitating risk transfer; (v) market behaviour is rational; and (vi) a bigger finance sector and bigger financial intermediaries were thought beneficial for economic growth and welfare.

With the mindset of reliance on self-regulation, securities regulators in many markets transferred certain supervisory responsibilities to SROs, especially stock exchanges. This could be seen in all cases where stock exchanges were wholly in charge of or shared the same duty of market surveillance with securities commissions and the securities dealers associations were actively involved in supervision of their corporate members.

3.2.1.2. Post-2008 GFC Securities Market Supervision Philosophy Crisis

After the 2008 GFC broke out, there was another crisis of financial market philosophy, described by Greenspan as a “shocked disbelief,” because “the whole intellectual edifice” had “collapsed” (Krugman, 2009, p.5). Standard Finance was blamed for 2008 GFC as a wrong supervisory philosophy; regulators were called to change their mindset in setting up a new theoretical framework for market supervision. Further, it was claimed that after the crisis, a critical question for regulators and supervisors is what their appropriate "field of vision" should be? (Bernanke, 2008 p.5). The GFC has raised fundamental questions about the conceptual foundations of financial regulation (Morris & Shin, 2008). Most of the reviewed literature blamed the neo-liberal ideologies, typically EMH as the essential motive that led the securities regulators to the pro-market and deregulation mindset, and hence caused the 2008 GFC.

Grenville (2009, p.20) argued that at the micro level, EMH has taken a direct hit and ‘its credentials as an intellectual rationale for self-interested minimal regulation are gone’.

Krugman (2009, p.2) ascertained that economists will have to recognize the significance of irrational and unpredictable behaviour, to face up “imperfections of the markets”, and to admit that “theory of everything” no longer works.

Rudd (2009, p.2) criticized that the ideologies of neo-liberalism have been revealed as ‘little more than personal greed dressed up as an economic philosophy’. Rudd (2009, p. 4) claimed that ‘if markets are fully efficient and prices fully informed, there is no reason to believe that asset price bubbles are probable’. Rudd (2009, p. 9) concluded that it was the time ‘to proclaim that the great neo-liberal experiment of the past 30 years has failed, that the emperor has no clothes’.

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4 Paul Krugman implied the efficient market theory;
Thaler (2009, p.1-2) declared that ‘markets can be wrong and the price is not always right’ and noted that the component of ‘price is right’ in the efficient market theory ‘is in more trouble than ever’ because if asset prices are always right, then there were no bubbles in stock markets. Ford (2009) argued that the GFC represented a fundamental challenge to the very place of economic theory in developing public policy. D'Aloisio (2009) admitted that the EMH has a number of assumptions to be questioned or re-examined after what had been done by 2008 GFC. Friedman (2010, p.396) proposed that ‘Minsky was right, markets are not always rational’.

Shiller (2010, p.2) highlighted the insight that the economic theory dominant in pre-crisis time ‘was deficient’ and had disregarded the importance of economy conduct and the ‘role of animal spirits’. P. Bell (2010) came up with an extreme conclusion that CAPM and EMH contributed to the 2008 GFC and if these models continue to be taught in financial courses, they will help set the stage for the next GFC.

Erskine (2010a, p.1) claimed that the “views that formed pro-market deregulatory mindset” were exaggerated, if not conflicted in the crisis and ‘disclosure and fairness regulation’ were proved insufficient to discipline risk taking, prevent conflicts of interest and other conflicts, and hence risks were not adequately recognized or diversified. Bergen (2011) has analysed the problems of the EMH and pointed out its three deficiencies.

Economists and practitioners all called for a new philosophy of market supervision. P. Krugman (2009, p.13) called the economists “to abandon the neat but wrong solution of assuming that everyone is rational and markets work perfectly”, to have more “cautious policy advices”, to reduce the willingness to take apart economics safeguards in “the faith that markets will solve all problems”, and to return to Keynesian Economics as it remains the ‘best framework for making sense of recessions and depressions’.

D'Aloisio (2009, p.14) claimed that securities regulators should move toward a ‘conceptual framework’ that ‘reassesses the market efficiency hypothesis and ensures that reforms achieve the right balance between efficiency and investor protection’ and that should be applied to post-GFC securities regulation.

Erskine (2010a) proposed a seven component conceptual framework and operational assumptions for securities regulation, which adopted insights of Behavioural Finance, focusing on systemic risks, and tougher supervision over risky instruments, OTC markets and markets institutions.
It is inevitably that excluding some lessons and implications on how the regulatory mindset should be after the crisis proposed by Erskine (2010a) and D’Aloisio (2009; 2010), most of the literature on changing philosophy of market supervision tends to criticize the economic grounding of market regulation in pre-crisis time rather than proposes new assumptions of efficient markets or a new conceptual framework of market supervision after the crisis. The fact that less attention is paid to the theoretical underpinnings of regulation than recommendations on increased governmental regulation and supervision was also noted by Davis (2011).

3.2.2. Securities Market Supervision Architecture Before and After the 2008 GFC

3.2.2.1. Pre-crisis Securities Market Supervision Architecture

There are four approaches that were used in pre-crisis time to set up financial supervisory systems in different markets.

The integrated approach is the one in which a single universal regulator conducts both safety and soundness oversight and conduct-of-business regulation for all the sectors of financial services business, including securities. Canada, Germany, Japan, Korea, Qatar, Singapore, Switzerland, Taiwan were the financial markets structured by this approach (G30, 2008).

The functional approach is the arrangement in which supervisory oversight is determined by the business that is being transacted by the entity, without regard to its legal status. Each type of business may have its own functional regulator. Brazil, France, Italy and Spain were among the economies that chose functional approaches for their financial market structure (G30, 2008).

The institutional approach is the structure in which a firm’s legal status (for example, a bank, broker-dealer, or insurance company) determines which regulator is tasked with overseeing its activity from both a safety and soundness and a business conduct perspective. China, Hong Kong and Mexico are the prominent examples of Institutional model (G30, 2008).

The twin-peaks approach, a form of regulation by objective, is the one where there is a separation of regulatory functions between two regulators: one that performs the safety and soundness supervision function and the other that focuses on conduct-of-business regulation. Australia, Netherland, New Zealand are the financial markets established under twin-peaks model (G30, 2008).

The USA was the only exception, where the financial market before the 2008 GFC was structured as a kind of functional and institutional hybrid, which maintains separate regulatory agencies across segregated functional lines of financial services, such as banking, insurance, securities, and futures (Paulson, Steel, & Nason, 2008). The structure of US financial regulation was blamed to have several inadequacies, the most important being the fact that no single
A regulator could obtain all needed information and authority to monitor systemic risk. In addition, it is more difficult to deal with market instabilities in that supervisory structure as regulators are unable to take coordinated action throughout the financial system (Paulson et al., 2008).

Masciandaro and Quintyn (2012) pointed out that there was a trend toward consolidation of the securities supervision into the unified financial supervision setting with single financial regulator in the decade before the 2008 GFC. Though different markets relied on different approaches to structure their SMS architecture, a common feature is they all had SROs as co-regulators. Before the 2008 GFC, SROs were recognized by the securities regulatory community as a compulsory component of the securities supervision structure. SROs were officially designated as one component of the securities co-regulation regime promulgated by the IOSCO (Austin, 2010).

3.2.2.2. Post-crisis Securities Market Supervision Architecture

The literature review suggested that as the 2008 GFC has changed SMS philosophy of securities regulators, it also modified their perception about how the supervisory system should be constructed to perform an effective supervision and enforcement. Two essential facts of SMS architecture after the crisis were observed: (i) An increasing need for a reform of financial supervisory structure toward a more consolidated system (Masciandaro & Quintyn, 2009), twin-peaks model is considered a superior approach (G30, 2008); and (ii) Changing roles of SROs as an outcome of re-thinking about the securities market architecture after the GFC (Carson, 2009, 2011; Rudd, 2009).

3.2.2.2a. An increasing need for reform of financial supervisory structure toward a more consolidated system

The literature of financial supervisory architecture after the 2008 GFC reflects an urgent demand for regulatory reform toward a more consolidated supervisory structure that resembles the Australian model of twin-peaks with a prudential regulator and a business conduct regulator to ensure efficient systemic risk management and better response to financial turbulence.

In early days of the 2008 GFC, validity of the fragmented functional financial supervision in US was questioned as it was not proved efficient in response to the systemic risks and supervision of multi-discipline financial conglomerates (Cox, 2008). At the same time, Paulson et al. (2008) had admitted that the current US financial regulatory structure is incompatible with market developments, having several inadequacies and was more difficult to deal with market instabilities as regulators are unable to take coordinated action throughout the system. Twin-
peaks model was proposed as an objective-based regulatory approach focusing on the goal of regulation (Paulson et al., 2008, p. 13).

Sharing the same idea that the prevalent financial supervisory architecture in US had shown some deficiencies in the 2008 GFC, Bernanke (2009) has committed establishment of a consolidated supervisory regime that would extend beyond banks to include all institutions that might pose system-wide risks such as AIG.

G30 (2008, p. 14) highlighted that of the four principal models of financial supervision, the twin-peaks approach maybe the ‘optimal means of ensuring that issues of transparency, market integrity, and consumer protection receive sufficient priority’ and the one that other jurisdictions are ‘engaged in debates over adopting’.

Coffee and Sale (2009) argued that the debate between the “universal” regulator and the “twin-peaks” alternative should not obscure the fact that both would be “super-regulators”, which would move beyond functional regulatory activities on the premise that regulators should converge as the lines between banks, securities firms, and insurance companies are vague.

Masciandaro and Quintyn (2009, p.188) claimed that the financial crisis seems to ‘have challenged all the designs of the supervisory settings, whether they are unified or not’ and policymakers and supervisors in all the countries were wondering if they need to reshape their supervisory regimes.

Zingales (2009) thought that the US financial regulatory structure did nothing to eliminate two major problems: (i) the trade-off among different objectives and; (ii) the difficulty in holding agencies or individuals accountable for regulatory outcomes given responsibilities are allocated across agencies. Supposing that it is the time to rethink regulatory architecture along clear lines of responsibility and goals, Zingales (2009) proposed to set up three different agencies, each responsible for only one of the three principal goals of financial system regulation, including price stability, systemic considerations and investor protection.

Eisenbeis (2009) noted that the reliance of the current system upon committees of supervisors had reached its limits and there is a need for creation of a new supervisory framework at the EU level that would be more effective to ensure competitive equity across the European Union, and to improve crisis prevention and management.

Weatherhead (2010) thought that the twin-peaks structure, which recognizes the fundamental difference between prudential regulation and conduct-of-business regulation and giving regulators clear objectives, promises to overcome some of the problems in the current single
regulator system. But the challenge financial regulators faced with this proposed model is coordinating the views of the different agencies and resolving conflict (Weatherhead, 2010).

D’Aloisio (2010, p. 5) and Erskine (2010a) argued that the twin-peaks structure made Australia far less affected by the 2008 GFC. However, K. Davis (2011, p. 38) observed that while the GFC showed up deficiencies in some regulatory structures and has led to changes in institutional arrangements and responsibilities in some markets, there is no clear answer to the optimal regulatory structure. Nevertheless, he did not deny that the need for ensuring regulatory cooperation has led to the creation of institutions such as FSOC and ESRB to ensure system-wide oversight arrangements.

3.2.2.2b. Changing role of SROs in securities supervisory system

Literature on securities market architecture after the 2008 GFC also reflects changing views on the role of SROs in the securities supervisory system. Basically, there are two trends of perceiving the roles of SROs after the 2008 GFC. The first trend includes the arguments of economist and practitioners who do not support the values of self-regulation any longer; and the second trend consists the milder views which see the GFC as an opportunity for a reform of self-regulation toward a more effective and responsive mechanism.

In early days of the 2008 GFC, Greenspan had admitted that he made a mistake in presuming that ‘the self-interest of organizations, specifically banks and others, was such that they were best capable of protecting their own shareholders’ and that ‘financial firms could regulate themselves’ (Catanach, 2009, p. 1).

Larosière (2009, p. 15) said that regulators had not sufficiently been mindful of the usefulness of self-regulation by the private sector and had not checked that where there is self-regulation it is being properly implemented in the recent past. Haldane (2009) noted that the GFC have divulged a system which has shown itself to be neither self-regulating nor self-repairing.

Rudd (2009) identified two unassailable truths which have been revealed by the 2008 GFC: financial markets are not always self-correcting or self-regulating, and government (nationally and internationally) cannot renounce the responsibility of maintaining economic stability.

Carson (2009) realized the key international trends of perceiving the roles of SROs after the 2008 GFC, including (i) doubt of the value of self-regulation; (ii) reduced reliance on SROs; (iii) cut back of the SRO roles of stock exchanges due to conflicts; move to more independent governance and away from member control; and (iv) tougher oversight and direction from securities regulators (Carson, 2009, p. 5).
Ford (2009) observed that the GFC illustrated how the models of "co-regulation" or "enforced self-regulation" could slide into bare self-regulation in the absence of meaningful regulatory oversight and engagement.

Erskine (2010a) noted that the prevailing pro-market mindset of securities regulators in pre-crisis time led them to the mistaken assumption that SROs are to play a similar role and to receive similar trust to the market gatekeepers, and to sustain their gate-keeping standards in order to maintain their hard-won reputations.

One of the lessons learnt by Madhur (2011) from the 2008 GFC is that self-regulation or light touch regulation is no regulation. Even in 2011, Greenspan was still blamed for pursuing the idea of self-regulation among financial institutions in pre-crisis time (Frean, 2011) and the SEC of US has conceded that self-regulation of investment banks contributed to the crisis (J. Kumar, 2011b).

In spite of arguments that dismissed the values of self-regulation, there are milder views which still see that self-regulation is a necessary component of the securities market after the 2008 GFC (Azuero, 2009; Carson, 2009, 2011; Paulson et al., 2008).

In contrast to the disappointment of Greenspan about self-regulation, self-regulation is still asserted to be ‘compulsory’ in US (Paulson et al., 2008, p. 122). However, this idea was criticized strongly by Coffee and Sale (2009, p. 767) as the economic arguments in favour of having the SROs to take on the responsibilities, which relies significantly on reputation and market forces, was inconvincible as these factors may be less effective than assumed.

Azuero (2009, p. 3) argued that the self-regulation system in Columbia ‘seems to be working’, despite the increased questioning of the value of self-regulation in the 2008 financial crisis. This is because: (i) strong tradition of self-regulation ensures greater compliance; (ii) corporate governance ensures that policies maintain stability and independence within the industry; (iii) independent character of the Colombian self-regulatory organization provides an image of a neutral self-regulator and minimizes the conflicts of interest (Azuero, 2009, p. 3).

Carson (2009) identified the trend of stronger, more credible, and more responsive to broader stakeholder interests of self-regulation in the countries which still rely on it after the 2008 GFC.

Carson (2011) argued that though demands for stronger financial regulation and consolidation of financial regulators could reduce reliance on self-regulation if regulators concerns with conflicts of interest, the crisis might be an opportunity for SROs to demonstrate how they can contribute to stronger regulation of securities firms.
The literature shows that the crisis is a good opportunity for the role of self-regulation to be re-evaluated and adjusted for more efficiency. Further study is needed to define how the roles of SROs, especially stock exchanges were actually changed due to impacts of the GFC.

3.2.3. Securities Market Supervision Approaches Before and After the 2008 GFC

3.2.3.1. Pre-crisis Securities Market Supervision Approaches

Before the 2008 GFC, various supervisory approaches such as rule-based, principle-based, market-based, disclosure-based, and risk-based were used at the discretion of the securities regulators in each market, given their supervision philosophy, regulatory areas and market conditions (See Section 2.3.3, Chapter 2).

For example, the FSA of UK strongly advocated the principle-based approach in general while using the risk-based approach for market intermediary supervision and the evidence-based approach for policy making (FSA 2007). Whereas, US securities regulators relied much on the rule-based approach in general with the Securities Exchange Act of 1934 (ISE, 2009) but used the market-based approach to supervise securities intermediaries as an invisible hand approach to align the incentives of market participants with the objectives of the regulator (Bernanke, 2007).

It was observed that market-based conceptual framework had dominated the regulatory world over several decades, forming the basis of the IOSCO Objectives and Principles of Securities Regulation (Erskine, 2010a; IOSCO, 2003a). The premise of the market-based approach is that prices in the stock market reflect exactly the ‘expected value of securities given the information available in the market’ (Bond, Goldstein & Prescott 2006, p. 3) and ‘simultaneously affect and reflect the regulator’s action, so both the prices and the price-dependent action of the regulator will need to be consistent’ (Bond et al., 2006, p. 3).

Followers of the market-based-approach assume that deregulation should be made to let the market stabilize itself and full-disclosure helps to deal with information asymmetries and conflicts of interest (Erskine 2010b). Three distinctive features of the market-based approach are deregulation, reliance on market self-regulation and reliance on full-disclosure.

With the perception that markets aggregate diffuse information more effectively and set prices more efficiently than any central planner possibly could and the market itself can often be used to achieve regulatory objectives, Bernanke (2007) fully supported the market-based approach to financial regulation in US markets. Bernanke (2007, p. 2) claimed that market-based approach is ‘regulation by invisible hand’ and creates ‘incentives for market participants to
monitor and control the risk taking behaviour of financial firms--that is, to exert market discipline--thereby reducing the need for direct oversight by the government’.

The market-based mindset made the securities regulators assume that ‘they could rely on markets to be self-stabilizing within a reasonable timeframe and at a low net cost in terms of resource misallocation. As a result they intervened rarely and only if justified by demonstrated market failures’ (Erskine, 2010b, p. 9).

3.2.3.2. Post-crisis Securities Market Supervision Approaches

The literature review in this section found: (i) A trend of moving away from the market-based approach though it still has loyal advocators; (ii) A trans-Atlantic rule-based vs. principle-based debate, which is in favour of principle-based approach; and (iii) Emerging significance of risk-based approach.

3.2.3.2a. A trend of moving away from the market-based principles after the crisis

Deregulation, disclosure reliance, self-regulation and market self-correction are the major concepts of the market-based approach. The literature review in part 3.2.2.2b on the changing roles of SROs after the 2008 GFC showed the overwhelming doubt on the value of self-regulation (Austin, 2010; Catanach, 2009; Coffee & Sale, 2009; Erskine, 2010b; Ford, 2009; Frean, 2011; Haldane, 2009; IOSCO, 2010f; J. Kumar, 2011b; Rudd, 2009).

This doubt inevitably is a sign of diminishing roles of self-regulation and skepticism of market-based approach. In order to avoid duplication, the literature review in this part focuses on what people think about the other concepts of the market-based approach, including deregulation, market self-correction and disclosure reliance after the crisis.

It was observed by S. Morris and Shin (2008, pp. 229-230) that ‘the era of the stand-alone Wall Street investment banks thus came to an end, and the market-based financial system that they epitomized became the object of intense scrutiny for clues as to what went wrong’.

Kniest (2008) noted the dangers of deregulation in the financial markets, arguing that deregulation led to a situation, where banks and other financial institutions were prepared to make loans to people who clearly did not have the capacity to repay. For Kniest (2008), deregulation was the answer for the growth of subprime housing loans, which were the underlying cause of the 2008 GFC.

Haldane (2009) argued that the market was not self-repairing. Whereas, Gilani (2009) described how deregulation fueled the 2008 GFC, arguing that it is very investment banks operation recasted hybrid capital instruments, subordinated debt, deferred tax returns and securities with no ready market into “healthy” capital assets.
Erskine (2010b, p. 3) observed that pro-market deregulatory views were found to be exaggeration, while disclosure and fairness regulation proved insufficient to discipline risk taking, prevent conflicts of interest and other agency conflicts being exploited or informed to investors, and risk was not adequately identified or appropriately diversified.

Carty (2011) asserted that the deregulation of the US stock markets increased riskier lending without enforceable credit controls and gave birth to an entirely new industry of high risk lending including the subprime mortgage and payday loan industries.

Lister (2011) claimed that financial deregulation has proved to be a catastrophe as it increased financial business size and market volatility, ultimately led to a huge blow to or a near-collapse of the entire financial system.

Interestingly, in the context that market-based or pro-market mindset were implicitly or explicitly dismissed by many academics and practitioners (Austin, 2010; Carty, 2011; Catanach, 2009; Coffee & Sale, 2009; Erskine, 2010b; Ford, 2009; Frean, 2011; Haldane, 2009; IOSCO, 2010f; Kniest, 2008; J. Kumar, 2011b; Lister, 2011; Rudd, 2009), some academics and practitioners did not think the concepts of market-based-approach or pro-market mindset were so dangerous.

Oplas (2008) argued that the GFC as a natural market correction because if capitalism and the market economy are capable of expanding and creating more wealth, they are also capable of making mistakes and failures.

Gattuso (2009) claimed that deregulation did not trigger the financial crisis because there was little deregulation of financial services before the GFC and most of the regulatory reforms achieved in earlier years mitigated, rather than contributed to, the crisis. However, Gattuso (2009) admitted that this does not mean that no regulatory changes should be considered as in the wake of the current crisis, debate over the scope and method of regulation in financial markets is inevitable and necessary.

Zingales (2010) proposed a market-based regulatory approach, which is balanced between the powers of securities regulators and markets and can help to avoid financial crisis.

Apparently, after the 2008 GFC the market-based-approach was no longer strongly advocated like it was in pre-crisis time though there are some academics and practitioners still supporting the underlying values of this approach.
3.2.3.2b. Debate on principle-based versus rule-based approaches

The 2008 GFC has led the legal debate focus on whether financial market regulation should be based on principles or rules (Anand, 2009) and the discussion about principle-based vs. rule-based has become ‘trans-Atlantic’ (Walsh, 2008). The literature review found that the arguments on principle-based vs. rule-based everywhere, except in UK tended to re-evaluate the merits of principle-based and to discuss whether adoption of this approach led to better supervision.

Walsh (2008) noted that though U.S. financial regulation was said to be rule-based, there was a changing mind of securities regulators and industry in favour of principle-based approach after the 2008 GFC. However, Walsh (2008, p. 382) remarked that what rising in US after the 2008 GFC was ‘institution-based’ regulation or a third paradigm of rule-base and principle-based.

Anand (2009 p.114) claimed that what Walsh (2008, p. 382) called institution-based is actually another version of principle-based, which ‘recast in the practicalities of a regulatory regime in which guidance and interpretive statements are common elements’.

Ford (2009) admitted that the 2008 GFC shaded principle-based approaches into severe doubt. Yet, Ford (2009) claimed that principle-based securities regulation as properly understood continues to be a feasible and even necessary policy option, proving solutions to the real-life and theoretical challenges that the GFC posed to financial markets regulation.

Salmon (2009) thought that it is a good thing US securities supervisory policy leans strongly in the principle-based regulation. Observing that principle-based approach failed quite spectacularly in the UK though the failure was inevitably due to the magnitude and leverage of UK financial system, Salmon (2009) is still of the opinion that at the margin, a principle-based approach will be more helpful and less harmful than a lawyered-up rule-based approach.

Coffee and Sale (2009) recognized that the US securities supervisory system is already a mix between rule-based and principle-based and a subtler balance between two should be maintained because without rules, enforcement, and any sense of parity therein, the securities supervisory system would decline.

Though identifying lack of uniformity as a drawback of this approach, D’Aloisio (2009 p.9) thought that principle-based decision making is sensible at an international level for it had the ‘advantage of facilitating consensus and leaving detail to each jurisdiction when it comes to implementation’.
Erskine (2010b, p. 4) argued that to cope with innovation in future, a principle-based regulatory approach is likely to prove superior to ‘a hard/black letter law’ form of a rule-based approach.

Expert Panel (2010a, p.4) recommended a more principle-based approach to securities regulation but warned that the approach ‘must be implemented with care, particularly with due regard to reducing regulatory uncertainty, re-thinking enforcement, addressing the distinct needs of small public companies, and properly engaging investors’.

It is interesting that in UK, where FSA was a pioneer and long-time advocator of principle-based approach, arguments against this approach seem to rise intensively after the 2008 GFC. J. Black (2010) criticized that principle-based regulation placed too much reliance on firms themselves to behave responsibly and having been one of the regulators most committed to the approach, FSA had no option but to withdraw it from the market after the 2008 GFC.

Carson (2011) argued that “light touch” regulation is no longer in favour. To explain the reasons, as reliance on the perceived effectiveness internal supervision and risk management systems of major financial institutions led regulators to adopt less frequent and more limited “risk-based” direct examination of firms’ operations.

It may be an odd but interesting conclusion that, after the 2008 GFC, the principle-based approach was doubted by those in the UK, where FSA was the pioneer developing the principle-based since the 1990s while it was in more favour in other countries such as US, (Coffee & Sale, 2009; Ford, 2009; Paulson et al., 2008), Australia (D’Aloisio, 2009, 2010; D’Aloisio, 2010; Erskine, 2010a, 2010b), and Canada (Expert Panel, 2010a; Pan, 2009).

3.2.3.2c. **Emerging significance of risk-based approach in securities supervision**

After the 2008 GFC, risk-based approach was recommended for financial supervision by practitioners and economists everywhere.

The ISE (2009) recommended that the risk-based approach should be adopted for securities regulation in the US as the approach has closer oversight, more transparency, and more flexibility to achieve regulatory objectives.

Kitching (2009, p. 10) advised that Canada should explore ‘risk-based securities regulation as well as tailor regulation to the size of public companies and the sector in which they operate’. Sharing the same idea, Pan (2009, pp. 862-863) recommended that reorganization of Canada’s financial regulatory system should offer ‘an opportunity to reallocate resources to enable Canada to effect a supervisory approach and introduce principle-based regulation’.
Expert Panel (2010a) argued that the FSA risk-based approach of UK is the global best practice and proposed for the further advancement of risk-based securities regulation in Canada as the approach is well-positioned to strengthen enforcement. Black and Baldwin (2010) observed that risk-based regulatory strategies are increasingly adopted in many countries and “risk-based regulators” have become much praised by policy reformers.

Balcom and Pargaonker (2011) of the FINRA (US) argued that most securities regulators would have embraced the need for a significant reassessment of their approach to supervision of securities firms and risk-based approach is considered by many as “best practice” after the 2008 GFC. Medcraft (2011) confirmed that the ASIC, taking systemic and other risks very seriously, do risk-based surveillances and focus on the highest impact risks.

However, risk-based was also the subject of scrutiny after the 2008 GFC. Gray (2009) doubted the values of risk-based regulation and raised questions about the wisdom of continuing reliance to ‘risk’ alone as a concept for regulators and policy makers in financial markets in what is very clearly not a zero failure world.

Further J. Black and Baldwin (2010) noted a need for re-examining the implementation challenges of risk-based regulation comes in the wake of the 2007–2009 credit crisis and stems from the widespread perception that risk-based regulation, at least in the UK, signally failed to protect consumers and the public from the catastrophic failure of the banking system.

Though risk-based approach is not an absolute answer for SMS after the 2008 GFC, it is safe to say that the approach has obtained an emerging significance after the crisis as risks, especially systemic risks are now at the centre of the regulatory and supervisory reforms to avoid crisis.

Inherently, the discussion and recommendations in this literature shows a trend of dismissing the notions of market-based approach, preference of principle-based to rule-based approach, emerging importance of risk-based approach in SMS. However, there is still a gap for further study to answer the question: how actually the securities market regulators have changed their supervisory approaches due to impacts of the GFC and do the changes make the supervisory system more responsive and efficient?

3.2.4. Macro-prudential Supervision Before and After the 2008 GFC

3.2.4.1. Pre-crisis Macro-prudential Supervision

For a long time before the 2008 GFC, macro-prudential supervision had been defined as the job of the central banks in monitoring structural trends in financial markets to produce the alerts of financial instability (Davis and Karim 2009). That is why there was a lack of literature on the involvement of securities regulators in macro-prudential supervision in pre-crisis time. In fact,
macro-prudential financial supervision before the 2008 GFC did not cover shadow banking activities conducted by the securities intermediaries such as hedge funds, money market funds and structured investment vehicles (Servén 2011, Galati and Moessner 2011).

The macro-prudential framework in pre-crisis time allowed a massive build-up of systemic risk in the shadow banking activities that showed up on the balance sheets of unregulated intermediaries and off the balance sheets of regulated ones (Servén 2011). Before the crisis, it was assumed that securities regulation should focus on market integrity and efficiency, using corporate governance and transparency requirements, but should not play macroeconomic or prudential role, as these were the responsibilities of the central bank and the prudential supervisor (Erskine 2010b).

According to IOSCO (2011b), securities regulation in pre-crisis time did not adequately deal with systemic risks and consequently the following outcomes were observed: (i) the flow of information or distribution of risks were not regulated in many jurisdictions (for instance credit ratings agencies); (ii) inadequate attention was given to the negative externalities and systemic implications of risks accumulating as a result of individual institutional behaviour; (iii) many securities regulators were not charged with evaluating systemic risk as part of their official remit, which was typically focused on investor protection and market integrity.

IOSCO (2011b) recognized that, in some cases, there was a misunderstanding of the risks in the system and an inadequate and/or incomplete application of the traditional tools of securities regulators to limit undesirable or improperly priced risk taking through market discipline, disclosure and corporate governance.

3.2.4.2. Post-crisis Macro-prudential Supervision and the Enhanced Roles of Securities Regulators

Literature review in this subsection found that securities market macro-prudential supervision has obtained a greater importance after the GFC and for the first time in history, securities regulators are supposed to take a role in financial macro-supervision.

While the problems of currency and assets and liabilities mismatch were most blamed for the 1997 Asian Financial Crisis (Hale, 2011), inadequate systemic risk management is seen as one of the crucial weakness that triggered the 2008 GFC. That is why the securities regulatory reform after the crisis focuses on macro-prudential supervision.

Persaud (2009a) argued that policymakers should focus on better regulation with greater macro-prudential orientation rather than react to the characters and colours of the current crisis as the
solution to the 2008 GFC is not more regulation, but better regulation, though more comprehensive regulation may be required in some areas.

Eisenbeis (2009) observed that after the crisis, a macro approach to prudential supervision has been applied in addition to concern about the health of individual institutions including processes and procedures for dealing with emerging risks in US.

David and Karim (2009, p. 5) realized that owing to costs of crisis, there is an ‘immense premium on timely warnings regarding systemic risks as an input to policy decisions as well as to strategies and market behaviour of financial institutions’.

Buiter (2009) argued that now it is time for over-regulation and macro-prudential supervision is the first thing he recommended for that strategy.

Clement (2010, p. 59) discussed the term “macro-prudential” as “a true buzzword in the wake of the recent financial crisis” as it is a core element of international policy response to the crisis is to strengthen the macro-prudential orientation of financial regulation and supervision.

Erskine (2010a) noted that fundamental thinking about post-crisis securities regulation has begun in the macro-prudential regulation with detailed considerations being explored for managing systemic risk.

D'Aloisio (2010) acknowledged that ASIC of Australia has worked to set up an IOSCO working group on systemic risk to pursue re-thinking of securities regulatory assumptions.

Anand (2010) asserted that one of the implications of the global financial meltdown is a renewed focus on the purposes of securities regulation and the expansion of these purposes to include considerations relating to systemic risk.

Tumpel-Gugerell (2010) argued that the crisis has highlighted the linkage of the main types of systemic risks and indicated that many risk taking activities were left to non-bank entities of the financial system and escaped the regulatory web, which was designed mainly for banks.

González-Páramo (2010, p. 2) observed that ‘the GFC has revealed the fragility of the financial system and stressed the importance of macro-prudential supervision in filling the gap of translation of risk assessments into policy action’.

Davis (2011, p. 2) admitted that the regulatory responses involved a movement away from minimalist regulation and reliance on “light touch supervision” and market self-discipline, toward a more interventionist approach with a willingness to consider capital controls as part of macro-prudential policy and new requirements for minimum holdings of liquid assets by banks.
Tucker (2011) acknowledged that the co-incidence of interests between macro-prudential authorities and securities regulators is beginning to be recognized at the global level and highlighted the importance of securities regulator’s involvement in macro-prudential supervision in UK to restore and preserve financial stability.

Hanson, Kashyap & Stein (2011) identified the fact that the regulatory framework prior to the GFC was argued by many observers as deficient because it was largely “micro-prudential” in nature. According to Hanson, Kashyap & Stein (2011), there seems to be agreement among both academics and policymakers that financial regulation needs to move in a macro-prudential direction in the aftermath of the crisis direction.

Undeniably, the literature showed that the financial crisis has changed the perception of securities regulators on the role of macro-prudential supervision, which used to be considered as the function of banking regulators (see Box 3.1 Appendix 3 for more literature review of strengthening of macro-prudential supervision post-crisis). Nevertheless, further study should be made to know whether the change has actually taken place by concrete activities of securities regulators.

3.2.5. Micro-prudential Supervision Before and After the 2008 GFC

3.2.5.1. Pre-crisis Securities Market Micro-prudential Supervision

In the securities market, micro-prudential supervision addresses the financial healthiness and sustainability of market intermediaries. Before the 2008 GFC, the financial self-regulation was supported and facilitated by securities regulators.

Bossone and Promisel (1999, p. 1) argued that ‘honest and prudent behaviour by a financial market institution is integral to its reputational capital, which in turn increases its franchise value. Private sector agreement on principles and rules for self-regulation can provide incentives for that honest and prudent behaviour’.

In pre-crisis time, it was assumed that bigger financial intermediaries were beneficial for economic growth and welfare (Erskine 2010b). With a pro-market mindset, securities regulators supposed that well designed corporate governance was sufficient for risk management of the intermediaries. Only those institutions, which were considered systemically important, were subject to prudential regulation, transparency and market conduct regulation; the institutions such as hedge funds merely had to disclose and not behave unfairly. Securities regulators assumed that their regulated entities were allowed to fail, as there would be no systemic consequences (Erskine 2010b).
Major market intermediaries in the securities market are securities firms and investment funds, whose roles in creating and transmitting systemic risks were considered ‘similar to those of banks but were not subject to a corresponding level of supervision’ in pre-crisis time (IOSCO 2011b, p. 9). Market intermediaries, especially hedge funds and securitizers had never been properly regulated and supervised in pre-crisis time (IOSCO 2009j, IOSCO 2009f).

International financial standards that applied to banks were not applied to the institutions that were ‘becoming more and more systemically important because of securitization trends’ such as investment bankers and hedge funds in the securities market (Helleiner, 2011, p. 72). Market intermediaries were encouraged by deregulation and ‘light touch regulatory environment’ to take greater risks (Helleiner, 2011, p. 73).

Hedge funds were left to regulation by the private sector (Helleiner & Pagliari, 2009) or largely unregulated because they, like individual investors, typically do not have legal or regulatory investment restrictions, although their operators are regulated in many countries (BCBS, IOSCO, IAIS, & BIS, 2010b).

It was claimed that micro-prudential regulation in pre-crisis time failed to achieve the goal of maintaining the stability of a financial system, in other words, it failed to limit the systemic risk within the system (Zhou 2010).

3.2.5.2. Post-crisis Securities Market Micro-prudential Supervision

The literature review in this subsection found intensification in the area of supervision over securities market intermediaries. There are two major trends in supervision of securities market intermediaries after the crisis, including: (i) the trend of establishing a new regulatory agency in charge of micro-prudential supervision or shifting the role of micro-prudential supervision from one to another regulatory body; and (ii) increasing efforts of securities regulators to improve effectiveness of supervision of securities market intermediaries.

3.2.5.2a. The trend of establishing a new regulatory agency or shifting the role of micro-prudential supervision from one to another regulatory body

Micro-prudential regulations have revealed their weaknesses, ineffectiveness and pernicious effects during the 2008 financial turmoil, partly because of their pro-cyclicality and the diagnostic of its deficiency is largely shared in the academic community and among regulators (Aglietta & Scialom, 2009b).

McKee (2010) confirmed the promulgation of the micro-prudential legislation as an effort to establish a new architecture for Europe's financial supervision system after the crisis by EU Council, the European Parliament and the European Commission.

In the US, Coffee and Sale (2009, p. 776) argued that ‘the roles of financial prudential supervision should be transferred to the Federal Reserve for two reasons: (i) times have changed, and (ii) banking regulators have the comparative advantage because they focus on precisely these issues of risk, leverage, safety, and soundness over a broad range of financial institutions’.

Bernanke (2011) highlighted the reform of micro-prudential supervision over financial institutions by the Federal Reserve as the efforts to address the too-big-to-fail problem and mitigating the threat to financial stability posed by systemically important financial firms.

Inherently, it was assumed that with the perception that micro-prudential supervision is essential but not sufficient for confronting systemic financial instabilities (Aglietta & Scialom, 2009b; Persaud, 2009a); consolidation of micro and macro-prudential regulation became a trend after the 2008 GFC.

### 3.2.5.2b. Increasing efforts of securities regulators to improve effectiveness of supervision of securities market intermediaries

The efforts to improve supervision over market intermediaries, especially financial prudential supervision by securities regulatory community include: (i) Risk-based supervision was recommended as an effective tool of supervision over securities market intermediaries; and (ii) Hedge funds became subject to stronger supervision of securities regulators than before the crisis.

J. Black and Baldwin (2010) proposed a five elementary risk-based regulatory framework, which responds to: (i) regulated firms' behaviour, attitude, and culture; (ii) regulation's institutional environments; (iii) interactions of regulatory controls; (iv) regulatory performance; and (v) change.

Balcom and Pargaonker (2011) claimed that risk-based supervision, which is considered by many as ‘best practice’ in securities regulation, is not only a short-lived reaction to the financial crisis, but an approach that securities regulators, in both emerging and developed markets, can rely on to oversee market intermediaries.

IMF (2011b, p. 5) noted that ‘risk-based approach was a robust supervisory framework, which exhibits high levels of implementation of IOSCO Principles for supervision of intermediaries’.
After the 2008 GFC, risks of investment funds in amplifying the consequences of the crisis were recognized by securities regulators (G20, 2009a, 2009b; IOSCO, 2009a). Though the possible contribution of hedge funds to the financial crisis was still a subject of debate, it was agreed that the lack of a consistent prudential regime for monitoring and assessing hedge funds was a critical gap in the regulatory framework (BCBS et al., 2010a).

G20 (2009b, p. 4) showed a strong commitment of the leaders in fortifying supervision over market intermediaries, especially, ‘systemically important hedge funds’. Also, for the first time in history, hedge funds were put under umbrella of international regulation (Helleiner & Pagliari, 2009). G20 (2009a) recommended that supervisors should require that institutions which have hedge funds as their counterparties have effective risk management, including mechanisms to monitor the funds’ leverage and set limits for single counterparty exposures.

Bianchi and Drew (2010, p. 6) supported tighter supervision of hedge funds and observed that ‘the challenge for regulators is to carefully craft a regime of transparency and disclosure that minimizes the potential for systemic risk without jeopardizing the financial innovation and entrepreneurship that are emblematic of the hedge fund sector’.

3.2.6. Supervision of Securities Products Before and After the 2008 GFC

3.2.6.1. Pre-crisis Supervision of Securities Products

In pre-crisis time, it was assumed that self-regulation of market transactions ensures that they are executed and completed by each member according to pre-agreed rules and modalities (Bossone & Promisel, 1999).

Disclosure was used by securities regulators as the major tool to enable an equal access of investors to available information of traded securities and investors just relied on principles of corporate governance to deal with conflicts of interest associated with those products (Erskine, 2010b; IOSCO, 1992, 2000b, 2001, 2009c).

Disclosure requirements were the key ingredient of the pre-GFC approach to financial regulation to strike a balance between regulation and market discipline. Much ‘regulatory effort has focused upon disclosure by way of prospectus requirements and timely disclosures of information by companies with securities trading on national stock exchanges’ (K. Davis, 2011, p. 19).

Besides, listed securities products were subject to more supervision than the OTC traded ones. Whereas, securitized products and other types of derivatives just received minimum supervision as the securities regulators assumed that self-regulation works best for those markets (IOSCO, 2010i).
Derivatives, especially securitized products were subject to minimum supervision before the 2008 GFC. Derivatives and hedge funds were ‘two sectors whose regulation had been left to the private sector’ by self-regulation mechanism (Helleiner & Pagliari, 2009, p. 8). No regulation was imposed to the OTC traded derivatives. In the context that approximately 89% of derivatives contracts were transacted OTC as of December 2009, inherently most of the derivatives products were left unregulated in pre-crisis time (IOSCO, 2010i). OTC derivatives, which started to be transacted in the 1980s, have not been regulated in Europe, Asia, North America or any country over a nearly 30-year period, until the financial reforms initiated after the crisis (Gensler, 2010).

According to Gensler (2010), the trend of no regulation on derivatives market was due to the perceptions that: (i) derivatives market was an institutional marketplace with “sophisticated” traders; (ii) OTC derivatives did not need regulation because the institutions dealing them were already regulated; (iii) large, sophisticated financial institutions dealing over-the-counter derivatives, as well as their counterparties, were so expert and self-interested that the markets would discipline themselves; (iii) OTC derivatives were customized and not susceptible to centralized trading or clearing; and (v) United States should not regulate OTC derivatives because they are not regulated in Europe or Asia.

3.2.6.2. Post-crisis Supervision of Securities Products

The literature of securities products supervision after the 2008 GFC suggested three trends: (i) Enhancing of supervision of derivatives and moving of OTC traded derivatives to organized markets; (ii) Strengthening of transparency by required disclosure on complex financial products and enhanced financial disclosure by firms; and (iii) Strengthening of accounting standards for better valuation of securities traded products.

3.2.6.2a. Enhancing of supervision of derivatives and moving of OTC traded derivatives to organized markets

Since early days of 2008 GFC, a worldwide trend of strengthening supervision over derivatives markets was recognized by Wetston (2010). The oversight of OTC derivatives and securitized products and the marketplaces they trade on is now considered as an important aspect of maintaining stability in the financial markets (Wetston, 2010).

Erskine (2010b) noted that the best markets are exchange traded markets more organized clearing venues are preferred to bilateral OTC trading of securities and derivatives between counterparties.
Gensler (2010, p. 2) recognized the worldwide consensus on stronger regulation on derivatives markets and argued that the requirement of standardized derivatives to be cleared through central clearinghouses will lower risks and interconnectedness in the system, and hence reduce the risk of future taxpayer bailouts.

Hull (2010, p. 1) proposed regulators to require all OTC derivatives (standard and non-standard) to be cleared centrally within three years to maximize the benefits of netting and reduce systemic risk while making it easier for regulators to carry out stress tests.

Nersisyan and Wray (2010, pp. 24-25) were not yet satisfied with more regulation and supervision on securitization, and proposed banning of this activity in the US market.

3.2.6.2b. Strengthening transparency by required disclosure on complex financial products and enhanced financial disclosure by firms

Securities regulators responded to the consequences of the 2008 GFC by requiring mandatory registration and disclosure for all the institutions, of which derivatives issuers, hedge funds and securitizers bore the maximum brunt of the regulations (Bhatia, 2011).

G20 (2008, p. 2) was committed to strengthen financial market transparency by ‘enhancing required disclosure on complex financial products and ensuring complete and accurate disclosure by firms of their financial conditions’

CESR (2009) noted that post-trade information plays an important role in derivatives markets and the proper level of transparency should be standardized, taking into account the type of instruments, their trading methods and market participants. The recommendations of CESR (2009) also called for a harmonized European post-trade transparency regime for all ABS and CDOs which are commonly considered to be standardized and that in terms of implementation a phased approach should be adopted.

D’Aloisio (2010, p. 7) noted that compelling better disclosure in markets with an ‘if not, why not’ approach to disclosure was a right response of the Australian securities regulator to the 2008 GFC.

Davis (2011) admitted that there were clearly substantial failings in disclosure leading up to the 2008 GFC and implied a need for adequate disclosure as a mandate for post-crisis regulatory reform. He claimed that investor understanding is required if disclosures are to potentially influence action, and that would in turn be dependent upon incentives.
Inherently, in almost all markets, enhancing market transparency by required disclosure of traded products, especially complex financial instruments and strengthened financial disclosure by firms was an essential measure for restoring market confidence after the 2008 GFC.

3.2.6.2c. Strengthening of accounting standards for better valuation of securities traded products

In order to consolidate supervision of traded securities products after the 2008 GFC, another approach used by the securities regulator community was strengthening of accounting standards to ensure proper valuation of securities.

Kathleen Casey (CNMV, 2008) admitted that after three roundtables to examine the IFRS regarding the performance of IFRS and US GAAP during the 2008 GFC, the US SEC officially allowed issuers to use IFRS to prepare their financial statements in 2008.

Larosière Group (2009, p. 9) asserted that ‘the public good of financial stability must be embedded in accounting standard setting’. The group has the concern about mark-to-market accounting principle and claimed that IASB should foster the emergence of a consensus as to where and how the mark-to-market principle should apply to ensure convergence of accounting practices and a level playing field at the global level.

Regarding the issue of pro-cyclicality, Larosière Group (2009, p. 22) called for ‘a solution to minimize competition distortions’ and argued that the accounting system should be neutral and not be allowed to change business models. With respect to accounting rules, the Group considers that a wider reflection on the mark-to-market principle is needed.

D’Aloisio (2009, pp. 5-6) observed the discussion of the regulatory community on improvement of accounting standards to strengthen supervision over securities products with four themes: (i) pro-cyclical nature of accounting standards; (ii) ensuring simpler accounting standards; (iii) international efforts toward global consistency in accounting standards; and (iv) governance of accounting standard setting processes.

Davis (2011, pp. p.16-17) recognized at least four areas in which accounting issues have contributed to problems in the pre-crisis financial sector and needed improvement after the crisis: (i) measurement of fair value and role of Market Value Accounting; (ii) ability of accounting methods to deal with complex financial transactions, which could lead to “de-recognition” in the accounts such as repurchase agreements and securitizations; (iii) netting or offsetting of financial instruments such as derivative contracts in financial accounts, with different approaches giving rise to different measures of the size of the institution; and (iv)
impairment of financial asset, which was raising the concern of accounting standard setters about the approach adopted to provisioning for potential losses on loans.

3.2.7. Market Conduct Oversight Before and After the 2008 GFC

3.2.7.1. Pre-crisis Market Conduct Oversight

Market conduct oversight plays a significant role in market integrity protection and is seen as a pre-emptive measure aimed at detecting and deterring potential market abuse and avoiding disruptions to the market from abnormal trading activity, including market manipulation, insider trading, market rigging and front running.

Before the 2008 GFC, market surveillance was either conducted by the regulator, the exchange or both the regulator and the exchange in parallel. In some instances, the surveillance function was outsourced to independent SROs, with the regulator and the exchange focusing on other regulatory functions and market development initiatives (IOSCO 2009a).

Although the securities regulators were recommended by the IOSCO (2003a) to obtain and ensure comprehensive market surveillance, it was widely perceived that the standards set by market gatekeepers such as the stock exchanges can be relied on by regulators and investors (Erskine, 2010a). That is why market surveillance activities were conducted widely by stock exchanges.

In the case where stock exchanges take the responsibility of market conduct oversight, market surveillance was an essential element in exchange business and it was assumed wrongly that it did not result in a conflict between their roles as both market operator and regulator (Rydge & Comerton-Forde, 2004).

With the assumption that ‘disclosure overcomes information asymmetries and resolves conflicts of interests’ (Erskine, 2010a, p. 4), disclosure requirements were an essential part of market conduct oversight.

Attitudes of securities regulators toward disclosure in market conduct oversight were mixed, reflecting the fact that disclosure of private information through non-anonymous trading reduces its value. Hence regulators face inherent conflicts between mandated disclosure in organized exchange trading and potential for trading to move off-exchange into ‘dark pools’ (K. Davis, 2011, p. 19).

Growing reliance of regulators on market-based mechanism for valuing risks and assets had dangerous pro-cyclical effects as ‘during market booms the risk valuation model based on
market prices sent low risk signals to market and encouraged more buying’ (Helleiner, 2011, p. 72).

Market integrity protection was undertaken with the mindset that behaviour of actors in the market is in effect ‘rational’ and market prices therefore were the best indicators of rationally evaluated economic value (Erskine, 2010a, p. 4). There was a ‘tendency for market conduct regulation to distract from prudential supervision and the pursuit of financial stability’ in the cases where the functions are combined within an integrated supervisory structure (Erskine, 2010a, p. 6).

3.2.7.2. Post-crisis Market Conduct Oversight

The literature review in this section found a trend of strengthening of market conduct oversight by securities regulators as a response to the 2008 GFC.

The G20 (2008, p. 3) declared their commitment to ‘protect the integrity of the world’s financial markets by bolstering investor and consumer protection, avoiding conflicts of interest, preventing illegal market manipulation, fraudulent activities and abuse, and protecting against illicit finance risks arising from non-cooperative jurisdictions’.

ASIC, the securities regulator in Australia recognized the potential damage to market integrity exposed by the GFC and committed to ensure a legal system that is ‘sufficiently robust to provide investors with confidence that they are able to make fully informed decisions’ (Corporations and Markets Advisory Committee, 2009, p. 2).

Larosière Group (2009, p. 23) proposed that EU financial regulators should also be equipped with strong, equivalent and deterrent sanction regimes to counter ‘all types of financial crime’.

Wadling (2010) reported law amendments to enable ASIC to supervise trading activities and conduct-of-business by market participants in relation to domestic licensed markets, and take enforcement action.

EC (2010) proposed a two-step plan for further alignment and reinforcement of organizational and market surveillance requirements for Multilateral Trading Facilities (MTFs) and regulated markets as well as organized trading facilities.

Aguilar (2011) depicted the new Large Trader Rule in US and related Form 13H as a great effort to strengthen market surveillance and the means for the SEC to identify and track the trading and market impact of significant market participants.

O'Sullivan, McNaughton, and Wright (2011) reported that market conduct oversight in the UK has been consolidated by changes in both institutional and legal areas. The FCA replaced
CPMA in the UK in 2011 and is responsible for the supervision of market discipline, including enforcement of market abuse. O’Sullivan, McNaughton & Wright (2011) also noted that the provisions of the Code of Market Conduct regarding the offence of insider dealing have been amended with effect from March 2011 following an important decision by the EC.

Erskine (2010a) recommended having one market conduct regulator and one prudential regulator rather than several in a country.

Inherently, enhancement of market conduct oversight was supposed to be an effective tool to recover market confidence and maintain market integrity after the 2008 GFC. However, an empirical analysis is needed to verify how the oversight of market conduct was actually changed as an impact from 2008 GFC in different markets and whether the changes made any improvement in the responsiveness of the supervisory system.

3.2.8. Supervision of Market Institutions and SROs Before and After the 2008 GFC

3.2.8.1. Pre-crisis Supervision of Market Institutions and SROs

Being defined as market gatekeepers, the institutions such as CRAs, auditors and clearing houses were subject to minimum supervision in pre-crisis time as the securities regulators assumed that deregulation was better and conflict of interests would be solved by good corporate governance and desire to maintain a good reputation of these institutions (Erskine 2010b).

Before the 2008 GFC, securities regulators had an over-reliance on credit ratings (IOSCO, 2008d). In fact, CRAs were not subject to proper supervision. Only a number of CRAs substantially implemented the 2008 IOSCO CRA Code, including the three largest CRAs – Fitch, Moody’s, and S&P (IOSCO 2008b).

The way securities regulators and prudential supervisors have bolted ratings into regulatory regimes in pre-crisis time was later considered to be a great mistake (Tucker, 2011). It was noted that CRAs’ activities related to rating SFPs in pre-crisis time raised concerns about (i) CRA transparency and market perceptions, (ii) independence and avoidance of conflicts of interest, and (iii) CRA competition and the interaction of this competition on CRA independence (IOSCO 2008c).

Like CRAs, clearing houses, auditors and stock exchanges were supposed to maintain proper standards until self-interest from incentives overweighs the values of gatekeepers’ reputation;
complexity and work pressure make them feel it is easier and more rewarding to drop their standards (Erskine, 2010a).

3.2.8.2. Post-crisis Supervision of Market Institutions and SROs

The literature of securities regulation in post-crisis time suggested that market institutions and SROs, especially CRAs now are subject to tougher supervision than ever before.

Carson (2009, p. 5) observed that SROs are now subject to ‘stronger oversight and direction from statutory regulators’. The SRO roles of stock exchanges were being reduced due to the trend minimizing conflicts of interest in self-regulation, competition among markets, focusing on products and development, and more importantly the perception that public regulators are more efficient than SROs as they can impose higher and more consistent standards of regulation (Carson, 2009).

Carson (2011, p. 46) emphasized that stronger supervision of SROs by government regulators has been an almost universal response to greater conflicts at exchange SROs. Carson (2011, p. 55) also argued that ‘engagement of market participants—in particular through industry organizations such as SROs and other industry bodies with some self-regulatory capacity—will be necessary to craft practical regulatory responses and to act effectively on policy changes’.

The literature of securities market recently also reflected that the 2008 GFC has terminated the CRAs’ age of immunity of liability and put them under tougher regulation and supervision.

In order to respond to the first shocks of the subprime crisis, G20 (2008) were committed in exercising a strong supervision over CRAs to ensure a sound regulation in the securities market. IOSCO was required to review CRAs adoption and the standards and mechanisms for monitoring compliance (G20, 2008, p. 4).

G20 (2009a) leaders agreed on more effective approach of oversight of the activities of credit rating agencies, including (i) all CRAs with ratings used for regulatory purposes should be subject to a regulatory oversight regime, including registration; (ii) national securities regulators will be in charge of enforcing compliance and compelling of changes to practices and procedures of CRAs for management of conflicts of interest and maintaining the transparency and quality of the rating procedures; and (iii) the Basel Committee will review the role of external ratings in prudential regulation and determine whether there are any adverse incentives that need to be addressed (G20, 2009a, p. 6).

Larosière Group (2009, p. 19) recommended that the use of ratings in financial regulations should be significantly reduced over time and the rating for structured products should be converted into a system of distinct codes. The Group asserted that these regulatory responses
should be accompanied by increased due diligence and judgement by investors and improved supervision. Supervisors should ensure that financial institutions have the capacity to use complementary independent evaluations beside external ratings (Larosière Group, 2009, p. 19).

Tucker (2011, p. 6) validated the determination of the FSA in reducing the “mechanistic reliance” on CRAs. (FSA, 2009; Utzig, 2010). For the first time in history, CRAs operating in Australia, EU, Hong Kong, Japan, Mexico, UK, US were required to register and hold a license (IOSCO, 2010d; FSA, 2009; Utzig, 2010; Maris, 2009; BCBS et al., 2010a).

The literature review in Section 3.2 concludes that the 2008 GFC might have caused fundamental changes in eight areas of SMS, including (i) supervisory philosophy; (ii) supervisory architecture; (iii) supervisory approaches; (iv) macro-prudential supervision; (v) supervision of market intermediaries or micro-prudential supervision; (vi) supervision of traded products; (vii) market conduct oversight and (viii) oversight of market institutions and SROs. Further study is needed to define the reality and magnitude of these changes. Summary of the literature review is presented in Table.3.1 of Appendix 3.

3.3. Research Issues

Based on the literature review of SMS landscape before and after the 2008 GFC in Section 3.2, this section summarizes the crisis impacts on SMS, which were identified from the literature review, defines research gaps and formulates research hypotheses as well as research issues.

3.3.1. Impacts of the 2008 GFC on Securities Market Supervision

The literature on the securities market after the crisis suggested the following phenomena in SMS in post-crisis time:

1) Standard Finance, typically efficient markets theory (EMH) have no longer served as the primary theoretical framework for SMS;

2) There is an emerging trend of financial supervisory architecture reform toward a more consolidated structure with twin-peaks of a prudential supervisor and a business conduct supervisor. The value of self-regulation is no longer assumed to be reliable for SMS. Hence there is a diminishing role of SROs in SMS structure and increasing need for supervision and direction from securities regulators;

3) There is a trend of moving away from market-based approach, debates on the value of principle-based and rule-based approaches, and the emerging significance of risk-based approach after the crisis;
4) Macro-prudential supervision, which was traditionally conducted by central banks and undervalued before the crisis, now is a top priority with involvement of securities regulators;

5) Supervision over market intermediaries is enhanced by strengthening of micro-prudential regulator with focus on hedge funds and risk-based supervision;

6) Supervision of traded securities products, especially derivatives and structured financial instruments is strengthened by moving them from OTC to organized markets; compulsory information disclosure and consolidated accounting standards;

7) Market conduct oversight is enhanced with new rules of market integrity and more stringent enforcement and compliance activities;

8) Market gatekeepers, especially CRAs and SROs are placed under tougher supervision than ever before the GFC.

Post-crisis SMS changes suggested by the literature review are summarized in the Table.3.1.

**Table. 3.1. A timeline of Post-crisis SMS Changes**

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SMS philosophy</strong></td>
<td>Crisis of SMS philosophy. EMH was blamed though some academics were still loyal. A new theoretical framework of SMS was recommended.</td>
<td>Departure from deregulation and market-based philosophy; Market failures and government failures are revisited to build up a new theoretical framework of SMS.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SMS architecture</strong></td>
<td>Financial supervisory structures were re-evaluated; SROs were blamed. Twin-peaks model was recommended; Roles of SROs were re-adjusted by IOSCO and in some markets.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SMS approaches</strong></td>
<td>doubts of and departure from the concepts market-based approach, including self-regulation and deregulation Re-evaluation of principle-based, rule-based approaches. Trans-Atlantic debates on principle-based vs. rule-based; Recommendations on usage of risk-based approaches.</td>
<td></td>
<td>Risk-based approach was recommended by IOSCO and introduced in some markets.</td>
<td></td>
</tr>
<tr>
<td><strong>Macro-prudential supervision in SM</strong></td>
<td>Critics of pre-crisis macro-prudential supervision; Recognition of importance of macro-prudential supervision in SM.</td>
<td></td>
<td>Recommendations and draft legislation on framework of macro-prudential supervision with involvement of securities regulators; policy document on enhancement of macro-prudential supervision were issued by IOSCO; G20 and BIS; Recognition of securities regulators’ roles in macro-prudential supervision by IOSCO.</td>
<td>Establishment of new agencies in charge of macro-prudential supervision; Promulgation of new legislations on enhancement of macro-prudential supervision.</td>
</tr>
<tr>
<td>Micro-prudential supervision in SM</td>
<td>Evaluation of the weaknesses of micro-prudential supervision revealed by the crisis; recommendations and proposal on enhancement of micro-prudential supervision; Significance of supervision over hedge funds was recognized by IOSCO and G20.</td>
<td>Establishing new regulatory agencies or shifting the role of micro-prudential supervision from one to another regulatory body in some markets; Recommendations of using risk-based approach and more supervision of hedge funds.</td>
<td>Strong consolidation or reform of micro-prudential supervision in every market; policy documents on micro-prudential supervision issued by IOSCO; Risk-based approached recommended by IOSCO and applied all over the markets; New regulations on hedge funds and market intermediaries were issued.</td>
<td></td>
</tr>
<tr>
<td>Supervision of traded securities products</td>
<td>Critics of the derivatives’ roles in the crisis; recognition of inadequate supervision of OTC derivatives in pre-crisis time; recommendations on supervision of OTC derivatives and moving them into the organized markets.</td>
<td>New requirements on derivatives and SFPs were issued; transparency requirements and strengthened accounting standards were recommended as tools for supervision of derivatives and SFPs.</td>
<td>Principles and standards of supervision over derivatives and SFPs were issued by IOSCO; international framework of supervision was set up.</td>
<td></td>
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<tr>
<td>Market conduct oversight</td>
<td>Consolidation of market conduct oversight was recommended and taken as tool for recovery of investor confidence; new integrity rules were issued; Public consultation was made to seek for reform of market conduct oversight.</td>
<td>New rules of market surveillance and market conduct were promulgated; institutional and legislative changes were made for promotion of market conduct oversight;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervision of market institutions and SROs</td>
<td>CRAs and SROs were blamed to bear some responsibility for the 2008 GFC; commitments of G20 and IOSCO on enhancement of supervision over CRAs &amp;SROs; review of CRA regulatory program in different markets</td>
<td>New principles for regulation of auditors, CRAs, and information service providers were provided by IOSCO; Rules on CRAs were promulgated or revised in some markets;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
More supervision of SROs was promoted by IOSCO and securities regulators; some supervisory functions of SROs were transferred to securities regulators; Policy documents of supervision over CRAs were issued by IOSCO

3.3.2. Research Gaps

There are gaps that require further study to identify and evaluate the actual impacts of the 2008 GFC on SMS, including:

Gap 1: There is no available empirical analysis, which provides a complete and precise landscape of what, how and why the changes in the SMS were made as a result from impacts of the 2008 GFC. The reviewed articles and policy documents only addressed some areas of SMS reform after the crisis.

Gap 2: The reviewed literature strongly suggested changes in all eight areas of SMS after the crisis. However, there is a need for further research to identify whether the changes are actually outcomes of policy responses by securities regulators to the impacts of the 2008 GFC. Though a lot of literature identified the crisis as a reason for securities supervisory reforms, evidence is necessary to identify causal relationships.

Gap 3: The phenomenon of SMS reform discussed above was well reflected by articles and policy documents, which mostly reproduced the recommendations, proposals, strategy and early activities of supervisory reforms in different securities markets. However, there is a gap between recommendations for reform and an actual reform in securities markets after the 2008 GFC, which need to be further explored to identify the impacts of the crisis to market supervision.

Gap 4: In the 5 years since the first days of the 2008 GFC most of the policy responses in SMS came into effect in 2011 and 2012. Naturally, there is a shortage of evidence on how did the policy responses and reforms improve responsiveness of SMS.

Gap 5: The GFC 2008 initiated in USA and became a global financial turmoil (Oplas, 2008) later on in Europe and all over the world. The literature review identified significant changes in securities supervisory system in USA, UK, Europe and other developed markets such as Australia and Canada as responses to impacts of the crisis. However, there remains limited analysis of the policy changes in emerging markets after the crisis. Research is required to investigate whether the same trend of policy evolution happened at the emerging markets, regarding SMS.
All the gaps mentioned above require further study for comprehensive conclusion on the impacts of the 2008 GFC on the SMS and draw out relevant implications for emerging markets. However, within the time constraint and limited resources of this research, the following research hypotheses and research questions are developed and studied:

### 3.3.3. Research Hypotheses and Research Questions

The following hypotheses are developed:

**Hypothesis 1:** The 2008 GFC has brought significant impacts and caused fundamental changes in the eight components of SMS, namely market supervision philosophy, market supervision architecture, market supervision approach, macro-prudential supervision, micro-prudential supervision, supervision of traded securities products, oversight of market conduct and supervision of securities market institutions and SROs.

Eight impacts of the 2008 GFC on SMS framework are hypothesized basing on the results of literature review summarized in Section 3.3.1.

**Hypothesis 2:** Changes due to crisis impacts in the eight components of SMS led to more responsiveness of the supervisory system.

Within the scope of this research, responsiveness of SMS is defined as the ability of the securities regulators to respond effectively to market behaviour, market context and market developments by using relevant supervisory tools and approaches in a specific supervisory structure.

The 2008 GFC created momentum for securities regulators to reform their SMS system for more responsiveness to ensure avoiding or better coping with a possible future crisis. Changes in post-crisis SMS philosophy, SMS architecture, SMS approach, macro- and micro-prudential supervision, supervision of traded securities products, market conduct oversight, and supervision of market institutions and SROs are designed to lead to more responsiveness of SMS.

**Hypothesis 3:** Emerging markets follow the same trend of SMS policy reform as developed markets after the crisis.

Within this research project, emerging markets are 85 stocks markets, of which securities regulators are the members of Growth and Emerging Markets Committee of IOSCO as of 2013. The number of emerging markets accounts for 77.3% of full population of member securities regulators of the IOSCO. It is predicted that emerging markets, though not badly affected from
the 2008 GFC, will follow the post-crisis policy reform of more developed markets in the eight components of SMS.

In order to test the hypotheses, an empirical study needs to be conducted to determine the actual impacts of the 2008 GFC on the SMS. In addition, the causal relationship between the changes in the eight areas of SMS after the crisis and the responsiveness of supervisory system is to be explored. Implications for the emerging markets are further examined by studying the way they responded to the crisis. Research questions identified include:

**Research question 1**: What are the actual impacts the 2008 GFC generated on the securities market supervision?

**Research question 2**: Whether the policy responses to the crisis increased the responsiveness of the securities market supervision?

**Research question 3**: Whether the emerging markets followed the same trend of securities market supervision policy reform as developed markets after the crisis?

3.4. **Summary and Conclusions**

The chapter has undertaken a comprehensive review of the literature on the impacts of the 2008 GFC on SMS. The landscape of the SMS was observed as having fundamental changes in its eight components after the crisis.

The market-based mindset and EMH – the economic rationale which served as philosophy of market supervisory activities has been dismissed by many academics and practitioners. Architecture of market supervision is considered to be changed by several securities regulators toward a more consolidated structure with two peaks of prudential supervision and market conduct oversight. SROs no longer hold significant roles in market supervision as before the crisis. There is a trend of moving away from market-based approach in supervision, instead, the risk-based approach is preferred. Rule-based and principle-based debate became trans-Atlantic. The perception of securities regulators on the role of macro-prudential supervision, which used to be considered as the function of banking regulators has been changed and securities market macro-prudential supervision has obtained a greater importance after the GFC. New regulatory agencies were set up and great efforts have been taken to enhance micro-prudential supervision in the securities market. Hedge funds and securitizers are at the centre of these strengthened supervisory activities. Risk-based became a dominant approach for supervision of market intermediaries. Supervision of traded securities products were enhanced by moving of OTC traded derivatives to organized markets and putting them under stronger supervision; strengthening of transparency by required disclosure of complex financial products and firms;
and strengthening of accounting standards for better valuation of securities traded products. Enhancement of market conduct oversight argued by academics, practitioners, securities regulators to be an effective tool to recover market confidence and maintain market integrity after the 2008 GFC. CRAs and SROs were put under more stringent supervision than before the crisis.

The literature review suggested that the 2008 GFC has fundamentally changed the components of the SMS and raised the research questions: (i) What are the actual impacts the 2008 GFC generated on the securities market supervision? (ii) Whether the policy responses to the crisis increased the responsiveness of the securities market supervision? And (iii) Whether the emerging markets followed the same trend of securities market supervision policy reform as developed markets after the crisis?
CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY
4.1. Introduction

Chapter 4 justifies, discusses and describes the paradigm and methodology used to collect the data to answer the research questions. An introduction to the methodology was provided in Section 1.4 of Chapter 1. This chapter builds on that introduction and provides assurance that appropriate procedures are followed.

The chapter is structured into six sections. Section 4.1 is the introduction, which summarizes the objective and structure of the chapter. Section 4.2 justifies the selected research methodology by reasoning the use of sequential mixed methods and discussing their limitations. Section 4.3 discusses research procedures used for quantitative research. Section 4.4 describes how qualitative research is used to supplement quantitative research. Section 4.5 considers ethical aspects of the research and Section 4.6 presents the conclusions. The structure of the chapter is outlined in Figure 4.1.

Figure 4.1. Outline of Chapter 4-Research Design and Methodology

![Figure 4.1. Outline of Chapter 4-Research Design and Methodology](image)
4.2. Justification of Paradigm and Methodology

This section discusses the paradigm used in this research project, describes and justifies the choice of research methods and research design. Limitations of the methodology are also discussed.

4.2.1. Paradigm

A paradigm is the philosophy of knowledge or an overall approach underlying a methodology. A paradigm has three levels of use: (i) the philosophy, which reflect basics belief about the world; (ii) the guidelines about how a researcher should conduct his/her endeavour; and (iii) method and technique which should ideally be adopted in conducting research (Burrell & Morgan, 1979).

<table>
<thead>
<tr>
<th>Purpose of Combination</th>
<th>Description</th>
<th>Implication from Critical Realism (CR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complementarity</td>
<td>MMs are used in order to gain complementary views about the same phenomena or events</td>
<td>Different levels of abstraction of a multilayered world demand different methods</td>
</tr>
<tr>
<td>Completeness</td>
<td>MM research design is used to ensure a complete picture (as detailed as possible) of the phenomenon under study</td>
<td>Requires meta-theoretical considerations (i.e., angle of approach)</td>
</tr>
<tr>
<td>Developmental</td>
<td>Inferences of one type of research are being used as questions for another type of research</td>
<td>This being part of the retroductive approach of CR, inferences need to hypothesize about the causal mechanisms whose recovery will then inspire additional research</td>
</tr>
<tr>
<td>Expansion</td>
<td>MMs are being implemented in order to provide explanations or expand the understanding obtained in previous research</td>
<td>Quantitative methods can be used to guide qualitative research which (subject to the context) is more capable of uncovering generative mechanisms</td>
</tr>
<tr>
<td>Corroboration/ Confirmation</td>
<td>MMs are used in order to confirm the findings from another study</td>
<td>Epistemic fallacy occurs when trying to validate qualitative results with quantitative methods</td>
</tr>
<tr>
<td>Compensation</td>
<td>The weakness of one method can be compensated by the use of another</td>
<td>The weaknesses of different methods are recognized so alternative methods can be used to compensate</td>
</tr>
<tr>
<td>Diversity</td>
<td>MMs are used in order to obtain divergent views on the same phenomena</td>
<td>Different levels of abstraction of a multilayered world demand different methods</td>
</tr>
</tbody>
</table>

Table 4.1. Purposes of mixed methods in Critical Realism

Critical realism was adopted as a single paradigm for mixed methods in this research. The ontology of critical realism is that “reality is real” and a social phenomenon to be studied is an external reality that exists independently of the researcher’s mind (Bhaskar, 1978; Harre & Madden, 1975; Magee, 1985) but only imperfectly and probabilistically apprehensible (Guba & Lincoln, 1994; Merriam, 1988; Tsoukas, 1989) and so “triangulation from many sources is required to try to know it” (Sobh & Perry, 2006, p. 1195).
Within the paradigm of critical realism, employing mixed methods in this research project is relevant because the approach not only considers the external reality of the 2008 GFC impacts on SMS by quantitative instruments but also acknowledges the complexities of crisis-induced policy developments that need to be investigated with in-depth qualitative research methods (Sobh & Perry, 2006).

Mixed methods research is the class of research where ‘the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study’ (Burke & Onwuegbuzie, 2003, p. 17). A mixed methods approach is useful in this research by reducing researcher bias and allowing documentation to be measured and analysed more effectively (Gerhardt, 2004, p. 29). The purposes of employing mixed methods in critical realism were described by Zachariadis et al. (2013) as shown in Table 4.1.

Adapting the ideas from Zachariadis et al. (2013) about purposes of using mixed methods in critical realism, mixed methods approach is justified in this research project as follows:

**Complementarity:** Mixed methods are used in order to gain complementary views about the same phenomena or events. In this research project, quantitative and qualitative researches are complementary rather than incompatible (Malterud, 2001). While quantitative research focuses on “generalizing to universals”, enabling the researcher to come up with the conclusions about general trends of securities regulators responses to crisis impacts, qualitative research helps to answer the specific whys and hows arising from quantitative research with its ability of “understanding particulars” (Maxwell, 1992, p. 296).

**Completeness:** Mixed method research design is used to ensure a complete picture of the phenomenon under study. Because mixed methods could yield results that would not have been identified through use of one method or the other (B. Davies, 2003), it is the best approach to draw a robust conclusion (Barnes, 2001) about the whole picture of 2008 GFC and its impacts on SMS. The different SMS settings and perceptions discovered by quantitative strategy require the researcher to re-frame research methodology to mixed methods to identify the landscape of crisis impacts and post-crisis SMS evolutions. The approach enables exploring the research issues in breadth and depth for better interpretations because data collected is both measurable and analysed through rich description (Creswell, 2003, 2008).

**Developmental:** Inferences of one type of research are being used as questions for another type of research. Research results do not always bring about a definitive answer for direct conclusions and may ‘generate more questions than they answer’ (Gerhardt, 2004, p. 4). Quantitative research of this project in fact generated various questions regarding the developed and emerging markets’ divergence in their responses to the crisis. The questions need to be
answered by further qualitative research, which is ‘useful to deal with puzzling quantitative results’ (Glenn, 2010, p. 96).

**Expansion:** Mixed methods are being implemented in order to provide explanations or expand the understanding obtained in previous research. The 2008 GFC can be classified as an exceptional social circumstance that is well depicted by quantitative research (Horna, 1994; Ulmer & Wilson, 2003) but better explained by qualitative research (Parker, 2010). Mixed methods provide a “truer analysis” (B. Davies, 2003, p. 110) of the changing perception of securities regulators after the crisis because quantitative findings will lead to a reflection on qualitative research to get a better understanding of the ideas in the “heads of economic actors and the models they use” (B. Davies, 2003, p. 109).

**Confirmation:** Mixed methods are used in order to confirm the findings from another study. The findings from quantitative research about crisis impacts and the causal relationship of post-crisis policy changes and the responsiveness of SMS need to be further confirmed by qualitative research because qualitative techniques permit researchers to apply multiple theoretical perspectives as a strategy of accumulating understanding, and allowing research findings to reflect many differing and changing social and organizational cultures, histories and contexts (Flick, 2002);

**Compensation:** The weakness of one method can be compensated by the use of another. In this research project, qualitative strategy is employed where the quantitative method could not reach the research objective. When a qualitative study is added to quantitative one, “a better understanding of the meaning and implications of the findings” (Malterud, 2001, p. 487) about crisis impacts can be obtained as ‘their relative strengths complement the weaknesses of the other’ (Gerhardt, 2004, p. 9). The goal of mixed methods in this research is ‘not to replace either of qualitative or quantitative method but rather to draw from the strengths and minimize the weaknesses of both in a single research study’ (Burke & Onwuegbuzie, 2003, p. 14). When using mixed methods for this research project, strengths and weaknesses of different methods ideally cancel each other (Modell, 2007) or in other words, disadvantages of one method justify using of the other.

**Diversity:** Mixed methods are used in order to obtain divergent views on the same phenomena. The multiple impacts of the 2008 GFC on SMS should be identified and explained from divergent angles exposed by applying different methodologies. In this research project, triangulation with mixing approaches enabled the researcher to have more than one point of view (Olsen, 2004) about the paradigm shift of the securities regulators on SMS after the crisis. Because the post-crisis changes in SMS policies are complex and multi-dimensional, the
research aims to identify the causal relationship between the crisis and the policy changes by seeking a “family of answers” (Pawson & Tilley, 1997, p. 152) that cover a range of possible causes and gauge the various impacts of the crisis among these causes.

4.2.2. Research Design

Having established the appropriate paradigm to underpin the thesis, the next methodological issue addressed is development of the research design.

Research design is the structure to guide data collecting and analysing to answer the research questions (Kinnear, Taylor, Johnson, & Armstrong, 1993). Taking the stand point of critical realism as the paradigm of study, the research was designed in a way that allows triangulation in different stages of the study. The purpose of triangulation was to enhance the precision of the representation of crisis impacts on SMS by examining it with different theories, methods and data sources (Bryman, 1988; Denzin, 1978; Modell, 2007). Triangulation is employed in this research for three main reasons: confirmation, completeness and retroduction (McEvoy & Richards, 2006; Risjord et al., 2001, 2002).

Figure 4.2. Research Design

The overall research design may be described as a sequential mixed method design spanning into three stage framework as shown in Figure 4.2. In a sequential mixed method design,
qualitative and quantitative methods are employed in sequence with results from one feeding into the later one (Mingers, 2001).

Stage One was a qualitative exploratory research to establish the theoretical framework of SMS and define research issues. Stage Two was a quantitative descriptive, comparative and causal research to find the answers for the three mentioned research questions. Stage Three was qualitative with focus group interviews and documentary research for confirmation, completeness and retroduction of the findings from qualitative and quantitative research in two previous stages. Beside, Stage Three also tried to answer the questions arising from Stages One and Stage Two for further deepening and extending of the research results. An outline of research design is presented in Figure 4.2. Each stage has its distinct and complementary roles as follows:

**Stage One: Qualitative exploratory research**

The primary objective of this stage was to define any research question that may arise around the SMS framework of developed and emerging markets due to impacts of the 2008 GFC. In this exploratory research, literature review was conducted to provide inputs for further research at Stage Two (Creswell & Clark, 2011; Greene et al., 1989; Malhotra, 1993).

The qualitative exploratory research in this stage helped to frame a theoretical background of SMS, develop the SMS framework and define the concepts of SMS responsiveness. This research stage hence provided operational definitions for the constructs of quantitative research in Stage Two such as the concepts of SMS philosophy, SMS architecture, SMS approaches, macro and micro-prudential supervision, supervision of market conduct, SMS responsiveness and other concepts that need to be explored before identifying the crisis impacts on SMS.

The exploratory research also helped identify several research gaps that need to be addressed by further study. Within the constraint time and resources of this project, only three research gaps were selected to be addressed. Three research questions are set up accordingly to identify (i) what are the actual impacts the 2008 GFC generated on eight components of SMS; (ii) whether the SMS policy responses to the crisis increased its responsiveness; and (iii) whether the emerging markets follow the same trend of SMS policy reform with developed markets after the crisis. A more compete discussion of this research is addressed in Section 4.4.

Further, from the perspective of critical realism, the choice of methods should be dictated by the nature of the research problem (McEvoy & Richards, 2006). Hence the outcomes of literature exploration in this stage were used as indication and suggestion for methodology
selection. Mixed methods were chosen for the complexity and abstractedness of the research topic. The reasons for mixed methods were discussed earlier in Section 4.2.1.

**Stage Two: Empirical quantitative research.**

This empirical quantitative research was conducted through a cross-sectional structured survey questionnaire that provides data for descriptive, comparative and correlational causal comparative research strategies. While the qualitative research in Stage One focused on exploiting a wide range of data sources from academics, economists, regulators, think tanks and practitioners, quantitative research in Stage Two concentrated on surveying the very securities regulators that could provide best answers for the research questions about crisis impacts on their SMS system. The quantitative strategy was chosen for this stage because the GFC is an extreme social event that are best depicted and explained by quantitative research designs through the employment of methodologies of deductive logic (Horna, 1994).

A survey was conducted with a structured questionnaire and a large sample (compared to whole population) of securities regulators to ensure minimizing of errors and maximizing of research reliability (Kinnear et al., 1993). The survey aimed to identify the various impacts of the 2008 GFC on SMS, defining the trends of two groups of emerging and developed markets in SMS policies responding to the crisis impacts and recognizing the correlation between the post-crisis SMS policy reform and responsiveness of the SMS system. In order to pursue the mentioned research objectives within the complexity of the SMS framework and the GFC, statistical analysis and quantitative data were employed as they developed reliable descriptions and provided accurate comparisons (Gerhardt, 2004; McEvoy & Richards, 2006).

The survey provided a reliable database for descriptive, comparative and correlational analyses. Multiple univariate analysis was conducted for descriptive research on impacts of the GFC on SMS. Trends of emerging markets and developed markets in SMS responding to the crisis impacts were recognized and compared by a comparative analysis. Besides, correlation relationship between SMS responsiveness and SMS policy changes in post-crisis time was defined by a correlational causal comparative analysis. A more complete description of this research is discussed in section 4.3.

Triangulation was conducted at the end of this stage. Findings from the quantitative research from stage 2 were then compared with the findings from the literature review in stage 1 to define the convergences and divergences between two sets of data and analyses. The comparison between the findings was what Venkatesh, Brown, and Bala (2013) referred to as “meta-inferences”. The retrodroduction helped to improve the capture of the particular phenomenon of
the 2008 GFC, the ‘real nature of which is of a singular kind and thus beyond dispute’ (Modell, 2007, p. 7).

From the perspective of critical realism, Stage Two of this research provided inputs for methodology development, i.e. using the findings from one method to help inform the other method (Burke & Onwuegbuzie, 2003). The triangulation process revealed interesting research issues that need further study and the requirement for additional research to confirm the hypotheses and to complete the research results. For example, despite the strong calls for dismissing of Standard Finance and EMH insights as an SMS philosophy by many academics, economists and think tanks as uncovered by literature review in Stage One, the survey research showed that securities regulators in fact did not reject the ideology, they just preserved it and included it into a combination with Behavioural Finance to reframe the post-crisis SMS philosophy. Besides, emerging markets did not follow the same trend of SMS reform with developed markets as hypothesized in some areas. The facts need to be understood by further qualitative research in Stage Three. In addition, one of the research questions was reframed and adjustment to the research design was incorporated (three stages of research rather planned two stage research) because the outcomes of stage 2 showed that there were different supervisory settings and perceptions in different markets that need to be taken into consideration. This is one of the strengths of mixed methods from the perspective of critical realism that was called by Burke and Onwuegbuzie (2003) as “initiation”, i.e. discovering paradoxes and contradictions that lead to a reframing of the research questions.

Stage Three: Qualitative Explanatory Research - Focus Group Interviews and Documentary Research

Qualitative research in this stage aimed at confirmation, completion and explanation of research findings identified in Stage Two. Because qualitative research is ‘valuable in its depth and its ability to uncover and interpret mechanisms behind behaviour’ (Gerhardt, 2004, p. 10), it was used to study the “behaviour” and momentum behind the “behaviour” of securities regulators to respond to the crisis. The triangulation in this stage was to ensure validity and credibility of the database collected from quantitative method as it is a ‘valuable tool for compensating missing information that was not gathered in surveys during a single round of questioning’(Gerhardt, 2004, p. 7).

Focus group interviews were conducted to explore the thinking of selected securities regulators and practitioners about what economic theory should be used as the post-crisis SMS philosophy because it is a relevant qualitative tool in the context ‘where a range of responses from a target group are useful’(Glenn, 2010, p. 96). Research findings from this stage help to understand the
mismatching of findings in Stage One and Stage Two about the SMS philosophy after the 2008 GFC.

Documentary research was undertaken in this stage to confirm the findings in Stage One and Stage Two about the actual impacts of the 2008 GFC on the SMS framework. Besides, documentary research also provided data to understand and explain the divergence of emerging markets and developed markets in the SMS policy responses to the crisis impacts that were uncovered in quantitative research in Stage Two. The documentary research also delivered data that helps to develop the criteria of SMS responsiveness that is an expansion of the research results of this project. Within the framework of using mixed methods under the paradigm of critical realism, that is a research expansion, i.e. seeking to expand the breadth and range of research by using different methods for different inquiry components. (Burke & Onwuegbuzie, 2003). Further review of this research is discussed in section 4.4.

In brief, in this sequential mixed method research project, qualitative exploratory research was conducted in Stage One, followed by quantitative empirical research in Stage Two and qualitative explanatory research in Stage Three.

4.2.3. Limitations of Mixed Methods

Though using mixed methods helps the researcher to offset the limitations of each method, the combination of quantitative and qualitative has its limitations too:

- Firstly, it takes more time, skills and resources to do the research with a mixed methodology. The researcher managed to make the qualitative and quantitative strategies compatible and maintain a good controlling of limitations of each method. Decisions regarding how to mix, what to mix and how much to mix was a dilemma. However, outcomes of the research project prove that mixed method was an appropriate choice and findings were worth for the double time, resources and skills.

- Secondly, it is more difficult to write up the results using mixed method. Presenting qualitative and quantitative research findings side-by-side or in sequence, ‘separation of the different components in reporting and interpreting those results is likely to lead to a report which is disjointed and potentially repetitive’ (Bazeley, 2004, p. 149). Mixed methods required researcher to adopt a thesis structure that is not conventional as is the case with a single methodological study.

- Finally, during the process of a mixed methods research, the researcher had to be aware of personal biases in collecting and analyzing data. The researcher had to keep their own and the respondents’ biases in check ‘in order to produce results that accomplish what scholars
have yearned to do for centuries—help society grow in knowledge through realized truths’ (Gerhardt, 2004, pp. 32-33).

Despite the above mentioned disadvantages, outcomes of this research strategy justified using of mixed methods. Having the research methodology and research design justified, the next issue to be addressed is the quantitative research procedures.

4.3. Research Procedures - Quantitative Research

In this study, quantitative research was conducted through a cross-sectional survey, including seven steps as outlined in Figure 4.3, including: (1) determining of information to be sought and from whom; (2) survey sampling; (3) determining the survey method and constructing operational definitions; (4) questionnaire design; (5) assessment of reliability and validity of survey questionnaire; (6) survey research administration; and (7) data analysis strategy.

![Figure 4.3. Quantitative research procedures and administration](image)

Source: developed for this research project with references from Malhotra (1993)
4.3.1. Step 1-Determining of Information to be Sought, Key Informants and Units of Analysis

The first step in quantitative research stage was to identify the information needed to answer the research questions, the relevant providers of that information and determine appropriate units of analysis.

Table 4.2. Types of research strategy and key variables used in this research project

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Type of research strategy and information needed</th>
<th>Variables</th>
</tr>
</thead>
</table>
| What are the actual impacts the 2008 GFC generated on the securities market supervision? | Descriptive research  
Multiple univariate analysis  
Information needed for description of crisis impacts on eight components of SMS                                                                 | Composite variables  
Variable 1: Impact of crisis on SMS philosophy  
Variable 2: Impact of crisis on SMS architecture  
Variable 3: Impact of crisis on SMS on SMS approaches  
Variable 4: Impact of crisis on macro-prudential supervision  
Variable 5: Impact of crisis on micro-prudential supervision  
Variable 6: Impacts of crisis on supervision of securities products  
Variable 7: Impact of crisis on market conduct oversight  
Variable 8: Impact of crisis on supervision of market institutions and SROs                                                                 |
| Whether the policy responses to the crisis increased the responsiveness of the securities market supervision? | Correlational causal comparative research  
Correlational analysis  
Information needed for defining correlational causal relationship between responsiveness of SMS and changes in SMS components due to crisis impacts | Dependent variables  
Variables 1: Impacts 2008 GFC on SMS eight components  
Variable 2: Responsiveness of SMS                                                                 |
| Whether the emerging markets followed the same trend of securities market supervision policy reform as developed market after the crisis? | Comparative research:  
Comparative analysis  
Information needed for comparison of trends by two groups of emerging markets and developed markets in SMS policy responses to the crisis impacts | Dependent variables  
Variable 1: Type of markets  
Variable 2: Trend of policy responses to crisis impacts by two market groups                                                                 |

Source: developed for this research

Information to be sought: A list of information required to address the research issues should be drawn up before determining of survey method and constructing of operational definitions (Malhotra, 1993). Key objective of the research is finding answers to three research questions: (i) how the GFC affected eight mechanisms of SMS and what the securities regulators have done to respond to the impacts; (ii) whether the crisis-induced actions of the securities regulators improved responsiveness of SMS; and (iii) whether the emerging markets follow the
same trends as developed markets in responding to the crisis impacts. Literature review in the exploratory qualitative research stage provided inputs to develop relevant variables for the quantitative research stage. Table 4.2 lists the research questions together with types of research and types of variables used in this research stage.

**Key informants:** It was imperative to approach the knowledgeable key informants who are engaged in securities supervision in the jurisdictions that were affected from 2008 GFC. In order to get the needed information, the optimum strategy was to approach the securities market regulators for obtaining their judgement about crisis impacts on their SMS and information about how they responded to the 2008 GFC to improve their SMS in post-crisis time. Therefore, the targeted survey respondents were the securities/financial regulators who are in charge of the securities market regulation and supervision in different jurisdictions. As suggested by Mitchell and Jolley (2013), high ranking officers are considered more reliable and enabled standardization of information across an organization, the persons to be approached for the survey research were the IOSCO contact persons at director level or chairmanship of the securities commissions. The IOSCO contact persons of securities commissions were the persons who received the survey request but were not necessarily the one who answered the questionnaires. The IOSCO members participated in a Memorandum on Cooperation and Exchange of Information in which the members have the responsibility to corporate and share information if one member has a request. Therefore, the representativeness of the survey responses was ensured by means of communicating and requesting sharing information through IOSCO contact persons under the above MOU. The survey questionnaires were delivered to a person or different people and units in charge in the securities commissions. For example, ASIC (Australia) had the questionnaire answered by many units, but in the case of the New Zealand Securities Commission, it was responded to by the Head of the Legal Department. The list of contact persons is available on the website of IOSCO for public viewing (list of ordinary members). However, full contact details of the contact person are only available in member field. Identities of the survey respondents were not revealed in accordance with the ethical code of the research and the commitment to IOSCO members regarding the anonymity of the survey respondents.

**Unit analysis:** the unit of analysis defined by Zikmund (2000), Sekaran and Bougie (2010) as the extent to which the level of investigation or level of aggregation of collected data focuses on objects or an object. As the research is the first to study the impact of a crisis on SMS, the researcher could not rely on the practices of previous or current studies in the same area to determine the unit of analysis. However, the exploratory research in Stage One helped to
identify that the 2008 GFC’s impacts on SMS should be recognized as the crisis-induced policy changes in eight components of SMS. Therefore, policy responses by securities regulators to improve their SMS framework in post-crisis time were used as the unit of analysis in this quantitative research.

4.3.2. Step 2 - Defining of Survey Method and Constructing of Operational Definitions

In this step, the relevant survey method was chosen and operational definitions of variables were defined.

4.3.2.1. Determination of Survey Method

The survey method of this research was chosen with the considerations in terms of time horizon, type of instrument, and pros and cons of administration.

Table 4.3. Comparing different ways of administering questionnaires

<table>
<thead>
<tr>
<th>Quality of answers</th>
<th>Personal interview</th>
<th>Phone interview</th>
<th>Investigator administrated (to a group)</th>
<th>Self-administrated (includes mail, email and web survey)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interviewer bias</strong></td>
<td>Facial expressions and tone of voice could affect responses. However, monitoring interview sessions could prevent and detect interviewer bias</td>
<td>Tone of voice could affect responses. However, having supervisor monitor or taping sessions could prevent and detect interviewer bias</td>
<td>Minimal interaction with investigator, so little chance of interviewer bias</td>
<td>No interview, no interviewer bias</td>
</tr>
<tr>
<td><strong>Social desirability bias</strong></td>
<td>Participant may want to impress interviewer</td>
<td>Participant often feel anonymous</td>
<td>Participant often feel anonymous</td>
<td>Participant are anonymous</td>
</tr>
<tr>
<td><strong>Problems due to participants misunderstanding questions</strong></td>
<td>Interviewer can clarify questions</td>
<td>Interviewer can clarify questions</td>
<td>In a group setting, participants are unlikely to ask questions even when they don’t understand</td>
<td>There may not even be an opportunity for participants to ask the meaning of a question.</td>
</tr>
</tbody>
</table>

**Sampling issue**

<table>
<thead>
<tr>
<th>Geographical diversity</th>
<th>Difficult</th>
<th>Easy if you can make long distances</th>
<th>Difficult</th>
<th>Easy to distribute to a wide area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheaply contacting a representative sample</td>
<td>Expensive to get a large sample</td>
<td>Long distance calls are affordable</td>
<td>Group administered surveys are cheaper and individually administered surveys</td>
<td>Very cheap as there is no need to have someone administer the survey</td>
</tr>
<tr>
<td>Getting a high response rate (avoiding non-response bias)</td>
<td>Good: people respond to the personal approach</td>
<td>If you precede your call with a letter, you may get a high response rate. It at first you get a low response rate, try calling again and again</td>
<td>Group debriefing may be less effective than individual debriefing</td>
<td>Potential problem</td>
</tr>
</tbody>
</table>

**Ethical issue**

| Potential for fraud (people filling out multiple questionnaires) | Not a problem | Not a problem | Not a problem | Potential for filling out multiple surveys |

**Source:** adapted from Mitchell & Jolley (2013, pp. 294-295) with modifications
In terms of *time horizon*, a cross-sectional survey was used to exploit needed information from the securities regulators of the crisis impacts on SMS, SMS responsiveness improvement and trends of emerging and developed markets in policy responses to the crisis impacts. A cross-sectional survey method was selected because it allows taking a snapshot of the phenomena to draw conclusions across a wide population and is often adopted in exploratory and descriptive studies (Babbie, 2010, p. 110; Sekaran, 2000; Sekaran & Bougie, 2010).

In terms of *type of instrument*, structured questionnaire survey was adopted because this quantitative research stage includes descriptive, comparative and correlational causal comparative analysis strategies. A structured questionnaire survey method is relevant as it is an effective means of gathering complex information and provides transparent, quantified data in a succinct, easy understood form on a comparable basis (Ticehurst & Veal, 2000).

In terms of *survey administration*, the survey method was selected with consideration of advantages and disadvantages of each method, based on four criteria (i) response rate; (ii) ability to obtain representative samples; (iii) limitations on questionnaire design; and (iv) problems with implementation (de Vaus, 2013; Mitchell & Jolley, 2013).

Four types of survey administration include: (i) face-to-face interview; (ii) telephone survey; (iii) investigator administered survey and self-administered survey; or (iv) combination of these methods (Malhotra, 1993; Mitchell & Jolley, 2013; Ticehurst & Veal, 2000).

Face-to-face interview, telephone survey and investigator administered survey are not feasible to conduct when the survey respondents are not individuals but regulatory organizations all over the world. An electronic self-administered survey questionnaire was adopted for this research because it is the best and cheapest way to obtain the information from the securities regulators given the organizational features and geographically dispersion of the IOSCO members (Mitchell & Jolley, 2013). Table 4.3 compares advantages and disadvantages of different survey methods.

In this research stage an electronic self-administrated survey questionnaire was chosen because of the following advantages:

- It is simpler to make changes to electronic questionnaire and deliver it to respondents in timely manner;
- It helps avoid interviewer bias (Mitchell & Jolley, 2013);
- Response rates of electronic surveys are proved higher than paper surveys or interviews (Fielding, Lee, & Blank, 2008);
- Respondents might provide more truthful answers with electronic surveys than paper surveys or interviews (Lazar, Feng, & Hochheiser, 2010);
- It is easy for conducting in geographic diversity (Mitchell & Jolley, 2013);
- It is the cheapest way to conduct survey research (de Vaus, 2013; Fielding et al., 2008; Mitchell & Jolley, 2013).

Disadvantages of self-administered survey questionnaire method were adequately controlled:
- The problems of potential misunderstanding questions were avoided by using securities regulatory language, which is familiar to all IOSCO members.
- The potential for filling out multiple surveys was reduced to nil as each IOSCO member approached only have one questionnaire to answer.
- Low response rate was dealt with by repeated online communications and three phases of electronic surveying.

In short, the survey method adopted for this research was cross-sectional, using an electronic, structured, and self-administrated questionnaire.

4.3.2.2. Constructing of Operational Definitions

Conceptualization and operationalization of variables are the next step that needs to be undertaken before collection of data (D. Davis & Cosenza, 1993). Once the survey method was chosen, operational definitions were constructed to set up a backbone for the survey research. Operationalization is the process of determining how a construct is to be measured (Brown, Davidson, & Wiklund, 2001).

It means that the variables in this research project have to be specified in a clear, specific and unambiguous manner so that they can be observable through the survey technique. For example, “2008 GFC impact on SMS” is a key construct in this research and it was measured by multiple dimensions. Due to the complexity of the SMS system, the crisis impact needs to be measured in total eight components of SMS: SMS philosophy, SMS architecture, SMS approaches, macro and micro-prudential supervision, supervision of traded securities products, supervision of market conduct, and supervision of market institutions. Therefore, eight composite variables, which are in turn the construct of crisis impact on each SMS component, were developed and defined for collecting data to answer the research question on 2008 GFC impact on SMS. Further, because the crisis impact varies between SMS components, it is measured by the various dimensions (crisis-induced policies, legal or structural changes) of 59 questions in
Section 2 and 3 of survey questionnaire. Table 4.4 lists the operational definition of key variables in this research.

Table 4.4. Operational definition of constructs

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>Operational definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Crisis Impact 1</td>
<td>Impact of crisis on SMS philosophy, measured by changes in SMS philosophy due to the crisis. Concept of SMS philosophy is constructed in Section 2.3.1, Chapter 2.</td>
</tr>
<tr>
<td>2</td>
<td>Crisis Impact 2</td>
<td>Impact of crisis on SMS architecture, measured by changes in SMS architecture due to the crisis. Concept of SMS architecture is constructed in Section 2.3.2, Chapter 2.</td>
</tr>
<tr>
<td>3</td>
<td>Crisis Impact 3</td>
<td>Impact of crisis on SMS approaches, measured by changes in SMS approaches due to crisis. Concept of SMS approaches is constructed in Section 2.3.3, Chapter 2.</td>
</tr>
<tr>
<td>4</td>
<td>Crisis Impact 4</td>
<td>Impact of crisis on micro-prudential supervision, measured by changes in macro-prudential supervision due to the crisis. Concept of micro-prudential supervision is constructed in Section 2.3.4, Chapter 2.</td>
</tr>
<tr>
<td>5</td>
<td>Crisis Impact 5</td>
<td>Impact of crisis on macro-prudential supervision, measured by changes in macro-prudential supervision due to the crisis. Concept of micro-prudential supervision is constructed in Section 2.3.5, Chapter 2.</td>
</tr>
<tr>
<td>6</td>
<td>Crisis Impact 6</td>
<td>Impact of crisis on supervision of traded securities products, measured by changes in supervision of traded securities products due to the crisis. Concept of supervision of traded securities products is constructed in Section 2.3.6, Chapter 2.</td>
</tr>
<tr>
<td>7</td>
<td>Crisis Impact 7</td>
<td>Impact of crisis on supervision of market conduct, measured by changes in supervision of market conduct due to the crisis. Concept of supervision of market conduct is constructed in Section 2.3.7, Chapter 2.</td>
</tr>
<tr>
<td>8</td>
<td>Crisis Impact 8</td>
<td>Impact of crisis on supervision of MIs and SROs, measured by changes in supervision of MIs and SROs due to the crisis. Concept of supervision of MIs and SROs is constructed in Section 2.3.8, Chapter 2.</td>
</tr>
<tr>
<td>9</td>
<td>SMS Responsiveness</td>
<td>Defined in Section 2.2.2 Chapter 2 as the ability of the securities regulators to respond effectively to market behaviour, market context and market developments by using relevant supervisory tools and approaches in a specific supervisory structure.</td>
</tr>
<tr>
<td>10</td>
<td>Type of markets</td>
<td>Defined by classification of IOSCO: ordinary members of Emerging and Growth Markets Committee are emerging markets, the other ordinary members are developed markets.</td>
</tr>
<tr>
<td>11</td>
<td>Trend of policies by types of market</td>
<td>Defined by comparison of changes in eight components of SMS of two groups of emerging and developed markets as policy responses to crisis impacts.</td>
</tr>
</tbody>
</table>

Source: Developed for this research project

Exploratory research in Stage One did not only reveal the research issues, but also provided inputs for a set of operational definitions that is used in this research stage. The definitions of SMS components and SMS responsiveness what were developed in Chapter 2 are used in this chapter to conceptualize the necessary variables.

In brief, in this research project, care was taken to construct clear, specific and unambiguous operational definitions of variables.
4.3.3. Step 3- Survey Population and Sampling

Sampling is a procedure to select and obtain reliable and appropriate sample from the research population (Kothari, 2004, pp. 55-56). Through the samples the researchers can generalize properties or characteristics, draw conclusions, or estimate the findings to the entire population (Schmid, 2007; Sekaran & Bougie, 2010). Therefore, a key element of quantitative research design is survey sampling to obtain the desired quality and quantity of information (Struwig, 2001, p. 118). Sampling of the research project was taken with consideration of three following aspects: (i) the sampling method to be used; (ii) sample size needed; and (iii) reliability degree of the conclusions can be obtained or an estimation of the error (Barreiro & Albandoz, 2001; Zikmund, 2003).

The major steps of sampling as defined by Sekaran and Bougie (2010) were followed in this research, including (i) defining the population, (ii) determining of sample frame and sample design; (iii) defining of appropriate sample size and executing of the sampling process.

4.3.3.1. Defining of Population

IOSCO members were selected as the target population of securities regulators for this quantitative research. IOSCO is the international body that brings together the world's securities regulators and is recognized as the global standard setter for the securities sector. IOSCO develops, implements and promotes adherence to internationally recognized standards for securities regulation. Recently, the organization works intensively with the G20 and the FSB on the post-crisis global securities regulatory reform agenda. IOSCO membership regulates more than 95% of the world's securities markets in 115 jurisdictions and securities regulators in emerging markets account for 77% of its ordinary membership (IOSCO, 2015a). The IOSCO members entered a commitment on cooperation and information sharing; therefore, it would be feasible to conduct a survey on impacts of the 2008 GFC on SMS through the organization’s network. Besides, the role of a former contact person of IOSCO would enable the researcher to process the survey fluently in the context that the survey issues relating to market supervisory policies might be very sensitive and hard to be released.

4.3.3.2. Determining of Sampling Frame and Sample Design

Sampling frame: sampling frame consists of a list of the entire target population (Sekaran, 2000; Sekaran & Bougie, 2010). Samples might be biased and not representative of the population if they were not drown from the sampling frame (Denscombe, 2007). Fortunately, it was easy to obtain a list of 120 ordinary members of IOSCO (the number of membership in 2013) from its website. The number represents nearly the whole population of securities
regulators in the world. At the time of research, there were two newly established securities commissions from Lao and Cambodia, which were not IOSCO members. However, those regulators and their markets were set up after the incidence of 2008 GFC. Therefore, the regulators and their markets do not fall within the framework of this research.

**Sampling design:** there are two major groups of sample designs, namely probability sampling and non-probability sampling (Cohen, Manion, & Morrison, 2013; Elmes, Kantowitz, & Roediger, 2011; Sekaran, 2000; Sekaran & Bougie, 2010). Probability sampling, including simple random, stratified random, cluster and systematic, provides greater confidence of the representativeness of population. Non-probability sampling, including convenience, quota, purposive, and snow ball, is viewed less likely to produce representative samples. In this research, non-probability and purposive sampling method was used because the population is very small (120).

### 4.3.3.3. Defining of Appropriate Sample Size and Executing of the Sampling Process

The next step is defining an appropriate sample size. For most research studies, a sample larger than 30 and less than 500 is appropriate (Sekaran & Bougie, 2010, p. 296) and a sample size of 100 to 200 can be used for correlation research (Lunenburg & Irby, 2007, p. 179). Four main methods to define the minimum sample size are heuristics, literature review, formulas and power analysis.

**Box 4.1 Minimum sample size for small population**

<table>
<thead>
<tr>
<th>Method</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binomial</td>
<td>$n = \frac{Z^2 pq}{E^2}$</td>
</tr>
<tr>
<td>Hypergeometric</td>
<td>$n = \frac{NZ^2 pq}{E^2(N-1)+Z^2}$</td>
</tr>
</tbody>
</table>

$n$ is the required sample size  
$N$ is the population size  
$p$ and $q$ are the population proportions, unknown then set to 0.5.  
$z$ is the value that specifies the level of confidence of data. Typical levels of confidence for surveys are 95%, in which case $z$ is set to 1.96.  
$E$ --accuracy of sample proportions or sample Error is set to 0.03.

Sources: cited from E. Morris (2015)

As the research population is known, the formulas method was used for determining of a minimum sample size. Further, because the population is relatively small, the normal approximation to the hypergeometric distribution was used with the formula shown in Box 4.1.
The minimum sample size needed is 108 (calculation using the above mentioned formula of normal approximation to the hypergeometric distribution can be seen in Box 1, Appendix 4) given the population of 120, population proportions are 0.5, level of confidence is 95% and sample error 0.03.

The number of 108 survey participant is very close to whole population of 120 securities regulators. Then doing a census of 120 regulators theoretically would be the best strategy to obtain the external validity of the survey. However, ten regulator members of IOSCO at the time of research were out of the survey’s scope as they are from the same jurisdictions as other securities regulators, which are also IOSCO ordinary members and are more relevant for the survey purpose in terms of securities regulation functions. Those ten members were then omitted. Therefore, a purposive sampling method was employed to make the selected sample representative of the securities regulation community. The selected research sample was 110. The purposive sampling method means that objectivity of the quantitative research was enhanced rather than damaged. If the total 120 ordinary members of IOSCO were kept for the survey sample, the research might face duplication and dilution.

4.3.4. Step 4 - Questionnaire Design

The next step to be considered is questionnaire design. The concepts, variables involved and relationships to be investigated that had been defined clearly in the earlier steps, provided guidance for questionnaire design process (Ticehurst & Veal, 2000). In this step, three processes were taken to design the survey questionnaire: (i) constructing of measurement scales; (ii) determining of question content and wording; and (iii) developing of questionnaire format. Two later processes were done at the same time as a specific question content would need specific formatting and wording. However, for the matter of presentation, question content and wording is discussed in in Step 4.2 and questionnaire format is discussed Step 4.3.

4.3.4.1. Constructing of Measurement Scales

The questionnaire was designed using multiple items to measure a dimension because it ensures that the overall score, which is a composite of several observed scores, is a reliable reflection of the underlying position (Hayes & Dredge, 1998). Constructing of measurement scales was undertaken first. A measurement scale is the way in which a variable is defined and categorized. Each scale of measurement has certain properties which in turn determine the appropriateness

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5 IOSCO allows multiple financial or securities regulators from a jurisdiction apply for ordinary membership of the Organization
for use of certain statistical analyses. The four common used scales of measurement are
nominal, ordinal, interval, and ratio (Stevens, 1946). Measurement is defined as assignment of
numbers to characteristics of objects. The rules for assigning numbers to the characteristics
should be standardized and not change over objects or time (Malhotra, 1993).

As the 2008 GFC impacts are abstract concepts that cannot be quantified, only two types of
measurement scale were used in this research project. These were nominal and ordinal scales.
As the nominal scale has no numeric value, it was used for the purposes of categorizing and
identifying the properties of respondents, crisis impacts on their SMS components and
improvement of SMS responsiveness in post-crisis time (Kinnear et al., 1993). Nominal scale
was also used to ask respondents to describe the changes in their systems as policy responses
to crisis impacts. For example, respondents were asked to identify themselves as developed or
emerging markets and to define whether or not the 2008 GFC generated impacts on their SMS
philosophy, architecture, approaches and other SMS components.

Ordinal scale was used to gauge the magnitude of crisis impacts and SMS responsiveness
improvement in post-crisis time because it is relevant for ranking but does not provide the
relative degree of difference between the ranks. These ordinal scales were later assumed to be
interval scales for data analysis as it is common in social science research (Perry, 1998). For
example, respondents were asked to rank the magnitude of crisis impact on their SMS system
in a five point Likert scale of (>75%); (74%-60%); (59%-45%); (44%-30%); (29%-0).

In brief, the measurement scales used in this research were appropriate. The measurement scales
used in this research are listed in Table 4.2, Appendix 4.

4.3.4.2. Determining of Question Content and Wording

The next step of setting question content and wording was taken to draft the questionnaire.

4.3.4.2a. Question Content

Content of the survey questions was determined to ensure the questionnaire was comprehensive
but not exhaustive. Only the questions that related to the list of necessary information defined
in Step 1 (Table 4.2) were included in the questionnaire. This means that every question
included must be linked to the research questions (Ticehurst & Veal, 2000). In short, the
following issues were considered before including any question in the questionnaire (Trochim,
2006):

- Is the question necessary or useful? The questions were linked directly to the three defined
research questions. For example, to define the impacts of the 2008 GFC on SMS system,
only questions about crisis impacts on the eight SMS components and the properties of the
respondents were asked. The questions were selected and designed to be comprehensive to understand those impacts from different perspectives and to identify the possible difference of crisis impacts between two groups of respondents.

- **Are several questions needed?** Double-barrel questions were avoided. Several questions or multiple choice questions were used wherever it was necessary to cover all possibilities and to provide sufficient context to interpret the answer. For example, in order to have sufficient information to define actual crisis impacts on a certain SMS component, respondents were first asked to notify whether the changes in that area post-crisis was a crisis-induced policy response or not. And then they were asked to list all the available reasons that led to changes in that SMS component. By that method, answers of respondents could help the researcher to identify the actual crisis impacts.

- **Do respondents have the needed information?** Respondents need to understand the questions and to have sufficient information to answer the questionnaire correctly. In order to make the questions comprehensible, explanations or definitions were provided in footnotes wherever it was necessary. For example, the concept of supervision philosophy and EMH were defined in footnote number 2 and 3 attached to question No. 3.1 of the questionnaire. Definitions of supervision architecture, supervisory approaches, macro-prudential supervision, market conduct oversight, market institutions and SROs were provided in the footnotes numbered 4 to 8 respectively.

- **Does the question need to be more specific?** The questions were designed to generate specific answers for interpretation. Generalization was avoided. For example, to obtain respondents’ judgement on the significance of supervision over derivatives before and after the crisis, respondents were asked to tick into a matrix that displayed four levels of supervisory significance, including “not subject of supervision”, “supervised but not adequately”, “adequately supervised” and “strictly supervised”. The type of question such as “how do you judge the significance of supervision over derivatives before and after the crisis” was avoided as it could lead to general answer like “it was good” or “it is not enough”.

- **Is the question sufficiently general?** The questions were also not too specific so as not to lead respondents into the wrong direction. For example, to obtain the survey respondents’ judgement on 2008 GFC’s impact on the roles SROs in their SMS system, the type of too specific questions such as “Did the 2008 GFC create a negative impact on the roles of SROs in your SMS system?” was avoided because respondents may understand the concept ‘negative impact’ differently. Instead, respondents were asked “Did the 2008 GFC cause
any impact on the roles of SROs in your SMS system?” To this question, the survey respondents can give “yes” or “no” answer and then clarify the crisis impacts to SRO’s role in the next multiple choice question.

- Is the question biased or loaded? Bias and blind-spots of the researcher were controlled by avoiding questions with wording that may contain researcher’s opinions and affect respondents’ answers. For example, to identify impacts of the 2008 GFC on SMS philosophy, especially the ideas of Standard Finance and EMH, the researcher refrained to ask the respondents to give their judgement on the role of Standard Finance and EMH after the crisis. Instead, respondents were asked to tick into relevant boxes of two different multiple choice questions to indicate the theory they rely on as SMS philosophy before and after the 2008 GFC. Comparison of data collected from answers to these two questions enabled understanding the crisis impacts on Standard Finance and EMH without imposing a subjective judgement on the theory into the questionnaire.

- Will respondent answer truthfully? For each question the researcher first asked whether the respondent will have any difficulty answering the question truthfully. If there was a potential reason why they might not, then the question was reworded.

4.3.4.2b. Question Wording

A number of principles of questionnaire wording were observed, including: (i) use of simple language; (ii) avoiding ambiguity; (iii) avoiding leading questions; (iv) asking just one question at a time; (v) defining a specific timeframe; and (vi) avoiding too sensitive or too direct wording (Ticehurst & Veal, 2000, p. 146; Trochim, 2006). The questions were short, simple, and understandable. The language of securities regulation, which is familiar to all IOSCO members, was used to avoid misleading and misunderstanding. Further, because the questionnaire might be answered by one or more staff from a respondent securities commission, wording of questions were considered and revised so they would not trigger the private perspective of the person involved in the answers of that commission. In short, jargon, ambiguous, multi-purpose, complicated and leading questions were avoided.

4.3.4.3. Developing Questionnaire Format

Finally, questionnaire format was defined as the last step before drafting of the survey questionnaire. The step including: (1) determining of question-answer format; (2) setting up of questions sequence; (iii) determining of questionnaire lay out; and (iv) writing of introductory remarks.
4.3.4.3a. Determining Question-answer Format

Relevant question-answer formats were selected to enable correct responses to the questionnaire. Two types of question formats were used: open-ended and pre-coded questions (Ticehurst & Veal, 2000). Five subtypes of pre-coded questions used in this research are dichotomous closed-end, categorical, multiple choice, matrix and labelled scales.

Open-ended questions are the ones that allow respondents to freely answer the question without prompting to the range of answers to be expected (A. C. Burns & Bush, 2000; Luck & Rubin, 1987; Ticehurst & Veal, 2000) Because it is a self-administrated questionnaire survey and the response rate to open-ended questions might be low (Ticehurst & Veal, 2000), open-ended questions were only used in a combination with pre-coded questions to give respondents a free choice to express their judgement or provide a more complete response (A. C. Burns & Bush, 2000; Luck & Rubin, 1987). In that combination, respondents were asked to answer a closed ended question with pre-coded list of possible answers and the choice of an ‘other’ answer (Ticehurst & Veal, 2000). Spaces were left in survey questionnaire for respondents to write down their ‘other’ answers. For example, respondents were asked to tick into any relevant box of the multiple choice question about crisis impacts on their SMS architecture. For any other possible impact that was not listed, the respondents were asked to specify in the box “others”.

Pre-coded questions were ideal for this quantitative survey research because they are time-efficient, easy to answer and simpler to handle and interpret data (Philip, McCulloch, & Smith, 1975; Seale, 2003).

Dichotomous, closed ended questions that contain only two alternate responses (often Yes or No) were used in the survey questionnaire as a filter to determine whether a respondent was qualified or necessary for answering subsequent questions (Ticehurst & Veal, 2000; Trochim, 2006). For example, respondents were firstly asked to identify whether the 2008 GFC caused any impacts on their SMS system or not by a simple dichotomous Yes-No question. If a respondent said “No”, there was no need for them to continue with subsequent questions. Later in the questionnaire, before asking respondents to indicate any crisis impacts on each of their SMS components, the researcher used the dichotomous question to filter out the respondents that were not affected from the crisis in that specific area. In that way, it saved time for both respondents and the researcher in answering, administering and processing the survey questionnaire.

Categorical questions were used in this research to identify different groups of respondents or different categories of policy responses that are mutually exclusive. Its means that each respondent must fall into exactly one of the specified category. For example, in the first part of
survey questionnaire, respondents were asked to categorize themselves as “developed market” or “emerging market”. This question was extremely important as it provided data for identifying the differences between two groups in terms of crisis impacts and the different trends of policy responses to those impacts by the two groups. Another example of categorical questions in this research is the one that asked respondents to identify the involvement of SROs in market conduct oversight as more, less or stay the same than before the crisis.

Multiple choice or checklists are the next important type of pre-coded questions used to measure attitude and opinions in this research. Multiple choice questions were used whenever respondents were expected to pick the best answer or answers from among all the possible options (Ticehurst & Veal, 2000). In this research, multiple choice questions were designed to ask the respondents to list all of their crisis-induced policy responses that made in each of their SMS components. The multiple choice questions were always combined with an open-ended question that allowed respondents to list any other possible policy response they had made but were not available in the pre-coded list of answers. In that way, it made the respondents easier to answer the questions but did not limit their choice within the pre-coded answers.

Matrix questions are two dimensional version of multiple choice questions, which are arranged like a table, where the questions are listed to the left and answer choices across the top. Matrix questions are easy to answer and provide an effective way to organize survey questions (Philip et al., 1975; Seale, 2003). In this research, matrix questions were used with Likert scale to measure judgement of respondents about significance of using risk-based approach, level of supervision over hedge funds, derivatives, CRAs, auditors, clearing houses, and SROs, including stock exchanges before and after the 2008 GFC. In addition, the type of question was also used to identify the trading platform of SFP in markets before and after 2008 GFC. The matrix questions were important in this research as they helped to collect valuable data to define how the SMS components were changed after the crisis. The data then further consolidated and triangulated with other data for identifying the actual impacts of the crisis on SMS.

Finally, labelled scale questions were used in this research as a direct measure of respondents’ opinion (Luck & Rubin, 1987). Though one of the disadvantages of the type of question was that the scale might be forced of overly detailed (A.C.Burns & Bush, 2000), it was simple for handling, coding and adaptable for computer statistical analysis (A.C. Burns & Bush, 2000; Luck & Rubin, 1987; Philip et al., 1975; Seale, 2003). Likert method of scaling was used in this research because: (i) it yields higher reliability coefficients with fewer items than the scales developed using other methods (Hayes & Dredge, 1998); (ii) it has been extensively tested and obtained a high likelihood of favourable responses in social science literature (A.C. Burns &
Bush, 2000); (iii) it is familiar with respondents to answer (Zikmund, 2003; Zikmund, Babin, Carr, & Griffin, 2012). In this research, Likert scale was used in the matrix questions as mentioned above. Besides, Likert scale was used to ask respondents to estimate the magnitude of crisis impacts on their markets and magnitude of responsiveness improvement of their SMS system after the 2008 GFC. A five point scale was adopted because it could not induce respondents to form an attitude or opinion (Zikmund et al., 2012, p. 328).

4.3.4.3b. Deciding Question Sequence

Following the selection of the types of question-answer format, question sequencing is next issue addressed. It is important that the survey questionnaire flows in a logical and comfortable manner (Ticehurst & Veal, 2000). A number of principles were observed when designing the questionnaire: (i) starting with easy questions; (ii) starting with relevant questions and (iii) leaving sensitive questions until later (Ticehurst & Veal, 2000). The questionnaire consisted of three major parts:

**Part 1- General information on respondent’s securities market:** seven questions in this part explored the information on market development level, traded securities products, types of SFPs, trading platforms, rating by CRAs in the respondents’ markets.

**Part 2- General impacts of the 2008 GFC on respondent’s securities market:** three questions were designed in this part to enable respondents to share information about general impacts of the 2008 GFC on their markets, features and magnitude of the impacts.

**Part 3- Impacts of the 2008 GFC on respondents’ SMS system:** this was the most important body of the survey questionnaire. This part included nine sections, comprising of 56 questions designed to explore information about details of 2008 GFC impacts on eight components of SMS and improvement of SMS responsiveness after the crisis.

Details of the survey are discussed and copy of survey questionnaire is contained in Box 4.1, 4.2 and Box 4.3, Appendix 4.

4.3.4.3c. Determining Questionnaire Layout

Of equal importance in designing the questionnaire is the layout, because it is a self-administered survey and fault could not be rectified ‘in the field’, extra care was taken to layout the questionnaire in such a way that it allowed respondents to follow the instructions easily and answer all the questions they were meant to answer (Ticehurst & Veal, 2000, p. 149). The layout of the questionnaire has the following characteristics:
- The introduction to the research, name and contacts of the researcher, and the ethics issues of the research were mentioned on the front cover of the questionnaire. In the front cover, there was a part that allowed respondents to share their names and contact if they wish to have a report of survey results that would benefit policy making of all securities regulatory IOSCO members;

- Questions were numbered, headlines were printed in bold and instructions were put into brackets so that the respondents could easily distinguish parts of the survey and follow the questions;

- There were matrix boxes in questions: 3.5.3, 3.5.4, 3.6.3, 3.6.4, 3.8.3, 3.8.4, 3.8.5, and 3.8.6;

- Footnotes were provided for questions 1.2, 3.1, 3.2, 3.3, 3.4, 3.7, 3.8 and 3.9 to define the terms and concepts so that respondents had sufficient information to answer the questions and any doubt could be clarified immediately (Malhotra, 1993);

- There were tick boxes in all questions and sufficient spaces for open-ended questions so that respondents could easily provide their answers;

Besides, because the survey was to be conducted by uploading or emailing electronic copies of the questionnaire to respondents, care was taken so that the copy of the questionnaire was in a professional format that allowed respondents easily fill in electronically using their computers or alternatively print it out and fill in a paper copy.

Overall, the questionnaire was laid out professionally to ensure accuracy and completeness of answers.

4.3.3.3d. Writing of Introductory Remarks

The writing of introductory remarks was the next step in designing the questionnaire. Special consideration was taken to write an introductory remark that explains the purpose of the survey and ask for respondent’s assistance (Ticehurst & Veal, 2000). The remarks were placed on top of the survey questionnaire in a form of front cover note that includes information about the research, identity of researcher, reasons why the survey is conducted and a proposal for respondent’s assistance. In the introductory remark, estimation of time for completing the survey and ethics code was provided to respondents. Further, respondents were assured that their participation is completely volunteering. However, respondents were also recommended to answer in the spirit of IOSCO’s commitment to exchange information at both global and regional levels on member respective experiences in order to assist the market development, to strengthen market infrastructure and to implement appropriate regulation.
Finally, respondents were assured that all information provided by them was confidential and if they provided contact details and wish to obtain the survey results, a report of survey research would be sent to them once the research is completed.

4.3.5. Step 5-Assessment of Reliability and Validity of Survey Questionnaire

The next step of quantitative research is assessment of reliability and validity of the instrument. In order to have confidence in the results of a study, the researcher must be assured that the questionnaire consistently measures what it means to measure when properly administered (Greco, Walop, & McCarthy, 1987). In this research, triangulation was used as an effective strategy for establishing validity and reliability of the survey findings (Denzin, 2012).

4.3.5.1. Assessment of Reliability of the Survey Questionnaire

Reliability, or reproducibility, indicates whether the questionnaire performs consistently (Greco et al., 1987). It means that a questionnaire is said to be reliable when it is error free and offers similar results over time and across various items in the instrument (Sekaran, 2000; Townsend, 1979; Zikmund, 2000; Zikmund et al., 2012). A questionnaire should have no random errors. A random error may result from people guessing the answers or accidentally choosing a response category that they did not intend to select.

Reliability of the research was measured in two terms, repeatability of the questionnaire and the consistency of the answers. It means that responses to the questionnaire should be consistent over time. There are three ways of examining reliability: (i) examine test-retest reliability (ii) examine inter-observer reliability; (iii) examine the consistency within the questionnaire (Greco et al., 1987; Ticehurst & Veal, 2000). It is not feasible and costly to do the test-retest reliability and inter-observer reliability in surveying 110 securities commissions located around the world. Therefore, consistency within the questionnaire was examined to ensure reliability of the survey research.

In this research, questions were repeated throughout the questionnaire and logical pattern of answers were checked. For example, respondents were asked to identify whether the changes (if any) in their SMS approaches after the 2008 GFC were the policy responses to the crisis in one question. In the next questions they were asked to identify all the reasons that led to the changes in their SMS approaches after the crisis, including the reasons related to the crisis. The reliability exists whenever a respondent said “yes” to the previous question and tick in the boxes delineating crisis impacts in the later.
## Table 4.5. Strategies for establishing of questionnaire reliability and validity

<table>
<thead>
<tr>
<th>Quality</th>
<th>Strategies of establishment</th>
</tr>
</thead>
</table>
| Reliability | - Professional wording and laying out  
- Easy understood instructions  
- Providing definitions and explanations  
- Repeating questions and checking for the logical pattern of answers  
- Pretesting the questionnaire in pilot study  
- Triangulation of data |
| Validity | |  
- **Face validity**  
  - Professional wording and laying out  
  - Pretesting the questionnaire in pilot study |
| | - **Content validity**  
  - Determining of operational definitions in exploratory research  
  - Pretesting the questionnaire for the feedback on concepts |
| | - **Criterion validity**  
  - Repeating questions and checking for the logical pattern of answers  
  - Empirical investigation through exploratory research and documentary research |
| | - **Construct validity**  
  - Empirical investigation through exploratory research and documentary research  
  - Pretesting the questionnaire in pilot study  
  - Analysis of survey data  
  - Triangulation of data |

*Source: developed for this research*

Besides, triangulation of survey data with the data from exploratory research in Phase 1 and documentary research in Phase 3 of the research was used effectively to confirm the reliability of the survey results.

Furthermore, random errors were restricted and reliability of the questionnaire was established by other methods such as careful wording of the questionnaire, providing clear instructions, providing definitions and explanations where necessary, and pre-testing the questionnaire.

### 4.3.5.2. Assessment of Validity of the Survey Questionnaire

Validity refers to whether the researchers actually measured what they wanted to measure (Greco et al., 1987; Sekaran, 2000; Ticehurst & Veal, 2000; Townsend, 1979; Zikmund, 2000; Zikmund et al., 2012). Validity of the questionnaire was assessed in terms of face validity, content validity, criterion validity and construct validity.

*Face validity* refers to the appearance of the questionnaire (Greco et al., 1987). The questions to be asked were: Does it look professional or poorly constructed? Are the questions worded, phrased and laid out appropriately? Are the options for responding appropriate? Care was taken so that both the pre-test and the final questionnaire were professional-looking to ensure serious responses.

*Content validity* is a function of how well the dimensions and elements of a concept have been delineated (Sekaran, 2000; Sekaran & Bougie, 2010; Zikmund et al., 2012). In this research,
content validity was established through exploratory research stage and developed further in pretesting step. For example, the concept such as SMS philosophy, architecture, approaches, macro and micro-prudential supervision, SMS responsiveness were discussed and developed in exploratory research (Chapter 2). Pilot survey also helped to define where the footnotes should be provided for clarifying doubts of respondents about the concepts.

Criterion validity indicates the effectiveness of a questionnaire in measuring what it purports to measure or the ability of a measure to correlate with other standard measures of the same construct, which can be established as concurrent validity or predictive validity (Greco et al., 1987; Hayes & Dredge, 1998; Sekaran, 2000; Sekaran & Bougie, 2010; Zikmund, 2000; Zikmund et al., 2012). In this research, a concurrent validity was established in each measure of 2008 GFC impacts on SMS. For example, the respondents were asked to indicate whether the changes in their SMS architecture (if any) are a policy response to 2008 GFC in one question. In the next multiple choice question, respondents were asked to confirm the reasons for their SMS architecture changes, including the reasons related to the crisis. In that way, validity of the measure on the actual crisis impacts on SMS architecture could be defined through consistency in answers by respondents. Besides, empirical evidence from exploratory research in Stage One and documentary research in Stage Three helped to examine the validity of the survey research in this stage. Comparison of the survey results and outcomes of the exploratory research and documentary research showed a high correlation in the measures of crisis impacts on SMS.

Construct validity refers to the extent to which the new questionnaire conforms to existing ideas or hypotheses concerning the concepts (constructs) that are being measured (Greco et al., 1987; Kline, 1998; Sekaran, 2000; Sekaran & Bougie, 2010). Triangulation to ensure construct validity was also done by comparing the survey results with hypothesized constructs from exploratory research in Stage One and empirical evidences from documentary research in Stage Three. The comparison showed a strong correlation between the survey results, the hypothesized constructs and empirical evidence from qualitative research.

In summary, multiple strategies were used to establish the questionnaire reliability and validity. Table 4.5 lists the assessment strategies of reliability and validity in this research.
4.3.6. Step 6 - Survey Administration

The next step discussed is survey administration, including pre-test, revising, drafting, sending and collecting the survey.

4.3.6.1. Pre-test, Revise and Final Draft of Survey Questionnaire

The pretesting was undertaken with a group of respondents selected on a convenient basis as is customary for pre-test (Sekaran, 2000; Sekaran & Bougie, 2010; Zikmund, 2000, 2003; Zikmund et al., 2012). Five participants involved in a pilot survey were colleagues and peers from researcher’s network of securities regulators. The primary purposes of the pilot survey were: (i) testing questionnaire wording, sequencing and layout; (ii) gaining familiarity with respondents; (iii) estimating of response rate and completion time; and (v) testing analysis procedures (Ticehurst & Veal, 2000).

The pilot survey uncovered biased or ambiguous questions before the survey was administered with a large sample of respondents (Zikmund, 2000, 2003; Zikmund et al., 2012). The following revisions were made as an outcome of the pilot survey:

- Rewording the questionnaire and providing footnotes for clarifying the concepts and definitions to facilitate accurate and prompt responses of IOSCO members;
- Reorganizing 16 questions into eight questions with matrix boxes that in turn shortened the questionnaire and made it easier for respondents to answer;
- Revising the questions about the magnitude of crisis impacts and SMS responsiveness into Likert scale with estimations in terms of percentages;
- Revising of introductory remarks to provide more information about the research and to confirm the confidentiality of survey data.

In summary, pre-test and revision were undertaken to ensure the validity and reliability of the survey questionnaire.

4.3.6.2. Sending and collecting survey responses

First, permission from IOSCO for conducting a survey with its securities regulatory members was obtained from the IOSCO General Secretary in November 2013 through the support of SSC Vietnam. The survey research with the sample size of 110 securities commissions (as decided in Step 2) had been conducted using the IOSCO Knowledge Sharing Portal and by emailing to the IOSCO members in three phases:
- The first phase was taken in March 2014 by uploading the survey and request for sharing information into IOSCO Knowledge Sharing Portal with collaboration with IOSCO Technical Team. No response was collected from this phase.

- The second phase was conducted in May 2014 by sending survey by emails to 110 contact persons of IOSCO, who are representatives from 110 IOSCO member securities regulators that were selected in the survey sample. A reminder was sent to the contact persons later in June 2014. A total of 16 responses from 16 securities commissions were collected in this phase.

- The third phase was taken using network of SSC international relations staff. The survey was sent by staff and Deputy Director of International Relations of SSC to colleagues and peers in other IOSCO member securities regulators to get more responses in September 2014. Twenty six responses were collected in this phase, making the 42 total respondents out of the approached 110 securities regulators in this survey research.

Responses were received by email from respondents. Copies of responses were downloaded and stored electronically. Data was then codified and analysed by using SPSS.

### 4.3.7. Step 7-Data Analysis Strategy

The next issue to consider is data analysis strategy. Four steps involved in this stage are discussed, including: (i) checking of questionnaire completeness and eligibility (ii) coding of responses; (iii) cleaning and screening of data; and (iv) selecting of appropriate data analysis strategy (A. C. Burns & Bush, 2000; Malhotra, 1993; Sekaran, 2000; Sekaran & Bougie, 2010; Ticehurst & Veal, 2000).

#### 4.3.7.1. Checking of Questionnaire Completeness and Eligibility

The surveys returned by email from 42 respondents were checked for completeness, consistency, respondent eligibility and accuracy (Iacobucci & Churchill, 2009; Sekaran & Bougie, 2010; Ticehurst & Veal, 2000). The following questions were set out to guide the process of checking the quality of the questionnaire: (i) Are the responses legible/readable? (ii) Are all important questions answered? (iii) Are the responses complete? (iv) Is all relevant contextual information included (Trochim, 2006). The answers were returned on different dates, and were all checked carefully by the researcher. In some cases, communications were made with the persons who completed the survey for clarification or further information.

Forty one out of the 42 responses were usable for data analysis because they were completed by well-trained staff from the respondent securities commissions and communication was made for any omission or clarification.
4.3.7.2. Coding of Responses

Coding of data is the process of assigning a code, usually a number to each possible response to each question (Malhotra, 1993, 1996). As discussed in Section 4.3.4.3, this research used open-ended questions and pre-coded questions. Five subtypes of pre-coded questions, including dichotomous closed-end, categorical, multiple choice, matrix and labelled scales were used in this research. The pre-coded question format allowed the researcher to pre-code questionnaire answers and made the codes ready before receipt of the survey responses. The process is defined as developing a codebook that contains SPSS variable names, variable types (string or numeric), variable description (SPSS label), variable coding instruction (SPSS value, code for missing value) and measurement (SPSS scale, ordinal, nominal) (P. Burns & Burns, 2008; Ho, 2006; Huizingh, 2007; Trochim, 2006).

The following principles were observed in coding of closed-end questions: A dichotomous closed-end or categorical question was coded as a numeric variable with a number assigned for each option. A multiple choice question was coded as multiple separated variables for its sub-questions. A matrix or labelled scale question was coded as a single variable with a numeric code assigned for each answer option (Huizingh, 2007). As for the missing values, the number 77 was defined as code for “not applicable” answer, similarly, 88 was for “no response” and 99 was for “not available”.

The open-ended questions can only be processed for SPSS input after receiving all responses by creating a limited number of categories so that the responses can be categorized into manageable groups with specific codes (McCormack & Hill, 1997). Due to disperse in the responses to open-ended qualitative questions, the researcher decided not to code the open-ended questions but left them as string variables in the database and saved time as it was no need to wait for all responses to be received (Huizingh, 2007, pp. 25-26). The SPSS still allows analyzing of the string variables and categorizing them in further analysis because the number is limited and manageable.

4.3.7.3. Cleaning and Screening of Data

Data cleaning and screening is an initial analytical assessment of data (R. Cox & Donnelly, 2011). After the data from survey responses were coded and entered the SPSS program, cleaning and screening of data were undertaken to identify outliers that might arise from a procedural error such as data entry error or mistake in coding (Hair, 1998; Ho, 2006; McCormack & Hill, 1997). Pattern of missing data was explored to ensure that any potential problem connected with the missing data could be identified before data analyzing (R. Cox & Donnelly, 2011). No response answers were categorized and identified for cleaning of the data.
so as they did not affect statistics and interpretation of the variables. Non-response bias was assessed by following three methods recommended by Armstrong and Overton (1977), Miller and Smith (1983) and Lindner, Murphy, and Briers (2001).

4.3.7.4. Selecting of Appropriate Data Analysis Strategies

This section discusses the data analysis strategies adopted in this research. Further discussion and details of data analysis is provided in Chapter 5- Analysis and Findings of Quantitative Data.

Descriptive Analysis Strategy

A descriptive analysis strategy was adopted in this research. Descriptive analysis refers to the transformation of raw data into a form that would provide information to describe a set of factors for easy understanding and interpreting (Sekaran & Bougie, 2010; Zikmund, 2000; Zikmund et al., 2012). Descriptive analysis firstly provided an overview of data through frequency distribution as a necessary initial step in data analysis (Sekaran, 2000; Sekaran & Bougie, 2010). Later, descriptive statistics techniques were used to describe the changes in eight components of SMS as the policy responses to 2008 GFC. For this purpose, multiple univariate analysis was used with the crisis-induced policy changes in eight SMS components, which were treated as single variables. Frequency distributions technique was the key tool for descriptive analysis in this research as the variables were all categorical.

Comparative Analysis Strategy

A comparative analysis strategy was adopted in this research to explore the similarities and differences in two groups of developed and emerging markets in responding to 2008 GFC impacts. Bivariate analysis, using cross-tabulation and graphical representation, was used for inspections and comparisons of differences in crisis policy responses among two groups of developed and emerging markets (Iacobucci & Churchill, 2009; Zikmund et al., 2012).

Correlational Causal Comparative Analysis Strategy

Inferential statistical instruments were used to explore the cause and effect components of data. In order to gauge the relationship of responsiveness and changes in SMS system after the crisis, a regression model, where Responsiveness of SMS = f (changes in SMS framework), was developed. The changes in SMS framework after the crisis are explanatory variables and SMS responsiveness is the dependent variable.

In this research, the explanatory variables are nominal and the dependent variable is ordinal. All seven explanatory variables, i.e. the crisis-induced policy changes in terms of SMS architecture, SMS approaches, macro-prudential supervision, micro-prudential supervision, the
securities traded products supervision, market conduct oversight and supervision over SROs and market institutions were categorical, were coded as dummy variables. It means that the presence of the policy change was recorded as one (1) and its absence was recorded as zero (0). The ordinal dependent variable—the SMS responsiveness was recorded in a five point Likert scale. Therefore, the regression model used was a cumulative odds ordinal logistic regression with proportional odds, which uses cumulative categories:

\[ L_{r-1} = \alpha_{r-1} + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_7 X_7 \]

The PLUM (Polytomous Universal Model) procedure of SPSS was used to explore the correlational causal relationships between the crisis-induced policy changes and the SMS responsiveness improvement in post-crisis time, using the above mentioned logistics regression model. Details of the qualitative data analysis is presented in Chapter 5- Analysis and Findings of Qualitative Data.

4.4. Research Procedure- Qualitative Research

This section discusses the qualitative research that was conducted in Stage One and Stage Three of the research as outlined in Figure 4.2. As discussed earlier in Section 4.2, qualitative research was undertaken in this research for the purposes of defining research questions, gathering data for triangulation, understanding the trends, explaining the particular context and answering the questions arising from the quantitative research in Stage Two. This section includes discussion about: (i) design of qualitative research (ii) sampling method of qualitative research; (iii) collecting and administrating of qualitative data; (iv) qualitative data analysis strategies; and (v) assessment of qualitative research validity and reliability.

4.4.1. Design of Qualitative Research

This section discusses the design of the qualitative research. The qualitative research in this study comprises of an exploratory research, conducted in Stage One and an explanatory research, conducted in Stage Three.

4.4.1.1. Exploratory research

The purpose of the exploratory research is that the results of the first method (qualitative) can help to develop or inform the second method (quantitative) (Greene et al., 1989). This design is usually based on the premise that an exploration is needed because: (i) measures or instrument are not available; (ii) the variables are unknown; or there is no guiding framework or theory (Creswell & Clark, 2011).
In this study, exploratory research was conducted with the goals of establishing a theoretical framework, defining research questions, and constructing operational definitions for further research in Stage Two and Stage Three. The exploratory research was designed with two components. The first component included the literature review that helped to develop a theoretical framework of SMS, SMS framework and the concept of SMS responsiveness (sections 2.2 and 2.3, Chapter 2). The second component of the literature review helped unfold the research gaps, frame the research scope, define the research objective and formulate research questions (sections 3.2, 3.3, 3.4, Chapter 3). The literature review was flexible but well-structured for framing and ‘step-by-step enfolding’ (Sobh & Perry, 2006, p. 1202) the research topic: the impacts of the 2008 GFC on SMS framework. The qualitative exploratory research design is shown in Figure 4.4.

4.4.1.2. Explanatory Research

The explanatory research was conducted in Stage Three for the purposes of data and theory triangulation, further clarifying the research questions and identifying answers to the research questions that had arisen from the quantitative research in stage 2 (Creswell, 2008; Creswell & Clark, 2011; Greene et al., 1989). This qualitative research stage includes focus group interviews and documentary research.
**Focus group interviews**: Interviews are a way to collect information and a vehicle for producing performance texts and performance ethnographies about self and society (Denzin, 2001, p. 24). Focus group interviews are simple, quick and convenient form of interviews that capitalizes on communication between research participants in order to generate data (Freeman, 2006; Stewart, Shamdasani, & Rook, 2007).

In this research, focus group interviews were conducted because it is considered helpful for participants to discuss perceptions, ideas, opinions, and thoughts (Krueger & Casey, 2000) and useful for explaining survey results from quantitative research (Kitzinger, 1994; O'Brien, 1993). Beside, focus group interview is an economical, fast, and efficient method for obtaining data from multiple participants (Krueger & Casey, 2000).

The primary objective of the focus group interviews was clarifying the research issues and triangulating data related to SMS philosophy collected from Stage One and Stage Two. The exploratory research in Stage One showed that the securities regulatory community seemed to dismiss the concepts of EMH and Standard Finance as the SMS philosophy after the incidence of 2008 GFC. However, analysis of data collected from the survey in Stage Two showed that the securities regulators prefer to adopt both ideologies of Standard Finance and Behavioural Finance rather than to dismiss the ideas of the earlier. Therefore, focus group interviews that established opportunity for the researcher to gather more data and in more details for continuous assessment and evaluation of information were needed to understand the fact (Guba & Lincoln, 1994; Jennings, 2011).

**Documentary research** refers to the use of outside sources of documents to support the viewpoint of an academic work or the analysis of documents that contain information about the phenomenon under investigation (K. D. Bailey, 1994; Guba & Lincoln, 1994). It is just as good as and even more cost-effective than social surveys, in-depth interviews or participant observation (K. D. Bailey, 1994). Documentary research was relevant for identifying the 2008 GFC impacts on SMS because the textual data is an ‘attractive nuisance’ that offers real and full insight into phenomena (Miles, 1979; Miles, Huberman, & Saldana, 2013).

As discussed in Section 4.2, documentary research in this stage helped to confirm and triangulate the findings from the quantitative research in Stage Two. Furthermore, the documentary research also provided a rich source of data for understanding and explaining the divergence in the trends of developed and emerging markets responding to crisis impacts. However, the usefulness of documentary research depends on whether the source of documents is accessible and accurate (K. D. Bailey, 1994; Miles, 1979). In this research, care was taken to
ensure the accessibility, authenticity, representativeness and accuracy of the documents for investigation (K. D. Bailey, 1994).

In short, qualitative research design at this stage was conducted with the purpose of: (i) understanding the meaning of events, situations and actions; (ii) understanding the particular context; and (iii) developing causal explanation of the 2008 GFC impacts on SMS (Maxwell, 1992). The explanatory research design is shown in Figure 4.4.

4.4.2. Sampling Method of Qualitative Research

Sampling in qualitative research is subject to the research objectives and the characteristics of the study population. In this qualitative research, two sampling methods were adopted: purposive sampling and convenience sampling.

Purposive sampling is relevant for the documentary research as the goal is not to generalize to a population but to obtain a rich description of and insights into a phenomenon (Onwuegbuzie & Leech, 2007).

In purposive sampling, a group of participants is decided on the basis of preselected criteria relevant to the research question. The purposive sample size, which may or may not be fixed prior to data collection, depends on the study’s objectives as well as resources and time available. Because the purposive sample size is determined on the basis of theoretical saturation, it is therefore most successful when data review and analysis are carried out in conjunction with data collection (Denzin, 1978; Guba & Lincoln, 1994; Miles, 1979; Miles et al., 2013; Mishler, 2000). In this research, policy documents and reports of IOSCO and its 110 ordinary members (as defined for quantitative research in Stage Two) were searched for the description, assessment and analysis of the 2008 GFC impacts on SMS taken by the securities regulators. The number of documents for analysis was not fixed prior to data collection and built up over time during the process of study.

Convenience sampling is adopted for focus group interviews. Convenience sampling is a technique that uses an open period of recruitment that continues until a set number of subjects, events, or institutions are enrolled (Luborsky & Rubinstin, 2011). This approach is appropriate for the studies drawing on predefined populations (Luborsky & Rubinstin, 2011) such as this study. The number of 30 high-profiled securities regulators and experts were approached and invited to participate into the focus group interviews. The number was determined on the basis of convenience (using of the researcher’s network of colleagues in securities regulation community and the network of IOSCO).
4.4.3. Collecting and Administering of Qualitative Data

The next issue considered is collecting and administrating of qualitative data.

4.4.3.1. Qualitative Data Collection

**Literature review:** the principal method to collect data for qualitative documentary research is the literature review. The literature review provided a primary source of data for exploratory research and explanatory research stages. Documents for reviewing were the public records as defined by Guba and Lincoln (1994).

In the exploratory research, the literature review comprises 283 documents, including academic articles and papers, policy documents, recommendations, interviews of securities regulators and think tanks about theoretical issues of SMS, impacts of the 2008 GFC on SMS, the framework of SMS before and after the 2008 GFC, and SMS responsiveness. The literature review was presented in two sections of Chapter 2 and one section of Chapter 3 to identify previous and current knowledge about three areas: (i) theoretical framework of SMS as a public policy process with imprints of Standard Finance and Behavioural Finance, and perception of responsive SMS (section 2.2 chapter 2); (ii) framework of SMS with its eight components (Section 2.3 Chapter 2); and (iii) impacts of the 2008 GFC on the SMS framework (Section 3.2 Chapter 3).

In the explanatory research, 949 documents, including policy papers and reports of IOSCO, reports of international organizations, policy papers, reports, legal documents, rules, online articles, websites, speeches, presentations, interview notes, project reports, and research of IOSCO members were researched to develop a textual database for further analysing the findings of the crisis impacts on SMS that were identified by quantitative research in Stage Two. The literature review in this research is analysed and reported in Chapter 6 - Analysis and Findings of Qualitative Data. Websites of IOSCO and IOSCO members were used to obtain updates and documents. In addition, literature review of 142 books, articles, websites and papers reviewing research methodology provided a rich source of references for development of research methodology.

The literature review has been conducted by observation of the four principles: authenticity, credibility, representativeness and meaning (Scott, 1990).

**Focus group interviews:** the second method of collecting data for the qualitative research is focus group interviews.

As discussed earlier in sections 4.4.1.2, focus group interviews have been conducted for supporting results of the survey questionnaire (O'Brien, 1993) in Stage Two. Focus groups are
the most appropriate method for researching attitudes and experiences (Kitzinger, 1995); the method was used in the Stage Three of the research to explore the insights of a small group of securities regulators and experts about post-crisis SMS philosophy.

In this research, focus group interviews were not conventional focus group discussions taken in a certain location within one or two hours with a moderator and a number of participants between 6 and 12 (Burke & Onwuegbuzie, 2003; Johnson & Christensen, 2004; O'Brien, 1993). Due to the complexity of the research issues and infeasibility of gathering a meeting for group discussion, ‘online’ interviews and interviews with anonymous securities regulators were conducted. However, it was still a focus group interview method by its nature because it is “a way of collecting qualitative data, which—essentially— involves engaging a small number of people in an informal discussion, ‘focused’ around a particular topic or set of issues” (Wilkinson, 2004, p. 177).

Interview invitations were sent to 30 high-profile current/former securities regulators and securities experts who work for different securities regulators, think tanks and international organizations. Organizing a face-to-face or teleconference meeting for the group discussion was infeasible because the potential participants work and reside in different jurisdictions. Multiple methods were used to interview during an extended time frame from June 2014 to September 2015 by emails and by disseminating the interview questions in 2015 annual conference of IOSCO. During the time frame from June 2014-June 2015, only 02 focus group members agreed to answer the interview question and 02 interviews were conducted by emails. Highly sensitive theme of post-crisis SMS philosophy might have limited the potentiality of response. Then ten interviews were conducted on the convenient and anonymous basis at the IOSCO annual conference 2015 in London with assistance of the researcher’s colleagues from the State Securities Commission of Vietnam. Another interview was conducted by email in September 2015. In total there were 13 focus group members. A copy of focus group interview invitation and response format is provided in Box 4.4, Appendix 4.

The qualitative data gathered from these focus group interviews was then used in further analysis of quantitative research findings to infer implications and conclusions for post-crisis securities supervision. Details of focus group interview data analysis are presented in Chapter 6-Analysis and Findings of Qualitative Data.

4.4.3.2. Administrating of qualitative data

Administrating of qualitative data is the first step that transforms (Wolcott, 1994) and makes sense of data (Hammersley & Atkinson, 1995). In this research, administration of qualitative
Setting up qualitative data library: The exploratory and explanatory qualitative research resulted in accumulation of a large amount of qualitative textual data including computer readable electronic files (PDF, Word or JPEG) that need to be put into a library (database) for management, storage and processing.

In this research, qualitative data was stored, managed and processed by Endnote solely rather than by both of Endnote and Nvivo (as usual in other qualitative researches) because of the following reasons:

- There is no need for using Nvivo and Endnote at the same time because all the qualitative data is textual data that requires comprehensive reading and analytical skills rather than complicated tools of management. Endnote facilitates analysing and reporting the data at the same time with referencing (*cite when you write* function), which is vital for analysis of data from the literature review and documentary research.

- Using Endnote in this research is efficient in terms of time, resources, and costs because it is a software program that allows: (i) creating and organizing a database of references and documents; (ii) storing PDF documents and other files with the references; and (iii) automatically formatting in-text citations and bibliographies in the chosen reference style.

- EndNote provides tools for storing, categorizing and indexing textual data, creating the basis for an “audit trail” (Guba, 1981, p. 78; Guba & Lincoln, 1994) of the qualitative research. Searching tools with multiple fields such as author, keyword, label, etc. help the researcher instantly find a topic of interest in the database.

- The web-desktop synchronizing function of Endnote helps save time and effort in putting new data into and updates the database seamlessly using web and different computers at any time and in any location.

Administrating of data is an ongoing process that started at the moment the qualitative research commenced. Once obtaining the documents for reviewing, the researcher made electronic copies and stored them in Endnote as attachments to bibliography information. Internet links for the documents, labels, keywords, notes of the researcher, abstracts or other information were also recorded in relevant fields of Endnote for later searching and analysing. Available web application of citations made it easy to import citations instantly and correctly from websites into the Endnote Library.
Once the references and documents had been stored in the Endnote Library, they were immediately categorized into groups. The groups were gradually created during the qualitative research process, depending on the themes, events or issues revealed in this process. A new document found was then added into an existing group or into a newly created group, which links to a specific theoretical or descriptive idea (Gibbs, 2002). For example, some key groups are: Behavioural Finance, Standard Finance, Theoretical framework of SMS, 2008 GFC Impacts, SMS Components, Responsive Regulation, IOSCO Policy Papers, and SMS Before Crisis. The process was an initial step of data management, creating a user-friendly library for the qualitative data.

**Coding of qualitative data:** Coding of qualitative data refers to the process of identifying one or more units of text or passages that demonstrate some theoretical or descriptive idea. Coding in qualitative analysis is a way of organizing or managing the data where all the original data were preserved and codes were added to the data (Gibbs, 2002). Codes are tags (Miles et al., 2013) or labels (Creswell & Clark, 2011), which are assigned to whole documents or segments of documents to help catalogue the key concepts while preserving the content of documents.

As soon as documents or texts had been entered into the Endnote Library and categorized into groups, they were assigned a code in terms of “label” in Endnote. A text might be densely coded with more than one code attached to it (Gibbs, 2002, p. 4). The process of coding enabled classifying the data at more detailed level while not making the structure of data groups more complicated. That label helps the researcher to retrieve the data at any time later and display it in a specific group for the purpose of analysing and reporting.

In that way the qualitative database of approximately 1400 documents was managed and utilized efficiently for qualitative data analysis.

**4.4.4. Qualitative Data Analysis Strategies**

The next issue addressed is the qualitative data analysis strategies. Data analysis is normally determined by the research objectives (deductive) and multiple readings and interpretations of the raw data (inductive) (Thomas, 2006). In an inductive analysis, a researcher moves from data to theory while in a deductive analysis, he/she starts with a theory or hypothesis and then test its implication with data.

The inductive analysis strategy was adopted by many researchers (Thomas, 2006); some labelled it (Backett & Davison, 1995; Bryman & Burgess, 2002; Lincoln & Guba, 1985; Strauss & Corbin, 1998; Thomas, 2006) and some just used it implicitly (Creswell & Miller, 2000; Jain
& Ogden, 1999; Miles & Huberman, 1994; Miles et al., 2013). Inductive analytical framework was adopted for this qualitative research for the following reasons:

- The general inductive approach provides a convenient and efficient way of analysing qualitative data for many research purposes (Thomas, 2006);

- The inductive analysis approach is appropriate for the research design (sequential mixed methods as discussed in Section 4.2). Inductive analysis strategy is applicable for Stage One- exploratory qualitative research because its objective is to define the research questions. Deductive analysis is relevant for quantitative research in Stage Two to obtain the findings from data to answer the research questions. The analysis strategy for the qualitative research in Stage Three is inductive again for triangulation and retriroduction;

In this qualitative research, the inductive analytical framework adopted from Thomas (2006) was adopted as follows:

- In Stage One - exploratory research, qualitative data collected from the literature review was analysed in accordance with the research objectives, which identify domains and topics to be investigated, including crisis impacts on eight components of SMS and SMS responsiveness. In Stage Three-explanatory research, qualitative data from documentary research and focus group interviews was analysed according to the research themes arisen in quantitative research in Stage Two, including divergence of securities regulators from emerging markets and developed markets in responding to the crisis impacts and insights about SMS philosophy after the crisis. The analysis was carried out through multiple readings and interpretations of the raw data, the inductive component (Thomas, 2006);

- The primary mode of analysis was the development of categories from the raw data into a model or framework (Thomas, 2006). For example, from the raw qualitative data, the theoretical framework of SMS with the imprints of Standard Finance and Behavioural Finance was developed; the SMS framework was constructed with eight components; and the concept of SMS responsiveness was defined accordingly. In this analytical model, coding process was conducted at the same time with identifying the key research themes and constructing the research questions;

- The findings result from multiple interpretations were shaped by the assumptions and experiences of the researcher, therefore it was a key decision to define what was more important and less important in the data. For example, the enormous quantity of data available about the 2008 GFC impacts was filtered to draw out the essential crisis impacts on SMS and policy responses by the securities regulators;
The trustworthiness of findings derived from inductive analysis then was assessed using similar techniques to those that were used with other types of qualitative analysis (Guba & Lincoln, 1994; Thomas, 2006). The trustworthiness is discussed further in the next section.

In summary, the appropriate inductive analytical framework had been conducted in qualitative research, assuring the process of triangulation and retroduction between the qualitative and quantitative research results, in conformity with the sequential mixed method design on the stance of critical realism. More details of qualitative analytical techniques are discussed in Annex 6.1.

4.4.5. Assessment and Establishment of Qualitative Research Reliability and Validity

This section discusses the concepts of validity and reliability in qualitative research and presents the strategies for obtaining reliability and validity in this research.

Validity and reliability are stated by Patton (2002) as two factors which any qualitative researcher should be concerned about while designing a study, analysing results and judging the quality of the study. However, it is claimed that concept of reliability is not relevant and even misleading in qualitative research (Stenbacka, 2001). While the terms reliability and validity are essential for quality of a quantitative research, in qualitative paradigms the terms credibility, confirmability, dependability and transferability are criteria for quality (Guba, 1981; Guba & Lincoln, 1994). In qualitative research, Lincoln and Guba (1985, p. 300) use the term “dependability” for the notion of “reliability”.

The term of validity is also disputable in qualitative research and it was suggested by Creswell and Miller (2000) that the term is affected by the researcher’s perception of validity in the study and his/her choice of paradigm assumption. In the qualitative paradigms, it is argued that there can be no validity without reliability and a demonstration of the former (validity) is sufficient to establish the latter (reliability) (Lincoln & Guba, 1985). Hence, reliability is a consequence of the validity in a qualitative study (Patton, 2002). The idea of trustworthiness (Mishler, 2000) which is “defensible” (Burke, 1997, p. 282) and establishes confidence in the findings (Lincoln & Guba, 1985) was used as a norm of reliability and validity in qualitative research (Golafshani, 2003). In this research, the five criteria trustworthiness framework developed by Lincoln and Guba (1985) for the qualitative research was adopted. The following strategies were taken to ensure the research trustworthiness:

Credibility in qualitative research deals with the question how congruent are the findings with reality (Merriam, 1988). Ensuring credibility is one of most important factors in establishing
trustworthiness (Lincoln & Guba, 1985). In order to pursue the objective of understanding a complex phenomenon such as the 2008 GFC, care was taken to assure the internal validity of the findings in the qualitative research. Importance of constructing correct operational definitions was recognized. Triangulation was conducted whenever possible to compare and contrast data for identifying of trustworthiness. Content and wording of focus group interviews were determined carefully for obtaining honest answers from participants. Also, qualitative data were checked carefully for accuracy.

Transferability or external validity (Merriam, 1988) in this study concerned with the extent to which the findings about crisis impacts on SMS of a group that accounts for approximately 38% of investigated securities regulator population can be applied to the whole population (Shenton, 2004). The qualitative research was designed and conducted so that the shortage of data coverage confronted by the quantitative research could be made up by qualitative documentary research. In that way the mix-method research design could ensure the transferability of the study. Besides, the qualitative research was conducted in a similar methods adopted by the IOSCO so that the findings would be readable, understandable and applied by IOSCO members.

Dependability refers to reliability of this qualitative research. It means that if the research was repeated, in the same context, with the same methods and with the same participants, similar results would be obtained. In practice, credibility is closely linked with dependability and it can be obtained through “overlapping methods” (Lincoln & Guba, 1985). The sequential mix-method design itself provided tools for triangulation and retroduction, which in turns yield the reliability of the research.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Strategies</th>
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<tbody>
<tr>
<td>Credibility</td>
<td>Constructing correct operational definitions</td>
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<tr>
<td></td>
<td>Triangulation</td>
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<td></td>
<td>Determining of appropriate content and wording of interview to obtain honest answers</td>
</tr>
<tr>
<td>Transferability</td>
<td>Adopting appropriate research design</td>
</tr>
<tr>
<td></td>
<td>Employing familiar methods and methodology to the IOSCO members</td>
</tr>
<tr>
<td>Dependability</td>
<td>Adopting appropriate research design for Reporting the study processes in details</td>
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<tr>
<td>Confirmability</td>
<td>Awareness of potential biases</td>
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<td></td>
<td>Triangulation to reduce researcher’s bias and ensure objectivity</td>
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<tr>
<td></td>
<td>Describing research methodology so as to create an audit trial</td>
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</tbody>
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Source: developed for this research with criteria adopted from Lincoln and Guba (1985)

The quantitative research in Stage Two confirmed the results of exploratory research in Stage One and qualitative explanatory research in Stage Three confirmed the findings of two earlier
stages. Besides, the reliability can be achieved through reporting the study processes in details, thereby enabling a future researcher to repeat the work, if not necessarily to gain the same results (Shenton, 2004). In this research, the methods and methodological choices of research design were documented with scrutiny to enable readers of the research report to understand and assess the extent to which proper research practices have been followed.

Confirmability in this qualitative research concerns the objectivity (Patton, 2002). This means that the neutrality should be assured to establish the degree to which the findings of a study are a function solely of the respondents and conditions of the study and not of the biases, motivations, interests, or perspectives of the researcher. In this research, triangulation has been implemented to obtain such confirmability by reducing the effect of investigator bias (Shenton, 2004). Besides, the research methodology has been described in detail, creating an audit trail, which allows any observer to trace the course of the research step-by-step via the decisions made and procedures described (Guba & Lincoln, 1994; Lincoln & Guba, 1985; Shenton, 2004).

In summary, in this research care was taken to ensure that the trustworthiness (reliability and validity) of the qualitative study was obtained through triangulation, constructing of appropriate operational definitions, using appropriate wording and procedures for focus group interviews, employing appropriate qualitative methods and describing the methods in an auditable ways. Summary of the strategies is listed in Table 4.6.
4.5. Ethical Considerations

The final issue observed in this methodology chapter is discussion of the ethical aspects of the research. Honesty, objectivity, integrity, carefulness, openness, respect for intellectual property, confidentiality, responsible publication, social responsibility, non-discrimination, legality, and human subjects protection are the leading ethical principles (Shamoo & Resnik, 2009) in this research. The ethical aspects considered in this research are presented in Table 4.7.

The research falls into the category of human research, therefore basic principles of ethics in human research adopted from Bouma (2000) were observed as follows:

Principle 1: The persons, groups and organizations that participate in the research were respected and treated with dignity by the researcher (Bouma, 2000, p. 194).

Participants of the research, the IOSCO members were treated with high respect and appreciation not only on the stance that they contributed invaluable inputs for the research, but they are the researcher’s colleagues and peers in the IOSCO network of the securities regulators. The information, especially the personal information provided by research participants was treated with great care. Person names were not recorded. Organization names were recorded for statistical purpose only and the statistical data was kept confidentially by the researcher. Data of survey questionnaire and focus group interviews was analysed and reported anonymously. Names of persons and organizations in documentary research and literature review were only mentioned where it was necessary for the crediting purpose and where the names were publicly disclosed by the persons and organizations (for example published articles, interviews, reports or policy papers of securities commissions and IOSCO members).

Principle 2: the potential benefits of the research substantially outweighed the potential harm to participants (Bouma, 2000, p. 196)

The research was conducted in accordance with the ethics codes that were established and ratified by Southern Cross University Human Research Ethics Committee, in accordance with the National Statement on Ethical Conduct in Human Research. In order to obtain high ethical standards, an Expedited Review Application Form for Low and Negligible Risk Research was submitted and approved by Human Research Ethics Committee (Approval Number ECN-13-229) before the survey questionnaire and focus group interviews were conducted.

Privacy and anonymity of research participants were protected where it was necessary. Care was taken to ensure that the participants benefited from the research rather than being disturbed.
### Table 4.7. Ethical considerations of the research

<table>
<thead>
<tr>
<th>Ethical Aspects</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honesty</td>
<td>Research data, results, methods and procedures, and publication status were reported honestly.</td>
</tr>
<tr>
<td>Objectivity</td>
<td>Bias and self-deception were avoided in research design, data analysis, data interpretation, and other aspects of research where objectivity is required.</td>
</tr>
<tr>
<td>Integrity</td>
<td>Sincerity and consistency were kept throughout research procedures. Promises and agreements were respected.</td>
</tr>
<tr>
<td>Carefulness</td>
<td>Careless errors and negligence were avoided by carefully and critically examination of research procedures and data.</td>
</tr>
<tr>
<td>Openness</td>
<td>Share data, results, ideas, tools, resources. Be open to criticism and new ideas.</td>
</tr>
<tr>
<td>Respect for Intellectual Property</td>
<td>Copyrights and other forms of intellectual property were respected. No unpublished data, methods, or results were used without permission. Proper reference, acknowledgement or credit were made for all contributions to research.</td>
</tr>
<tr>
<td>Confidentiality</td>
<td>Confidential communications, information and data were protected. Anonymity was observed where it is necessary.</td>
</tr>
<tr>
<td>Responsible Publication</td>
<td>All publications within this research were made to advance research and scholarship, not to advance just my own career. No wasteful and duplicative publication.</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>Social good was promoted through the research. Research results were shared with IOSCO securities regulator members for improvement of market regulation.</td>
</tr>
<tr>
<td>Non-Discrimination</td>
<td>Discrimination against research colleagues and respondents on the basis of sex, race, ethnicity, geography, politics or other factors that are not related to their scientific competence and integrity, was avoided.</td>
</tr>
<tr>
<td>Competence</td>
<td>Professional competence and expertise were promoted through the research.</td>
</tr>
<tr>
<td>Legality</td>
<td>Relevant laws and institutional and governmental policies were respected.</td>
</tr>
<tr>
<td>Human Subjects Protection</td>
<td>Harms and risks for respondents were minimized while benefits were maximized. Human dignity, privacy, and autonomy of respondents were respected.</td>
</tr>
</tbody>
</table>

**Source:** adapted from Shamoo and Resnik (2009) with modifications for this research

**Principle 3:** Participants were able to make a voluntarily, informed decision to participate into the research (Bouma, 2000, p. 197)

Appropriate care was taken in this research to ensure that all the participants of the survey questionnaire and focus group interviews were assured of their voluntary participation and provided with full and accurate information about the research. Front cover of the questionnaire and focus group invitation used in the research includes information about the research, its ethics code, the statement that the research participation is completely voluntary and full contact details that participants can use for complaints. Written consents were attached to focus group interview invitations.

**Principle 4:** The research was a public activity, conducted openly and accountably to both the researcher’s community and to the participants in the research (Bouma, 2000, p. 199).
Care was taken in this research to make the participants aware that the data of the survey and focus group interviews, as well as research finding would be made public and used deliberately for a PhD thesis, conference papers, articles, book chapters related to the research project, the reports by the IOSCO and for their use in policy making and future research.

A report of research findings was sent to the survey and focus group participants on the spirit of cooperation and sharing of information among the IOSCO’ members.

4.6. Conclusions

This chapter has summarized the research methodology by reasoning the use of selected mix-methods and discussing their limitations, discussed research procedures used for quantitative and qualitative research and considered ethical aspects of the research.

Critical realism was adopted as a single paradigm for mixed methods in this research. Within the framework of critical realism, mixed methods are appropriate because they ensure complementarity, completeness, developmental, expansion, confirmation, compensation and diversity for the research procedures. Taking the stand point of critical realism as the paradigm of study, the research was designed in a way that allows triangulation in different stages of the study. The overall research design may be described as a sequential mixed method spanning into three stages. Stage One was a qualitative exploratory research to establish theoretical framework of SMS and define research issues. Stage Two was a quantitative descriptive, comparative and causal research to find the answers for the three mentioned research questions. Stage Three was qualitative again with focus group interviews and documentary research for confirmation, completion and retroduction of the findings from qualitative and quantitative research in two previous stages. A survey questionnaire was used for quantitative research while literature review, documentary research and focus group interviews were the techniques employed for qualitative research. Descriptive, comparative, and correlational causal comparative analysis strategies were employed, using SPSS in quantitative research. Whereas, inductive analysis strategy was used in the qualitative research. Appropriate steps were taken to ensure the reliability, validity and ethical principles of the research.
CHAPTER 5
ANALYSIS AND FINDINGS OF QUANTITATIVE DATA
5.1. Introduction

The primary purpose of this chapter is to present evidence that answer the three research questions: (i) What are the actual impacts the 2008 GFC generated on SMS? (ii) Whether the policy responses to the crisis increased the responsiveness of SMS? (iii) Whether emerging markets followed the same trend of the SMS policy reform as developed markets after the crisis? This chapter is structured into five sections. Section 5.2 describes how quantitative data had been analysed using descriptive research techniques to identify impacts of the 2008 GFC on the philosophy, structure, approaches and five other components of SMS systems. Section 5.3 discusses the data analysis involving the correlational causal relationship between the crisis-induced policies responses and SMS responsiveness improvement post-crisis. Section 5.4 compares the trends of developed and emerging markets in responding to the crisis impacts on SMS. Section 5.5 presents conclusions. The Chapter is complemented by Annex 5 and Appendix 5. Annex 5 addresses sample and data description for an overview of data. Appendix 5 provides additional data for further supporting data analysis discussed in this chapter. The outline of Chapter 5 is presented in Figure 5.1:

Figure 5.1. Outline of Chapter 5- Analysis and Findings of Quantitative Data

![Figure 5.1. Outline of Chapter 5- Analysis and Findings of Quantitative Data](image-url)
5.2. **Descriptive Analysis – Preliminary Findings for Research Question 1 - What Are the Actual Impacts the 2008 GFC Generated on SMS?**

This section presents data analysis for Research Question 1 on the actual changes of SMS eight components due to the impacts of the 2008 GFC. The section is constructed in accordance with the structure of research issues presented in the survey questionnaire. Nine areas of data were analysed, including:

1. General landscape and magnitude of the 2008 GFC impacts on the securities markets of respondents;
2. Impacts of the crisis on SMS philosophy;
3. Impacts of the crisis on SMS structure and the roles of SROs;
4. Impacts of the crisis on SMS approaches;
5. Impacts of the crisis on macro-prudential supervision;
6. Impacts of the crisis on micro-prudential supervision;
7. Impacts of the crisis on supervision of securities products;
8. Impacts of the crisis on market conduct oversight;
9. Impacts of the crisis on supervision over MIs and SROs.

In this chapter, quantitative research findings (QTF) are summarized at the end of each section, summary of QTFs is presented in Table 5.7, Appendix 5.

**5.2.1. General Impacts of the 2008 GFC on the Securities Markets**

Around 97.6% of respondents reported they were affected by the 2008 GFC. There was only one respondent, accounting for approximately 2.4% who stated that the crisis had no impacts on their securities market. Among 40 respondents, who identified crisis impacts to their markets, there were 22.5% who recognized the impacts as direct, 35.0% who reported indirect impacts and 42.5% confirmed that their markets were affected in both direct and indirect terms from the 2008 GFC (Table 5.1).
Table 5.1. Impacts of the 2008 GFC on SMS

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>2.4</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>Yes</td>
<td>40</td>
<td>97.6</td>
<td>97.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Direct or indirect impacts of the 2008 GFC on Securities Market

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>9</td>
<td>22.0</td>
<td>22.0</td>
<td>22.0</td>
</tr>
<tr>
<td>Indirect</td>
<td>14</td>
<td>34.1</td>
<td>34.1</td>
<td>56.1</td>
</tr>
<tr>
<td>Both</td>
<td>17</td>
<td>41.5</td>
<td>41.5</td>
<td>97.6</td>
</tr>
<tr>
<td>Non-applicable</td>
<td>1</td>
<td>2.4</td>
<td>2.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: developed for this research with data from the survey undertaken in 2013-2014

There were 38 respondents who identified the magnitude of crisis impacts to their markets; two respondents stated that it was too difficult to measure the scale of crisis impacts. Respondents were required to evaluate the magnitude of crisis impacts on their market using a five level scale as shown in Figure 5.2 below.

Figure 5.2. Magnitude of crisis impact

Exactly 50% of respondents notified that the crisis impacts on their market were in the ranges of less than 30%. Above 13% recorded a magnitude of 30%-40% and a same percentage reported crisis impacts of 45%-59%. But a higher proportion of respondents (18.4%) reported
the level of 60%-74%. Only 5.3% of respondents reported crisis impact of 75% or more. Quantitative research findings (QTFs) in this section are summarized below:

**QTF1-General impacts of the 2008 GFC on the securities markets:** The 2008 GFC created substantial impacts on the securities markets of the survey respondents. There were dispersed impacts between two groups of developed and emerging markets, suggesting that developed markets were more seriously affected by the crisis.

### 5.2.2. Impacts of the 2008 GFC on Philosophy of Market Supervision

Section 3.1 in the survey questionnaire explored whether 2008 GFC has changed the supervisory philosophy of securities regulators. It also investigated whether regulators still use their conventional theoretical framework in pre-crisis time or have re-constructed the underpinning economic theory of their supervisory system.

Thirty nine or above 95% of respondents reported that the GFC created an impact to their supervisory philosophy. There are 87.8 % of respondents reporting re-evaluation and re-construction of supervisory philosophy as a response to impacts of the 2008 GFC. Only 2.4% of respondents acknowledged that they have replaced pre-crisis theoretical framework by other philosophy. Besides, 4.9 % respondents advised a plan to set up a new framework.

Focus on financial stability, comprehensive supervision with mega-regulator and awareness of behavioural theory were the points revealed by three respondents (7.3%) as their other policy responses to the philosophy of market supervision.

<table>
<thead>
<tr>
<th>Changes due to crisis</th>
<th>Respondents (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-evaluation and re-construction of supervisory philosophy</td>
<td>87.8</td>
</tr>
<tr>
<td>Pre-crisis theoretical framework was replaced by other philosophy</td>
<td>2.4</td>
</tr>
<tr>
<td>New framework is being set up</td>
<td>4.9</td>
</tr>
<tr>
<td>Pre-crisis framework was totally abandoned</td>
<td>0</td>
</tr>
</tbody>
</table>

**Source:** developed for this research with data from the survey undertaken in 2013-2014

Survey members were also asked to identify their SMS philosophy before and after the crisis. Data analysis showed that 81.58% of respondents had used Standard Finance which supports Efficient Market Hypothesis (EMH) and 10.53% of respondents had used a mixture of Behavioural Finance theory and Standard Finance theory as the theoretical framework for market supervision. After the crisis, there was a great transition from the conventional conceptual framework of SMS to a combination of Standard Finance and Behavioural Finance.
Post-crisis, only 7.89% of respondents still fully relied on Standard Finance and EMH as their SMS philosophy while 81.58% of respondents adopted the insights of Behavioural Finance in addition to the conventional wisdom in SMS. The number of respondents using other theoretical frameworks after the crisis also increased slightly from 5.26% to 10.53% (Table 5.3).

Table 5.3. SMS philosophy before and after the 2008 GFC

<table>
<thead>
<tr>
<th>SMS philosophy</th>
<th>Before GFC</th>
<th>After GFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Finance, which supports EMH</td>
<td>81.58%</td>
<td>7.89%</td>
</tr>
<tr>
<td>Theory of Behavioural Finance and Behavioural Economics</td>
<td>2.63%</td>
<td>0%</td>
</tr>
<tr>
<td>A mixture of Behavioural Finance and Standard Finance</td>
<td>10.53%</td>
<td>81.58%</td>
</tr>
<tr>
<td>Other</td>
<td>5.26%</td>
<td>10.53%</td>
</tr>
</tbody>
</table>

Source: developed for this research with data from the survey undertaken in 2013-2014

The transition from 81.58% relying on Standard Finance before the crisis to the proportion of 81.85% having their SMS theoretical framework based on both paradigms post-crisis represents a significant change. The transition made an increase of 68.6% of respondents who adopted insights of Behavioural Finance in post-crisis time.

There were only 29 or 69% of respondents who answered the question whether securities regulators still rely on EMH as the theoretical framework for the SMS after the crisis. Hesitation to answer this question by 23.11% of respondents should be the subject for further study about the role of Standard Finance in SMS philosophy post-crisis (7.89% respondents did not rely on this paradigm before the crisis).

Among the respondents giving their answer to this question, 24 respondents (52.4%) ascertained that EMH is still used by them and five respondents (11.9%) reported that they no longer use the hypothesis as SMS philosophy. It should be noted that among 24 respondents who still use EMH, only three (or 12.5%) rely on it as unique theoretical framework for their SMS philosophy. Twenty one (87.5%) still uses it but also use Behavioural Finance insights or other theory as their underlying theoretical framework.

Table 5.4. Reasons for changing of SMS philosophy

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Respondents (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The 2008 GFC revealed the flaws of the philosophy that existed before the crisis</td>
<td>93.8</td>
</tr>
<tr>
<td>The old philosophy became out of date to respond to new market condition after the crisis</td>
<td>3.1</td>
</tr>
<tr>
<td>Others (following international trends, G20’s or IOSCO’s recommendations)</td>
<td>3.1</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: developed for this research with data from the survey undertaken in 2013-2014

Thirty among 41 respondents answered the question regarding the different reasons for them to change the SMS philosophy and 93.8% agreed that the crisis revealed the flaws of the
philosophy that existed in pre-crisis time and this was the reason for them to change their mindset of SMS. Only 3.1 % of the respondents changed their SMS philosophy because their existing philosophy was outdated and 3.1 % quoted other reasons, including following international trends and recommendations from G20 or IOSCO (Table 5.4). Quantitative research findings (QTF) in this section are summarized below.

**QTF2- Impacts of the 2008 GFC on SMS philosophy:** The 2008 GFC revealed the flaws of SMS philosophy in pre-crisis time and led to re-construction of the SMS theoretical framework of the respondents. Despite the exploratory research suggested that securities regulators were strongly called for abandoning of the pre-crisis supervisory philosophy, which essentially relied on insights of Standard Finance and EMH, the survey research shows that securities regulators were hesitant to do so in post-crisis time. Further study is needed to understand the outcome. Though not abandoned, neo-classical economics theory was no longer the preferable mindset of securities regulatory community. Quantitative data analysis found a transition from a supervisory framework that relied solely on Standard Finance to a post-crisis framework that adopt insights from both Behavioural Finance and Standard Finance. Significance of ideologies from Behavioural Finance in SMS theoretical framework post-crisis is an important fact discovered by the quantitative research.

**5.2.3. Impacts of the 2008 GFC on Securities Market Supervision Architecture**

Section 3.2 of the survey questionnaire required respondents to evaluate types of crisis impacts on SMS structure, roles of SROs, and reasons for changing their SMS architecture after the crisis. There were 40 out of 42 respondents who answered survey question on whether 2008 GFC created any impacts to their SMS architecture and 22 respondents or 55% of the group reported impacts of the 2008 GFC on their supervisory structure. The number of respondents reporting GFC impacts on their supervisory structure is equally divided between two groups of developed and emerging markets.

However, in term of percentage, its shows that the GFC led to changing in SMS architecture of 78.57 % of respondents from developed group but only approximately 39.3% of emerging group had their SMS structure affected by the crisis (see Figure 5.1, Appendix 5). Analysis of data in section 3.2.2 of the survey indicated various impacts of the crisis on their supervisory structure, ranging from re-construction of the existing system to building up new systems, and other reasons. As shown in Table 5.5 a majority of 17 respondents (77.3%) out of the group reporting crisis impacts on their supervisory structure, had re-evaluated and re-constructed their SMS system after the 2008 GFC. Six respondents (27.3%) developed a new SMS structure to
respond to crisis impacts and 13 of them (59%) reported other crisis impacts to their SMS structure.

Table 5.5. Types of crisis impacts to SMS architecture

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Number*</th>
<th>Percentage**</th>
</tr>
</thead>
<tbody>
<tr>
<td>The structure of the SMS before 2008 GFC has been re-evaluated and re-</td>
<td>17</td>
<td>77.3%</td>
</tr>
<tr>
<td>constructed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The structure of the SMS before 2008 GFC has been totally abandoned and</td>
<td>6</td>
<td>27.3%</td>
</tr>
<tr>
<td>replaced by other structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A new structure of SMS is being developed</td>
<td>13</td>
<td>59%</td>
</tr>
<tr>
<td>A new structure of twin-peaks is recommended in a regulatory reform</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>An integrated model of financial regulation is proposed</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Financial Stability Oversight Council, office of Financial Research,</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Bureau of Consumer Financial Protection, Office of National Insurance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>were created</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More power was given to the central bank to supervise derivatives</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>New regime of regulation on OTC derivatives was developed jointly by</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>monetary authority and financial regulator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An office of Securities Business Monitoring within financial regulator</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>was created to strengthen supervision and identify systemic risks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A new financial supervisory agency took over functions of securities</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>regulator and central bank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A push for integrating into EU supervisory network</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Securities Regulator were empowered with new authorities to supervise</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>on the consolidation basis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsibilities of central bank and financial regulator were redesign</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ed in 2011 into twin-peaks model</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The plan to set up a twin-peaks system has been delayed by the crisis</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>A Financial Stability Council has been set up</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Twin-peaks of financial supervision was set up</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>A Plan of SMS restructuring is delayed by the crisis</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

*number of respondents reporting that type of crisis impacts
**percentage of respondents reporting that type of crisis impacts

Source: developed for this research with data from the survey undertaken in 2013-2014

Analysis of data in Table 5.5 shows that restructuring of supervisory system was the major impact of the GFC on SMS architecture. Re-evaluation of SMS structure often leads to three key changes: (i) redesign of system into twin-peaks or integration model; (ii) new power was given to existing financial regulators or securities regulators to enhance systemic stability and supervision over derivatives and SFPs; (iii) new regulators or new structure were established.

Question 3.2.3 and 3.2.4 of the survey asked respondents to identify the approach by which their SMS systems were designed before and after the 2008 GFC. There were four essential approaches used to set up an SMS system, including integration, functional, institutional and twin-peaks. It should be noted that a jurisdiction may choose more than one approach, a hybrid approach or an approach other than the four mentioned approaches to set up their SMS system. Among 40 respondents who answered these questions, 14 were from developed markets and 26 from emerging markets.
Survey data shows that though integration was the most preferred approach (chosen by 16 respondents); functional and institutional approaches (chosen by 15 and 13 respondents respectively) were very popular in pre-crisis time. The twin-peaks model was least preferred with only three respondents having it before the crisis (Table 5.6).

Table 5.6. SMS structure of developed and emerging markets before and after the 2008 GFC

<table>
<thead>
<tr>
<th>SMS structure</th>
<th>Before GFC</th>
<th></th>
<th></th>
<th>After GFC</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Developed</td>
<td>Emerging</td>
<td>Total</td>
<td>Developed</td>
<td>Emerging</td>
<td>Total</td>
</tr>
<tr>
<td>Integration approach</td>
<td>7</td>
<td>9</td>
<td>16</td>
<td>6</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Functional approach</td>
<td>4</td>
<td>11</td>
<td>15</td>
<td>2</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Institutional approach</td>
<td>4</td>
<td>9</td>
<td>13</td>
<td>1</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Twin-peaks</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other approaches</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid with effort of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>consolidation^1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mix of functional and</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>institutional^2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partly integration^3</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strengthened integration^2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple regulators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>operating under a policy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>networking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twin-peaks complemented by</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>central bank</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twin-peaks to be set up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: 1, 2, 3, 4, and 5 were self-defined by respondents
Source: developed for this research with data from the survey undertaken in 2013-2014

After the 2008 GFC, the integration approach preserved its position as the most preferred with the proportion of respondents having integration structure increased from 40% to 52.5% (calculated by dividing number of respondents having this approach by total 40 respondents. The functional approach has not lost its second position despite the proportion of respondents with this structure decreasing from 37.5% to 27.5%). The proportion of the respondents with twin-peaks structure, though increased from 7.5% to 20% after the crisis, only went up one step higher than the proportion of respondents with institutional structure, which was reduced from 32.5% to 17.5%.

As for the role of SROs in the SMS architecture, there are only 17 respondents, accounting for 40.5% of total respondents reported impacts of the 2008 GFC on the roles of SROs in the SMS system. Among this group, six respondents (42.86%) are from developed markets and eight respondents (around 39.29%) are from emerging markets.

It should be noted that some respondents could not respond to the question about the impacts of the 2008 GFC on the roles of SROs in market supervision because they do not have SROs
or the institutions that fall into the conceptual framework of SROs of this research (defined by IOSCO) are not recognized as SROs in their jurisdictions. For example, in one market, there is no SRO and in another market, stock exchanges and other market operators, who are identified as SROs by IOSCO, are not considered SROs because there is no concept of SROs in the market.

Data in Table 5.7 shows that the crisis impacts, which were reported by most of the respondents, are re-evaluation and improvement of the SROs’ roles in SMS (82.35%). Six respondents, equally divided between two groups of developed and emerging markets, reported that SROs in their jurisdiction now still perform the functions of member supervision but less important in SMS. One respondent notified that SROs now play their traditional roles in a re-evaluated framework to ensure a more intrusive role of regulator after the crisis. There was one case where SROs no longer hold any functions in market supervision system. In total the number of respondents reporting diminishing roles of SROs in post-crisis time accounts for 47% of total respondents. Whereas, four cases or 23.52% of respondents said that SROs play a more important role in SMS after the 2008 GFC.

Table 5.7. Impacts of the 2008 GFC on the roles of SROs

<table>
<thead>
<tr>
<th>Crisis Impacts</th>
<th>Developed markets</th>
<th>Emerging markets</th>
<th>Total</th>
<th>%*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roles of SROs in market supervision were re-evaluated for further improvement after the 2008 GFC</td>
<td>6</td>
<td>8</td>
<td>14</td>
<td>82.35</td>
</tr>
<tr>
<td>SROs take more important roles in market supervision after the 2008 GFC</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>23.52</td>
</tr>
<tr>
<td>SROs are less important in SMS than before 2008 GFC but they still perform the function of market /market member supervision</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>35.29</td>
</tr>
<tr>
<td>SROs do not hold any function of market supervision after the 2008 GFC</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>5.88</td>
</tr>
<tr>
<td>Self-regulation does not exist any longer in our market supervision system after the 2008 GFC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other reason (SROs continue to play a role with re-evaluated framework to ensure that regulator plays a more intrusive role)</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>5.88</td>
</tr>
</tbody>
</table>

*Percentage of total 17 respondents who reported crisis impacts on roles of SROs in SMS

Source: developed for this research with data from the survey undertaken in 2013-2014

Nineteen (48.7%) out of 39 respondents to the question identified that changes in the post-crisis SMS structure were actually policy responses of securities regulator to impacts of the GFC. This result is relevant with the proportion of only 55% of respondents reported crisis impact on their SMS structure.

There are 25 respondents who identified reasons for changing their SMS structure after the crisis. As shown in Figure 5.3, 68% of the respondents agreed that the 2008 GFC was the key...
reason leading to the changes in SMS system as it revealed the flaws of pre-crisis SMS structure. Only 16% of the respondents changed their SMS structure as their existing system was no longer relevant to adapt to new environment after the crisis.

**Figure 5.3. Reasons for changing SMS structure after the crisis**

![Figure 5.3](image)

**Source:** developed for this research with data from the survey undertaken in 2013-2014

Twenty four percent or six respondents reported other reasons for them to make changes in their system in post-crisis time, including: (i) changes were made in a planned legislative reform or a capital market development roadmap; (ii) changes were made to implement IOSCO recommendations; and (iii) changes were made in a planned consolidation that allows better oversight of market members to enable timely detection and response to risks. Qualitative research findings (QTF) of this section are summarized below:

**QTF3-Impacts of the 2008 GFC on SMS architecture:** The 2008 GFC generated significant impacts on SMS architecture. The crisis created a good chance for regulators to re-evaluate and reconstruct their system. Changes of supervisory structure were made in response to impacts of the GFC and post-crisis environment. Re-evaluation of SMS structure often lead to three key changes: (i) redesign of system into twin-peaks or integration model; (ii) new power was given to existing financial regulators or securities regulators to enhance systemic stability and supervision over derivatives and SFPs; (iii) new regulators or new structure were established. Qualitative exploratory research stage gave the impression that twin-peaks model has become the favourite financial supervisory structure in post-crisis time. However, quantitative research only found a weak trend to restructure supervisory systems into twin-peaks model in 12.5% of the respondents after the crisis. Integration structure is still the favourite architecture of financial regulators. Functional became less preferable but reserved its second popular position. Twin-peaks model went up one step higher than
institutional structure in the rank. The 2008 GFC also diminished the significance of self-regulation in SMS system. Roles of SROs in the securities market were re-evaluated, improved or reduced to member supervision.

5.2.4. Impacts of the 2008 GFC on Securities Market Supervision Approaches

In section 3.3 of the survey, respondents were required to evaluate impacts of the 2008 GFC on their approaches of market supervision. Usage of the approaches such as merit-based, disclosure-based, market-based, principle-based, rule-based, risk-based, and evidence-based and others in pre and post-crisis time were also explored. Reasons for changing SMS approaches after the crisis were then reported by respondents.

There were 33 respondents out of 41 survey members (or 78%) notified crisis impacts on their SMS practices, representing 85.7% of respondents from developed markets and 78% of respondents from emerging markets. Inherently, the crisis caused a mass impact to the way the securities regulators supervise their market.

Figure 5.4. Impacts of the 2008 GFC on supervisory approaches

As shown in Figure 5.4, the 2008 GFC made a majority of respondents from both developed and emerging markets to re-evaluate and reconstruct their supervisory approach. After the crisis a minority (23.50% from developed and 16.70% from emerging markets) developed new way of supervision. Further, 10.53% of respondents from developed markets abandoned their existing approach and adopted a new one. Whereas, approximately 15.2% of respondents reported other impacts such as adopting new practices in market supervision.

There were 40 respondents who answered the question regarding the practices used to supervise their markets before and after the crisis. Among merit-based, disclosure-based, market-based,
principle-based, rule-based, risk-based, evidence-based, and others\(^6\), as shown in Figure 5.5, disclosure-based practice was most common approach used by respondents in pre-crisis time. If including the respondents who ticked in market-based approach box, the proportion of respondents using full-disclosure practice in pre-crisis time was 67.50%. However, after the crisis risk-based inherently became the dominant approach.

**Figure 5.5. Usage of different supervisory approaches before and after 2008 GFC**

Number of respondents reporting usage of disclosure-based practice decreased from 52.50% before the crisis to 2.5% after the crisis. Together, proportion of respondents using market-based and disclosure-based approaches dropped from 67.5% to 10%. However, number of respondents using risk-based approach increased nearly by 4.5 times from 17.50% before the crisis to 77.50% after the crisis.

Rule-based and principle-based are two practices that are widely applied. Before the crisis, 27.5% of respondents used principle-based approach, and after the crisis, the number increased to 47.5%. The number of respondents using rule-based approach was 32.50% in pre-crisis time and rose to 47.5% after the incidence.

Number of respondents, that used market-based and merit-based approaches before the crisis, was minor and both reduced by half in post-crisis time. Objective-based approach maintains a

\(^6\) Disclosure-based or full disclosure-based is a simplified version of the market-based approach as discussed in Chapter 2. However, the survey listed both of them for easy understanding and responding of respondents as in some markets, the concepts and terms of disclosure-based or full disclosure are more common than market-based. The securities regulators that use market-based approach definitely use the practices of full disclosure, but not vice versa.
stable number of users (5%) before and after the crisis. Whereas, number of respondents, that used other approaches than the listed ones, was triple after the crisis.

Before the crisis there were three respondents using other approaches, mainly hybrid or combination of two listed approaches. However, after the crisis, the list of other approaches was diversified as shown in Box 5.1 Appendix 5. Combination of two or more approaches in market supervision is preferred by both groups of developed and emerging markets in post-crisis time. It may be a mixture of rule-based and principle-based; or a combination of disclosure-based, rule-based and evidence-based. Some respondents just name the approach as hybrid or mixed approach but did not specify the methods. New concepts such as structured supervision, proactive approach, soft-law approach, objective-based, outcome-based, value-based, proportionate-based and judgement-based practices were introduced (Box 5.1 Appendix 5).

Regarding the reasons for changing SMS supervisory approaches post-crisis, a majority (66.7%) of respondents confirmed that they changed their supervisory approaches as a policy response to impacts of the 2008 GFC. The finding is confirmed by 78.8% of respondents who agreed that the 2008 GFC revealed the flaws of SMS approaches in pre-crisis time and it is the reason they need to change their approaches. 18.2% of respondents thought that their pre-crisis approaches were simply out of date and no longer relevant to adapt to the new economic environment of markets after the crisis.

Other reasons for changing SMS practices quoted by respondents include: complying with recommendations of IOSCO and G20; following international trends post-crisis, EU integration requirements, or simply the pre-crisis approaches were not adequate for market supervision.

Quantitative Research Findings (QTF) discussed in this section are summarized below.

**QTF4-Impacts of the 2008 GFC on SMS approach:** The 2008 GFC caused significant impacts on the supervisory approaches of securities regulators. The most prevalent impact was that the crisis led to re-evaluation and re-construction of SMS practices. Most regulators changed their SMS approaches as a direct policy response to the GFC. Full-disclosure-based approach was no longer preferred by both developed and emerging markets in post-crisis time. Risk-based practices now become most popular while rule-based and principle-based are still common. There was a trend to move away from full-disclosure based and market-based, come back to rule-based and adopt more risk-based practices in developed markets after the crisis. However, emerging markets tended to move away from disclosure-based, but to adopt more principle-based and risk-based practices. Combination of different approaches
is more common now by both groups of developed and emerging markets in post-crisis time. New approaches were introduced for the first time to adapt to new environment and supervisory requirements after the crisis.

5.2.5. Impacts of the 2008 GFC on Macro-prudential Supervision

Section 3.4 in the survey explored impacts of the 2008 GFC on macro-prudential supervision and the roles of securities regulators in macro-prudential regulation after the crisis.

There were 34 or approximately 85% respondents who reported that the 2008 GFC caused impacts to their macro-prudential supervision. Among them, there were 11 (84.6%) from developed markets and 23 (85%) from emerging markets. Respondents were asked to identify any relevant impacts from a list of nine possible outcomes that may be caused by the 2008 GFC. They were also encouraged to inform any other impact not listed.

**Figure 5.6. The 2008 GFC impacts on macro-prudential supervision**

The three most common crisis impacts include: (i) re-evaluation and improvement of macro-prudential supervision (91.2% respondents did this); (ii) change of regulator’s perception on the role of macro-prudential supervision (agreed by 82.4% of respondents); and (iii) macro-prudential supervision became more important post-crisis (79.4% of respondents reported the fact) (Figure 5.6). A significant number of respondents (38.2%) developed new legislation on macro-prudential regulation after the GFC and 26.5% respondents set up new authority to
perform the function. More regulators were involved in macro-prudential supervision after the crisis was a trend reported by 20.6% of respondents (Figure 5.6).

There were 39 respondents who identified and evaluated the roles of securities regulators in macro-prudential supervision before and after the 2008 GFC. Among them, only 15 respondents, accounting for 38.5% were involved in macro-prudential supervision in their financial markets before the GFC. However, after the crisis, the proportion increased to 74.4% and all the respondents (100%) confirmed that securities regulators take a more important role in post-crisis macro-prudential supervision. This finding needs further analysis in the context that in some designs of SMS system such as in functional or institutional architecture, securities regulators technically are not involved in macro-prudential regulation. Nevertheless, the fact that many more securities regulators are involved in macro-prudential supervision after the crisis is evidence of more important roles for them in this field.

**Table 5.8. Reasons for improvement of post-crisis macro-prudential supervision**

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Total</th>
<th>Developed markets</th>
<th>Emerging markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>The 2008 GFC revealed that the macro-prudential supervision before the crisis was not sufficient to maintain the stability and sustainability of the market</td>
<td>43.0%</td>
<td>83.3%</td>
<td>24.0%</td>
</tr>
<tr>
<td>New market conditions after the 2008 GFC require improvement of macro-prudential supervision</td>
<td>37.8%</td>
<td>41.7%</td>
<td>36.0%</td>
</tr>
<tr>
<td>The approach of macro-prudential supervision before the 2008 GFC were not relevant and effective to identify the systemic risks and send relevant alerts</td>
<td>24.3%</td>
<td>50.0%</td>
<td>12.0%</td>
</tr>
<tr>
<td>The structure and coordination of macro-prudential supervision before the 2008 GFC were not effective enough to identify the systemic risks and send relevant alerts</td>
<td>45.9%</td>
<td>58.3%</td>
<td>40.0%</td>
</tr>
<tr>
<td>The regulator in charge of macro-prudential supervision before the 2008 GFC were not capable to perform the function</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other reasons</td>
<td>18.9%</td>
<td>8.3%</td>
<td>24.0%</td>
</tr>
</tbody>
</table>

*Source: developed for this research with data from the survey undertaken in 2013-2014*

Then respondents were asked to judge whether post-crisis improvement of macro-prudential regulation is a policy response to the GFC in post-crisis time. The reasons led to post-crisis macro-prudential supervision improvements were explored to have a more objective assessment on the impacts of the 2008 GFC on this field of SMS. Thirty five (90.5%) of 38 respondents to question 3.4.6 reported that post-crisis improvements in macro-prudential supervision were made as policy responses to the GFC. Among them, there were 12 (100%) from developed markets and 23 (88.5%) from emerging markets. Thirty seven (88.09%) of total
41 respondents reported different reasons for post-crisis macro-prudential supervision improvement.

As shown in Table 5.8, the most common reasons for post-crisis macro-prudential supervision improvement reported by respondents were the structure and coordination of macro-prudential supervision before the 2008 GFC were not effective enough to identify systemic risks and send relevant alerts (45.9%) and the pre-crisis macro-prudential supervision was not sufficient (43%). Requirements of new market conditions after the crisis were reported by 37.8% respondents as the reason for macro-prudential supervision improvement.

The need for improvement of macro-prudential supervision approach was recognized by total 24.3% of respondents. However, the gap between developed market respondents and emerging ones were significant and needs further analysis. The other reasons reported by 18.9% of respondents ranged from a pre-planned financial reform, amendment of legal framework, implementation of requirements for EU integration, following EU policy network, inclusion of the concept on macro-prudential supervision into the supervisory system for the first time, to establishment of a mega-regulator. Quantitative research findings (QTF) discussed in this section are summarized below.

**QTF5-Impacts of the 2008 GFC on macro-prudential supervision:** The 2008 GFC caused a substantial impact on macro-prudential supervision. The crisis impacts changed the financial regulators’ perception on the roles of macro-prudential supervision, induced them to re-evaluate and intensify their macro-prudential supervisory activities in post-crisis time. A significant number of securities regulators responded to the impact by establishing new regulators to perform the function of macro-prudential supervision, shifting the role to other regulators, or creating a new structure or network that allows more regulators to be involved in this activity. Some others issued new legal framework or implemented a reform. Securities regulators take a more important role in post-crisis macro-prudential regulation. Developed markets found a stronger momentum and more reasons from impacts of the 2008 GFC to improve their macro-prudential supervision than emerging markets after the crisis.

**5.2.6. Impacts of the 2008 GFC Market Micro-prudential Supervision**

Section 3.5 of the survey explored impacts of the GFC on supervision of market intermediaries by securities regulators (micro-prudential supervision). In addition to types of impacts, usage of risk-based approach to supervise market members and supervision of hedge funds are also studied in this section. Respondents were asked to report whether the improvement in their post-
crisis micro-prudential supervision, if any, was a policy response to the 2008 GFC or caused by other reasons.

Forty one out of 42 respondents identified whether the 2008 GFC caused any impacts to supervision of market intermediaries. Among the respondents, 34 or 82.9% reported crisis impact on their micro-prudential supervision. Data analysis shows a slight difference between two groups of developed and emerging markets. There were 13 respondents from developed markets, accounting for 92.9% of this group and 21 respondents, representing 77.8% from emerging markets reporting impacts of the GFC on their market member supervision.

**Figure 5.7. Impacts of the 2008 GFC on micro-prudential supervision**

<table>
<thead>
<tr>
<th>Action</th>
<th>Total</th>
<th>Emerging</th>
<th>Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>More regulators are involved in micro-prudential supervision</td>
<td>14.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The role of micro-prudential supervision was shifted to other regulator</td>
<td>2.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A new supervisory authority was established to perform the function</td>
<td>8.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A new legislation on micro-prudential supervision was issued</td>
<td>55.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro-prudential supervision is under strong reform</td>
<td>20.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro-prudential supervision is less important</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro-prudential supervision is more important</td>
<td>61.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro-prudential supervision was re-evaluated</td>
<td>91.2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: developed for this research with data from the survey undertaken in 2013-2014

The most prevalent crisis-induced action taken by respondents is re-evaluation of micro-prudential supervision for more improvement. As shown in Figure 5.7, 91.2% of total survey respondents reported this type of impact. The proportion of respondents confirmed that micro-prudential supervision is more important 61.8% whereas no respondent thought that this area is less significant after the crisis. Besides, 20.6% of respondents took a strong reform of micro-prudential regulation after 2008 GFC (Figure 5.7). Promulgation of new legislation on micro-prudential supervision is another policy option preferred by 55.9% of respondents to fill in the gaps revealed by the crisis. However, only a minority of respondents restructured their system to respond to the crisis impacts with 8.8% of respondents chose to set up a new regulatory agency to perform the function after the crisis; just 2.9% shifted the roles from one to another.
regulator; and 14.7% set up a mechanism for more regulators to be involved in micro-prudential supervision.

Around 18% of respondents also listed other types the GFC impacts on their micro-prudential supervision system, such as: (i) alteration of capital adequacy rules for credit institutions and securities companies; (ii) promulgation of first regulation on hedge funds and first regulation on derivatives trading of financial institutions; (iii) taking a tougher post-crisis micro-supervision instead of a moral one before the crisis; (iv) promulgation of new rules requiring market intermediaries to enter an SRO; (v) law amendment for micro-prudential supervision; (vi) new capital requirement for market intermediaries; (vii) granting SROs more power to regulate; redesigned system for central bank to be involved in micro-prudential supervision; and (viii) reform of securities regulator for strengthened enforcement powers.

Table 5.9. Significance of risk-based approach in post-crisis micro-prudential supervision

<table>
<thead>
<tr>
<th>Scale</th>
<th>Before the crisis (%)</th>
<th>After the crisis (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not in use</td>
<td>24.4</td>
<td>4.9</td>
</tr>
<tr>
<td>In use but not important</td>
<td>46.3</td>
<td>0</td>
</tr>
<tr>
<td>Important</td>
<td>9.8</td>
<td>41.5</td>
</tr>
<tr>
<td>Very important</td>
<td>17.1</td>
<td>41.5</td>
</tr>
<tr>
<td>Extremely important</td>
<td>2.4</td>
<td>12.2</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Percentage of total respondents rating in each category

Source: developed for this research with data from the survey undertaken in 2013-2014

Respondents were asked to measure significance of risk-based approach in micro-prudential supervision before and after 2008 GFC. Table 5.9 shows a transformation of regulatory perception about the importance of risk-based approach. Among 41 respondents, 10 or 24.4% of them did not use risk-based approach before the crisis. 46.3% of them used the approach but did not think it important. Only 29.3% of the total respondents rated risk-based approach as an important instrument (in a scale from important to extremely important) for market intermediary supervision before the crisis. However, after the crisis the attitude of regulators to risk-based approach had completely changed.

The proportion of respondents who have not yet used risk-based approach decreased to only 4.9% and clustered on emerging markets. The proportion of respondents use risk-based approach as an important, very important or extremely important tool for micro-prudential supervision surged to 95.1%. No respondent still use it but think it unimportant after the crisis. Hedge funds are important intermediaries in the securities market and were blamed as a factor that triggered the 2008 GFC. Respondents were asked to rate the magnitude of hedge fund supervision before and after 2008 GFC to test how the supervision over that kind of market
intermediaries has changed after the crisis. It should be noted that proportion of respondents answered this question depend on whether hedge funds operate in their markets.

**Figure 5.8. Supervision over hedge funds before and after the crisis**

There were 31 out of 42 respondents that identified magnitude of hedge fund supervision in their markets before the crisis and 32 respondents provided rating on hedge fund supervision after the crisis (one respondent just had hedge funds available in its market recently). One more respondent might create a small gap for comparison. However, the data is sufficient for observation regarding the changing magnitude of hedge fund supervision before and after the crisis. Reasons for the other respondents do not provide their rating is that they do not have any hedge funds operating in their markets.

Before the crisis, hedge funds were not subject to supervision by 58.1% of the reporting respondents. Only 19.4% of respondents supposed that hedge funds were adequately supervised in their markets. The 22.6% remainder thought that the pre-crisis supervision of hedge fund was not sufficient. After the crisis, attitude of regulators toward hedge funds completely changed. Just 9.4% of respondents notified that hedge funds are not supervised in their markets. A minor proportion of respondents (3.1%) claimed that post-crisis hedge fund supervision in their markets was not strict enough. Majority (87.6%) of the respondents reported that hedge funds recently were put under adequate (81.3%) or even strict supervision (6.3%) (Figure 5.8).

Respondents were asked to opine whether improvement of post-crisis micro-prudential supervision policies was a policy response to the 2008 GFC and the reasons those led to that
improvement. Thirty two (94.1%) out of 34 respondents reporting impacts of the 2008 GFC on micro-prudential supervision confirmed that the improvement of post-crisis market intermediary supervision was a policy response to impacts of the GFC. The proportion was built up by 85.7% of respondents of developed markets and 74% of respondents from emerging markets.

Figure 5.9. Reasons for improvement of micro-prudential supervision after 2008 GFC

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>The structure and coordination of pre-crisis micro-prudential supervision were ineffective</td>
<td>45.7%</td>
</tr>
<tr>
<td>The regulator in charge of pre-crisis micro-prudential supervision were not capable</td>
<td>5.7%</td>
</tr>
<tr>
<td>The pre-crisis approach of micro-prudential was not relevant and ineffective</td>
<td>11.4%</td>
</tr>
<tr>
<td>New market conditions after the 2008 GFC require improvement</td>
<td>34.3%</td>
</tr>
<tr>
<td>Micro-prudential supervision before the crisis was insufficient</td>
<td>62.9%</td>
</tr>
<tr>
<td>Other reasons</td>
<td>2.9%</td>
</tr>
</tbody>
</table>

Source: developed for this research with data from the survey undertaken in 2013-2014

Thirty five out of 42 respondents, making 83.4% of total respondents reported improvement of micro-prudential supervision post-crisis. The respondents also identified different reasons for that improvement. Pre-crisis micro-prudential supervision insufficiency, which was revealed by the crisis, was quoted by 62.9% of the respondents as the most common reason for necessary improvement (Figure 5.9).

The second best impetus for respondents to improve their market intermediary regulation is inefficiency of pre-crisis coordination between regulators in micro-prudential supervision, with 45.7% of respondents reporting this fact. Another significant momentum for improvement of post-crisis market intermediary supervision was requirements of new market conditions post-crisis. More than 34.3% of respondents confirmed this circumstantial necessity (Figure 5.9).

Quantitative research findings (QTF) of this section are summarized below.

QTF6- Impacts of the 2008 GFC on supervision of market intermediaries: The 2008 GFC caused significant impacts to supervision of market intermediaries by respondents. The most prevalent crisis-induced action taken by respondents was re-evaluation of micro-prudential supervision for more improvement. Besides, the incidence also highlighted
importance of micro-prudential supervision, making regulators to promulgate new legal framework, change their supervisory structure by setting up new authority, creating new network, shifting the responsibility, or involving more regulators to perform the functions of micro-prudential supervision. A minority of regulators are even taking a strong reform of market member supervision. A variety of other impacts were reported by both emerging and developed markets. The crisis affected the group of developed markets more seriously than that of emerging markets in overall and especially in terms of micro-prudential supervisory structure and magnitude of supervision. Moreover, the crisis-induced a transformation of regulatory perception about the importance of risk-based approach and supervision of hedge funds. After the crisis, risk-based approach became a favourite tool for member supervision by both developed and emerging markets. Hedge funds were put under adequate supervision in post-crisis time while most of them were not supervised before the crisis. Most of improvements of post-crisis micro-prudential supervision have been made by policy responses of regulators to the impacts of the 2008 GFC. Pre-crisis insufficient supervision was considered the main reason for taking action to improve market member supervision post-crisis. Inefficient pre-crisis structure and coordination, as well as post-crisis new market conditions are significant impetuses for further enhancement of micro-prudential supervision.

5.2.7. Impacts of the 2008 GFC on Supervision of Securities Products

Section 3.6 of the survey explored impacts of the GFC on the traded securities products, including derivatives and SFPs. Thirty three (78.6%) of 42 survey respondents found crisis impacts on their supervision of traded securities products. The proportion was made by 14 (100%) respondents from developed markets and 19 (67.9%) respondents from emerging markets.

Regarding the types of crisis impacts, the most prevalent crisis-induced activity taken by securities regulators to strengthen supervision of securities products was issuing new legislation on creating, offering and trading of derivatives and SFPs, undertaken by approximately 70% of the respondents.

Performing stricter supervision of derivatives and SFPs in post-crisis time was the second most common activity triggered by the 2008 GFC. Nearly 63.6% of the respondents apply a tougher regime of derivatives and SFP supervision after the crisis. The crisis also created momentum for securities regulators to issue new rules and regulations on transparency or/and required disclosure of SFPs as well as to strengthen accounting and auditing standards for better transparency and valuation of traded securities and derivatives products. Both of the activities
have been undertaken by 57.6% of the respondents. Besides, 48.5% of the respondents decided to promulgate new rules or regulations on accounting and/or auditing of derivatives and SFPs in response to the 2008 GFC. The proportion of respondents moved OTC traded derivatives and SFPs to exchange traded markets was not as high as suggested by literature review in qualitative exploratory research. Only 9.1% of the respondents reported this activity.

**Figure 5.10. Crisis impacts on securities product supervision by developed and emerging markets**

The respondents also listed variety of other crisis impacts to their supervision of traded products, including (i) improvement of short selling regulations, of regulation of CRAs, and mandatory OTC trading reporting (Australia); (ii) moratorium on complex structured products launched in June 2011, soft-law preferred through agreement with market members (Belgium); (iii) new legislation for OTC derivatives (South Africa); (iv) new rules for issuance and disclosure of securities and derivatives (not applicable to SFPs) (Russia); (v) new rules on offering of securities to include financial health warning in 2011 (Netherlands); (vi) new rules on OTC derivatives trading (Netherlands); (vii) new stricter rules for issuers of securities in

**Source:** developed for this research with data from the survey undertaken in 2013-2014
Respondents were then asked to evaluate significance of their supervision of derivatives and SFPs before and after 2008 GFC. As shown in Table 5.10, the number of respondents providing answer on pre-crisis supervision of derivatives and SFPs was 33, including all the respondents (14) from developed markets and 19 respondents from emerging groups. However, there are 34 respondents (14 from developed and 20 from emerging market groups) evaluating their post-crisis supervision of those products. The reason is one respondent has introduced derivatives in their market after the crisis. It should be noted that the numbers of respondents depend on the presence of derivatives and SFPs in respondents’ markets. Non-respondents are the ones that do not have any derivatives and SFPs traded in their markets. Data analysis shows that supervision of derivatives and SFPs before the crisis clustered on the status ‘supervised but not adequately’ with 66.7% of respondents acknowledging this fact. Nine percent was the proportion of respondents who did not supervise derivatives and SFPs before the crisis. No respondent maintained a strict supervisory regime of these products. However, above 24.2% of respondents reported that derivatives and SFPs were supervised adequately in pre-crisis time. However, after the crisis 85.3% of the respondents stated that supervision of derivatives and SFPs in their markets was adequate, even 8.8% of the respondents said that these products are strictly supervised in their markets. Only one respondent (2.9%) said derivatives and SFPs are still not supervised and one respondent (2.9%) considered supervision of these products in their market was still not adequate enough.

Respondents were also asked to identify trading platform of SFP in their market before and after 2008 GFC. There were 25 respondents (13 from developed and 12 from emerging markets) reported their trading platform of SFPs before the crisis and 27 respondents (13 from developed and 14 from emerging markets) reported their SFPs trading platform in post-crisis time. The

Table 5.10. Supervision of derivatives and SFPs before and after 2008 GFC

<table>
<thead>
<tr>
<th>Level of supervision</th>
<th>Before the crisis</th>
<th>After the crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percent</td>
</tr>
<tr>
<td>Not subject of supervision</td>
<td>3</td>
<td>9.1</td>
</tr>
<tr>
<td>Supervised but not adequately</td>
<td>22</td>
<td>66.7</td>
</tr>
<tr>
<td>Adequately supervised</td>
<td>8</td>
<td>24.2</td>
</tr>
<tr>
<td>Strictly supervised</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: developed for this research with data from the survey undertaken in 2013-2014*
numbers represent full population of survey respondents that have SFPs traded in their markets in two periods before and after the 2008 GFC.

Figure 5.11. Trading platform for SFPs before and after 2008 GFC

![Graph showing the trading platform for SFPs before and after 2008 GFC.](image)

Source: developed for this research with data from the survey undertaken in 2013-2014

Figure 15.11 shows that maintaining both OTC and exchange traded platforms for SFPs was the dominant way of both developed and emerging respondents to create a market place for these products before and after the GFC. However, there was a weak trend to move OTC traded SFPs to exchange markets and maintain only exchange traded market for these products in post-crisis time. The trend is indicated by double proportions of respondents who moved OTC traded SFPs to exchanges and those who maintained SFPs exchange traded only platform post-crisis. After the crisis, there was also 14.29% of emerging market respondents who had exchange traded only SFPs though no one from this group chose the option before the crisis. Nevertheless, two emerging markets, who newly introduced SFPs in their markets post-crisis, let their SFPs OTC traded only, making the proportion of emerging markets choosing this option increase slightly from 25% to 28.57%.

Twenty nine (69%) out of 42 respondents reporting that the improvement of supervision of securities products is the result of direct policy responses to the 2008 GFC. The group is made of 12 respondents (85.7%) from developed markets and 17 respondents (60.7%) from emerging markets. There were 34 (approximately 81%) out of 42 respondents answering survey question on the reasons that led to improvement of traded securities products supervision post-crisis. Nearly 56% of the respondents agreed that insufficient supervision revealed by the crisis was
the reason for them to make improvements to maintain a transparent process of issuing, offering and trading of securities and an effective valuation of securities traded. This proportion is made by 76.9% from developed and 42.9% from emerging groups (Figure 5.12).

**Figure 5.12. Reasons for post-crisis policies to improve securities product supervision**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Emerging markets</th>
<th>Developed markets</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>The transparency and disclosure requirements of securities and derivatives products pre-crisis were not sufficient to maintain market confidence</td>
<td>28.6%</td>
<td>30.8%</td>
<td>44.1%</td>
</tr>
<tr>
<td>New market conditions after the 2008 GFC require improvement of supervision of securities and derivatives products</td>
<td>33.4%</td>
<td>29.4%</td>
<td>61.5%</td>
</tr>
<tr>
<td>The GFC revealed that pre-crisis supervision of securities products was not sufficient</td>
<td>42.9%</td>
<td>55.9%</td>
<td>76.9%</td>
</tr>
<tr>
<td>The regulator in charge of supervision of securities products before the 2008 GFC were not capable</td>
<td>4.8%</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>The structure and coordination of supervision of securities products pre-crisis were not effective</td>
<td>19.0%</td>
<td>11.8%</td>
<td></td>
</tr>
<tr>
<td>Other reasons</td>
<td>0.0%</td>
<td>11.8%</td>
<td></td>
</tr>
</tbody>
</table>

Source: developed for this research with data from the survey undertaken in 2013-2014

More than 44% of the respondents agreed that post-crisis transparency and disclosure requirements of securities and derivatives products were not sufficient to maintain market confidence and hence it was the reason for them to improve supervision of securities products after the crisis. The proportion includes 61.5% respondents from developed and 33.4% from emerging markets.

New market conditions after the 2008 GFC was another the reason for the respondents to make policy improvement of supervision of securities and derivatives products with 29.4% of respondents in agreement. This proportion comprises 30.8% respondents from developed and 28.6% from emerging markets. Only one respondent from emerging market (2.9%) said that the regulator in charge of supervision of securities products in their market before the 2008 GFC was not capable to perform the function. Whereas above 20% of the respondents blame ineffective structure and coordination of supervision of securities products in the pre-crisis time.

Some other reasons listed by four emerging market respondents, accounting for 11.8% of total respondents to this question, include: (i) financial reform; (ii) following IOSCO.
recommendations; (iii) EU integration; and (iv) requirement for more transparency for interests of investors. Quantitative research findings (QTF) discussed in this section are summarized below:

**QTF7-Impacts of the 2008 GFC on supervision of securities products:** 2008 GFC affected supervision of traded products of all the respondents from developed market and of two third from emerging markets. The crisis created momentum for both of developed and emerging market groups to pursue a stricter regime of derivatives and SFP supervision, to issue new rules and regulations for better transparency, creating, offering, trading and valuation of the products in post-crisis time. Only a minority of respondents chose to move OTC traded derivatives and SFPs to exchange traded market. Not only derivatives and SFPs are subject to post-crisis strengthened supervision, some regulators decided to consolidate whole supervisory framework of securities products, especially securities issuance. Developed markets and emerging markets are like-minded in terms of reactions to the 2008 GFC impacts. However, disperse between two groups can be seen in some cases. Both developed and emerging market groups have the tendency to maintain and adequate supervision over derivatives and SFPs post-crisis. Only a minority of emerging markets have not yet put them under tougher supervision.

Despite the strong call for moving all OTC traded SFPs to exchange traded market right after the incidence of 2008 GFC, a majority of respondents still operate both OTC and exchanges as market places for SFPs post-crisis. The trend to move OTC traded SFPs to exchanges or to maintain a unique exchange market for SFPs in post-crisis time is not as strong as expected. Further study should be taken to explain this fact. Insufficient supervision and inadequate transparency of securities products in pre-crisis time are the two biggest reasons for the respondents to make policy improvement in this field post-crisis.

### 5.2.8. Impacts of the 2008 GFC on Market Conduct Oversight

Section 3.7 of the survey research explored impacts of the 2008 GFC on the field of market conduct oversight. Respondents were first asked to identify whether the 2008 GFC caused any impact on market conduct oversight and types of impacts. Thirteen respondents from developed markets (92.9%) and 22 from emerging markets (78.6%), accounting for 85.4% of total respondents recognized 2008 GFC impacts on their oversight of market conduct. The respondents then reported diversified types of crisis impacts.
Table 5.11 shows that the most common crisis impacts reported by respondents from both developed and emerging markets was that securities regulators simply perform more supervision to ensure healthy market conduct post-crisis. More than 94% of the respondents have taken policies to strengthen market conduct oversight in post-crisis time. The second prevalent crisis-induced activity taken by regulators to consolidate market conduct oversight was issuing new rules or regulations on market conducts and market integrity.

Approximately 63% of the respondents created new rules and regulations on this field after the crisis. A minority of respondents chose to restructure their SMS to enhance market conduct oversight, with 11.4% establishing a new regulator to perform the function and 5.7% shifted the responsibility of market conduct oversight from one to another regulator.

**Table 5.11. Impacts of the 2008 GFC on market conduct oversight**

<table>
<thead>
<tr>
<th>Types of impacts</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market conduct oversight after 2008 GFC is more than before 2008 GFC</td>
<td>94.3%</td>
</tr>
<tr>
<td>Market conduct oversight after 2008 GFC is less than before 2008 GFC</td>
<td>0.0%</td>
</tr>
<tr>
<td>New regulations on market conduct oversight/market integrity were issued post-crisis</td>
<td>62.9%</td>
</tr>
<tr>
<td>New regulator was established to perform market conduct oversight</td>
<td>11.4%</td>
</tr>
<tr>
<td>The role of market conduct oversight was shifted from one to another regulator</td>
<td>5.7%</td>
</tr>
<tr>
<td>A strong reform of market conduct oversight we undertaken</td>
<td>8.6%</td>
</tr>
<tr>
<td>Others</td>
<td>20.0%</td>
</tr>
</tbody>
</table>

Source: developed for this research with data from the survey undertaken in 2013-2014

Another minority (8.6%) decided to conduct a strong reform of market conduct post-crisis and 20% of respondents listed other crisis-induced policies such as: (i) adopting twin-peaks regulatory approach; (ii) implementing EU Directives on short selling and transparency; (iii) making conduct oversight stronger; (iv) promulgation of new Financial Services Act in 2012; (v) installing new requirement on short selling disclosure; (vi) resuming the ban on short selling; issuing new rules within the framework of EU policy changes.

There were 41 out of 42 respondents that identified whether involvement of SROs, especially the stock exchange in market conduct oversight and market surveillance in post-crisis time was more, less or stayed the same as before the crisis. One respondent was out of the scope of the question as there was not any SRO in their market. Figure 5.13 shows that roles of SROs and stock exchange in market conduct oversight in post-crisis time did not change significantly. Above 73% of the respondents still remains the level of SRO involvement as before the crisis. The proportion of respondents that allowed more SRO involvement in market conduct oversight and market surveillance (14.6%) after the crisis was larger than those who reduced the role of SROs (12.2%).

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Thirty one (75.6%) out of 41 respondents confirmed that improvements of post-crisis market oversight are outcomes of policy responses to crisis impacts. Thirty four (81%) respondents provided a variety of reasons that led to improvements of market conduct oversight and market surveillance after the crisis.

Table 5.12. Reasons for improvements of market conduct oversight after the crisis

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Total (%)</th>
<th>Developed Markets (%)</th>
<th>Emerging Markets (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The 2008 GFC revealed that the level of market conduct oversight before the crisis was not sufficient to ensure a fair and transparent market</td>
<td>52.9</td>
<td>73.4</td>
<td>47.6</td>
</tr>
<tr>
<td>New market conditions after the 2008 GFC require improvement of market conduct oversight</td>
<td>44.1</td>
<td>30.8</td>
<td>52.4</td>
</tr>
<tr>
<td>The market integrity rules before the 2008 GFC were not enough to maintain an effective enforcement and compliance</td>
<td>5.9</td>
<td>7.7</td>
<td>4.8</td>
</tr>
<tr>
<td>The regulator in charge of market conduct oversight before the 2008 GFC were not capable to perform the function</td>
<td>2.9</td>
<td>0</td>
<td>4.8</td>
</tr>
<tr>
<td>The structure and coordination of market conduct oversight before the 2008 GFC were not effective</td>
<td>14.3</td>
<td>15.4</td>
<td>14.3</td>
</tr>
<tr>
<td>Other reasons</td>
<td>9.8</td>
<td>7.7</td>
<td>14.3</td>
</tr>
</tbody>
</table>

As shown by Table 5.12, nearly 53% of respondents agreed that the incidence of 2008 GFC revealed that their pre-crisis market conduct oversight was not sufficient to ensure a fair and transparent securities market and this was the reason for them to make improvements in this
field after the crisis. Above 44% of the respondents said that post-crisis market conditions require the improvements in market conduct oversight. The proportion of respondents that are from emerging markets and confirmed this fact (52.4%) was greater than that of developed markets (30.8%). Research findings in this section are summarized below:

QTF8-Impacts of the 2008 GFC on market conduct oversight: The 2008 GFC created important impacts on market conduct oversight by respondents. The most common crisis-induced action taken by securities regulators is performing more market conduct oversight post-crisis. The second prevalent crisis impact was issuing new rules and regulations on market conducts and market integrity. New regulators in charge of market conduct oversight were established by a small group of respondents. Shifting the role of market conduct oversight from one to another regulator, and taking strong reform of market conduct oversight are the options taken by minority of the respondents consolidating oversight, resuming or new installing rules on short selling, issuing a whole new law or part of legal system to adapt to EU changing legal environment.

Despite the call for reducing roles of SROs in market supervision after the 2008 GFC, involvement of SROs and stock exchanges in market conduct oversight and market surveillance experienced little change. A minority of respondents in fact diminished the roles of SROs in this field. However, the number of respondents that decided to strengthen it was even greater. Further study should be taken to understand the reason for this response.

5.2.9. Impacts of the 2008 GFC on Supervision of Market Institutions and SROs

Section 3.8 of the survey explored the impacts of the 2008 GFC on supervision of MIs and SROs. Within the framework of this research, MIs and SROs include market gatekeepers such as CRAs, accounting and auditing companies, clearing houses, stock exchanges, securities dealer associations and other institutions providing subordinate services for securities trading.

Forty one out of 42 respondents answered the survey question on impacts of the 2008 GFC on supervision of MIs and SROs. One respondent was not suitable to answer the question as there were no MIs or SROs operating on their market. Thirty four or 85% of these respondents reported crisis impacts on supervision of market institutions and SROs. The proportion is contributed by 92.9% respondents from developed markets and 77.8% respondents from emerging markets.

Regarding types of crisis impacts, as shown in Figure 5.14, intensifying level of post-crisis supervision over MIs and SROs was the most prevalent reaction of the securities regulators to
the 2008 GFC. Over 91% of the respondents who reported crisis impacts on this area chose to undertake more supervision after the crisis. A substantial proportion of the respondents (64.7%) decided to issue new rules or regulations on supervision over MIs and SROs. The proportion of respondents who put selected types of MIs and SROs in more supervision in post-crisis time was 35.3%.

The proportion of the total respondents that newly established regulators or regulatory structures to perform the function of MIs and SROs supervision was 26.5%. Only around 6% of the total respondents shifted the role of MIs and SROs supervision from one to another regulator.

Approximately 9% of the total respondents reported other crisis-induced actions such as installing new regulation on CRAs, setting up new symbol and system of rating in line with international standards, and establishing new rules for securities handling and the key requirements for the stock exchanges.

**Figure 5.14. Impacts of the 2008 GFC on supervision over MIs and SROs**

Thirty four respondents that have CRAs operating in their markets responded to survey question on supervision of credit rating agencies before and after the 2008 GFC. Above 47% out of these respondents reported that CRAs were not subject to supervision before the crisis (Figure 5.15).
More than 38% of the respondents acknowledged that CRAs in their markets were supervised but not adequately before the crisis. Only 14.7% of the respondents reported an adequate supervision of CRAs in pre-crisis time. However, the landscape of CRAs supervision has changed completely after the crisis.

There was only one respondent from developed markets having unsupervised CRAs, accounting for 2.9% of the total respondents. The proportion of respondents that maintain insufficient supervision of CRAs post-crisis dropped to 2.9% (one respondent from emerging markets). The proportion of respondents maintaining adequate and strict supervision over CRAs increased to 94.2% (Figure 5.15), including 92.8% of developed and 95.3% of emerging markets (See Table 5.4, Appendix 5).

**Figure 5.15. Supervision over CRAs before and after 2008 GFC**

![Figure 5.15](source: developed for this research with data from the survey undertaken in 2013-2014)

There were 39 respondents reporting level of supervision over auditors in their markets before the 2008 GFC and 40 respondents reporting level of auditor supervision after the crisis. The difference of one respondent is due to new presence of auditors in one emerging market in post-crisis time (Table 5.4, Appendix 5).

Unlike CRAs, auditors were better supervised before the 2008 GFC. Figure 5.16 shows that nearly 67% of the total respondents (57.1% of developed and 72% of emerging markets) reported that auditors were adequately supervised in pre-crisis time. The proportion of respondents that had pre-crisis insufficient supervision over that kind of MIs was 20.5%, including 28.6% of developed and 16% of emerging market respondents. There was only 12.8
% of the total respondents, including 14.3% of developed and 12% of emerging markets, who had not put auditors under supervision before the crisis (Table 5.4, Appendix 5).

However, the significance of auditor supervision was improved after the crisis. The proportion of respondents that maintain an adequate supervision over that kind of MIs increased from 66.7% to 90%. Proportions of respondents that do not supervise auditors and maintain an inadequate supervision decreased to 2.5% and 7.5% respectively (Figure 5.16).

**Figure 5.16. Supervision over auditors before and after 2008 GFC**

Respondents were asked to judge the significance of supervision over clearing houses before and after the 2008 GFC. Based on presence of clearing houses in their markets, there were 38 respondents reporting level of supervision over clearing houses pre-crisis and 39 respondents reporting clearing house supervision significance post-crisis.

**Figure 5.17: Supervision over clearing houses before and after the 2008 GFC**

**Source:** developed for this research with data from the survey undertaken in 2013-2014
Figure 5.17 shows that clearing houses were put under supervision before the 2008 GFC. 60.5% of the respondents reporting that they have maintained an adequate supervision over clearing houses pre-crisis. However, 34.2% of the respondents acknowledged that their pre-crisis supervision over clearing houses was not sufficient. Supervision over clearing houses was significantly strengthened post-crisis. All respondents from emerging and developed markets increased the level of supervision over that type of MIs to adequate (92.3%) or strict (7.7%) post-crisis (Figure 5.17).

Respondents were asked to opine the significance of supervision over SROs, including stock exchanges before and after the 2008 GFC. Thirty eight respondents that have SROs, including stock exchanges operating in their markets responded to SQ 3.8.9 and SQ 3.8.10. Among the respondents, 13 are from developed markets and 25 from emerging markets.

**Figure 5.18. Supervision over SROs and stock exchanges before and after 2008 GFC**

Figure 5.18 shows that about two third of the respondents reported an adequate supervision over SROs, including stock exchanges before the 2008 GFC. Even 7.9% of the respondents said that they maintained strict supervision over that type of MIs pre-crisis. However, 23.7% of the respondents thought that their pre-crisis supervision of SROs was not sufficient. Besides, 2.6% of the respondents reported no supervision over SROs and stock exchanges in their market in pre-crisis time. After the 2008 GFC, there was a significant change in level of supervision over SROs. The proportion of the respondents undertaking adequate supervision over that type of MIs increased to 86.8%. Whereas, proportion of respondents who thought that their
supervision over SROs was still insufficient decreased to 5.3%. There was no respondent who still left SROs unsupervised (Figure 5.18).

**Figure 5.19. Reasons for undertaking policies to improve MIs and SROs supervision post-GFC**

<table>
<thead>
<tr>
<th>Reason for Improvement</th>
<th>Developed Markets</th>
<th>Emerging Markets</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other reasons</td>
<td>0.0%</td>
<td>20.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>The structure and coordination of supervision of market institutions and SROs before the 2008 GFC were not effective</td>
<td>11.1%</td>
<td>16.7%</td>
<td>13.0%</td>
</tr>
<tr>
<td>The regulator in charge of supervision of market institutions and SROs before the 2008 GFC were not capable to perform the function</td>
<td>5.6%</td>
<td>16.7%</td>
<td>10.0%</td>
</tr>
<tr>
<td>The pre-crisis rules and regulations on supervision of market institutions and SROs were not sufficient to maintain an effective enforcement and compliance</td>
<td>16.7%</td>
<td>33.3%</td>
<td>36.7%</td>
</tr>
<tr>
<td>New market conditions post-GFC require improvement of supervision of market institutions and SROs</td>
<td>0.0%</td>
<td>41.7%</td>
<td>46.7%</td>
</tr>
<tr>
<td>The GFC revealed that reliance on SROs was wrong and market gate keepers and SROs should be subject to more regulation</td>
<td>0.0%</td>
<td>16.7%</td>
<td>16.7%</td>
</tr>
<tr>
<td>The GFC revealed that the level of pre-crisis supervision of market institutions and SROs was not sufficient</td>
<td>0.0%</td>
<td>38.9%</td>
<td>50.0%</td>
</tr>
</tbody>
</table>

**Source:** developed for this research with data from the survey undertaken in 2013-2014

There were 30 (12 from developed and 18 from emerging markets) out of 42 respondents (71.4%) confirming improvement of MIs and SROs supervision post-crisis and reporting on actual reasons for improvement of MIs and SROs supervision post-crisis. The question is not applicable to 12 respondents, including 11 respondents having no improvement in post-crisis
MIs and SROs supervision and one respondent having no MIs or SROs operating in their market.

Data analysis shows that among 30 respondents confirming improvements of MIs and SROs post-crisis, 28 or 93.3% confirmed that the improvement in their supervision of MIs and SROs in post-crisis time is the outcome of the policy responses to impacts of the 2008 GFC. Figure 5.19 shows the reasons for improvement of supervision over MIs and SROs in post-crisis time. The most common reasons for securities regulators to enhance their supervision over MIs and SROs post-crisis are requirements of new market conditions after the 2008 GFC (reported by 46.7% of respondents) and the awareness that pre-crisis supervision over MIs and SROs was not sufficient to maintain healthy performance of these institutions (reported by 43.3% of the respondents).

More than one-third of the respondents confirmed that pre-crisis rules and regulations on MIs and SROs were not sufficient for effective enforcement and compliance and this was the impetus for them to improve this supervisory area. The proportion is contributed by 38.9% of emerging market and 33.3% of developed market respondents (Figure 5.19).

A proportion of 16.7% of respondents from both developed and emerging markets agreed that the 2008 GFC revealed that the reason for taking action to improve MIs and SROs supervision was the awareness that reliance on SROs pre-crisis was wrong and market gatekeepers and SROs should be subject to more regulations.

Thirteen percent of the respondents said that in effective pre-crisis coordination and cooperation in MIs and SROs supervision was the reason that triggered the requirement for supervision improvement. Only 10% of the respondents thought that incapability of pre-crisis regulators to perform the functions of MIs and SROs supervision was the reason for securities regulators to take action for improvement in this supervisory area.

Twenty percent of the respondents listed other reasons for improvement of MIs and SROs supervision such as: activities within framework of a capital market roadmap, a master plan of market development or a reform plan of the securities regulator; EU integration, recommendations of IOSCO or that the GFC sent an alert that supervision over MIs and SROs should be strengthened. Quantitative research findings (QTF) discussed in this section are summarized below:
**QTF9- Impacts of the 2008 GFC on supervision of MIs and SROs, including stock exchanges:** The 2008 GFC created mass impacts on MIs and SROs supervision of respondents from both developed and emerging markets. The most common crisis-induced actions taken by both developed and emerging groups were intensifying supervision over MIs and SROs and issuing new rules and regulations on this supervisory aspect. Developed markets focused on putting some selected MIs and SROs under tougher supervision while emerging markets preferred to enhance their legal framework. A significant proportion of regulators decided to establish new regulators or regulatory structures to perform the function of MIs and SROs supervision. A minority of regulators shifted the role from one to another regulator post-crisis and some reported other crisis impacts on their supervision over MIs and SROs. Supervision over CRAs, auditors, clearing houses, and SROs including stock exchanges is all strengthened post-crisis. Especially, CRAs, which were unsupervised or inadequately supervised pre-crisis, are now put under adequate or strict supervision. Improvement of MIs and SROs supervision post-crisis was mostly made as policy responses to the 2008 GFC impacts. The most common reasons for the improvement were the requirements of new market conditions post-crisis and awareness of regulators that pre-crisis supervision over MIs ad SROs was not sufficient to ensure healthy performance of the institutions.

5.3. **Correlational Causal Analysis - Research Question 2- Whether the Policy Responses to the Crisis Increased the Responsiveness of SMS?**

This section discusses data analysis regarding Research Question 2 and the hypothesis that SMS responsiveness improved as a result of SMS policy responses to the 2008 GFC and describes the correlational causal analysis conducted to quantify the correlation coefficients between the crisis-induced policies and SMS responsiveness improvement. Section 3.9 of the survey asks respondents to confirm whether the policy reforms after 2008 GFC have made their SMS system more responsive. The respondents were also asked to measure the improvement of responsiveness in a five level scale: [(0-29%); (30%-44%); (45%-59%); (60%-74%); and >75%].

**5.3.1. Analysis of Responsiveness Improvement of SMS System**

Descriptive analysis shows that SMS policy reforms of the survey respondents have made their SMS system more responsive after the crisis. Magnitude of responsiveness improvement is different between two groups of developed and emerging markets. Among 42 respondents, 39
or 92.9% reported that their attempt to improve SMS system post-crisis have made the system more responsive. Among them, 14 (100%) from developed markets, and 25 (92.6%) from emerging markets. Among 39 respondents reporting improvement of their SMS responsiveness, there were 36 or 85.7% provided their judgement on the improvement. Three respondents said that it was too difficult to quantify the improvement.

Table 5.13. Magnitude of responsiveness improvement of SMS as a result of crisis-induced policy responses

<table>
<thead>
<tr>
<th>Percent of improvement</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 75</td>
<td>1</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>74-60</td>
<td>1</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>59-45</td>
<td>10</td>
<td>23.8</td>
<td>2.8</td>
</tr>
<tr>
<td>44-30</td>
<td>16</td>
<td>38.1</td>
<td>2.8</td>
</tr>
<tr>
<td>29-0</td>
<td>8</td>
<td>19.0</td>
<td>27.8</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>85.7</td>
<td>44.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Missing</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Applicable</td>
<td>3</td>
<td>7.1</td>
<td>22.2</td>
</tr>
<tr>
<td>No Response</td>
<td>3</td>
<td>7.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>14.3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: developed for this research with data from the survey undertaken in 2013-2014

The Frequency Table 5.13 shows that there are 77.8% of the respondents (28/36) reporting an improvement of SMS responsiveness of more than 29% and 33.3% of the respondents (12/36) reporting an improvement of more than 44%. A substantial proportion of the respondents (44.4%) or 16/36 rated the improvement of their SMS responsiveness from 30% up to 44%.

Figure 5.20. Improvement of SMS responsiveness after 2008 GFC

Source: developed for this research with data from the survey undertaken in 2013-2014
Data analysis shows a slight difference between emerging market respondents and developed market respondents in their judgement about the improvement of SMS responsiveness after the crisis. This can be seen in Figure 5.20. A majority of respondents from developed markets (63.6%) clustered in the range of SMS responsiveness improvement from 30% to 44%.

Whereas, respondents from emerging markets tend to allocate evenly to two ranges of SMS responsiveness improvement of from 30% to 44% and from 45% to 59%. Only above 18% of respondents from developed markets reported an improvement of more than 44%. Whereas, accumulatively 40% of respondents from emerging markets reported the improvement above that range (see Table 5.5, Appendix 5).

5.3.2. Measuring Correlation Coefficients Between Post-crisis SMS Policy Reforms and Responsiveness Improvement of SMS System

Inferential statistical instruments were used to explore the cause and effect components of data. A regression model, where Responsiveness of SMS = f (changes in SMS framework), was developed in order to measure the coefficients of the responsiveness improvement and policy changes in seven areas of SMS system after the crisis. The policy changes in SMS framework due to the crisis are explanatory variables and SMS responsiveness is the dependent variable.

All seven explanatory variables, i.e. the crisis-induced policies in terms of SMS architecture, SMS approaches, macro-prudential supervision, micro-prudential supervision, the securities traded products supervision, market conduct oversight and supervision over SROs and market institutions were categorical and were coded as dichotomous variables. The respondents were asked to inform whether the improvements in each area of their SMS framework are the outcomes of crisis-induced policies. Their answer “yes” was recorded as 1 and “No” was recorded as 0. The data provides seven explanatory variables for this regression model. Besides, respondents were also asked to rate the improvement of SMS responsiveness after the GFC in a Likert scale with five orders [(0-29%); (30%-44%); (45%-59%); (60%-74%); and >75%]. This data provides dependent variable for the model. The regression model used was a cumulative odds ordinal logistic regression with proportional odds, which uses cumulative categories:

$$L_{r-1} = \alpha_{r-1} + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_7 X_7$$

The PLUM (Polytomous Universal Model) procedure of SPSS was used to measure the correlational causal relationships between the crisis-induced policy changes and the SMS responsiveness improvement in post-crisis time, using the above logistics regression model. It
should be noted that the regression procedures had just been conducted with 36 out of 41 cases, 5 cases were filtered out because the respondents decided not to give their judgement on the magnitude of SMS responsive improvement or reported no improvement in responsiveness of their SMS system.

However, the econometrics model failed to quantify the coefficient between the policies to improve each component of SMS and improvement of the post-crisis SMS responsiveness. It has been found that the variables of crisis-induced policies relating to all seven areas, including SMS architecture, SMS supervisory approaches, macro-prudential supervision, micro-prudential supervision, securities product supervision and market conduct oversight, and MIs and SROs supervision all have statistically insignificant coefficients to the dependent variable-SMS responsiveness improvement magnitude (p-value >0.05). The null hypothesis that the coefficients are zero cannot be rejected (see Annex 5 for more details). The outcomes might be explained by the instability of the logistic regression model owing to available empty cells, small database and a large number of categorical predictors (Kenny, 2015; Spais & Vasileiou, 2006).”(see Annex 5 for more details of testing the model goodness of fit and Measuring Correlational Coefficients of Crisis-induced Policies and SMS Responsiveness)

Findings of the quantitative research (QTF) discussed in this section are summarized below:

| QTF10-Improvement of SMS responsiveness resulted from post-crisis SMS policy reform: | Post-crisis SMS responsiveness improvement was reported as a result of crisis-induced policy responses by an absolute majority of respondents in descriptive analysis. However, logistic regression model developed for correlational causal analysis was unable to quantify the correlational coefficients between the SMS responsiveness improvement and the crisis-induced SMS policies made by the respondents. |

5.4. Comparative Analysis-Research Question 3: Whether Emerging Markets Followed the Same Trend of the SMS Policy Reform As Developed Markets After the Crisis?

This section describes the comparative analysis that answers Research Question 3 by revealing the convergences and divergences of developed and emerging market respondents in SMS policy responses to the 2008 GFC. Descriptive data of two groups of developed and emerging market respondents was compared to find out whether the later follows the same trends as the earlier in their SMS policy responses to the 2008 GFC. The comparative analysis is important to draw out the implications for emerging markets.
5.4.1. Trends of Policy Responses to Crisis Impacts on SMS Philosophy

Data analysis shows a mix of convergence and divergence between two groups of developed and emerging market respondents in term of SMS philosophy after the crisis. Both groups have re-evaluated their SMS theoretical framework and adopted ideas of Behavioural Finance in post-crisis time. However, no developed market respondents relies solely on Standard Finance as their SMS philosophy in post-crisis time while a small group of emerging market respondents (12.5%) still do so (Figure 5.21).

Figure 5.21. Change in SMS philosophy of developed and emerging markets before and after the 2008 GFC

As shown in Figure 5.21, after the crisis, number of respondents from developed group that rely on both Standard Finance and Behavioural Finance as their theoretical framework for SMS increased from 7.14% to 92.86%. In post-crisis time, similarly, 75% of respondents from emerging markets use a combination of Behavioural Finance and Standard Finance. However, 12.5% of respondents from this group have retained Standard Finance and EMH as their sole economic theory for SMS.
5.4.2. Trends of Policy Responses to Crisis Impacts on SMS Architecture

Data analysis of 40 responses (14 from developed markets and 26 from emerging markets) about structure of financial supervision shows that both groups have taken a reform of SMS architecture to respond to the crisis. Transformation from one to another supervisory structure is one option for the respondents. However, emerging market respondents tend to accelerate their restructuring into integrated model while a group of the developed market respondents, have transformed into twin-peaks model (Figure 5.22).

Figure 5.22. Restructuring of SMS architecture by developed and emerging markets

Table 5.6 in Section 5.2.3 shows that the number of respondents with integrated structure increased from 16 to 21 after the 2008 GFC. The increase made by six emerging markets, who decided to transform their system into integrated structure while one developed market abandoned this structure and transformed into twin-peaks. Number of respondents using functional approach was reduced in both groups of developed markets (from 4 to 2) and emerging markets (from 11 to 9). Institutional approach was also less preferable to both groups (decreased from 4 to 1 in developed group and from 9 to 6 in emerging group). In post-crisis time, three respondents of developed market group have their SMS system restructured into twin-peaks model and two from emerging group planned this action. This means that above 21% of respondents from developed markets decided to transform into twin-peaks model, doubling the proportion of the respondents having this model in this group to 43% after the
crisis. However, only approximately 7.4% of respondents from emerging market group followed the trend while 26% of them decided to transform into integrated model, making the proportion of respondents with integrated structure in this group increase from above 33.3 to around 59.3% (Figure 5.22).

5.4.3. Trends of Policy Responses to Crisis Impacts on SMS Approaches

Using multiple SMS approaches became a practice in post-crisis time. Both groups have moved away from full-disclosure-based approach to adopt the risked based approach.

Figure 5.23. Usage of different supervisory approaches by developed and emerging markets

![Usage of different supervisory approaches by developed and emerging markets](image)

**Source:** developed for this research with data from the survey undertaken in 2013-2014

However, the emerging markets that still use rule-based approach tended to prefer principle-based approach while the developed markets that had used principle-based approach until the crisis tended to come back to the rule-based approach. The number of risk-based approach users increased from 14.3% to 71.4% in the group of developed markets and from 19.2% to nearly 81% in the group of emerging market post-crisis.

As shown in Figure 5.23, there was a trend to move away from disclosure-based and market-based practices to rule-based and adopt more risk-based practices in developed markets after the crisis. Before the crisis, there was no respondent from developed markets using rule-based practice. It has been replaced by market-based and disclosure-based approaches since the emergence of neo-classical economics theory, which served as the philosophy for SMS. However, in the emerging markets group, the trend was to move away from disclosure-based
and to take more principle-based and risk-based approach. It should be noted that before the crisis there was a significant number of respondents already using rule-based approach (50%). After the crisis, the number was at 42.3%. Whereas, the number of emerging market respondents that use principle-based approach increased from 11.5% pre-crisis to more than 46% post-crisis.

5.4.4. Trends of Policy Responses to Crisis Impacts on Macro-prudential Supervision

Data in Table 5.14 shows that there was resemblance between two groups of developed and emerging markets in terms of policy responses to crisis impacts on macro-prudential supervision.

However, many more respondents from developed groups (72%) confirmed that the crisis was the cause for financial regulators in their jurisdictions to promulgate a new legal framework on macro-prudential regulation. Whereas, only 21.7% of respondents from emerging markets identified the same response to crisis impacts. Establishment of a new authority to perform the function of macro-prudential supervision was another option preferred by developed markets (45.5%) to correct the flaws of pre-crisis macro-prudential supervision. Whereas, only 17.4% of emerging market respondents had set a new regulatory structure to respond to the requirement of enhancing macro-prudential regulation after the crisis.

### Table 5.14. Policy responses to impacts of the 2008 GFC on macro-prudential supervision

<table>
<thead>
<tr>
<th>GFC impacts</th>
<th>Developed markets (%)</th>
<th>Emerging markets (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Macro-prudential supervision was re-evaluated for more improvement</td>
<td>100</td>
<td>87</td>
</tr>
<tr>
<td>2. The crisis has changed the perception of securities regulators on the role of macro-prudential supervision</td>
<td>90.1</td>
<td>78.3</td>
</tr>
<tr>
<td>3. Macro-prudential supervision take more important roles in market supervision after the 2008 GFC</td>
<td>90.1</td>
<td>74</td>
</tr>
<tr>
<td>4. Macro-prudential supervision is now under a strong reform</td>
<td>7.2</td>
<td>13</td>
</tr>
<tr>
<td>5. A new legislation on macro-prudential supervision was established</td>
<td>72</td>
<td>21.7</td>
</tr>
<tr>
<td>6. A new supervisory authority was established to perform the function of macro-prudential supervision</td>
<td>45.5</td>
<td>17.4</td>
</tr>
<tr>
<td>7. After the 2008 GFC, the role of macro-prudential supervision was shifted from one to another regulator</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>8. After the 2008 GFC, more regulators are involved in macro-prudential supervision</td>
<td>18.2</td>
<td>21.7</td>
</tr>
<tr>
<td>9. Other impacts</td>
<td>7.7</td>
<td>0</td>
</tr>
</tbody>
</table>

**Source:** developed for this research with data from the survey undertaken in 2013-2014

The group of emerging market respondents only went ahead of the developed markets in two areas: macro-prudential supervision reform and involvement of more regulators in supervision.
post-crisis. 21.7% of respondents from emerging market group having more regulators involved in macro-prudential supervision post-crisis while the proportion of developed respondents that did the same thing was 18.2%. Proportion of emerging market respondents that conducted a strong reform of macro-prudential supervision post-crisis nearly double that of developed markets (13% versus 7.2%).

5.4.5. Trends of Policy Responses to Crisis Impacts on Micro-prudential Supervision

Resemblance can be seen in the policy responses in terms of micro-prudential supervision to crisis impacts of both groups of developed and emerging markets respondents. However, developed markets seem to make stronger reforms and improvements in every field of this supervisory area.

The most prevalent crisis-induced action taken by both groups of developed and emerging markets was re-evaluation of micro-prudential supervision for more improvement. As shown in Figure 5.7 Section 5.2.6, 95.2% of developed market respondents and 84.6% of emerging market respondents reported this type of policy response. Promulgation of new legislation on micro-prudential supervision was another policy option preferred by 61.4% of respondents from developed markets and 52.4% from emerging markets to fill in the gaps revealed by the crisis. The crisis also highlighted the importance of post-crisis micro-prudential supervision for both groups. However, the proportion of respondents from developed markets (84.6%), who reported a more significant role of market member supervision after the crisis, was nearly double that of emerging markets (47.%). Besides, 30.8% of developed market group took a strong reform of micro-prudential regulation after 2008 GFC (Figure 5.7, Section 5.2.6) while there was only 14.3% of emerging market group committed to a strong reform effort in post-crisis time.

Data analysis also shows that developed market respondents have taken stronger reform in terms of micro-prudential supervisory structure. Twenty three percent of respondents from developed group established a new authority to perform supervision of market intermediaries after the crisis; the same proportion created a new structure that allows more regulators to be involved with micro-prudential supervision; and 7.7% of them shifted the function from one to another regulator. Whereas, no respondent from emerging market group reported any establishment of new regulator or transferred responsibility of micro-prudential supervision, and only 9.5% of them created a mechanism for more regulators involvement with market members (Figure 5.7, Section 5.2.6).
As for the improvement of micro-prudential supervision approach after the crisis, a similarity between two groups of developed and emerging markets can be observed (see Figure 5.24). Before the crisis, total 78.5% of respondents from developed markets did not use risk-based approach or thought it was not important. Likewise, 66.6% of respondents from emerging markets did not use or underestimated the risk-based approach. However, after the crisis 100% respondents from developed markets and 92.6% from emerging markets rated risk-based approach from important to extremely important. Only 7.4% of emerging group have not yet used this approach after the crisis (Figure 5.24).

**Figure 5.24. Significance of risk-based approach in micro-prudential supervision before and after the crisis**

<table>
<thead>
<tr>
<th></th>
<th>Developed markets before GFC</th>
<th>Emerging markets before GFC</th>
<th>Developed markets after GFC</th>
<th>Emerging markets after GFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not in use</td>
<td>7.1%</td>
<td>33.3%</td>
<td>0.0%</td>
<td>7.4%</td>
</tr>
<tr>
<td>In use but not important</td>
<td>71.4%</td>
<td>33.3%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Important</td>
<td>7.1%</td>
<td>11.1%</td>
<td>28.6%</td>
<td>48.1%</td>
</tr>
<tr>
<td>Very important</td>
<td>14.3%</td>
<td>18.5%</td>
<td>57.1%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Extremely important</td>
<td>0.0%</td>
<td>3.7%</td>
<td>14.3%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

*Source: developed for this research with data from the survey undertaken in 2013-2014*

In terms of supervisory subjects, data analysis shows that developed and emerging market respondents followed the same policy trend in strengthening supervision over market intermediaries, especially hedge funds. Hedge funds were placed under stronger supervision than before the crisis by both groups. Figure 5.25 shows that both groups of developed and emerging markets have moved from no supervision to an adequate or strict supervision over hedge funds. Before the crisis, 57.1% of developed markets and 58.8% of emerging markets did not supervise their hedge funds. More than 21.4% of developed and 23.5% of emerging markets just maintained a nominal supervision over hedge funds.

After the crisis, proportion of developed market respondents that employed an adequate or strict supervision of hedge funds was 100%. Similarly, proportion of emerging respondents who supervised hedge fund adequately and strictly raised to 77.8%. Whereas only 16.7% of
emerging respondents did not supervise the funds and just 5.6% of them think that their hedge fund supervision is still insufficient.

**Figure 5.25. Supervision of hedge funds before and after the crisis in developed and emerging markets**

Data analysis shows synchronization between two groups of respondents from developed and emerging markets in terms of securities products supervision policy responses to crisis impacts. However, there were divergences in some cases. Respondents from developed markets (78.6%) tend to prefer a stricter post-crisis regime of derivatives and SFP supervision in comparison to the ones from emerging markets (52.6%). Similarly, 71.4% of the developed markets issued new rules and regulations on transparency or/and required disclosure of SFPs while only 47.4% of the emerging group did the same thing. Besides, the proportion of the developed market respondents (57.1%) issued new regulations on accounting and/or auditing of derivatives and SFPs was slightly higher than those from emerging markets (42.1%). Nevertheless, the proportion of emerging market respondents (68.4%) chose to improve transparency and valuation of securities and derivatives by strengthened accounting and auditing standards was much higher than that of developed markets (42.9%). See Figure 5.10, Section 5.2.7.

In terms of supervision over derivatives and SFPs in post-crisis time, respondents from developed markets and emerging markets were observed to follow the same trend policy to enhance supervisory activities over these products. However, this trend is much stronger in the
developed markets group. Data analysis shows that after the crisis, all respondents from developed markets perform adequate or even strict supervision of derivatives and SFPs. Whereas there were still two respondents from emerging markets who did not supervise or inadequately supervise these products, representing 10% of the group in post-crisis time (Figure 5.26).

**Figure: 5.26. Supervision of derivatives and SFPs before and after the 2008 GFC**

Developed and emerging market respondents showed convergence in the trends of crisis-induced policy responses that strengthened market conduct oversight after the 2008 GFC with 100% developed markets and 90.9% emerging market intensified market conduct oversight (Figure 5.27).

As shown in Figure 5.27, a majority from both groups issued new rules or regulations on market conduct and market integrity (77% of respondents from developed and 54.5% from emerging markets) and a minority of them chose to shift the responsibility of market conduct oversight from one to another regulator (7.7% from developed markets and 4.5% from emerging markets) or conducted a strong reform of market conduct oversight post-crisis (approximately 8% of respondents from developed markets and 9% from emerging markets).
However, divergence between two groups has been seen in terms of the policy relating to supervisory structure and roles of SROs in market conduct oversight after the crisis. Twenty three percent of respondents from developed market established new regulators to be in charge of market conduct oversight. But only 4.5% of respondents from emerging market adopted this approach.

For the respondents experiencing change in the roles of SROs in post-crisis market surveillance and market conduct oversight, developed and emerging markets seem to deviate to two reversal trends. Nearly 29% of developed market respondents said that involvement of SROs in market conduct oversight and market surveillance post-crisis was less than it was pre-crisis. Nevertheless, only 3.7% emerging respondents reported the same outcome in their market supervision. Vice versa, the group of respondents that decided to give SROs more involvement in market surveillance and market conduct oversight include 18.5% of respondents from emerging markets and only 7.1% of respondents from developed markets (Figure 5.13, Section 5.2.8).
5.4.8. Trends of Policy Responses to Crisis Impacts on MIs and SROs Supervision

Developed market and emerging market respondents followed the same trend in policy responses to crisis impacts in terms of MIs and SROs supervision. There was no significant different between two groups of developed and emerging markets (92.3% from developed markets and 90% from emerging markets) that chose to intensify supervision of MIs and SROs after the crisis.

**Figure 5.28. Significance of supervision over MIs and SROs after the crisis**

However, the two groups deviated in their ways to strengthen this supervisory area. The proportion of respondents from emerging markets (71.4%) that enhanced supervision over MIs and SROs by new legal framework after the crisis was higher than that from developed markets (53.8%). Whereas the proportion of respondents from developed markets (61.5%), who put selected types of MIs and SROs under more supervision in post-crisis time was over triple that from emerging markets (19%). The gap between the proportions of developed markets (30.7%) and emerging market respondents (23.8%) that set up new regulator or regulatory structure to respond to crisis impacts in this area was significant (6.9%). (See Figure 5.14, section 5.2.9)
As for magnitude of supervision over specific MIs and SROs post-crisis, both groups of developed and emerging market respondents show similarity in intensifying supervision. But developed market respondents tend to have stricter regulation than emerging markets (See Figure 5.28).

Both groups have similar proportion of respondents putting CRAs under adequate or strict supervision after the 2008 GFC (92.8% of developed market respondents, and 95.3% of emerging market respondents). However, the proportion of developed market respondents that put CRAs under strictly supervision (35.7%) was nearly seven times higher than that of emerging markets (4.8%).

Developed and emerging markets have the same awareness on the significance of supervision over clearing houses after the crisis. The proportions of respondents from developed markets and emerging markets reporting adequate and strict level of clearing house supervision in post-crisis time are quite similar, around 92% at adequate level and 8% at strict level for both groups. Though there were no respondents reporting a strict supervision mechanism over auditors after the 2008 GFC, developed markets, once again, have tightened supervision over auditors in post-crisis time much more than emerging markets. Data analysis shows that 100% of respondents from developed markets, compared to 84.6% of respondents from emerging markets undertake an adequate supervision over auditors (Figure 5.28). Both groups of developed and emerging markets have similarly increased the proportion of respondents undertaking adequate SROs and SEs supervision post-crisis (23% to 84.6% and 20% to 88% respectively). Proportion of respondents from developed and emerging markets that strictly supervise SROs remain unchanged (7.7% and 8% respectively) (See Table 5.4 Appendix 5). Findings of this comparative analysis are summarized below:

**QTF11-Convergence and divergence of developed markets and emerging markets in crisis-induced policy responses:** Emerging market respondents followed developed market respondents in the same trends of implementing policies to strengthen all eight components of SMS to respond to the 2008 GFC. However, divergences were seen in the diversified ways by which two groups responded to crisis impacts and improved their SMS systems to cope with the new market conditions in post-crisis time.
Table 5.15 summarizes the convergences and divergences of developed and emerging market respondents in SMS policy responses to the 2008 GFC.

**Table 5.15. Trends of crisis-induced policy responses by developed and emerging markets**

<table>
<thead>
<tr>
<th>SMS area</th>
<th>Convergences in policy responses</th>
<th>Divergences in policy responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SMS Philosophy</strong></td>
<td>- Re-evaluating the current theoretical framework of SMS;                                                                                      - Shifting from relying on Standard Finance theory to a combination of Behavioural Finance and Standard Finance theories as SMS theoretical framework after the crisis (approximately 93% of developed market respondents and 75% of emerging market respondents) (Figure 5.26).</td>
<td>- There was a small proportion of emerging market respondents (12.50%) still rely solely on ideologies of neo-classical theory as their SMS philosophy.</td>
</tr>
<tr>
<td><strong>SMS Architecture</strong></td>
<td>- Supervisory structure were changed in response to impacts of the GFC and post-crisis environment;                                                                                       - Integration was still the most popular approach used by securities regulators to design their SMS system in post-crisis time;                                                                                          - The roles of SROs in SMS were re-evaluated, improved or diminished to member supervision after the crisis.</td>
<td>- For restructuring supervisory system to respond to crisis impacts, emerging market respondents preferred integration structure while developed market respondents preferred twin-peaks model.</td>
</tr>
<tr>
<td><strong>SMS Approaches</strong></td>
<td>- Re-evaluation and re-construction of SMS practices;                                                                                       - Full-disclosure-based approach was less preferred. Risk-based practices now became most popular while rule-based and principle-based were still common. Combination of different approaches seems to be trendy now by both groups of developed and emerging markets in post-crisis time.</td>
<td>- Developed market respondents tended to move away from full-disclosure based and market-based, come back to rule-based and adopt more risk-based practices;</td>
</tr>
<tr>
<td>Macro-prudential Supervision</td>
<td>- Changed perception on the roles of macro-prudential supervision;                                                                                       - Re-evaluate and intensify macro-prudential supervisory activities;                                                                                                                   - Strengthening legal framework on macro-prudential supervision;</td>
<td>- Developed market tended to be much more actively in issuing new legal framework and setting up new regulatory agency to strengthen macro-prudential supervision. Whereas, emerging market respondents are a bit stronger in conducting a reform and letting more supervisors involving into macro-prudential supervision.</td>
</tr>
</tbody>
</table>
- Securities regulators were given a more important role in post-crisis macro-prudential regulation.

| Micro-prudential Supervision | - Re-evaluation of micro-prudential supervision for more improvement;  
- Promulgate new legal framework and involving more regulators to perform the functions of micro-prudential supervision;  
- Risk-based approach and supervision of hedge funds are put on first priority. | - Developed markets had stronger policy responses to restructure micro-prudential supervision such as setting up new supervisory agency (23%), creating new structure to allow involvement of more regulators (23%), and shifting of supervisory roles from one to another regulators (7.7%) while only a minority of emerging markets built up a new structure for more regulators involving in micro-prudential supervision. |

| Supervision Of Securities Traded Products | - Stricter regime of derivatives and SFP supervision;  
- Issuing of new rules and regulations for better transparency, creating, offering, trading and valuation of the securities products, especially SFPs. | - A minority of emerging market respondents has not put derivatives and SFPs under tougher supervision. |

| Market Conduct Oversight | - Market conduct oversight was strengthened by new rules and regulations on market conducts and market integrity;  
- A minority established regulator in charge of market conduct or shifting the role of market conduct oversight from one to another regulator;  
- The roles of SROs in market conduct oversight were disputable. Some respondents diminished the SROs but other strengthened. | - Proportion of developed market respondents who set up new regulator for market conduct oversight is five time higher than that of emerging one;  
- Minority of emerging market respondents rather strengthened the roles of SRO in market conduct oversight than reduced them. |

| Supervision Over MIs And SROs | Supervision over CRAs, auditors, clearing houses, and SROs including stock exchanges was all strengthened post-crisis by:  
- Issuing new rules and regulations;  
- Establishing new regulators or regulatory structures to perform the function of MIs and SROs supervision;  
- Shifting the role from one to another regulator post-crisis. | - Developed markets tended to focus on putting some selected MIs and SROs under tougher supervision while emerging markets preferred to enhance their legal framework. |

Source: developed for this research
5.5. Summary of Research Findings and Conclusion

This chapter has discussed quantitative data analysis and generated findings for the three research questions (RQs). The findings are summarized as follows:

- **RQ1**: *What are the actual impacts the 2008 GFC generated on the securities market supervision?* QTF 1 to QTF 9 provides evidence to answer the first question about actual impacts of the 2008 GFC on the supervisory framework, showing that the crisis had generated impacts in all eight areas of SMS.

- **RQ2**: *Whether the crisis-induced policies increased the responsiveness of securities market supervision?* QTF 10 shows descriptive evidence that policy reform post-crisis have improved SMS responsiveness but the logistic regression model developed for the correlational causal analysis was unable to measure the coefficients of the regression correlation between the crisis-induced policies in each component of SMS and the improvement of SMS responsiveness.

- **RQ3**: *Whether emerging markets followed the same trend of securities market supervision policy reform as developed markets after the crisis?* QTF 11 provides evidence that emerging markets in fact followed the same trends of policy reform as the developed markets for strengthening supervisory framework post-crisis but there were divergences between them in some policy areas.

Table 5.7, Appendix 5 presents the detailed findings of quantitative research conducted in this research. Quantitative research also generated new research issues that need to be explored by further qualitative research that are discussed in next chapter. The research issues include:

1) Despite the exploratory research finding that securities regulators were strongly called for abandoning of the pre-crisis supervisory philosophy, which essentially relied on insights of Standard Finance and EMH, the quantitative research shows that securities regulator respondents were hesitant to do so in post-crisis time. Instead, they chose to adopt the ideologies from Behavioural Finance while preserving selected values of Standard Finance;

2) Literature review in the qualitative exploratory research stage highlighted that twin-peaks model had become the preferred financial supervisory structure. However, quantitative research only found a trend to restructure supervisory systems into twin-peaks model in a group of developed markets after the crisis.

3) Despite the exploratory research finding of the strong calls for moving all OTC traded SFPs to exchange traded market after the incidence of 2008 GFC, quantitative research
in this stage shows that a majority of securities regulator respondents still operate both OTC and exchanges as market places for SFPs post-crisis. The trend to move OTC traded SFPs to exchanges or to maintain a unique exchange market for SFPs in post-crisis time was not as strong as suggested by the exploratory research in Stage One of this study.

4) Despite the calls for reducing roles of SROs in market supervision found in the literature of SMS after 2008 GFC, quantitative research in this stage shows that involvement of SROs and stock exchanges in market conduct oversight and market surveillance experienced little change. A minority of respondents in fact diminished the roles of SROs in this field. However, the number of respondents that decided to strengthen SROs’ roles was greater.
CHAPTER 6
ANALYSIS AND FINDINGS OF QUALITATIVE DATA
6.1. Introduction

This chapter presents analysis and findings of qualitative data. The explanatory qualitative research, including focus group interviews and documentary research was conducted for validation, explanation and triangulation of research findings from the qualitative exploratory and quantitative empirical research. The research findings in Chapter 5 and this chapter are revisited and further analysed in Chapter 7 to draw out final research findings, implications and conclusions. This chapter is structured into four main sections. Section 6.2 presents data analysis of focus group interviews. Section 6.3 discusses data analysis of documentary research. Section 6.4 presents summary of findings and conclusions. This chapter is complemented by three annexes and one appendix. Annex 6.1 discusses qualitative data analysis procedures for focus group interviews and documentary research. Annex 6.2 presents details of focus group interviews data analysis. Annex 6.3 describes documentary research data. Other supporting data and analysis is presented in Appendix 6. Outline of this chapter is presented in Figure 6.1.

Figure 6.1. Outline of Chapter 6. Analysis and Findings of Qualitative data
6.2. Focus Group Data Analysis-Validation and Explanation of The Paradigm Shift in SMS Post-crisis

Objectives of Focus Group Interviews: The key objective of the focus group interviews is to provide evidence for validation and explanation of the findings in earlier research stages regarding the choice of securities regulators in the post-crisis SMS philosophy, particularly QTF 2 and the first issue among four new research issues identified in the of quantitative research (see Section 5.5, Chapter 5). The following research questions were set out:

(1) Has Behavioural Finance obtained a new significance in SMS philosophy? Is there a transition in the mindset of securities regulators toward adoption of ideologies of Behavioural Finance as suggested by quantitative research? If so, why is that?

(2) Do the securities regulators prefer to adopt both ideologies of Standard Finance and Behavioural Finance post-crisis rather than to dismiss the ideas of the earlier and rely exclusively on the later? If so, why is that?

Data Analysis: Focus group data was analysed in two levels: (i) group data analysis and (ii) inter-group data analysis. Comparison and contrasts were made to facilitate triangulation of data. In the interviews, the focus group participants (FGPs) were asked to share their opinion about which theory should be used as the philosophy for SMS in post-crisis time. Their answers were then recorded, coded and categorized for data analysis (see Box 6.1 for an example of FGP answer and details of focus group interviews analysis in Annex 6.2).

Data analysis found a strong consensus among the FGPs about the Standard Finance’s weaknesses that were revealed by the GFC and the values of Behavioural Finance’s perspectives in explanation of the crisis and in redesigning a new regulatory framework. The FGPs’ points of view regarding the post-crisis SMS philosophy were diversified into three groups, namely Decisive, Sceptical and Neutral as shown in Table 6.1.

Data analysis (see details in Annex 6.2) of the focus group interviews provides reliable evidence that may validate and explain the findings from quantitative research on the roles of Behavioural Finance and Standard Finance in the SMS philosophy post-crisis.

Focus group analysis shows that all FGPs (100%) indicated or implied the Standard Finance’s limitations divulged by the GFC (Table 6.1). This data supports the survey quantitative data of 93.8% of respondents reporting that the flaws of the pre-crisis supervisory philosophy that revealed by crisis were the reason for changing their mindset of SMS (Table 5.4 Chapter 5). Data analysis also pointed that all FGPs (100%) acknowledged the values of Behavioural
Finance in explaining financial crisis and setting up a new supervisory framework post-crisis. Around 54% of FGPs explicitly recommended adoption of Behavioural Finance for the SMS theoretical framework post-GFC (Table 6.2). This data provides an answer for the first research question set out for focus group interview research.

**Box 6.1. An answer by a focus group interview participant**

**Question:** The literature of securities market after the 2008 Global Finance Crisis suggested that there is another crisis of philosophy for securities market supervision. Some blamed that ideologies of Standard Finance, especially Efficient Market Hypothesis, which has been long time philosophy of securities market regulation, has some flaws that enabled the crisis. Some proposed that Behavioural Finance should be applied more for policy making in securities market supervision. What economic theory do you think will serve well as the philosophy for securities market supervision after the crisis?

**Answer:** The EMH has its weaknesses even in liquid markets, such as those for listed common stocks. It has more limitations when one attempts to apply it to less liquid markets such as markets for mortgage-backed securities and their derivatives. It is unlikely to work at all if one of the principal pieces of information that people rely upon turns out to be false information. Especially, many of the mortgage-backed securities were rated AAA but the ratings were wrong either because the models applied inadequate or because the ratings agencies were complicit in giving out false rating. Behavioural Finance clearly has some relevance to the financial crisis. For example herding behaviour has to be considered when stories or rumours of an intermediary, such as Bear Stearns or Lehman, being in financial trouble cause banks to withdraw credit lines and customers to withdraw funds or securities. I think it could be concluded that Behavioural Finance may explain, in part why trading markets and credits markets become illiquid, which in turns renders many risks assessment models ineffective as a measure of a firm’s risk. Incorrect rating also affected the risk-based models’ accuracy.

Having stated this, I don’t think a regulator necessarily has to choose one or several economic theories as a philosophy for securities market supervisions. The regulator should simply understand all of the theories insofar as they may affect market integrity and the adequacy of regulatory safeguards in place. For example, what was learnt in the U.S. from the crisis is that the CRA industry requires fixing (it still required more fixing), and risk-based model can be unreliable when they presume incorrectly that there will always be a liquid market with available prices during a financial crisis.

The lesson for the regulator is that other capital adequacy safeguards (more capital and leverage ratios) may work better. Knowledge of economic theories and their limitations should help a regulator understand what can and cannot be supervised. For example, it would be difficult to have stopped herding behaviour or some credit and trading markets ceasing to operate. On the other hand, it would be possible for the regulator to take steps to ensure that better information was available in the marketplace.

**Source:** developed for this project, data from focus group interviews undertaken in the period 6/2014-9/2015

Besides, data analysis provided other evidence that helps answer the second research question set out for the focus group interviews. Focus group data analysis yielded similar outcomes with those of quantitative research as to the roles of Standard Finance in the post-crisis SMS theoretical framework. Twelve out of 13 (92.3%) of interviewees perceiving the importance of Standard Finance’s ideologies in three levels: (i) proposing adoption of ideologies from both paradigms in SMS philosophy; (ii) claiming or implying values of Standard Finance; and (iii)
recommending that knowledge of both paradigms is fundamental for regulators (see Annex 6.2 for data analysis).

Table 6.1. Matrix of answers by FGPs with coded points of view

<table>
<thead>
<tr>
<th>Group</th>
<th>FGP</th>
<th>GCA</th>
<th>AFS</th>
<th>AVB</th>
<th>RAB</th>
<th>RA2</th>
<th>IBC</th>
<th>SKB</th>
<th>AVA</th>
<th>DIC</th>
<th>SBH</th>
<th>SBT</th>
<th>RSR</th>
<th>CVS</th>
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<tr>
<td>Decisive</td>
<td>FGP1</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>Sceptical</td>
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<td>53.9</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>15.4</td>
<td>38.5</td>
<td>84.6</td>
<td>46.2</td>
<td>30.8</td>
<td>15.4</td>
<td>7.7</td>
<td>15.4</td>
<td>46.2</td>
</tr>
</tbody>
</table>

GCA: giving clear answer on the choice of economics theory as SMS philosophy
AFS: analyzing or implying failures of Standard Finance
AVB: Acknowledging or implying values of Behavioural Finance in explaining the GFC or redesigning SMS framework
RAB: recommending adoption of Behavioural Finance
RA2: recommending adoption of both paradigms and/or with other theory
IBC: implying that weaknesses of Standard Finance could be explained and/or complemented by Behavioural Finance
SKB: suggesting knowledge of both paradigms is fundamental for securities regulators
AVA: avoiding the answer as to the choice of any economics theory for SMS philosophy
DIC: denying importance of the choice
SBH: showing suspicion on choosing of Behavioural Finance as SMS philosophy
SBT: showing suspicion on choosing both paradigms as SMS philosophy
RSR: recommending stronger regulation by government or more effective supervisory framework
CVS: claiming values of Standard Finance

Source: developed for this project, data from focus group interviews undertaken in the period 6/2014-9/2015

Focus group data analysis also provides the evidence that supports the conclusion from qualitative exploratory research that there was another crisis of SMS philosophy after the GFC. Hesitation of FPGs (46.53%) in answering interview question is an indication that SMS theoretical framework re-construction is still a dilemma for the securities regulator community even 5 year after the crisis (see Annex 6.2 for data analysis).

However, focus group data does not give any evidence supporting the prediction from qualitative exploratory research that Standard Finance ideologies have been discarded from SMS philosophy. Instead, both quantitative research in Stage Two and focus group interviews show the possibility that regulators chose to retain the values of Standard Finance rather than totally dismiss them from the SMS philosophy (see Annex 6.2 for data analysis and Section 5.2.2, Chapter 5). In addition, focus group data analysis shows that 84.6% of interviewees explicitly indicated or implied that weaknesses of Standard Finance could be complemented or explained by Behavioural Finance (Annex 6.2). Qualitative research findings (QLF) discussed in this section are summarized below:
QLF1-Validation and Explanation of the paradigm shift in SMS after 2008 GFC: It is concluded that the focus group interview helps validate and explain the outcomes of quantitative empirical research regarding the role of Behavioural Finance and Standard Finance in post-crisis supervisory framework. Behavioural Finance has obtained a new significance in redesigning the post-crisis supervisory framework. The transition from the pre-crisis Standard Finance based framework to adoption of Behavioural Finance was confirmed by evidence from focus group interview. The paradigm shift reflected the awareness by securities regulators of the failures of Standard Finance and advantages of Behavioural Finance in addressing risks and market behaviour, explaining financial crisis and establishing a post-crisis responsive supervisory framework.

Despite securities regulators recognizing the failures of Standard Finance in explaining financial crises, the conventional wisdom of financial supervision was not totally dismissed. The securities regulators prefer to adopt ideologies of Behavioural Finance in complementary to Standard Finance rather than dismiss the ideas of the earlier and rely exclusively on the later. The reason may be that the majority of securities regulators still perceive the values of Standard Finance are fundamental for SMS theoretical framework and suppose its weaknesses could be complemented or explained by insights of Behavioural Finance. Fundamental knowledge of both paradigms hence is considered a requisite for securities regulators. However, SMS theoretical framework re-construction is still a dilemma for the securities regulator community even 5 year after the crisis.

6.3. Qualitative Data Analysis-Documentary Research

Objective of Documentary Research: Primary objective of the documentary research in this stage is collecting and analysing documentary data that helps triangulation, validation and explanation of the 11 preliminary quantitative findings and four other research issues (Box 6.2) arising from quantitative research (See Section 5.5, Chapter Five and Box 5.8, Appendix 5). Data analysis of focus group interviews discussed in Section 6.2 has confirmed QTF2 and provided some preliminary explanation the first of those four research issues. However, data of the focus group interviews only covers a small group of 13 securities regulators. Therefore, the researcher decided to further explore data from documentary research with 101 securities regulators to find additional evidence for more comprehensive research answers.
Box 6.2. Research issues arising from quantitative research in Stage Two

1) Despite the exploratory research finding that securities regulators were strongly called for abandoning of the pre-crisis supervisory philosophy, which essentially relied on insights of Standard Finance and EMH, the quantitative research shows that securities regulator respondents were hesitant to do so in post-crisis time. Instead, they chose to adopt the ideologies from Behavioural Finance while preserve selected values of Standard Finance;

2) Literature review in the qualitative exploratory research stage highlighted that twin-peaks model had become the preferred financial supervisory structure However, quantitative research only found a trend to restructure supervisory systems into twin-peaks model in a group of developed markets after the crisis.

3) Despite the exploratory research finding of the strong calls for moving all OTC traded SFPs to exchange traded market after the incidence of 2008 GFC, quantitative research in this stage shows that a majority of securities regulator respondents still operate both OTC and exchanges as market places for SFPs post-crisis. The trend to move OTC traded SFPs to exchanges or to maintain a unique exchange market for SFPs in post-crisis time is not as strong as suggested by the exploratory research in Stage One of this study.

4) Despite the calls for reducing roles of SROs in market supervision found in the literature of SMS after 2008 GFC, quantitative research shows that involvement of SROs and stock exchanges in market conduct oversight and market surveillance experienced little change. A minority of respondents in fact diminishes the roles of SROs in this field. However, the number of respondents that decided to strengthen SROs’ roles was greater.

Source: developed for this research

Data analysis results of documentary research: Description of documentary research data is presented in Annex 6.1. This section presents nine groups of qualitative research findings (QLF) that support nine major findings of quantitative research (QTF) regarding impacts of the 2008 GFC on SMS. Findings that validate and explain QTF1 regarding general impacts of the GFC on securities markets, QTF11 regarding the divergence between developed and emerging markets, and four new research issues will be integrated into relevant QLFs.

6.3.1. Confirmation, Validation and Explanation of Crisis Impacts on SMS Philosophy

Data analysis in this section provides evidence for confirmation, validation and explanation of QTF 2 regarding the 2008 GFC’s impacts on SMS philosophy and paradigm shift toward adoption of Behavioural Finance and preservation some insight of Standard Finance (see Table 5.7, Appendix 5). Discussions of this section include: (i) paradigm shift in SMS policy making promoted by IOSCO; and (ii) The synergies between the paradigm shift in the IOSCO policy papers and policy making by securities regulators demonstrating the organization’s important role in originating, promoting and transmitting the paradigm shift from developed to emerging markets.
6.3.1.1. Paradigm Shift in SMS Policy Making Promoted by IOSCO

Before 2008, the ideologies of Standard Finance and EMH were essentially reflected by the culture of deregulation and self-regulation reliance in 277 pre-crisis IOSCO’s policy papers. The concept of efficient market was adopted by IOSCO in all four versions of the IOSCO Principles from 1998 to 2008:

“In an efficient market, the dissemination of relevant information is timely and widespread and is reflected in the price formation process. Regulation should promote market efficiency” (IOSCO, 1998b, p. 7; 2002; 2003a, p. 6; 2008b, p. 6).

The perception that markets are efficient and self-regulated led to the belief that information disclosure was sufficient for investor protection and securities regulators can rely on self-regulation by market participants. In very first discussion about the role of securities commissions, IOSCO adopted a three-dimension supervisory framework:

“…any attempt of supervision must combine information disclosure, regulation and self-regulation in the proportion that particular circumstances and cases might call for” (IOSCO, 1990, p. 17).

Self-regulation was considered by IOSCO a valuable complement to the regulator in achieving the objectives of securities regulation (IOSCO, 1998b) and an effective model for regulation of the complex, dynamic and ever-changing financial services industry (IOSCO, 2000b). IOSCO (2003a, p. 5) alleged that ‘full-disclosure of material information to investors is most important means for ensuring investor protection’ and recommended the approach as the major tool for investor protection (IOSCO, 1992, 1995, 1998a, 1999, 2000a, 2000b, 2001, 2003b). However, data analysis shows that the 2008 GFC has triggered a fundamental change in the way the IOSCO perceives securities regulation. Ninety eight out of 186 post-crisis IOSCO policy documents (50%) explicitly or implicitly address the challenges revealed by 2008 GFC as momentum for the reform of SMS endeavoured by IOSCO post-crisis. IOSCO (2009k, p. 17) proclaimed that ‘the crisis affords securities regulators an opportunity to revisit the design, structure and approach to regulating and developing their financial systems’. IOSCO (2009h, p. 5) admitted that globalization and the growing complexities of financial and capital markets ‘have necessitated that regulators undergo a paradigm shift in their supervisory philosophy and regimes’. The in-depth analysis of post-crisis policy documents of IOSCO shows that the organization has taken a paradigm shift in securities regulation and adopted insights of Behavioural Finance post-crisis (IOSCO, 2013d, 2013e, 2014g, 2015l; IOSCO, BCBS, & IAIS,

The paradigm shift was expressed by IOSCO through three key policy themes: (i) removal of self-regulation and strengthening of disclosure in its three-dimension supervisory framework; (ii) adoption of Behavioural Finance’s concept of investors and investor protection; and (iii) adoption of risk-based supervisory approach that nurtured by Behavioural Finance to cope with emerging risks and financial crisis.

6.3.1.1a. ‘Self-regulation’ component was removed while ‘disclosure’ component was strengthened in the IOSCO’s three-dimension supervisory framework

Pro-market mindset that nurtured self-regulation no longer dominate IOSCO securities regulatory framework. Latest version of IOSCO Principles does not only eliminate the roles of SROs in its three-dimension supervision framework but also clearly states that the SROs should be regulated (IOSCO, 2010f, 2013c). The version had no longer called for an obligatory employment of self-regulation. Instead, it said:

“Where the regulatory system makes use of Self-Regulatory Organizations (SROs) that exercise some direct oversight responsibility for their respective areas of competence, such SROs should be subject to the oversight of the Regulator and should observe standards of fairness and confidentiality when exercising powers and delegated responsibilities” (IOSCO, 2010f, p. 5).

It can be assumed that IOSCO has removed one (self-regulation) and retained one (disclosure) of the two components that based on Standard Finance from its three-dimension supervisory framework (disclosure, regulation and self-regulation (IOSCO, 1990)). Analysing of 186 post-crisis policy papers of IOSCO, it was found that the organization has opted to strengthen the left Standard Finance based component-disclosure and intensify the component of regulation by adopting Behavioural Finance’s insights. Until March 2016, IOSCO has published 13 new policy papers on the transparency requirements, mainly focusing on the products, market intermediaries and institutions that were left self-regulated before such as derivatives and SFPs, auditors and entities involving securitization and derivatives creation (BCBS et al., 2010b; BIS, 2009; IOSCO, 2009c, 2009n, 2010i, 2012c, 2012i, 2013d; IOSCO & BCBS, 2015a; IOSCO et al., 2014; IOSCO & BIS, 2012)( see the list of documents in Table 6.7, Appendix 6).

6.3.1.1b. Adoption of Behavioural Finance’s concept of investors and investor protection

The IOSCO’s concept of investors has shifted from Standard Finance’s rational to Behavioural Finance’s human biased investors. Financial investors are no longer deemed rational enough
for deregulation and self-regulation. Instead, investor’s cognitive errors and “irrational behaviour” are now recognized and justified (IOSCO, 2015l). The IOSCO calls for more investment education as an important part of the regulatory toolkit, complementary to enforcement and surveillance activities, for broader objectives of investor protection (IOSCO, 2015l). Investment risk education activities of IOSCO were considered evidence-based and took into account Behavioural Finance, to help IOSCO members better understand the decision making behaviour of the target retail investor audience. Incorporating Behavioural Finance principles into investment risk education helps to adapt to, or even take advantage of, investors’ behavioural biases (IOSCO, 2015a, p. 48).

Behavioural Finance’s point of view is expressed consistently throughout the group of IOSCO’s policy documents on investor protection and education (IOSCO, 2013d, 2013e, 2014g, 2015l; IOSCO et al., 2014) (see the list of policy documents in Table 6.7, Appendix 6). In addition, the IOSCO has also established a Strategic Framework for Investor Education and Financial Literacy and developed a list of 29 key behavioural responses, biases and effects in financial decision making (IOSCO, 2014g) (see Table 6.1, Appendix 6) for guiding its members to conduct investor education initiatives.

6.3.1.1c. Risk-based approach is recommended as the supervisory methodology to cope with emerging risks and financial crisis

Risk-based supervision, nurtured by Behavioural Finance was recommended to cope with the financial crises and emerging risks (IOSCO, 2009h). In the wake of the 2008 financial crisis, risk-based supervision was recommended by IOSCO as the supervisory scheme that included: (i) better identification of risks exposure of market intermediaries and their possible impact on the market; (ii) allocate relevant supervisory scope and intensity based on the level of risk exposed; (iii) combining of supervisory regimes-efficient use and effective allocating of scarce resources; (iv) a more proactive approach; and (v) promoting confidence in the system as a whole (IOSCO, 2009h, p. 10).

Thirty six out of 186 post-crisis policy documents of IOSCO (19.4%) explicitly promote using risk-based methodology in securities supervision (see list of documents in Table 6.7, Appendix 6). Detailed discussion of the risk-based approach promoted by IOSCO is presented in Section 6.3.3 to avoid repetition.

Though the SMS paradigm shift was reflected extensively through the three post-crisis policy themes of IOSCO. A new SMS philosophy has not been developed comprehensively by the organization.
6.3.1.2. Synergies Between Policy Making by Securities Regulators and Paradigm Shift in IOSCO Policy Recommendations

Leading role of IOSCO as a global standard setter in securities regulation was a factor that contributed to the evolution of securities regulatory policies after the 2008 GFC. Through the channels of IOSCO (forums, conferences, memorandums, meetings, discussions, reports, research papers, and public consultative documents) the SMS paradigm shift was fostered in the whole securities community and transmitted from developed markets to emerging markets. Analysis of annual reports of 101 securities regulators during the period of 2008-3/2016 shows that implementation of IOSCO’s recommendations is an important part of post-crisis policy reform plan specified by 100% of securities regulators (see Table 6.2 this section and Table 6.2, Appendix 6). In the context that the policy initiatives proposed by IOSCO are not mandatory, high levels of implementation (from around 80% to 100%) shows the strong influence of the organization in SMS policy making by the securities regulators post-crisis. Analyzing the synergies between IOSCO policy papers and policy making by securities regulators post-crisis provides reliable evidence for validation and explanation the post-crisis paradigm shift.

Documentary research of 101 securities regulators in the time frame from 2008-3/2016 found that the SMS paradigm shift was mentioned or implied by 93% of the regulators (see Table 6.2 Appendix 6). Only 7% of researched securities regulators from emerging markets did not show an obvious change in their supervisory mindset after the 2008 GFC. Some regulators clearly stated their adoption of Behavioural Finance: The plan to establish twin-peaks model in Portugal was called setting up a ‘Behavioural’ peak to protect investors (Pina, 2011). FCA7 of UK declared that Behavioural Finance is their ‘important regulatory tool to analyse consumers and the markets’ (Erta et al., 2013; FCA, 2014, p. 44). ASIC8 implied an SMS philosophy that is balanced between Standard Finance and Behavioural Finance by claiming that their ‘free-market system is based on the principles of investor responsibility, gatekeeper responsibility and the rule of law’ but now ‘understanding the behaviour of investors, consumers and gatekeepers, and applying the right interventions’, is central to achieving their supervisory priorities. As results, ASIC aims to undertake a supervisory approach that addresses ‘conduct risk and the balance between a free-market-based system and investor and financial consumer protection’ (ASIC, 2015, p. 2).

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7 Financial Conduct Authority
8 Australian Securities and Investment Commission
Table 6.2. Advocating of 101 researched securities regulators to IOSCO’s paradigm shift

<table>
<thead>
<tr>
<th>Policies</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plans to implement IOSCO policy recommendations</td>
<td>101</td>
<td>100</td>
</tr>
<tr>
<td>Paradigm shift in SMS mentioned in official report or policy papers of regulators</td>
<td>94</td>
<td>93</td>
</tr>
<tr>
<td>Enhancement of regulation or policy reform of stock exchanges and SROs*</td>
<td>79</td>
<td>78</td>
</tr>
<tr>
<td>Policies to strengthen disclosure and transparency</td>
<td>97</td>
<td>96</td>
</tr>
<tr>
<td>Customer protection and investor education programs conducted with new perception of ‘behavioural’ investors</td>
<td>87</td>
<td>86</td>
</tr>
<tr>
<td>Adoption of risk-based supervisory approach</td>
<td>90</td>
<td>89</td>
</tr>
</tbody>
</table>

* the policy item is not applicable to 05 (4.95%) researched securities regulators

Source: developed for this research, data covers the period 2008-3/2016

Three post-crisis policy themes that promoted the SMS paradigm shift by IOSCO were advocated extensively by the securities regulators.

- Recommendations of IOSCO on regulation of SROs and strengthening disclosure requirements were strongly supported by securities regulators. During the period 2008-2015, 78% of the securities regulators had undertaken policy reform with stock exchanges and other SROs, ranging from intensifying supervision over the institutions to restructuring or setting up some coordination to enhance market supervision (Table 6.2, this section and Table 6.2, Appendix 6). At the same time, 97% of them had developed new legal framework to enhance information disclosure, especially transparency of derivatives and OTC markets (see Table 6.2 this section and Table 6.2, Appendix 6). However, the policies to enhance transparency requirements post-crisis of IOSCO and securities regulators does not mean the securities regulatory community still rely on disclosure-based supervision. Different from the pre-crisis mechanism that encourages market participants to provide as much information as available to investors for decisions; the post-crisis transparency requirements not only enable investors to have more information for their choice but aim to provide sufficient and adequate information for risk-based supervision (post-trade transparency requirements, market infrastructure requirements, etc.). Details of data analysis are discussed later in Section 6.3.5).

- The investor education initiatives with insights from Behavioural Finance of the IOSCO were actively supported by securities regulators. Annual reports of securities regulators during the period from 2008-2015 show that 87 out of 101, accounting for 86% of securities regulators, have been conducting the financial investor education initiates as part of their reforms post-crisis (see Table 6.2 in this section and Table 6.4, Appendix 6). For instance: ASIC acknowledged the influences of financial literacy and behavioural biases of investors in providing education and tools to help Australians with financial decisions (ASIC, 2015,
Securities and Exchange Commission (SEC) of Thailand set up Financial Literacy Department and Accredited Investor Regime to promote investor education on savings and investment in 2011 (SEC, 2011); FCA (UK) has conducted research papers on investor behaviour and risks to guide their investor education programs since their establishment in 2013 (FCA, 2014). These are only some typical examples. Investor education initiatives of other securities regulators are summarized in Table 6.4, Appendix 6.

Analysis of data from annual reports of 101 securities regulators during the period 2008-2015 provides strong evidence about the trend adoption of risk-based approach by IOSCO members. Ninety out of 101 researched securities regulators (89%) mentioned using risk-based approach in market supervision. Many of them mentioned the risk-based approach as a policy response to the impacts of the 2008 GFC (Croatia, Denmark, Estonia, France, Ghana, Georgia, Gibraltar, Guernsey, Hungary, Indonesia, Ireland, Italy, Japan, Jordan, Korea, Malaysia, Portugal, and UK) (see Table 6.2 this section and Box 6.2, Table 6.5 Appendix 6 for details). Discussion about emergence of risk-based approach is discussed in details in Section 6.3.3.

Although the SMS paradigm shift is clearly reflected in IOSCO policy documents and the synergies of IOSCO members in policy making post-crisis, the theoretical transition has not been supported by a complete and comprehensive theoretical framework that could replace the one in pre-crisis time. Qualitative research findings (QLF) discussed in this section are summarized below:

**QLF2- Confirmation, validation and explanation of the crisis impacts on SMS philosophy:** Evidence was found by documentary research to support QTF2 and first research issue arising from quantitative research regarding impacts of the 2008 GFC on SMS philosophy and the paradigm shift toward adoption of Behavioural Finance’s ideologies and retaining certain values of Standard Finance in SMS framework.

The paradigm shift was reflected through three key policy themes of IOSCO: (i) removing Standard Finance based ‘self-regulation’ component while retaining ‘disclosure’ component in its three-dimension supervisory framework; (ii) adoption of Behavioural Finance’s concept of investors and investor protection to complement the weaknesses of disclosure-based mechanism; and (iii) adoption of risk-based supervisory approach that nurtured by Behavioural Finance to cope with emerging risks and financial crisis. The leading role of IOSCO as an international standard setter in securities regulation was found a factor that fostered the SMS paradigm shift and transmitted it from developed markets to emerging
markets. Synergies between post-crisis policy making by securities regulators and the paradigm shift of IOSCO were found extensively. Many efforts have been made to regulate SROs and strengthen transparency requirements to pre-crisis unregulated products, market activities and institutions, which were previously left to self-regulation. Investor education programs with insights from Behavioural Finance and risk-based approaches are widely implemented by regulators.

The shifted perception of IOSCO from protection of rational investors by self-regulation and disclosure to protection of human biased investors by financial literacy and education explains and supports the finding of focus group interviews that the securities regulators might choose to preserve certain values of Standard Finance because they think the weaknesses of Standard Finance could be complemented by Behavioural Finance. Though the SMS paradigm shift was reflected extensively through the three post-crisis policy themes of IOSCO and the policy reform of IOSCO members, a new SMS philosophy that can serve as a complete and comprehensive alternative for the pre-crisis theoretical framework is still missing in the policy documents of IOSCO and its securities members.

6.3.2. Validation and Explanation of Crisis Impacts on SMS Architecture and New Finding on the Emergence of Central Bank Involvement in Supervision

Data analysis in this section aims to identify evidence for validation and explanation of QTF 3 regarding 2008 GFC’s impacts on SMS architecture and targets the second among five research issues arising in quantitative research (Box 6.2) concerning divergence between developed and emerging markets in their choices for restructuring SMS systems post-crisis (See Table 5.7, Appendix 5). This part of the research, based on updated data collected from 101 securities regulators during the period 2008-2015, addresses three questions: (i) whether the finding from the quantitative research on the mentioned trend of post-crisis supervisory reform and reshaping is consistent for the whole population of securities regulators? And if the trend is confirmed (ii) why the twin-peaks model is not the choice for majority of securities regulators to redesign their system, despite its advantages? And (iii) why integration is still a preferable approach for regulators, especially the ones from emerging markets to reshape their supervisory setting after the 2008 GFC, given the twin-peaks model rather than integration is recommended as optimum or ideal for financial stability (Alembakis, 2015; Burke, 2015; Erskine, 2010; G30, 2008; Paulson, Steel, & Nason, 2008).
6.3.2.1. Verification of SMS Supervisory Architecture Reform After the 2008 GFC With a More Complete Picture of Policy Responses

Quantitative research showed that that post-crisis re-evaluation of SMS structure often lead to one or more among three key changes: (i) redesign of SMS structure into twin-peaks or integration model; (ii) new power was given to existing financial regulators or securities regulators to enhance systemic stability and supervision over derivatives and SFPs; (iii) new regulators or new supervisory structures were established.

However, qualitative research in this stage not only verified the quantitative findings but found a more diversified range of supervisory structural reforms after the 2008 GFC (see Table 6.2 and Table 6.3, Appendix 6 for details of reforms), including:

- **Powers of existing securities regulators were strengthened by new legislation, mostly to supervise the products, markets and institutions that were not under supervision pre-crisis such as OTC derivatives, hedge funds, market gatekeepers such as CRAs and auditors.** For example, the FMA\(^9\) of Austria was given new responsibilities for supervision of CRAs, prevention of money laundering and terrorist financing in 2011. In 2013, FMA obtained new authority for enforcing accounting standards and supervision duties with regard to hedge funds and alternative investments;

- **Securities regulators were restructured by realigning of responsibilities among departments or setting up new departments for better supervision and investor protection.** For instance, the State Securities Commission (SSC) of Viet Nam has been under restructuring since 2008 GFC and a new department within the SSC was set up in 2015 to undertake the responsibility of public companies supervision;

- **New organizations were established to participate in market supervision.** The new organizations might assume a certain supervisory responsibility or operate as a coordinator of supervisory efforts from different market regulators. For instance, The Systemic Risk Committee and the Financial Stability Committee, chaired by the Minister of Finance, were established by Act No 66/2014 in Iceland. The Financial Stability Committee issues recommendations to the member institutions on appropriate actions in the interest of stability and the institutions are obliged to comply with recommendations or otherwise justify publicly why they are not in compliance;

- **The financial supervisory architecture was transformed from one to another model/structure.** The transformation might be achieved by realigning supervisory

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\(^9\) Financial Market Authority
responsibilities of existing regulators or by establishing new supervisory organizations and/or strengthening supervisory powers by new legislation. France is a typical example. The financial supervision of this jurisdiction was transformed from functional to partly integrated with twin-peaks elements. Law No. 2010-1249 on banking and financial regulation enacted on 22 October 2010 provided French Financial Market Authority (AMF) with the authority to implement emergency measures to restrict the negotiations in the financial markets in the event of exceptional circumstances. The Law extends the competence of the AMF with respect to market abuse sanctions and reporting of suspicious transactions to, in particular, certain derivative markets. The Law also creates Council in Charge of Regulating the Financial Sector and Monitoring Systemic Risk. Supervising authorities for the banking and insurance sectors merged into a new single supervisory authority, the French Prudential Supervisory Authority (ACP);

- Securities regulators participated into a regional financial supervisory body or a national network of supervisory coordination was set up. Securities regulators in European Union (EU) participated in the European System of Financial Supervision (ESFS), which was created in 2011 as an effort for consolidating market supervision. Transposition of EU new legislations on market supervision is compulsory for the regulators. Setting up a national coordination network for supervision is another option for regulators. For instance, the Macro-Prudential Council, including representatives from Denmark National Bank, Danish FSA, Economic Ministry and independent external experts was established in 2013 to coordinate macro-prudential supervisory activities in Denmark;

- Strengthening securities regulator’s powers by new legislation was combined with organizational restructuring or establishing new supervisory organizations. In Singapore, Monetary Authority of Singapore (MAS) set up Corporate Governance Council in February 2010 to enhance market supervision. The Securities and Futures Act amendments to allow MAS to mandate central clearing came into effect in November 2012. In 2013, the MAS Amendment Bill was passed, giving MAS additional resolution powers and a broader range of regulatory options to deal with failed financial institutions, as well as share information with foreign resolution authorities, where necessary;

- Organizational restructure was combined with participating into regional supervisory body or setting up national supervisory coordination network. Slovakia is a prominent
example. On 10 June 2013, an amendment to the Financial Market Supervision Act had extended power of National Bank of Slovakia (NBS), the integrated supervisor of Slovakian financial market in financial market supervision. In the same year, to accommodate participation in Single Supervisory Mechanism of European Community, NBS established new units within its organization;

- **Supervisory responsibilities were shifted from one to another organization.** In Kazakhstan, functions and powers of the Financial Supervisory Agency (FSA) were transferred to the National Bank of the Republic of Kazakhstan by the Decree № 25 of the President of the Republic of Kazakhstan as of April 12, 2011;

- **A new model of supervisory structure had been proposed but restructuring process has not been finalized.** For example, twin-peaks model was proposed in Portugal and Spain. However, the transformation of supervisory structure in the jurisdiction has not been yet finalized as of March 2016.

Figure 6.2 shows a landscape of post-crisis SMS restructure of 101 countries. It should be noted that the securities supervisory structure is an inseparable part of the overall financial supervisory structure. Therefore, the reform depicted has a broader scope that overcomes the borderline of national securities markets.

**Figure 6.2. Supervisory structure reform of 101 researched securities regulators post-crisis**
It can be seen in Figure 6.2 that the cases of transformation from one to another model of supervisory structure (either by realigning of responsibilities of existing regulators or by setting up of new supervisory organizations and/or strengthening of supervisory powers by new legislations) accounts for 21.78% (11.88% plus 9.90%) of the research sample. If including 3.96% of the research sample that have work-in-progress transition or a plan of transformation from one to another structure into this group, the proportion of securities regulators with accomplished or future plan of restructure into other supervisory architecture would become almost 26% of the research sample.

Figure 6.3. Current financial supervisory structure of 101 researched jurisdictions

![Pie chart showing the distribution of current financial supervisory structures among the researched jurisdictions.]

**Source:** developed for this research, data is updated as of 3/2016

The second prevalent supervisory restructure activity is promulgation of new legislation to empower the existing regulators (undertaken by 16.83% research sample), followed by reform of organizational restructuring of the securities regulators, accounting for approximately 15% of research sample (7.92% plus 6.93%). The combination of strengthening of securities regulator’s powers by new legislation with organizational restructuring or establishing new supervisory organizations comes into fourth place, accounting for 14.85% of research sample. Nearly 11% of securities regulators having no change in their supervisory structure. The issue
of SMS restructure is non-applicable (special cases) to approximately 2% of the sample as their supervisory regulators were set up after the crisis.

Figure 6.3 shows the financial supervisory structure of the selected 101 jurisdictions as at March 2016. Criteria for classifying the supervisory structure of the sample is essentially based on the definitions and classification of G30 (2008) on the structure of financial supervision (see Box. 6.1 Appendix 6 for the criteria). The current structure is an outcome of transformation of around 21% of the research sample from one to another supervisory architecture during 8 years since the 2008 GFC. Integration of financial supervision is inherently a trend that became stronger after the crisis. The post-crisis trend of supervisory consolidation is highlighted by emergence of integrated structure under central bank.

As shown by Figure 6.3, the fully integrated model accounts for 30.7% of the research sample (19.8%+10.9%). The proportion of 21.8% and 30.7% of research sample that have a partly and fully integrated supervisory structure accordingly shows the fact that the supervisory consolidation toward integration was undertaken by 52.5% of the securities regulators. Twin-peaks model only accounts for approximately 7% of the research sample. The institutional model accounts for nearly 25% whereas functional model shrank to less than 12% of the research sample.

Table 6.3. Matrix of financial supervisory restructuring of 24 selected jurisdictions

<table>
<thead>
<tr>
<th>Abandoned Model</th>
<th>Fully Integrated</th>
<th>Fully Integrated Under CB</th>
<th>Partly Integrated Under CB</th>
<th>Partly Integrated</th>
<th>Partly Integrated With Twin-peaks Elements</th>
<th>Twin-peaks</th>
<th>Total *</th>
<th>% of total sample (101)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>11</td>
<td>10.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>6.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fully Integrated</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>4.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>7</td>
<td>0.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>24</td>
<td>23.8</td>
<td></td>
</tr>
</tbody>
</table>

*Including 20 cases of completed transformation and five cases of work-in-progress plans of transformation

Source: developed for this research, data covers the period 2008-3/2016

Analysis of data also provides an explanation for the current setting of securities supervisory structure. Table 6.3 shows the transformation of supervisory structure of 24 securities regulators during the period from 2008-March 2016. The data displayed in the table was collected from 21 cases of securities regulators with completed transition from one to another model of supervisory structure and three cases with transition or work-in-progress plans for
transformation (two cases where a plan of transformation was mentioned but not undertaken was excluded). It means that nearly 24% of the research sample have taken steps to restructure their supervisory system to another model during the period (see Figure 6.2 and Table 6.3).

Data analysis shows that twin-peaks and integration are the two alternatives for supervisory architecture redesigning. Among 24 regulators that had taken steps to restructure their supervisory architecture, twin-peaks model was the choice for seven regulators with more developed financial sectors (five from functional and one each from integrated and institutional models), accounting for 29.2% total group.

However, an integrated model (partly or fully integration) was the choice for 15 other regulators to redesign their supervisory architecture, making a proportion of 62.5% of total group. Among those 15, five used to be under functional model, six were under institutional before restructure, one was transformed from hybrid setting and three of them were fully integrated but chose to consolidate under central bank. Two remaining regulators balanced between twin-peaks and integration and developed a partly integrated system with twin-peaks elements, accounting for 8.3% of the group (See Table 6.3, this section and Table 6.3, Appendix 6 for details).

It can be identified from the data that nearly a half of the jurisdictions with supervisory architecture constructed under functional model before 2008 GFC had restructured their system into another model, causing a drop from 22.8% (10.9% plus 11.9%) to only 11.9% of the total sample after the crisis (Figure 6.2 and Table 6.3). Nearly 7% of research sample decided to transform from institutional setting to the integrated and twin-peaks models (only one regulator or 0.99% chose twin-peaks).

The trend of consolidating supervision toward integration is more than double the trend to set up twin-peaks in financial supervision post-crisis (15 versus seven if excluding two cases of integrated structure with twin-peaks elements). The cases of restructuring into integrated model accounts for approximately 62.5% the total cases of shifting supervisory architecture (15/24), making the proportion of regulators with partly or fully integrated supervisory settings approximately 52.5% of the total 101 researched securities regulators. Findings discussed in this section are summarized below.
QLF 3A - Confirmation of the SMS architecture reform after the 2008 GFC with a more complete picture of crisis-induced policy responses: It is concluded that documentary research provides evidence that supports QTF 3 on the landscape of crisis-induced SMS supervisory structure reform and a part of QTF 11 on divergence in trend of post-crisis restructuring between developed and emerging markets during the period 2008-2015:

- Securities regulators had undertaken a wide range of crisis-induced policies to reform their supervisory structure, including strengthening the regulatory powers by new legislation, setting up new supervisory body, reorganizing the existing supervisory agencies, transforming into other supervisory structure, participating into regional supervisory agencies, shifting of supervisory responsibilities to another organizations, and combination of the above mentioned policy measures;

- The functional model was further losing its significance. More than half of the jurisdictions with the supervisory system in this setting pre-crisis chose to abandon it and construct a new system in twin-peaks or integration model. Regulators with institutional model, though preserves a stable proportion of 24.75% of the research sample, started the transition to other models, mainly integration post-crisis;

- The integration model is increasingly predominant after the crisis with more than half of the research population having the supervisory architecture with features of this model as of March 2016. Twin-peaks model, though strongly recommended by international organizations and academics post-crisis, is only a choice of a small group of developed markets. Whereas, emerging markets preferred integration to reform their supervisory settings;

6.3.2.2. Twin-peaks Model Is An Optimum Model for Developed Markets But Not A Convenient Choice For The Emerging Markets

The objective of data analysis in this section is to explain the choice between twin-peaks and integration model of securities regulators post 2008 GFC. The twin-peaks model was recognized as the ‘optimal means’ of ensuring that issues of transparency, market integrity, and consumer protection receive sufficient priority (Alembakis, 2015; G30, 2008, p. 14).

However, both quantitative and qualitative data analysis of this research found that the model, despite the claimed superiority, has not obtained the expected significance in post-crisis trend of supervisory restructuring. Documentary research found that twin-peaks model seems to be a ‘customized’ setting for developed markets rather than the majority of emerging markets.
Table 6.4. Financial architecture restructuring of 24 selected jurisdictions

<table>
<thead>
<tr>
<th>Model adopted</th>
<th>Jurisdictions</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twin-peaks and other setting with twin-peaks elements</td>
<td>Belgium (2011); France (2010); Germany (2013) New Zealand (2011); United of Kingdom (2012), United of Arab Emirates (2012), Spain (2010, plan in progress); South Africa (2014, transition in progress); Portugal (2011, plan in progress);</td>
<td>9</td>
</tr>
<tr>
<td>Fully or partly integrated outside central bank</td>
<td>El Salvador (2011); Indonesia (2013); Korea (2008); Switzerland (2009); Barbados (2011); Bolivia (2009); Egypt (2009); Romania (2012);</td>
<td>8</td>
</tr>
<tr>
<td>Fully or partly integrated under central bank</td>
<td>Georgia (fully integrated in 2009; partly integrated in 2013); Hungary (2013); Ireland (2010); Kazakhstan (2011); Lithuania (2012); Russia (2013); Uruguay (11/2008)</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Source: developed for this research, data covers the period 2008-3/2016

Development of the twin-peaks model may require fundamental political-economic and institutional factors which makes the model viable in Australia but may not be available in the emerging markets. In other words, the twin-peaks model is not the one-size-fit-all that can be transferred to other financial markets without considerations. The paradox can be explained by the following reasons:

- Firstly, one crucial factor to the success of twin-peaks model is the notion that both regulators in charge of prudential regulation and conduct supervision are equal in power and importance, and that neither should play second-fiddle to the other (A. Schmulow, 2016). The factor makes twin-peaks hardly applicable in emerging markets, where financial systems tend to be relatively smaller in size, more concentrated and less complex, with banks playing a large role while capital markets and other financial institutions remain relatively underdeveloped (IMF et al., 2011). In UK, twin-peaks model was supported by some academics just because the British financial sector is not dominated by banks and there is a highly developed customer protection regime in the jurisdictions (Bryane, 2014). Sectoral design, rival for regulatory powers and over dominance of bank regulators make the institutional restructure to establish two specialized regulators with balanced power and importance in the emerging markets difficult. Data collected from updated IMF’s country reports for financial system stability assessment of 24 jurisdictions that have their structure redesigned after 2008 GFC provides reliable evidence to support this observation. Seven (Belgium, New Zealand, Portugal, Spain, UK, France and Germany) among nine jurisdictions that constructed a pure model of twin-peaks or mixed it with integrated settings in the period
2008-3/2016 are the developed financial markets with more complex financial systems compared to the larger part of the group (see Table 6.4). Two other jurisdictions, South Africa and United Arab Emirates are still members of IOSCO Growth and Emerging Markets Committee. However, South Africa has large, sophisticated financial sectors (IMF, 2014g) and United Arab Emirates was ranked by World Economic Forum (Liu & Reinhardt, 2016) as one of 25 World’s strongest financial markets in 2015 (See Table 6.3, Appendix 6). Among the group of 15 jurisdictions that chose integration model rather than twin-peaks, 14 are the emerging and developing economies that share many of the characteristics as defined by IMF et al. (2011). These characteristics may be the obstacles that contributed to them not choosing the twin-peaks model (See Table 6.3, Appendix 6). An exception in this group is Switzerland. Although it is a developed economy by definition of IMF et al. (2011), Switzerland chose integration model for their new financial supervisory setting;

- Secondly, coordinating the views of the different regulators and resolving conflicts is a challenge of twin-peaks model (Restoy, 2016; Weatherhead, 2010). For success, two peaks in the model need to rely upon effective and efficient inter-agency collaboration, which is free from rivalry and political interference. In Australia, Australian Prudential Regulation Authority and the Reserve Bank of Australia (RBA) in one peak of prudential regulation, and ASIC in the other peak of market conduct supervision, have demonstrated history of close cooperation (A. Schmulow, 2016). Furthermore, Australian public servants are highly skilled and largely free from corruption because of an independent judiciary and existing within a state based upon the rule of law (A. Schmulow, 2016). The same characteristics seem to be evident in group of seven mentioned developed economies that have taken steps to restructure into twin-peaks model within eight years post-crisis. However, the characteristics are not available in 14 of 15 jurisdictions that opted to integrate their supervisory agencies (except Switzerland). With weaker institutional frameworks and market infrastructures, emerging markets often lack an efficient mechanism for cooperation and sharing information among regulators. This fact might cause the twin-peaks model to become less attractive for them. In addition, in the context that there has been a general shift toward more politicization of financial policy making after the 2008 GFC (Véron, 2012), twin-peaks model that require technical regulators and political interference free environment may not be a convenient choice for emerging markets with a relatively greater involvement of the state in the financial system (IMF et al., 2011);
Thirdly, the costs of restructuring the supervisory system into twin-peaks may be bigger than the benefits it may generate. In addition, market participants may incur higher costs because more regulators mean more resources should be allocated to compliance (Michael, 2014). For the emerging markets with important capacity constraints (IMF et al., 2011) in terms of both human and financial resources, twin-peaks may be an expensive option;

Finally, twin-peaks model is recommended as a resilient model to cope with financial crisis (Erskine, 2014; KMG, 2012; Paulson et al., 2008; A. Schmulow, 2016). Documentary research found that jurisdictions that transformed to twin-peaks are the ones that were hurt badly in the 2008 GFC. All the jurisdictions that chose twin-peaks highlighted the requisite of developing a supervisory architecture that is viable in financial crisis and provides effective investor protection (see Table 6.3, Appendix 6). In addition, data from updated IMF’s country reports on financial stability of 101 securities regulators shows evidence to verify QTF1 that emerging markets are less affected from the 2008 GFC. Another report of IMF recently concluded that many emerging markets proved resilient during the crisis (IMF et al., 2011). This may be a factor that makes the requirement to set up a costly crisis-preventive structure like twin-peaks less urgent for the emerging markets. The case of Switzerland provides some further evidence to support this observation. Different from other developed markets that transformed their supervisory system post-crisis, Switzerland chose integration model rather than twin-peaks and claimed that their supervisory consolidation had ‘nothing to do’ with the 2008 GFC (FINMA, 2009a).

Qualitative research findings discussed in this section are summarized below:

QLF 3B-Twin-peaks was found an optimum model for financial stability in developed markets but not a convenient choice for the emerging markets post-crisis: It is concluded that documentary research provides evidence to explain QTF 1, QTF 3, QTF 11 and the second research issues of the quantitative research (Box 6.2). Twin-peaks model is recommended as an optimum model for financial stability. However, the model requires fundamental institutional settings and market infrastructure that are unlikely available in emerging markets. Equality in power and importance of involved regulators, effective and efficient inter-agency collaboration, rivalry and political interference free are the prerequisite of twin-peaks model. Due to the fact, the model is relevant for developed markets with urgent requisite for enhancement of financial stability and consumer protection post-
crisis. But it may not be a convenient choice for the emerging markets with less developed financial sector and tradition of politicization of financial policy making, which was amplified by the 2008 GFC. In addition, costs for setting a new supervisory structure that requires not only special institutional and market infrastructures but availability of huge resources and special expertise can be another factor that may prevent emerging markets from restructuring into twin-peaks model. Furthermore, emerging markets were less vulnerable in the recent 2008 GFC, therefore among other factors, it might be less urgent for them to restructure their supervisory system into a costly crisis-preventive architecture like twin-peaks.

6.3.2.3. Prevalence of Integration Model - a Continued Progress Since 1997 Asian Financial Crisis and Further Supervisory Consolidation Mandated by the 2008 GFC With Emerging Role of Central Banks

In this section, the process and reasons for restructuring into integration model of 15 selected countries in the period 2008-2015 was compared and analysed. Qualitative data analysis in this research not only found evidence that supports QTF 3 regarding the prevalence of supervisory integration (Table 5.7, Appendix 5), but identified an increasing involvement of central banks in the integrated financial structure after 2008 GFC.

**Box 6.3. Examples of rationale for supervisory architecture redesign after the 2008 GFC**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>&quot;The new model will create a prudential regulator housed in the South African Reserve Bank (SARB), while the FSB will be transformed into a dedicated market conduct regulator. It is designed to streamline interaction between regulators and the financial services industry, with a more functional approach to regulation and supervision replacing the current industry silo-based approach. The implementation of the twin-peaks model in South Africa has two fundamental objectives: (i) Strengthen South Africa’s approach to consumer protection and market conduct in financial services; and (ii) Create a more resilient and stable financial system. The prudential regulator’s objective will be to maintain and enhance the safety and soundness (or financial health) of regulated financial institutions, while the market conduct regulator will be tasked with protecting consumers of financial services, and promoting confidence in the South African financial system&quot;</td>
<td>“The financial crisis of recent years highlighted the vulnerabilities of both the institutional and organizational architecture of markets and of the regulatory and supervisory activity thereof. Reform of business models and of regulatory and supervisory practices is done slowly and over time. The Financial Supervisory Authority (FSA) was established in Romania in this dynamic of re-construction of the architecture and consolidation of the regulatory and supervisory mechanisms of markets at the European level. One of the main reasons that led to the amalgamation of the three supervisory authorities into one was the formation of a better and more unitary supervisory framework of markets, institutions, non-banking financial instruments and activities. The purpose of the new framework was to make all participants in</td>
</tr>
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</table>
the national non-banking financial system responsible, individually and collectively, to better allocate resources and to achieve a fair competitive environment for the participants in the financial markets. Also, through the establishment of FSA, the prerequisites for the implementation and application of a uniform set of supervisory rules for non-banking financial markets are created, favouring the implementation of the European supervisory authorities’ recommendations and the improvement of the participation of Romania in the activities of such bodies”.

Financial supervision integration under Central Bank of Hungary (2013): “At its session on 16 September 2013, the Parliament adopted the draft legislation on the Magyar Nemzeti Bank (MNB), which decided to integrate the financial market supervision function into the central bank. Having drawn conclusions from the financial crisis, with this Act the legislator created a central bank which, within the framework of a single institution, guarantees the stability of the financial system and the functioning of individual financial institutions. The negative repercussions of the financial crisis in Hungary and the best practices of several EU Member States have both demonstrated that the harmony between macro and micro level supervision is indispensable for the prevention and resolution of individual or systemic financial crises. As a result of this integration, the MNB acquired a comprehensive information base pertaining to individual institutions, which improved the conditions for macro-level decision-preparation and resolved the previous contradictions surrounding regulatory actions taken vis-à-vis the financial intermediary system. With the comprehensive set of instruments available to the MNB, the identification, prevention, monitoring and control of the systemic risk factors threatening the stability of the financial system and the individual risks of specific institutions have become more harmonized and thus more efficient”

Source: cited from FSB (2014a, p. 8), AFS (2013, p. 9) and MNB (2013, p. 9) respectively

Further exploration of the qualitative data gave evidence to explain the phenomenon:

- The trend of consolidation of supervisory powers is not newly emerged. Instead, it has been trending for nearly 20 years after the South East Asia Financial Crisis 1997 (Masciandaro & Quintyn, 2012). The momentum for supervisory consolidation after that crisis was identified by many researches (ECB, 2010; Jabotinsky, 2012; Masciandaro & Quintyn, 2009, 2012). The momentum behind supervisory consolidation after that crisis is the increasing need to adopt a mechanism that can address the changing industry structure with financial conglomerates, emergence of new financial products, especially derivatives products that overlapped conventional deposit, insurance, securities boundaries (Klein, 2009; Masciandaro & Quintyn, 2012; Taylor, 2011). It was found that the reasons for transition to integration model of some jurisdictions in the years 2008-2009, including Korea (2008), Uruguay (2008), Bolivia (2009); Egypt (2009) and Switzerland (2009) did not originate with the current 2008 GFC. In fact, the trend of consolidation was to respond to the changing landscape of financial market since the first crisis (1997). The second crisis (2008) additionally fueled or accelerated the process. For instance, the establishment FSCK10 of

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10 Financial Services Commission of Korea
Korea in 2008 was claimed ‘to proactively deal with rapidly changing financial environment characterized by conglomeration, financial convergence, and globalization while separating policy making and execution functions so as to enhance the responsibility of financial administration’ (FSC, 2008). Swiss FINMA\(^\text{11}\) stated that the primary objective of their integration is dealing with dynamic and increasingly complex financial markets; and the 2008 GFC required them to undertake a supervisory approach reform to specialization in some areas of supervision (FINMA, 2009a) (see Table 6.3, Appendix 6 for rationale of restructure of selected 24 jurisdictions).

However, the trend of supervisory integration of other jurisdictions after the 2008 GFC seems to be connected closely with the crisis. Paradigm shifting in SMS philosophy possibly required regulators to redesign their current structure to accommodate new supervisory tasks. Two new supervisory functions emerged after 2008 GFC, including the management of the resolution of non-viable institutions and the adoption of macro-prudential policies to prevent potential macro-financial imbalances and mitigate their destabilizing effects (Taylor, 2011). Harmonization of macro-prudential and micro-prudential supervisory activities becomes indispensable. Data analysis found that the choice of ten jurisdictions (El Salvador, Indonesia, Barbados, Romania, Georgia, Hungary, Ireland, Kazakhstan, Lithuania, and Russia) that transformed to partly or fully integration during the period 2010-2015 (see Table 6.4) was related to the new responsibilities and the requisite of harmonization of macro and micro-supervisory functions (See Table 6.3, Appendix 6). In the securities industry, integration in supervision means more information, less coordination costs for regulators and less chance of regulatory arbitrage risks, which may generate or amplify the potential systemic risk spin-offs from one sector to another. For the ten jurisdictions, compared to twin-peaks model, supervisory integration may be a more economic, institutionally suitable and practical choice to ensure macro-prudential supervision and equivalent regulation across different sectors of financial markets (see Table 6.3 Appendix 6). In addition, eight of the ten jurisdictions are from Europe and have participated in the EU regional supervisory networks such as European Securities Regulator or Single Supervisory Mechanism. Transposition of EU new legislations to respond to 2008 GFC was found a key policy responsibility of the agencies post-crisis (See Table 6.3 Appendix 6). For the cases, supervisory integration was considered a pre-requisite for implementation and application of a uniform set of policy recommendations (AFS, 2013) by regional and international supervisory bodies that were formed after the 2008 GFC.

\(^\text{11}\) Financial Market Supervisory Authority
Evidence from this research is the emerged trend of integration under central banks. Using a sample of 102 financial regulators, Freytag and Masciandaro (2005); Masciandaro and Quintyn (2010) found a trend of supervisory integration outside central bank in the period of 10 years after the 1997 Asian Financial Crisis. By an ordered logit model, the authors found a significant inverse relationship between supervision unification and central bank involvement (Masciandaro & Quintyn, 2010). That outcome enabled the authors to conclude that in an institutional setting with a central bank deeply and successfully involved in supervision, or legally independent, a multi-authority model or a supervisory fragmentation is likely to occur (Freytag & Masciandaro, 2005). However, this research, conducted with the similar sample of 101 regulators for the period from 2009-early 2016, found alternative evidence. Seven (46.7%) of the 15 jurisdictions (see the list in Table 6.4 and Table 6.3 Appendix 6) that restructured their financial system toward integration in the period from 2008-3/2016 had set up a partly or fully integrated structure under the umbrella of central bank, making the proportion of this model increase to approximately 11% of total sample. And even three of them transited from the fully integrated model outside central bank to integration under central bank. Among these three, one was separated from central bank before but re-integrated into central bank after the 2008 GFC (Kazakhstan). This research outcome was supported by the research of ECB (2010) that confirms a departure from functional (sectorial) setting and tendency toward further enhancing the role of national central banks in supervisory activities. Further exploration of documentary research data helped explain this phenomenon. The 2008 GFC has highlighted the requirement of systemic risk control and the information-related synergies between the central banking and the prudential supervisory function (ECB, 2010). Data analysis in this research found that involvement of the central banks in financial supervision was increasingly strengthened through the adoption of the twin-peaks model in developed markets and the adoption of integration under central banks in emerging markets. Seven out of nine jurisdictions that transited to twin-peaks model and partly integrated with twin-peaks elements in the period 2008-3/2016, including Belgium, New Zealand, Portugal, South Africa, Spain, U.A.E, and Germany have the central bank in the peak of prudential regulation. France and UK established a subordinate organization under their central banks to conduct the prudential supervision responsibilities, namely Autorité de Contrôle Prudentiel (ACP) under Bank of France and Prudential Regulation Authority (PRA) under Bank of England respectively. For Ireland and six emerging markets (Georgia, Hungary, Kazakhstan, Lithuania, Russia, and Uruguay), it was found that the crisis-induced mandate of strengthening macro-prudential (usually assumed by central banks) and controlling the risks generated by rapidly growing
financial institutions in harmony is an impetus for their financial supervision systems to be integrated under central banks (see Table 6.3 Appendix 6). For example, Central Bank of Hungary (MNB) was assigned the new macro-prudential mandate in accordance with best international practices by a new Act in late 2011. The integration of financial supervision under MNB, undertaken in 2013, was claimed as an approach to ensure ‘harmony between macro and micro level supervision…for the prevention and resolution of individual or systemic financial crises’ (MNB, 2013, p. 9) (see Box 6.3).

Qualitative research findings discussed in this section are summarized below:

QLF 3C: Prevalence of integration model was found as a continued progress since 1998 financial crisis and further supervisory consolidation mandated by the 2008 GFC with emerging role of central banks: It is concluded that documentary research provided evidence to validate and explain QTF 3, QTF 11 and the second among 4 research issues of quantitative research on the increasing financial supervisory integration, especially in emerging markets post 2008 GFC. In addition, documentary research also identify and justify a new research finding on emergence of central bank’s role in the supervisory consolidation process:

The trend of supervisory integration had momentum from the previous Asian Financial Crisis in 1997. It was additionally fueled and accelerated by the 2008 GFC. The regulators adapted to rapidly changing financial environment characterized by conglomeration, financial convergence, globalization, and emergence of complex financial products after the first crisis by consolidating their powers across sectors of financial market. Whereas, the paradigm shift after the second crisis requires the regulators to further consolidate their systems to accommodate their new supervisory mandates. Lessons learnt from the 2008 GFC led to the awareness of indispensable harmonization of both macro and micro-prudential supervision to achieve two objectives: financial system stability and protection of investors in a new light of SMS philosophy. The requisite of comprehensive supervisory information base, reducing of regulatory arbitrage risks, and unifying of supervisory activities across interconnected sectors for harmonization of macro and micro-prudential supervision place regulators before two alternatives: twin-peaks model and integration model. Because of different level of market infrastructure and institution, developed markets chose twin-peaks and emerging markets chose integration. In addition, integration is another pre-requisite for implementation and application of a uniform set of policy recommendations by regional and international supervisory bodies that were formed after
the 2008 GFC. The information-related synergies between the central banking and the prudential supervisory function have placed central banks at the centre of the post-crisis supervisory restructure. The new era of central bank has emerged after the 2008 GFC: central banks as prudential regulators in the twin-peaks model and central banks as integrated supervisors of financial markets.

6.3.3. Validation and Explanation of Crisis Impacts on SMS Supervision Approaches

Data analysis in this section provides further evidence to support QTF 4 and QTF 11 regarding evolution of SMS supervisory approaches post 2008 GFC (See Table 5.17, Chapter 5 and Table 5.7, Appendix 5). Research outcomes discussed in this section include: (i) confirmation of 2008 GFC impacts on SMS approaches with emergence of risk-based supervision as a tool to cope with risks and financial crisis; (ii) the move from deregulation to re-regulation by developed markets that can explain the divergence between two groups of developed and emerging markets in post-crisis SMS approaches. Concepts of SMS approaches discussed in Section 2.3.3 Chapter 2 (Figure 2.3) were used as criteria to define different available approaches applied by the securities regulators.

6.3.3.1. Emergence of Risk-based Approach As a Tool to Cope With Risks and Financial Crisis

Documentary research found the data that suggests the trend of using risk-based approach by IOSCO and 101 securities regulators. As discussed in Section 6.3.1, thirty six out of 186 post-crisis policy documents of IOSCO (19.4%) explicitly promote the ideas of using risk-based methodology in securities supervision (see list of documents in Table 6.7, Appendix 6).

Three objectives of risk-based supervision defined by IOSCO are: (i) safeguard the stability of the financial system; (ii) promote efficiency in the operation and compliance by market intermediaries; and (iii) provide adequate investor protection (IOSCO, 2009h). Intensifying of the roles of securities regulators in mitigation of systemic risks (IOSCO, 2011d) and addressing conflicts of interest and problems of financial conglomerates (BIS, 2009; IOSCO, 2009h, 2010d, 2011e) are the two crisis-induced policy mandates that prompted IOSCO and other international organizations such as BIS, G20 to recommend their members using risk-based approach.

IOSCO’s promotion of risk-based approach can be seen in the 21 post-crisis policy documents regarding market intermediaries regulation and risk-based approach (BCBS et al., 2010a,
2010b; IOSCO, 2009e, 2009g, 2009h, 2010c, 2010d, 2011b, 2011f, 2011g, 2012e, 2014e, 2015a, 2015j; IOSCO & BCBS, 2015b; IOSCO et al., 2008). Risk-based supervision was also recommended in 15 documents of IOSCO on emerging risks, systemic risks and roles of securities regulator in macro-prudential supervision (BCBS et al., 2010a; IMF, 2011b; IOSCO, 2009k, 2011a, 2011d, 2012a, 2012f, 2012h, 2012j, 2013a, 2013b, 2013f, 2013h, 2013i, 2014b, 2014d, 2014f, 2014h, 2015a, 2015e, 2015k, 2015m, 2015n) (See Table 6.7, Appendix 6 for the list of documents). However, the key policy document of IOSCO on risk-based approach that influenced the trend of emerging markets to follow risk-based practices is the “Guidelines to Emerging Market Regulators Regarding Requirements for Minimum Entry and Continuous Risk-Based Supervision of Market Intermediaries” (IOSCO, 2009h). In the document, IOSCO provided useful guidelines on setting, models and tools of the risk-based approach that was unfamiliar to emerging markets pre-crisis. The organization also warned that risk-based approach can be challenging, costly and time consuming for securities regulators that have historically been more rule-based (IOSCO, 2009h). Furthermore, IOSCO proposed emerging markets to ‘tailor their risk-based supervision approaches to suit the circumstances that are specific to their own markets’ (IOSCO, 2009h, p. 9).

It was found that the recommendations of IOSCO on application of risk-based framework were intensely supported by IOSCO members. Ninety out of 101 researched securities regulators (89%) were found using risk-based approach in market supervision as a tool for fulfillment of new responsibilities post-crisis (see Table 6.5 Appendix 6). The risk-based approach found in the supervisory framework of 101 securities regulators essentially includes three aspects: (i) minimum entry requirements for licensing and capital requirements; (ii) risk assessment frameworks; and (iii) risk-focused inspection methodologies (IOSCO, 2009h, p. 3). Risk-based approach was officially recognized by many securities regulators as their strategic approach of supervision. For example, risk-based supervision was discussed extensively on Barbados Financial Services Commission (FSCB) website as a ‘dominant approach to regulatory supervision of financial institutions around the world’ (FSCB, 2016). Mauritius Financial Services Commission (FSCM) committed that they pursued a ‘sustainable risk-based’ and ‘shall further develop a culture of risk-based supervision and embed a single risk framework and risk-based regulation approach’ (FSCM, 2013, p. 35). Financial Markets Authority (FMA) in New Zealand stated that as a risk-based conduct regulator, FMA focus its resources on conduct that they think poses the most significant risk to achieving this objective (FMA, 2015, p. 2). Portugal announced an adoption of a global model for supervision, which, in accordance with international best practices, risk-based, enables an effective allocation of current resources
and prevents failures from taking place in the market for financial instruments (CMVM, 2011) (see Table 6.5 and Box 6.2, Appendix 6 for details).

Therefore, it is concluded that consistent evidence was found from documentary research to confirm the transition toward risked based approach of securities regulators post-crisis. Post-crisis awareness and demand for an efficient crisis-preventive and investor protective supervisory regime are the factors that contributed to the prevalence of risk-based approaches. In addition, leading role of IOSCO in promotion the risk-based approach was another factor that can explain the adoption of risk-based regime where it was not available before, especially in emerging markets.

6.3.3.2. The Move from Deregulation to Re-regulation That Can Explain the Divergence Between Developed and Emerging Markets in SMS Approaches Post-crisis

Documentary research found substantial data that suggests a trend of moving from deregulation to re-regulation post-crisis in both IOSCO and the group of 101 securities regulators in the period 2008- March/2016. In the wake of the financial crisis, securities investors are no longer left to rely on self-regulation of markets. Instead, they are protected by more disclosure, risk-based supervisory approach and re-regulation.

Table 6.5. Shifting to re-regulation in IOSCO policy documents

<table>
<thead>
<tr>
<th>Policy themes</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>1 Policy documents on principles and standards of securities regulation</td>
<td>37</td>
</tr>
<tr>
<td>2 Policy documents on strengthening of secondary markets regulation and market surveillance</td>
<td>14</td>
</tr>
<tr>
<td>3 Policy papers on strengthening of market intermediaries supervision and risk-based approach</td>
<td>21</td>
</tr>
<tr>
<td>4 Policy documents on reinforcement of regulation over investment management funds and hedge funds</td>
<td>21</td>
</tr>
<tr>
<td>5 Policy documents on regulation of pre-crisis unregulated entities, products and markets,</td>
<td>08</td>
</tr>
<tr>
<td>6 Regulation of securitization, OTC markets and derivatives trading</td>
<td>29</td>
</tr>
<tr>
<td>7 Policy documents of promoting strict regulation of CRAs</td>
<td>13</td>
</tr>
<tr>
<td>8 Policy papers on strengthening regulation of auditors</td>
<td>10</td>
</tr>
<tr>
<td>9 Policy documents on regulation of clearing and settlement systems</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>171</td>
</tr>
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</table>

Source: Developed for this research, data covers the period 2008-3/2016

As shown by Table 6.5, the changing mind of the IOSCO from deregulation to re-regulation have been reflected throughout 171 post-crisis policy documents of the organization, categorized in nine groups (see Table 6.7, Appendix 6 for more details). The latest version of IOSCO Principles put the pre-crisis unregulated market intermediaries and entities under tough regulation by adding four new principles (Principles 19-13) for regulation of auditors, CRAs and other entities that offer investors analytical or evaluative services, one principle for
regulation of hedge funds (Principle 28) and one principle on oversight of clearing and settlement systems and central counterparties (IOSCO, 2010f, 2013c).

The synergies of shifting from deregulation to re-regulation of IOSCO were found among the 101 selected securities regulators. The documentary research has explored the availability of new or amendment legislation by the jurisdictions to strengthen SMS and identified a strong advocating by the regulators to the IOSCO policy recommendations. Data analysis shows that during the period from 2008-3/2016, 101 securities regulators have extensively promulgated new laws or amendment of existing legal framework to strengthen five SMS areas, including supervision of market intermediaries (93.1%), macro-prudential supervision (77.2%), supervision of securities products (78.2%), supervision of market conduct (96%) and supervision over CRAs and auditors (74.3%) (See Figure 6.4 and Table 6.2, Appendix 6).

**Figure 6.4. Legislation to strengthen SMS post-GFC of 101 researched securities regulators**

FSCK has described the pre- and post-crisis transition in securities regulatory approach as ‘Regulation->deregulation->re-regulation->better regulation’ (FSCK, 2014). The process was identified as re-regulation because the subjects of the new or revised legal documents are the market entities or behaviour that were deregulated or left to self-regulation before the 2008 GFC (See Section 6.3.4, 6.3.5, 6.3.6 and 6.3.7 for details of data analysis). Exploration of the
re-regulation trend post-crisis enabled the following explanation for the divergence between developed and emerging markets in their post-crisis SMS approach reform:

- The re-regulation process is more robust in developed market group with 100% of the regulators promulgating new or amendment legislation to strengthen all five areas of SMS (see Figure 6.4, this section and Table 6.2, Appendix 6) during 2009-3/2016. It is justifiable because developed markets were more vulnerable in the 2008 GFC and under stronger pressure of issuing new rules to correct pre-crisis regulatory failures. In fact, the re-regulation process was initiated and promoted by the developed markets through the channels of BIS, IOSCO, G30, G20, G8, European Securities and Market Authority (ESMA) and other international or regional institutions. In this group, market entry requirements, reporting mandates, customer suitability, conflict of interests, fit and proper requirements and code of conduct were found important regulatory tools for the re-regulation. The evidence may explain the trend found by quantitative research that regulators of developed markets used more rule-based regulations in parallel with enhancing of risk-based practices in their post-crisis SMS reform. However, with larger data from qualitative research, it was found that the re-regulation process does not mean the securities regulators in developed markets came back to rule-based supervision. In fact, combination of different approaches was preferred. For example, FCA (UK) stated that they use a proportionate-based and judgement-based approach in combination with risk-based in-depth, structured supervision with firms, who are potential to cause greater risks (FCA, 2014) (see Table 6.5 and Box 6.2 Appendix 6 for the details of post-crisis SMS approaches reforms).

- The group of emerging markets was found less active in the re-regulation process from 2009 to 2015 with above 70% of regulators issuing new or amended legislation to strengthen macro-prudential supervision, market conduct oversight and supervision of market institutions and SROs. Below 95% of jurisdictions in this group undertook legal reform to strengthen supervision of market intermediaries and securities product supervision post-crisis. New regulations to strengthen SMS by the emerging markets were found less crisis-induced, less comprehensive and less stringent than those of developed markets (see Figure 6.2 and Table 6.6). This feature can be explained by the three facts found by documentary research: (i) emerging market were less vulnerable in the 2008 GFC, therefore the policy reform was conducted essentially to respond to the lessons learnt from the more crisis sufferers and recommendations by international organizations, mainly IOSCO; (ii) SMS supervision of emerging markets are already
rule-based so that the impetus of re-regulation might not be as strong as in the case of developed markets; and (iii) most of the emerging markets, especially the ones that set up their market recently (Brunei, Sri Lanka, Mongolia, and some from former Soviet Union) are in the process of market development and forsaking the old method of compliance-based supervision. Market development for competition with the other regional and international markets is a mandate for the jurisdictions in the post-crisis context that centre of gravity for global markets is being shifted to emerging markets (Macquarie, 2012; Writer, 2012). The mandate placed the emerging market securities regulators under the pressure to reduce the regulatory burden for market intermediaries and participants. This impetus induced them to adopt principle-based regulations to accommodate market development at the same time with application of risk-based supervision approach for financial stability and crisis prevention.

Therefore, the outcome of quantitative research that developed markets pursued more rule-based regulations while emerging markets preferred principle-based post-crisis could be explained by the evidence of the documentary research. Qualitative research findings discussed in this section are summarized below:

QLF 4-Validation of findings from quantitative research on supervisory approach and emergence of risk-based approach, and explanation of divergence in post-crisis SMS methodology between developed markets and emerging markets: Documentary research found consistent evidence to confirm QTF 4 and QTF 11 concerning impacts of the 2008 GFC on SMS approach and divergence of developed and emerging markets in the crisis-induced policy responses in terms of SMS approach. High synergies between promotion of risk-based framework of IOSCO and application of risk-based practices by securities regulators once again demonstrated the influence of IOSCO as a global standard setter to post-crisis SMS policy making of its members. In addition, evolving post-crisis market scenario and the need for better allocation of limited supervisory resources was an impetus for securities regulators to look for improved methods of identifying, appraising and mitigating risks. Consequently, an increasing number of securities regulators has been moving away from a loosen market-based system or a rigid rule-based system to adoption of a risk-based supervisory approach, which is more reliant on the discretion and professional judgement of supervisors on the specific possibility to generate or amplify risks of each market entity.
The post-crisis re-regulation process was initiated and undertaken robustly by developed markets to correct the pre-crisis regulatory failures. Development of Behavioural Finance based rules to regulate the market participants and market operations that were deregulated and self-regulated pre-crisis became a mandate. The re-regulation process might explain why developed markets group in the quantitative research showed a trend of coming back to rule-based regulations while enhancing risk-based supervisory approach to respond to the crisis. However, the re-regulation process does not mean that the securities regulatory community came back to rule-based supervision. Combination of different SMS approaches for different SMS objectives was observed post-crisis. Being less affected from the 2008 GFC, already rule-based and under pressure of reducing regulatory burdens to promote market development, emerging markets were less active in the post-crisis re-regulation and chose to be more principle-based at the same time with adoption of risk-based approach for maintaining of system stability and preventing of financial crises.

6.3.4. Validation and Explanation of Crisis Impacts on Macro-prudential and Micro-prudential Supervision in the Securities Markets

Documentary research in this section provides further evidence to confirm QTF 5, QTF 6 and QTF 11 relating to evolution of SMS macro-prudential and micro-prudential supervision post 2008 GFC (See Table 5.17, Chapter 5 and Table 5.7, Appendix 5). Macro-prudential and micro-prudential supervision post-crisis reforms are discussed together in this section to reflect the inter-connectivity between the two SMS components. Research outcomes discussed in this section include: (i) increasing involvement of securities regulators in macro-prudential supervision post-crisis and (ii) enhancement of post-crisis market intermediaries supervision with focus on investment funds.

6.3.4.1. Increasing Involvement of Securities Regulators in Macro-prudential Supervision Post-crisis

Documentary research in this stage found data that shows impacts of the 2008 GFC on macro-prudential supervision and an increasing involvement of securities regulators in macro-prudential supervision post-crisis.

Representation of IOSCO at the Financial Stability Board (FSB) is the inherent evidence of increasing importance of macro-prudential supervision in the securities markets. The movement toward more stringent macro-prudential supervision in the securities markets can be seen prominently in the IOSCO’s policy documents. Principle number 6 in IOSCO Principles version 2010 specifies that the securities regulators should have or contribute to a process to
monitor, mitigate and manage systemic risk, appropriate to its mandate (IOSCO, 2010f, 2011d). The tasks of securities regulators were also extended to review perimeter of regulation regularly and to avoid conflicts of interest and misalignment of incentives (IOSCO, 2010f). Having observed that pre-crisis practices of securities regulation “lacks of financial stability perspective”, IOSCO (2011d, p. 8) recognized mitigating systemic risk as one of the most important roles of securities regulators.

Table 6.6. Comparison of crisis-induced polices by developed and emerging markets in strengthening macro and micro-prudential supervision

<table>
<thead>
<tr>
<th>Policy area</th>
<th>Developed markets</th>
<th>Emerging markets</th>
</tr>
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<tbody>
<tr>
<td>Strengthening macro-prudential supervision</td>
<td>More responsive to the 2008 GFC impacts and following the recommendations of IOSCO and other international organizations by: (i) restructuring supervisory architecture to specialize macro-prudential supervision into a functional supervisory organization (twin-peaks model); (ii) redesigning of macro-prudential responsibilities among current supervisory bodies; (iii) establishing new network or institutions for coordination of macro-prudential supervision; (iv) new legal framework to strengthen macro-prudential supervision; (v) strengthening activities of investor protection</td>
<td>Responding to the lessons from the 2008 GFC and following the recommendations of IOSCO and other international organizations: (i) restructuring supervisory architecture to unify supervisory power into integrated supervisory body to ensure it have adequate access to systemically important information for macro-prudential supervision (integration model); (ii) redesigning of macro-prudential responsibilities among current supervisory bodies; (iii) establishing network for further enhanced coordination of macro-prudential supervision; (iv) new legal framework to extend power of supervisory bodies in macro-prudential supervision; (v) strengthening activities of investor protection</td>
</tr>
<tr>
<td>Strengthening market intermediaries supervision</td>
<td>More responsive to the 2008 GFC’s impacts and following the recommendations of IOSCO and other international organizations by (i) redesigning the current structure to set up a specialized supervisory body in charge of market institutions; (ii) re-regulating the market intermediaries that were deregulated or self-regulated pre-crisis; (iii) focusing on the systemically important financial conglomerates; (iv) applying the Behavioural Finance based requirements such as customer suitability, conflict of interests, fit and proper requirements; (v) risk-based supervision is enhanced.</td>
<td>Responding to the lessons from the 2008 GFC and following the recommendations of IOSCO and other international organizations: (i) reviewing or amending the current legal framework on market intermediaries supervision; (ii) shifting the supervisory power to other regulator or extending power of current supervisory bodies over market intermediaries supervision; (iii) applying the Behavioural Finance based requirements such as customer suitability, conflict of interests, fit and proper requirements; (iv) risk-based supervision is adopted.</td>
</tr>
</tbody>
</table>

Source: developed for this research, data covers the period 2008-3/2016

Providing guidelines to the securities regulators, the IOSCO (2011d) defined eight factors that may cause financial instability (See Box 6.3 Appendix 6). In order to promote better macro-prudential supervision, the IOSCO also created the Working Group on Systemic Risk to
examine the role of securities regulators with respect to systemic risk. IOSCO (2011d) defined systemic risks as any widespread adverse effect on the financial system and called for contribution of securities regulators to the regulatory processes to monitor, mitigate and appropriately manage risks. Regulators were proposed to have ‘particular regard to investor protection, market integrity, and the proper conduct-of-business within markets as contributing factors to reducing systemic risks’ (IOSCO, 2011d, p. 13). During the period from 2010-2015, IOSCO had issued 15 policy papers on systemic risks and macro-prudential supervision to guide the securities regulators in macro-prudential supervision (see Table 6.7 Appendix 6).

Responding to the recommendations of IOSCO on taking a more important role in macro-prudential supervision, majority of securities regulators in the research had undertaken policy measures to strengthen this supervisory activity (Table 6.2, Appendix 6). Differences found between developed and emerging markets in the policy measures are summarized in Table 6.6. A hundred percent of securities regulators from developed markets and 70.1 % from emerging markets developed new or amended legal frameworks to strengthen macro-prudential supervision (see Figure 6.3). Restructuring of supervisory architecture to ensure financial stability was a choice of many regulators (23.8%). In developed markets, the restructure was to specialize macro-prudential supervision into a functional supervisory organization (twin-peaks model-Belgium, France, Germany, New Zealand, Portugal, Spain, and UK). In the emerging markets, it was the unification of supervisory power into integrated bodies to ensure adequate access to systemically important information for macro-prudential supervision (integration model-El Salvador, Georgia, Indonesia, Hungary, Romania). In this process, central banks were emerging as important peaks of supervision or a unified financial supervisor (see Table 6.3 Appendix 6). Redesigning of macro-prudential responsibilities among current supervisory bodies was another option for macro-prudential reform by the securities regulators (some examples are Canada, Czech, Hungary, and Kazakhstan). Some jurisdictions established new network or national institutions for coordination of macro-prudential supervision (Iceland, India, Japan, Mauritius, Sweden, Turkey and US). Other jurisdictions opted to empower the current supervisory bodies to enhance macro-prudential supervision (Cyprus, Estonia, Finland, Jamaica and Singapore) (See Table 6.2, Appendix 6 for more details). In addition to new legal frameworks that strengthened macro-prudential supervision, investor protection was also strengthened as a measure to ensure market confidence and stability (IOSCO, 2011d). Eighty six percent of securities regulators in the research have been conducting the investor education programs as a policy response to the 2008 GFC (see Table 6.5 this section and Table 6.4 Appendix 6).
6.3.4.2. Enhancement of Post-crisis Market Intermediary Supervision With Focus on Investment Funds

Documentary research found a robust evolution of supervision over market intermediaries after the 2008 GFC as a policy measure to contribute toward systemic stability.

Forty three policy documents were developed by IOSCO recommending and enhancing market intermediary supervision (see table 6.7 Appendix 6 for the list of documents and Box 6.4 Appendix 6 for details of data analysis of IOSCO documents). Customer suitability, conflict of interests, fit and proper test requirements that were based on insights of Behavioural Finance are applied extensively (IOSCO, 2013g, 2014e, 2015d). Risk-based approach was assumed ‘can improve regulator’s efficiency and effectiveness of regulatory processes by optimum utilization of supervisory resources’ and ‘promotes a proactive compliance culture among market intermediaries’ IOSCO (2009h, p. 24). Observing the ‘ever increasing complexities of market participants activities’, IOSCO encouraged regulators to move toward risk-based supervision (IOSCO, 2009h, p. 6). Investment funds, especially hedge funds became subject to toughest supervision (IOSCO, 2009d, 2009i, 2013f, 2014b, 2015e, 2015i). Newly emerged crowdfunding activities were also recognized and placed under regulation by IOSCO (2014b, 2015e).

Documentary research found the synergies between IOSCO recommendations and reforms of market intermediary supervision by securities regulators. All (100%) securities regulators from developed markets and 91% from emerging markets in this research had promulgated new or amended legislation to strengthen micro-prudential supervision (See Figure 6.3). The trend of establishing a new regulatory agency in charge of micro-prudential supervision or shifting the function from one to another regulatory body in many markets was found to consolidate micro-prudential regulation and to create a close link between micro and macro-prudential regulation to avoid potential financial instability and crises. Some typical examples are: Bank of Russia took over the responsibilities of financial institutions from Federal Service for Financial Markets (FSFM) and became a mega-regulator in 2013, fostering the coordination of macro and micro-prudential supervision. Responsibilities of National Belgium Bank (NBB) and Financial and Securities Market Authority (FSMA) were redesigned in 2011 where NBB was in charge of financial stability and prudential supervision of financial institutions and FSMA was for supervision of market conduct and prudential regulation of companies which were not regulated by NBB. Financial Market Authority (AMMC) of Morocco was established in 2012 to replace the old capital market regulator (CDVM) with greater powers covering all the financial market participants. The Office of Securities Business Monitoring within Financial
Supervisory Agency (FSA) of Japan was created to strengthen supervision of market intermediaries and identify systemic risks.

Developed and emerging markets slightly deviated in their approaches to strengthen micro-prudential supervision:

- Developed markets responded to the 2008 GFC by re-regulating the market intermediaries that were not or loosely regulated pre-crisis, especially hedge funds. Due to the unavailability of hedge funds and complex financial institutions in emerging markets, they focused on reviewing the current legal framework on market intermediaries (Table 6.6);

- Developed markets redesigned the supervisory structure and concentrated on systemic important financial conglomerates. Being less urgent in responding to the impacts of the 2008 GFC, emerging markets shifted the supervisory power from one to another regulator or extended power of current supervisory bodies to strengthen market intermediary supervision (Table 6.6).

The differences might be explained by discrepancy of the two groups in the level of market development and impacts of the 2008 GFC. Due to the leading role of IOSCO, a common point between the two groups was that they both employed risk-based supervision and the Behavioural Finance based requirements such as customer suitability, conflict of interests, fit and proper requirements for micro-prudential supervision reform (Table 6.6). Qualitative research findings discussed in this section are summarized below:

**QLF5- Validation and explanation of the 2008 GFC impacts on macro-prudential and micro-prudential supervision in the securities markets:** It is concluded that documentary research provided evidence to verify QTF5, QTF6 and regarding evolution of SMS macro-prudential and micro-prudential supervision post 2008 GFC. To respond to 2008 GFC impacts, securities regulators were actively involved in macro-prudential supervision. Being aware of the potential systemic instabilities caused by failures of market intermediaries, securities regulators have been strengthening macro and micro-prudential supervision in parallel. New or amendment legislation was promulgated, supervisory architecture was redesigned, supervisory power was expanded, new supervisory bodies or networks were established, Behavioural Finance ideologies were adopted to strengthen macro and micro-prudential supervision at the same time. IOSCO, as a global standard setter, continues to play an important role in the post-crisis reform of regulators. Though evolving toward the same direction, discrepancy was found between two groups of developed and emerging markets.
The process macro and micro-prudential supervision reform in developed markets was more vigorous and responsive to the direct impacts of the 2008 GFC. Meanwhile, it was less active in emerging markets due to lower level of market development and less suffering from the crisis. In the developed markets that transformed from one to another SMS architecture, there was a trend to specialize and functionaize macro-prudential regulation and micro-prudential supervision into two separate supervisory bodies. In emerging markets, it was the trend to unify both areas into one united financial supervisory body. Among others, investor education and financial literacy programs were conducted as an attempt to ensure investor protection and maintain the financial systemic stability. Risk-based supervisory approach and the Behavioural Finance based requirements such as customer suitability, conflict of interests, fit and proper requirements were employed by both groups to strengthen supervision over market intermediaries.

6.3.5. Validation and Explanation of Crisis Impacts on Supervision of Securities Products

The objective of data analysis in this section is to find evidence to verify and explain QTF 7, QTF 11 and the third research issue from quantitative research concerning the impacts of the 2008 GFC on supervision of securities products (See Table 5.17 Chapter 5 and Table 5. 8, Appendix 5). Discussion of data analysis include: (i) Re-regulation of pre-crisis unregulated products in developed markets and further enhancement of transparency requirements in emerging markets; and (ii) reinforcement of OTC derivatives and SFPs supervision by mandatory registration and transparency of trading participants.

**Table 6.7. Comparison of crisis - induced policies of developed and emerging markets in strengthening securities product supervision**

<table>
<thead>
<tr>
<th>Developed markets</th>
<th>Emerging markets</th>
</tr>
</thead>
</table>
| More responsive to the 2008 GFC’s impacts and following the recommendations of IOSCO and other international organizations:  
(i) Re-regulating the products that were deregulated pre-crisis, especially SFPs and OTC derivatives;  
(ii) Strengthen supervision over parties that are involved in the process of issuing and trading the SFPs and derivatives (settlement, central counterparty);  
(iii) Enhancing transparency requirements of securities issuance and transaction;  
(iv) Enhancing corporate governance principles | Responding to the lessons from the 2008 GFC and following the recommendations of IOSCO and other international organizations:  
(i) Taking into account the recommendations of IOSCO in development of legal framework for derivatives markets;  
(ii) Enhancing transparency requirements of securities issuance, offering and transaction of public companies;  
(iii) Enhancing corporate governance principles |

*Source: developed for this research, data covers the period 2008-3/2016*
6.3.5.1. Re-regulation of Pre-crisis Unregulated Products in Developed Markets and Further Enhancement of Transparency Requirements in Emerging Markets

Documentary research found a strong progression of supervision over securities products post-crisis in policy documents of IOSCO and 101 selected securities regulators post-crisis. Divergence between developed and emerging markets was seen in their policy reforms in this SMS area. In developed markets, it was the trend of re-regulation of the pre-crisis unregulated products. In emerging markets it was a process of further enhancement of transparency requirements. The role of IOSCO in initiating and popularizing the policies to strengthen securities product supervision was acknowledged.

IOSCO (2009f) proposed securities regulators to restore the market confidence by enhancing transparency of complex financial products and disclosure by the market participants involved in issuing, trading and rating them. Since early days after the 2008 GFC, IOSCO has recommended more stringent regulatory tools over the derivatives and financial structured products that were unregulated or least regulated pre-crisis (IOSCO, 2009c, 2009h, 2009n, 2010i, 2011c, 2012c, 2012d, 2012f, 2012i, 2013d, 2015k; IOSCO & BCBS, 2015a, 2015b; IOSCO & BIS, 2012).

During the period 2008-3/2016, IOSCO developed 30 policy documents (See Table 6.7 Appendix 6) on this theme with the recommendations on the following issues: (i) setting up requirements on responsibilities of creators/sponsors of SFPs; (ii) developing the requirements on derivatives market intermediaries (DMI); (ii) enforcing stronger transparency requirements relating to creation and trading of SFPs, derivatives, securitized products; (iii) reviewing the requirements on investor suitability, definition of sophisticated investor and investor financial literacy; (iv) improvement of risk management practices by reducing reliance on external credit ratings; and (v) recommending to trade standardized derivatives contracts with a suitable degree of liquidity on exchanges or electronic trading platforms (See Box 6.5 Appendix 6 for details of data analysis). Given the context that before the 2008 GFC, derivatives were subject to minimum regulation, this was a turning point in the history of securities market regulation. In addition to more stringent regulations of SFPs, securitized and derivatives products, IOSCO strongly recommended more regulation and supervision of securities products by further enhanced transparency and adoption of international accounting and auditing standards (see Table 6.7 Appendix 6).

Responding to the recommendations of IOSCO, 100% of securities regulators from developed markets (24/24) developed new legal framework on securities issuance and offering, ongoing disclosure of issuers, accounting standards, corporate governance, securitization, and SFPs and
derivative markets (see Figure 6.3) during the period 2008-3/2016. Most of the regulations were issued in the period from 2012 to 2015 in a synergy with recommendations of IOSCO on strengthening supervision of securities products (see Table 6.6, Appendix 6 for list of legal documents by developed markets). A typical example of policy reform of securities supervision in developed markets was the Dodd-Frank Wall Street Reform and Consumer Protection Act in US. The Act, promulgated by the US Congress in January 2010 has six sections from Sec. 941 to Sec. 946 for improvements to the asset-backed securitization process. The improvements include (i) regulation of credit risk retention; (ii) disclosures and reporting for ABS; (iii) representations and warranties in asset-backed offerings; (iv) exempted transactions under the Securities Act of 1933; (v) due diligence analysis and disclosure in ABS issues; and (vi) study on the macroeconomic effects of risk retention requirements. The Act also has whole Title VII - Wall Street Transparency and accountability with 74 Sections on promotion of transparency and accountability in securities market (US Government, 2010).

Nearly 95% of emerging markets (73/77) in this research issued new or amended legal documents on transparency, accounting standards and corporate governance to enhance supervision of securities products in the period 2008-3/2016 (see Figure 6.3). Different from developed markets, emerging markets focused on enhancement of transparency requirements and adoption of international auditing and accounting standards (Table 6.7). However, there is a discrepancy among emerging markets in legislative reform of this area:

- Emerging markets in EU enjoyed the robust securities legislative reform of the community and developed a comprehensive legal framework on securities products by transposition of EU new legal documents. The group includes Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia;

- Emerging markets where derivatives are prevalent actively followed recommendations of IOSCO in developing the legal framework to enhance supervision of these products. For example, Thai SEC issued two rules on issuance of structured products in 2012 and five rules on service providers and derivative intermediaries in the period from 2012 to 2014. FSCK of South Korea developed the Asset-Backed Securitization Act, Special Purpose Companies for Mortgage-backed bonds Act and Financial Investment Services and Capital Market Act in 2014;

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12 From Section 701 to section 774, Dodd-Frank Wall Street Reform and Consumer Protection Act 2010 (US Government, 2010);

6.3.5.2. Reinforcing of OTC Derivatives and SFPs Supervision by Mandatory Registration and Transparency of Trading Participants

The crisis had revealed certain deficiencies in the OTC derivatives markets and highlighted the importance of robust regulation of OTC trade products (IOSCO, 2010i, p. 4). Qualitative exploratory research found numerous recommendations on moving of OTC traded derivatives to exchange traded markets to improve transparency, mitigate systemic risk, and protect against market abuse in the derivatives markets (G20, 2009a) (Erskine, 2010b) (Hull, 2010). Documentary research for the period 2008-2015 also found that IOSCO at least twice recommended the securities regulators to trade standardized derivatives contracts with a suitable degree of liquidity on exchanges or electronic trading platforms (IOSCO, 2011i, 2012c). However, exploration of data on post-crisis policy reform of the 101 securities regulators only found limited evidence of moving OTC traded products to exchanges by the regulators in this period.

Some OTC derivatives have been moved to exchanges in Australia, Brazil, Germany and Taiwan. Among other reforms, Dodd-Frank Act 2010 in US also specifies that standardized derivatives contracts have to be traded on electronic platforms. The OTC derivatives reform post-crisis was vigorous with plenty of new rules and regulations, but the trend of moving OTC derivatives to exchange traded platform was not as strong as expected.

Instead, the policy recommendations of IOSCO on mandatory clearing of OTC derivatives through central counterparties and post-trade transparency were advocated heartily by the securities regulators (see Box 6.5, Appendix 6 for analysis of IOSCO recommendations). There were three levels of reform of OTC derivatives: (i) shifting standardized OTC derivatives to exchanges (only five cases); (ii) mandatory post-trade reporting and clearing through central clearing counterparties (CCP) of standardized OTC derivatives; and (iii) mandatory reporting, collateralization, and higher capital requirements for non-centrally cleared contracts.
Data analysis (Figure 6.5) shows that 24.8% of the total researched regulators are non-applicable for the research question because OTC derivatives market was not available in their jurisdictions. Around 23% of the sample was developing market infrastructure and legal framework for the derivatives market. Policy documents of this group showed a high compliance with recommendations of IOSCO and G20. One case (Thailand) that has derivative market in operation but does not have any legal reform up to date. Around 47% of the sample, chose to adopt the IOSCO’s recommendations on mandatory post-trade CCP clearing and reporting and maintaining higher capital requirement and collateralization for non-CCP cleared cases. Only 5% of the sample moved standardized contracts to exchanges markets in addition of the mandatory requirements of post-trade CCP clearing and reporting.

Figure 6.5. Post-crisis OTC derivatives market reform of 101 researched securities regulators

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-applicable, 24.8%</td>
<td></td>
</tr>
<tr>
<td>Mandatory CCP clearing and reporting of OTC derivatives, collateralization and higher capital for non-CCP cleared, 46.5%</td>
<td></td>
</tr>
<tr>
<td>Market infrastructure and legislation are being developed in compliance with IOSCO and G20 recommendations, 22.8%</td>
<td></td>
</tr>
<tr>
<td>Exchange traded standardized contract, mandatory CCP clearing and reporting of non-standardized contracts, 4.95%</td>
<td></td>
</tr>
<tr>
<td>No changes, 1.0%</td>
<td></td>
</tr>
</tbody>
</table>

Source: developed for this research, data covers the period 2008-3/2016

It is inevitable that jurisdictions still prefer OTC derivatives with enhanced transparency and risk management to moving all derivatives to exchange markets. It may be because OTC market
offers a more flexible mechanism for risk diversification as the primary objective of derivatives and product innovation (Duffie, Li, & Lubke, 2010). Qualitative research findings discussed in this section are summarized below:

| QLF6: Validation and explanation of the 2008 GFC impacts on supervision of securities products: | It is concluded that evidence from documentary research verified and explained QTF7, QTF11 and the third research issue from quantitative research regarding the impacts of the 2008 GFC on supervision of securities products found. The 2008 GFC was found leading to a robust reform of supervision over securities products in both developed and emerging markets. In developed markets, it was the trend to re-regulate the pre-crisis deregulated products such as SFPs, derivatives and securitized products. The mandate requires a comprehensive legal framework that covers issuance/creation, intermediating and trading of these products to be set up for filling the regulatory gaps unveiled by the crisis. In the emerging markets, due to unavailability of SFPs or securitized products, the reform process essentially focused on re-enforcing transparency requirements and corporate governance. The reform of OTC derivatives markets was not a shifting to exchange traded markets as expected. Instead, the securities regulators preferred to preserve the flexibility of OTC derivatives markets for risk diversification and product innovation by mandatory registration, post-trade reporting and CCP clearing and settlement. Higher capital requirements and collateralization were applied to non-CCP cleared products to reduce risks and risk taking. Again, IOSCO played an important role in promoting and guiding the policy reform in this area. |

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6.3.6. Validation and Explanation of Crisis Impacts on Market Conduct Oversight

The objective of this section is to discuss the outcomes of documentary research that validate and explain QTF 8, QTF 11 and the fourth research issue arising from quantitative research on impacts of the 2008 GFC on market conduct oversight of securities regulators post-crisis (Table 5.7, Appendix 5 and Box 6.2). Documentary research identified (i) a trend of fortifying market conduct oversight by securities regulators; (ii) unclear future role of SROs in market supervision post-crisis.

Table 6.8. Comparison of crisis-induced policies of developed and emerging markets in strengthening market conduct oversight

<table>
<thead>
<tr>
<th>Developed markets</th>
<th>Emerging markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>More responsive to the 2008 GFC’s impacts and following the recommendations of IOSCO and other international organizations:</td>
<td>Responding to the lessons from the 2008 GFC and following the recommendations of IOSCO and other international organizations:</td>
</tr>
<tr>
<td>(i) Focusing on the market behaviour that may endanger market integrity and investor protection such as short selling, insider trading and market manipulation;</td>
<td>(i) Extending power of securities regulators in enforcement, especially powers in administrative penalties or bringing cases to court;</td>
</tr>
<tr>
<td>(ii) Issuing new code of conduct and new legal framework that strengthen market conduct oversight;</td>
<td>(ii) Reviewing and amending the regulations on market surveillance and enforcement;</td>
</tr>
<tr>
<td>(iii) Strengthening the role of securities regulators on market conduct oversight that were left to SROs pre-crisis.</td>
<td>(iii) Modernizing IT system for abnormal transaction monitoring.</td>
</tr>
</tbody>
</table>

Source: developed for this research, data covers the period 2008-3/2016

6.3.6.1. Fortifying of Market Conduct Oversight by Securities Regulators Post-Crisis

Data analysis of this research found a trend of fortifying market conduct oversight by securities regulators as a response to lessons learnt from the 2008 GFC. Once again, IOSCO took a leading role in promoting the post-crisis reform of market surveillance and conduct oversight. IOSCO (2009e) argued that the international initiative of setting up the Task Force on Short Selling was an essential global response to restore and maintain investor confidence, helping to ensure market integrity, and reducing systemic risk (IOSCO, 2009e, p. 4). IOSCO (2009h) stresses the need for securities regulators to reassess the current approaches to market surveillance and to re-evaluate ‘whether the existing approaches are effective in detecting and preventing potential market abuses’, given the context post-crisis securities markets (IOSCO, 2009a, p. 24). See Box 6.6, Appendix 6 for analysis of IOSCO policy documents recommending strengthened market conduct oversight.
Following the efforts of IOSCO to reinforce market conduct oversight after the turbulence of the 2008 GFC, securities regulators have undertaken many activities to strengthen the supervisory area. Study of policy documents by selected 101 securities regulators found that 100% of developed markets and 71.4% of emerging markets issued new or amended legal documents to reinforce market surveillance and conduct oversight (Figure 6.3).

Restructuring of supervisory architecture of 24 selected cases (see Table 6.4, Section 6.3.2.1 and Table 6.3, Appendix 6) undoubtedly was an attempt to further reinforce market surveillance and market conduct oversight, especially in the case of twin-peaks model, in which one pillar of supervision was specialized in market conduct oversight and investor protection. Though striving toward the same trend of fortifying enforcement of market integrity requirements, developed markets and emerging markets slightly deviated in their ways (See Table 6.8).

- The policies of developed markets include: (i) issuing new laws on the market behaviour that may endanger market integrity and investor protection such as short selling, insider trading and market manipulation; (ii) issuing new code of conduct and new legal framework that strengthen market conduct oversight; and (iii) strengthening the role of securities regulators on market conduct oversight that were left to SROs pre-crisis. Some typical examples are: Australia, United States and Germany. See Box 6.7 Appendix 6 for detailed analysis of 14 selected cases of developed markets.

- Policies of emerging markets include: (i) extending power of regulatory body in enforcement, especially powers in administrative penalties or bringing cases to court; (ii) reviewing and amending the regulations on market surveillance and enforcement; and (iv) upgrading the IT system that facilitates market monitoring. Some examples include Israel, Jamaica, Greece, Mexico, Palestine, Philippines and Viet Nam. See Box 6.7 Appendix 6 for detailed analysis of 21 selected cases of emerging markets.

Divergence of developed and emerging markets can be explained by the level of crisis impacts, involvement in IOSCO and difference in market institutions and infrastructure. The policy measures of developed markets were found more responsive to the problems revealed by 2008 GFC impacts because the markets were more vulnerable to the crisis and their post-crisis policies should aim at the gaps exposed by the GFC. The policies of developed markets highly reflect the recommendations from IOSCO because of their higher involvement in the post-crisis policy making of the organization. Whereas, the policy measures by emerging markets were to strengthen powers of regulators in terms of both legal status, human resource and technical powers to address market failures and crisis prevention. It is explainable by the fact that the emerging markets were suffered less from the 2008 GFC and most of the securities regulators
undertake the responsibility of market surveillance and market conduct oversight in coordination with SROs (IOSCO, 2009a). Therefore there was no urgency for emerging markets to change their current settings. What was necessary for them was to review their current settings and enhance their regulatory power to avoid what happened to those impacted by the crisis.

6.3.6.2. Unclear Future Role of SROs in Market Surveillance Post-crisis Plans

Market surveillance is either conducted by the regulator, the exchange or both the regulator and the exchange in parallel or an outside SRO (IOSCO, 2009a). In emerging markets, about two third of securities regulators have the responsibility shared by both regulator and SROs (usually stock exchanges) (IOSCO, 2009a). In more developed market, SROs are often designated the job of market surveillance.

Documentary research for the period 2008-2015 found plentiful data about more stringent regulation and supervision by the securities regulators over SROs post-crisis (see further discussion in next section and data analysis in Box 6.8 and Box 6.9, Appendix 6). However, there was almost a ‘silence’ about the future supervisory role of SROs in the framework of policy reform post-crisis. It was different from the time after the 1997 Asian Financial Crisis, when self-regulation was boosted everywhere to respond to the policy recommendations by IMF and IOSCO.

Despite the criticism about the incapability of SROs in market supervision (Erskine, 2010b; Frean, 2011; Haldane, 2009; J. Kumar, 2011b; Madhur, 2011; Rudd, 2009) and IOSCO elimination of self-regulation out of its three-dimension supervision (disclosure, self-regulation and regulation)(IOSCO, 2010f), SROs are still there in the supervisory system of global markets. The documentary research found no evidence of abandoning SROs and very little evidence of SROs that ceased to take the responsibility of member supervision and market surveillance (in case of stock exchange) in the period 2008-3/2016. Two cases where SROs ceased to perform or have regulatory responsibilities restricted post-crisis are Australia and Slovenia. In 2010, ASIC in Australia took over the responsibility to supervise trading activities and conduct-of-business of market participants from ASX (See Box 6.7, Appendix 6). In 2012, Legal amendment13 was made in Slovenia to repeal the power of Central Securities Clearing Corporation (KDD) and the Stock Exchange to use administrative procedures in their operation. In addition, the KDD’s superiority in relation to issuers when issuing its decisions was cancelled. Another case is Norway where the responsibility for operative prospectus control for

13 Amended Market in Financial Instruments Act (ZTFI-D) 2012
transferable securities, was taken over by Finanstilsynet from Oslo Stock Exchange on 1 May 2010 (Box 6.9, Appendix 6).

Documentary research identified 12 cases (approximately 11.9%) where SROs were explicitly mentioned as partners with securities regulators in bolstering market surveillance and conduct oversight. Brazil, New Zealand and Russia are some examples (see Box 6.8, Appendix 6 for data analysis). However, the future regulatory role of SROs was not specified in most of the plans for strengthened market supervision by other securities regulators post-crisis. All that can be seen post-crisis is that SROs are now “regulated SROs” (see discussion of data analysis in next section) (see Box 6.9, Appendix 6 for 19 typical cases). Findings discussed in this section are summarized below:

QLF7-Validation and explanation of the 2008 GFC impacts on market conduct oversight: It is concluded that documentary research provides evidence to support QTF8, QTF 11 and the fourth research issue arising from qualitative research regarding impacts of the 2008 GFC on market conduct oversight. Securities regulators were found responding to the lessons learnt from the crisis by strengthening market integrity requirements and fortifying market surveillance activities. Due to different levels of crisis impacts, involvement in IOSCO, market institutions and infrastructure, developed markets and emerging markets diverged in their policies. Developed markets responded to the regulatory failures unveiled by the 2008 GFC, focusing on market behaviour that may compromise market integrity and investor protection; setting up new legal framework that strengthen market surveillance; and strengthen the role of securities regulators on market conduct oversight that were left to SROs pre-crisis. Emerging markets emphasized capacity building in terms of legislative powers, legal framework and resources for enhancing market surveillance and conduct oversight. Despite the post-crisis criticism of self-regulation and missing regulatory importance that caused by the paradigm shift of securities regulators, SROs are still there in the supervisory system of global markets. In some cases regulatory responsibilities of SROs were terminated after the crisis. But in a few more cases, coordination with SROs was stronger in market supervision. Nevertheless, they are now “regulated SROs” and face unclear future in the policy reform plans of most securities regulators post-crisis.
6.3.7. Validation and Explanation of Crisis Impacts on Supervision of SROs and Market Institutions

Data analysis in this section targets validating and explaining QTF 9 and QTF 11 regarding impacts of the 2008 GFC on supervision over SROs and market institutions (MIs), especially market gate keepers such as stock exchanges, CRAs and auditors (Table 5.17, Chapter 5 and Table 5.7, Appendix 5). Discussion includes: (i) increasing supervision over SROs, especially stock exchanges and (ii) re-regulating of market institutions with focus on market gate keepers.

Table 6.9. Comparison of crisis-induced policies by developed and emerging markets in supervision of SROs and MIs

<table>
<thead>
<tr>
<th>Developed markets</th>
<th>Emerging markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>More responsive to the 2008 GFC’s impacts and following the recommendations of IOSCO and other international organizations:</td>
<td>Responding to the lessons from the 2008 GFC and following the recommendations of IOSCO and other international organizations:</td>
</tr>
<tr>
<td>(i) re-regulating the SROs and market institutions (CRAs, clearing houses, auditors) that were deregulated or self-regulated pre-crisis;</td>
<td>(i) reviewing the current legal framework and/or taking into account the recommendations of IOSCO in development of legal framework on supervision of market institutions and SROs;</td>
</tr>
<tr>
<td>(ii) development new legal framework to strengthen supervision over SROs and other market institutions</td>
<td>(ii) fortifying current supervision over market institutions and SROs</td>
</tr>
</tbody>
</table>

Source: developed for this research, data covers the period 2008-3/2016

In some jurisdictions, stock exchanges are the MIs that play the role of SROs. In some others, they are not. Therefore in this section, stock exchanges will be discussed as both SROs and market institutions where it is relevant.

6.3.7.1. Increasing Supervision Over Self-regulatory Organizations Post-crisis

Documentary research found a trend of fortifying supervision over SROs post-crisis. Once again the trend was initiated by IOSCO and followed by both developed and emerging markets. Instead of recommending regulators to make use of SROs (IOSCO, 2003a) as before the 2008 GFC, post-crisis IOSCO proposed SROs should be subject to the oversight of the regulator and should observe standards of fairness and confidentiality when exercising powers and delegated responsibilities where SROs take some direct oversight responsibility for their respective areas of competence (IOSCO, 2010f, p. 5).

Data analysis of legal framework and policy papers of 89 jurisdictions where SROs are available in the research sample (101) found that 68 jurisdictions (76.4%) had undertaken policy reform to strengthen supervision over SROs in the period 2008-3/2016. In 22 developed markets, 19 or 90.5% issued new legal framework to fortify supervision over SROs. Whereas,
49 out of 67 emerging markets (73.1%) had the same policy response (See Figure 6.3 and Table 6.2, Appendix 6). Typical examples are jurisdictions in EU, Japan, Malaysia, Slovenia, and United States, where there has been first time an SRO was charged an administrative penalty by the securities regulator (see Box 6.9 Appendix 6 for data analysis).

Interestingly, 12 or approximately 13.5% of the jurisdictions strengthened roles of SROs in coordination with securities regulators in market supervision in the period 2008-3/2016. Among the groups, Brazil, Canada, Chile, Colombia, Sweden and New Zealand are the jurisdictions with long tradition of SROs. Whereas, China, India, Kenya and Russia are the emerging markets that are in process of developing their self-regulation system (see Box 6.8 Appendix 6 for data analysis of the 12 cases).

6.3.7.2. Re-regulating of Market Institutions With Focus on Market Gate Keepers

Documentary research found a robust trend of re-regulating MIs, especially market gate keepers. IOSCO played an important role in developing and communicating the policy reform in this SMS area to its member securities regulators. During the period 2008-2015, IOSCO developed numerous policy documents to strengthen MIs supervision, including 13 documents about CRAs (BCBS et al., 2009; IOSCO, 2010g, 2012b, 2014a, 2015c), 10 documents about auditors (IOSCO, 2010a, 2010e, 2010f, 2015o), and 24 documents on stock exchanges, clearing and settlement systems and their central counterparties ((IOSCO, 2010b, 2010f, 2014a, 2014c, 2014e, 2015a, 2015b, 2015f, 2015h; IOSCO, BCBS, & FSB, 2015a, 2015b). (See Table 6.7. Appendix 6 for the list of documents).

Market gate keepers, especially CRAs were placed at the centre of the policy reform. The G-20 has recommended that CRAs should be subject to oversight, based on a registration regime compliant with the IOSCO Code of Conduct, which seeks to address: (i) the quality and integrity of the rating process; (ii) the independence of CRAs and the adequate management of conflicts of interest; and (iii) CRAs responsibilities to the issuer and the investing public (IOSCO, 2010i) (See Box 6.10, Appendix 6).

In a synergy with the post-crisis policy reform of IOSCO, securities regulators rapidly set up new legal framework to re-regulate the MIs that were not regulated or least regulated pre-crisis. All the developed markets (100%) and 66.6% of the emerging markets, making the total 74.3% of research sample conducted policy reform to strengthen supervision over MIs (See Figure 6.3). For the first time, CRAs were put under rigorous supervision (see Box 6.10 and Box 6.11, Appendix 6). New regulations on CRAs appeared on every market where they provide credit rating services. Strict regulations on auditors and CCPs were also developed in harmonization
with enhancement of transparency requirements and stronger regulation and supervision of SFPs and derivatives markets (See Box 6.11, Appendix 6).

Divergence and convergence between developed markets and emerging markets were found (Table 6.9). Re-regulation of least regulated SROs and MIs in developed markets seem to be more responsive to the 2008 GFC impacts. Developed markets focused on development of new legal framework to re-regulate supervision over SROs and other MIs. Whereas, having less involvement of SROs in supervision pre-crisis, emerging markets were inclined to reviewing the current legal framework. The recommendations of IOSCO in development of legal framework and fortifying current supervision over MIs and SROs were undertaken by both groups in the period 2008-3/2016 (See Box 6.9, Appendix 6). Qualitative research findings discussed in this section are summarized below:

QLF8-Validation and explanation of the 2008 GFC impacts on supervision of SROs and market institutions: It is concluded that documentary research provides evidence to support QTF 9 and QTF 11 regarding impacts of the 2008 GFC on supervision of MIs and SROs in the securities markets. Re-regulation of pre-crisis unregulated and least regulated SROs and MIs is a policy reform of both developed markets and emerging markets. IOSCO played important role in promoting the reform. Following IOSCO recommendations, securities regulators issued new legal documents to strengthen supervision over the institutions. CRAs, auditors and CCPs were at the centre of the reform because of the essential roles held by them in enhancing transparency and fortifying supervision of securities products, especially SFPs and derivatives. Due to more availability of SROs, deeper involvement of SROs in market supervision, and less stringent supervision over MIs pre-crisis, the policy reform in developed markets seem to be more comprehensive and more responsive to the 2008 GFC than in emerging markets.
6.3.8. Awareness of Responsiveness in Securities Market Supervision

Data analysis in this section aims to find out the awareness of securities regulator of the responsiveness in SMS to support QTF10. Ninety five percent (39/42) of survey respondents in quantitative research reported that their post-crisis policy reforms have made their SMS system more responsive.

Exploration of policy documents and annual reports of 101 securities regulator in the period 2008-2015, documentary research found 20 jurisdictions having official discussion or mentioning responsive regulation in their policy papers or on their websites. It was found that the securities regulators share a common sense about the concept of responsiveness in SMS and the pre-requisite of a responsive supervisory system in the changing market conditions post-crisis. ASIC in Australia expects to be a high performing and responsive agency, that responds to misconduct by educating investors, guiding gatekeepers, fighting harmful behaviour, taking enforcement action and policy advising to Government (ASIC, 2014b). Central Bank of Bahrain strives to be responsive to the needs of financial sector stakeholders (Rasheed, 2012). AMF in France asserts that a crucial factor for a better organized market supervision that was highlighted by the current GFC is responsiveness and coordination of international financial regulators (AMF, 2008). MAS in Singapore recognized responsiveness to change and cycles as the need for the regulatory framework to keep pace with changes in the industry and new risks emerged (MAS, 2010). See Box 6.12 Appendix 6 for discussion of responsiveness by the 20 jurisdictions.

Among the 20 jurisdictions, 10 are from developed markets (45.5%) and ten are from emerging markets (12.7%). The numbers indicates the level of awareness about responsiveness in SMS of the total researched regulators and the difference between developed and emerging markets.

QLF 9: Awareness of responsiveness in SMS supervision: Qualitative research found evidence reflecting securities regulators’ awareness of responsiveness in SMS. Responding to market behaviour, risks, changes and cycles of markets is perceived by regulators as characteristics of a responsive SMS framework. However, there is a gap of awareness level between developed and emerging markets, showing that the level of awareness by developed markets is higher than emerging markets.
6.4. Summary of Findings and Conclusions

It is concluded that qualitative research provides evidence to verify, validate and explain the findings and research issues arising from the quantitative research. Nine groups of QLFs that support and explain 11 QTFs cover the following research issues: (i) the paradigm shift of securities regulators from a framework based solely on Standard Finance toward adoption of ideologies from Behavioural Finance. Self-regulation was dismissed while transparency was preserved, concept of behavioural investors with bias and risk-based methodology are employed in new SMS framework post-crisis. However, a complete post-crisis SMS philosophy has not been established yet; (ii) impacts of the 2008 GFC on SMS architecture, where the new role of central bank has emerged and twin-peaks and integration model was the different choices of developed markets and emerging markets respectively (iii) Risk-based supervision became the preferred approach. Re-regulation made post-crisis policy reform by developed markets more rule-based while post-crisis policy making by emerging markets more principle-based due to the need for market development; (iv) strengthening of both macro and micro-prudential supervision to respond to the failures revealed by the crisis required not only new legislation but sometimes changing the SMS architecture. Investor education was an attempt to promote financial stability. Risk-based approach and other supervisory tools based on Behavioural Finance were implemented for micro-prudential supervision post-crisis; (v) supervision over securities, especially SFPs, securitized and derivatives products was strengthened. OTC market reform was not a shifting to exchange traded markets as expected. Instead, it was a mandatory registration and reporting of the parties participating in offering and trading the products; (vi) market conduct oversight was strengthened to respond to the crisis but the future regulatory role of SROs in market supervision remains unclear; (vii) SROs and MIs are subject to stringent supervision post-crisis. CRAs, auditors and CCPs are now at the centre of the reform due to their role in enhancement of supervision of securities products; and (viii) awareness of SMS responsiveness was found but not very common in the securities regulatory community. In addition, four research issues arising from quantitiave research were addressed by the qualitative research. Divergence between developed and emerging market was found in each finding and explained by differences in level of market development, market institutions, impacts of the 2008 GFC and the requirements for market development and regulation post-crisis. IOSCO played an important role in originating and promoting the policy reforms to securities regulators in both developed and emerging markets.
CHAPTER 7

DISCUSSION OF RESEARCH FINDINGS, IMPLICATIONS AND CONCLUSIONS
7.1. Introduction

This chapter discusses the research findings, provides implications and conclusions of the research. Section 7.2 presents a summary of the research and discusses the findings. Sections 7.3 addresses research implications. Section 7.4 addresses the contribution of the research in terms of theory, body of knowledge, methodology, and literature. Section 7.5 considers the research limitations. Section 7.6 deliberates future research directions and Section 7.7 confers the research conclusion. Outline of the chapter is presented in Figure 7.1.

Figure 7.1. Outline of Chapter 7-Discussion of Research Findings, Implications and Conclusions
7.2. Summary of the Research and Findings

7.2.1. Summary of Previous Chapters

The 2008 GFC was identified as the worst financial crisis since the Great Depression of the 1930s (K. Davis, 2011, p. 3; Erskine, 2010b; Pendery, 2009; Shiller, 2010). An inadequate supervision system was blamed as one of the contributing factors that enabled the crisis to grow from the US financial market to a global economic crisis. Responding to the lessons learnt from the crisis, securities regulators have been robustly pursuing regulatory and supervisory reforms in order to bring the markets back on track.

This research, in an endeavour to assess the impacts of the 2008 GFC on SMS and draw out implications for emerging markets, had built up a theoretical and conceptual frameworks of SMS. Chapter Two of this research has deliberated SMS as a public policy process, which is justified by relevant economic theories and adopted by securities regulators at their discretion and consideration of market conditions and economies. In the light of responsive regulation, responsiveness of SMS was defined as the ability of the securities regulators to respond effectively to market behaviour, market context and market developments by using relevant supervisory tools and approaches in a specific supervisory structure. Imprints of Standard Finance and Behavioural Finance were analysed as the two major theories that have provided influential theoretical underpinnings for the SMS. In addition, a framework of the SMS system had been identified as a roadmap for investigating the crisis impacts.

Chapter Three was an outcome of an exploratory qualitative research conducted by reviewing 114 articles, researches and studies on SMS before and after 2008 GFC, recognizing the potential gaps for further research, formulating the research hypotheses and setting up the relevant research questions. The landscape of the SMS was observed as having fundamental changes in all SMS areas after the crisis (see summary of literature review in Box 3.1. Appendix Three). Based on the literature review, research gaps were defined and research questions were developed, including:

Research question 1: What are the actual impacts the 2008 GFC generated on the securities market supervision?

Research question 2: Whether the policy responses to the crisis increased the responsiveness of the securities market supervision?

Research question 3: Whether the emerging markets followed the same trend of securities market supervision policy reform as developed markets after the crisis?
Chapter Four discussed the research methodology by reasoning the use of selected mixed-methods, described the procedures of quantitative and qualitative research, and considered ethical aspects of the research. The overall research design may be described as a sequential mixed method spanning into three stages, conducted in a way that allows triangulation in each stage. Stage One was a qualitative exploratory research to establish theoretical framework of SMS and define research issues. Stage Two was a quantitative empirical survey research to find the answers for the three research questions. Stage Three was explanatory qualitative research with focus group interviews and documentary research for confirmation, completion and retrodution of the findings from qualitative and quantitative research in the two previous stages. Descriptive, comparative, and correlational causal analysis strategies were employed, using SPSS in quantitative research. Whereas, inductive analysis strategy was used in the qualitative research. Appropriate steps were taken to ensure the reliability, validity and ethical principles of the research.

Chapter Five presented analysis and findings of empirical quantitative research, which was conducted to find out answers for the research questions. A survey research investigating the impacts of the 2008 GFC on SMS framework was obtained from 42 securities regulators. Quantitative data was collected for three analyses: (i) the descriptive analysis to identify impacts of the 2008 GFC on SMS philosophy, SMS structure, SMS approaches, macro-prudential supervision, micro-prudential supervision, supervision of securities products, market conduct oversight, and supervision over MIs and SROs; (ii) the correlational causal analysis to measure the correlation between the crisis-induced policies responses and SMS responsiveness improvement post-crisis; and (iii) the comparative analysis that compares the trends of developed and emerging markets in responding to the crisis impacts on SMS. The quantitative data analysis showed deep impacts of the 2008 GFC on SMS; suggested the correlational relationship between SMS responsiveness and the crisis-induced policy responses; and indicated the convergence and divergence between developed and emerging markets in the policy responses. In total 11 findings of quantitative research (Table 5.7, Appendix 5) were discussed in Chapter Five.

The explanatory qualitative research, including focus group interviews and documentary research was conducted for validation, explanation and triangulation of research findings identified from the qualitative exploratory and quantitative empirical research undertaken in the two previous stages. Chapter Six presented findings and analysis of qualitative data that was collected from both focus group interviews and documentary research. The focus group interviews were undertaken with 13 high-profile securities regulators. The documentary
research was conducted with the data from 101 websites, 485 policy papers and annual reports of 101 securities regulators and international organizations during the period from January 2008 to March 2016, plus 464 policy documents of IOSCO. Content analysis procedures for inductive analytical framework have been inter-subjectively and comprehensibly conducted in order to compare the qualitative data analysis results with quantitative research in the sense of triangulation and checks for reliability (Mayring, 2000). Explanatory qualitative research provided nine findings to support and explain eleven findings identified by quantitative research as well as explain any gap or difference between exploratory qualitative research in Stage One, empirical quantitative research in Stage Two and explanatory qualitative research in Stage Three.

Findings of quantitative and qualitative research are retroducted and discussed in the next section as the final research findings.

7.2.2. Summary and Discussion of Findings

This section summarizes and discusses ten final research findings (FRF) that were identified by condensing the tentative findings from both qualitative and quantitative research (Table 7.1).

<table>
<thead>
<tr>
<th>Table 7.1. Summary of final research findings</th>
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<tr>
<td><strong>FRF 1: General impacts of the 2008 GFC on the securities markets and SMS- convergence and divergence between developed and emerging markets</strong></td>
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<td>Evidence was found by both qualitative and quantitative research to confirm significant impacts of the 2008 GFC on the securities markets and SMS systems. Different magnitude of crisis impacts between two groups of developed and emerging markets was observed, suggesting that developed markets were more severely affected by the crisis. Emerging markets followed the same trend of post-crisis policy reforms undertaken by developed markets thanks to the role of the IOSCO as the global securities regulation standard setter. However, divergences were seen between two groups. Developed markets have robustly initiated a paradigm shift and taken crisis-induced SMS policy reform that addressed the regulatory gaps exposed by the crisis. The reform was deep, comprehensive and revolutionary. The policy responses by emerging markets tended to be induced by the post-crisis global financial regulation reform rather than responsive to the direct impacts of the 2008 GFC with slower pace.</td>
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<tr>
<td><strong>FRF2: Impacts of the 2008 GFC on SMS philosophy-a post-crisis paradigm shift</strong></td>
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<td>Evidence was found by both qualitative and quantitative research to support the hypothesis that the 2008 GFC had revealed the flaws of pre-crisis SMS philosophy and led to re-construction of the SMS theoretical framework post-crisis. Standard Finance ceased to be the favourite SMS philosophy of</td>
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securities regulators. Adoption of ideologies from Behavioural Finance to enrich the SMS philosophy post-crisis became a trend. The post-crisis SMS paradigm shift was reflected through three key policy themes that was initiated by IOSCO and followed by securities regulators: (i) removing ‘self-regulation’ but keeping ‘disclosure’ in the three-dimension supervisory framework; (ii) adoption of Behavioural Finance’s concepts of human biased investors to complement the weaknesses of disclosure-based requirements for investor protection; and (iii) adoption of risk-based supervisory approach that nurtured by Behavioural Finance to cope with emerging risks and financial crisis. Post-crisis, SROs were strongly recommended as a subject of regulation, not a co-regulator as before. Various policy efforts have been undertaken to re-regulate products, market activities and institutions, which were unregulated or self-regulated prior to the 2008 GFC.

The paradigm shift is possibly explained by awareness of securities regulators of the failures of Standard Finance and advantages of Behavioural Finance in addressing risks and market behaviour, explaining financial crisis and establishing a responsive supervisory framework. Leading role of IOSCO as an international standard setter in securities regulation was found a factor that might transfer the SMS paradigm shift from developed to emerging markets. However, a new SMS philosophy has not been constructed yet. The securities regulators tend to adopt ideologies of Behavioural Finance to enrich the current theoretical framework. The fact might be explained by perception of regulators about values of Standard Finance and the belief that its weaknesses could be complemented or explained by insights of Behavioural Finance. However, it might also reflect that the securities regulatory community is still in the paradigm crisis where setting up a new SMS philosophy has been recognized as a requisite but not yet realized.

**FRF3: Impacts of the 2008 GFC on SMS architecture**

Quantitative research and qualitative research found evidence showing that the 2008 GFC generated significant impacts on SMS architecture. The GFC might have brought about a good chance for regulators to re-evaluate and reconstruct their systems. In addition, the crisis also created significant change to the position of SROs in the supervisory structure. Functions of SROs in the SMS system were re-evaluated, improved or reduced to member supervision in different supervisory settings. Crisis-induced policy reforms in terms of SMS architecture include:

- Securities regulators have undertaken a wide range of crisis-induced policies to reform their supervisory structure, including strengthening the regulatory powers by new legislation, setting up new supervisory bodies, reorganizing the existing supervisory agencies, transforming into other supervisory structure, participating into regional supervisory agencies, shifting of supervisory responsibilities from one to another organization, and combination of the above mentioned policy measures;

- The functional model is further losing its significance. More than half of the jurisdictions with the supervisory system in this setting pre-crisis chose to abandon it and construct a new system
in twin-peaks or integration model. Regulators with institutional model, though preserves a stable proportion in the current setting of the world financial supervisory structure, started the transition to other models, mainly integration after the crisis;

- The model of supervisory integration is increasingly predominant after the crisis with more than half of the research population have the supervisory architecture with features of this model as of March 2016. Twin-peaks model, though strongly recommended by international organizations and academics post-crisis, was only the choice of a small group of more developed markets. Whereas, emerging markets preferred integration to restructure their supervisory settings;

- Twin-peaks might be an optimum model for financial stability but it requires that both regulators in charge are equal in power and importance, and work together with effective and efficient inter-agency collaboration, which is free from rivalry and political interference. Due to the fact, the model may be relevant for developed markets with urgent requisite for enhancement of financial stability and consumer protection post-crisis. But twin-peaks may not be a convenient choice for the emerging markets with less developed financial sector, lower inter-agency coordination and tradition of politicization of financial policy making, which was amplified by the 2008 GFC. In addition, costs for setting a new supervisory structure that requires not only special institutional and market infrastructures but availability of huge resources and special expertise can be another factor that may prevent emerging markets from restructuring into twin-peaks model. Furthermore, emerging markets was less vulnerable in the recent 2008 GFC, therefore among other factors, it might be less urgent for them to restructure their supervisory system into a costly crisis-preventive architecture like twin-peaks;

- The trend of supervisory integration had got its momentum from the previous Asian Financial Crisis in 1997. It was additionally fueled and accelerated by the current 2008 GFC. Lessons learnt from the 2008 GFC led to the awareness of indispensable harmonization of both macro and micro-prudential supervision to achieve two objectives: financial system stability and protection of investors in a new light of SMS philosophy. The requisite of comprehensive supervisory information base, reducing of regulatory arbitrage risks, and unifying of supervisory activities across interconnected sectors for harmonization of macro and micro-prudential supervision put regulators before two alternatives: twin-peaks model and integration model. Because of different level of market infrastructure and institution, developed markets chose twin-peaks and emerging markets chose integration. In addition, integration is another pre-requisite for implementation and application of a uniform set of policy recommendations by regional and international supervisory bodies that were formed after the 2008 GFC;

- The information-related synergies between the central banking and the prudential supervisory function have put central banks at the centre of the post-crisis supervisory restructure. The new era of central bank has emerged after the 2008 GFC: central banks as prudential regulators in the twin-peaks model and central banks as integrated supervisors of financial markets.
FRF4: Impacts of the 2008 GFC on SMS approach

Evidence was found by both quantitative and qualitative research supporting the observation that the 2008 GFC had generated significant impacts on supervisory approaches of the securities regulators. The most prevalent impact was that the crisis led to re-evaluation and re-construction of SMS practices. Most of regulators changed their SMS approaches as a direct policy response to the GFC. Full-disclosure-based approach is no longer preferred by both developed and emerging markets post-crisis. Risk-based practices became most popular while rule-based and principle-based are still common.

High synergies between promotion of risk-based framework of IOSCO and application of risk-based practices by securities regulators once again demonstrated the influence of IOSCO as a global standard setter to post-crisis SMS policy making of its members. In addition, evolving post-crisis market scenario and the need for better allocation of limited supervisory resources was an impetus for securities regulators to look for improved methods of identifying, appraising and mitigating risks. Consequently, an increasing number of securities regulators have been moving away from a loose market-based system or a rigid rule-based system to adoption of a risk-based supervisory approach, which is more reliant on the discretion and professional judgement of supervisors on the specific possibility to generate or amplify risks of each market entity.

The post-crisis re-regulation process was initiated and undertaken robustly by developed markets to correct the pre-crisis regulatory failures. Development of Behavioural Finance based rules to re-regulate the market participants and behaviour that were deregulated and self-regulated pre-crisis became a mandate. The re-regulation process might well explain why developed markets issued stricter rules in parallel with enhancing risk-based supervisory approach to respond to the crisis. However, the re-regulation process does not mean that the securities regulatory community came back to rule-based supervision. Combination of different approaches seems to be preferred now by both groups of developed and emerging markets.

In the post-crisis context that centre of gravity for global markets shifted toward emerging markets, being less affected from the 2008 GFC and already rule-based, emerging regulators are under pressure to reduce regulatory burdens to promote market development and enhance international competition. Pursuing the mandate, regulators in emerging markets chose to be more principle-based at the same time with adoption of risk-based approach for maintaining of system stability and preventing of financial crisis.

FRF 5: Impacts of the 2008 GFC on macro-prudential supervision

Qualitative and quantitative research identified evidence on substantial impacts of the 2008 GFC on macro-prudential supervision. The crisis impacts changed the financial regulators’ perception on the role of macro-prudential supervision, induced them to re-evaluate and intensify their macro-prudential
supervisory activities in post-crisis time. Jurisdictions responded to the impacts by setting up new legal framework, establishing a new regulator to perform the function of macro-prudential supervision, shifting the role from one to other regulator, or creating a new structure or network that allows more regulators to be involved in this activity.

The macro-prudential supervision responsibility that was traditionally assumed by central banks before is now shared with securities regulators. Being aware of the potential systemic instabilities caused by failures of market intermediaries, securities regulators are strengthening macro and micro-prudential supervision in parallel. IOSCO, as a global standard setter, contributed significantly to promoting the role of securities regulators in macro-prudential supervision by defining the factors that may cause systemic instabilities in the securities market and identifying the jobs of securities regulators in maintaining financial stability. Among others, investor education and financial literacy programs were conducted as an attempt to ensure investor protection and maintain financial stability. Divergence between developed and emerging markets was found. Being worse sufferers of the crisis, developed markets were more responsive to the crisis impacts, filling the gaps of macro-prudential supervision exposed by the 2008 GFC by new legislation and new SMS architecture. Less affected from the crisis, emerging markets were less active in fortifying macro-prudential supervision. However, IOSCO is an effective forum that enables developed markets to instigate emerging markets to perform the macro-prudential supervision reform.

**FRF 6: Impacts of the 2008 GFC on micro-prudential supervision**

Quantitative and qualitative research provided evidence that 2008 GFC caused significant impacts to supervision of market intermediaries. The most prevalent crisis-induced action taken by both groups of developed and emerging markets was re-evaluation of micro-prudential supervision for more improvement. Promulgation of new legal framework, setting up new supervisory body, creating new network, shifting the responsibility from one to another regulators, or involving more regulators to perform the functions of micro-prudential supervision were other policy responses.

Moreover, the crisis induced a spectacular transformation of regulatory perception about the importance of risk-based approach and supervision of hedge funds. After the crisis, risk-based approach became a favourite tool for member supervision by both developed and emerging markets. Hedge funds that were almost not supervised pre-crisis now are put under stringent supervision. Risk-based supervisory approach and the Behavioural Finance based requirements such as customer suitability, conflict of interests, fit and proper requirements were employed to strengthen supervision over market intermediaries.

IOSCO continues to play an important role in the post-crisis micro-prudential reform of regulators. Though evolving toward the same direction, discrepancy was found between two groups of developed and emerging markets. The process of micro-prudential supervision reform in developed markets was more vigorous and responsive to the direct impacts of the 2008 GFC. Meanwhile, it was less active...
in emerging markets due to lower level of market development and less suffering from the crisis. In the developed markets that transformed from one to another SMS architecture, there was a trend to specialize and functionalize macro-prudential regulation and micro-prudential supervision into two separate supervisory bodies in the twin-peaks model. In emerging markets, it was the trend to unify both areas into one united financial supervisory body. In the cases, central banks emerged as mega-regulators.

**FRF 7: Impacts of the 2008 GFC on supervision of securities products**

Evidence was found from both quantitative and qualitative showing impacts of the 2008 GFC on supervision of securities products. The 2008 GFC led to a robust reform of supervision over securities products in both developed and emerging markets. In developed markets, it was the trend to re-regulate the products that were deregulated pre-crisis such as SFPs, derivatives and securitized products. The mandate requires a comprehensive legal framework that covers issuance/creation, intermediating and trading of these products to be set up for filling the regulatory gaps unveiled by the crisis. In the emerging markets, due to unpopularity of SFPs or securitized products, the reform process essentially focused on re-enforcing of transparency requirements and corporate governance. Implementing or harmonization of international accounting and auditing standards to strengthen securities product supervision became part of the post-crisis reform in both developed and emerging markets.

The reform of OTC derivatives markets was not a shifting to exchange traded markets as recommended by many academics in the early days after the incidence of the crisis. Instead, the securities regulators preferred to preserve the flexibility of OTC markets for risk diversification and product innovation and to intensify risk management and transparency by mandatory post-trade reporting and CCP clearing. Higher capital requirements and collateralization are applied to non-CCP cleared products to reduce risks and risk taking. Again, IOSCO plays an important role in promoting and guiding the policy reform in this area.

**FRF 8: Impacts of the 2008 GFC on market conduct oversight**

Qualitative and quantitative research found evidence that the 2008 GFC generated important impacts on market conduct oversight. Crisis-induced policies in this field include: performing more robustly market conduct oversight; issuing new or re-enforcing rules and regulations on market conduct and market integrity; harmonizing of current rules with new regulations of the EU; establishing of a new regulator in charge of market conduct oversight or shifting the role from one to another regulator; and taking strong reform of market conduct oversight.

Due to different levels of crisis impacts, involvement in IOSCO, market institution and infrastructure, developed markets and emerging markets were diverging in their policies. Developed markets responded to the failures unveiled by the 2008 GFC, focusing on market behaviour that may
compromise market integrity and investor protection; setting up new legal framework that strengthen market surveillance; and strengthen the role of securities regulators on market conduct oversight that were left to SROs pre-crisis. Following developed markets through the framework of IOSCO, emerging markets emphasized capacity building in terms of legislative powers, legal framework and resources for enhancing market surveillance and conduct oversight. Despite the post-crisis criticism of self-regulation, calls for abandoning of SROs and missing regulatory importance that caused by the paradigm shift of securities regulators, SROs are still there in the supervisory systems with little change in their responsibilities of market surveillance and member regulation. In a few cases regulatory responsibilities of SROs were terminated or reduced. But in other cases, securities regulators strengthened coordination with SROs in market supervision. Nevertheless, they are now “regulated SROs” and face unclear future in the policy reform plans of most securities regulators.

FRF 9: Impacts of the 2008 GFC on supervision of MIs and SROs, including stock exchanges

Both quantitative and qualitative research yielded evidence that the 2008 GFC generated profound impacts on MIs and SROs supervision. The most popular crisis-induced actions taken by both developed and emerging groups were intensifying supervision over MIs and SROs and issuing new rules and regulations on this supervisory aspect.

Re-regulation of the pre-crisis least regulated SROs and MIs was a policy reform undertaken by both developed markets and emerging markets. Following IOSCO recommendations, securities regulators issued new legal documents to strengthen supervision over the MIs and SROs. For the first time, CRAs, auditors and CCPs are the subject of sturdy regulation and supervision because of their essential roles in enhancing transparency and fortifying supervision of securities products, especially SFPs and derivatives. Due to more availability of SROs, deeper involvement of SROs in market supervision, and less stringent supervision over SROs and MIs pre-crisis, the policy reform in developed markets seem to be more comprehensive and more responsive to the impacts of the 2008 GFC than in emerging markets. Developed markets focused on putting the MIs and SROs under tougher supervision while emerging markets followed the IOSCO’s recommendations to enhance their legal framework to prevent any possible failure of the institutions.

FRF 10: Improved responsiveness of SMS as results of post-crisis policy reforms

Descriptive quantitative analysis identified evidence that SMS policy reform post-crisis have improved responsiveness of SMS system. However, the logistic regression model developed for this research failed to quantify the correlation coefficients between the responsiveness improvement and the crisis-induced policies in each SMS components due to limitations of quantitative data with nominal variables. Awareness of SMS responsiveness by securities regulators was recognized in qualitative research. It was found that the securities regulators share a common sense about the
concept of responsiveness in SMS and the pre-requisite of a responsive supervisory system in the changing market conditions post-crisis. Responding to market behaviour, risks, changes and cycles of markets is perceived by regulators as characteristics of a responsive SMS framework. The consensus was an important finding that helps build up criteria for a responsive SMS culture. However, the awareness of SMS responsiveness among the securities regulatory community was not very common and subject to discrepancy between developed and emerging markets. Therefore the research finding suggests the requirement for development and popularization of a responsive SMS culture framework.

7.3. Research Implications

Final research findings as discussed and summarized in the previous section have several important implications for securities regulators. In the context that the post-crisis financial regulatory reform debate ‘had focused mainly on addressing the problems that had arisen in the financial systems of developed economies’ (IMF et al., 2011, p. 8), this research emphasizes the implications for emerging markets. Recognizing the inter-connectivity of the crisis impacts on SMS activities, decisive role of SMS philosophy to the rest of the SMS framework, and the multi-dimensionality of the research implications, this section does not discuss implications of each finding separately but intertwine them in four core aspects, including: (i) comprehending post-crisis SMS paradigm shift and developing post-crisis SMS philosophy; (ii) solving the dilemma of post-crisis SMS architecture restructuring and role of SROs; (iii) identifying the tasks and challenges of applying the risk-based approach (iv) and establishing a culture of responsive securities market supervision.

7.3.1. Comprehending SMS Paradigm Shift and Developing Post-crisis SMS Philosophy

Continuing the discussion from Chapter Two concerning the theoretical framework of SMS, it is argued that SMS should be understood as a public policy process that is a purposive and consistent course of governmental actions (Anderson, 2003) in response to market operations, market developments, and problems arising in markets. The critical questions for market supervision are to what extent regulators should let the invisible hand of the market do its job and how far they should intervene into the market to correct market failures? The way the securities regulators answer the questions and justify their answers is based on the SMS philosophy.

Development of an SMS philosophy is extremely important to regulators as it will serve as a constitution for them to set up a relevant SMS architecture, to select efficient SMS approaches
and to successfully perform five other components of SMS. In post-crisis time, the critical question faced by securities regulators, especially the ones in emerging markets is how to construct the SMS philosophy that is resilient to financial crisis? Findings from the research (FRF1) show that despite the ideologies of Standard Finance being the most influential ideas to underpin the SMS philosophy for decades, the 2008 GFC induced the securities regulators, especially the ones in developed markets to take a paradigm shift and adopt more policies derived from Behavioural Finance. In addition, other theories such as Network Theory and Agency Theory were recommended and applied (K. Davis, 2011; Diplock, 2011; Erskine, 2010a).

However, in spite of the inevitability of the paradigm shift, a complete post-crisis SMS philosophy has not been well developed and securities regulators ‘are picking and choosing’ ideologies from some competing theories (K. Davis, 2013, p. 3; Erskine, 2014). The research also found that IOSCO, though having discussed the requisite of a new paradigm and adopting ideologies of Behavioural Finance in their policy recommendations post-crisis, has not developed a comprehensive alternative philosophy of market supervision. The crisis of SMS philosophy has not been ended, even though it has been seven years since the 2008 GFC.

Following developed markets in SMS policy making seems a tradition for emerging markets and the mimic action of emerging markets in post-crisis SMS paradigm shift currently is not an exception. It was observed in this research that involvement of IOSCO, G20, IMF, World Bank and ESMA into the process of post-crisis financial regulatory reform is significantly influential to emerging markets. After the outbreak of the 2008 GFC, the forums of G20 have developed and committed in numerous global financial policy responses (G20, 2008, 2009a, 2009b) that were the essential materials for the post-crisis SMS policy reforms of IOSCO. IOSCO, with its responsibility as global standard setter for securities market regulation has guided the post-crisis re-regulation by issuing the policy recommendations and continuously communicating with its members and other international organizations through its forums, conferences, meetings and other channels. The process has enabled the popularization of the SMS paradigm shift that was initiated by developed markets to emerging markets. IMF, within its Financial Sector Assessment Program, provides assessment on implementation of IOSCO Objectives and Principles of Securities Regulation in its country reports, further enhancing the promotion of these policies. In Europe, ESMA plays an important role in post-crisis SMS policy reform of regional emerging markets, where EU regulatory harmonization framework is a compulsory part of membership. Through the channels of the international organizations, especially
IOSCO, the post-crisis financial regulatory reform and the SMS paradigm shift spilled over from developed markets to emerging markets.

However, the critical question for emerging markets is whether it is always a right thing to follow all that has been done by developed markets without re-thinking the current systems and recognizing the prevailing emerging market conditions and institutions? After the 1997 Asian Financial Crisis, emerging market regulators, taking into consideration IOSCO’s and IMF’s recommendations, had followed developed markets in accelerating deregulation, establishing market-based regulation and developing the SMS system that relied heavily on full-disclosure and self-regulation. Ten years later, when most of them have not yet completed the construction of that EMH-based SMS framework, the emerging markets were showered with totally different recommendations from IOSCO, G20 and other international organizations on re-regulation of everything they were advised to deregulate before the 2008 GFC. Inevitably, the emerging markets were not well prepared for the shock of this paradigm shift. In this research, it is recommended that the theoretical aspects of the paradigm shift should be apprehended and a pertinent SMS philosophy, which observes the nature of today securities markets, responds to the problems revealed by the 2008 GFC and takes into consideration the contextual factors of emerging markets be established.

7.3.1.1. Comprehending the Theoretical Aspects of Post-crisis SMS Paradigm Shift

It is argued that before laying the first brick to build a new SMS philosophy, emerging market regulators should survive the shock of the paradigm shift by understanding it. This means that they should observe the real characteristics of the investors they protect and the markets they supervise in an analytical framework, including:

- **First**, as the current GFC indicated, securities investors are not rational; they are human with biased behaviour and recognition errors (Shefrin, 2001; Shefrin & Statman, 1994, 1997). The assumption that everyone is rational and markets work efficiently needs to be discarded. The significance of irrational and unpredictable behaviour of securities investors should be recognized by regulators to deal with market imperfections (Friedman, 2010; Krugman, 2009, p. 2). Investor protection framework in emerging markets, where investors are less sophisticated than in developed markets, should be redesigned to address the human investors with biases and to be more effective than the current “full-disclosure regime”.

- **Second**, it was implied by the market crash in 2008 that the securities markets are not always efficient (Shiller, 2003, 2010; Shleifer, 2000; Statman, 2008) nor rational as Friedman (2010) finally admitted. Markets can be wrong and the price is not always right (Thaler, 2009). Securities regulators have to distance themselves from the assumption that markets
always work efficiently and that price changes always mirror genuine information (Shiller, 2003, 2010). If stock prices are always right, then there would be no bubbles in markets and no financial crisis. Knowing that prices can be wrong, regulators could usefully adopt automatic stabilizing activity, such as linking the down-payment for mortgages to a measure of real estate “frothiness” or ensuring that bank reserve requirements are set dynamically according to market conditions (T. Richard, 2009, p. 2). Markets are not always self-correcting nor self-regulating (Rudd, 2009), and self-regulation would turn out to be no regulation (Madhur, 2011). Principal-agent problems often lead the CRAs, public companies, investment managers, stock exchanges and other SROs to weigh their self-interests more than those of public investors. Markets are only efficient if they are well regulated and supervised to ensure that market failures do not harm the efficient allocation of resources by markets. Government cannot renounce the responsibility of financial stability (Rudd, 2009) and leave it to markets.

- Third, price in securities market is easily distorted by herd behaviour. The current GFC proved that Keynes was right (Friedman, 2010) in arguing that investor sentiment that reflects unrealistic optimism or pessimism, leads to booms and busts of the securities markets (Keynes, 1930a, 1930b, 1936; McCulley, 2009). The sentiment that nurtures the booms and bursts often takes the form of herd behaviour, which is the tendency for individuals to mimic the actions of a larger group rather than act on their own discretion. Herd psychology induces investors to be greedy or anxious, buying or selling together with the crowd rather than to make an investment decision based on fundamental values of the stocks. The importance of economic conduct and the role of ‘animal spirits’ (Keynes, 1936) should not be disregarded (Shiller, 2010). The current GFC is the eminent evidence for securities regulators to rethink the role of investors’ behaviour in driving markets to turbulence and contagion.

- Fourth, the 2008 GFC is a prominent example demonstrating that the more securities market develops with sophisticated innovative products, the likelier it performs with the booms and bursts cycles that was coined as Minsky moments and Minsky journeys by McCulley in 1998 and 2009 (Cassidy, 2008; Harcourt & Kriesler, 2013; McCulley, 2009; McCulley & Fuerbringer, 2007; Minsky, 1992, 2008). Minsky moment is the financial market phenomenon recognized by Minsky (1992, 2008). It is described as the time when a booming market and a prospering economy lead investors to being over optimistic and borrowing beyond their earnings. The market rise is followed by more speculation with accelerating debts and investors who have overly borrowed
must sell their assets to disburse their loans or become insolvent if they have no assets available to pay out their debts. Mass selling out then causes sudden collapse of asset values. The disruption is called the Minsky moment (Cassidy, 2008; H. Davies, 2014; Kregel, 2008; McCulley, 2009; Minsky, 1992, 2008; M. E. Sharpe, 2008; Surhone, Tennoe, & Henssonow, 2011). Minsky journey, forwardly or reversely travels through three debt units: hedge financing units, in which the buyer’s cash flows cover interest and principal payments; speculative finance units, in which cash flows cover only interest payments; and Ponzi unit, in which cash flows cover neither and depend on rising asset prices to keep the buyer floating (McCulley, 2009, p. 3). The forward Minsky journey is the progress of risk taking in the markets characterized by the excessive subprime loans, SFPs and other features dwelling the shadow banking system (McCulley, 2007). Their apparent stability provokes ever-riskier debt arrangements, which inflate asset price bubbles. A Minsky moment happens when the bubbles burst (McCulley, 2009). It should be noted that the Minsky journey tends to be shorter and easily undermine market integrity in the emerging capital markets, which are ‘more shallow and susceptible to sudden price movements’ (IMF et al., 2011, p. 6). This occurs because when faced with negative investor sentiment, ‘liquidity in emerging markets can erode quickly, causing panic sales and contagion effects resulting in disorderly markets and financial instability’ (IMF et al., 2011, p. 10). In short, as said by McCulley (2009) as long as a reasonable deregulation and product innovation exist, Minsky journeys will recur, punctuated by Minsky moments. It is a reality and what regulators should do is have the good sense to set up a counter-cyclical regulatory policy.

- *Finally*, one of the important implications of the current GFC is that the securities market needs to be perceived as a sophisticated network inside other complex networks. The securities market is a network inside the network of the national financial system. And the national financial system is a network inside the regional and global vitally interconnected markets. Nowadays ‘money goes around the world with a click of mouse’ (Diplock, 2011). Two emerged characteristics of the complex adapted network of financial markets are complexity and homogeneity (Haldane, 2009). Systemic risks, flashed out by IOSCO (2015a) with increasingly important role of securities regulators, are attached to the links of the networks. Securities regulation is challenged by the obscuring boundaries between markets in the networks (K. Davis, 2013). Properties of the connected networks are: (i) robust but fragile; (ii) having feedback effects like disease contagion; (iii) dimensionality and complexity, amplified by asset price uncertainty cause financial market ‘seizures’; (iv) financial innovation by SFPs increase further network dimensionality, complexity and uncertainty; (v) diversity is gradually eroded by institutions’ business and risk management
strategies, making the whole system less resistant to disturbance (Haldane, 2009). As evidenced by the 2008 GFC, collapse of some important nodes (Soramaki, 2010; Soramaki & Cook, 2016) can cause disruption in other nodes and lead to chaos in the entire network.

7.3.1.2. Developing post-crisis SMS philosophy

The characteristics of securities market have been analysed for justification of the SMS paradigm shift, and it is concluded that the securities market and its inter-connectivity has developed too complicated in the global integrated context post-crisis so that it can only be understood and explained by manifold theoretical frameworks, including Keynesian Economics (Keynes, 1930a, 1930b, 1936), Behavioural Finance (Kattan, 2006; T. Richard, 2003; Sewell, 2007; Shefrin, 2000, 2001; Shefrin & Statman, 1994; Statman, 1995; Subrahmanym, 2007), Financial Market Instability Hypothesis (Cassidy, 2008; Kregel, 2008; McCulley, 2009; Minsky, 1992, 2008), Financial Network Theory (Allen & Babus, 2007; Allen & Gale, 2000; Babus, 2007; Diplock, 2011; Haldane, 2009; Soramaki, 2010; Soramaki & Cook, 2016) and Agency Theory (Eisenhardt, 1989; Jensen & William, 1976). In order to avoid the pre-crisis theoretical fallacy, it is argued that emerging market policy makers should come back to the Keynesian rule of thumb for effective regulation to set up the post-crisis SMS philosophy and justify their policy choices by the relevant theories where they are applicable.

The Keynesian regulation is based on the central tenet that government intervention can stabilize the economy (Harcourt & Kriesler, 2013; Harvey, 2010; Keynes, 1936). The regulatory conception requires securities regulators to focus on the specific source of the market failures and address these failures by relevant regulatory interventions (Acharya et al., 2009; Chaudhuri, 1990; Keech et al., 2012; Krugman, 2009; Krugman & Wells, 2006; Ledyard, 2008; Persaud, 2009b). The failures of securities market deliberated in this SMS philosophy include: behavioural biases of investors, information asymmetry, principal-agency problems, monopoly, de-merit goods, public goods and negative externalities.

(i) Behavioural biases of investors

Behavioural biases of investors should be recognized as a conventional market failure (Lewis, 2013) because they lead to price distortion, and prevent the efficient allocation of funds and investments in the securities market. Biases in investment decisions often lead to mispricing of stocks, facilitating moral hazards, escalating herding action and resulting in market booms and bursts.

Behavioural Finance research currently provides numerous analyses on a variety of behavioural responses in financial decision making that have significant implications for securities
regulation, including: anchoring and adjustment (Bergman, Ellingsen, Johannesson, & Svensson, 2010; Furnham & Boo, 2011); ambiguity aversion (Eilsberg, 1961); availability heuristic (An & Shi, 2012); choice preference (Sethi-Iyengar, Huberman, & Jiang, 2004); confirmation bias (W. Bailey, Kumar, & Ng, 2011; Park, Konana, Gu, Kumar, & Raghunathan, 2010); conflict disclosure (Cain, Loewenstein, & Moore, 2003; Sah, Loewenstein, & Cain, 2013); disposition effect (A. Kumar & Lim, 2008; Shefrin & Statman, 1985); endowment effect (Carmon, Wertenbroch, & Zeelenberg, 2003; Kahneman, Knetsch, & Thaler, 1990; Knetsch, 1989; Lerner, Small, & Loewenstein, 2004); framing effect, January effect and small-firms effect (An & Shi, 2012); fund-level inattention (W. Bailey et al., 2011); herding (Fernández, García-Merino, Mayora, Santos, & González, 2011); illusion of control (Langer, 1975); inertia (Beshears, Choi, Laibson, & Madrian, 2009); inattention to earnings news and local bias (W. Bailey et al., 2011); inattention to macroeconomic news; loss aversion (Benartzi & Thaler, 1999; Kattan, 2006; Novemsky & Kahneman, 2005; Odean, 1998); Lottery stock preference (Barberis & Huang, 2008); Narrow framing (Kahneman & Lovallo, 1993); myopic loss aversion (Benartzi & Thaler, 1999; Charness & Gneezy, 2010); overconfidence (Abreu & Mendes, 2012; Barber & Odean, 2001; Barber & Odean, 2002); present bias (Akerlof, 1982); temporal framing (J. R. Brown, Kling, Mullainathan, & Wrobel, 2008); and risk aversion (Hibbert, Lawrence, & Prakash, 2013) (see Box 6.1, Appendix 6 for definitions of these biases).

The research shows that insights of Behavioural Finance have been adopted by securities regulators in the programs of investor education and financial literacy. However, it is argued that the investor behavioural biases and insights of Behavioural Finance should be embraced in other areas of SMS by emerging market regulators, including: (i) development of disclosure regulations to enhance supervision of securities products; (ii) designing of the market integrity framework to address the market abuses conducted by taking advantage of investor biases such as market manipulations; (iii) establishing micro-prudential regulation and practitioners conduct like fit and proper testing, know –your-client, and conflict of interests. In a wider spectrum, investor behavioural biases need to be researched from the perspectives of Financial Instability Hypothesis (Minsky, 1992) to set up the policy programs for financial crisis prevention and financial stability.

(ii) Information asymmetry

Information asymmetry is the market failure where one party of a transaction (either buyer or seller) has more or better information compared to the other. Information asymmetry is the root cause of mispricing in the securities market. Information asymmetry, in the context of separation between the ownership and management of public companies, enables conflicts of
interest (Jensen & William, 1976) and facilitates insider trading (Martins & Paulo, 2014). Greater information asymmetry among active traders of a particular stock increases the cost of capital borne by public companies (Choi & Yan, 2013). Information asymmetry is especially severe in the emerging markets (Ding, 2011) due to the lack of adequate financial reporting requirement and low quality and quantity of disclosed information (Arouri, Jawadi, & Nguyen, 2009). Both Market Microstructure Approach (Glosten & Milgron, 1985; Kyle, 1985) and Behavioural Finance Approach (Boswijk, Hommes, & Manzan, 2007; De Grauwe & Grimaldi, 2005) are relevant to examine the problems of information asymmetry in the securities markets.

Asymmetric information often triggers insider trading, then creating non-linearity characterizing dynamic stock prices adjustments in emerging markets (Kyle, 1985). Information asymmetry reduces liquidity and moves prices in the direction of the information (Agudelo, Villaraga, & Giraldo, 2011). The stronger asymmetry will lead to stronger mimic actions of the well-informed investors by the less-informed ones, reflecting market behaviour that is not attached to the fundamental values of stocks (Arouri et al., 2009). The information disclosure increases the company’s visibility and shrinks information asymmetry between well informed and uninformed investors, which should increase market liquidity (Ajina, Sougne, & Lakhal, 2015).

In order to enhance supervision of securities products, transparency requirements, including financial reporting and ongoing disclosure hence should be at the centre of policy making by emerging market regulators to address the information asymmetry, ensure an efficient price formation, constraining insider trading, limiting herd actions and expand the market liquidity (Duong et al., 2013). However, it should be noted that ‘further disclosure, no matter how high quality or comprehensive, cannot overcome market failure’ (Loss, 1985, pp. 327, 331). Therefore enforcement and disciplines of insider trading, market manipulation and other market abuses that make use of information asymmetry are important. Furthermore, securities regulators should consider the roles of information agencies such as well-developed and critical financial news media, investigative journalism, financial bloggers, critical academic research and independent financial analysts in reducing information asymmetry.

(iii) Principal-agency problem

Principal and agency problem is another market failure, where the authorized agents (corporate managers, securities practitioners, fund managers, services providers) may work for their self-interests rather than the interests of the principals (shareholders, investors, clients). In the securities market, principal-agent problems are closely linked with moral hazards and conflict of interests, which are applicable in supervision of market intermediaries, supervision of SROs
and MIs, and supervision of securities products (in terms of responsibilities of public companies). For example, investors do not invest directly in securities but through agents such as securities brokers and fund managers. Agents have better information and different objectives than their customers (principals) and this asymmetry is the source of inefficiency - mispricing, bubbles and crashes, making the financial intermediaries become bloated, profitable and prone to crisis (Woolley, 2010).

From the perspective of a public company, there are three principal-agency problems. The first involves the conflict between the shareholders (principal) and its hired managers (agents). The second involves the conflict between the majority (controlling) shareholders and minority (non-controlling) ones. The third involves the conflict between the company itself—including its shareholders—and the other contractual parties such as rating agencies, creditors, employees, and customers (Armour, Hansmann, & Kraakman, 2009; Frierman & Viswanath, 1994; R. C. Smith & Walter, 2001). Enron’s collapse in 2001 showed how devastating the first type of principal-agency problem could be (Hanks, 2016). And Goldman Sachs scandal is an example of conflicts between clients and their contractual investment providers (Hanks, 2016).

Moral hazards and conflicts of interest arise where public company management, securities practitioners, SROs and market gatekeepers such as stock exchanges, CRAs that are supposed to act for the benefits of investors indeed work to protect their self-interests. One of the painful truths revealed by the 2008 GFC is that the SROs and other market gatekeepers could not perform efficiently their self-regulation function due to the principal-agency problem and conflict of interests. In emerging markets, principal and agency problem are popular and make the financial intermediation become costly (Montiel, 2003).

Recognizing the market failure, emerging market regulators should undertake relevant supervisory arrangements that reduce conflicts of interest and make the public companies, securities practitioners, SROs and MIs to responsively perform their responsibilities to market stakeholders. In order to address the principal-agency problem, insights of Behavioural Finance (Erta et al., 2013) and Agency Theory (Armour et al., 2009; Eisenhardt, 1989; Jensen & William, 1976) need to be adopted in the regulatory and supervisory strategies, including: enforcement of rules and standards to protect creditors and investors (Armour et al., 2009); setting the terms for entry and exit (Armour et al., 2009); and implementing of adapted corporate governance principles for emerging markets (Boubaker & Nguyen, 2014; Duong et al., 2013; Kandrac & Bernd, 2015; Walton, 2007);
(iv) Monopoly

Three types of monopoly in the emerging stock markets identified in this research are: (i) natural data monopoly; (ii) ownership monopoly and (iii) trading monopoly.

Natural data monopoly exists due to the concentration of information and data within the operators of trading platforms or settlement and clearing systems. In this case stock exchanges and clearing houses are the data monopolies (Hruska & Ellig, 2000). Data monopoly may facilitate moral hazards by the persons or organizations that have privileged access to information and data (insider trading for example).

Ownership monopoly can be seen in the cases of equitized state-own-enterprises (SOEs) available in the economies from former Soviet Union like Russia and other Eastern European countries or the socialist economies like Viet Nam or China. In the economies, although the SOEs already became public and listed on stock markets, governments still monopolies the ownership and intervene deeply into the company operations. The state ownership monopoly exposes the companies to the conflicts of interest (between public investors and state representatives), malfunctioning and stock price distortion. For example, Chinese state monopoly and political intervention helped boost speculation and manipulations in the stock market under the illusion of superficial prosperity before 2001. However, this was followed by the investor confidence collapse when the bubbles burst and sent the market tumbling (S. Bell & Feng, 2009).

Trading monopoly happens in the secondary stock market as the power that influences other investors’ decisions, enabling market manipulation to succeed. The concept was paraphrased from Nye (2008)’s definition of soft power in political science and classified as trade-based monopoly and information monopoly by Yan, Klein, Dalko, Gyurcsán, and Wang (2011). The trade-based monopoly is the trading manipulation where large investors use a large sum of capital to build up a relatively dominant shareholding position in a particular stock for certain period of time (Yan, Lawrence, Dalko, Gyurcsán, & Wang, 2012b, 2012c). The accumulation of shares induces further buying of public investors and price acceleration. The manipulators then sell the stock and realize their arbitraged returns. Information monopoly (Yan, Lawrence, Dalko, Gyurcsán, & Wang, 2012a) is the exercise of manipulating power by generating news or rumours that encourage public investors to have a false impression about potential price increases or decreases of certain stock (Yan et al., 2011). Market abuses employing monopoly in the emerging markets are dangerous because they can be conducted in an easy, fast and effective manner with any stock, jeopardizing market equity, market stability and investor protection.
The issue of stock market monopoly is extremely relevant in consideration of post-crisis strengthening of macro and micro-prudential supervision, market conduct oversight, and supervision of SROs and MIs. Relevant rules applied to each type of monopoly should be in place to prevent market abuses. Insights of Behavioural Finance (Erta et al., 2013; Kattan, 2006; Leigh Caldwell, 2009; Yan et al., 2011) are relevant for designing regulations and supervision of market abuses attached to stock market monopoly, including requirements of prudent and fiduciary responsibilities, conflict of interest, fit and proper requirements, and trading rules to prevent market manipulations. In addition, looking at stock exchanges, clearing houses and other MIs from the perspective that they are the data monopolies in stock market would enable securities regulators to source out why, what and how to supervise the MIs;

(v) De-merit goods

De-merit goods exist when markets failed to control the manufacture and sale of goods or services, which are harmful to individual consumers or create negative externalities. As implied by the 2008 GFC, the products like highly leveraged SFPs and derivatives can easily turn into de-merit goods (Duong et al., 2013) or toxic securities (J. Black, 2009; Fujii, 2010, 2012) if the process of creation, distribution and trading of the securities generate more risks to investors and systemic instability than the benefits they can create. The SFPs - the products of the shadow banking, deregulation and de-supervision process were blamed for the 2008 GFC (Doyle, 2009; Epstein & Crotty, 2009; Fujii, 2010; Nersisyan & Wray, 2010) and proposed to be banned completely (Nersisyan & Wray, 2010). The OTC derivatives operation potentially creates systemic risks because an insolvency of one large financial institution can lead to losses by other institutions and consequently defaults by all of them (Hull, 2010).

In the context that exceeding complexities of derivative products, coupled with the investor behavioural constraints, have made the full-disclosure regime unsuccessful in enabling investors to make fully informed decisions, merit regulation was recommended to securitized derivative debt products (Solaiman, 2013). In the meantime, substantive transparency requirements were proposed to the OTC derivative products, mainly standardized ones, including mandatory registration, clearing through CCP and reporting (IOSCO, 2011i, 2012i; IOSCO et al., 2015b; IOSCO & BIS, 2012).

Because the derivatives markets in emerging economies are developing, the proposed re-regulation trend currently put the emerging regulators before two regulatory dilemmas: (i) the trade-off between tight and safe regulation that may limit market growth and a more flexible but riskier framework that provides some space for financial innovation (Prasad, 2011) and (ii) the discrepancy between the requisite to pursue global derivative market reform and low
capacity in terms of market infrastructure and institutions to accommodate that reform (FSB, 2013; Mminele, 2013).

It is advocated that Behavioural Finance (Abreu & Mendes, 2012; Akerlof, 1982; Barber & Odean, 2001; Barber & Odean, 2002; Barberis & Huang, 2008; Fernández et al., 2011; Langer, 1975) and Financial Market Instability Hypothesis (Cassidy, 2008; Kregel, 2008; McCulley, 2009; Minsky, 1992, 2008) should be adopted by emerging market regulators to research the investor behavioural constraints and market phenomena in derivatives market in order to set up a relevant regulatory and supervisory framework. The recommendations of IOSCO on derivatives market should be implemented in phases and with consideration of the contextual factors because many of them may not be applicable for emerging markets where derivative markets are still in the early stage of development (World Bank, 2013). In order to set up a supervisory framework that ensures investor protection and systemic stability, the following IOSCO’s recommendations should be implemented first: customer suitability, classification and protections (IOSCO, 2013g; IOSCO & BCBS, 2015a; IOSCO et al., 2008); principles on parties involved in creation, distribution, trading of derivatives and securitized products (IOSCO, 1995, 2009c, 2009g, 2010d, 2011c, 2012e, 2012i, 2015a, 2015h). However, the recommendations on shadow banking and OTC derivatives market infrastructures may be delayed until the derivatives market develops to a certain level to ensure cost effectiveness and to avoid unintended consequences.

(vi) Public goods

An implication from the 2008 GFC is that systemic stability is a public good, which market fails to produce and hence should be provided by government. Since the global financial stability was recognized as a global public good after the Asian Financial Crisis in 1997, systemic risks once again became the centre of financial regulatory reform that was highlighted by the 2008 GFC (Moshirian, 2010). The crisis has revealed the fragility of the financial system, highlighted the linkage of systemic risks and indicated that many risk taking activities were taken by non-bank institutions and escaped the regulatory web, which was designed mainly for banks (González-Páramo, 2010; Tumpel-Gugerell, 2010).

Securities regulators in emerging market should observe their significant role in maintaining systemic stability. Substantial recommendations of IOSCO on systemic risks and involvement of securities regulators should be implemented (Diplock, 2011; IOSCO, 2011d). However, it should be noted that the trade-off between financial stability and financial deepening and growth tends to be stronger for emerging markets compared to developed markets (World Bank, 2013). For recognition of systemic risks and implementation of relevant policy tools to address
the risks, the perception that the securities market is a network inside other networks is advocated. Insights of Network Theory (Allen & Babus, 2007; Babus, 2007; Diplock, 2011; Haldane, 2009; Soramaki, 2010; Soramaki & Cook, 2016) should be embraced to identify the nodes (Haldane, 2009; Soramaki & Cook, 2016) where systemic risks are attached to, to understand the financial contagion (Allen & Gale, 2000) and to define what kind of intervention should be in place. Systemically important securities companies and investment funds should be recognized by national laws based on the criteria: size, interconnectedness, complexity, substitutability, and national or regional (global) activity as proposed by FSB and IOSCO (2015).

A special supervisory framework applied for these institutions should be established with visions of Network Theory and risk-based approach. Given the context that supervisory agencies in many emerging markets are facing lack of operational independence, limited resources and lack of specialized human capital (FSB, 2011; IMF et al., 2011; World Bank, 2013), a balanced and tailored reform process (World Bank, 2013) with priorities should be considered by emerging market regulators to enhance systemic stability;

(vii) Negative externalities

Another important implication of the 2008 GFC is that negative externalities are critical failures of the financial markets, where default of one important institution may cause insolvency of other institutions and instability of the whole system. Some of the negative externalities that are relevant to justify regulation of the securities market, including (i) the failure of a financial institutions might impose costs to non-contracting third parties; (ii) the failure of a financial institution might cause runs on other solvent financial institutions, causing contagion and systemic instability; (iii) the failure of the market intermediaries might lead to collapse of the payment system or the securities market, that in turn cause economic negative effects; and (iv) the failure of financial instruments that insured or guaranteed by government might impose costs to tax payers (Benston, 1999).

In the securities market, negative externalities were proved fatal by the GFC. The systemic risks generated by market intermediaries were not addressed, causing a system collapse because the securities regulation just focused on micro level of individual firms rather than on systemic risks (Duong et al., 2013). The crisis has made the regulator perceive the need to turn the pre-crisis ‘largely micro-prudential’ supervision (Hanson et al., 2011) into a framework that closely links macro- and micro-prudential supervisory activities. Investment bankers and hedge funds in the securities market were recognized as ‘more and more systemically important because of securitization trends’ (Helleiner, 2011, p. 72). That is the reason why (IOSCO, 2011d) called
for a role of securities regulators in mitigating systemic risks and FSB & IOSCO (2015) set up the criteria to define the systemically important market intermediaries (SIMIs) in the securities market to respond to the crisis impacts.

In order to address the negative externalities that may be caused by market intermediaries, especially hedge funds, investment bankers and the newly emerged crowding funds, the insights of Network Theory need to be embraced. In addition, risk-based approach should be used for micro-prudential supervision of market intermediaries such as investment funds and brokerage firms in a way to ensure their financial soundness and harmonization of macro and micro-prudential supervisory activities.

Having an SMS philosophy based on the conception that government should intervene to correct the market failures does not mean that regulators should suppose that they know better than markets or intervene more in the market operations (Duong et al., 2013). The 2008 GFC taught us that regulators should take action when and where the market ‘invisible hand breaks’ (McCulley, 2009, p. 3). It is recommended that the Emerging Market and Growth Committee of IOSCO should take a role in raising the SMS philosophy and discussion of the paradigm shift from the perspective of emerging markets in the IOSCO’s forum and communication with its members for a more progressive SMS policy reform.

7.3.2. Solving the Dilemma of Post-crisis SMS Architecture Restructuring and Role of SROs

The research implied that the role of securities regulators is no longer to ensure that market is provided with full, timely and accurate information (Masciandaro & Quintyn, 2012). Research findings (FRF3, FRF5, FRF6) shows that the major momentum for the crisis-induced policies to restructure SMS architecture is the requisite of harmonization of macro and micro-prudential supervision, changing supervisory approach to risk-based methodology, building up a comprehensive supervisory information base, reducing regulatory arbitrage risks, and unifying supervisory activities across interconnected sectors. The securities regulators need to be counter-cyclical regulators in a post-crisis supervisory architecture that can respond to all aspects of that requisite. The research found that twin-peaks model was a choice for developed markets while integration was opted by several emerging markets to restructure their SMS settings to address the tasks. It is argued that there is no one-size-fit-all model of SMS architecture for emerging markets because they are a diverse group of jurisdictions where priorities for post-crisis regulatory reforms and applicability of specific policy measures may differ (FSB et al., 2012). The objectives of setting that SMS architecture can be obtained
through two ways which are naturally traded off, namely coordination policy among supervisors and institutional integration of the securities supervision in the overall supervisory architecture (Masciandaro & Quintyn, 2012).

It is recommended that the regulators in emerging markets should not let themselves be confused by the debates on twin-peaks or integrated models. What is most important is that the regulators have clear lines of authority and have a regime of freely and continuously sharing information, and effective coordination of regulatory actions with other regulators in the financial markets. Further, that regime should ensure no administrative obstructions in performing prudential supervision and business conduct oversight (Duong et al., 2013). Given the context that supervisory agencies in many emerging markets are struggling with a lack of operational independence, limited resources and lack of specialized human capita (FSB et al., 2012), it is argued that policy makers in emerging markets should focus on capacity building before having the SMS architecture redesigned (if it is necessary to do so). Without a sound supervisory capacity, any effort to reform in terms of SMS restructure might be pointless and costly.

The principal capacity challenges the emerging market regulators need to overcome include but are not limited to: supervisory independence constraints, incomplete legal frameworks, inability to adequately regulate and supervise multi-sectoral conglomerates (IMF et al., 2011, p. 9), and lack of special human resources. In addition, adopting international standards at a pace consistent with the level financial development and supervisory capacity is another challenge to emerging markets (FSB et al., 2012) in the current post-crisis reform.

It was shown by the research that the information-related synergies between the central banking and the prudential supervisory function has put central banks at the centre of the post-crisis supervisory restructure: central banks as prudential regulators in the twin-peaks model and central banks as integrated supervisors of financial markets in the integration model. In the context that consolidated supervision is critical weakness of emerging markets (World Bank, 2013); supervisory integration under the central banks in emerging markets may be a responsive and cost-effective approach to effectively supervise cross-sectoral financial institutions and to harmonize macro and micro-prudential supervision. The structure eliminates regulatory arbitrages; reduces the regulatory transaction costs, generates the economies of scale; enhances accountability due to regulatory concentration; responds more effectively to financial innovation and cross-sectoral problem; produces regulatory flexibility and facilitates extensive and dynamic cross-border regulatory cooperation by acting as a single point of contact (Abrans & Taylor, 2000; Pellerin, Walter, & Wescott, 2009; Reddy, 2001). However, the structure may
imply: a regulatory monopoly where the concentration of power could harm the democratic policies (Reddy, 2001); excessive power of central bank may lead to the case where its regulatory failure potentially tarnish its reputation and credibility, especially monetary policies (Abrans & Taylor, 2000); pooling of resource with different skills and regulatory objectives of banking, securities and insurance may not yield the expected synergy (Pellerin et al., 2009; Reddy, 2001); potential moral hazards (Abrans & Taylor, 2000); lack of specialization (Pellerin et al., 2009); loss of scope economies between consumer protection and safety supervision; and adjustment and organizational costs (Pellerin et al., 2009). The pros and cons should be observed for any further plan of integration under central banks and during the course of functioning of this model by emerging markets.

Research findings also indicated that SROs are no longer privileged co-regulators in the SMS architecture and they now are subject to stringent supervision than before (IOSCO, 2013c). Its means that the post-crisis supervisory burden of the securities regulators is heavier due to the adding up of responsibility. In addition, the ‘quietness’ of most emerging securities regulators about the role of SROs in the post-crisis securities supervisory reform plan might indicate that they are still in the post-crisis shock of paradigm shift. The lack of attention to self-regulation was also recognized as ‘an important omission in the debate on regulatory reform in the financial services sector’ in other research (Omarova, 2011, p. 2). It is possibly that the emerging market regulators might not know where to fit the current SROs, many of which were established as regulatory tools recommended by IOSCO, now proved inefficient by the 2008 GFC and strongly recommended as subject to critical supervision (IOSCO, 2013c), into their post-crisis supervisory systems.

For the emerging markets where lack of inadequate regulatory resources is still a current problem (IMF et al., 2011), ignoring the role of SROs in the post-crisis SMS reform may not be a smart choice. Given the complexity and global interconnected nature of the markets, any government unilateral attempt to undertake the SMS policy reform without involvement of private sector may encounter regulatory arbitrage. It means that there will be a never ended cycle of rule-making and rule evading (Omarova, 2010).

Therefore, it is recommended that the efficacy of self-regulation in a particular market should be facilitated in consideration of specific market circumstances and characteristics (Carson, 2009). The emerging markets with long tradition of self-regulation should enjoy the market expertise of and regulatory burden sharing with SROs as far as regulators bear in mind that the co-regulatory mechanism can only work if there are: (i) a clear line of responsibilities between statutory regulators and the SROs; (ii) conflict of interests are comprehensively identified by
legal framework and efficiently enforced; (iii) corporate governance and management of the SROs are reasonably constructed and performed; and (iv) adequate oversight operation is in place. In newly established securities markets, where the size of markets does not justify establishing an SRO and role of formal SROs is not achievable, self-regulation may not be an option because the statutory regulator is still weak in capacity and the SROs may be manipulated by moral hazards rather than operated under self-discipline and adequate supervision. In some emerging markets where SRO stock exchange are traditionally powerful while the statutory regulators are weak, self-regulation is not sustainable (Carson, 2011). In this case, capacity building of statutory regulator and stronger supervision over SROs is recommended.

In the meantime, reassessing the rules and performance of existing SROs and revaluation of SMS structure in emerging markets are relevant steps before deciding on the future role of SROs.

7.3.3. Identifying the Tasks and Challenges of Applying Risk-based Supervision

The research signified a new trend to move to risk-based approach by developed and emerging markets post-crisis (FRF4). Before the 2008 GFC, full disclosure-based approach was recommended in securities regulatory forums. Since the GFC the focus is on risk-based approach as result of the post-crisis paradigm shift. Risk-based approach is conducted for: (i) maintaining the stability of the financial system, especially the safety and soundness of the settlement system; (ii) promoting in operational and compliance efficiency of market intermediaries; and (iii) providing sufficient protection to customers of financial services offered by intermediaries (IOSCO, 2009h, p. 10).

For emerging markets that largely relied on a rigid compliance-based approach pre-crisis (IOSCO, 2009h), moving to risk-based supervision means the regulators are required to set up completely new supervisory methodology and processes. Risk-based approach to supervision employs methods such as sensitivity analysis, stress testing and other risk monitoring techniques to identify the likelihood of an (negative) event and its impact on the system in the process of the risk assessment and risk management (IOSCO, 2009h). For a simplified definition, risk-based supervision is ‘pick important problems and fix them’ (Sparrow, 2008, p. 5) approach that requires the ‘efficient allocation of supervisory resources to their most effective use’ (Lewis, 2013, p. 8). The Australian five steps of risk-based approach is recommended for emerging markets: (i) identifying risks by reviewing information collected from on-site examinations and off-site supervision to monitor the risk profile of supervised
entities and the adequacy of their risk management and governance; (ii) rating risks by identifying the type and level of risks to create a risk map with priorities of supervised entities; (iii) responding to the risks by constructing an updated supervisory action plan for each entity; (iv) undertaking regulatory intervention to flagged entities in accordance with priorities defined upon a specified baseline; and (i) re-evaluating the risk analysis to ensure supervisory effectiveness (Lewis, 2013).

The risks that are available in the securities market include but are not limited to: market risk, operational risk, credit risk, related party risk, liquidity risk, underwriting risk, and provisioning risk (FSCB, 2016). In risk-based supervision, behavioural factors matter, including risk appetite, risk management, corporate governance, alignment of incentives, and organizational culture (Lewis, 2013).

Applying risk-based supervisory approach means that emerging markets are facing the challenges, including: (i) change in organizational culture and modes of interaction with market intermediaries; (ii) establishing of appropriate legal framework; (iii) reallocating of supervisory resources from low risk to high risk intermediaries and extensive organizational restructuring to perform the risk-based approach; (iv) additional costs related to capacity building; (v) developing of market awareness on new supervisory approach; (vi) validating efficiency of risk-based approach by different stakeholders; (vii) potential risks of ineffective performing; and (viii) requiring changes of market intermediaries in terms of compliance culture and available resources to comply with risk-based framework (IOSCO, 2009h).

7.3.4. Establishing a Culture of Responsive Securities Market Supervision

In the context that unintended consequences of post-crisis financial market reform has become a concern of emerging market regulators (FSB, 2013; FSB et al., 2012; Mminele, 2013; World Bank, 2013), this research proposes a responsive SMS culture that may enable the securities regulators to address the concern and keep pace with market developments. An SMS framework that respond effectively to the specific market behaviour, market context and market developments is argued to be relevant for bridging the gap between regulation and market development, and avoiding the traditional path of following all the SMS policies of developed markets, which may not be suitable or lead to unintended consequences for emerging markets.

The concept of responsive SMS is developed within this research by adopting the insights of Ayers and Braithwaite (1992, 2006, 2011), Smith (2011), and Baldwin and Black (2007, 2010, 2014), as follows: *Responsiveness of SMS is the ability of the securities regulators to respond*
effectively to market behaviour, market context and market developments by using relevant supervisory tools and approaches in a specific supervisory structure.

Adapting and extending the insight of responsive regulation (Baldwin & Black, 2007, 2010a; F. Black et al., 1972; J. Black, 2014; J. Black & Baldwin, 2010), and taking into account the characteristics of the responsiveness discussed by 20 selected securities regulators in this research, it is recommended that the responsiveness of SMS should be constructed as a culture that focuses on the securities regulator-regulated interaction, which is defined by seven criteria as follows:

- **The behaviour and cultures of the securities market actors**: the SMS framework should respond first to the behaviour and cultures of the securities market actors. Objectives of supervision, subjects of supervision, risks that need to be supervised can be clearly defined through comprehending the behaviour and cultures of market actors;

- **Dynamic interconnectivities of supervised market sectors and institutions**: the securities regulators should observe that the interconnectivities of market sectors and institutions is a reality and respond to them effectively to obtain the supervisory objectives and to ensure that systemic stability can be maintained throughout. The interconnectivities are dynamic and need to be updated frequently;

- **Market innovations and developments**: Responding to market innovations and market developments is critical to keep the SMS framework ‘alive’. Market innovations and developments should be continuously studied and put under regulation and supervision to reduce the risk that market outpaces regulation and instigates unexpected disruptions;

- **The organizational dynamics and institutional setting of the securities regulator within the financial regulatory architecture**: each jurisdiction has its own supervisory institution and architecture that largely depend on its historical, political and economic features. The securities regulators should understand the features for realizing the borderline of their responsibilities, knowing what they can and what they cannot do in the system, who to coordinate for effective supervision, and how they can best perform their functions within the particular supervisory settings;

- **The different logics of supervisory approaches**: the ability to grasp the different logics of the supervisory approaches enables the regulators to define which approach should be used to achieve a particular supervisory objectives and how to combine different approaches to obtain a set supervisory goals in a particular market context and market institution;
- **The securities regulatory regime’s own performance over time**: health of the SMS framework should be re-checked periodically to recognize whether the framework still works satisfactorily and achieve its expected purposes. Periodical re-evaluation and capacity building are important to ensure that the SMS system is capable to perform its functions;

- **Changes in each of these elements**: Finally changes in each of these elements should be updated and responded in timely manner.

While an adequate SMS philosophy is a constitution that helps to design and govern all the SMS operations, the culture of responsive SMS with the above seven criteria is vital to ensure the viability of the SMS operations.

### 7.4. Contribution of the Research

In addition to the regulatory implications discussed in the previous section, this research has numerous contributions in terms of theory, body of knowledge, research methodology and research literature. Summary of the contributions is presented in Table 7.2.

#### 7.4.1. Theoretical Contribution

This research is the first one that has studied the theoretical underpinning of SMS in a comprehensive and analytical framework. The research has not only described and analysed how the imprints of Standard Finance and Behavioural Finance contributed to the SMS theoretical framework before the 2008 GFC but provided a critical explanation of the post-crisis SMS paradigm shift and constructed a comprehensive SMS philosophy for emerging markets.

This research has not only adapted and extended the insights of public policy, micro-economics and the notions from Behavioural Finance, Network Theory, Agency Theory, and Minsky Financial Instability Hypothesis in securities regulation, but further employed, developed and reorganized them in an applicable Keynesian framework of SMS philosophy, which justifies government regulation and supervision by different types of failures in the securities market. Given the context that the securities regulators are still in the post-crisis philosophy predicament, looking for an alternative theoretical framework that would replace the conventional exemplar, which was dismissed by the 2008 GFC, the proposed SMS philosophy is a meaningful attempt to theoretically underpin the post-crisis supervisory reform for emerging markets.

Again, for the first time this research has established an all-encompassing conceptual framework of SMS, including SMS philosophy, SMS architecture, SMS approach and five
supervisory activities, including macro and micro-prudential supervision, supervision of securities products, market conduct oversight, and supervision of MIs and SROs. In addition, the study has defined the concept of responsiveness in SMS, developing the characteristics of a responsive SMS culture that would help emerging markets keep the pace with market developments and escape the traditional path of blindly following the financial reforms initiated by developed markets, which might lead to unintended consequences.

Hence, this research contributed significantly to the economic theories in general and the conceptual framework of SMS in particular in terms of academic coherence, development and innovation.

7.4.2. Contribution to the Body of Knowledge

This research has contributed extensively to the body of knowledge by identifying and analysing the impacts of the 2008 GFC on SMS system. Findings of the research have provided a complete landscape of crisis-induced policy making by securities regulators in the period from 2008 to early 2016. Furthermore, the research largely contributed to understanding of the convergence and divergence between developed and emerging markets in their SMS policy responses to crisis impacts as well as the reasons for the alike and different ways of policy making by the two groups. Research outcomes reflected an extensive observation of the different level of crisis impacts to each group as an essential factor that induced policy responses, additionally providing knowledge about the role of IOSCO and other international organizations in fostering the post-crisis financial regulation reform in emerging markets.

<table>
<thead>
<tr>
<th>Areas</th>
<th>Contribution</th>
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<tr>
<td>Theoretical Contribution</td>
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</tr>
<tr>
<td>Keynesian Economics</td>
<td>Adapted and extended the insights from Keynesian Economics in explaining the characteristics of investors and the securities market to set up an SMS philosophy that justified government regulation and supervision by market failures;</td>
</tr>
<tr>
<td>Standard Finance</td>
<td>Recognized and analysed the imprints of Standard Finance in SMS before the 2008 GFC; indicated its failures in explaining the market phenomenon such as crisis;</td>
</tr>
<tr>
<td>Behavioural Finance</td>
<td>Identified and analysed the imprints of Behavioural Finance in SMS before the 208 GFC; Adopted ad developed the insights from the theory in explaining the financial crisis, describing the characteristics of securities investors and stock market; employed the concepts of behavioural investor biases and recognition errors in development of the post-crisis SMS philosophy;</td>
</tr>
<tr>
<td>Minsky Financial Instability Hypothesis</td>
<td>Adapted and extended the hypothesis in explaining the securities market booms and burst; recognized the Minsky moments and Minsky cycles to explain the pro-cyclicality of the securities market and financial crises; employed the insights of the hypothesis to develop the post-crisis SMS philosophy;</td>
</tr>
<tr>
<td>Agency Theory</td>
<td>Adapted and extended the insights of the theory in understanding typical relationships in the securities market; employed the concepts of the theory in development of the post-crisis SMS philosophy;</td>
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<tr>
<td>Network Theory</td>
<td>Adapted and extended the insights of the theory in explaining the infrastructure of the securities market within the network of financial market, its regional and global inter-connectivity and the contagion of market turbulence; employed the insights in establishment of the post-crisis SMS philosophy;</td>
</tr>
<tr>
<td>Public policy, micro-economics and post-crisis SMS philosophy</td>
<td>Employed the notions and insights of public policy and micro-economics to define the concept of SMS and develop a post-crisis SMS philosophy, which observes the nature of today securities markets, responds to the problems revealed by the 2008 GFC and takes into consideration the contextual factors of emerging markets, should be established. The SMS philosophy justifies the government supervision by numerous securities market failures, including behavioural biases of investors, information asymmetries, principal-agency problems, monopoly, de-merit goods, public good and negative externalities;</td>
</tr>
<tr>
<td>SMS conceptual framework</td>
<td>Developed a comprehensive conceptual framework of SMS, including SMS philosophy, SMS architecture, SMS approaches and five key SMS supervisory activities (macro and micro-prudential supervision, supervision of securities products, market conduct oversight, and supervision of MIs and SROs)</td>
</tr>
<tr>
<td>SMS paradigm shift</td>
<td>Recognized the SMS paradigm shift induced by the 2008 GFC, where the Standard Finance ceased to be the favourite theoretical underpinning of financial supervision and Behavioural Finance has obtained a new important in the theory of financial and securities regulation and supervision;</td>
</tr>
<tr>
<td>Responsive regulation</td>
<td>Adopted the insights of responsive regulation in defining the concept of responsiveness of SMS and developing a framework of responsive SMS for emerging markets</td>
</tr>
<tr>
<td>Contribution to body of knowledge</td>
<td>Identified the impacts of 208 GFC on SMS policy making by the securities regulators, contributing to understanding the crisis and post-crisis financial reform; observed the changes in the SMS framework in terms of SMS philosophy, SMS architecture, SMS approaches and five key supervisory activities; identified and analysed the role of IOSCO and other international organizations in fostering the post-crisis SMS policy reform;</td>
</tr>
<tr>
<td>Knowledge of securities supervision</td>
<td>Contributed to the knowledge of securities supervision by providing, discussing and analysing: concept of SMS; the concept of responsive SMS; the conceptual framework of SMS; definition of SMS philosophy; definition and different models of SMS architecture; the concept and different SMS approaches; definition of macro-prudential supervision; definition of micro-prudential supervision; definition and understanding of securities product supervision; definition and understanding of market conduct oversight; and definition ad understanding of SROs, MIs and supervision of SROs and MIs;</td>
</tr>
<tr>
<td>Observation of policy making paths by developed and emerging markets</td>
<td>Observed the convergence and divergence of developed and emerging markets in policy responses to crisis impacts; identified and analysed the reasons leading to the alike and different policy making by the two groups;</td>
</tr>
<tr>
<td>Responsive SMS</td>
<td>Recognized the awareness of securities regulators on the responsiveness of SMS; identified the positive correlation between the crisis-induced policies and improvement of responsiveness in SMS post-crisis;</td>
</tr>
<tr>
<td>Contribution to research methodology</td>
<td>Justified the use of mix-methodology under the single paradigm of critical realism; contributed significantly to the knowledge and development of research methodology by demonstrating that answers for the complex and difficult research questions, which cannot be elucidated by a single method, should be explicated by mix-methodology;</td>
</tr>
<tr>
<td>Contribution to research literature</td>
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271
| Literature of 2008 GFC and crisis impacts on SMS | Filled in the contextual gaps of the existing literature about the 2008 GFC’s impacts by depicting a full picture of SMS before and after the crisis, addressing the research gaps on what, how and why the changes in SMS were made as a result from impacts of the 2008 GFC; Verified and further expanded the literature by providing empirically proved evidence on the causal relationships between the crisis and post-crisis SMS policy reform, filtering the real crisis impacts from the market developments fostered by other momentum; |
| Literature of SMS | Contributed significantly to literature about SMS by describing the landscape of SMS before and after the 2008 GFC; |
| Literature of policy making by developed and emerging markets | Contributed to the literature of the paths of developed and emerging markets in policy making by observing and analysing the convergence and divergence of SMS policy responses to the GFC by the two groups; |
| Data of SMS and crisis impacts | Provided important data supporting empirical evidence that was justified by relevant theories and can be verified in any further research |

Source: developed for this research

Moreover, the research has delivered important data and information that would benefit the securities regulators in terms of perception of SMS philosophy; observation of the SMS paradigm shift provoked by the 2008 GF; conception of responsive SMS; understanding of different supervisory architecture; observing the restructure of SMS supervisory setting into integration and twin-peaks models with emerged role of central banks; knowledge of various supervisory approaches, recognition of moving to risk-based approach; acquaintance of five key components of SMS and awareness of how the framework of SMS has been changed under the regulatory reform to respond to the crisis impacts.

7.4.3. Contribution to Research Methodology

Findings of the study have justified the usage of mix-methodology under the single paradigm of critical realism. The sequential three stage research design was demonstrated efficiently to combine and complement qualitative and quantitative research to generate reliable and valid findings. Triangulation and retroduction allowed by the mix-methods were attested rational in generalizing the comprehensive and profound research findings. Objectives of the combination of quantitative and quantitative research tools have been extensively achieved, including complementarity, completeness, developmental, expansion, confirmation, compensation, and diversity.

Therefore, the research contributed significantly to the knowledge and development of research methodology by demonstrating that the answers for the complex research questions, which cannot be elucidated by a single method, should be explicated by mixed methodology.

7.4.4. Contribution to Literature

The research filled into the contextual gaps of the existing literature about the 2008 GFC’s impacts by depicting a full picture of SMS before and after the crisis, addressing the research
gaps on what, how and why the changes in SMS were made as a result from impacts of the 2008 GFC. Given the context that most of the post-crisis literature identified the crisis as a reason for securities supervisory reforms without an empirical justification, this research verified and further expanded the literature by providing empirical evidence on the causal relationships between the crisis and post-crisis SMS policy reform, filtering the real crisis impacts from the market developments fostered by other momentums.

While the extant literature on 2008 GFC and securities markets just focuses on the policy recommendations and financial regulatory reform in a certain market or a specific region post-crisis, this research provided an entire global landscape of SMS policy reform undertaken by 101 jurisdictions. By classifying the research population into two groups of developed and emerging markets with distinct characteristics, the research effectively contributed to the academic literature that identifies the paths of developed and emerging markets in SMS policy making. Specifically, this research analysed the divergence between two groups in SMS restructure post-crisis into integration and twin-peaks models, highlighting the emerged role of central banks in the settings. Moreover, this research has gathered discussion on responsiveness in securities supervision, analysed and incorporating it into the wider literature on responsive regulation.

Therefore, from the exclusive analytical point of view, this research has overcome the fragmentation of the literature on securities supervision, setting up a broad and compact qualitative and quantitative database of global SMS framework and evolution of the SMS policy under the impacts of the 2008 GFC through the researched timeframe from 2008 to early 2016. Qualitative and quantitative data of this research provide empirical evidence that was justified by relevant theories and can be verified in any further research.

### 7.5. Research Limitations

As with any research, this study has limitations that might affect the overall reliability and validity of the research findings. The limitations that should be considered in interpretation of the research findings include:

- First, due to the complexity of the SMS framework, the research objectives became too ambitious. The crisis impacts were to be measured on all eight areas of SMS and there were numerous research issues arising during the course of study. The limited resources of the research had to be allocated with a pertinent priority so that the most important research issues would be addressed first. This limitation might lead to the fact that some interesting issues such as unintended consequences of the SMS policy reform in
emerging markets; new emerged risks and market intermediaries; and new technology and ethical aspects could not be included under the umbrella of this research. Moreover, the research discussion could not go on details of the noteworthy crisis-induced supervisory policies on hedge funds and investment bankers due to limited timeframe and structure of the study;

- Second, the quantitative research findings were based on self-reported cross-sectional data rather than longitudinal data. This characteristics made the landscape of 2008 GFC impacts on SMS drawn out from this quantitative data static at the date of survey and could not dynamically reflect the ongoing and changing context of post-crisis SMS reform. This limitation was settled by the qualitative research with wider timeframe from 2008 to March 2016; hence the final research findings were not really affected. However, the limitation might confine the generalisability of the quantitative research and then the qualitative research because the later was conducted to address the implications and research issues arising from the earlier;

- Third, the logistic regression model of the quantitative research had failed to quantify the correlation coefficients between the improvement of SMS responsiveness and the crisis-induced SMS policies due to the limitation of quantitative data. Small sample size with nominal variables and a number of empty cells might have caused the model to be unstable and unable to deliver the expected results to support findings from descriptive analysis;

- Finally, focus group interviews in the qualitative research could only be conducted with 13 participants, representing about 10% of the securities regulatory community. Small number of interview participants might restrain the generalisability of the qualitative research in investigating points of view of the securities regulators about the post-crisis paradigm shift and the post-crisis SMS philosophy. Although the documentary research successfully addressed this research issue later, time and cost efficiency became a concern of the research because it took nearly two years to carry out the documentary research and to collect qualitative data for analysis.

While acknowledging the limitations, this research generated findings and evidence to answer the three research questions about the impacts of the 2008 GFC on SMS system, enabling the researcher to come up with meaningful implications for emerging markets and achieve the research objectives. From the positive point of view, the limitations of the research suggested the future research directions that will be discussed in next section.
7.6. Future Research Directions

Findings and limitations of the research provide solid foundation for further research. The following future research directions are recommended:

First, an extensive study should be undertaken to identify the unintended consequences of post-crisis securities regulatory reform in emerging markets for development of appropriate policy recommendations. As identified in this research, the crisis-induced policy reform, originated by developed markets, spilled over to emerging markets through the channels of and commitments within the frameworks of IOSCO, IFM, World Banks, G20 and other international/ regional organizations. Following the path of developed markets, emerging markets are performing a reform that was not designed for them, facing the unpremeditated consequences that may hinder them from an effective performance of securities supervisory functions and market development. The concerns, recognized by FSB et al. (2012) and World Bank (2013), include but are not limited to: (i) Implementation of Basel III capital framework may raise the cost of banking and hence encourage the shadow banking activities and securities regulatory arbitrages; (ii) Large holding of high quality liquid assets under the Basel III may have an adverse impact on the bond market development, as well as on the availability of financing to the real economy in the context that the supply of government bonds and high quality corporate bond in emerging market is limited; and (iii) OTC derivative market reforms may imply additional costs through new capital and margining requirements, which in turns may affect market development domestically and the supply of finance for end-users in terms of costs and availability.

Second, it was observed that the role of hedge funds and investment bankers in shadow banking and trading of OTC derivative products might have significantly contributed to the root causes of the 2008 GFC and the global financial contagion. Numerous SMS policy reforms have been undertaken to address the potential risks of the market intermediaries in a wider consideration of systemic risks post-crisis. However, the extant literature only has limited discussion about what and how the emerging market securities regulators should do to address the potential instabilities that might be triggered by them. Further, the limited resources of this research did not allow a more detailed investigation about this matter. Therefore, further exhaustive research is recommended to study the roles of market intermediaries in the GFC and their post-crisis supervision in emerging markets to clarify the role of securities regulators in maintaining systemic stability.

Third, as the markets never wait for academics and regulators to keep pace with them, new market activities and products have emerged swiftly after the 2008 GFC, when they were busy
scrutinizing what had happened before and during the crisis. Hence, an inherent future research direction is to study the new emerged market activities such as capital raising through crowdfunding and peer to peer lending; and the services such as collateral optimization, collateral transformation, collateral arbitrage, re-hypothecation and reuse (IOSCO, 2016b) that were developed to respond to higher requirement of collateralization. For the market activities entail their own set of unique risks that have not been fully comprehended, especially when viewed on a system-wide basis, significance of future research on these market activities is required.

Fourth, it was found that the 2008 GFC could not have been so fast, so dangerous, so destructive and so contagious without the involvement of poor ethics, high-techs and financial innovation. Technologies are changing the market landscape and accelerating financial innovation to a hyper-speed. Securities regulators are seeing the emergence of the so-called ‘fintech’ service providers (IOSCO, 2016b) and cyber threat. The technological revolution in securities markets include: robo-advice for investment; crypto currencies payments; smartphone finance applications; distributed ledger technology; using of cyber applications for fund mobilization or lending; and use of big data to better recognize the client needs (IOSCO, 2016b). The potential risks of the high-tech application will be multiplied when there is involvement of moral hazards. Cyber threat relates to the risks of cyberattacks, which are launched against financial market members, services, and market infrastructure. Cyber threat may arise from connections to unsecured third-party vendors; abuse of information and communication platforms; disruptions of exchange trading system; patching and misconfiguration; and misperception of customer responsibility. Through disruption and sabotage, cyber threat incurs high costs and undermines the financial system integrity, imposing potential danger to financial stability (IOSCO, 2016b). Therefore, it is recommended that the aspects of hi-tech application, cyber threat and harmful conducts should be studied comprehensively and promptly to narrow the gap of regulation and market innovation.

Finally, it has been the first time the financial crisis impacts on the complete SMS framework were studied. The construct measures of the research were found to be valid and reliable in the present context. However, the post-crisis financial regulatory and SMS policy reforms are still ongoing. Findings of the research are tentative and should be further verified and refined by any similar future research direction. Quantitative data from survey research with 42 securities regulators and qualitative data on SMS reform of 101 jurisdictions in this research would serve as a valuable and reliable literature for any attempt to investigate how the securities supervision have evolved after the 2008 GFC.
7.7. Conclusions

In order to answer three research questions on the impacts of the 2008 GFC on SMS, qualitative and quantitative techniques have been combined in a mix-methodological three stage research design under the single paradigm of critical realism. The qualitative and quantitative researches generated ten final research findings that provided evidence of the crisis impacts on the securities market and SMS framework. The GFC has led to a paradigm shift in SMS with newly emerged importance of Behavioural Finance and diminishing role of Standard Finance. SMS architecture has been changed to meet the requirements of financial stability and re-regulation of pre-crisis deregulated products and institutions. The SROs is no longer recommended as co-regulators in the securities markets. Twin-peaks became preferred model of developed markets while integration is preferred by emerging markets. Risk-based supervision became the most common approach. Re-regulation trend has put hedge funds and OTC derivatives markets at the centre of post-crisis financial regulation reform. Market conduct oversight is enhanced but the future role of the SROs is unclear. Supervision of MIs and SROs focusses on the market gate keepers such as CRAs, auditors and stock exchanges. Responsiveness of SMS system was found improved due to the post-crisis SMS policy reform though specific coefficients between them could not be established clearly. Emerging markets are following developed markets in the post-crisis SMS policy reform with some divergence. Influence of IOSCO and other international organizations in initiating and fostering the reform was found significant and decisive to emerging markets.

By analysing the research findings, extending the insights of Keynesian Economics, Behavioural Finance, Minsky Financial Instability Hypothesis, Agency Theory, and Network Theory, and applying the perceptions of public policies and macro-economics, implications for emerging markets have been developed, focusing on: (i) comprehending the theoretical aspects of post-crisis SMS paradigm shift; (ii) building up a post-crisis SMS philosophy; (iii) dealing with the dilemma of post-crisis SMS architecture restructuring and the role of SROs; (iv) identifying the tasks and challenges of applying risk-based supervision; and (v) establishing a culture of responsive SMS. Limitations and contributions of the research have been identified. Not only this research is reminiscent in terms of its implications for emerging markets, its contributions to economic theories, body of knowledge, research methodology and literature are substantial. This research has been closed but future research avenues have been identified to cover: (i) unintended consequences of the post-crisis financial regulation reform in emerging markets; (ii) roles of the hedge funds and investment bankers in the GFC and their post-crisis supervision with implications for emerging markets; (iii) post-crisis newly emerged market...
activities; (iv) Potential risks of high-techs and financial innovation; and (v) any further research to verify and refine the findings of this research.
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ANNEXES AND APPENDICES
### APPENDIX 1. TIMELINE EVENTS OF 2008 GFC

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late July/early August 2007</td>
<td>The UK stock market goes through a period of volatility. Banks begin to stop lending to each other due to market fears over exposure to potential losses on high risk US mortgages. The credit crunch begins in earnest.</td>
</tr>
<tr>
<td>September 13, 2007</td>
<td>News breaks that Northern Rock has sought emergency funding from the Bank of England in its capacity as &quot;lender of last resort&quot;. It prompts the first run on a bank for more than a century.</td>
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<tr>
<td>February 17, 2008</td>
<td>The government announces that struggling Northern Rock is to be nationalized for a temporary period.</td>
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<tr>
<td>July 14, 2008</td>
<td>Financial authorities step in to assist America's two largest lenders, Fannie Mae and Freddie Mac, owners or guarantors of 5 trillion worth of home loans.</td>
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<td>Wall Street bank Lehman Brothers files for Chapter 11 bankruptcy protection and another US bank, Merrill Lynch, is taken over by the Bank of America.</td>
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</tr>
<tr>
<td>September 17, 2008</td>
<td>Lloyds TSB announces a £12 billion deal to take over Britain's biggest mortgage lender HBOS after a run on HBOS shares.</td>
</tr>
<tr>
<td>September 28, 2008</td>
<td>European banking and insurance giant Fortis is partly nationalized to ensure its survival.</td>
</tr>
<tr>
<td>September 29, 2008</td>
<td>The government takes control of Bradford &amp; Bingley's £50 billion of mortgages and loans. Savings operations and branches are sold to Spain's Santander. The Icelandic government also takes control of the country's third-largest bank, Glitnir, after the company faces short-term funding problems.</td>
</tr>
<tr>
<td>September 30, 2008</td>
<td>The Irish government guarantees deposits in the country's main banks for two years.</td>
</tr>
<tr>
<td>October 6, 2008</td>
<td>Trading is suspended in Icelandic banks including Kaupthing, Landsbanki, Glitnir, Straumur-Burdaras, Exista and Spron.</td>
</tr>
<tr>
<td>October 7, 2008</td>
<td>The Icelandic government takes control of Landsbanki, the country's second largest bank.</td>
</tr>
<tr>
<td>October 8, 2008</td>
<td>The Bank of England cuts interest rate by 0.5% to 4.5% in a surprise decision as part of a coordinated global attempt to ease the financial crisis. The Government unveils an unprecedented £50 billion plan to part-nationalize major UK banks and pump billions more into helping ailing money markets. The Bank of England also extends the existing £50 billion Special Liquidity Scheme to £200 billion, while a further £250 billion is being pumped in under a debt guarantee scheme.</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
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<td>-------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>October 10, 2008</td>
<td>Treasury officials travel to Iceland for urgent talks after the collapse of the country’s banking sector leaves councils and charities in Britain facing losses of up to £1 billion.</td>
</tr>
<tr>
<td>October 13, 2008</td>
<td>The government announces a £37 billion rescue package for Royal Bank of Scotland (RBS), Lloyds TSB and HBOS.</td>
</tr>
<tr>
<td>October 19, 2008</td>
<td>Chancellor Alistair Darling announces plan to pour billions of pounds into major public works in an attempt to help spend the UK out of the worst of the economic downturn.</td>
</tr>
<tr>
<td>November 20, 2008</td>
<td>The International Monetary Fund (IMF) approves a 2.1 billion dollars (£1.4bn) loan for Iceland, after the country’s banking system collapsed in October. It is the first IMF loan for a western European nation since 1976.</td>
</tr>
<tr>
<td>November 29, 2008</td>
<td>The Government takes a 58pc in RBS for £15bn, with a further £5bn of preference shares. Sir Fred Goodwin steps down as RBS chief executive, and is replaced by Stephen Hester.</td>
</tr>
<tr>
<td>January 15, 2009</td>
<td>The Irish government says it is to nationalize the Anglo Irish Bank.</td>
</tr>
<tr>
<td>January 16, 2009</td>
<td>The US Government provides the Bank of America with another 20 billion dollars from its 700bn dollar financial rescue fund to help it with the losses incurred when it bought Merrill Lynch.</td>
</tr>
<tr>
<td>February 11, 2009</td>
<td>Ireland says it will inject €7bn into Bank of Ireland and Allied Irish in return for guarantees on lending, executive pay and mortgage arrears. It gets a 25pc indirect stake in both banks.</td>
</tr>
<tr>
<td>February 26, 2009</td>
<td>RBS reports a loss of £24.1bn for 2008, the biggest in British corporate history. The government asks Sir Fred to give up an annual pension worth about £700,000.</td>
</tr>
<tr>
<td>April 16, 2010</td>
<td>The Securities and Exchange Commission accuses Goldman of defrauding investors of more than $1bn by willfully mis-marketing toxic subprime mortgage-related securities.</td>
</tr>
<tr>
<td>May 2, 2010</td>
<td>Greece gets a €110bn (£93bn) bail-out from other countries using the euro, and the IMF.</td>
</tr>
<tr>
<td>November 21, 2010</td>
<td>Irish Finance Minister, Brian Lenihan says he will recommend to the Government that the country formally request a bail-out package from the EU, ECB and IMF.</td>
</tr>
<tr>
<td>June 22, 2011</td>
<td>Greek Prime Minister (PM) George Papandreou tries to persuade MPs to approve 28bn euros (£25bn) of cuts, tax rises, fiscal reforms and privatization plans. Eurozone ministers say the legislation must be passed to receive a 12bn-euro loan Greece needs to pay its debts.</td>
</tr>
</tbody>
</table>

**Source:** Cited from *Timeline of World Financial Crisis* by The Telegraph at [http://www.telegraph.co.uk/finance/financialcrisis/8592990/Timeline-of-world-financial-crisis.html](http://www.telegraph.co.uk/finance/financialcrisis/8592990/Timeline-of-world-financial-crisis.html)
APPENDIX 2. LIST OF SCHOLARS ADVOCATING EMH BEFORE EUGEN FAMA

<table>
<thead>
<tr>
<th>Author</th>
<th>Publication</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelier, L.</td>
<td>Theory of Speculation</td>
<td>1900</td>
</tr>
<tr>
<td></td>
<td>The Game, the Chance and the Hazard</td>
<td>1914</td>
</tr>
<tr>
<td>Pearson, K.</td>
<td>The Problem of the Random Walk</td>
<td>1905</td>
</tr>
<tr>
<td>Smoluchowski, M</td>
<td>The theory of Brownian Motion</td>
<td>1906</td>
</tr>
<tr>
<td>Barriol, A.</td>
<td>Book on Financial Transactions</td>
<td>1908</td>
</tr>
<tr>
<td>De Montessus, R.</td>
<td>published a book on probability and its applications</td>
<td>1908</td>
</tr>
<tr>
<td>Langevin, P.</td>
<td>The stochastic differential equation of Brownian motion</td>
<td>1908</td>
</tr>
<tr>
<td>George Binney Dibblee</td>
<td>The Laws of Supply and Demand</td>
<td>1912</td>
</tr>
<tr>
<td>Mitchell, C.W.</td>
<td>Recognition that distributions of price changes are too ‘peaked’ to be</td>
<td>1915</td>
</tr>
<tr>
<td></td>
<td>relative to samples from Gaussian populations</td>
<td></td>
</tr>
<tr>
<td>Taussig, F. W.</td>
<td>Is Market Price Determinate?</td>
<td>1921</td>
</tr>
<tr>
<td>MacCauley, F.</td>
<td>Forecasting Security Prices</td>
<td>1925</td>
</tr>
<tr>
<td>Olivier, M.</td>
<td>Doctorate Thesis with unquestionable proof of the leptokurtic nature of the</td>
<td>1926</td>
</tr>
<tr>
<td></td>
<td>distribution of returns</td>
<td></td>
</tr>
<tr>
<td>Frederick, C. M.</td>
<td>The Behaviour of Prices</td>
<td>1927</td>
</tr>
<tr>
<td>Cowles, A.</td>
<td>Can Stock Market Forecasters Forecast?</td>
<td>1933</td>
</tr>
<tr>
<td></td>
<td>Investment Professionals Do Not Beat the Market</td>
<td>1944</td>
</tr>
<tr>
<td>Working H.</td>
<td>A random-difference series for use in the analysis of time series</td>
<td>1934</td>
</tr>
<tr>
<td></td>
<td>The investigation of economic expectations</td>
<td>1949</td>
</tr>
<tr>
<td></td>
<td>A theory of anticipatory prices</td>
<td>1958</td>
</tr>
<tr>
<td></td>
<td>Note on the correlation of first differences of averages in a random chain</td>
<td>1960</td>
</tr>
<tr>
<td>Slutsky, E.</td>
<td>The Summation of Random Causes as the Source of Cyclic Processes</td>
<td>1937</td>
</tr>
<tr>
<td>Friedman, M.</td>
<td>The Case for Flexible Exchange Rates,</td>
<td>1953</td>
</tr>
<tr>
<td>Kendall, M. G.</td>
<td>The analysis of economic time series</td>
<td>1953</td>
</tr>
<tr>
<td>Osborne, M. F. M.</td>
<td>Brownian motion in the stock market</td>
<td>1959</td>
</tr>
<tr>
<td></td>
<td>Periodic structure in the Brownian motion of stock prices</td>
<td>1962</td>
</tr>
<tr>
<td>Larson, A.B.</td>
<td>Measurement of a random process in futures prices</td>
<td>1960</td>
</tr>
<tr>
<td>Alexander, S.S</td>
<td>Price movements in speculative markets: Trends or random walks</td>
<td>1961</td>
</tr>
<tr>
<td></td>
<td>Price movements in speculative markets: Trends or random walks, no. 2</td>
<td>1964</td>
</tr>
<tr>
<td>Muth, J. F.</td>
<td>Rational expectations and the theory of price movements</td>
<td>1961</td>
</tr>
<tr>
<td>Treynor, J.</td>
<td>Capital Market Asset t Pricing Model (CAPM)</td>
<td>1962</td>
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<tr>
<td>Cootner, H.</td>
<td>The Random Character of Stock Market Prices</td>
<td>1964</td>
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<tr>
<td>Godfrey</td>
<td>The random walk hypothesis of stock market behaviour</td>
<td>1964</td>
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</tbody>
</table>

Source: adapted from Martin Sewell, History of the Efficient Market Hypothesis, Research Note, RN/11/04 20 January 2011, UCL
APPENDIX 3. DATA SUPPORTING LITERATURE REVIEW

Box 3.1. Advocates of strengthening macro-prudential supervision post-crisis

Bernanke (2008) stated that one of the five strategic elements of the Federal Reserve to respond to the 2008 GFC is mitigating systemic risks. (Bernanke, 2008, p. 5) said at the Federal Reserve Bank of Kansas City's Annual Economic Symposium in Jackson Hole, Wyoming, on 22 August 2008:

Going forward, a critical question for regulators and supervisors is what their appropriate “field of vision” should be. Under our current system of safety and soundness regulation, supervisors often focus on the financial conditions of individual institutions in isolation. An alternative approach, which has been called system-wide or macro-prudential oversight, would broaden the mandate of regulators and supervisors to encompass consideration of potential systemic risks and weaknesses as well (Bernanke, 2008, p. 5).

Persaud wrote in “Macro-Prudential Regulation”:

Micro-prudential regulation is not enough; it must be supplemented by macro-prudential regulation that catches the systemic consequences of all institutions acting in a similar manner. While we cannot hope to prevent crises, we can perhaps make them fewer and milder by adopting and implementing better regulation—in particular, more macro-prudential regulation (Persaud, 2009a, pp. 8-9).

Masciandaro & Quintyn (2009) highlighted the US Government’s plans to establish a body with responsibility for macro-prudential supervision in 2009. According to Masciandaro & Quintyn (2009), the White Paper of US Government, which was issued in Mid July 2009, proposed to establish a Financial Oversight Council to identify systemic risks and improve the cooperation among the US regulators. Its membership would comprise the US Treasury, the heads of the Fed, the National Bank Supervisor, the Federal Deposit Insurance Corporation, the Securities and Exchange Commission, the Commodity Futures Trading Commission, the Consumer Protection Agency and the Federal Housing Finance Agency.

According to (Buiter, 2009), the objective of macro-prudential regulation is systemic financial stability and it should include: (i) preventing or mitigating asset market and credit booms, bubbles and busts; (ii) preventing or mitigating market illiquidity in systemically important markets; (iii) preventing or mitigating funding illiquidity for systemically important financial institutions; and (iv) preventing or managing insolvencies of systemically important financial institutions (Buiter, 2009).

On 23 September 2009, the European Commission has adopted an important package of draft legislation to create a new European Systemic Risk Board (ESRB) to detect risks to the financial system as a whole with a critical function to issue early risk warnings to be rapidly acted on. It was recognized as steps to strengthen the supervision of the financial sector in Europe with the aims to sustainably reinforce financial stability throughout the EU; to ensure that the same basic technical rules are applied and enforced consistently; to identify risks in the system at an early stage; and to be able to act together far more effectively in emergency situations and in resolving disagreements among supervisors (EU, 2009).

Anand suggested to equip securities regulators with legislative power of macro-prudential regulation in “Is Systemic Risk relevant to securities regulation?”:

One option is to provide securities regulators with the legislative powers to engage in macro-prudential regulation….If this strategy was adopted, and securities legislation included concepts of systemic risk, what specific changes should be implemented? To begin, the mandate of securities regulators should be expanded, perhaps along the lines of the IOSCO Principles which state that the
three objectives of securities regulators are as follows: ‘the protection of investors; ensuring that markets are fair, efficient and transparent; and the reduction of systemic risk’. (Anand, 2010, p. 35).

In May 2011, a testimony of Bernanke before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate highlighted the implementation of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) in monitoring systemic risk and promoting financial stability (Bernanke, 2011). The testimony noted the establishment of Financial Stability Oversight Council (FSOC) as one of the efforts to identify and mitigate threats to the financial stability of the United States. Bernanke (2011) also stressed the continuous efforts of Federal Reserve in the reform of macro-prudential supervision:

We created a centralized multidisciplinary body called the Large Institution Supervision Coordinating Committee to oversee the supervision of these firms….. More recently, we have also created an Office of Financial Stability Policy and Research at the Federal Reserve Board. This office coordinates our efforts to identify and analyse potential risks to the broader financial system and the economy. It also helps evaluate policies to promote financial stability and serves as the Board’s liaison to the FSOC (Bernanke, 2011, p. 2).

Tucker (2011) acknowledged that the co-incidence of interests between macro-prudential authorities and securities regulators is beginning to be recognized at global level with representation of IOSCO on the FSB14 and its policy discussion on “Mitigating Systemic Risk”, the engagement of the European Securities Markets Authority on the Systemic Risk Board in Europe, and the present of CFTC and SEC on the FSOC in the USA. Tucker thought that securities regulators have to look well beyond their roots, accepting that their rules and policies influence the resilience of the financial system and securities regulators and financial stability authorities will have to meet half way to make progress with comprehending the network characteristics of the financial system (Tucker, 2011).

We cannot afford to ignore capital markets if we are to restore and preserve stability in the UK. The UK’s new macro-prudential regime recognizes this. The CEO of the planned new market regulator, the Financial Conduct Authority, will sit on the Financial Policy Committee (FPC) once it is placed on a statutory footing. And the government proposes that the FPC be given power by Parliament to give Recommendations and Directions to FCA where it could develop its policies and rules in the interests of stability. (Tucker, 2011, pp. 11,12).

Source: developed for this research, data from documentary research

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14 The Financial Stability Board (FSB) has been established in April 2009 as the successor to the Financial Stability Forum (FSF) to address vulnerabilities and to develop and implement strong regulatory, supervisory and other policies in the interest of financial stability; The FSB coordinates at the international level the work of national financial authorities and international standard setting bodies and to develop and promote the implementation of effective regulatory, supervisory and other financial sector policies. It brings together national authorities responsible for financial stability in significant international financial centres, international financial institutions, sector-specific international groupings of regulators and supervisors, and committees of central bank experts. See http://www.financialstabilityboard.org/about/history.htm
## Table 3.1. Summary of literature review

**Impacts of the 2008 GFC on securities market supervision**

<table>
<thead>
<tr>
<th>Changes of supervisory system after 2008 GFC</th>
<th>Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>The neo-liberal ideologies, typically efficient markets theory were blamed as the essential motive that led the securities regulators to the pro-market and deregulation mindset, and hence caused the 2008 GFC. However, a new conceptual framework of market supervision after the crisis was not suggested;</em></td>
<td>(Ball, 2009; K. Davis, 2010, 2011; Haldane, 2009; Varma, 2009)Ball 2009; Davis, K 2010, 2011; Haldane 2009; Varma 2009)</td>
</tr>
<tr>
<td><em>There are some academics who still loyal to the EMH and claimed that financial regulators had misused the efficient market principles.</em></td>
<td>(Ball, 2009; K. Davis, 2010, 2011; Haldane, 2009; Varma, 2009)Ball 2009; Davis, K 2010, 2011; Haldane 2009; Varma 2009)</td>
</tr>
<tr>
<td><strong>Impacts of the 2008 GFC on the securities market supervision architecture</strong></td>
<td>(Bernanke, 2009; CNMV, 2008; Coffee &amp; Sale, 2009; C. Cox, 2008; D’Aloisio, 2010; K. Davis, 2010; Eisenbeis, 2009; Erskine, 2010b; Group of Thirty, 2008; John, 2009; Masiandaro &amp; Quintyn, 2009; Pan, 2009; Paulson et al., 2008; The de Larosière Group, 2009; Weatherhead, 2010; Zingales, 2009)</td>
</tr>
<tr>
<td><em>An increasing need for a reform of financial supervisory structure toward a more consolidated system</em></td>
<td>(Austin, 2010; Carson, 2009; Catanach, 2009; Erskine, 2010b; Ford, 2010; Fren, 2011; Haldane, 2009; J. Kumar, 2011a; Larosière, 2009; Madhur, 2011; Rudd, 2009)</td>
</tr>
<tr>
<td><em>The trend is separation of a prudential regulator and a business conduct regulator, in which the role of securities regulators might well be adjusted to ensure a more efficient systemic risk management;</em></td>
<td>(Austin, 2010; Carson, 2009; Catanach, 2009; Erskine, 2010b; Ford, 2010; Fren, 2011; Haldane, 2009; J. Kumar, 2011a; Larosière, 2009; Madhur, 2011; Rudd, 2009)</td>
</tr>
<tr>
<td><em>The twin-peaks model of financial supervision seems to be preferred by some academics and practitioners.</em></td>
<td>(Austin, 2010; Carson, 2009; Catanach, 2009; Erskine, 2010b; Ford, 2010; Fren, 2011; Haldane, 2009; J. Kumar, 2011a; Larosière, 2009; Madhur, 2011; Rudd, 2009)</td>
</tr>
<tr>
<td><strong>Changing roles of SROs as an outcome of re-thinking about the securities market architecture after the GF:</strong></td>
<td>(Azuero, 2009; Carson, 2009, 2011; Coffee &amp; Sale, 2009; Paulson et al., 2008)</td>
</tr>
<tr>
<td><em>There are arguments of economist and practitioners who do not support in the values of self-regulation any longer;</em></td>
<td>(Azuero, 2009; Carson, 2009, 2011; Coffee &amp; Sale, 2009; Paulson et al., 2008)</td>
</tr>
<tr>
<td><em>There are milder views which see the GFC as an opportunity for a reform of self-regulation toward a more effective and responsive mechanism.</em></td>
<td>(Azuero, 2009; Carson, 2009, 2011; Coffee &amp; Sale, 2009; Paulson et al., 2008)</td>
</tr>
<tr>
<td><em>A trend of moving away from the market-based approach though it still has loyal advocates</em></td>
<td>(Anand, 2009; Coffee &amp; Sale, 2009; D’Aloisio, 2009, 2010; D’Aloisio, 2010; Erskine, 2010a, 2010b; Expert Panel, 2010b; Ford, 2008; Gray, 2009; Paulson et al., 2008; Salmon, 2009; Walsh, 2008); (Azuero, 2009; J. Black, 2010; Sants, 2010; Weatherhead, 2010)</td>
</tr>
<tr>
<td><em>The trend of moving away from market-based approached advocated my many institutions, academics and practitioners;</em></td>
<td>(Anand, 2009; Coffee &amp; Sale, 2009; D’Aloisio, 2009, 2010; D’Aloisio, 2010; Erskine, 2010a, 2010b; Expert Panel, 2010b; Ford, 2008; Gray, 2009; Paulson et al., 2008; Salmon, 2009; Walsh, 2008); (Azuero, 2009; J. Black, 2010; Sants, 2010; Weatherhead, 2010)</td>
</tr>
<tr>
<td><em>However, there are some academics and practitioners still support the underlying values of this approach.</em></td>
<td>(Anand, 2009; Coffee &amp; Sale, 2009; D’Aloisio, 2009, 2010; D’Aloisio, 2010; Erskine, 2010a, 2010b; Expert Panel, 2010b; Ford, 2008; Gray, 2009; Paulson et al., 2008; Salmon, 2009; Walsh, 2008); (Azuero, 2009; J. Black, 2010; Sants, 2010; Weatherhead, 2010)</td>
</tr>
<tr>
<td><strong>A trans-Atlantic rule-based vs. principle-based debate</strong></td>
<td>(Coffee &amp; Sale, 2009; Ford, 2009; Paulson et al., 2008). (D’Aloisio, 2009, 2010;</td>
</tr>
</tbody>
</table>
### Emerging significance of risk-based approach

- Risk-based approach is increasingly advocated by many securities regulators, academics and practitioners though still doubted by some.

(D’Aloisio, 2010; Erskine, 2010a, 2010b), (Expert Panel, 2010b; Pan, 2009)

### Impacts of the 2008 GFC on the securities market macro-prudential supervision

- The crisis has changed the perception of securities regulators on the role of macro-prudential supervision, which used to be considered as the function of banking regulators. Securities market macro-prudential supervision has obtained a greater importance after the GFC.


### Impacts of the 2008 GFC on supervision of securities market intermediaries

#### The trend of establishing a new regulatory agency in charge of micro-prudential supervision or shifting the role of micro-prudential supervision from one to another regulatory body

- The attempts to consolidate micro-prudential regulations by securities regulators were discussed by many institutions, academics and practitioners.

(Aglietta & Scialom, 2009a; Bernanke, 2011; Coffee & Sale, 2009; EU, 2009; IMF, 2011b; McKee, 2010; O’Sullivan et al., 2011; Tucker, 2011)

#### Increasing efforts of securities regulators to improve effectiveness of supervision of securities market intermediaries

- Risk-based supervision was also recommended by the institutions as an effective tool of supervision over securities market intermediaries;  
- Hedge funds are now at the centre of strengthening of supervision over market intermediaries due to their essential roles.

(G20, 2009b; IOSCO, 2009h, 2010d, 2010f, 2011c); (G20, 2009a, 2009b; Geithner, 2009; IOSCO, 2009j)

### Impacts of the 2008 GFC on supervision of traded securities products

#### Enhancing supervision of derivatives and moving of OTC traded derivatives to organized markets

- In almost capital markets, derivatives, especially securitized products are now subject to more supervision than ever before and the trend of moving OTC traded derivatives to organized market with central clearing mechanism has become worldwide.


#### Strengthening transparency by required disclosure on complex financial products and enhanced financial disclosure by firms

- Enhancing market transparency is an essential measure for restoring market confidence after the 2008 GFC. Mandatory registration and disclosure is required for all the institutions, of which derivatives issuers, hedge funds and securitizers bore the maximum brunt of the regulations.

(Bhatia, 2011; CESR, 2009; D’Aloisio, 2010; K. Davis, 2011; G20, 2008; Gensler, 2010; IOSCO, 2009c, 2009n)

#### Strengthening of accounting standards for better valuation of securities traded products

- To consolidate supervision of traded securities products after the 2008 GFC, another approach used by the securities regulator community is strengthening of accounting standards to ensure proper valuation of securities.

(CNMV, 2008; D’Aloisio, 2009; K. Davis, 2011; G20, 2008, 2009a; IOSCO, 2008c; The de Larosière Group, 2009)
### Impacts of the 2008 GFC on market conduct oversight

- Enhancement of market conduct oversight was supposed by academics, practitioners, securities regulators and international institutions such as G20 or IOSCO as an effective tool to recover market confidence and maintain market integrity after the 2008 GFC.  

  [Aguilar, 2011; Corporations and Markets Advisory Committee, 2009; European Commission, 2010; G20, 2008; IOSCO, 2009b, 2009e, 2009f; Lofchie, Barrentine, & Trunzo, 2011; O'Sullivan et al., 2011; The de Larosière Group, 2009; Wadling, 2010]

### Impacts of the 2008 GFC on supervision of market institutions and SROs

**Securities regulators conduct more stringent supervision over CRAs than ever before**

- CRAs were claimed to bear some responsibility for the 2008 GFC. As a result of the crisis, a strong consensus emerged that further regulatory intervention was needed with respect to CRAs (IOSCO, 2010h). The trend of tougher oversight of CRAs was discussed by academics, practitioners and regulators all over the world.  


**SROs, especially stock exchanges are also subject to tougher supervision**

- Having been no longer observed as “ethical standards that go beyond government regulations” (IOSCO, 1998b, p. 13) after the 2008 GFC, self-regulation and SROs are now under scrutinizing by securities regulators. The literature on enhanced oversight of securities regulators over SROs is not as much, but indicated reduced reliance on SROs and more stringent supervision over that kind of market institutions, especially stock exchanges after the crisis.  

  [Aguilar, 2011; Carson, 2009; IOSCO, 2010f; ISE, 2009; Shearman & Sterling, 2009; Wadling, 2010]
# APPENDIX 4
## DATA SUPPORTING RESEARCH DESIGN AND METHODOLOGY

Table 4.1. Calculation of required sample size for survey

<table>
<thead>
<tr>
<th>N (population size)</th>
<th>120</th>
<th>Required sample size =</th>
<th>108</th>
</tr>
</thead>
<tbody>
<tr>
<td>z (confidence level)</td>
<td>1.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E (+- error)</td>
<td>0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*z for different levels of confidence:*

<table>
<thead>
<tr>
<th>z</th>
<th>Confidence Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.58</td>
<td>99%</td>
</tr>
<tr>
<td>1.96</td>
<td>95%</td>
</tr>
<tr>
<td>1.645</td>
<td>90%</td>
</tr>
</tbody>
</table>

Formula used:

\[ n = \frac{Nz^2pq}{E^2(N-1) + z^2pq} \]

Normal approximation to the hypergeometric
<table>
<thead>
<tr>
<th>Variables</th>
<th>Measurement scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Level of market development</td>
<td>Nominal {1= Developed; 2: Emerging}</td>
</tr>
<tr>
<td>2. Structure Financial Products traded</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>3. Stocks and bonds are traded</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>4. Investment Units are traded</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>5. Basic derivatives such as options, forwards and futures are traded</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>6. Complex derivatives, including structured financial products are traded</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>7. Others securities products are traded</td>
<td>String</td>
</tr>
<tr>
<td>8. Mortgage-backed securities</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>9. Asset-backed securities</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>10. Collateralized Debt Obligations</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>11. Collateralized Loan Obligations</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>12. Asset-Backed Commercial Papers</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>13. Other Special Financial Products</td>
<td>String</td>
</tr>
<tr>
<td>14. SFP are traded on OTC market</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>15. SFP are traded on Exchange market</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>16. Other trading platform for SFP</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>17. Rating by Credit rating Agencies</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>18. CRA s are supervised by securities regulator</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>19. Impacts of the 2008 GFC</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>20. Direct or indirect impacts of the 2008 GFC on Securities Market</td>
<td>Categorical {1= Direct; 2=Indirect; 3=Both; 88=No response 99=Not available}</td>
</tr>
<tr>
<td>21. Magnitude of 2008 GFC impacts on SM</td>
<td>Categorical {1= &gt; 75%; 2=74%-60%; 3=59%-45%; 2=44%-30%; 1=&lt;29%; 88=No response; 99=Not available}</td>
</tr>
<tr>
<td>22. Impact of 2008 GFC on securities market supervision philosophy</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>23. The philosophy of the securities market supervision before 2008 GFC has been re-evaluated and re-constructed</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>24. The philosophy of the securities market supervision before 2008 GFC has been totally abandoned</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>25. The philosophy of the securities market supervision before 2008 GFC has been replaced by the other philosophy</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>26. A new philosophy of the securities market supervision has been or is being developed</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>27. Other Impacts on SMS philosophy</td>
<td>String</td>
</tr>
<tr>
<td>28. Theory framework of SMS before the 2008 GFC</td>
<td>Categorical {1= Neo-classical theory, which supported Efficient Market Hypothesis (EMH); 2= Behavioural Finance; 3=Mixture of Standard Finance and Behavioural Finance; 4=Other; 77=Not Applicable; 88=No Response}</td>
</tr>
<tr>
<td>29. Post-crisis theory framework of SMS</td>
<td>Categorical {1= Neo-classical theory, which supported Efficient Market Hypothesis (EMH); 2= Behavioural Finance; 3=Mixture of Standard Finance and Behavioural Finance; 4=Other; 77=Not Applicable; 88=No Response}</td>
</tr>
<tr>
<td>30. If the EMH still serves as theory framework for SMS</td>
<td>Nominal {0= No; 1= Yes}</td>
</tr>
<tr>
<td>31. Reason why EMH is no longer the theory framework for SMS</td>
<td>String</td>
</tr>
<tr>
<td>32. Name of new SMS philosophy</td>
<td>String</td>
</tr>
<tr>
<td>No.</td>
<td>Question</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 33. | Reasons for changing of SMS philosophy                                  | Categorical                   | 1= The 2008 GFC revealed the flaws of the philosophy that existed before the incidence of the crisis; 2=the old philosophy became out of date; 3=Other; 77=Not Applicable; 88=No response...
<p>| 34. | SMS philosophy has been changed                                         | Nominal                       | 0= No; 1=Yes                                                           |
| 35. | Impact of 2008 GFC on SMS architecture                                  | Nominal                       | 0= No; 1=Yes                                                           |
| 36. | The SMS structure before 2008 GFC has been re-evaluated and re-constructed | Nominal                       | 0= No; 1=Yes                                                           |
| 37. | The SMS structure before 2008 GFC has been totally abandoned and replaced by other structure | Nominal                       | 0= No; 1=Yes                                                           |
| 38. | A new structure of securities market supervision is being developed     | Nominal                       | 0= No; 1=Yes                                                           |
| 39. | Other Impacts on SMS structure                                          | String                        |                                                                        |
| 40. | Integrated approach was used before the 2008 GFC                        | Nominal                       | 0= No; 1=Yes                                                           |
| 41. | Functional approach was used before 2008 GFC                            | Nominal                       | 0= No; 1=Yes                                                           |
| 42. | Institutional approach was used before the 2008 GFC                      | Nominal                       | 0= No; 1=Yes                                                           |
| 43. | Structure with twin-peaks was used before the 2008 GFC                  | Nominal                       | 0= No; 1=Yes                                                           |
| 44. | Other structure was used before the 2008 GFC                            | String                        |                                                                        |
| 45. | Integrated approach is used after the 2008 GFC                          | Nominal                       | 0= No; 1=Yes                                                           |
| 46. | Functional approach is used after 2008 GFC                              | Nominal                       | 0= No; 1=Yes                                                           |
| 47. | Institutional approach is used after the 2008 GFC                        | Nominal                       | 0= No; 1=Yes                                                           |
| 48. | Structure with twin-peaks is used after the 2008 GFC                    | Nominal                       | 0= No; 1=Yes                                                           |
| 49. | Other structure is used after the 2008 GFC                              | String                        |                                                                        |
| 50. | Impact of 2008 GFC on roles of SROs                                      | Nominal                       | 0= No; 1=Yes                                                           |
| 51. | Roles of SROs in market supervision were re-evaluated for further improvement after the 2008 GFC | Nominal                       | 0= No; 1=Yes                                                           |
| 52. | SROs now take more important roles in market supervision after the 2008 GFC | Nominal                       | 0= No; 1=Yes                                                           |
| 53. | SROs are now less important but still perform the function of market /market member supervision | Nominal                       | 0= No; 1=Yes                                                           |
| 54. | SROs do not hold any function of market supervision after the 2008 GFC   | Nominal                       | 0= No; 1=Yes                                                           |
| 55. | Self-regulation does not exist any longer in our market supervision system after the 2008 GFC | Nominal                       | 0= No; 1=Yes                                                           |
| 56. | Other impacts the 2008 caused on roles of SROs                          | String                        |                                                                        |
| 57. | Are the changes in SMS structure are outcome of policy responses to 2008GFC | Nominal                       | 0= No; 1=Yes                                                           |
| 58. | The 2008 GFC revealed the flaws of the architecture that existed before the incidence of the crisis | Nominal                       | 0= No; 1=Yes                                                           |
| 59. | The old architecture simply became out of date and is no longer relevant to respond to the new market condition after the 2008 GFC | Nominal                       | 0= No; 1=Yes                                                           |
| 60. | Other reasons for changing structure in post-crisis time                 | String                        |                                                                        |
| 61. | Impacts of the 2008 GFC on SMS approach                                 | Nominal                       | 0= No; 1=Yes                                                           |
| 62. | The approach of supervision before 2008 GFC has been re-evaluated and re-constructed | Nominal                       | 0= No; 1=Yes                                                           |
| 63. | The approach of supervision before 2008 GFC has been totally abandoned and is being replaced by other approach | Nominal                       | 0= No; 1=Yes                                                           |
| 64. | A new approach of securities market supervision has been developed       | Nominal                       | 0= No; 1=Yes                                                           |
| 65. | Other impacts 2008 GFC caused on SMS approaches                          | String                        |                                                                        |
| 66. | Merit-based approach is used before the 2008 GFC                         | Nominal                       | 0= No; 1=Yes                                                           |
| 67. | Disclosure-based approach is used before 2008 GFC                        | Nominal                       | 0= No; 1=Yes                                                           |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>68.</td>
<td>Market-based approach is used before 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>69.</td>
<td>Principle-based approach is used before 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>70.</td>
<td>Rule-based approach is used before 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>71.</td>
<td>Risk-based approach is used before 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>72.</td>
<td>Evidence-based approach is used before 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>73.</td>
<td>Other SMS Approaches is used before 2008 GFC</td>
<td>String</td>
</tr>
<tr>
<td>74.</td>
<td>Merit-based approach is used after the 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>75.</td>
<td>Disclosure-based approach is used after 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>76.</td>
<td>Market-based approach is used after 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>77.</td>
<td>Principle-based approach is used after 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>78.</td>
<td>Rule-based approach is used after 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>79.</td>
<td>Risk-based approach is used after 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>80.</td>
<td>Evidence-based approach is used after 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>81.</td>
<td>Other SMS approach is used after 2008 GFC</td>
<td>String</td>
</tr>
<tr>
<td>82.</td>
<td>SMS approach change as policy response to 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>83.</td>
<td>The 2008 GFC revealed the flaws of the approaches that existed before the incidence of the crisis</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>84.</td>
<td>The old approaches simply became out of date and are no longer relevant to respond to the new market condition after the 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>85.</td>
<td>Other reason for changing of SMS approach post-crisis</td>
<td>String</td>
</tr>
<tr>
<td>86.</td>
<td>Impact of 2008 GFC on macro-prudential supervision</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>87.</td>
<td>Macro-prudential supervision was re-evaluated for more improvement</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>88.</td>
<td>The crisis has changed the perception of securities regulators on the role of macro-prudential supervision</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>89.</td>
<td>Macro-prudential supervision now take more important roles in market supervision after the 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>90.</td>
<td>Macro-prudential supervision is now less important than before 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>91.</td>
<td>Macro-prudential supervision is now in a strong reform</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>92.</td>
<td>A new legislation on macro-prudential supervision was established</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>93.</td>
<td>A new supervisory authority was established to perform the function of macro-prudential supervision</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>94.</td>
<td>After the 2008 GFC, the role of macro-prudential supervision was shifted from one to another regulator</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>95.</td>
<td>After the 2008 GFC, more regulators are involved in macro-prudential supervision</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>96.</td>
<td>Other change of macro-prudential supervision after 2008 GFC</td>
<td>String</td>
</tr>
<tr>
<td>97.</td>
<td>Involvement of securities regulator before 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>98.</td>
<td>Involvement of securities regulator after 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>99.</td>
<td>Importance of securities regulator's role in macro-prudential supervision</td>
<td>[1= More important; 2=Less important; 3=Stay the same; 77=Not applicable; 88=No response]</td>
</tr>
<tr>
<td>100.</td>
<td>Improvement of Macro-prudential supervision as policy response to impacts of the 2008 GFC</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>101.</td>
<td>The 2008 GFC revealed that pre-crisis macro-prudential supervision was not sufficient</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td>102.</td>
<td>Post-crisis market conditions require improvement of macro-prudential supervision</td>
<td>Nominal [0= No; 1=Yes]</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Scale Type</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>103</td>
<td>The approach of pre-crisis micro-prudential supervision were not relevant and effective to identify the systemic risks and send relevant alerts</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>104</td>
<td>The structure and coordination of pre-crisis micro-prudential supervision were not effective enough to identify the systemic risks and send relevant alerts</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>105</td>
<td>The regulator in charge of micro-prudential supervision before the 2008 GFC were not capable to perform the function</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>106</td>
<td>Other reason for micro-prudential supervision improvement after 2008 GFC</td>
<td>String</td>
</tr>
<tr>
<td>107</td>
<td>Impacts of the 2008 GFC on micro-prudential supervision</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>108</td>
<td>Micro-prudential supervision system was re-evaluated for more improvement</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>109</td>
<td>Micro-prudential supervision is more important after 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>110</td>
<td>Micro-prudential supervision is now less important than before 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>111</td>
<td>Micro-prudential supervision is now in a strong reform</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>112</td>
<td>A new legislation on micro-prudential supervision was established</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>113</td>
<td>A new supervisory authority was established to perform the function of micro-prudential supervision</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>114</td>
<td>After the 2008 GFC, the role of micro-prudential supervision was shifted from one to another regulator</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>115</td>
<td>After the 2008 GFC, more regulators are involved in micro-prudential supervision</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>116</td>
<td>Other Impacts of the 2008 GFC on micro-prudential supervision</td>
<td>String</td>
</tr>
<tr>
<td>117</td>
<td>Significance of risk-based approach in supervision of market intermediaries pre-crisis</td>
<td>Categorical {1= Not in use; 2=In use but not important; 3=important; 4=very important; 5=extremely important}</td>
</tr>
<tr>
<td>118</td>
<td>Significance of risk-based approach in supervision of market intermediaries after the crisis</td>
<td>Categorical {1= Not in use; 2=In use but not important; 3=important; 4=very important; 5=extremely important}</td>
</tr>
<tr>
<td>119</td>
<td>Significance of supervision over hedge funds before 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>120</td>
<td>Significance of supervision over hedge funds after 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>121</td>
<td>Improvement of micro-prudential supervision as policy response to impacts of the 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>122</td>
<td>The 2008 GFC revealed that the pre-crisis micro-prudential supervision was not sufficient to maintain the financial soundness of market intermediaries</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>123</td>
<td>New market conditions after the 2008 GFC require improvement of micro-prudential supervision</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>124</td>
<td>Pre-crisis approach of micro-prudential supervision was not relevant and ineffective, causing collapses of market intermediaries during the crisis</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>No.</td>
<td>Statement</td>
<td>Type</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>125</td>
<td>The regulator in charge of micro-prudential supervision before the 2008 GFC were not capable enough to perform the function</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>126</td>
<td>The structure and coordination of micro-prudential supervision before the 2008 GFC were not effective enough</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>127</td>
<td>Other reason for improvement of micro-prudential supervision after 2008 GFC</td>
<td>String</td>
</tr>
<tr>
<td>128</td>
<td>Impacts of the 2008 GFC on supervision of securities traded products</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>129</td>
<td>Supervision over derivatives and structured financial products after 2008 GFC is more strictly than before 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>130</td>
<td>Supervision over derivatives and structured financial products after 2008 GFC is less than before 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>131</td>
<td>Moving of OTC traded derivatives and structured financial products to exchange markets after the 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>132</td>
<td>New rules or regulations on transparency or/and required disclosure of structured financial products were issued after 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>133</td>
<td>Accounting and/or auditing standards were strengthened for better transparency and valuation of traded securities and derivatives products</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>134</td>
<td>New rules or regulations on accounting and/or auditing of derivatives and structured financial products were issued after 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>135</td>
<td>A new legislation on derivatives and structured financial products was established for improvement of the process of creating, offering and trading these products</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>136</td>
<td>Other Impacts of the 2008 GFC on supervision of traded products</td>
<td>String</td>
</tr>
<tr>
<td>137</td>
<td>Significance of supervision over derivatives, including structured financial products before 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>138</td>
<td>Significance of supervision over derivatives, including structured financial products after 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>139</td>
<td>Trading platform of SFPs before 2008 GFC</td>
<td>Categorical {1= OTC traded only; 2=some OTC traded and some exchange traded; 3=some OTC traded were moved to exchange traded; 4=Exchange traded only; 77=Not Applicable; 88=No response}</td>
</tr>
<tr>
<td>140</td>
<td>Trading platform of SFPs after 2008 GFC</td>
<td>Categorical {1= OTC traded only; 2=some OTC traded and some exchange traded; 3=some OTC traded were moved to exchange traded; 4=Exchange traded only; 77=Not Applicable; 88=No response}</td>
</tr>
<tr>
<td>141</td>
<td>Improvement of supervision of securities traded products is a policy response to 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>142</td>
<td>The 2008 GFC revealed that pre-crisis supervision of securities products was not sufficient to maintain a transparent process of issuing, offering and trading of securities and an effective valuation of securities traded</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td></td>
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<td></td>
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<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>143</strong></td>
<td>New market conditions after the 2008 GFC require improvement of supervision of securities and derivatives products</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>144</strong></td>
<td>The pre-crisis transparency and disclosure requirements of securities and derivatives products were not enough to maintain market confidence</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>145</strong></td>
<td>The regulator in charge of supervision of securities products before the 2008 GFC were not capable to perform the function</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>146</strong></td>
<td>The structure and coordination of supervision of securities products before the 2008 GFC were not effective</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>147</strong></td>
<td>Other reasons for improvement of traded product supervision after the 2008 GFC</td>
<td>String</td>
</tr>
<tr>
<td><strong>148</strong></td>
<td>Impacts of the 2008 GFC on market conduct oversight</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>149</strong></td>
<td>Market conduct oversight after 2008 GFC is more than before 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>150</strong></td>
<td>Market conduct oversight after 2008 GFC is less than before 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>151</strong></td>
<td>New rules or regulations on market conduct oversight or market integrity were issued after 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>152</strong></td>
<td>New regulator was established to perform market conduct oversight</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>153</strong></td>
<td>The role of market conduct oversight was shifted from one to another regulator</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>154</strong></td>
<td>A strong reform of market conduct oversight we undertaken</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>155</strong></td>
<td>Other Impacts of the 2008 GFC on market conduct oversight</td>
<td>String</td>
</tr>
<tr>
<td><strong>156</strong></td>
<td>Level of involvement of SROs, especially the stock exchange in market conduct oversight and market surveillance</td>
<td>[1= More involvement; 2=Less involvement; 3=Stay the same; 77= Not applicable; 88=No response]...</td>
</tr>
<tr>
<td><strong>157</strong></td>
<td>Improvement of market conduct oversight as a policy response to 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>158</strong></td>
<td>The 2008 GFC revealed that the level of market conduct oversight before the crisis was not sufficient to ensure a fair and transparent market</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>159</strong></td>
<td>New market conditions after the 2008 GFC require improvement of market conduct oversight</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>160</strong></td>
<td>The market integrity rules that existed before the 2008 GFC were not enough to maintain an effective enforcement and compliance</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>161</strong></td>
<td>The regulator in charge of market conduct oversight before the 2008 GFC were not capable to perform the function</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>162</strong></td>
<td>The structure and coordination of market conduct oversight before the 2008 GFC were not effective</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>163</strong></td>
<td>Other reason for improvement of market conducts after the 2008 GFC</td>
<td>String</td>
</tr>
<tr>
<td><strong>164</strong></td>
<td>Impacts of the 2008 GFC on supervision of market institutions and SROs</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>165</strong></td>
<td>Supervision of market institutions and SROs after 2008 GFC is more than before 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>166</strong></td>
<td>Supervision of market institutions and SROs after 2008 GFC is less than before 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td><strong>167</strong></td>
<td>New rules or regulations on supervision of market institutions and SROs were / issued after 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>168</td>
<td>New regulator or regulatory structure was established to perform supervision of market institutions and SROs</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>169</td>
<td>The role of supervision of market institutions and SROs was shifted from one to another regulator</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>170</td>
<td>Some type of market institutions and SROs are put in more supervision after the 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>171</td>
<td>Other impacts of the 2008 GFC on supervision of market institutions and SROs</td>
<td>String</td>
</tr>
<tr>
<td>172</td>
<td>Significance of supervision over CRAs before the 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>173</td>
<td>Significance of supervision over CRAs after the 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>174</td>
<td>Significance of supervision over auditors before the 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>175</td>
<td>Significance of supervision over auditors after the 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>176</td>
<td>Significance of supervision over clearing houses before the 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>177</td>
<td>Significance of supervision over clearing houses after the 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>178</td>
<td>Significance of supervision over SROs, including stock exchanges before the 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>179</td>
<td>Significance of supervision over SROs, including stock exchanges after the 2008 GFC</td>
<td>Categorical {1= not subject of supervision; 2=supervised but not adequately; 3=adequately supervised; strictly supervised; 77=Not applicable; 88=No Response}</td>
</tr>
<tr>
<td>180</td>
<td>Improvement of supervision of market institutions and SROs as a policy response to impacts of the 2008 GFC</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>181</td>
<td>The 2008 GFC revealed that the level of pre-crisis supervision of market institutions and SROs was not sufficient to ensure healthy their performance</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>182</td>
<td>The 2008 GFC revealed that reliance on SROs before the 2008 GFC were wrong and market gate keepers and SROs should be subject to more regulations</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>183</td>
<td>New market conditions after the 2008 GFC require improvement of supervision of market institutions and SROs</td>
<td>Nominal {0= No; 1=Yes}</td>
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</tr>
<tr>
<td>184</td>
<td>Pre-crisis rules and regulations on supervision of market institutions and SROs were not enough to maintain an effective enforcement and compliance</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>185</td>
<td>The regulator in charge of supervision of market institutions and SROs before the 2008 GFC were not capable to perform the function</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>186</td>
<td>The structure and coordination of supervision of market institutions and SROs before the 2008 GFC were not effective</td>
<td>Nominal {0= No; 1=Yes}</td>
</tr>
<tr>
<td>187</td>
<td>Other reasons of improvement of supervision over market institutions and SROs after the 2008 GFC</td>
<td>String</td>
</tr>
<tr>
<td>188</td>
<td>Responsiveness of supervisory system after the 2008 GFC</td>
<td>Categorical {1=More responsive; 2=Less responsive; 3=stay the same; 77=Not applicable; 88=Not available}</td>
</tr>
<tr>
<td>189</td>
<td>Magnitude of responsiveness improvement of supervisory system after the 2008 GFC</td>
<td>Categorical {1=0-29%; 2=30-44%; 3=45-59%; 4=60-75; 5=&gt;75%; 77=Not applicable; 88=No Response}</td>
</tr>
</tbody>
</table>
Box 4.1. Description of survey questions

**Part 1- General information on respondent’s securities market:** 07 questions in this part try to explore the information on market development level, traded securities products, types of SFPs, trading platforms, rating by CRAs in the respondents’ markets.

**Part 2- General impacts of the 2008 GFC on respondent’s securities market:** 03 questions are set out to enable respondents to share information about general impacts of the 2008 GFC on their markets, features and magnitude of the impacts. A five scale measurement is set for judgement of respondents on significance of crisis impacts [(>75%); (74%-60%); (59%-45%); (44%-30%); (29%-0)].

**Part 3- Impacts of the 2008 GFC on respondents’ SMS system:** this is the most important body of the survey questionnaire. This part includes nine sections, 56 questions designed to explore information about details of 2008 GFC on 08 components of SMS and responsiveness of the SMS system.

1. **Impacts of the 2008 GFC on SMS philosophy:** 08 questions in this section are aimed at collecting data about real crisis impacts on SMS philosophy by requiring respondents to confirm the impacts, to define the crisis-induced changes in philosophy of securities supervision, to share information on SMS philosophy before and after the GFC and reasons for the regulators to change their philosophy;

2. **Impacts of the 2008 GFC on SMS architecture:** 08 questions in this sections are designed for collecting data about actual crisis impacts on SMS architecture by asking respondents: to notify the impacts on SMS structure and roles of SROs in the settings; to describe the crisis-induced changes in SMS architecture; to report on the approaches used for setting up of financial supervisory structure before and after the crisis; to describe how the roles of SROs are changed after the crisis; and to confirm the changes of post-crisis SMS structure as the outcomes of the policy responses to the 2008 GFC’s impacts and the actual reasons led to the changes.

3. **Impacts of the 2008 GFC on SMS approaches:** this section includes 06 questions that are designed for collecting data about actual crisis impacts on SMS approaches by asking respondents: to confirm the impacts on SMS approaches; to explain the crisis-induced changes in SMS approaches; to report on the SMS approaches used before and after the crisis; and to confirm the changes of post-crisis SMS approaches as the outcomes of the policy responses to the 2008 GFC’s impacts and the actual reasons led to any change in SMS approaches after the crisis.

4. **Impacts of the 2008 GFC on macro-prudential supervision:** 07 survey questions in this section are designed to collect data about actual crisis impacts on macro-prudential supervision by asking respondents: to confirm the crisis impacts on this supervisory area; to report the crisis-induced changes in post-crisis macro-prudential supervision; to define the involvement of securities regulator in macro-prudential supervision before and after the crisis; and to identify the improvements of post-crisis macro-prudential supervision as the outcomes of the policy responses crisis impacts and the actual reasons led to any change this area after the crisis.

5. **Impacts of the 2008 GFC on micro-prudential supervision:** 06 survey questions this section are set for collecting data about actual crisis impacts on supervision of market intermediaries by asking respondents: to confirm the crisis impacts on this supervisory area; to report the crisis-induced changes in post-crisis micro-prudential supervision; to define the significance of risk-based method usage and supervision over hedge funds before and after the crisis; and to confirm the improvements of post-crisis micro-prudential supervision as the outcomes of the policy responses crisis impacts and the actual reasons led to any change this area after the crisis.

6. **Impacts of the 2008 GFC on supervision of traded securities products:** this section includes 06 survey questions designed for collecting data about actual crisis impacts on supervision of securities products by asking respondents: to notify the crisis impacts on this supervisory area; to report the crisis-induced changes in supervision of traded securities products; to identify the trading platform of and significance of supervision over derivatives, including SFPs before and after the 2008 GFC; and to confirm the
improvements of post-crisis micro-prudential supervision as the outcomes of the policy responses crisis impacts and the actual reasons led to any change this area after the crisis.

7. **Impacts of the 2008 GFC on market conduct oversight**: this survey section includes 05 questions that are designed to collect data about actual crisis impacts on market conduct oversight by asking respondents: to identify the crisis impacts on this supervisory area; to report the crisis-induced changes in post-crisis market conduct oversight; to classify the level of involvement by SROs in market conduct oversight post-crisis; and to confirm the improvements of post-crisis market conduct oversight as the outcomes of the policy responses crisis impacts and the actual reasons led to any change this area after the crisis.

8. **Impacts of the 2008 GFC on market institutions and SROs supervision**: 08 survey questions this section are designed for collecting data about actual crisis impacts on supervision of MIs and SROs, including stock exchanges by asking respondents: to confirm the crisis impacts on this supervisory area; to report the crisis-induced changes in post-crisis supervision of MIs and SROs; to define the significance of supervision over CRAs, auditors, clearing houses and SROs before and after the crisis; and to confirm the improvements of post-crisis MIs and SROs supervision as the outcomes of the policy responses crisis impacts and the actual reasons led to any change this area after the crisis.

9. **Responsiveness of SMS system after the 2008 GFC**: 02 survey questions in this section are designed to explore information on whether the SMS responsiveness of the survey respondents is improved after the crisis and how much the respondents rate the improvement in a five scale measurement [>(>75%); (74%-60%); (59%-45%); (44%-30%); (29%-0)].

Source: developed for this research
Box 4.2. Cover letter to IOSCO members to request for assistance in doing the survey research

Re: Request for assistance in survey research on 2008 GFC Impacts on stock market supervision – Phuong Duong – SSC Viet Nam

Dear IOSCO members,

My name is Phuong Duong. I am the former IOSCO contact person for SSC Viet Nam and Deputy Director of Market Supervision of the Commission. In 2011 I was sent by the Chairman of SSC Viet Nam to Australia to do a PhD research on impacts of the 2008 GFC on securities market supervision. Hopefully the outcomes of my research would contribute meaningfully into development of a strong supervisory system in Viet Nam.

I am writing to request for the assistance from IOSCO members on doing a survey research on impacts of the 2008 GFC on securities market supervision. Without your assistance and coordination in sharing information in this survey research, I cannot fulfil the tasks of my research.

Please find attached the survey questionnaire. You may also find my survey questionnaire on the IOSCO Knowledge Sharing Platform. Thanks to the IOSCO assistance and cooperation of the IOSCO IT Team, I have already posted my request onto that platform to request the IOSCO members to take it in the spirit of IOSCO members’ commitment of cooperation and information sharing. I would highly appreciate it if you could answer or arrange for the survey questions to be answered and return it to me by 20 October 2014. The survey responses will be analysed on the anonymous basis. It means that no jurisdictions or persons will be mentioned in details.

For the sake of global stock market development, I would like to share my research analysis with any IOSCO member who would like to have a landscape on how the philosophy, architecture, and components of stock market supervision have been changed due to the impacts of the 2008 GFC. Please mention it in the returned survey questionnaire and you will receive the survey research analysis from me when I complete it in due course.

Thank you very much for your assistance and look forward to hearing from you soon.

With my best regards,
Phuong T. Duong
PhD Candidate, Endeavour Award Holder
Business School, Southern Cross University
Riverside Campus, Tweed Heads, NSW, Australia
Mobile: +61 (0)466994612
Email: p.duongthi.10@student.scu.edu.au/phuongsse@yahoo.com
Box 4.3. Survey Questionnaire- Impacts of the 2008 Global Financial Crisis on the securities market supervision

A. INFORMATION FOR SURVEY PARTICIPANTS

My name is Duong Thi Phuong. I am former IOSCO contact person for Vietnam and Deputy Director of Market Supervision of the State Securities Commission of Viet Nam. I am now conducting the PhD research project “Impacts of the 2008 Global Financial Crisis to Securities Market Supervision- Implications for emerging economies” at Southern Cross University, Australia.

The 2008 GFC has been recognized by G20 as “the greatest challenge to the world economy in modern times” and required a global solution. The research project aims to find out the impacts of the 2008 GFC on the securities supervision framework by identifying how securities regulators have adjusted their supervisory system to reflect the lessons learnt from the GFC, to adapt to the post-crisis market conditions, and ultimately to develop a more responsive market supervisory system. Implications for setting up a relevant framework of securities market supervision for emerging markets then will be drawn based on analysis of data collected for this project.

The survey is an essential part of the research project with a strong support from IOSCO from its perspective that there is an opportunity in every crisis, and the crisis affords regulators an opportunity to revisit the design, structure and approach to regulating and developing their financial systems. The responses of securities regulators to the impacts of the GFC would be identity of implications for development of securities market in emerging and developed economies. Therefore, the survey questionnaire was designed to obtain relevant answers from the IOSCO’s securities members on the impacts of the 2008 GFC and how their market supervision system responded to those impacts;

Data collected from the survey and focus group interview will be analysed and presented in the PhD thesis and other related publications of researcher such as articles or conference papers. For the sake of securities regulators community, the survey results may be provided to the IOSCO for discussion and reference of securities members upon request of the IOSCO members. The database obtained from the survey will be kept under tough security for 7 year by the SCU. Participation in this survey research is completely voluntary. However, securities members of IOSCO are strongly recommended to complete it on the spirit of IOSCO’s commitment to exchange information at both global and regional levels on member respective experiences in order to assist the market development, to strengthen market infrastructure and to implement appropriate regulation. The survey was designed under strict terms and conditions of Australian National Statement on Ethical Conduct in Human Research. The ethics approval number of the research is ECN-13-229.

If you have any question on the research, please do not hesitate to contact:

Duong Thi Phuong - PhD Candidate, Endeavour Award Holder
Business School, Southern Cross University, Australia
Mobile: +61 (0)466994612
Email: p.duongthi.10@student.scu.edu.au; or phuongssc@yahoo.com

Or my Supervisor:

Professor Ian Eddie PhD FCPA
Professor of Accounting and Corporate Governance
Business School, Southern Cross University, Australia
T: +61 7 5506 9315 | F +61 7 5589 3703
Email: ian.eddie@scu.edu.au

If you have concerns about the ethical conduct of this research or the researchers, the following procedure should occur, write to the following:

The Ethics Complaints Officer
Southern Cross University
PO Box 157
Lismore NSW 2480
Email: ethics.lismore@scu.edu.au

I WOULD LIKE to obtain the survey’s results: ☐

Please SEND it to the following email address: ..........................................................

Please fill in the survey questionnaire and return it to: Duong Thi Phuong - PhD Candidature, Business School, Southern Cross University at email address: p.duongthi.10@student.scu.edu.au or phuongssc@yahoo.com or mailing address: Duong Thi Phuong, 10/12 Solander Street, Tweed Heads, NSW 2485, Australia.

Special thanks go to IOSCO, securities members of IOSCO, and survey respondents for help in complete this survey questionnaire.
B. Information on the Surveyed Organization

Address: ..............................................................................................................................
Contact Person: ..................................................................................................................
Contact Number: Telephone: ................................ Fax: ................................ Email:.................................

C. SURVEY QUESTIONNAIRE

Please tick (×) or click on the relevant box or provide details for your answer where it is applicable.

1. General information on your securities market

1.1. Is your securities market a developed or emerging market?

Developed □ Emerging □

1.2. Are the structured financial products (SFPs)\(^{15}\) traded on your securities market? If Yes, please go on to question 1.3, if No, please go to questions 1.5

Yes □ No □

1.3. What types of securities are traded in your securities markets

a. □ Stocks and bonds
b. □ Investments units
c. □ Basic derivatives such as options, forwards and futures
d. □ Others (please specify)...........................................................................................................

1.4. What types of structured financial products are traded on your securities market? (Please tick (×) or click on any relevant box)

a. □ Mortgage-backed securities (MBS)
b. □ Asset-backed securities (ABS)
c. □ Collateralized debt obligations
d. □ Collateralized loan obligations
e. □ Asset-backed commercial papers
f. □ Others (please specify)...........................................................................................................

1.5. What trading platform are the structured financial products traded on?

a. □ OTC market
b. □ Exchange market
c. □ Other (please specify)...........................................................................................................

1.6. Are the securities traded on your market rated by CRAs?

Yes □ No □

1.7. Were CRAs in your market regularly supervised by securities regulator before the 2008 GFC

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\(^{15}\) The SFPs are financial instruments defined by IOSCO as products (i) based on a pooling of assets usually sold to a special purpose vehicle; (ii) the assets can be either cash instruments or credit derivatives; but the credit risk of the asset pool is de-linked from the special purpose vehicle; and (iii) there is also credit or maturity trenching of the liabilities backed by the asset pool. (IOSCO, 2009n)
2. **General impacts of the 2008 GFC on your securities market**

2.1. Did the 2008 GFC cause any impact on your securities market?

   - Yes □ No □

2.2. Were the impacts from the 2008 GFC direct or indirect on your securities market?

   - Direct □ Indirect □ Both □

2.3. Please estimate the magnitude of the 2008 GFC’s impacts on your securities market by choosing a relevant box in the scaling (%) below:

   - 75 □ 74-60 □ 59-45 □ 44-30 □ 29-0 □

3. **Impacts of the 2008 GFC on your securities market supervision system**

3.1. **Philosophy of securities market supervision**

   - Did the 2008 GFC cause any impact on the philosophy of your securities market supervision system?

     - Yes □ No □

   - If Yes, did the impacts lead to any of the following below (Please tick (×) in any relevant box):

     a. □ The philosophy of the securities market supervision before 2008 GFC has been re-evaluated and re-constructed
     b. □ The philosophy of the securities market supervision before 2008 GFC has been totally abandoned
     c. □ The philosophy of the securities market supervision before 2008 GFC has been replaced by the other philosophy
     d. □ A new philosophy of the securities market supervision has been or is being developed
     e. □ Others (please specify)---------------------------------------------

3.1.3. Before the 2008 GFC, which of the following theoretical framework did your securities market supervision system rely on? (Please tick (×) in any relevant box)

   a. □ Neo-classical theory, which supported Efficient Market Hypothesis\(^\text{17}\) (EMH)
   b. □ Alternative theory of Behavioural Finance and economic
   c. □ A mixture of Behavioural Finance theory and neo-classical theory

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\(^{16}\) Within framework of this research, *supervision philosophy* reflects a set of values or standards which based on an *economic rationale* back up the supervisory system and framework. This philosophy was mentioned as ‘ideology’(Ward, 2008), ‘the faith’ (P. Krugman, 2009) or a ‘conceptual framework and operational assumptions for securities regulation’(Erskine, 2010b, p. 3)

\(^{17}\) In 1970s, Fama defined an efficient market is ‘a market in which prices always “fully reflect” available information’ (Fama, 1970). His EMH bases on the supposition that: “an ideal capital market is the market in which prices provide accurate signals for resource allocation: that is, a market in which firms can make production –investment decisions, and investors can choose among the securities that represent ownership of firms’ activities under the assumption that securities at any time ‘fully reflects” all available information (Fama, 1970, p. 383). The EMH claimed that stock markets are efficient, prices are always right and investors are rational. The EMH based on free market ideology and lead to pro-market deregulatory mindset’ (Erskine, 2010b, p. 1), which in turn lead to strong reliance on deregulation and self-regulation;
d. □ Others (please specify)------------------------------

3.1.4. After the 2008 GFC, which of the following theoretical framework does your securities market supervision system rely on? (Please tick (×) or click on any relevant box)
a. □ Neo-classical theory, which supports Efficient Market Hypothesis (EMH)
b. □ Alternative theory of Behavioural Finance and economic
c. □ A mixture of Behavioural Finance theory and neo-classical theory
d. □ Others (please specify)------------------------------

3.1.5. If the Efficient Market Hypothesis (EMH) served as the philosophy for your securities market supervision before the 2008 GFC, does your market supervision still rely on it after the crisis?

Yes □ No □

3.1.6. If No, Please explain why:----------------------------------

3.1.7. If a new philosophy of securities market supervision has been or is being developed in your market, what is it (please specify)?----------------------------------

3.1.8. If the securities regulators changed philosophy of the securities market supervision after 2008 GFC, what were the reasons?
a. □ The 2008 GFC revealed the flaws of the philosophy that existed before the incidence of the crisis
b. □ The old philosophy became out of date and is no longer relevant to respond to the new market condition after the 2008 GFC
c. □ Others (please specify)----------------------------------

3.2. Securities market supervision architecture18

3.2.1. Did the 2008 GFC cause any impact on the architecture of your securities market supervision system?

Yes □ No □

3.2.2. If Yes, did the impacts lead to any of the following (Please tick (×) or click on any relevant box):
a. □ The structure of the securities market supervision before 2008 GFC has been re-evaluated and re-constructed

18 Within this research, securities market supervision architecture is often seen in a hierarchy, which reflect the areas and functions of market supervision involved in and taken by different units of the securities regulator and SROs. The SMS architecture cannot be analysed in isolation from the whole financial supervision structure and the position of SROs;
b. □ The structure of the securities market supervision before 2008 GFC has been totally abandoned and replaced by other structure

c. □ A new structure of securities market supervision is being developed

d. □ Others (please specify)

3.2.3. Identify the approach by which the architecture of your securities market supervision was set up before the 2008 GFC

<table>
<thead>
<tr>
<th>Approach</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Integrated approach</td>
<td>A single universal regulator conducts both safety and soundness oversight and conduct-of-business regulation for all sectors of financial services business</td>
</tr>
<tr>
<td>b. Functional approach</td>
<td>Supervisory oversight is determined by the business that is being transacted by the entity, without regard to its legal status</td>
</tr>
<tr>
<td>c. Institutional approach</td>
<td>A firm’s legal status (for example, a bank, broker-dealer, or insurance company) determines which regulator is tasked with overseeing its activity from both a safety and soundness and a business conduct perspective</td>
</tr>
<tr>
<td>d. Twin-peaks</td>
<td>There is a separation of regulatory functions between two regulators: one that performs the safety and prudential supervision function and the other that focuses on conduct-of-business regulation</td>
</tr>
<tr>
<td>e. Others (please specify)</td>
<td></td>
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</tbody>
</table>

3.2.4. Identify the current architecture of your securities market supervision after the 2008 GFC by choosing any approach listed below

<table>
<thead>
<tr>
<th>Approach</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Integrated approach</td>
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<tr>
<td>b. Functional approach</td>
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<tr>
<td>c. Institutional approach</td>
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<tr>
<td>d. Twin-peaks</td>
<td></td>
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<tr>
<td>e. Others (please specify)</td>
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</tbody>
</table>

3.2.5. Did the 2008 GFC cause any impact on the roles of self-regulatory organizations (SROs) in your securities market supervision system?

Yes □ No □

3.2.6. If Yes, did the impacts lead to any of the following (Please tick (×) or click on any relevant box):

<table>
<thead>
<tr>
<th>Impact</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Roles of SROs in market supervision were re-evaluated for further improvement after the 2008 GFC</td>
<td></td>
</tr>
<tr>
<td>b. SROs now take more important roles in market supervision after the 2008 GFC</td>
<td></td>
</tr>
<tr>
<td>c. SROs are now less important in securities market supervision than before 2008 GFC but they are still perform the function of market /market member supervision</td>
<td></td>
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<tr>
<td>d. SROs do not hold any function of market supervision after the 2008 GFC</td>
<td></td>
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<tr>
<td>e. Self-regulation does not exist any longer in our market supervision system after the 2008 GFC</td>
<td></td>
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<tr>
<td>f. Others (Please specify)</td>
<td></td>
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</tbody>
</table>

3.2.7. If the architecture of market supervision in your market has changed after the 2008 GFC, are the changes actually outcomes of policy responses by securities regulator to the impacts of the 2008 GFC?
3.2.8. If the architecture of securities market supervision in your market after 2008 GFC has changed, what were the reasons? (Please tick (×) or click on any relevant box)

d. □ The 2008 GFC revealed the flaws of the architecture that existed before the incidence of the crisis
e. □ The old architecture simply became out of date and is no longer relevant to respond to the new market condition after the 2008 GFC
f. □ Others (please specify)------------------

3.3. Securities market supervision approach\(^{19}\)

3.3.1. Did the 2008 GFC cause any impact on your securities market supervision approach?

Yes □ No □

3.3.2. If Yes, did the impacts lead to any of the following (Please tick (×) or click on any relevant box):

a. □ The approach of supervision before 2008 GFC has been re-evaluated and re-constructed
b. □ The approach of supervision before 2008 GFC has been totally abandoned and is being replaced by other approach
c. □ A new approach of securities market supervision has been developed
d. □ Others (please specify)

3.3.3. Identify the approach of supervision in your securities market before the 2008 GFC (Please tick (×) or click on any relevant box)

a. □ Merit-based approach, in which securities regulators use predefined merits as criteria to judge the conducts of market participants
b. □ Disclosure-based approach, which assumes that the market is better than the regulator in defining the merits of securities operations and hence full-disclosure is just enough for investors to make informed decisions
c. □ Market-based approach, which assumes that prices in the stock market reflect exactly the expected value of securities given the information available in market
d. □ Principle-based approach, in which regulators set out high-level principles for market conduct and give market participants freedom to develop and manage internal compliance systems to achieve the regulatory outcomes articulated by those principles
e. □ Rule-based approach, where the efforts of securities regulators are focused on compliance with the rules and processes rather than on broader objectives and outcomes
f. □ Risk-based approach, which is a process to identify crucial risks that confront market intermediaries via procedures of focused review by the securities supervisor to assess their potential financial vulnerability and the level they prepare themselves to encounter the risks
g. □ Evidence-based approach, which uses empirical evidence and market consultation to decide new regulatory policy initiatives
h. □ Others (please specify)

3.3.4. What is the current approach of supervision in your securities market after the 2008 GFC? (Please tick (×) or click on any relevant box)

a. □ Merit-based approach c. □ Rule-based approach

\(^{19}\) Within this research, the SMS approach means the way or method the supervisory activities are taken.
□ Disclosure-based approach  f. □ Risk-based approach  
□ Market-based approach  g. □ Evidence-based approach  
□ Principle-based approach  h. □ Others (please specify)  

3.3.5. If the approaches of market supervision in your market has been changed after the 2008 GFC, are the changes actually outcomes of policy responses by securities regulator to the impacts of the 2008 GFC?

Yes □ No □

3.3.6. If the approaches of securities market supervision in your market after 2008 GFC have changed, what were the reasons? (Please tick (×) or click on any relevant box)

   a. □ The 2008 GFC revealed the flaws of the approaches that existed before the incidence of the crisis  
   b. □ The old approaches simply became out of date and are no longer relevant to respond to the new market condition after the 2008 GFC  
   c. □ Others (please specify)  

3.4. Macro-prudential supervision

3.4.1. Did the 2008 GFC cause any impact on macro-prudential supervision in your securities market?

Yes □ No □

3.4.2. If Yes, did the impacts lead to any of the following (Please tick (×) or click on any relevant box):

   a. □ Macro-prudential supervision was re-evaluated for more improvement  
   b. □ The crisis has changed the perception of securities regulators on the role of macro-prudential supervision  
   c. □ Macro-prudential supervision now take more important roles in market supervision after the 2008 GFC  
   d. □ Macro-prudential supervision is now less important than before 2008 GFC  
   e. □ Macro-prudential supervision is now in a strong reform  
   f. □ A new legislation on macro-prudential supervision was established  
   g. □ A new supervisory authority was established to perform the function of macro-prudential supervision  
   h. □ After the 2008 GFC, the role of macro-prudential supervision was shifted from one to another regulator  
   i. □ After the 2008 GFC, more regulators are involved in macro-prudential supervision  
   j. □ Others (Please specify)  

3.4.3. Was the securities regulator involved in macro-prudential supervision before the 2008 GFC?

Yes □ No □

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Macro-prudential supervision 'concerns itself with the stability of the financial system as a whole' (The World Bank Group, 2009, p. 2) and aims to limit the systemic risks;
3.4.4. Does the securities regulator take part in macro-prudential supervision in your market now

Yes □ No □

3.4.5. Is the role of securities regulator in macro-prudential supervision in your market now more or less important compared to the time before 2008 GFC

More important □ Less important □

3.4.6. If macro-prudential supervision in your market has been improved after the 2008 GFC, are improvements actually outcomes of policy responses by the securities regulator to the impacts of the 2008 GFC?

Yes □ No □

3.4.7. If improvements of macro-prudential supervision in your market after 2008 GFC have been made, what were the reasons? (Please tick (×) or click on any relevant box)

a. □ The 2008 GFC revealed that the macro-prudential supervision before the crisis was not sufficient to maintain the stability and sustainability of the market
b. □ New market conditions after the 2008 GFC require improvement of macro-prudential supervision
c. □ The approach of macro-prudential supervision before the 2008 GFC were not relevant and effective to identify the systemic risks and send relevant alerts
d. □ The structure and coordination of macro-prudential supervision before the 2008 GFC were not effective enough to identify the systemic risks and send relevant alerts
e. □ The regulator in charge of macro-prudential supervision before the 2008 GFC were not capable to perform the function
f. □ Others (please specify)--------------------------------------------------------------

----------------------------------------------------------------------------------

3.5. Supervision of market intermediaries/micro-prudential supervision

3.5.1. Did the 2008 GFC cause any impact on micro-prudential supervision in your securities market?

Yes □ No □

3.5.2. If Yes, did the impacts lead to any of the following (Please tick (×) or click on any relevant box):

a. □ Micro-prudential supervision system was re-evaluated for more improvement
b. □ Micro-prudential supervision is more important after 2008 GFC
c. □ Micro-prudential supervision is now less important than before 2008 GFC
d. □ Micro-prudential supervision is now in a strong reform
e. □ A new legislation on micro-prudential supervision was established
f. □ A new supervisory authority was established to perform the function of micro-prudential supervision
g. □ After the 2008 GFC, the role of micro-prudential supervision was shifted from one to another regulator
h. □ After the 2008 GFC, more regulators are involved in micro-prudential supervision
i. □ Others (Please specify)--------------------------------------------------------------

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3.5.3. Identify the significance risk-based approach in supervision of market intermediaries before and after the 2008 GFC
### 3.5.4. Identify the significance of supervision over hedge funds before and after the 2008 GFC

<table>
<thead>
<tr>
<th></th>
<th>Not in use</th>
<th>In use but not important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
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<tbody>
<tr>
<td>Before the GFC</td>
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<tr>
<td>After the GFC</td>
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</table>

### 3.5.5. If micro-prudential supervision in your market has been improved after the 2008 GFC, are improvements actually outcomes of policy responses by securities regulator to the impacts of the 2008 GFC?

Yes ☐ No ☐

### 3.5.6. If improvements of micro-prudential supervision in your market after 2008 GFC have been made, what were the reasons? (Please tick (×) or click on any relevant box)

a. ☐ The 2008 GFC revealed that the micro-prudential supervision before the crisis was not sufficient to maintain the financial soundness of market intermediaries
b. ☐ New market conditions after the 2008 GFC require improvement of micro-prudential supervision
c. ☐ The approach of micro-prudential supervision before the 2008 GFC were not relevant and ineffective, causing collapses of market intermediaries during the crisis
d. ☐ The regulator in charge of micro-prudential supervision before the 2008 GFC were not capable enough to perform the function
e. ☐ The structure and coordination of micro-prudential supervision before the 2008 GFC were not effective enough
f. ☐ Others (please specify)-----------------------------------------------

### 3.6. Supervision of traded securities products

#### 3.6.1. Did the 2008 GFC cause any impact on supervision of securities products in your market?

Yes ☐ No ☐

#### 3.6.2. If Yes, did the impacts lead to any of the following (Please tick (×) or click on any relevant box):

a. ☐ Supervision over derivatives and structured financial products after 2008 GFC is more strictly than before 2008 GFC
b. ☐ Supervision over derivatives and structured financial products after 2008 GFC is less than before 2008 GFC
c. ☐ Moving of OTC traded derivatives and structured financial products to exchange markets after the 2008 GFC
d. ☐ New rules or regulations on transparency or/and required disclosure of structured financial products were issued after 2008 GFC
e. ☐ Accounting and/or auditing standards were strengthened for better transparency and valuation of traded securities and derivatives products
f. □ New rules or regulations on accounting and/ or auditing of derivatives and structured financial products were / issued after 2008 GFC

g. □ A new legislation on derivatives and structured financial products was established for improvement of the process of creating, offering and trading these products

h. □ Others (Please specify)........................................................................................................................................

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3.6.3. Identify the significance of supervision over derivatives, including structured financial products before and after the 2008 GFC (Please tick (×) or click on the relevant box)

<table>
<thead>
<tr>
<th></th>
<th>□ not subject of supervision</th>
<th>□ supervised but not adequately</th>
<th>□ adequately supervised</th>
<th>□ strictly supervised</th>
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<tbody>
<tr>
<td>Before the GFC</td>
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<tr>
<td>After the GFC</td>
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</tbody>
</table>

3.6.4. What was/ is the trading platform of structured financial products in your market before and after 2008 GFC

<table>
<thead>
<tr>
<th></th>
<th>□ OTC traded only</th>
<th>□ Some OTC traded and some exchange traded</th>
<th>□ Some OTC traded were moved to exchange traded markets</th>
<th>□ Exchange traded only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before the GFC</td>
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<tr>
<td>After the GFC</td>
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</tbody>
</table>

3.6.5. If supervision of securities products in your market has been improved after the 2008 GFC, are improvements actually outcomes of policy responses by securities regulator to the impacts of the 2008 GFC?

Yes □ No □

3.6.6. If improvements of supervision of securities products in your market after 2008 GFC have been made, what are the reasons? (Please tick (√) or click on any relevant box)

g. □ The 2008 GFC revealed that supervision of securities products before the crisis was not sufficient to maintain a transparent process of issuing, offering and trading of securities and an effective valuation of securities traded

h. □ New market conditions after the 2008 GFC require improvement of supervision of securities and derivatives products

i. □ The transparency and disclosure requirements of securities and derivatives products that existed before the 2008 GFC were not enough to maintain market confidence

j. □ The regulator in charge of supervision of securities products before the 2008 GFC were not capable to perform the function

k. □ The structure and coordination of supervision of securities products before the 2008 GFC were not effective

l. □ Others (please specify)........................................................................................................................................

---
### 3.7. Market conduct oversight

**3.7.1.** Did the 2008 GFC cause any impact on market conduct oversight in your market?

Yes □ No □

**3.7.2.** If Yes, did the impacts lead to any of the following (Please tick (×) or click on any relevant box):

a. □ Market conduct oversight after 2008 GFC is more than before 2008 GFC
b. □ Market conduct oversight after 2008 GFC is less than before 2008 GFC
c. □ New rules or regulations on market conduct oversight or market integrity were issued after 2008 GFC
d. □ New regulator was established to perform market conduct oversight
e. □ The role of market conduct oversight was shifted from one to another regulator
f. □ A strong reform of market conduct oversight we undertaken
g. □ Others (Please specify) ..............................................................................................................................  

**3.7.3.** After the 2008 GFC, the level of involvement of SROs, especially the stock exchange in market conduct oversight and market surveillance is more or less than before the crisis

More involvement □ Less involvement □ Stay the same □

**3.7.4.** If market conduct oversight in your market has been improved after the 2008 GFC, are improvements actually outcomes of policy responses by the securities regulators to the impacts of the 2008 GFC?

Yes □ No □

**3.7.5.** If improvements of market conduct oversight in your market after 2008 GFC have been made, what are the reasons? (Please tick (×) or click on any relevant box)

a. □ The 2008 GFC revealed that the level of market conduct oversight before the crisis was not sufficient to ensure a fair and transparent market
b. □ New market conditions after the 2008 GFC require improvement of market conduct oversight
c. □ The market integrity rules that existed before the 2008 GFC were not enough to maintain an effective enforcement and compliance
d. □ The regulator in charge of market conduct oversight before the 2008 GFC were not capable to perform the function
e. □ The structure and coordination of market conduct oversight before the 2008 GFC were not effective
f. □ Others (please specify) ..............................................................................................................................  

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**Note:** Within this research, market conduct oversight is defined as the activities taken by securities or financial regulators to ensure integrity of the securities market. These activities include market surveillance, inspection, investigation and enforcement of laws and regulations in the securities market;
3.8. Supervision of market institutions and SROs

3.8.1. Did the 2008 GFC cause any impact on supervision of market institutions and SROs in your market?

Yes □ No □

3.8.2. If Yes, did the impacts lead to any of the following (Please tick (×) or click on any relevant box):

a. □ Supervision of market institutions and SROs after 2008 GFC is more than before 2008 GFC
b. □ Supervision of market institutions and SROs after 2008 GFC is less than before 2008 GFC
c. □ New rules or regulations on supervision of market institutions and SROs were / issued after 2008 GFC
d. □ New regulator or regulatory structure was established to perform supervision of market institutions and SROs
e. □ The role of supervision of market institutions and SROs was shifted from one to another regulator
f. □ Some type of market institutions and SROs are put in more supervision after the 2008 GFC
g. □ Others (Please specify)  

3.8.3. Identify the significance of supervision over CRAs before and after the 2008 GFC

<table>
<thead>
<tr>
<th></th>
<th>Before the GFC</th>
<th>After the GFC</th>
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<tbody>
<tr>
<td>□ not subject of supervision</td>
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<tr>
<td>□ supervised but not adequately supervised</td>
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<tr>
<td>□ adequately supervised</td>
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<tr>
<td>□ strictly supervised</td>
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3.8.4. Identify the significance of supervision over auditors before and after the 2008 GFC

<table>
<thead>
<tr>
<th></th>
<th>Before the GFC</th>
<th>After the GFC</th>
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<tbody>
<tr>
<td>□ not subject of supervision</td>
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<td>□ adequately supervised</td>
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<tr>
<td>□ strictly supervised</td>
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</table>

22 Market institutions and SROs include market gate keepers such as credit rating agencies, accounting and auditing companies, clearing houses, stock exchanges, securities dealer associations and other institutions providing subordinate services for securities trading
### 3.8.5. Identify the significance of supervision over clearing houses before and after the 2008 GFC

<table>
<thead>
<tr>
<th></th>
<th>□ not subject of supervision</th>
<th>□ supervised but not adequately</th>
<th>□ adequately supervised</th>
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<td>Before the GFC</td>
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<td>After the GFC</td>
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</table>

### 3.8.6. Identify the significance of supervision over SROs, including stock exchanges before and after the 2008 GFC

<table>
<thead>
<tr>
<th></th>
<th>□ not subject of supervision</th>
<th>□ supervised but not adequately</th>
<th>□ adequately supervised</th>
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<tr>
<td>Before the GFC</td>
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</table>

### 3.8.7. If supervision of market institutions and SROs in your market has been improved after the 2008 GFC, are the improvements actually outcomes of policy responses by securities regulator to the impacts of the 2008 GFC?

Yes □ No □

### 3.8.8. If improvements of supervision of market institutions and SROs in your market after 2008 GFC have been made, what are the reasons? (Please tick (✓) or click on any relevant box)

a. □ The 2008 GFC revealed that the level of supervision of market institutions and SROs before the crisis was not sufficient to ensure healthy performance of these institutions
b. □ The 2008 GFC revealed that reliance on SROs before the 2008 GFC were wrong and market gate keepers and SROs should be subject to more regulations
c. □ New market conditions after the 2008 GFC require improvement of supervision of market institutions and SROs
d. □ The rules and regulations on supervision of market institutions and SROs that existed before the 2008 GFC were not enough to maintain an effective enforcement and compliance
e. □ The regulator in charge of supervision of market institutions and SROs before the 2008 GFC were not capable to perform the function
m. □ The structure and coordination of supervision of market institutions and SROs before the 2008 GFC were not effective
n. □ Others (please specify) -------------------------------------------------
3.9. Responsiveness of your supervision system after the 2008 GFC

3.9.1. If efforts of improvement of your supervisory system after 2008 GFC have been made in your securities market, do they make your system more or less responsive?

More □ Less □ Stay the same □

3.9.2. Please estimate the magnitude of responsiveness improvement of your system after the 2008 GFC by choosing a relevant box in the scaling (%) below:

| Percentage | 75 □ | 74-60 □ | 59-45 □ | 44-30 □ | 29-0 □ |

You have finished the survey questionnaire. Thank you very much!

---

23 Responsiveness of SMS is the ability of the securities regulators to respond effectively to market behaviour, market context and market developments by using relevant supervisory tools and approaches in a specific supervisory structure.
A. INFORMATION FOR FOCUS GROUP PARTICIPANTS

My name is Duong Thi Phuong, I am former contact person of IOSCO and Deputy Director of Market Supervision of the State Securities Commission of Viet Nam. I am conducting the PhD research project “Impacts of the 2008 Global Financial Crisis on securities market supervision and implications for emerging markets” at Southern Cross University, Australia.

The 2008 GFC has been recognized by G20 as “the greatest challenge to the world economy in modern times” and required a global solution. The research project aims to find out the impacts of the 2008 GFC on the securities supervision framework by identifying how securities regulators have adjusted their supervisory system to reflect the lessons learnt from the GFC, to adapt to the post-crisis market conditions, and ultimately to develop a more responsive market supervisory system. Implications for setting up a relevant framework of securities market supervision for emerging markets then will be drawn based on analysis of data collected for this project. The project involves a survey questionnaire and a focus group interview:

- The survey is an essential part of the research project with a strong support from International Organization of Securities Commission (IOSCO) from its perspective that there is an opportunity in every crisis, and the crisis affords regulators an opportunity to revisit the design, structure and approach to regulating and developing their financial systems. The responses of securities regulators to the impacts of the GFC would be identity of implications for development of securities market in emerging and developed economies. Therefore, the survey questionnaire was designed to obtain relevant answers from the IOSCO’s securities members on the impacts of the 2008 GFC and how their market supervision system responded to those impacts;
- The focus group interview is aimed at exploring the changes in the philosophy of securities market supervision after the 2008 GFC.

Data collected from the survey and focus group interview will be analysed on confidential and anonymous basis. It means that no jurisdictions or persons will be mentioned in details. The research results will be presented in the PhD thesis and other related publications of researcher such as articles or conference papers. For the sake of securities regulators community, the survey results may be provided to the IOSCO for discussion and reference of securities members upon request of the IOSCO members. The database obtained from the survey will be kept under tough security for 7 year by the SCU. Participation in this survey research is completely voluntary. However, securities members of IOSCO are strongly recommended to complete it on the spirit of IOSCO’s commitment to exchange information at both global and regional levels on member respective experiences in order to assist the market development, to strengthen market infrastructure and to implement appropriate regulation.

The survey was designed under strict terms and conditions of Australian National Statement on Ethical Conduct in Human Research. The ethics approval number of the research is ECN-13-229.

The focus group interview question will take you less than 5 minute to answer. If survey respondents and focus group interview members wish to obtain the survey and interview results, please indicate and provide a relevant email address. The survey and interview result will be sent to you once the research is completed.

If you have any question on the research, please do not hesitate to contact:

Duong Thi Phuong - PhD Candidate, Endeavour Award Holder
Business School, Southern Cross University, Australia
Mobile: +61 (0)466994612
Email: p.duongthi.10@student.scu.edu.au; or phuongssc@yahoo.com
Or my Supervisor:
Professor Ian Eddie PhD FCPA
Professor of Accounting and Corporate Governance
Business School, Southern Cross University, Australia
T: +61 7 5506 9315 | F +61 7 5589 3703
Email: ian.eddie@scu.edu.au

If you have concerns about the ethical conduct of this research or the researchers, the following procedure should occur, write to the following:
The Ethics Complaints Officer
Southern Cross University
PO Box 157 Lismore NSW 2480
Email: ethics.lismore@scu.edu.au
All information is confidential and will be handled as soon as possible.

B. CONSENT FORM OF FOCUS GROUP MEMBERS

Title of research project: Impacts of the 2008 Global Financial Crisis to Securities Market Supervision- Implications for emerging markets

Name of researcher: Duong Thi Phuong

Tick the box that applies, sign and date and give to the researcher

I agree to take part in the Southern Cross University research project specified above   Yes □  No □

I understand the information about my participation in the research project, which has been provided to me by the researchers.   Yes □  No □

I agree to be interviewed by the researcher.   Yes □  No □

I agree to make myself available for further interview if required. Yes □  No □

I agree to complete questionnaires asking me about philosophy of market supervision   Yes□  No □

I understand that my participation is voluntary and I understand that I can cease my participation at any time.  Yes □  No □

I understand that my participation in this research will be treated with confidentiality.  Yes □  No □

I understand that all information gathered in this research will be kept confidentially for 7 years at the University.  Yes □  No □

I am aware that I can contact the researchers at any time with any queries. Their contact details are provided to me.  Yes □  No □

I understand that this research project has been approved by the SCU Human Research Ethics Committee  Yes □  No □

Participant’s name: ______________________________________________________

Participant’s signature: ____________________________________________________

Date: ___________________
C. QUESTION FOR THE FOCUS GROUP INTERVIEW

The literature of securities market after the 2008 Global Finance Crisis suggested that there is another crisis of philosophy for securities market supervision. Some blamed that ideologies of Standard Finance, especially Efficient Market Hypothesis, which has been long time philosophy of securities market regulation, has some flaws that enabled the crisis. Some proposed that Behavioural Finance should be applied more for policy making in securities market supervision. What economic theory do you think will serve well as the philosophy for securities market supervision after the crisis?

D. ANSWER
ANNEX 5.1

QUANTITATIVE RESEARCH SAMPLE AND DATA DESCRIPTION

This Annex describes the sample and data collection of quantitative research. However, assessment of reliability and validity of the data is not addressed in this Annex because it was discussed in details in Chapter 4. The response rate and assessment of non-response bias, data processing and anonymity of data analysis, are addressed in this Annex.

1. Response Rate and Non-response Bias

1.1. Response Rate

In this research a total 110 securities regulators were approached and 42 provided responses. With the response rate 38.18% of the sample, the statistical accuracy of the survey is 95% ± 5%. Among the respondents, there are 14 regulators from developed markets and 28 from emerging markets. In terms of geography, majority of the respondents are from Europe (19) and from Asia (15), while only six were from America, and two from Africa.

Figure 5.1. Structure of research respondents

![Pie chart showing response rate and non-response bias for developed and emerging markets.]

Source: developed for this research

Figure 5.1 reports the structure of respondents in term of market development level. The survey sample of IOSCO ordinary securities regulator members comprises 85 from emerging markets and 25 from developed markets. The number of 14 survey respondents from developed markets represents 56% of the full population of developed market securities regulators. The rate ensures a statistical accuracy of 95% ± 5% of the survey. Whereas, 28 respondents from emerging markets just account for nearly 33% of IOSCO members in Growth and Emerging markets Committee (see Table 5.1 Appendix 5).
1.2. Assessment Of Non-response Bias

As the non-response rate accounts for 61.82% of approached securities commissions in the sample, non-response bias assessment was taken by comparing population and respondents and comparing respondents and non-respondents (Lindner et al., 2001; Miller & Smith, 1983):

1.2.1 Comparison of Respondents to the Population

The objective of this comparison is to find out whether the respondents are similar or different from the population. If they are typical of the population, the research outcomes from their responses can be generalized to the sample and hence population (in this research the sample accounts for 91.7% of population). If the respondents are different from the population then the research might be exposed to non-response bias (Miller & Smith, 1983).

Respondents were compared to the population of securities regulators in terms of their functions and responsibilities in SMS to diagnose the risk of non-response bias if there is any difference in this area. Besides, respondents were compared to the population in terms of their activeness in the IOSCO framework and the magnitude of crisis impacts on their economy. Websites of the securities regulators, IOSCO reports and policy papers were used as data for this analysis.

In terms of SMS responsibilities and functions, analysis of population and respondents found that there was no difference between the respondents and the population in terms of their responsibilities in SMS and their functions as the securities regulators.

In terms of activeness within IOSCO framework, the respondents-population analysis found that the respondents from developed market group are the ones that are most active IOSCO members. Ten (77%) out of the 13 respondents from developed markets are the members of the IOSCO Board (IOSCO, 2015g). Analysis of three other randomly chosen reports on IOSCO activities shows that nine of them (69.2%) are the members of the IOSCO Task Force on Cross-border Regulation. Nine of them (69.2%) are among 12 respondents of the IOSCO survey on hedge funds (75%) in 2013 (IOSCO, 2013f). Five of them are among eight representatives of the IOSCO Board level Task Force on Financial Market Benchmarks (62.5%) (IOSCO, 2012g). The activeness of the developed market respondents in the framework of IOSCO might be a factor that affected the decision to respond to the survey research because the survey was conducted within the framework of IOSCO cooperation. However, there is no evidence about there is any difference between the group of emerging market respondents and the whole population of emerging market securities regulators in term of their activeness in the IOSCO framework.
In terms of crisis impact magnitude, respondent-population analysis show that the depth of GFC impacts is in a positive correlation to the development level of the securities markets. In the 2008 GFC, emerging markets, which the members of IOSCO Growth and Emerging Market Committee were less vulnerable. The reason is the structured financial products and complex financial techniques, which were blamed among the root causes of the crisis, are not usually available in the emerging markets. Some securities regulators, who are still in early process of the securities market development, might not respond to the survey because underdevelopment of their market realistically isolated them from impacts of the GFC. Two securities commissions had officially explained this matter in their correspondences.

The difference in terms of crisis impacts is not a risk of non-response bias because the objective of the research is to find out the impacts of the 2008 GFC to SMS taken by securities regulators. Non-response due to less crisis impacts in fact became an indicator that helps to reveal the “true” population of the research.

Non-response bias that might associate to the difference in terms of activeness within IOSCO framework of developed market respondents needs to be further analysed by comparison of early and late responses because there are only four developed market respondents that are active in IOSCO events fall into the group of early respondents.

1.2.2. Comparison of Respondents to Non-respondents

The purpose of this analysis is to identify any difference between respondents and non-respondents. If non-respondents are not different from respondents, the research results can be generalized to non-respondents (Lindner et al., 2001; Miller & Smith, 1983).

Respondents and non-respondents were compared based on the information regarding their regulatory culture, the functions they perform as securities regulators and their policy responses to 2008 GFC. Data for comparison was from websites of securities commissions and other securities regulators in the survey sample.

Respondents and non-respondents analysis shows that both respondents and non-respondents perform similar responsibilities in SMS although their SMS structure, approaches and regulatory culture may vary. They both recognized impacts of the 2008 GFC, had some policy responses to the crisis and supported post-crisis regulatory reform initiatives of the IOSCO. The only difference found is that non-respondents are mostly from non-English speaking countries, especially the jurisdictions located in South America and Africa. The survey is in English and the language difference may be an obstacle for the regulators from the non-English speaking regions to respond to the survey, especially when the survey response was voluntary;
Therefore, it is concluded that there was no major difference between respondents and non-respondents in terms of their securities regulatory responsibilities and functions that may cause non-response bias. However, difference in official language might be an obstacle for responding to a voluntary survey questionnaire and led to low response from non-English speaking securities regulators in emerging markets. This explained the survey low response but did not cause a non-response bias because non-respondents and respondents are alike and therefore research results can be generalized for the whole population.

2. **Data Processing**

Data processing is essential to have critical insights into data characteristics and analysis (Hair, 1998). Data processing includes data examining, editing and coding, and data cleaning and screening for missing values.

2.1. **Data Coding, Examining and Editing**

Raw data was examined, edited and coded to check and verify errors before analysis (Cooper & Schindler, 2003; Sekaran, 2000; Sekaran & Bougie, 2010; Zikmund, 2003). One hundred and ninety nine items were double checked for data omission, reliability and validity before being codified and transferred into the SPSS data analysis software (Ticehurst & Veal, 2000). Each response was identified and classified with numerical scores and symbols (Ticehurst & Veal, 2000; Zikmund et al., 2012). The survey questionnaire consists primarily of pre-coded questions and items. However, there are options of “other” in each question to encourage respondents to provide more information. All the survey questions and items were examined for consistency with pre-coded data (D. Davis & Cosenza, 1993). Initially, data entry was checked manually case by case and then the check was doubled by descriptive techniques. Frequency distribution was used to identify data errors and ensured that the errors were corrected properly. The data accuracy is greater than 99.5%.

2.2. **Data Cleaning and Screening**

Missing values were examined by data cleaning and screening. The process improved the data accuracy, reliability of data analysis and ensured that there was no violation of assumptions of data analysis techniques (Hair, 1998; Hair, Black, Babin, Anderson, & Tatham, 2006). Missing data might occur due to omission and data entry errors by the researcher or was an action of respondents such as refusal to answer, that could lead to missing information (Hair et al., 2006). In this quantitative research, missing responses in certain cases are compulsory because the questions might be non-applicable or answers might be not available depending on respondents’ circumstance or characteristics. For example, some jurisdictions do not have SFPs traded in their markets. Then the question on types of SFPs should be non-applicable for them. Some
respondents reported no crisis impacts on certain areas of SMS, and then the question on crisis response policy in those areas would be non-available for them. The missing data issue was expected and pre-coded to facilitate proper data management and accurate data analysis. Types of missing data were numeric pre-coded into three categories: non-applicable (coded as 77), not available (coded as 99) and no response (coded as 88). In dealing with missing data, pair-wise deletion method suggested by Byrne (2001) was used in this research. One survey response was discarded due to eighty percent of non-response answers. This was due to the reason that the respondent’s market is too immature to have any SMS system and get any impacts from the 2008 GFC. Pre-categorizing of missing data helped the researcher to classify and allocate missing values into specific categories and recognized the “dangerous” no-responses that are refusals to answer or negligence by respondents. Missing data was not a problem within this research study as missing values due to non-response by respondents only account for 0.37% of data.

2.3. Anonymity of Data Analysis
The survey data was analysed on the anonymous basis as survey questions regarding market supervisory policies might be sensitive to the securities regulators. In the survey process, three respondents had contacted researcher to ensure the anonymity before responding to the survey. In order to respect anonymity requirement of survey respondents, there is strictly no quotation of securities regulators or persons in Chapter 5. Analysis and Findings of Quantitative Data. Survey data was analysed in two groups of developed and developing markets. The comments or quotes from respondents, which mentioned names of certain jurisdictions or organizations are modified in terms of wording to preserve the anonymity. Case by case, jurisdictions or organizations are referred to as securities regulators, central banks or financial regulators.
ANNEX 5.2

LOGISTIC REGRESSION MODEL TO TEST THE CORRELATION COEFFICIENTS BETWEEN POST-CRISIS SMS POLICY REFORMS AND RESPONSIVENESS IMPROVEMENT OF SMS SYSTEM

1. Testing of the model goodness of fit

The output generated by PLUM with seven predictors shows a *statistically insignificant* chi-square (p=0.466>0.05) in model fitting information (Table 5.14). However, it is not unexpected because chi-squares are good for large database but very sensitive to empty cells in models with small database and a large number of categorical predictors (Kenny, 2015; Spais & Vasileiou, 2006) as this model. Therefore the test statistics cannot be relied on to test whether the final model (model with all explanatory variables) has significantly improved the fit to the data over the baseline intercept only model. Other method of indexing the goodness of fit, pseudo $R^2$, was used as a measure of association.

In this case, the pseudo $R^2$ values (e.g. Nagelkerke = 21.1%) indicates that the presence of crisis-induced policies explains a relatively large variation between the scales of SMS responsiveness improvement. The higher R-squared also indicates that the final model has the greater improvement of model fitting to data.

**Table 1.1. Assessing of model fitting**

<table>
<thead>
<tr>
<th>Pseudo R-Square</th>
<th>Goodness of Fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cox and Snell</td>
<td>Chi-Square</td>
</tr>
<tr>
<td>Nagelkerke</td>
<td>Pearson</td>
</tr>
<tr>
<td>McFadden</td>
<td>Deviance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Link function: Logit.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Model Fitting Information</th>
<th>Test of Parallel Lines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-2 Log Likelihood</td>
</tr>
<tr>
<td>Intercept Only</td>
<td>49.822</td>
</tr>
<tr>
<td>Final</td>
<td>43.167</td>
</tr>
</tbody>
</table>

**Source:** developed for this research with data from the survey undertaken in 2013-2014

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.
In addition, Table 5.14 shows Pearson's chi-square statistics for the model. These statistics are intended to test whether the observed data are consistent with the fitted model. The null hypothesis is that the fit is good. The p-value is large (0.277 > 0.05) so it is concluded that the null hypothesis is not rejected, the data and the model predictions are similar and the model is good. Besides, test of parallel lines produces a statistically insignificant chi-square (p-value = 0.937 > 0.05). Therefore the null hypothesis that the location parameters (slope coefficients) are the same across response categories is not rejected. It is therefore concluded that the ordinal regression model has overall goodness of fit.

2. Measuring Correlational Coefficients of Crisis-induced Policies and SMS Responsiveness

Table 2.1 shows that all the p-values of the coefficients or the probability that, within a given model, the null hypothesis that a particular predictor's regression coefficient is zero given that the rest of the predictors in the model are statistically insignificant (p-value > 0.05).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Estimates</th>
<th>Std. Error</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ResponsiveMagnitude = 1]</td>
<td>-2.394</td>
<td>0.749</td>
<td>10.226</td>
<td>1</td>
<td>0.001</td>
</tr>
<tr>
<td>[ResponsiveMagnitude = 2]</td>
<td>0.196</td>
<td>0.544</td>
<td>0.129</td>
<td>1</td>
<td>0.719</td>
</tr>
<tr>
<td>[ResponsiveMagnitude = 3]</td>
<td>2.245</td>
<td>0.8</td>
<td>7.882</td>
<td>1</td>
<td>0.005</td>
</tr>
<tr>
<td>[ResponsiveMagnitude = 4]</td>
<td>2.997</td>
<td>1.06</td>
<td>7.988</td>
<td>1</td>
<td>0.005</td>
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<tr>
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<td>0.784</td>
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<td>0.754</td>
</tr>
<tr>
<td>[ApproachChangeduetoCrisis=0]</td>
<td>0.641</td>
<td>1.081</td>
<td>0.352</td>
<td>1</td>
<td>0.553</td>
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<tr>
<td>[MacroImprovementasPolicyResponse=0]</td>
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<td>1.593</td>
<td>1.75</td>
<td>1</td>
<td>0.186</td>
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<tr>
<td>[ImproveAsPolicyResponse=0]</td>
<td>-0.853</td>
<td>1.036</td>
<td>0.678</td>
<td>1</td>
<td>0.41</td>
</tr>
<tr>
<td>[MarketConductImprovement=0]</td>
<td>1.269</td>
<td>1.117</td>
<td>1.29</td>
<td>1</td>
<td>0.256</td>
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<tr>
<td>[MicroImproveDuoetoResponse=0]</td>
<td>-1.432</td>
<td>1.412</td>
<td>1.029</td>
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<tr>
<td>[MIpostcrisisImprovement=0]</td>
<td>-1.820</td>
<td>1.114</td>
<td>2.672</td>
<td>1</td>
<td>0.102</td>
</tr>
</tbody>
</table>

Source: developed for this research with data from the survey undertaken in 2013-2014

For example, the Wald test statistic for the predictor of crisis-induced policy responses in terms of SMS architecture is 0.098 with an associated p-value of 0.754. As the alpha level set for this model is 0.05, the null hypothesis is not rejected and it is concluded that the regression coefficient for the variable has not been found to be statistically different from zero in estimating SMS responsive improvement magnitude given other explanatory variables in the model.
Likewise, it has been found that the variables of crisis-induced policies relating to all other six areas, including SMS supervisory approaches, macro-prudential supervision, micro-prudential supervision, securities product supervision, market conduct oversight and MIs and SROs supervision all have statistically insignificant coefficients to the dependent variable- SMS responsiveness improvement magnitude (p-value >0.05). The null hypothesis that the coefficients are zero cannot be rejected (see Table 2.2 for more details). The outcomes may be explained by the instability of the logistic regression model due to available empty cells, small database and a large number of categorical predictors (Kenny, 2015; Spais & Vasileiou, 2006).

**Table 2.2. Parameter estimates of regression model (PLUM)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>Wald</th>
<th>Df</th>
<th>Sig.</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Expo. B</th>
<th>Lower</th>
<th>Upper</th>
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<tr>
<td>[ResponsiveMagnitude = 1]</td>
<td>2.394</td>
<td>0.749</td>
<td>10.22</td>
<td>1</td>
<td>0.00</td>
<td>-3.862</td>
<td>-0.927</td>
<td>0.091</td>
<td>0.021</td>
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<tr>
<td>[ResponsiveMagnitude = 2]</td>
<td>0.196</td>
<td>0.544</td>
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<td>1</td>
<td>0.71</td>
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<td></td>
</tr>
</tbody>
</table>

Source: developed for this research, data from the survey undertaken in 2013-2014

Therefore it is concluded that the econometrics model failed to quantify the coefficient between the policy to improve each component of SMS and improvement of the SMS responsiveness in post-crisis time.
APPENDIX 5
DATA SUPPORTING QUANTITATIVE ANALYSIS AND FINDINGS

Table 5.1. List of jurisdictions participating into the survey research on impacts of the 2008 GFC on securities market supervision

<table>
<thead>
<tr>
<th>No</th>
<th>Emerging markets</th>
<th>No</th>
<th>Developed markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Andorra</td>
<td>1.</td>
<td>Australia</td>
</tr>
<tr>
<td>2.</td>
<td>Arab Emirate</td>
<td>2.</td>
<td>Belgium</td>
</tr>
<tr>
<td>3.</td>
<td>Bahamas</td>
<td>3.</td>
<td>Canada</td>
</tr>
<tr>
<td>4.</td>
<td>Brunei</td>
<td>4.</td>
<td>Germany</td>
</tr>
<tr>
<td>5.</td>
<td>Bulgaria</td>
<td>5.</td>
<td>Hong Kong</td>
</tr>
<tr>
<td>6.</td>
<td>Chile</td>
<td>6.</td>
<td>Japan</td>
</tr>
<tr>
<td>7.</td>
<td>Honduras</td>
<td>7.</td>
<td>Luxemburg</td>
</tr>
<tr>
<td>8.</td>
<td>India</td>
<td>8.</td>
<td>Netherland</td>
</tr>
<tr>
<td>9.</td>
<td>Indonesia</td>
<td>9.</td>
<td>New Zealand</td>
</tr>
<tr>
<td>11.</td>
<td>Latvia</td>
<td>11.</td>
<td>Spain</td>
</tr>
<tr>
<td>12.</td>
<td>Malaysia</td>
<td>12.</td>
<td>Sweden</td>
</tr>
<tr>
<td>13.</td>
<td>People Republic of China</td>
<td>13.</td>
<td>UK</td>
</tr>
<tr>
<td>14.</td>
<td>Philippines</td>
<td>14.</td>
<td>USA</td>
</tr>
<tr>
<td>15.</td>
<td>Poland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Romania</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Russia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Serbia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Slovakia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>South Africa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Sri Lanka</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>SRSPKA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Taiwan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Thailand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Uganda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Ukraine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>Uruguay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Vietnam</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: developed for this research
Figure 5.1. Impacts of the 2008 GFC on SMS architecture

Source: developed for this research, data from the survey undertaken in 2013-2014
Table 5.2. SMS structure of developed and emerging markets before and after 2008 GFC

<table>
<thead>
<tr>
<th>SMS structure</th>
<th>Before GFC</th>
<th></th>
<th>After GFC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Developed</td>
<td>Emerging</td>
<td>Developed</td>
<td>Emerging</td>
</tr>
<tr>
<td>Integration approach</td>
<td>50.0%</td>
<td>34.60%</td>
<td>50.00%</td>
<td>57.69%</td>
</tr>
<tr>
<td>Functional approach</td>
<td>28.6%</td>
<td>42.30%</td>
<td>14.29%</td>
<td>34.62%</td>
</tr>
<tr>
<td>Institutional Approach</td>
<td>28.6%</td>
<td>34.60%</td>
<td>7.14%</td>
<td>23.07%</td>
</tr>
<tr>
<td>Twin-peaks</td>
<td>21.4%</td>
<td></td>
<td>35.71%</td>
<td>7.69%</td>
</tr>
<tr>
<td>Hybrid</td>
<td></td>
<td>3.85%</td>
<td></td>
<td>7.14%</td>
</tr>
<tr>
<td>Mixed of functional and institutional</td>
<td>14.3%</td>
<td></td>
<td></td>
<td>3.85%</td>
</tr>
<tr>
<td>Partly integration</td>
<td></td>
<td></td>
<td></td>
<td>3.85%</td>
</tr>
<tr>
<td>Multiple regulators operating under a policy networking</td>
<td></td>
<td></td>
<td></td>
<td>7.14%</td>
</tr>
</tbody>
</table>

*Source*: developed for this research, data from the survey undertaken in 2013-2014
Box 5.1. List of other supervisory approaches listed by respondents after the 2008 GFC

<table>
<thead>
<tr>
<th>Approach</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combination of rule-based and principle-based approach</td>
<td></td>
</tr>
<tr>
<td>Enforcement without fear or favour, act professionally with integrity and fairness</td>
<td>value-based approach</td>
</tr>
<tr>
<td>Hybrid</td>
<td></td>
</tr>
<tr>
<td>Mix of disclosure-based, rule-based and evidence-based</td>
<td></td>
</tr>
<tr>
<td>Objective and outcome-based approach, focus on areas with high customer impacts, and soft-law approach</td>
<td></td>
</tr>
<tr>
<td>Consolidation of macro- and micro-prudential supervision within the central bank, and objective-based approach</td>
<td></td>
</tr>
<tr>
<td>Proactive approach</td>
<td></td>
</tr>
<tr>
<td>Proportionate-based and judgement-based, in-depth, structured supervision</td>
<td></td>
</tr>
<tr>
<td>Two track approach: rule-based for system stability, consumer protection and data security, principle-based for market member supervision and market entry</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Types of approaches are self-defined by survey participants to answer open questions

**Source:** developed for this research, data from the survey undertaken in 2013-2014
Figure 5.2. Reasons for post-crisis improvement of micro-prudential supervision by groups of developed and emerging markets

Source: developed for this research, data from the survey undertaken in 2013-2014
Table 5.3. Types of crisis impacts on market conduct oversight

<table>
<thead>
<tr>
<th>Types of impacts</th>
<th>Developed markets</th>
<th>Emerging markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market conduct oversight after 2008 GFC is more than before 2008 GFC</td>
<td>100.0%</td>
<td>90.9%</td>
</tr>
<tr>
<td>Market conduct oversight after 2008 GFC is less than before 2008 GFC</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>New rules or regulations on market conduct oversight or market integrity were issued after 2008 GFC</td>
<td>76.9%</td>
<td>54.5%</td>
</tr>
<tr>
<td>New regulator was established to perform market conduct oversight</td>
<td>23.1%</td>
<td>4.5%</td>
</tr>
<tr>
<td>The role of market conduct oversight was shifted from one to another regulator</td>
<td>7.7%</td>
<td>4.5%</td>
</tr>
<tr>
<td>A strong reform of market conduct oversight was undertaken</td>
<td>7.7%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Others</td>
<td>30.8%</td>
<td>13.6%</td>
</tr>
</tbody>
</table>

Source: developed for this research, data from the survey undertaken in 2013-2014
### Table 5.4. Significance of supervision over MIs and SROs before and after the crisis

#### Level of market development * Significance of supervision over CRAs before the 2008 GFC Cross-tabulation

<table>
<thead>
<tr>
<th>% within Level of market development</th>
<th>Significance of supervision over CRAs before the 2008 GFC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not subject of supervision</td>
<td>supervised but not adequately</td>
</tr>
<tr>
<td>Level of market development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed</td>
<td>57.1%</td>
<td>35.7%</td>
</tr>
<tr>
<td>Emerging</td>
<td>40.0%</td>
<td>40.0%</td>
</tr>
<tr>
<td>Total</td>
<td>47.1%</td>
<td>38.2%</td>
</tr>
</tbody>
</table>

#### Level of market development * Significance of supervision over credit rating agencies after the 2008 GFC Cross-tabulation

<table>
<thead>
<tr>
<th>% within Level of market development</th>
<th>Significance of supervision over CRAs after the 2008 GFC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not subject of supervision</td>
<td>supervised but not adequately</td>
</tr>
<tr>
<td>Level of market development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed</td>
<td>7.1%</td>
<td>57.1%</td>
</tr>
<tr>
<td>Emerging</td>
<td>4.8%</td>
<td>90.5%</td>
</tr>
<tr>
<td>Total</td>
<td>2.9%</td>
<td>77.1%</td>
</tr>
</tbody>
</table>

#### Level of market development * Significance of supervision over auditors before the 2008 GFC Cross-tabulation

<table>
<thead>
<tr>
<th>% within Level of market development</th>
<th>Significance of supervision over auditors before the 2008 GFC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not subject of supervision</td>
<td>supervised but not adequately</td>
</tr>
<tr>
<td>Level of market development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed</td>
<td>14.3%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Emerging</td>
<td>12.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Total</td>
<td>12.8%</td>
<td>20.5%</td>
</tr>
</tbody>
</table>

#### Level of market development * Significance of supervision over auditors after the 2008 GFC Cross-tabulation

<table>
<thead>
<tr>
<th>% within Level of market development</th>
<th>Significance of supervision over auditors after the 2008 GFC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not subject of supervision</td>
<td>supervised but not adequately</td>
</tr>
<tr>
<td>Level of market development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed</td>
<td></td>
<td>100.0%</td>
</tr>
<tr>
<td>Emerging</td>
<td>3.8%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Total</td>
<td>2.5%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Level of market development</td>
<td>Significance of supervision over clearing houses before the 2008 GFC Cross-tabulation</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>% within Level of market development</td>
<td>supervised but not adequately</td>
<td>adequately supervised</td>
</tr>
<tr>
<td>Level of market development</td>
<td>Developed</td>
<td>50.0%</td>
</tr>
<tr>
<td></td>
<td>Emerging</td>
<td>25.0%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>34.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of market development</th>
<th>Significance of supervision over clearing houses after the 2008 GFC Cross-tabulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Level of market development</td>
<td>strictly supervised</td>
</tr>
<tr>
<td>Level of market development</td>
<td>Developed</td>
</tr>
<tr>
<td></td>
<td>Emerging</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of market development</th>
<th>Significance of supervision over SROs, including stock exchanges before the 2008 GFC Cross-tabulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Level of market development</td>
<td>not subject of supervision</td>
</tr>
<tr>
<td>Level of market development</td>
<td>Developed</td>
</tr>
<tr>
<td></td>
<td>Emerging</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of market development</th>
<th>Significance of supervision over SROs, including stock exchanges after the 2008 GFC Cross-tabulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Level of market development</td>
<td>strictly supervised</td>
</tr>
<tr>
<td>Level of market development</td>
<td>Developed</td>
</tr>
<tr>
<td></td>
<td>Emerging</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

Source: developed for this research, data from the survey undertaken in 2013-2014
### Table 5.5. Responsiveness improvement of SMS system after the 2008 GFC

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>More</td>
<td>39</td>
<td>92.9</td>
<td>95.1</td>
</tr>
<tr>
<td></td>
<td>Stay the same</td>
<td>2</td>
<td>4.8</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>41</td>
<td>97.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Missing</td>
<td>System</td>
<td>1</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>42</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

#### Level of market development * Responsiveness of supervisory system after the 2008 GFC

<table>
<thead>
<tr>
<th>Level of market development</th>
<th>More</th>
<th>Stay the same</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed</td>
<td>100.0%</td>
<td></td>
<td>100.0%</td>
</tr>
<tr>
<td>Emerging</td>
<td>92.6%</td>
<td>7.4%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>95.1%</td>
<td>4.9%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

#### Level of market development * Magnitude of responsiveness improvement of supervisory system after the 2008 GFC

<table>
<thead>
<tr>
<th>% within Level of market development</th>
<th>29-0</th>
<th>44-30</th>
<th>45-59</th>
<th>60-74</th>
<th>&gt;75</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed</td>
<td>18.2%</td>
<td>63.6%</td>
<td>18.2%</td>
<td></td>
<td></td>
<td>100.0%</td>
</tr>
<tr>
<td>Emerging</td>
<td>24.0%</td>
<td>36.0%</td>
<td>32.0%</td>
<td>4.0%</td>
<td>4.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>22.2%</td>
<td>44.4%</td>
<td>27.8%</td>
<td>2.8%</td>
<td>2.8%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Source: developed for this research, data from the survey undertaken in 2013-2014*
<table>
<thead>
<tr>
<th>QTF</th>
<th>Findings of Quantitative Empirical Research – 2008 GFC impacts on SMS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>QTF 1</strong></td>
<td><strong>General impacts of the 2008 GFC on the securities markets:</strong> The 2008 GFC created substantial impacts on the securities markets of the survey respondents. There was dispersing impacts between two groups of developed and emerging markets, suggesting that developed markets were more seriously affected by the crisis.</td>
</tr>
</tbody>
</table>

| **QTF 2** | **Impacts of the 2008 GFC on SMS philosophy:** The 2008 GFC revealed the flaws of SMS philosophy in pre-crisis time and led to re-construction of the SMS theoretical framework of the respondents. Despite the exploratory research suggested that securities regulators were strongly called for abandoning of the pre-crisis supervisory philosophy, which essentially relied on insights of Standard Finance and EMH, the survey research shows that securities regulators were hesitant to do so in post-crisis time. Further study is needed to understand the outcome. Though not abandoned, neo-classical economics theory was no longer the preferable mindset of securities regulatory community. Quantitative data analysis found a transition from a supervisory framework that relied solely on Standard Finance to a post-crisis framework that adopt insights from both Behavioural Finance and Standard Finance. Significance of ideologies from Behavioural Finance in SMS theoretical framework is an important fact discovered by the quantitative research. |

| **QTF 3** | **Impacts of the 2008 GFC on SMS architecture:** The 2008 GFC generated significant impacts on SMS architecture. The crisis created a good chance for regulators to re-evaluate and reconstruct their system. Changes of supervisory structure were made in response to impacts of the GFC and post-crisis environment. Re-evaluation of SMS structure often lead to three key changes: (i) redesign of system into twin-peaks or integration model; (ii) new power was given to existing financial regulators or securities regulators to enhance systemic stability and supervision over derivatives and SFPs; (iii) new regulators or new structure were established. Qualitative exploratory research stage gave the impression that twin-peaks model has become the favourite financial supervisory structure in post-crisis time. However, quantitative research only found a weak trend to restructure supervisory systems into twin-peaks model in 12.5% of the respondents after the crisis. Integration structure is still the favourite architecture of financial regulators. Functional became less preferable but reserved its second popular position. Twin-peaks model went up one step higher than institutional structure in the rank. The 2008 GFC also diminished the significance of self-regulation in SMS system. Roles of SROs in the securities market were re-evaluated, improved or reduced to member supervision. |

| **QTF 4** | **Impacts of the 2008 GFC on SMS approach:** The 2008 GFC caused significant impacts on the supervisory approaches of securities regulators. The most prevalent impact was that the crisis led to re-evaluation and re-construction of SMS practices. Most regulators changed their SMS approaches as a direct policy response to the GFC. Full-disclosure-based approach was no longer preferred by both developed and emerging markets in post-crisis time. Risk-based practices now become most popular while rule-based and principle-based are still common. There was a trend to move away from full-disclosure based and market-based, come back to rule-based and adopt more risk-based practices in developed markets after the crisis. However, emerging markets tended to move away from disclosure-based, but to adopt more principle-based and risk-based practices. Combination of different approaches is more common now by both groups of developed and emerging markets in post-crisis time. New approaches were introduced for the first time to adapt to new environment and supervisory requirements after the crisis. |
**QTF 5**  
**Impacts of the 2008 GFC on macro-prudential supervision:** The 2008 GFC caused a substantial impact on macro-prudential supervision. The crisis impacts changed the financial regulators’ perception on the roles of macro-prudential supervision, induced them to re-evaluate and intensify their macro-prudential supervisory activities in post-crisis time. A significant number of securities regulators responded to the impact by establishing new regulators to perform the function of macro-prudential supervision, shifting the role to other regulators, or creating a new structure or network that allows more regulators to be involved in this activity. Some others issued new legal framework or implement a reform. Securities regulators take a more important role in post-crisis macro-prudential regulation. Developed markets found a stronger momentum and more reasons from impacts of the 2008 GFC to improve their macro-prudential supervision than emerging markets after the crisis.

**QTF 6**  
**Impacts of the 2008 GFC on supervision of market intermediaries:** The 2008 GFC caused significant impacts to supervision of market intermediaries by respondents. The most prevalent crisis-induced action taken by respondents was re-evaluation of micro-prudential supervision for more improvement. Besides, the incidence also highlighted importance of micro-prudential supervision, making regulators to promulgate new legal framework, change their supervisory structure by setting up new authority, creating new network, shifting the responsibility, or involving more regulators to perform the functions of micro-prudential supervision. A minority of regulators are even taking a strong reform of market member supervision. A variety of other impacts were reported by both emerging and developed markets. The crisis affected the group of developed markets more seriously than that of emerging markets in overall and especially in terms of micro-prudential supervisory structure and magnitude of supervision. Moreover, the crisis-induced a transformation of regulatory perception about the importance of risk-based approach and supervision of hedge funds. After the crisis, risk-based approach became a favourite tool for member supervision by both developed and emerging markets. Hedge funds were put under adequate supervision in post-crisis time while most of them were not supervised pre-crisis.

Most of improvements of post-crisis micro-prudential supervision have been made by policy responses of regulators to the impacts of the 2008 GFC. Pre-crisis insufficient supervision was considered the main reason for taking action to improve market member supervision post-crisis. Inefficient pre-crisis structure and coordination, as well as post-crisis new market conditions are significant impetuses for further enhancement of micro-prudential supervision.

**QTF 7**  
**Impacts of the 2008 GFC on supervision of securities products:** 2008 GFC affected supervision of traded products of all the respondents from developed market and of two third from emerging markets. The crisis created momentum for both of developed and emerging market groups to pursue a stricter regime of derivatives and SFP supervision, to issue new rules and regulations for better transparency, creating, offering, trading and valuation of the products in post-crisis time. Only a minority of respondents chose to move OTC traded derivatives and SFPs to exchange traded market. Not only derivatives and SFPs are subject to post-crisis strengthened supervision, some regulators decided to consolidate whole supervisory framework of securities products, especially securities issuance. Developed markets and emerging markets are like-minded in terms of reactions to the 2008 GFC impacts. However, disperse between two groups can be seen in some cases. Both developed and emerging market groups have the tendency to maintain and adequate supervision over derivatives and SFPs post-crisis. Only a minority of emerging markets have not yet put them under tougher supervision.
Despite the strong call for moving all OTC traded SFPs to exchange traded market right after the incidence of 2008 GFC, a majority of respondents still operate both OTC and exchanges as market places for SFPs post-crisis. The trend to move OTC traded SFPs to exchanges or to maintain a unique exchange market for SFPs in post-crisis time is not as strong as expected. Further study should be taken to explain this outcome.

Insufficient supervision and inadequate transparency of securities products in pre-crisis time are the two biggest reasons for the respondents to make policy improvement in this field post-crisis.

QTF 8 **Impacts of the 2008 GFC on market conduct oversight:** The 2008 GFC created important impacts on market conduct oversight by respondents. The most common crisis-induced action taken by securities regulators was performing more market conduct oversight post-crisis. The second prevalent crisis impact was issuing new rules and regulations on market conducts and market integrity. New regulators in charge of market conduct oversight were established by a small group of respondents. Shifting the role of market conduct oversight from one to another regulator, and taking strong reform of market conduct oversight are the options taken by minority of the respondents consolidating oversight, resuming or new installing rules on short selling, issuing a whole new law or part of legal system to adapt to EU changing legal environment.

Despite the call for reducing roles of SROs in market supervision after 2008 GFC, involvement of SROs and stock exchanges in market conduct oversight and market surveillance experienced little change. A minority of respondents in fact diminished the roles of SROs in this field. However, the number of respondents those decided to strengthen it was even bigger. Further study should be taken to understand the reason for this response.

QTF 9 **Impacts of the 2008 GFC on supervision of MIs and SROs, including stock exchanges**

The 2008 GFC created mass impacts on MIs and SROs supervision of respondents from both developed and emerging markets. The most common crisis-induced actions taken by both developed and emerging groups were intensifying supervision over MIs and SROs and issuing new rules and regulations on this supervisory aspect. Developed markets focused on putting some selected MIs and SROs under tougher supervision while emerging markets preferred to enhance their legal framework.

A significant proportion of regulators decided to establish new regulators or regulatory structures to perform the function of MIs and SROs supervision. A minority of regulators shifted the role from one to another regulator post-crisis and some reported other crisis impacts on their supervision over MIs and SROs.

Supervision over CRAs, auditors, clearing houses, and SROs including stock exchanges is all strengthened post-crisis. Especially, CRAs, which were unsupervised or inadequately supervised pre-crisis, are now put under adequate or strict supervision after the crisis. Improvement of MIs and SROs supervision post-crisis was mostly made as policy responses to the 2008 GFC impacts. The most common reasons for the improvement were the requirements of new market conditions post-crisis and awareness of regulators that pre-crisis supervision over MIs ad SROs was not sufficient to ensure healthy performance of the institutions.

QTF 10 **Improvement of SMS responsiveness resulted from post-crisis SMS policy reform:**

Post-crisis SMS responsiveness improvement was reported as a result of crisis-induced policy responses by an absolute majority of respondents in descriptive analysis. However, logistic regression model developed for correlational causal analysis was unable to
quantify the correlational coefficients between the SMS responsiveness improvement and the crisis-induced SMS policies made by the respondents.

| QTF 11 | **Convergence and divergence of developed markets and emerging markets in crisis-induced policy responses**: Emerging market respondents followed developed market respondents in the same trends of implementing policies to strengthen all components of SMS after the 2008 GFC. However, differences are seen in the diversified ways by which two groups responded to crisis impacts and improved their SMS systems to cope with the new market conditions in post-crisis time. |

**Source**: developed for this research
This Annex discusses data analysis techniques and procedures used for focus group interviews and documentary research in the qualitative explanatory research of this study.

Data in this research was generated from focus group interviews and a documentary research in actual text format as used by most of researchers in qualitative research (Onwuegbuzie, Dickinson, Leech, & Zoran, 2009). As discuss in Section 4.4.3 Chapter 4-Research Methodology, qualitative data was analysed by an inductive analytical framework (Figure A6.1.1).

![Figure A6.1.1. Qualitative content analysis procedures for inductive analytical framework](image)

Data collected from the focus group interviews and documentary research was coded and entered a data library in Endnote. The qualitative data was then analysed by classical content analysis techniques. Qualitative content analysis is an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytical rules and step-by-step models (Mayring, 2000). This qualitative technique includes creating small chunks of the data and then placing a code with each chunk. These codes then are placed into similar groupings and counted (Mayring, 2000; Morgan, 1997; Onwuegbuzie et al., 2009). The procedures of qualitative content analysis were used in this research because they preserve the advantages of quantitative content analysis for a more qualitative text interpretation (Mayring, 2000) of written data. Within framework of this research, content analysis procedures...
for inductive analytical framework has to be inter-subjectively comprehensible to compare the qualitative data analysis results with quantitative research in the sense of triangulation and checks for reliability (Mayring, 2000).

As for focus group data, following the recommendations made by Onwuegbuzie et al. (2009), verbatim statements (i.e., quotations) made by focus group participants, whenever possible, were supplemented by information about the number or proportion of members who appeared to be part of the consensus from which the category or theme emerged.

Similarly, data collected from documentary research was classified into relevant categories that were set up in consideration of the research issues and the themes emerged from reading, reviewing and analysing content of documents. Four criteria, including authenticity, credibility, and representativeness and accuracy (D. Bailey, 1994) were ensured during analytical procedures. Whenever possible, statistics, figure and tables were established to display data analysis in a scientific way.

The use of quasi-statistics technique (Barton & Lazarsfeld, 1955) in focus group data and documentary data analysis provides richer information and yields a form of mixed methods data analysis (Onwuegbuzie et al., 2009). This method does not only allow testing and supporting claims that are intrinsically quantitative, but also enables assessment of the amount of evidence in the data that bears on a particular conclusion or threat (Maxwell, 2005; Onwuegbuzie et al., 2009).

In summary, data analysis in this qualitative research was conducted in accordance with the procedures of content analysis for inductive analytical framework recommended by Mayring (2000) and employment of quasi-statistical techniques that allows better triangulation and conformity with mix-method paradigm.
ANNEX 6.2
DATA ANALYSIS OF FOCUS GROUP INTERVIEWS
This Annex presents data analysis of focus group interview in two levels. Group data analysis and inter-group data analysis. Group data analysis provided a picture of how participants in the three major groups think about the roles of Standard Finance and Behavioural Finance in SMS philosophy after the crisis.

Table A6.2.1. Answers of focus group interview participants

| Participant 1 | Decisive Group | Behavioural Finance offers a useful perspective to understand the institutional failures that contributed to the crisis and the psychological factors that were also central to financial crises. Definitely the ideologies of Behavioural Finance should be adopted to design a financial system that can avoid the impact of irrational thinking, and prevent it from adversely affecting the real economy in the way that it may recently have done. |
| Participant 2 | Decisive Group | Standard Finance cannot explain recent price bubbles and financial crisis. Behavioural Finance is relevant to explain how “rational investors” were defeated by “irrational investors” and therefore an “inefficient market” which is overpriced or underpriced was created. Points of view provided by Behavioural Finance should be adopted in securities regulation. |
| Participant 3 | Decisive Group | Securities regulators need to understand different economics theories to know what does work and what does not in their markets. Standard Finance has some weaknesses that were revealed by the current GFC. Behavioural Finance provides useful insights to understand the causes and effects of the crisis. Adoption of both ideologies from Behavioural Finance and Standard Finance in the securities market supervision would be a choice for securities regulators in post-crisis time. |
| Participant 4 | Decisive Group | Both paradigms have their strengths and weaknesses. But the recent GFC brought into sharp focus the inadequacies of the contemporary financial regulation model that based on the assumption that investors are always rational and markets can regulate themselves both at the national and the global level. Behavioural Finance is relevance in explaining the crisis. However, perspectives of Standard Finance and Behavioural Finance should be taken as complementary elements in establishing a post-crisis proactive regulatory framework. |
| Participant 5 | Decisive Group | Regulators should not necessarily categorize themselves as neo-classical economists or behavioural economists. They should understand the viewpoints of both Standard Finance and Behavioural Finance to make better decisions. Standard Finance assumes that investors are always rational. This assumption sometimes does not hold in reality. Behavioural Finance does not contend that investors are irrational. It explains that investors try to make rational decisions but they are limited by the constraints on their resources or abilities. Both paradigms provide valuable contributions and should be viewed as complementary rather than mutually exclusive in the supervisory theoretical framework. |
| Participant 6 | Decisive Group | Co-existence of the invisible hand of market and visible hand of the government is compulsory for the global and national economy. Global financial crises occur because of both market institutional failures and ineffective regulatory practices. As for setting up a proactive regulatory framework post-crisis, regulators should observe that Standard Finance and EMH have their fatal weaknesses that need to be complemented by the perspectives of Behavioural Finance. Risk taking by investors and institutions should be considered the behaviour that needs to be at the centre of stronger regulatory activities. |
| Participant 7 | Decisive Group | The old ways of thinking about the financial system allowed it to fail. For developing a new model that allows the system to prosper, rather than encourages individuals to prosper at the expenses of the system, and identifying trends that may pose systemic risks to markets, we must view them through the right lens. Our conceptual models shape our actions. Network Theory, concepts from behavioural economics, and applying mathematical give policymakers and... |
regulators have a far better chance of intervening into markets before the system tips into chaos.

<table>
<thead>
<tr>
<th>Participant 8</th>
<th>Sceptical Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>After the 2008 GFC, a dilemma for financial policy makers in designing an optimal regulatory framework lies in the deficiencies of theory and empirical evidence of the financial market operation and stability. Pre-GFC dominant paradigm was the one that support optimality of free markets with minimal regulation. This paradigm emphasized the efficiency and self-correcting nature of markets, denied the ability of regulators to identify and prevent asset price bubbles and therefore contended that financial deregulation is fundamental. In post-GFC time, there is a view that a new paradigm is required for the compatibility of unregulated operations of financial markets with financial stability. Behavioural Finance offers useful perspectives to understand and explain the failures of the “market paradigm”. Regulators now are, arguably, picking and choosing from both paradigms.</td>
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<table>
<thead>
<tr>
<th>Participant 9</th>
<th>Sceptical Group</th>
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<tbody>
<tr>
<td>Post-GFC, regulators should understand how different perspectives of Standard Finance and Behavioural Finance might have affected the financial regulatory system. According to Standard Finance, investors are rational. They have stable risk aversion and risk preferences. And they take risks for compensation. Markets are efficient and able to self-correct and self-regulate. Behavioural Finance, even before the GFC has increasingly become a part of mainstream finance. The paradigm has the potential to explain how people make the financial decisions, that are not always rational choices and how markets function in interaction with investors’ ‘not always rational’ behaviour. The insights of Behavioural Finance are extremely useful for the regulators in redesigning a responsive regulatory framework that emphasize behaviour of investors and institutions, especially risks and risks taking by the investors and institutions. However, Behavioural Finance is still incomplete because it neither offers a unified theory nor explains all observed behaviour.</td>
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<thead>
<tr>
<th>Participant 10</th>
<th>Sceptical Group</th>
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</thead>
<tbody>
<tr>
<td>Behavioural Finance is useful for analysis of financial crisis and turbulence, as they are the products of irrational behaviour, inefficient markets and unresponsive regulation. However, choosing one or another financial theory as a philosophy for securities market supervision might also lead to a crisis as the recent 2008 GFC if the theory has some weaknesses that were not addressed. Knowledge of financial theories is fundamental but strictly following a paradigm, either Standard Finance or Behavioural Finance in regulatory policy making is disputable.</td>
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<table>
<thead>
<tr>
<th>Participant 11</th>
<th>Neutral Group</th>
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<tbody>
<tr>
<td>The 2008 GFC was an evidence of how people deviated from full rationality. Behavioural Finance helps us make sense of the crisis. People try to make rational choice but they have cognitive and psychological constraints and often make suboptimal financial decisions. However, Standard Finance cannot be replaced as it provides the edifice of how markets work. Behavioural Finance does not try to replace Standard Finance. In fact, it provides a more relevant point of view to explain why and how sometime markets do not work as expected by “rational thinking” based on Standard Finance.</td>
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<tr>
<th>Participant 12</th>
<th>Neutral Group</th>
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<tr>
<td>The EMH has its weaknesses even in liquid markets, such as those for listed common stocks. It has more limitations when one attempts to apply it to less liquid markets such as markets for MBS and their derivatives. It is unlikely to work at all if one of the principal pieces of information that people rely upon turns out to be false information. Especially, many of the MBS were rated AAA but the rating were wrong either because the models applied inadequate or because the ratings agencies were complicit in giving out false rating. Behavioural Finance clearly has some relevance to the financial crisis. For example herding behaviour has to be considered when stories or rumours of an intermediary, such as Bear Stearns or Lehman, being in financial trouble cause banks to withdraw credit lines and customers to withdraw funds or securities. I think it could be</td>
<td></td>
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</table>
concluded that Behavioural Finance may explain, in part why trading markets and credits markets become illiquid, which in turns renders many risks assessment models ineffective as a measure of a firm’s risk. Incorrect rating also affected the risk-based models’ accuracy.

Having stated this, I don’t think a regulator necessarily has to choose one or several economic theories as a philosophy for securities market supervisions. The regulator should simply understand all of the theories insofar as they may affect market integrity and the adequacy of regulatory safeguards in place. For example, what was learnt in the U.S. from the crisis is that the CRA industry requires fixing (it still required more fixing), and risk-based model can be unreliable when they presume incorrectly that there will always be a liquid market with available prices during a financial crisis.

The lesson for the regulator is that other capital adequacy safeguards (more capital and leverage ratios) may work better. Knowledge of economic theories and their limitations should help a regulator understand what can and cannot be supervised. For example, it would be difficult to have stopped herding behaviour or some credit and trading markets ceasing to operate. On the other hand, it would be possible for the regulator to take steps to ensure that better information was available in the marketplace.

<table>
<thead>
<tr>
<th>Participant 13</th>
<th>Neutral Group</th>
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<tbody>
<tr>
<td></td>
<td>The current crisis was created by the system itself with a free-market ideology that has been nurtured by neo-liberalism or economic liberalism. The central thrust of this ideology has been that government activity should be constrained, and ultimately replaced, by market invisible hands. But the 2008 GFC showed that there are two undeniable truths: the first is that financial markets do not always self-correct or self-regulate, the market invisible hand is sometime “invisible”; and the second is that government should never resign its responsibility of maintaining economic stability. The key issue for the regulators after the 2008 GFC is not that they should choose any economics theory as philosophy of supervision but that they need to understand the economics theories, to know what works and what does not work in the theories. And first of all, a regulatory framework should be designed so that regulator has ultimate responsibilities to determine and enforce the rules of the system.</td>
</tr>
</tbody>
</table>

**Source:** developed for this research, data from focus group interviews undertaken in 2014-2015

Names of the groups were given by researcher as the codes for identifying their unique features and the shared ideas and themes between participants of each group.

**Decisive Group:** This group comprises seven participants (FGPs), accounting for 53.85% of the total focus group. The group was named as the Decisive Group because the FGPs in this group gave clear answers about which theory should be used as SMS philosophy post-GFC.

**Sceptical Group:** The group was named as the Sceptical Group because FGPs in this group showed their doubt on the rationale of choosing one, another or both paradigm as SMS philosophy. This group comprises three participants, accounting for above 23% of interviewees.

**Neutral Group:** The last group, named as the Neutral Group because the FGPs in this showed a neutral attitude to adoption of a theory as SMS philosophy. This group comprises of three left participants (above 23% the focus group).

Group data analysis recognizes the common points in answers of FGPs of each group, summarized in Table A6.2.2.
### Table A6.2.2. Categories of focus group participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Points of view</th>
<th>No</th>
<th>%</th>
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</table>
| Decisive Group     | - Giving a clear answer on which economic theory or both should be adopted as SMS philosophy post-GFC;  
                      - Analysing or implying the failures of the pre-crisis theoretical framework of market supervision;  
                      - Six out of seven explicitly indicating or implying that the weaknesses of Standard Finance could be complemented by Behavioural Finance;  
                      - Rationalizing the values of Behavioural Finance and recommending adoption of the ideologies from this paradigm in SMS philosophy, alone or in complement to Standard Finance and other theory. | 7  | 53.85 |
| Sceptical Group    | - Acknowledging weaknesses of Standard Finance and advantages of Behavioural Finance;  
                      - Explicitly indicating or implying that Behavioural Finance has the potential to explain the failures of Standard Finance or what the later does not;  
                      - Avoiding the answer as to which paradigm should be used as SMS philosophy; and  
                      - Showing suspicion in choosing one, another or both paradigms as SMS philosophy; | 3  | 23.08 |
| Neutral Group      | - Acknowledging or providing analysis of weaknesses of Standard Finance and usefulness of Behavioural Finance;  
                      - Avoiding answer on the choice of economic theory for SMS philosophy or denying the importance of the choice; and  
                      - Recommending stronger responsibilities of regulators in making decision, enforcement, and maintaining system stability. This point of view inherently does not support the Standard Finance’s stance that nurtured deregulation and market self-regulation in pre-crisis time. | 3  | 23.08 |

**Source:** developed for this research, data from focus group interviews undertaken in 2014-2015

Results of group data analysis was supplemented by inter-group data analysis to yield valuable evidence to understand and explain possible outcomes of focus group data analysis. Inter-group data analysis helps to come up with the following results:

- All three groups or 100% of interviewees agreed on the values of Behavioural Finance that help to understand the nature of financial crisis or redesigning the supervisory system into a more proactive framework. Totally seven FGPs from Decisive Group or 53.85% of interviewees recommended adoption of Behavioural Finance in SMS philosophy, alone or together with Standard Finance and/or other theory. One FGP from Neutral Group (7.7%) implied a possible harmonization of both paradigms. One FGP from Sceptical Group (7.7%) observed the trend that regulators now are picking and choosing from both paradigms. Only one FGP from Sceptical Group (7.7%), though claimed that Behavioural Finance is extremely useful for the regulators in redesigning a post-crisis responsive regulatory framework, expresses his/her concern that theory is still incomplete (see Table A6.2.1 and Table A6.2.2). Given all FGPs are former or current securities regulators, this outcome possibly suggested that Behavioural Finance has obtained a new significance after the crisis; and that its values in explaining extreme market phenomena as well as establishing a post-crisis responsive supervisory framework have been acknowledged by securities regulators;
All FGPs from three groups (100%) recognized limitations of Standard Finance that were divulged by the 2008 GFC. Eleven out of 13 FGPs (06 from Decisive Group, all three of Sceptical Group and two from Neutral Group) or 84.6% of interviewees explicitly indicated or implied that failures of Standard Finance could be complemented or explained by Behavioural Finance (see Table A6.2.1 and Table A6.2.2). Given that all FGPs are the former or current securities regulators, this outcome may imply that Standards Finance’s failures in coping with extreme market phenomena such financial crises were aware by the securities regulators. It is possibly that most of securities regulators assumed the failures could be complemented or explained by Behavioural Finance;

However, no FGP clearly mentioned that Standard Finance should be dismissed or replaced by Behavioural Finance or any other theory (see Table A6.2.1 and Table A6.2.2). Instead, 5 FGPs, including four from Decisive Groups and one from Neutral Group, accounting for 38.46% of interviewees still explicitly acknowledged values of Standard Finance. Five out of seven FGPs from Decisive Group (38.46%) recommended adoption of both Standard Finance and Behavioural Finance in SMS theoretical framework. Four out of six FGPs from Sceptical Group and Neutral Group, accounting for 30.77% of total interviewees supported the point of view that knowledge of both paradigms is fundamental to regulators. One FGP from Neutral Group (7.7%) claimed that Standard Finance ideologies cannot be replaced as it provides an edifice of how markets work. So totally 12 FGPs make a proportion of 92.3% of interviewees perceiving the importance of Standard Finance’s ideologies in three levels: (i) proposing adoption of ideologies from both paradigms in SMS philosophy; (ii) claiming or implying values of Standard Finance; and (iii) recommending that knowledge of both paradigms is fundamental for regulators (see Table A6.2.1 and Table A6.2.2). This outcome might indicate that despite the failures of Standard Finance in explaining financial crises have been aware by the regulators, its values as the conventional wisdom of financial supervision might have not been dismissed;

Five out of seven FGPs from Decisive Group recommended adoption of both Standard Finance and Behavioural Finance in SMS theoretical framework, two of them explicitly said that that regulator should understand ideologies from both paradigms. Four out of 6 FGPs from Sceptical Group and Neutral Group. Together they created a proportion of 69.23% interview supported the point of view that knowledge of both paradigms is fundamental to regulators. This outcome possibly implied that understanding of both paradigm is considered a requisite for securities regulators;

Three FGPs from Sceptical Group and three FGPs from Neutral Group, accounting for 46.15% of interviewees avoided the answer as to the choice of an economics theory for SMS philosophy or denied the importance of the choice (see Table A6.2.1 and Table A6.2.2). Hesitation of FGPs in answering the interview question probably indicated that redefining the theoretical framework for securities supervision is still a sensitive theme and/or a dilemma for regulators though it has been five years since the first days of the 2008 GFC.
Data Description of Documentary Research

Documentary research was conducted with two major databases: (i) IOSCO policy papers and (ii) policy papers, legal documents of IOSCO members, reports of international organizations and research papers of think tanks.

1. IOSCO policy papers

The IOSCO called itself “a standards setter” in securities regulation and “the leading international grouping of securities market regulators” (IOSCO, 2013c, p8). Its current membership comprises regulatory bodies from over 120 jurisdictions that have day-to-day responsibility for securities regulation and the administration of securities laws. IOSCO uses its policy papers as guidelines for securities supervision all over the world. Therefore, documentary research of IOSCO’s policy papers provides a reliable database for evaluation of post-crisis development in the global securities regulatory framework. The data source meets all four criteria of documentary research: accessibility, authenticity, representativeness and accuracy (D. Bailey, 1994).

A database of 463 policy papers published by IOSCO was investigated in this research. The documents studied are classified into six groups as presented in Table A6.3.1.

Table A6.3.1. Categories of studied IOSCO’s policy papers

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective and Principles of Securities Regulations (5) and Assessment Methodology Papers (9)</td>
<td>14</td>
</tr>
<tr>
<td>Current Financial Crisis (7) and Emerging Risks (16)</td>
<td>23</td>
</tr>
<tr>
<td>Policy papers on Information Disclosure (50); Issuer Accounting, Audit and Disclosure (55); Unregulated Markets &amp; Product (11); and Securitization (12)</td>
<td>128</td>
</tr>
<tr>
<td>Policy papers on Regulation of Secondary Markets (68); Short Selling (4); OTC Markets and Derivatives Trading (41); Clearing &amp; Settlement (48)</td>
<td>161</td>
</tr>
<tr>
<td>Policy papers on Regulations of Market Intermediaries (81) Corporate Governance (8) Investment Management (95) Hedge Funds (13)</td>
<td>199</td>
</tr>
<tr>
<td>Policy Papers on Credit Rating Agencies (27) Auditing (15) Unregulated Entities (6)</td>
<td>48</td>
</tr>
<tr>
<td>Total</td>
<td>463</td>
</tr>
</tbody>
</table>

Source: developed for this research, data covers the period 2008-3/2016

Among the database, the most important are five versions of IOSCO Objectives and Principles of Securities Regulation (hereafter referred to as the IOSCO Principles). The policy documents are a kind of “constitution” that expresses the ideologies of IOSCO member securities regulators about market supervision. It also provides a general framework for the securities regulation, including the regulation of: (i) securities markets; (ii) the intermediaries that operate in those markets; (iii) the issuers of securities; (iv) the entities offering investors analytical or evaluative services such as CRAs; and (v) the sale of interests in, and the management and operation of, collective investment schemes (IOSCO, 2013c).

The IOSCO Principles was first adopted by the IOSCO Presidents’ Committee in 1998 in response to the East Asia Financial Crisis emerged in 1997 as “a valuable source of information on principles that underlie effective securities regulation and on the tools and techniques necessary to give effect to those principles...” (IOSCO, 2013c, p. 13). In 2002 and 2003, the Principles were revised and a detailed Methodology for assessing implementation of the Principles was adopted. In early 2008, fourth version of the Principles was adopted to include updates and references from work of the IOSCO from 1998 to 2008. In 2010, the IOSCO Presidents’ Committee adopted a revised set of 38 principles, drawing on developments in securities regulation and the lessons from the 2008 GFC.
The IOSCO Principles are the key standards and codes highlighted by the FSB as essential to sound financial systems and deserving priority implementation. The IOSCO Principles form the basis of an IOSCO-directed, comprehensive self-assessment exercise and are continuously used by the World Bank and the IMF in the Financial Sector Assessment Program (Table A6.3.2).

**Table A6.3.2. Lists of regulatory policy themes arising from post-crisis IOSCO public documents**

<table>
<thead>
<tr>
<th>No.</th>
<th>Policy themes</th>
<th>No. of documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Principles and standards of Securities Regulation; Assessment methodology of the Principles</td>
<td>37</td>
</tr>
<tr>
<td>2.</td>
<td>Enhancing of Issuer Accounting, Auditing, disclosure and corporate governance</td>
<td>13</td>
</tr>
<tr>
<td>3.</td>
<td>Strengthening of secondary markets regulation and market surveillance</td>
<td>14</td>
</tr>
<tr>
<td>4.</td>
<td>Financial Market infrastructure</td>
<td>09</td>
</tr>
<tr>
<td>5.</td>
<td>Strengthening of market intermediaries supervision and risk-based approach</td>
<td>21</td>
</tr>
<tr>
<td>6.</td>
<td>Reinforcement of regulation over investment management funds and hedge funds</td>
<td>25</td>
</tr>
<tr>
<td>7.</td>
<td>Promoting strict regulation of Credit Rating Agencies</td>
<td>13</td>
</tr>
<tr>
<td>8.</td>
<td>Strengthening of Accounting and Auditing standards and regulation of auditors</td>
<td>10</td>
</tr>
<tr>
<td>9.</td>
<td>Recommendation of regulation over pre-crisis unregulated entities, products and markets</td>
<td>08</td>
</tr>
<tr>
<td>10.</td>
<td>Emerging risks, systemic risks and roles of securities regulator in macro-prudential supervision</td>
<td>15</td>
</tr>
<tr>
<td>11.</td>
<td>Reinforcement of regulation over securitization, OTC markets and derivatives trading</td>
<td>29</td>
</tr>
<tr>
<td>12.</td>
<td>Policy issues and implications from 2008 GFC</td>
<td>05</td>
</tr>
<tr>
<td>13.</td>
<td>Emerging Markets</td>
<td>15</td>
</tr>
<tr>
<td>14.</td>
<td>Policy issues regarding clearing and settlement system</td>
<td>18</td>
</tr>
<tr>
<td>15.</td>
<td>Principles of disclosure and transparency</td>
<td>10</td>
</tr>
<tr>
<td>16.</td>
<td>Financial Market Benchmarks</td>
<td>05</td>
</tr>
<tr>
<td>17.</td>
<td>Shadow Banking</td>
<td>04</td>
</tr>
<tr>
<td>18.</td>
<td>Retail Investors Education and Protection</td>
<td>09</td>
</tr>
<tr>
<td>19.</td>
<td>Regulatory Cooperation and Joint Forums</td>
<td>40</td>
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</tbody>
</table>

**Source:** developed for this research, data covers the period 2008-3/2016

The other policy papers are the extension of Principles in all areas of securities regulation, providing the international regulatory benchmarks for all securities markets (IOSCO, 2016a). The set of 463 policy papers include two categories of 186 documents that were published since the incidence of 2008 GFC and 277 pre-crisis documents that provide a rich database for in-depth analysis of the policy evolution of SMS post-crisis. There are 19 key policy reform themes have been arisen from 186 new policy documents relating to securities supervision published by IOSCO after the crisis (from 2008 to 2015). The number of policy documents include the final reports, peer reviews and other reports but exclude version of the reports for consultation because content of the report were then reflected in the final reports. See Table A6.3.2 for the policy themes and Table 6.7 Appendix 6 for the list of policy papers and documents.

Data collected from IOSCO’s source is used for comparison with data collected from policy papers, legal documents and research papers from 101 securities regulators to create a useful database for triangulation of findings from qualitative exploratory and quantitative empirical researches in previous stages.
2. Policy papers, legal documents of securities regulators and research papers

Websites of 101 securities commissions and financial regulators, including of 99 full members of IOSCO and 02 IOSCO observers, have been visited to seek for information about financial regulatory structure, aspects of SMS, and updates of policy papers and legal documents that reflect policy reform after the 2008 GFC. The database also meets all four criteria of documentary research, namely accessibility, authenticity, representativeness and accuracy (K. D. Bailey, 1994) because the information provided is an official source of data for regulation and public reference.

Besides, this research also use information from 486 documents, including annual reports of the securities regulators, research papers of think tanks and international organizations such as Asian Development Bank (ADB), IMF, OECD and World Bank. The documents provided an important source of additional data for explaining four research issues that had been discovered by quantitative empirical research (see Table 6.7 Appendix 6 for list of researched documents).

Table A6.3.3. Websites, policy papers, legal documents, research papers of securities regulators and reports by international organizations studied in documentary research

<table>
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<td></td>
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<td>Annual Reports of securities regulators</td>
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<td>Financial System Stability Assessment - Country Reports of IMF</td>
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Source: developed for this research
APPENDIX 6
DATA SUPPORTING QUALITATIVE ANALYSIS AND FINDINGS

Table 6.1. List of key behavioural responses, biases and effects in financial decision making

<table>
<thead>
<tr>
<th>Key behavioural responses in financial decision making</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anchoring and adjustment – an initial value or starting point influences the final decision. The anchoring effect decreases but does not vanish with higher cognitive ability.</td>
</tr>
<tr>
<td>2. Choice preference – too many options inhibit or overwhelm selection decision making.</td>
</tr>
<tr>
<td>3. Confirmation bias – people use data selectively to agree or confirm their existing views. Investors with a stronger confirmation bias also exhibit greater overconfidence.</td>
</tr>
<tr>
<td>4. Conflict disclosure – disclosing a conflict of interest may make it more likely that the conflict will actually occur as it increases levels of trust.</td>
</tr>
<tr>
<td>5. Inertia – the default option becomes the de facto selection even if it is not the optimal choice.</td>
</tr>
<tr>
<td>6. Loss aversion – people more strongly prefer to avoid small losses than acquire larger gains. Loss aversion is not invoked when spending money that is within an intended budget for purchases, but only when operating outside the intended budget. Loss aversion can actually be a motivation to invest to the extent that when people perceive a loss, they become risk-seeking as opposed to risk averse. When assessing a situation from the perspective of a potential loss, “loss framing” will occur. An investor on a losing streak, for example, may well decide that greater risk is necessary to achieve their target.</td>
</tr>
<tr>
<td>7. Myopic loss aversion – combination of loss aversion and a tendency to evaluate outcomes frequently. This leads investors to be more willing to invest a greater proportion of their portfolio in risky assets if they evaluate their investments less frequently.</td>
</tr>
<tr>
<td>8. Overconfidence – people tend to trade frequently and hurt their own investment performance. Investors are more likely to be overconfident when they are less experienced as they learn about their true ability through experience. Investors with biased information-processing behaviour in virtual communities are likely to trade more actively and realize worse performance due to their overconfidence. Overconfident investors, who show a better than average bias, trade more frequently.</td>
</tr>
</tbody>
</table>

Other biases and effects related to financial decision making

| 10. Ambiguity aversion – the desire to avoid unclear circumstances, even when this will not increase the expected utility. |
| 11. Availability heuristic – people judge the frequency or probability of some events on the basis of how easily examples or instances can be recalled or remembered. |
| 12. Disposition effect – the propensity of an investor to sell winners too early and hold losers too long. |
| 13. Endowment effect – people demand a higher price to sell something they own than they are willing to pay for acquiring it. This effect may occur for goods |
whose possession is merely desired. The effect is reduced if a negative mood is induced before the good is acquired.
14. Framing effect – a decision is influenced by the phrasing or frame in which the problem is presented.
15. Fund-level inattention – the propensity to trade mutual funds around macroeconomic news events.
16. Herding – a phenomenon where many people take the same action. Information concerning the number of previous transactions in the market is particularly relevant to explain herding propensity among investors.
17. Illusion of control – the expectancy of personal success is inappropriately higher than the objective probability would warrant.
18. Inattention to earnings news – degree to which an investor does not trade a particular individual stock around earnings news.
19. Inattention to macroeconomic news – degree to which an investor does not trade any individual stocks around macroeconomic news events.
20. January effect – the tendency for excess share returns in the first few days of January.
21. Local bias – the propensity to select funds or stocks with headquarters close to the investor’s geographical location.
22. Lottery stock preference – the propensity to select stocks with lottery-like features (low price, volatile returns and skewed returns).
23. Narrow framing – the propensity to select investments individually, instead of considering the broad impact on the portfolio.
24. Present bias – the inordinate weight people place on costs and benefits that are immediate.
25. Regret – a human emotion that can influence decisions.
26. Representativeness – evaluation of the degree of correspondence between a sample and a population, an instance and a category, or more generally, an outcome and a model.
27. Risk aversion – when individuals have the same level of financial education, there is no gender difference in the level of risk aversion.
28. Small-firms effect – the shares of smaller firms have outperformed those of larger firms over a period of several decades.
29. Weekend effect – there appear to be abnormal returns on Fridays and relative falls on Mondays.

Source: adopted from IOSCO (2014g, p. 22)
Box. 6.1. Criteria for classifying supervisory structure of 101 researched jurisdictions

Criteria for classifying supervisory structure of 101 selected jurisdictions of this research was developed based on classification of financial supervisory architecture into four categories of integrated, functional, institutional, and twin-peaks by G30 (2008). However, in fact there are many jurisdictions that do not fall completely into one category. In order to recognize all the supervisory structural settings available at the present (as of March 2016), the same criteria used by G30 (2008) were used to define other categories, namely Hybrid, Partly Integrated with Twin-Peaks elements, Fully/Partly Integrated under central bank to ensure the consistency in this research.

**The Integrated Approach:** This is the structure in which a single universal regulator conducts both safety and soundness oversight and conduct-of-business regulation for all the sectors of financial services business (G30, 2008);

**Partly Integrated:** It is the structure in which a single regulator conducts both safety and soundness oversight and conduct-of-business regulation for more than one but not all the sectors of financial services business;

**The Functional Approach:** It is the structure in which supervisory oversight is determined by the business that is being transacted by the entity, without regard to its legal status. Each type of business may have its own functional regulator (G30, 2008). This setting can be named as sectoral structure where banking, insurance and capital market activities are regulated by separate regulators.

**The Institutional Approach:** It is the structure in which a firm’s legal status (for example, a bank, broker-dealer, or insurance company) determines which regulator is tasked with overseeing its activity from both a safety and soundness and a business conduct perspective (G30, 2008).

**Twin-Peaks approach:** It is a form of regulatory structure by objective, where there is a separation of regulatory functions between two regulators: the one that performs the safety and soundness supervision function and the other that focuses on conduct-of-business regulation (G30, 2008).

**Hybrid:** It is any setting that has characteristics of both Institutional and Functional approaches.

**Partly Integrated with Twin-Peaks elements:** This is the arrangement where there are two regulators participate into regulation and supervision of financial market. One of the regulators may be in charge of more than one sector. Among two regulators, one may be assigned the responsibilities of prudential supervision or market conduct oversight that cover the sector that is licensed and regulated by the other.

France is a typical example. Autorité des Marchés Financiers (AMF) is the securities regulator. Before 2010, insurance and banking sectors were regulated and supervised by two other regulators. However, in 2010, the French Prudential Supervisory Authority (ACPR) was established as regulator and supervisor of banking and insurance. In addition, ACPR is in charge of financial stability for the whole financial market while AMF is still securities regulator but its responsibilities were realigned to assume the job of a market conduct regulator. Supervision of securities market involves ACP and AMF under a twin-peaks-type model. France is identified as functional with Twin-Peaks elements in some literature (A. D. Schmulow, 2015). However, in this research, France is classified as partly integrated with twin-peaks elements to recognize precisely all the characteristics of the setting.

**Fully/Partly Integrated under central bank:** this is the fully or party integrated structure where Central bank takes the role of integrated regulator and supervisor.

**Source:** developed for this research
Table 6.2. SMS policy reform of 101 researched securities regulators in 2008-3/2016

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<td>PAR: post-crisis architecture reform: 1=no changes, 2=Strengthened power of regulator by new legislation, 3=Restructuring of regulator by realigning of responsibilities among department or setting up new departments, 4=Transformation from one to another structure by realigning responsibilities of current supervisory bodies, 5=New organizations were set up to participate in supervision, 6=Participating into regional supervisory body or set up national coordination network for supervision, 7=Transformation from one to another structure by setting up new supervisory body &amp; strengthened powers by new legislation, 8=Strengthened power by new legislation+restructuring/establishing new organization to participate into supervision, 9=Restructuring+participating into regional supervisory body/setting up coordination network for supervision, 10=Supervisory functions were moved from one to the other regulator, 11=New structure was proposed, 12= Non-applicable because the securities regulators were set up after the crisis</td>
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<td>IM: new/amendment legal document issued to strengthen supervision over market intermediaries</td>
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<td>MA: new/amendment legal document issued to strengthen macro-prudential supervision</td>
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<td>MC: new/amendment legal document issued to strengthen market conduct oversight</td>
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<td>SP: new/amendment legal document issued to strengthen supervision of securities products</td>
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<td>MI: new/amendment legal document issued to strengthen supervision of market institutions such as CRAs, auditors, CCP, stock exchanges</td>
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<td>SRO: new/amendment legal document issued to strengthen supervision over self-regulatory organizations</td>
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<td>IE: availability of investor education programs</td>
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<td>PS: paradigm shift in SMS philosophy was mentioned as impacts of the 2008 GFC in policy papers, annual reports</td>
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<td>IOSCO: Plan to implement of IOSCO policy recommendations</td>
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<td>Source: developed for this research, data covers the period 2008-3/2016</td>
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### Table 6.3. Post-crisis financial supervisory restructuring from one to another model by 24 selected jurisdictions in the period from 2008-03/2016

1. **Belgium**: *Institutional structure was transformed to twin-peaks (2011)*; Responsibilities of NBB and FSMA were redesigned in 2011. NBB is in charge of financial stability and prudential supervision of institutions and FSMA is in charge of market conduct supervision and prudential regulation of companies which are not regulated by NBB.

**Financial system structure**: The Belgian financial system is relatively large, concentrated, and interconnected with the rest of the world (IMF, 2013a). Central Bank is prudential regulator.

**Rationale for transformation**: “In the wake of the financial crisis, a process has been under way at both the national and the international levels to rethink the shape of the supervisory architecture for the financial sector. In various countries of the EU, in particular, there was a rapidly growing convergence on the need for a rapprochement between the micro- and the macro-prudential components of the supervision of financial institutions. Parallel to these European developments, in Belgium too the main lines were drawn for a new organization of supervision. We wish hereby to inform you of recent developments in this regard. In line with international developments, and building on the recommendations formulated by a national working group the Belgian government opted, in the Law of 2 July 2010, to develop the supervision of the financial sector toward a bipartite model known as the ‘Twin-Peaks’ model”. Cited from Press Release of FSMA and NBB on new model of supervision (FSMA & NBB, 2011, p. 1).

2. **New Zealand**: *Functional structure was transformed to twin-peaks (2011)*. The FMA is New Zealand’s financial conduct regulator. FMA was established on 1 May 2011 by the Financial Markets Authority Act 2011, in response to the need to address failures in New Zealand’s financial markets, which were exacerbated by the GFC. FMA proactively monitors and enforces securities legislation and works with the prudential regulator – the Reserve Bank of New Zealand (RBNZ) – as well as other regulatory and public sector enforcement bodies. Financial Markets Conduct Act 2013 (FMC Act) and the Financial Supervisors Act 2011, brought the majority of financial service providers into a supervisory relationship with the FMA (FMA, 2015).

**Financial system structure**: Previously dominated by publicly-owned banks, the sector is now almost fully in private, foreign ownership, Non-bank Financial Institutions (NBFIs) and securities markets have declined in importance and are now secondary players, as banks have expanded their range of activities. Central Bank is the prudential regulator (FMA, 2015).

**Rationale for transformation**: “The FMA is New Zealand’s financial conduct regulator. FMA was established on 1 May 2011 by the Financial Markets Authority Act 2011 (FMA Act), in response to the need to address failures in New Zealand’s financial markets, which were exacerbated by the GFC. The Government recognized that New Zealand required a single conduct regulator to proactively monitor and enforce securities legislation, as well as work with the RBNZ, the prudential regulator, and other regulatory and public sector enforcement bodies”. Cited from Annual Report 2012 of FMA (FMA, 2012, p. 12).

3. **Portugal**: *Functional structure with plan of transformation to twin-peaks model (2011)*. CMVM is the securities regulator. Via National Council of Financial Supervisors, CMVM took part in the operation of ESRB, National Committee for Financial Stability was set up in 2007. The Committee of Financial Innovation (CIF) was established at early 2011. The Committee centralizes and coordinates the involvement of the CMVM in matters related to financial innovation, notably within the complex financial products context (APB, 2015).

**Financial system structure**: Portugal has a developed finance system. Financial intermediation in Portugal is dominated by the banking sector (IMF, 2006a). Central Bank is in charge of banking supervision, will take the responsibility of prudential regulator in twin-peaks.

**Rationale for transformation**: Question: From your perspective, what are the most urgent reforms that need to be made to the system of financial regulation? *Answer*: “Create a more effective regulation and supervision system in Europe. In Portugal, just to improve the current model, transforming it in a
"twin-peaks" model based in two authorities: one in charge of prudential regulation; the other one in charge of what we call "behavioural" supervision covering relations between financial institutions and consumers”, Cited from Interview with Portuguese Secretary of State for Treasury and Finance Carlos Costa Pina (Pina, 2011).

4. South Africa: Functional transformed to twin-peaks (2014, transition is still in progress in 3/2016). The twin-peaks model of financial sector regulation will see the creation of a prudential regulator – the Prudential Authority – housed in the SAR, while the FSB will be transformed into a dedicated market conduct regulator – the Financial Sector Conduct Authority. The Financial Sector Regulation Bill (FSR Bill, December 2014) is the first in a series of bills toward the implementation of the twin-peaks model and it follows two policy papers that respond to lessons learnt from the 2008 GFC: A Safer Financial Sector to Serve South Africa Better (National Treasury, February 2011) and implementing a twin-peaks model of financial regulation in South Africa (Financial Regulatory Reform Steering Committee, February 2013).

Financial system structure: South Africa’s financial sector is large and sophisticated. NBIs hold about two-thirds of financial assets (IMF, 2014f). Central Bank (SARB) will be in charge of prudential supervision.

Rationale for transformation: “The new model will create a prudential regulator housed in the SAR, while the FSB will be transformed into a dedicated market conduct regulator. It is designed to streamline interaction between regulators and the financial services industry, with a more functional approach to regulation and supervision replacing the current industry silo-based approach. The implementation of the twin-peaks model in South Africa has two fundamental objectives: (i) Strengthen South Africa’s approach to consumer protection and market conduct in financial services and (ii) Create a more resilient and stable financial system. The prudential regulator’s objective will be to maintain and enhance the safety and soundness (or financial health) of regulated financial institutions, while the market conduct regulator will be tasked with protecting consumers of financial services, and promoting confidence in the South African financial system”. Cited from (FSB, 2014b, p. 19).


Financial system structure: Overall Spain’s financial sector is vibrant, resilient, highly competitive, and well supervised and regulated (IMF, 2006b). Central Bank is in charge of banking supervision and planned to take the responsibility of prudential supervision under twin-peaks models (CNMV, 2008).

Rationale of transformation: “Supervisory architecture reform is one of five key reforms to response to lessons learnt from 2008 GFC. The choice of twin-peaks model most suited to Spain situation because of both the simplicity of its institutional design and the fact that a single institution retains responsibilities of micro-prudential supervision and aggregate stability, which has a long tradition and major synergy in Spain. Cited from Introduction and Opening Remark by CNMV Chairman Julio Segura in Perspective on the Securities Market Supervision and Regulation–CNMV 20th Anniversary Commemorative Book-2010-ISBN:978-84-87876-88-0 which represents the main challenge of adaption of the CNMV fact in the short-term to respond to the GFC” (CNMV, 2008, p. 11).

6. United Kingdom: integrated structure was transformed to twin-peaks (2013). The Purdential Regulatory Authority (PRA) was created within Bank of England responsible for prudential regulation. FCA (Financial Conduct Authority), which is in charge of conduct regulation of all financial services firms took over FSC from 1 April 2013(FCA, 2013).

Financial system structure: The United Kingdom is both home and host to large domestic and international financial institutions (IMF, 2011d). Central Bank is in charge of prudential supervision (PRA)

Rationale for transformation: “Why change the FSA to the FCA? In the wake of the financial crisis, the Financial Services Act of 2012set out a new system for regulating financial services in order to protect and improve the UK’s economy. Our purpose is to make sure markets work well so that consumers get a fair deal. We: (i) maintain and ensure the integrity of the market (ii) regulate financial
services firms so that they give consumers a fair deal (iii) ensure the financial services market is competitive”. Cited from statement of FCA on its website (FCA, 2013).

7. United of Arab Emirates: functional structure with plan to transform to twin-peaks model (2012, transition is still in progress in 3/2016). A framework that brings about the implementation of a "twin-peaks" approach toward financial sector regulation by placing business conduct and investor protection functions with the SCA and prudential, safety and soundness functions with the U.A.E. Central Bank was initiated in 2012. New legal documents were issued to set up ground for twin-peaks supervision. The U.A.E. Securities and Commodities Authority (SCA) has issued its regulations for investment funds pursuant to Board Decision No. (37) of 2012 Concerning the Regulations as to Mutual Funds (Regulations). The legal document is significant as it marked the transformation to twin-peaks model in supervision of the jurisdiction(Arnold, 2012).

Financial system structure: Financial Sector is dominated by banks. Central bank is in charge of prudential supervision (IMF, 2013b).

Rationale for transformation: “A new agency will have daily oversight of financial services in the biggest shake-up of banking and finance in three decades. The change is part of a new banking law that aims to bolster regulation of the industry and reduce the risk of future banking crises…

…..The Government has decided to move to a twin-peaks regulation model. It will mean you have two regulators for the financial sector - a prudential regulator and a conduct-of-business regulator,” said Mazen Boustany, head of banking and finance at Habib Al Mulla, the law firm advising the Ministry of Finance as sponsor of the law. It is the central part of a broader tightening of bank lending practices in response to lessons learnt during the GFC, said Ismail Al Bloushi, chief manager at the general secretariat and legal affairs division of the central bank. Many banks faced trouble and we are addressing that.” Cited from (Arnold, 2012).

8. France: Functional structure was transformed to partly integrated model with twin-peaks elements (2010). Law n°2010-1249 of 22 October 2010 on banking and financial regulation provided the chairman of the French Financial Market Authority (AMF) with the authority to implement emergency measures to restrict the negotiations in the financial markets in the event of exceptional circumstances. The Law extends the competence of the AMF with respect to market abuse sanction and reporting of suspicious transactions to, in particular, certain derivative markets. The Law also creates Council in Charge of Regulating the Financial Sector and Monitoring Systemic Risk. Supervising authorities for the banking and insurance sectors merged into a new single supervisory authority, the French Prudential Supervisory Authority (ACPR) which was granted enhanced powers, including new powers to issue recommendations and take positions (AMF & ACPR, 2015).

Financial system structure: France’s financial system is large, sophisticated, and integrated both vertically and internationally. It is dominated by five banking groups that are regionally and globally systemic and among the largest in the world. Central Bank is in charge of prudential supervision (IMF, 2012).

Rationale for transformation: “The ACPR, established in 2010, is an independent administrative authority attached to the Banque de France. It is responsible for authorising and supervising banks and insurers with a view to upholding customers’ interests and maintaining the stability of the financial system. The ACPR which is an independent administrative authority, is charged with preserving the stability of the financial system and protecting the customers, insurance policyholders, members and beneficiaries of the persons that it supervises. The AMF and ACPR also collaborate within their respective areas of jurisdiction to coordinate the regulation and oversight of investment services providers. The AMF Chairman sits on the ACPR Board. Improving investor protection through a Joint Unit: In view of the increasing overlap between different types of savings media (particularly life insurance and investment funds) and the emergence of market participants capable of distributing a comprehensive range of insurance and banking products, the AMF and the ACP set up a Joint Unit in 2010. This close collaboration allows the two authorities to enhance oversight of financial product marketing in France to improve investor protection. Improving investor protection through a Joint Unit”, Cited from (AMF & ACPR, 2015).
9. Germany: Fully integrated structure was transformed to partly integrated model with twin-peaks elements (2013). BaFin was the integrated regulator of financial market, including banking. However, in the new mechanism, Bundesbank took over the responsibility of banking regulation. With the entry into force of the Financial Stability Act on 1 January 2013, the Financial Stability Committee was established, consisting of three representatives from the Federal Ministry of Finance (BMF), three from BaFin, three from the Bundesbank, and one representative (in advisory capacity) from the Federal Agency for Financial Market Stabilization (FMSA). The Bundesbank was given the task of macro-prudential supervision of the German financial market. BaFin continues to be responsible for micro-prudential supervision. The Financial Stability Act obliges BaFin and the Bundesbank to inform each other of observations, conclusions and assessments necessary to fulfil their respective oversight duties (BaFin, 2013, p. 13).

**Financial system structure:** Germany’s financial system is complex and dispersed. The banking sector accounts for the majority of total financial sector assets, serving as a backbone to the German industry, which is more reliant on bank financing than that in many other advanced economies (IMF, 2011a). Central Bank is in charge of prudential supervision

**Rationale for transformation:** The German government’s Coalition Agreement proposes to significantly extend BaFin’s role in the area of consumer protection. Is this the right thing to do?

Answer: “To be precise: the aim is to further strengthen our existing consumer protection role. Collective consumer protection and public interest activities have always been part of our mandate, even though a different impression is often given in the media. Solvency supervision and consumer protection are not necessarily mutually incompatible. In fact, efficient solvency supervision is one of our most effective consumer protection weapons. We also have a number of other efficient consumer protection tools at our disposal, such as in the areas of securities and insurance supervision. Nevertheless, it is true that we need to look closely at more than whether and how we wish to regulate the unregulated capital market. We need to ask ourselves at a fundamental level if and how we want to introduce additional regulations governing product development, the suitability of certain products for certain investors, and how financial investments are marketed. We will contribute to this debate – both here in Germany and in the relevant European bodies. Banking, insurance and securities supervision are currently undergoing radical change. Large scale reforms – some of them resulting from the lessons learnt during the financial crisis – have been adopted or are in the pipeline”. Cited from (BaFin, 2013, p. 13).

10. Barbados: functional structure was transformed to partly integrated model (2011). The Financial Services Commission (FSCB) is an integrated regulatory body, established on April 1, 2011 by virtue of the Financial Services Commission Act, 2011. It represents a consolidation of the regulatory and supervisory functions previously conducted by the Supervisor of Insurance and Pensions, the Securities Commission and the Cooperatives Department, insofar as it relates to credit unions. The BFSC is therefore responsible for supervising and regulating entities in the insurance, occupational pensions, credit unions and securities sectors (FSCB, 2011).

**Financial system structure:** Relatively well developed financial system, including a large offshore sector. The onshore system is dominated by large, regionally active banks (IMF, 2014a). Central Bank is in charge of banking supervision

**Rationale for transformation:** “In the years immediately following the crisis, many of the structures set up in the wake of the crash were mainly involved in identifying and minimizing further potential shocks to the system and developing policy and legislation. Significant amounts of new legislation have been crafted both globally and across the region, and have been delegated to national regulators. National regulators like the FSCB have typically retained or enhanced all their existing powers and areas of discretion and flexibility, but now have additional responsibility to ensure that the new global requirements set by standard setting bodies are introduced and complied with by registrants. The FSCB’s obligation is to ensure that Barbados is compliant with these new standards. New legislation and regulations will, particularly in the early years, put very considerable demands on stakeholders and the resources of the FSCB. New systems always take time to be introduced and, in the complex world of financial services, the FSCB, industry representative bodies and individual firms will have to digest
a range of issues, meanings, interpretation and purpose. With the introduction of a risk-based framework, the FSCB aims to place the highest level of scrutiny on those entities that pose the greatest level of risk to the system. In doing so the FSCB is able to efficiently use its resources and does not place undue or unreasonable demands on those entities less able to deal with them”. Cited from (FSCB, 2014, pp. 1, 9).

11. Bolivia: Institutional structure was transformed to fully integrated and then partly integrated (2009). The Financial System Supervisory Authority (ASFI) was put in charge of the consolidated supervision of all financial intermediaries (banks and non-banks), as well as the insurance and securities market. Since its creation in early 2009, ASFI has continued expanding the supervisory and regulatory perimeter to include cooperatives and other financial institutions. In the area of prudential regulation, ASFI introduced counter-cyclical provisioning requirements in addition to specific and generic provisioning requirements (IMF, 2010a) However, in 2012, APS the Insurance and Pension Funds Authority was separated from SAIFI.

Financial system structure: Main players in the financial system are the commercial banks. About 50% of the financial system’s assets are held by commercial banks; 28 percent by the new public pension fund; and 18 percent by other deposit taking institutions. Central Bank does not involved in supervision (IMF, 2010a).

12. Egypt: Institutional was transfromed to partly integrated model (2009). The Egyptian Financial Supervisory Authority was established in accordance to law 10 of the year 2009. The Authority is responsible for supervising and regulating non-banking financial markets and instruments, including the Capital Market, the Exchange, all activities related to Insurance Services, Mortgage Finance, Financial Leasing, Factoring and Securitization. Institute of Financial Service and the Egyptian Institute of Directors are to be set up (ESFA, 2009).

Financial system structure: Financial system is dominated by bank. Central bank is in charge of banking supervision (USAID, 2007)

Rationale for transformation: “(i) Stability and Integrity of non-banking financial markets (ii) Regulation and development of non-banking financial markets (iii) Protecting investors & participants rights (iv) Issuing various means, systems, rules and regulations which ensure efficiency and transparency of these markets”. Cited from (ESFA, 2009).

13. Romania: Institutional structure was transformed to partly integrated model (2012). Emergency Ordinance No. 93/2012 on the establishment, organization and operation of the Financial Supervisory Authority was promulgated in 2012 to set up FSA by taking over responsibilities and powers of the National Securities Commission (CNVM), the Insurance Supervisory Commission (CSA) and the Private Pension System Supervisory Commission (CSSPP) (AFS website).

Financial system structure: The Romanian financial system is dominated by foreign-owned commercial banks. Banks account for 83 percent of total assets of the financial system. Central banks is in charge of banking supervision (IMF, 2010c)

Rationale for transformation: “The financial crisis of recent years highlighted the vulnerabilities of both the institutional and organizational architecture of markets and of the regulatory and supervisory activity thereof. Reform of business models and of regulatory and supervisory practices is done slowly and over time. The Financial Supervisory Authority (FSA) was established in Romania in this dynamic of re-construction of the architecture and consolidation of the regulatory and supervisory mechanisms of markets at the European level. One of the main reasons that led to the amalgamation of the three supervisory authorities into one was the formation of a better and more unitary supervisory framework of markets, institutions, non-banking financial instruments and activities. The purpose of the new framework was to make all participants in the national non-banking financial system responsible, individually and collectively, to better allocate resources and to achieve a fair competitive environment for the participants in the financial markets. Also, through the establishment of FSA, the prerequisites for the implementation and application of a uniform set of supervisory rules for non-banking financial markets are created, favouring the implementation of the European supervisory authorities’
recommendations and the improvement of the participation of Romania in the activities of such bodies”. Cited from (AFS, 2014, p. 9).

14. El Salvador: Institutional structure was transformed to integrated model (2011). The transformation was approved by Legislative Decree No.592 dated 14 January 2011, the new Law on Supervision and Regulation of the financial system, legal framework governing the Superintendence of the Financial System as a single supervisory body, which integrates the functions of the Superintendence of the Financial System, pensions and securities (SSF, 2015).


Rationale for transformation: “Monitoring the financial system under an integrated approach to help preserve stability and ensure the efficiency and transparency of it, cooperating with the protection of the user population and economic and social development approach.” The Superintendence is responsible for overseeing the individual activity and consolidated financial system members and others, operations or entities that send laws; for the exercise of such powers counted operational independence, transparent processes and resources for plunged their duties” (art. 3 of the Law on Supervision and Regulation of the Financial System, first paragraph). Cited from (SSF, 2015).

15. Indonesia: Functional structure was transformed to fully integrated model (2013). Indonesian Financial Services Authority (OJK) took over regulatory and supervisory functions in capital markets and non-bank financial institutions from Bapepam-LK at the end of 2012, followed by the transfer of Bank Indonesia’s responsibilities for the supervision and regulation of the banking sector at the end of 2013 (OJK, 2014, p. 1).

Financial system structure: Indonesia’s financial sector is small relative to peer countries and is dominated by banks, accounting for 50 percent of GDP and 80 percent of the financial system. Central Bank does not involve in supervision (IMF, 2010b).

Rationale for transformation: “Financial Services Authority (OJK) has begun to operate since early 2013. The establishment of OJK extends broader horizons for the financial services industry by uniting the regulation and supervision of the Capital Market and Non-Bank Financial Industry (previously under the Capital Market and Financial Institution Supervisory Agency, Ministry of Finance) along with the Banking Industry (from Bank Indonesia) under a single authority. The OJK has a great responsibility toward the economy of Indonesia because of the two overarching mandates, namely the integrated regulation and supervision of all activity in the financial services sector, as well as Education and Consumer Protection. We are also grateful that amidst global economic conditions shrouded in ubiquitous uncertainty that undermined the domestic economy, OJK is still able to implement its function and duties effectively”. Cited from (OJK, 2014, p. 1).


Financial system structure: Korea’s financial sector is large and diversified. Central Bank is not involved in supervision (IMF, 2014e).

Rationale for transformation: “The Financial Services Commission was established in 2008 after a series of changes in Korea’s financial supervisory system. In the wake of the 1997 Asian Financial Crisis, there was a growing need for an integrated supervisory authority to oversee the financial industry. The Financial Supervisory Commission, the predecessor to the current Financial Services Commission, was founded in April 1998 as a single supervisory authority integrating financial supervisory functions of the former Ministry of Finance and Economy - currently Ministry of Strategy and Finance, MOSF - and the Bank of Korea. In January 1999, the Financial Supervisory Service (FSS) was founded under the guidance and supervision of the FSCK to carry out examination of financial
institutions along with enforcement and other oversight activities as directed or charged by the FSCK. The Act for the Establishment of Financial Services Commission Under the Amendment of the Act for the Establishment of Financial Services Commission which was enacted on Feb. 29, 2008, the Financial Services Commission was established by integrating the Ministry of Finance and Economy's financial policy function and the Financial Supervisory Commission's supervisory policy function to proactively deal with rapidly changing financial environment characterized by conglomereration, financial convergence, and globalization while separating policy making and execution functions so as to enhance the responsibility of financial administration, thereby laying the groundwork for the advancement of the Korean financial Supervisory industry”. Cited from (FSCK, 2008).

17. Switzerland: functional structure was transformed to fully integrated model (2009). The Swiss Federal Banking Commission (SFBC), the Federal Office of Private Insurance (FOPI) and the Anti-Money Laundering Control Authority were merged into the Swiss Financial Market Supervisory Authority FINMA on 1 January 2009. FINMA commenced its activities on 1 January 2009, the Swiss Parliament granted it a greater degree of independence than its three predecessor institutions. FINMA's power of enforcement was extended by the revised Stock Exchange Act in 1 May 2013 (FINMA, 2013).

Financial system structure: Switzerland has a diverse financial sector that is systemically important to global markets. It is home for two largest banks in the world. Central Bank of Switzerland is not involved in supervision (IMF, 2014b).

Rationale for transformation: “Since 1 January 2009, the SFBC has been integrated in the Swiss FINMA. The reason why FINMA was set up as an integrated financial market regulator had nothing to do with the 2008 GFC. Nonetheless, the present structure of FINMA is an advantage when it comes to the demanding job of dealing with dynamic and increasingly complex financial markets. As a direct consequence of the financial market crisis FINMA is currently developing the supervisory approach further in concrete projects and is expanding its supervisory expertise in specific areas. Practical experience gained in senior finance and risk management positions is increasingly in demand”. Cited from (FINMA, 2009b).

18. Georgia: Integrated structure under FSA was transformed to fully integrated under central bank (2009) and then partly integrated under central bank (2013). In 2008 Georgian Financial Supervisory Agency (GFSA) was set up as the supervisor of the whole financial sector- commercial banks, microfinance institutions, credit unions, foreign exchange bureaus, money transfer entities, insurance companies and the securities market. However, in December 2009, the Parliament of Georgia has changed the financial sector legislation – the supervisory function over entire financial sector was transferred to the National Bank of Georgia (NBG) and the GFSA was abolished. In 2013, Georgia legislation was changed again to separate Insurance State Supervision Service of Georgia and turned it from the subdivision (department) of National Bank of Georgia to Insurance State Supervision Service of Georgia (LLPL) and become an independent national regulatory body (NBG, 2014).

Financial system structure: Banking system is small relative to the size of the economy, the two largest banks have an outsized role in the economy. Banking system is growing fast. The size of the capital market is negligible. Central Bank is in charge of supervision of securities and banking sectors (IMF, 2014c)


19. Hungary: Integrated structure under FSA was transformed to integrated model under central bank (2013). The Hungarian Financial Supervisory Authority (HFSA) has been no longer exists since the 1st October, 2013. Central Bank of Hungary is the financial supervisory authority in Hungary (NBH, 2015)
Financial system structure: Banks represent two-thirds of all institutional assets in the financial system and have substantial presence in all markets of financial intermediation but they also own major stakes in the capital market, insurance and fund sectors (Kálmán, 2015). Central bank is in charge of supervision of all three sectors.

Rationale for transformation: “At its session on 16 September 2013, the Parliament adopted the draft legislation on the Magyar Nemzeti Bank which decided to integrate the financial market supervision function into the central bank. Having drawn conclusions from the financial crisis, with this Act the legislator created a central bank which, within the framework of a single institution, guarantees the stability of the financial system and the functioning of individual financial institutions. The negative repercussions of the financial crisis in Hungary and the best practices of several EU Member States have both demonstrated that the harmony between macro and micro level supervision is indispensable for the prevention and resolution of individual or systemic financial crises. As a result of this integration, the MNB acquired a comprehensive information base pertaining to individual institutions, which improved the conditions for macro-level decision-preparation and resolved the previous contradictions surrounding regulatory actions taken vis-à-vis the financial intermediary system. With the comprehensive set of instruments available to the MNB, the identification, prevention, monitoring and control of the systemic risk factors threatening the stability of the financial system and the individual risks of specific institutions have become more harmonized and thus more efficient”. Cited from (NBH, 2014, p. 9).

20. Ireland: Institutional structure was transformed to integrated model under central bank (2010). The Central Bank Reform Act 2010 created the new single unitary body, the Central Bank of Ireland, which replaced the previous related entities, the Central Bank and the Financial Services Authority of Ireland and the Financial Regulator. The Act commenced on 1 October 2010. Central Bank Supervision and Enforcement Act 2013 has significantly strengthened and standardized its regulatory powers (CBI, 2014).

Financial system structure: The Irish financial system can be described as bank-based as against being market-based. Central Bank is in charge of all three financial sectors (Ononugbo, 2015)

Rationale for transformation: “The Central Bank will be responsible for both the supervision of individual firms and the stability of the financial system generally. The purpose of the new organization and the proposed statutory objectives are: (i) The stability of the financial system overall; (ii) The proper and effective regulation of financial institutions and markets, while ensuring that the best interests of consumers of financial services are protected; (iii) The efficient and effective operation of payment and settlement systems; (iv) The provision of analysis and comment to support national economic policy development; and (vi) The discharge of such other functions and powers as are conferred on it by law. The changes to the regulatory structure are being brought about to help address deficiencies in the regulatory system that became apparent during the financial crisis. There are parallels with the new arrangements proposed at EU level designed to ensure greater cohesion between overall financial stability policy and the prudential supervision of individual institutions. The reforms will be supported by a significant expansion of regulatory capacity within the new Central Bank”. Cited from (CBI, 2010, p. 2).

21. Kazakhstan: Integrated structure under FSA was transformed to integrated model under central Bank (2011). In 2004 FSA was separated from National Bank of Kazakhstan. However, in accordance with the Decree № 25 of the President of the Republic of Kazakhstan as of April 12, 2011 functions and powers of the Financial Supervisory Agency were transferred to the National Bank of the Republic of Kazakhstan. Later, by virtue of the Decree № 61 dated April 18, 2011 it was formed Committee for the control and supervision of financial market and financial organizations of the National Bank of Kazakhstan (NBK, 2012).

Financial system structure: Banks dominate the financial system in Kazakhstan. The banking sector consists of 38 commercial banks, which account for 77 percent of total financial system assets and 44 percent of GDP. Central Bank supervise all three financial sectors (IMF, 2014d).

Rationale for transformation: “In order to develop macro-prudential approach in Kazakhstan, it would be required to increase coordination of efforts of monetary, fiscal and supervision bodies to
work out macro-prudential financial policy, directed at prevention of negative influence on the financial system of internal systemic risks and macroeconomic risks…. Current crisis and many previous breakdowns showed that it is not possible to avoid them in deregulated financial systems. It was realized the necessity of more integrity and effective regulation……regulation shall be oriented on types of activities, rather than on an organization. In order to prevent systemic crisis in future, it is supposed to revise mechanisms of regulation of separate financial institutes according to sources of funding and types of activities, and to increase monitoring of risks. Besides, for the purpose of ensuring financial stability in the country it is envisaged to rationalize legislation through including additional mechanisms of prevention of risk concentration beyond control of the supervision authority” Cited from (NBK, 2010, pp. 3, 4).

22. Lithuania: Institutional structure was transformed to integrated model under central bank (2012). By the decision of the Seimas, since the beginning of 2012 the supervision of financial institutions has been concentrated in the Bank of Lithuania. In order to make this function of particular importance to the state more effective and less expensive for the budget, the Securities Commission and the Insurance Supervision Commission have been wound up and their functions have been transferred to the central bank. Since 1 January 2015 Lithuania has been part of the European banking union which is being created and has joined the Single Supervisory Mechanism (LB, 2013).

**Financial system structure:** Financial system is dominated by bank. Central bank is involved in supervision of intermediaries in all three sectors (LB, 2013).

**Rationale for transformation:** “In recent years, particular attention has been paid to the strengthening of the supervision of the entire credit unions sector, as not every credit union managed to curb the risk related to its strong development. For five credit unions the authorisations have been revoked due to the too risky nature of their activities. By the decision of the Seimas, since the beginning of 2012 the supervision of financial institutions has been concentrated in the Bank of Lithuania. In order to make this function of particular importance to the state more effective and less expensive for the budget, the Securities Commission and the Insurance Supervision Commission have been wound up and their functions have been transferred to the central bank. It now supervises commercial banks and other credit and payment institutions, the securities and insurance markets, gives a sharper focus on the prevention of issues, their identification at an early stage”. Cited from Bank of Lithuania website (LB, 2013).

23. Russia: Hybrid, partly functional and partly institutional structure was transformed to integrated model under central bank (2013). FSFM was sole regulator of securities market professionals and has certain company law responsibilities and regulates certain securities functions performed within banks, but not regulators of pooled investment funds of banks. Central Bank of Russia was in charge of government bonds and Ministry of Finance (MOF) was in charge of auditing and accounting standards. As of 4 March 2011, FSFM assumed the functions of insurance regulation. In Sep 2013 FSFM was merged to Central Bank of Russia (CBR) and operates as an independent agency under CBR until 1/2015. Bank of Russia became a mega-regulator since 2013 (BOR, 2013, p. 2).

**Financial system structure:** All three sectors of financial market are small (IMF, 2011c). Central Bank is financial mega-regulator.

**Rationale for transformation:** “In relation to the amendments introduced in 2013 to a number of federal laws, the Bank of Russia has been granted the authority to regulate, control and oversee the financial markets. The objectives of the Financial Markets Service set up within the Bank of Russia included the development of the financial market and the fostering of a competitive environment, protecting the rights and legal interests of shareholders, investors, insurers and insured parties, and monitoring compliance with the Russian Federation legislation to counter the illegal use of insider information and market manipulation”. Cited from (BOR, 2013, p. 13).
24. Uruguay: Functional structure was transformed into integrated model under central bank (11/2008). All financial supervisors were integrated into a single agency inside the Central Bank of Uruguay (BCU)—the SSF, responsible for regulating and supervising 486 heterogeneous institutions covering all sectors of financial intermediation. New Financial Stability Council (CEF)-established in 2011, is designated as both safety net and macro-prudential coordinator. It brings together all institutions that play a principal role in crisis management: the Minister of Economy and Finance, the President of the BCU, the Superintendent of Financial Services, and the President of the Deposit Guarantee Corporation (COPAB), which acts as secretariat to the CEF, and has a Technical Committee to prepare analysis and reports in which each of the bodies is represented (BCU, 2012).

Financial system structure: Uruguay’s financial system is characterized by an unusual set of structural factors. All three sectors are small, but liquid, highly dollarized. State-owned financial institutions dominate the financial system. Central Bank is in charge of supervision of all three sectors (IMF, 2013c).

Rationale for transformation: Objective of integration of financial supervision into BCU: (i) improve the BCU’s autonomy, (ii) create an agency to protect bank savings deposits, and (iii) improve the effectiveness of the supervision of the different agents that operate in the financial market. Cited from (BCU, 2010).

Source: developed for this research, data covers the period 2008-3/2016

1. **Argentina**: The Investor Protection and Financial Education Division assists the Securities Commission (CNV) in executing its responsibility for investor protection, working toward an ethical and sustainable growth of the Capital Markets via the Financial Education. The Division is concerned primarily with promoting the Financial Education, and as part of a National Strategy it is developing a Strategic Plan for Financial Education and proposing the creation of a legal institution to strengthen the plan.

2. **Australia**: ASIC has a dedicated consumer web site which provides information about financial products and services and information on how to avoid scams and swindles. ASIC, which provides an outline of their consumer education strategy on their web site, also communicates directly with consumers through investor forums across the country. ASIC's dedicated consumer web site can be found at: www.moneysmart.gov.au/. Beside, investor education activities are carried out through Australian Investors Association (AIA), Australian Shareholders Association, Australian Stock Exchange (ASX), Investors Education Association (IEA).

3. **Austria**: Austrian Nationalbank (OeNB) Financial Cockpit: The provision of financial education, in particular the relationship between risk and return in investments, is the focus of the OeNB Financial cockpit.

4. **Bahamas**: Investor education events are organized by securities regulators. Information of investor education events are available on its website. Besides, investor education materials are made available on the website too.

5. **Bangladesh**: Investors education programs for general investors are usually held twice a month, usually at the end of 2nd and 4th week of each month. Bangladesh Securities and Exchange Commission (BSEC) also conducts another investor education program each month exclusively for women investors. Each program is two-day long covering various topics related to the capital market.

6. **Brazil**: The Brazilian Securities Commission (CVM) has set up an Investor Education and Assistance Program that holds town meetings for the general public around the country in places like São Paulo, Brasília, and Fortaleza. The program also produces brochures, booklets, investment guides, and has a toll-free number, among other resources available for the individual investor.

7. **France**: Ecole de la Bourse: Sponsored in part by Euronext, this private school was established in 1997 to provide training seminars for retail investors in 50 different cities throughout the country as well as online information about investing, financial markets and financial instruments. Listed firms in France also offer classes to their shareholders using the Ecole de la Bourse's facilities and training materials. The Ecole de la Bourse also offers individualized courses covering economics and investment topics at workplaces and other locations. The web site for the school can be found at: www.ecolebourse.com

8. **Georgia**: The Consumer Protection Division of the NBG has utilized moral suasion and developed basic principles for the preparation of advertisements by commercial banks. As a result of the joint efforts of the Consumer Protection division and commercial banks, advertising materials for retail credit largely converged around the aforementioned principles. With equity markets as the model, the Stock Market Game™ is designed to give Georgia teachers a tool for showing students how scarcity, trade, opportunity cost, voluntary exchange, price incentive, specialization, productivity, and many other economic concepts play out in financial institutions they hear about in the news almost daily.

9. **Ghana**: Strategic agenda of targeted public awareness and education program to enhance public understanding and participation in the capital market was taken in 2014.

10. **India**: Realizing the need of the current market scenario and investor requirement, the Committee on Financial Markets and Investors' Protection of The Institute of Chartered Accountants of India (ICAI) has published a "Handbook for Investing & Investor Protection." This publication provides information on investment process, rights of investor, commodity and currency market, clearing and settlement, grievances, arbitration aspects, etc. The contents of the book are simple and very precise and were written keeping in view the interest of investors at large.
### Jamaica
The FSC has a critical consumer protection role since by law it exists for the purpose of protecting the users of financial services. We at the FSC have observed certain economic trends, consumer behavioural patterns, as well as the threat posed by unregulated financial organizations, all of which serve to convince us that there is a critical need for Jamaica to urgently establish a coordinated and comprehensive mechanism to impart financial education; in other words there is need now for a Jamaican National Financial Literacy Program (NFLP).

### Japan
Investor education is conducted by Committee for the Promotion of Financial Education in Japan, established by the CCFSI (June 2013): (1) Define what to be learnt at what age group; (2) Promote the mutual linkage of websites of relevant organizations and promoting the CCFSI’s website as the first access point; (3) Improve the functions of the diagnoses of life planning on the CCFSI’s website.

### Kazakhstan
Academy of Regional Financial Centre of Almaty was established in accordance with the Concept of development of the financial sector of the Republic of Kazakhstan for 2007 - 2011 years, (i) Professional Certification Program (ACCA, FRM, CISI, CFA) (ii) Medium term and short-term programs (Kazakh and International) for all financial market participants (iii) Collaboration with leading universities to develop and implement Master programs (iv) Support financial literacy programs and others.

### Korea
The Korea Council for Investor Education (KCIE) has taken the initiative to provide a wide range of financial literacy programs, not only for general investors but also for children and teenagers. As part of this effort, the KCIE has published, based on its extensive experience and expertise in investor education, an English version of Investing for Your Dreams, a set of financial education materials consisting of a teacher's guidebook and a student's textbook.

### Latvia
In 2012, Financial and Capital Market Commission (FCMC) became the coordinating authority for financial awareness issues between the financial sector institutions and public institutions in continuing education programs.

### Lithuania
The financial education concept of the Bank of Lithuania was developed in 2012. Since early 2012 financial education, as an important element in seeking to ensure responsible usage of financial products, has become a priority field in the operation of the bank. A website for financial education was developed.

### Luxembourg
The Commission de Surveillance du Secteur Financier (CSSF) developed proposals to improve financial education in 2013. In 2013, the CSSF became a full member of the International Network on Financial Education (INFE), whose objective is to monitor the developments in financial education worldwide and the exchange of experiences between members.

### Malaysia
Launch of InvestSmartTM – a new suite of investor outreach programs premised on delivering easy-to-understand information via multiple platforms including Facebook, Twitter and a mobile app, which supplement existing modalities such as roadshows and workshops in 2014. Investor Blue Prints is has been conducted since 2007.

### Mauritius
The FSC Mauritius is mandated under Section 6 of the FSA to take measures for better protection of consumers of financial services and to promote public understanding of the financial system including awareness of the benefits and risks associated with different kinds of investment. FSC Mauritius had embarked on Financial Literacy Initiatives since 2011. On 24 November 2014, the FSC Mauritius launched the FSC Mauritius Consumer Education Website: www.Protectyourfinance.com.

### Mexico
Financial Inclusion is defined as the access and the usage of formal financial services under a proper regulation that will guarantee consumer protection and promote financial education to improve the financial capabilities of all population segments. The National Council for Financial Inclusion is the consulting, advising and coordinating organism through with the financial authorities in the country coordinate to formulate, implement and monitor the National Policy for Financial Inclusion. Securities and Exchange Commission (CNBV) is a member of the National Council for Financial Inclusion.

### Mongolia
Promoted "The year for financial education" in 2009. The TV serial "Training for Millionaire" had been released and launched by ADB project JFPR-9152 in 2014. The serial was for public financial literacy based on the true life.
<table>
<thead>
<tr>
<th>22. Montenegro</th>
<th>Public campaigns to educate the public about the functioning of securities markets; Organizing courses and seminars on capital markets, and Training for brokers, dealers and investment managers.</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. New Zealand</td>
<td>In 2015 FMA launched the investor capability strategy which sets out our approach to building investor understanding and confidence. The strategy addresses our strategic priority to improve investor decision making. Six investor education brochures available to be ordered or downloaded from the FMA website.</td>
</tr>
<tr>
<td>24. Nigeria</td>
<td>SEC embarked on significant investor education and capital market awareness activities including organizing quiz competitions for secondary schools in Nigeria and introducing capital market studies to the curricula of tertiary institutions. In 2011 SEC published a number of publications to further enhance the teaching of capital market studies already infused into six (6) subjects as approved by the National Council of Education. The Capital Market Literacy Master Plan Committee was set up in 2013.</td>
</tr>
<tr>
<td>25. Norway</td>
<td>Strategy 2010-2014 promoted investor and consumer protection and ensuring a broad public awareness of Finanstilsynet’s requirements and supervisory activities.</td>
</tr>
<tr>
<td>26. Oman</td>
<td>Capital Market Authority (CMA) educates investors of their rights and how to maintain them, in addition to education of directors and executives, and strengthening the ideas of saving and investment among minors, and constructive interface with various academic institutions, and educating the public of the importance of capital and insurance markets and how to deal with them. Capital Market Awareness Campaign in collaboration with Muscat Securities Market (MSM) and Muscat Clearing and Depository Company (MCDC) was conducted in 2011.</td>
</tr>
<tr>
<td>27. Pakistan</td>
<td>In collaboration with key capital market stakeholders, the Securities and Exchange Commission of Pakistan (SECP) has initiated an ambitious countrywide program for investor education. The exchanges, Mutual Funds Association of Pakistan (MUAP) and the Insurance Association of Pakistan (IAP) are collaborating as partners with the SECP to widen the coverage of the program. In addition, the SECP has introduced a centralized complaints handling system for providing investors a quick redress to their grievances. Launch of investor education portal Jamapunji.pk in 2015.</td>
</tr>
<tr>
<td>28. Palestine</td>
<td>Implemented financial awareness programs targeting specific groups and the general public, and participate in developing the national strategy for financial education in 2012</td>
</tr>
<tr>
<td>29. Philippines</td>
<td>Philippines Securities and Exchange Commission (PSEC) conducts investor education and financial awareness programs. To enhance its information and education campaign in the other sectors of our society, the SEC, through its Speakers Bureau, conducted briefings for students from different colleges and universities of the country on the following subjects: • Investment Scams and Internet Frauds • Anti-Money Laundering Act • Company Registration and Reportorial Requirements • Financial Reporting Process.</td>
</tr>
<tr>
<td>30. Portugal</td>
<td>National Plan for Financial Education was approved in 2011. The Gateway for the National Plan for Financial Education was established and financial education initiatives are undertaken. CMVM published the following documents for investor education: (i) &quot;Guide to Complex Financial Products&quot;, which includes a simple description of the operation and the major risks linked to certain products; (ii) &quot;Recommendations for Investors in Financial Instruments&quot;; (iii)&quot;Recommendations for Investors in Financial Instruments&quot;; (iv)&quot; Glossary of Terms relating to Financial Instruments&quot; and (v)&quot;CMVM Policy on Complex Financial Products&quot;.</td>
</tr>
<tr>
<td>31. Qatar</td>
<td>The regulatory authorities developed programs that raise public interest and awareness on topics such as (i) financial products, investment discipline/culture and financial planning; (ii) business conduct, product and service innovation; (iii) prudential standards of financial institutions; and (iv) managing conflicts of interest and corporate governance issues. The regulatory authorities will also focus on increasing financial literacy through education outreach initiatives and publishing consumer and investor information on their websites.</td>
</tr>
<tr>
<td>32. Russia</td>
<td>Work continued to establish the Bank of Russia’s Museum and Education Centre (BOR MEC). Concepts for three pilot projects for museum and education centres (financial literacy centres) in Russian regions were also prepared in 2014.</td>
</tr>
<tr>
<td>33. Rwanda</td>
<td>CMA initiated national public education program to facilitate an interactive and educative forum to enable and benefit market regulators, operators, practitioners, issuers and other general public investors in Rwanda and in the Diaspora. Conducted a number of public</td>
</tr>
</tbody>
</table>
education and awareness programs in form of workshops, print media articles, radio and television shows, and the annual University Challenge 2013.

| 34. Saudi Arabia: | CMA has opened many channels for investor awareness, including publishing and distributing awareness booklets; conducting awareness roadshows; adding an appendix of financial investments and securities markets in high school textbooks; developing CMA's media channel; and sponsoring workshops and training courses. |
| 35. Singapore: | Financial education to various segments of the community was undertaken though the media programs of Money SENSE. |
| 36. Slovakia: | Financial education and training, and customer protection was included in the Concept of Capital Market Development in 2014. |
| 37. Slovenia: | Investor education is conducted through info brochures for investors available on website of Securities Market Authority (SMA), including Money chains, prohibited acts of abuse of the market in financial instruments, "Forex - what do you need to know?", "Tips for investors in securities and financial instruments", Pitfalls of online investing, Risk of investing in complex products". |
| 38. South Africa: | Investor education was enhanced by the Financial Services Laws General Amendments Act, 2013 to provide, promote or otherwise support financial education, awareness and confidence regarding financial products, institutions and services.” |
| 39. Spain: | Financial Education Plan, which aims to promote the improvement of financial literacy in Spain was developed, including: Introduction of financial education content in the education system; Financial Education Program in schools; Assessment of financial literacy among young people; collaboration with various entities to conduct information and dissemination activities. |
| 40. Sri Lanka: | SEC further expanded its investor outreach programs with initiatives such as educational seminars, newspaper articles, studio discussions on radio and television etc. In addition, the SEC and Colombo Stock Exchange (CSE) in collaboration with Sirasa TV conducted Sri Lanka’s first ever Reality Quiz to continue to build awareness on the capital market. |
| 41. Sweden: | The Stockholm Stock Exchange provides courses to public schools regarding investment in equities, unit trust investment funds and other equity-related securities that are quoted on the stock exchange. It also provides various courses for the general public and publishes monthly a magazine that informs the public by means of educational articles regarding various financial products. |
| 42. Taiwan: | FSC Financial Consumer Protection Act was passed on 3 June 2011. The FSC set up the Moneywise website (URL: http://moneywise.fsc.gov.tw) as part of its Financial Literacy Campaign. The website provides the public an opportunity to acquire financial knowledge online. The FSC’s School and Community Financial Literacy Campaign continues. Since the campaign was first launched in 2006, the FSC has held a total of 3,739 activities around Taiwan, attracting a total attendance of over 710,000 people. |
| 43. Tanzania: | Public awareness and educational campaigns have been identified as one of the key avenue of attaining the promotional and developmental goals of Capital Market and Securities Authority (CMSA). CMSA targets that 50% of Tanzanian population will be capital markets-literate by the year 2016. |
| 44. Thailand: | The SEC set up the Financial Literacy Department to provide and promote the investing public’s education on savings and investment. The SEC Investor Education Plan 2011-2013 was strategically designed, with the key messages, outreach activities, and communication channels customized, to reach the target groups, i.e. existing and potential investors more effectively. The Accredited Investor Regime was introduced to separate high risk tolerant investors from retail investors in 2011. |
| 45. Trinidad and Tobago: | Investor Education Outreach Campaign. The Commission has launched a Facebook page which provides information to the ordinary investor about the role of the Commission, current initiatives to protect the investor, information on their rights and responsibilities, financial planning and general investing tips. YouTube videos tips are also embedded in this medium. This platform was launched in July 2012 and has amassed more than nineteen hundred (1900) followers with the largest number of followers being females in the 25-34 age group. In July 2012, the Commission |
launched its first Investor Education Competition for youth between the ages of 14-17 years, which was conducted in partnership with the Embassy of the United States of America.

<table>
<thead>
<tr>
<th>46. U.A.E.: SCA develops the investment awareness of investors by organizing awareness lectures and releasing diverse publications, including TV channels programs, establishment of a “Stock market virtual screen” centre at the University of Sharjah (UoS), organizing forums and workshops, publishing booklets and terms dictionaries.</th>
</tr>
</thead>
<tbody>
<tr>
<td>47. Uganda: CMA develops public education programs whose ultimate goal is to have all Ugandans benefit from participation in the capital market. Activities of investor education include: training for journalists; information dissemination through seminars, workshops, education through media channels, The annual Kikonyogo Capital Markets Award.</td>
</tr>
<tr>
<td>48. UK: FCA continues the financial education programs run by FSA before. The research papers about investor behaviour and potential risks was published as guidance for supervision and investor education.</td>
</tr>
<tr>
<td>49. US: Office of Investor Education and Advocacy (OIEA) conducts Investor education through: addressing questions and complaints; conducting education programs; holding public roundtables and conferences; publishing of staff legal bulletins; guidance updates; summary trend data; public administrative proceedings.</td>
</tr>
<tr>
<td>50. Zimbabwe: Investor Protection Rules were published in 2014. SECZ was accepted and became a member of the Organization of Economic Cooperation and Development International Network on Financial Education (OECD-INFE) from January 2014. Investor education activities include: workshops, university visits; customized capital market institutes; publications; and in-house training.</td>
</tr>
</tbody>
</table>

**Source:** Developed for this research, data from documentary research, wordings are cited or adapted from annual report of the 50 securities regulators in period 2008-3/2016. Other regulators have the investor education portals on their websites.
<table>
<thead>
<tr>
<th>Country</th>
<th>Supervisory Approach Reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>Rule-based changed to risk-focused approach</td>
</tr>
<tr>
<td>Argentina</td>
<td>Rule-based changed to risk-based and rule-based</td>
</tr>
<tr>
<td>Australia</td>
<td>Outcomes focused, principle-based regulation and risk-based supervision</td>
</tr>
<tr>
<td>Austria</td>
<td>Disclosure-based changed to rule-based and comprehensive risk-based</td>
</tr>
<tr>
<td>Bahamas</td>
<td>Moved to a risk-based approach to supervision since 2013</td>
</tr>
<tr>
<td>Bahrain</td>
<td>Adopted risk-based and principle-based. Application of Sharia Compliance Program</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Compliance-based changed to risk-based</td>
</tr>
<tr>
<td>Barbados</td>
<td>Rule-based changed to risk-based</td>
</tr>
<tr>
<td>Belarus</td>
<td>Compliance-based changed to risk-based</td>
</tr>
<tr>
<td>Belgium</td>
<td>Moved from disclosure-based and principle-based to risk-based, outcome-based and objective-based, focusing on areas with high customer impacts, soft-law approach</td>
</tr>
<tr>
<td>Bolivia</td>
<td>Market-based changed to risk-based</td>
</tr>
<tr>
<td>Bosnia</td>
<td>Rule-based changed to rule-based and risk-based</td>
</tr>
<tr>
<td>Brazil</td>
<td>Principle-based and risk-based adopted</td>
</tr>
<tr>
<td>Brunei</td>
<td>Risk-based unchanged since establishment</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Rule-based changed to risk-based</td>
</tr>
<tr>
<td>Canada</td>
<td>Disclosure-based and principle-based changed to combination of principle-based and risk-based</td>
</tr>
<tr>
<td>Chile</td>
<td>Rule-based changed to risk-based</td>
</tr>
<tr>
<td>China</td>
<td>Merit-based, disclosure-based and rule-based changed to principle-based, rule-based, risk-based and market-based. Risk and problem-oriented approach to supervise market intermediaries, market-based approach to regulate new issues of stock</td>
</tr>
<tr>
<td>Colombia</td>
<td>Developed a risk-based supervision in accordance with the Management information systems (MIS) methodology</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>Ruled based changed to risk-based but facing inadequacy of its legal framework for risk-based supervision and cross-border consolidated supervision</td>
</tr>
<tr>
<td>Croatia</td>
<td>Fully implemented risk-based supervision as a standard of conduct for supervisory authorities in EU Member States. The approach is supported by adoption of the Act on the Financial Stability Council (Official Gazette 159/13)</td>
</tr>
<tr>
<td>Cyprus</td>
<td>In 2014 the Cyprus Securities and Exchange Commission (CySEC) proceeded in the completion of the Risk-Based Supervision Framework, which will substantially improve its supervisory practice, as with its use, the risks posed by each regulated entity will be identified and assessed according to its significance and focus the supervision on organizations involving the major risks</td>
</tr>
<tr>
<td>Czech</td>
<td>Moved to risk-based approach within the framework of EU legislation</td>
</tr>
<tr>
<td>Denmark</td>
<td>Financial supervision is risk-based. Initiatives for 2015: New rating model, Increase the effectiveness of inspection activities, Focus on high risk elements in undertakings’ business models, Increased focus on liquidity, Earlier intervention in high risk undertakings, Bilateral international supervision work, Develop a new model for financial reporting enforcement activities</td>
</tr>
<tr>
<td>Egypt</td>
<td>Compliance-based, rule-based shifted to risk-based</td>
</tr>
<tr>
<td>El Salvador</td>
<td>Rule-based shifted to risk-based, but facing low-compliance</td>
</tr>
<tr>
<td>Finland</td>
<td>Shifted to risk-based and efficient supervision</td>
</tr>
<tr>
<td>France</td>
<td>Risk-based</td>
</tr>
<tr>
<td>Georgia</td>
<td>Transition to risk-based supervision in 2011</td>
</tr>
<tr>
<td>Germany</td>
<td>Mixed approach of risk-based, rule-based, principle-based, focusing on risk-based supervision and cross-border consolidated supervision</td>
</tr>
</tbody>
</table>

(Col. 397)
<table>
<thead>
<tr>
<th>Country</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>In 2013 the Commission made great strides toward strengthening rules and procedures for improvement of market transparency and disclosure-based regime. Introduction of risk-based supervision to replace the existing compliance-based supervision model in 2014.</td>
</tr>
<tr>
<td>Gibraltar</td>
<td>SFC delivers a more outcomes focused approach to supervision which is supported by risk-based and transparent policies and processes. SFC takes a proportionate approach to supervision, that allows to focus on the bigger issues and higher risks across the financial services industry, specific sectors or within individual firms, and will be proactive in acting or intervening where appropriate earlier and decisively. A structured approach is taken to the implementation of EU Directives and international initiatives, and development of policy more generally in 2015-16.</td>
</tr>
<tr>
<td>Greece</td>
<td>Developed a more risk-focused, forward-looking approach to financial supervision.</td>
</tr>
<tr>
<td>Guernsey</td>
<td>Moved to risk-based approach. Risk-based supervision, fully implemented, should also mean that supervisors spend relatively more of their time forming judgements on business models and governance effectiveness rather than on systems and controls issues, narrowly defined. Guernsey Financial Supervisory Commission (GFSC) is adopting Probability Risk and Impact SysteM (PRISM) as the risk-based supervision methodology.</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Rule-based with risk-based added.</td>
</tr>
<tr>
<td>Hungary</td>
<td>Moved toward a forward-looking and risk-based supervisory approach.</td>
</tr>
<tr>
<td>Iceland</td>
<td>The complete adoption of risk-based supervision is planned for 2015-2016.</td>
</tr>
<tr>
<td>India</td>
<td>Disclosure-based and market-based changed to principle-based and risk-based (unofficially).</td>
</tr>
<tr>
<td>Indonesia</td>
<td>OJK focused attention on efforts to strengthen the implementation of the tasks, function and authority for the regulation and risk-based supervision of financial services activity in the capital market industry and the non-bank financial industry.</td>
</tr>
<tr>
<td>Iran</td>
<td>Enhanced disclosure-based and Sharia compliance.</td>
</tr>
<tr>
<td>Ireland</td>
<td>Regulation of financial institutions and markets is undertaken through risk-based supervision, which is underpinned by credible enforcement deterrents. PRISM is risk-based supervisory framework.</td>
</tr>
<tr>
<td>Israel</td>
<td>Application of regulator scale and costs and benefits model; Proportionality-based, enhanced disclosure-based and rule-based; deregulation in multi-year strategy, easing regulatory requirements in a proportionate and balanced manner, wherever possible, while protecting the interests of the investing public.</td>
</tr>
<tr>
<td>Italy</td>
<td>The response to 2008 GFC has been to adopt a risk-based supervisory approach, capable of detecting the signs of risk promptly and calibrating the enforcement action more effectively. Consolidating a supervisory method where substance prevails over formality.</td>
</tr>
<tr>
<td>Jamaica</td>
<td>The FSC is the sole regulator in the Caribbean that conducts risk-based supervision for all three industries.</td>
</tr>
<tr>
<td>Japan</td>
<td>Principle-based and disclosure-based changed to mixture of risk-based, principle-based, rule-based, and Comply-or-Explain Approach.</td>
</tr>
<tr>
<td>Jordan</td>
<td>Rule-based with some elements of risk-based added. Securities Commission (SC) identifies risks through monitoring of the trading and if the inspection and investigation reflect material violations remedial measures are triggered. Jordan Securities Commission (JSC) assesses weekly the position of intermediaries from the financial data submitted to determine the risk related to each intermediary.</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>Supervision concept will be based on the world practice of supervision, i.e. on risk-based supervision. It is estimated to use risk maps. It is envisaged to improve the procedure of stress testing, the system of early response and development of plans for limitation of financial organizations exposure.</td>
</tr>
<tr>
<td>Kenya</td>
<td>Rule-based changed to principle-based and risk-based. CMA developed Quantitative Impacts Study (QIS), Management, Supervision and Internal Control Guideline for licensed entities and Risk Profiling Tool were developed in 2011-2012. In 2013, CMA introduced principle-based regulation to accelerate introduction of new products and services (Sec 12 A of The Capital Markets (Amendment) Act No. 48 of 2013).</td>
</tr>
<tr>
<td>Korea</td>
<td>Principle-based, disclosure-based, risk-based changed to risk-based and two track approach: rule-based for systematic stability, consumer protection &amp; personal data security, principle-based for market entry and market conduct.</td>
</tr>
<tr>
<td>Country</td>
<td>Description</td>
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<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Kirghizstan</td>
<td>Risk-based approach is being promoted</td>
</tr>
<tr>
<td>Latvia</td>
<td>FCMC continued to consolidate the framework of intensive supervision through risk-based and result-oriented supervisory measures. FCMC started using Mystery Shopping in the supervision of market participants in 2012</td>
</tr>
<tr>
<td>Lithuania</td>
<td>In supervising the financial market, the Bank of Lithuania uses a risk-based approach to supervision, which means that it concentrates its resources for the systemically most significant financial market participants or the financial services and products posing the highest risk for consumers</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>Principle-based changed to combination of risk-based and principle-based approach</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Rule-based and disclosure-based changed to proportionality-based, risk-based and value-based approach. Risk-Focused Supervisory Framework is implemented with an appropriate level of regulation based on the risks posed by a regulated activity or capital market service. The Sharia governance framework was strengthened</td>
</tr>
<tr>
<td>Malta</td>
<td>The Financial Action Task Force (FATF) Recommendations recognize the principle of a risk-based approach (RBA). The FATF has adopted a series of guidance in cooperation with relevant sectors. The Guidance supports the development of a common understanding of what the risk-based approach involves, outlines the high-level principles involved in applying the risk-based approach, and indicates good public and private sector practice in the design and implementation of an effective risk-based approach</td>
</tr>
<tr>
<td>Mauritius</td>
<td>Implementation of the Risk-Based Supervision framework. FSC authorises and supervises regulated entities in a risk-based, efficient and proactive manner. FSC further develops a culture of risk-based supervision and embeds a single risk framework and risk-based regulation approach. Balanced and effective regulation is subject to continuous monitoring and cost-benefit analysis</td>
</tr>
<tr>
<td>Mexico</td>
<td>Transition to risk-based approach. Rating of financial entities with risk approach</td>
</tr>
<tr>
<td>Moldova</td>
<td>Transition to risk-based approach. Implementation of stricter risk-based principles. The EU supports development of the risk-based supervision system for the non-banking financial market participants in Moldova</td>
</tr>
<tr>
<td>Mongolia</td>
<td>Compliance-based with risk elements</td>
</tr>
<tr>
<td>Montenegro</td>
<td>Transition from compliance-based to risk-based</td>
</tr>
<tr>
<td>Morocco</td>
<td>Transition to risk-based</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Principle-based changed to risk-based, institution-based and objective-based, consolidation of macro- and micro-prudential supervision within the central bank</td>
</tr>
<tr>
<td>New Zealand</td>
<td>As a risk-based conduct regulator, FMA focus its resources on conduct that we think poses the most significant risk to achieving this objective.</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Nigeria Securities and Exchange Commission (NSEC) moved away from a Compliance-Based Supervisory model and migrating to Risk-Based supervision since 2010 and adoption of the IFRS</td>
</tr>
<tr>
<td>Norway</td>
<td>The Finanstilsynet employs a risk-based approach to supervision, and its general supervisory framework is comprehensive, taking into account macroeconomic and system-wide aspects</td>
</tr>
<tr>
<td>Oman</td>
<td>Risk-based supervision will be introduced at the end of 2016</td>
</tr>
<tr>
<td>Pakistan</td>
<td>Started using risk-based in the Regulation of Join-inspection 2015</td>
</tr>
<tr>
<td>Palestine</td>
<td>Moved from rule-based supervision toward risk-based supervision in 2013</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>compliance-based</td>
</tr>
<tr>
<td>Philippines</td>
<td>Risk-based approach is mandate entry requirement and for supervision of market intermediaries</td>
</tr>
<tr>
<td>Poland</td>
<td>Still compliance-based</td>
</tr>
<tr>
<td>Portugal</td>
<td>The CMVM's supervisory models were revised and redesigned throughout 2011. This is a global model for supervision, which, in accordance with international best practices, risk-based, enables an effective allocation of current resources and prevents failures from taking place in the market for financial instruments</td>
</tr>
<tr>
<td>Country</td>
<td>Description</td>
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<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Qatar</td>
<td>A renewed focus on developing a risk-based approach to the regulation and supervision of markets</td>
</tr>
<tr>
<td>Romania</td>
<td>FSA started the procedures necessary for implementing certain supervisory indicators and activities for financial investment undertakings with the purpose of passing from the supervision based on conformity rules, to the risk-based supervision in 2014</td>
</tr>
<tr>
<td>Russia</td>
<td>Fully transparency and adopted risk-based. Risk-based approaches to supervision have been developed, aimed at a timely detection, adequate assessment and prudent reduction of risks assumed by credit institutions</td>
</tr>
<tr>
<td>Rwanda</td>
<td>Capital Market Supervisory Agency (CMS) implements Risk-Based Supervision (RBS) in Rwanda capital markets</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>CMA approach to supervision is risk-based and compliance-focused as assessed by IMF. But CMA clarify to adopt a disclosure-based regulatory approach in its 5 year strategic plan 2015-2019</td>
</tr>
<tr>
<td>Serbia</td>
<td>Moved from compliance-based to risk-based</td>
</tr>
<tr>
<td>Singapore</td>
<td>MAS incorporated key lessons from the last financial crisis to strengthen supervisory practices and risk management, with particular emphasis on a more forward-looking and effective risk-based approach to supervision</td>
</tr>
<tr>
<td>Slovakia</td>
<td>Rule-based and risk-based</td>
</tr>
<tr>
<td>Slovenia</td>
<td>Compliance-based moved to risk-based</td>
</tr>
<tr>
<td>South Africa</td>
<td>Moved from principle-based and rule-based to hybrid of principle-based with risk-based.</td>
</tr>
<tr>
<td>Spain</td>
<td>Disclosure-based changed to rule-based and risk-based, moving from light-hand regulation to a tougher regulation with application of Network Theory</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Rule-based changed to principle-based and risk-based, proactive approach, first time implemented measures such as Know Your Customers</td>
</tr>
<tr>
<td>Sweden</td>
<td>Risk-based methodology is applied</td>
</tr>
<tr>
<td>Switzerland</td>
<td>FINMA uses principle-based regulatory approach and enforcement proceedings against supervised institutions in a targeted and risk-oriented manner</td>
</tr>
<tr>
<td>Taiwan</td>
<td>FSC changed from disclosure-based and market-based to principle-based and risk-based</td>
</tr>
<tr>
<td>Tanzania</td>
<td>The CMSA has adopted Risk-Based Supervision to the capital market intermediaries with principles recommended by IOSCO</td>
</tr>
<tr>
<td>Thailand</td>
<td>SEC uses rule-based with risk-based added approaches</td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>A risk-based approach is utilized to determine the Commission’s schedule for inspections. This approach enables the staff of the Commission to identify the major risks associated with registrants.</td>
</tr>
<tr>
<td>Turkey</td>
<td>Still compliance-based</td>
</tr>
<tr>
<td>United of Arab Emirates</td>
<td>Rule-based with risk-based components</td>
</tr>
<tr>
<td>Uganda</td>
<td>Disclosure-based changed to risk-based</td>
</tr>
<tr>
<td>Ukraine</td>
<td>Rule-based changed to rule-based and risk-based</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Principle-based and risk-based change to proportionate-based and judgement-based, risk-based in-depth, structured supervision with firms, who potential to cause great risks</td>
</tr>
<tr>
<td>Uruguay</td>
<td>The SSF adopted in 2010 a risk-based approach to supervision to allocate its resources and to more closely link its supervisory strategy to the risk profile of each supervised institution. However, no risk-based capital requirements and very limited requirements regarding internal controls or risk management systems that apply to brokers</td>
</tr>
<tr>
<td>United States</td>
<td>Risk-based with enhanced disclosure</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>Compliance-based</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Compliance-based with enhanced disclosure (listed companies are encouraged to make disclosure in English)</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Compliance-based</td>
</tr>
</tbody>
</table>

**Source:** developed for this research, data from documentary research, wordings are cited or adapted from annual reports of the 101 securities regulators in the period 2008-3/2016
Box 6. 2. Discussion on shifting of supervisory approaches post-crisis in 04 selected jurisdictions

**United States**

The US Treasury Department (2008), in its Blueprint stressed the need for a quick change to a principles-oriented system as it is vital to maintaining global competitiveness (Coffee & Sale, 2009; Paulson et al., 2008). The Blueprint noted that an oft-cited argument against the merger of the CFTC and the SEC is the potential loss of the CFTC’s principle-based regulatory philosophy. To preserve the market benefits in the futures area, US Treasury recommended:

The SEC should use its exemptive authority to adopt core principles to apply to securities clearing agencies and exchanges. These core principles should be modelled after the core principles adopted for futures exchanges and clearing organizations under the Commodity Futures Modernization Act (“CFMA”). By imbuing the SEC with a regulatory regime more conducive to the modern marketplace, a merger between the agencies will proceed more smoothly (Paulson et al., 2008, pp. 11-12).

It was assumed that principle-based regulation and outcome-oriented regulation are better to deal with broader organizational and cultural problems than traditional, rule-oriented legal regimes. Ford (2008) wrote in “New Governance, Compliance, and Principle-based Securities Regulation”:

Principle-based regulation forces agency on firms, making them active participants in defining the compliance processes that will best address their particular business risks and situation. Some version of outcome-oriented regulation is a necessary correlative to principle-based regulation, in that it is a responsible way to force accountability into a system that leaves articulation of the content of those principles to on-the-ground actors. (Ford, 2008, p. 60).

In the “Principle-based Securities Regulation in the Wake of the Global Financial Crisis”, Ford admitted that the 2008 GFC shaded principle-based approaches into severe doubt (Ford, 2009). Yet, she claimed that principle-based securities regulation as properly understood continues to be a feasible and even necessary policy option, proving solutions to the real-life and theoretical challenges that the GFC posed to financial markets regulation. Ford argued:

What the crisis actually demonstrates is how damaging a laissez-faire mindset on the part of regulators can be to any form of regulation, including principle-based regulation. Principle-based regulation does not mean doing away with rules. Rather, it is a particular approach to structuring regulation. It gives legislatures the power to set high-level regulatory goals and outcomes, and leaves the articulation of processes and details to front-line regulators in collaboration with industry itself. (Ford, 2009, p. 49)

However, Ford noted that for effectiveness, principle-based regulation calls for ‘increasing regulatory resources, developing a thoughtful response to complexity (…), and consciously incorporating a broader and more independent range of perspectives into the regulatory discussion’ (Ford, 2009, p. 50).

Joining into the rule-based vs. principle-based debate in US, Felix Salmon (2009) thought that it is a good thing for the ‘white paper’ of US leans strongly in the principle-based regulation. Observing that principle-based approach failed quite spectacularly in the UK though the failure was inevitable due to the magnitude and leverage of UK financial system, Salmon is still of the opinion that:

…at the margin, a principle-based approach will be more helpful and less harmful than a lawyered-up rule-based approach, and one of the good things about this white paper, in my view, is that it does build a certain amount of flexibility into the system, rather than just trying to construct new rules for financial companies to navigate their way around (Salmon, 2009).

In contrary to Ford (2009), Coffee and Sale (2009) recognized the recent debate in US about reforming of the SEC as the one, which have been laced ‘with invocation of the superiority of “principles” as a basis for any regulatory reform and a corresponding denigration of “rule-based” regulation’ (Coffee & Sale, 2009, p. 749). Coffee and Sale argued that the US securities supervisory system is already a mix between rule-based and principle-based and a subtler balance between two should be maintained because without rules, enforcement, and any sense of parity therein, the securities supervisory system would decline (Coffee & Sale, 2009, p. 749 and 755). Coffee and Sale argued:

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24 Commodity Futures Trading Commission
The right choice of a rule-based or principle-based system depends on the circumstances. To the extent that a principle-based standard is more costly for the regulator to enforce and to the extent that the regulator is resource constrained, a principle-based system may result in less enforcement, lower penalties, and a larger de facto zone of regulatory immunity for those subject to it (Coffee & Sale, 2009, p. 749).

**Australia**

In Australia both D’Aloisio (D’Aloisio, 2009) and Erskine (2010b) are supporters of principle-based approach. D’Aloisio (D’Aloisio, 2009) thought that principle-based decision making is sensible at an international level for it has the “advantage of facilitating consensus and leaving detail to each jurisdiction when it comes to implementation”. The obvious benefit is that matters can be better adapted to each jurisdiction” (D’Aloisio, 2009, p. 9). However, D’Aloisio identified lack of uniformity as a drawback of this approach, which he thought can add to the cost of compliance and open up regulatory arbitrage (D’Aloisio, 2009). In 2010, D’Aloisio observed that ‘much of the push of international bodies is ‘principle-based’ (D’Aloisio, 2010, p. 8) but he thought the most difficult thing is in the detail of what is implemented. Erskine (2010b) observed that the crisis exposed an excessive faith in the self-balancing merits of the market-based deregulatory mindset that dominated thinking pre-crisis. According to this economist, though there has been no conclusive debate, it does seem that the "black letter law" versions of rule-based approaches seemed in the crisis to be more prone to incomplete regulatory coverage of innovations than did principle-based approaches. He argued:

To cope with innovation in future, a principle-based regulatory approach is likely to prove superior to a hard/’black letter law’ form of a rule-based approach (Erskine, 2010b, p. 4).

**Canada**

Expert Panel (2010b) recommended a more principle-based approach to securities regulation in Canada. They wrote:

First, capital markets are becoming increasingly more sophisticated and dynamic. In this environment, principle-based regulation might achieve better regulatory outcomes since it would give businesses greater flexibility to adapt compliance practices to the latest innovations in the capital markets. Second, under principle-based regulation, businesses, when confronted with an ambiguous situation, would no longer be bound by strict rules. Finally, principle-based regulation might facilitate better enforcement actions by being able to hold businesses accountable for rule infractions as well as actions that, although technically compliant, violate the public interest (Expert Panel, 2010b, p. 2).

Nevertheless, they warned that the approach ‘must be implemented with care, particularly with due regard to reducing regulatory uncertainty, re-thinking enforcement, addressing the distinct needs of small public companies, and properly engaging investors’(Expert Panel, 2010b, p. 4).

**United of Kingdom**

It is interesting that in UK, where FSA was a pioneer and long-time advocator of principle-based approach, arguments against this approach seem to rise intensively after the 2008 GFC. In “The Rise, Fall and Fate of Principle-based Regulation”, Black (2010) wrote:

Pre-crisis, Principle-based Regulation (PBR) was seen as the solution that firms and regulators were looking for to deliver an effective and responsive regulatory regime. Post-crisis, PBR is seen as being the source of the problem: light touch regulation that placed too much reliance on firms themselves to behave responsibly. Having been one of the regulators most committed to PBR, it is no surprise that the FSA responded with such force against the markets’ betrayal. It had had so much reputational capital invested in PBR that when the crisis came, it had no option but to withdraw it from the market (J. Black, 2010, p. 4).

However, for Black, ‘rule-based regulation did not fare particularly well either, but as such a regulatory approach is largely unfashionable in the regulatory literature, few commentators would have expected it to do so’ (J. Black, 2010, p. 1).

Weatherhead (2010) observed that the global crisis had fostered a more uniform approach to regulation toward limiting the extent and risks of regulatory arbitrage. As for the recommendations for financial market reform in UK, Weatherhead remarked that “the intention is to move toward objectives-based regulation but the proposal still has remnants of activity-based regulation and a further distinction based on the type of business” (Weatherhead, 2010, p. 5). Her concern is that this ambiguity could lead to duplication of the burden on firms and inaction as a result of confusion over responsibility.
In 2010, the deviation of FSA from “principle-based” approach of regulation and supervision was officially confirmed in a lecture in Management Studies delivered by Sants\textsuperscript{25} (2010):

…. the FSA has radically changed the way it operates. This is best described in two main respects: first, the changes we have made to our philosophy; and second, the resultant changes to our operating model. Regarding the first, there were various ways to describe the FSA’s philosophy historically, by politicians as ‘light touch’, by the FSA, as derivations of ‘principle-based’ or ‘more principle-based’. The new approach we have moved to is ‘outcomes-based’ and this is delivered through intensive supervision (Sants, 2010, p. 2).

Source: developed for this research, data covers the period 208-3/2016

\textsuperscript{25} Hector Sants is Chief Executive of FSA;
Box 6.3. The factors that cause financial instability in securities markets

(i) Non-bank financial institutions such as securities firms, which created and transmitted as much systemic risks as banks but were not adequately supervised;
(ii) Market interconnectedness, which was not properly understood, valued and monitored by securities regulators and market participants;
(iii) Loosen capital requirements and prudential standards, which were not strong enough to create incentives for proper risk taking;
(iv) Product complexity, which challenged the capacity of disclosure and market conduct regulation to overcome information asymmetries and resolve conflicts of interest;
(v) Product innovation, which complicated risk management and increased the cost of information by increasing interconnections between markets and amplifying problems in particular markets and institutions of any size and function, resulting in transmission of risk through other parts of the financial system;
(vi) More difficult and costly conflict management, which let certain gatekeepers, especially credit rating agencies were not subject to sufficient constraints and there was over-reliance on their assessments of the risks attached to institutions, products and strategies rather than internal risk assessments;
(vii) The cyclicality of financial markets, and the tendency for both regulation and market participants behaviour to be pro-cyclical; and
(viii) The risks in OTC markets with a lack of transparency and robust infrastructures, which undermined market.

Source: Adopted from IOSCO (2011d)
The G20’s Declaration on strengthening the financial system in the G20 London Summit on 2 April 2009 showed a strong global commitment on financial prudential regulation after the 2008 GFC (G20, 2009a). The plan of G20 to strengthen international frameworks for prudential regulation include eight key aspect: (i) the international standard for the minimum level of capital will be remained until recovery is assured; (ii) capital buffers above the required minima should be allowed to decline where appropriate to facilitate lending in deteriorating economic conditions; (iii) prudential regulatory standards should be strengthened once recovery is assured by increasing buffers above regulatory, enhancing of the quality of capital and issuing guidelines for harmonization of the definition of capital by end 2009, and minimum levels of capital and develop recommendations will be reviewed in 2010; (iv) implementation of the recommendations to mitigate pro-cyclicality will be taken by the FSB26, BCBS27, and CGFS28 with a deadline of end 2009; (v) risk-based capital requirements should be supplemented with a simple, transparent, non-risk-based measure; (vi) the BCBS and authorities should take forward work on improving incentives for risk management of securitization, including considering due diligence and quantitative retention requirements, by 2010; (vii) all G20 countries should progressively adopt the Basel II capital framework; and (viii) the BCBS and national authorities should develop and obtain consent a global framework for promoting stronger liquidity buffers at financial institutions, including cross-border institutions by 2010 (G20, 2009a, p. 2).

To ensure a more stringent supervision of market intermediaries, IOSCO added Principle 8 in the in the category of Principles for securities regulator in 2010 version of Objectives and Principles of Securities Regulation, with the mandate that the securities regulators ‘should seek to ensure that conflicts of interest and misalignment of incentives are avoided, eliminated, disclosed or otherwise managed’ (IOSCO, 2010f, p. 4). Principle 31 in that version also have a minor change in the category of Principles for market intermediaries, which highlighted that the market intermediaries should be required to establish ‘an internal function that delivers compliance with standards for internal organization and operational conduct, with the aim of protecting the interests of clients and their assets and ensuring proper management of risk, through which management of the intermediary accepts primary responsibility for these matters’(IOSCO, 2010f, p. 11). Whereas, Principles 23 in the 2003 version of Objectives and Principles of Securities Regulation did not require market intermediaries to set up that internal functions. Instead, they only have to comply with standards of international organization and operational conduct (IOSCO, 2003a). Besides, IOSCO has issues several reports or guidelines for securities regulators to strengthen supervision of market intermediaries.

Behavioural Finance’s ideologies were adopted by IOSCO to guide securities regulators in strengthening market intermediary supervision. IOSCO (2009f) issued a guideline for securities regulators on assessment of adequacy of securities practitioners, titled “Fit and Proper Assessment – Best Practice”. Objective of this guideline is to reduce the risk that responsible persons of the regulated institutions are not fit and proper for their roles. IOSCO (2009f) asserted that the maintenance of fit and proper standards is essential to ensure that securities activities are conducted with high standards of market practice and integrity. The Best Practices are intended to support the members of IOSCO in ensuring that financial institutions are subject to adequate regulations and supervision and that competent authorities take necessary legal or regulatory measures in this matter. IOSCO (2009f) emphasized that:

The fit and proper assessment is both an initial test undertaken during consideration of an application for licensing or authorisation, and also a continuing and cumulative test which takes into account the ongoing conduct-of-business and the history of compliance with all applicable laws, regulation and codes (IOSCO, 2009f, p. 4)

26 Financial Stability Board;
27 Basel Committee on Banking Supervision;
28 Committee on Global Financial System;
The purposes of the Best Practices include (i) supporting a common understanding of what fit and proper assessments of securities practitioners; (ii) outlining the principles of applying fit and proper tests; and (iii) indicating good practices in the effective design and implementation of a fit and proper assessment approach (IOSCO, 2009f, pp. 3-4). Three key fit and proper standards of (i) competence and capability; (ii) honesty, integrity, fairness, ethical behaviour; and (iii) financial soundness should be applied by securities regulators to ensure that a practitioner is suitable for the sound and prudent management of a regulated institution in the securities market. Subjects of the standards are individual practitioners, corporate securities intermediaries and any of its officers, its directors, chief executive, managers and executive officers within the framework of the functions and duties undertaken by any of these persons in any regulated activities in the securities market (IOSCO, 2009f, p. 7).

In addition, risk-based supervision is another regulatory tool adopted from Behavourial Finance that was recommended by IOSCO. Final Report on Guidelines to Emerging Market Regulators Regarding Requirements for Minimum Entry and Continuous Risk-Based Supervision of Market Intermediaries (IOSCO, 2009h) stated:

Globalization and the growing complexities of financial and capital markets that cater to the demands of a wider and more sophisticated pool of investors have prompted regulators in many jurisdictions to measure the risks posed by the new breed of market participants and financial products. These developments have necessitated that regulators undergo a paradigm shift in their supervisory philosophy and regimes. One trend is a shift away from post-event rule-based approaches which focus on the detection of violations and non-compliance, to risk-based approaches which are more proactive, risk-focused and continuous. In light of the ever increasing complexities of market participants’ activities, IOSCO is also encouraging regulators to move toward risk-based supervision (IOSCO, 2009h, p. 5).

Based on the information shared and lessons learnt from the fact-finding survey of jurisdictions that already practice a risk-based supervision approach, IOSCO recommended the guiding principles on continuous risk-based supervision, including three categories: (i) structured planning for risk-based supervision/impact and probability assessments; (ii) identification and assessment of relevant risks (information collection, management and analysis; and (iii) allocation of supervisory resources, including entry level, scheduled inspections planning and execution/communication of risk ratings to intermediaries (IOSCO, 2009h). IOSCO argued that:

Risk-based supervision, can improve regulator’s efficiency and effectiveness of regulatory processes by optimum utilization of supervisory resources. It also promotes a proactive compliance culture among market intermediaries. Development of sufficient regulatory capacity that ensures its effective implementation is, however, a challenge to this supervisory approach. With all its challenges, the successful implementation of a focused, proactive and efficient risk-based supervisory methodology that is able to evolve as the markets further develop (dynamic in character), is imperative in achieving the regulatory objectives of capital and financial stability, the maintenance of market integrity and the protection of investors (IOSCO, 2009h, p. 24).

In November 2010, IOSCO published the Final Report on Guidelines for the Regulation of Conflicts of Interest Facing Market Intermediaries as a response to the problems of market intermediaries’ conflicts of interest, which were revealed by the 2008 GFC. It was specified in the Report that:

Conflicts of interest cannot be accepted as an unavoidable fact of life, even though the existence of conflicts is inherent in the business model of most firms. Conflicts of interest faced by market intermediaries have become a significant problem for the financial industry as a whole and it is essential for regulators to tackle this issue. Recent scandals in the financial industry worldwide have put doubts over markets ability to adequately control conflict of interests. Regulators have come under fire for not having sufficient and appropriate regulations in place to counter the risks posed by conflicts of interest. New regulations for management of conflicts of interest are required to prevent any further loss of investor’s confidence in the financial system (IOSCO, 2010d, p. 31).

To enable the securities regulator to tackle with problems of conflict of interest facing by market intermediaries IOSCO (IOSCO, 2010d) recommended: (i) senior management of market intermediaries should be actively involved in identifying and mitigating conflicts of interest; (ii) Clear and concise policy on conflict of interest should be adopted and clearly stated to highlight conflicts of interest according to the business structure and activities of the market intermediary and well communicate it to all stakeholders; (iii) Adequate disclosure of an actual or potential conflict
should be made to a customer without creating an over-reliance on disclosed information; (iv) Information barriers need to be carefully set up between different departments or affiliated businesses during sensitive times balancing the effect of reduction of synergies of information collection, to that of economies of scope in information production; (v) Effective procedures to be put in place as regards to the activities of investment research and advice, proprietary trading, asset management, portfolio management and corporate finance business, including underwriting or selling in an offering of securities and advising on mergers and acquisitions; (vi) Remuneration should be made to commensurate the activities; (vii) update a record of all the different kinds of activities it has carried out which has given rise to a conflict of interest should be kept for in identifying situations which give rise to conflicts in order to prevent them from occurring in the future; and (vii) market intermediaries should be encouraged to adopt internal control mechanism to effectively address conflicts of interest by regulatory requirements and clearly defined penalties and punishments for non-compliance. Intermediaries that are exploiting conflicts of interest need to be severely reprimanded (IOSCO, 2010d, pp. 28-30).

In February 2011, the Final Report of Technical Committee of IOSCO, titled “Intermediary Internal Controls Associated with Price Verification of Structured Finance Products and Regulatory Approaches to Liquidity Risk Management” provided three groups of recommendations:

- First, for enhancement of securities firm internal controls, it was recommended by IOSCO (2011c) that securities regulators should use two key regulatory tools to discourage or prevent excessive risk taking by firms and to promote robust internal SFP\textsuperscript{29} price verification processes and related internal controls, including: (i) robust capital standards to ensure that all material risks are adequately addressed; and (ii) restricting a firm from engaging in a particular line of business where the firm falls below certain capital levels or where the firm violates other material requirements imposed by the regulator. In addition, on an ongoing basis, it was recommend that supervisors and/or SROs enhance their oversight of firm internal controls by (i) closely monitoring the firms' liquidity position; (ii) assessing the concentration of positions and the building up of concentration, particularly in the context of a limited history of liquidity of a particular asset class; (iii) seek to ensure that firms are appropriately marking assets to market, inspecting to see if there is a reasonable valuation system in place; and (iv) developing a robust inspection program to determine whether the firm as a whole, and senior managers in particular, are appreciating the risks posed to their firm by these products (IOSCO, 2011c, pp. 25-26).

- Second, to address the issues relating to the problem posed by —too-big-to-fail institutions for the stability of the financial sector, IOSCO (2011c) recommended securities regulators: (i) to develop strengthened capital and liquidity requirements for systemically important entities in the wake of the G20 request; to strengthen more generally the prudential requirements relating to the trading activities for all financial institutions; (iii) to strictly supervise proprietary (own-account) trading; and (iv) to establish a credible mechanism for the resolution of failed institutions, particularly for those firms active on a cross-border basis (IOSCO, 2011c, p. 26).

- Third, it was identified a survey of IOSCO (2011c) that jurisdictions were either in the process of updating their approach to regulating and supervising liquidity risk management at securities firms, or had the intention of doing so in the short to medium term as a result of lessons learnt during the crisis. The survey identified a number of key risks that could make securities firms more susceptible to liquidity stresses, including (i) complexities in asset price discovery; (ii) concentration risk — a lack of asset diversity; (iii) mismatches between asset and liability maturity; and (iv) over-reliance on short-term, unsecured wholesale funding (IOSCO, 2011c, p. 26).

It was found by IOSCO that a range of approaches to reducing the probability and impact of liquidity risk were taken by securities regulators. Generally, regulators control behaviour of securities intermediaries by placing limits on areas where liquidity risks may arise, such as daily funding

\textsuperscript{29} Structured Finance Products;
liquidity risks, asset and funding concentrations, and a requirement that firms hold a buffer of liquid assets against their liquidity risk. A number of jurisdictions were changing liquidity requirements, to improve liquidity risk management and supervision for market intermediaries. Some other regulators were planning to update the quantitative aspects of their liquidity regime for credit institutions, incorporating lessons learnt from the current crisis, and BCBS and The Committee of European Banking Supervisors (CEBS) standards for liquidity. Besides, alternative responses included increasing capital requirements for certain credit institutions, the introduction of liquidity charges to supplement haircuts, changing the core liquidity requirements for certain institutions and updating the listing requirements for structured products.

Regarding supervision of liquidity risks exposed by market intermediaries, IOSCO (2011c) recommended securities regulators: (i) to require these firms to keep a buffer of highly liquid assets to offset the liquidity risks inherent in their balance sheet; and (ii) to increase supervisory attention paid to liquidity risks at securities firms by increasing scrutiny of liquidity risks at firms and greater dialogue between firm and regulator, collecting easy to interpret information, and redesigning quantitative elements that worked less well during the crisis (IOSCO, 2011c, pp. 30-31).

Importantly, IOSCO recognized that the recent financial crisis was not actually a hedge fund crisis because many of the financial firms that failed were already subject to a high degree of regulatory oversight. However, IOSCO defined that the activities of hedge funds may have amplified the consequences of the crisis because of the need for hedge funds and many other market participants to hastily unwind positions due to liquidity restrictions in meeting margin calls or significant requests for redemption by investors. (IOSCO, 2009j, p. 7). Therefore, IOSCO (2009j) and G20 (2009b, p. 3) agreed that hedge funds or fund managers should be registered and required to disclose appropriate information on an ongoing basis to supervisors or regulators, including on their leverage, necessary for assessment of the systemic risks that they pose individually or collectively.

Following the G20 commitment on fortifying supervision over hedge funds, in June 2009 IOSCO provided six principles for oversight of hedge funds, including: (i) mandatory registration of hedge funds and/or hedge fund managers/advisers; (ii) appropriate ongoing regulatory requirements of registered hedge fund managers/advisers regarding to organizational and operational standards, conflicts of interest and other conduct-of-business rules, disclosure to investors and prudential regulation; (iii) mandatory registration/regulation and supervision of prime brokers and banks which provide funding to hedge funds. The institutions also should have appropriate risk management systems and controls to monitor their counterparty credit risk exposures to hedge funds; (iv) provision to the relevant regulator by hedge fund managers/advisers and prime brokers with information for systemic risk purposes, including the identification, analysis and mitigation of systemic risks; (v) regulators’ encouragement and taking account of the development, implementation and convergence of industry good practices, where appropriate; (vi) Regulators’ authority to co-operate and share information with each other, where appropriate, in order to facilitate efficient and effective oversight of globally active managers/advisers and/or funds (IOSCO, 2009j).

Source: developed for this research, data covers the period 208-3/2016
Box 6.5. Data analysis-Policy documents of IOSCO on strengthening supervision of securities products

1. Recommendations for re-regulation of pre-crisis unregulated securities products

The efforts of securities regulators to enhance supervision over derivative products and process of securitization were shown most clearly in the continuous technical and survey reports of IOSCO. In September 2009, IOSCO released the report “Unregulated Financial Markets and Products” (IOSCO, 2009o), which recommended greater transparency and oversight in unregulated financial markets and products, especially securitized products and improve investor confidence in, and the quality of, these markets. In this report, IOSCO proposed five groups of recommendations:

- First, securities regulators should consider requiring originators and/or sponsors to retain a long term economic exposure to the securitization in order to appropriately align interests in the securitization value chain. In this regard, any retention requirement should be made in consideration of (i) economic and regulatory features of the domestic securitization market and include appropriate transitional provisions; (ii) risk sensitiveness relating to the underlying quality of the collateral bucking a securitization; and (iii) broad function of securitization and the impact of increased capital charges, accounting de-recognition treatment and legal true sale issues in the relevant jurisdiction (IOSCO, 2009o);

- Second, securities regulators should: (i) require enhanced transparency through disclosure by issuers to investors of all verification and risk assurance practices that have been performed or undertaken by the underwriter, sponsor, and/or originator of securitized products; and (ii) provide regulatory support for improvements in disclosure by issuers to investors including initial and ongoing information about underlying asset pool performance. Disclosure should also include details of the creditworthiness of the person(s) with direct or indirect liability to the issuer (IOSCO, 2009o);

- Third, securities regulators should: (i) require independence of service providers engaged by, or on behalf of, an issuer, where an opinion or service provided by a service provider may influence an investor's decision to acquire a securitized product; and (ii) require service providers to issuers to maintain the currency of reports, where appropriate, over the life of the securitized product (IOSCO, 2009o);

- Fourth, securities regulators should review investor suitability requirements and the definition of sophisticated investor in the relevant market. Besides, these requirements should be strengthened as appropriation with context of the relevant market (IOSCO, 2009o);

- Fifth, securities regulators should encourage the development of tools by investors to assist in understanding complex financial products (IOSCO, 2009o).

In October 2010, another survey report titled “Securitization and Securitized Debt Instruments in Emerging Markets” of IOSCO (2010i) identified wrong incentives, inadequate risk management and regulatory structure and oversight as three challenges in the securitization business model and regulatory framework. This report also outlined five lessons learnt from the 2008 GFC on securitization:

- First, disclosure and transparency of the securitized products should be improved to ensure that investors have necessary information that would allow them to perform robust due diligence. Improvements have been called for in regard to: (i) initial and ongoing information about the underlying asset pool performance; as well as on the creditworthiness of any person with direct or indirect liability to the issuer; and (ii) representations and warranties to be provided by the originator to ensure, for example, the buy-back of the underlying assets under certain conditions (IOSCO, 2010i);

- Second, investors’ risk management practices should be improved by reducing reliance on external credit ratings. Besides, banks and institutional investors should strengthen their risk assessment and risk management mechanisms to select their investments and manage their
associated risks. To facilitate this, the Basel Committee for Banking Supervision (BCBS) has required banks to conduct their own due diligence on their securitization exposures instead of solely relying on rating agencies. At the same time, IOSCO has developed good practices on due diligence for investment managers when investing in structured products. Besides, IOSCO is reviewing suitability requirements to strengthening securitized products distributors’ obligations in connection with the sale of structured products and the definition of sophisticated investors (IOSCO, 2010i);

- Third, regulatory arbitrage in connection with capital requirements should be eliminated. A survey by IOSCO found that there has been wide consensus on the need to review capital requirements to minimize loophole gaming and incentives for regulatory arbitrage. In this regard, the Basel Committee on Banking Supervision (BCBS) has strengthened the treatment for certain securitizd products and introduced higher charges for re-securitization exposures (IOSCO, 2010i);

- Fourth, incentives through retention and compensation practices should be aligned among different participants in the securitization chain to the longer term performance of securitized assets. In this regard, the G-20 has recommended that originators be required to retain a portion of the issue as a key element to align their incentives with the longer term performance of the securitized assets. In addition, the Financial Accounting Standards Board (FASB) has eliminated gain on sale for many securitizations and required consolidation of more securitized assets on the originator’s balance sheet. Similar performance-based, medium to longer term approaches to securitization fees in order to focus market participants on underwriting quality were also encouraged (IOSCO, 2010i);

- Fifth, perimeter of regulation on securitized products should be reviewed to determine whether specific participants or products need to be brought into the jurisdiction of the securities regulator. In consideration of the lessons, IOSCO (2010i) recommended securities regulators in emerging markets: (i) to collect a minimum set of information on securitization markets to monitor their development and identify potential sources of risk for financial stability or consumer protection; (ii) to strengthen disclosure requirements for securitized financial products vis-à-vis investors, both in the context of public as well as private offerings; (iii) to encourage trading of SFPs in public venues, and impose transparency in OTC markets; (iv) to encourage the development of regulated pricing agencies; (v) to establish a minimum framework for key participants of the securitization process; (vi) to strengthen business conduct obligations; and (vii) to align credit rating agencies regulation with the IOSCO Code of Conduct.

IOSCO (2012f) set up the International Standards for Derivatives Market Intermediaries Regulation, which provides recommendations on; (i) criteria for definition of a DMI; (ii) Requirements of licensing and registration of a DMI to ensure minimum standards, disclosure and supervisory arrangement between regulatory agencies; (iii) Capital or financial resources requirements for DMIs; (iv) business conduct standards applied to DMIs; (v) segregation of clients’ collateral assets; (vi) corporate governance frameworks of DMIs, (vii) requirements of supervisory policies and procedures to manage OTC derivatives operations and representatives’ activities of DMIs; (viii) requirements of risk management of DMIs; (ix) requirements of policies, procedures and systems of control; effective business continuity plan; and retention of derivatives transaction records by DMIs.

A set of Principles for Ongoing Disclosure for Asset-Backed Securities was also established by IOSCO (2012d). The principles include: (i) Information regarding ABS should be provided on a periodic basis; (ii) Material events regarding ABS should be disclosed in event-based reports; (iii) Periodic and event-based disclosure reports should contain sufficient information to increase transparency and to help enable investors to perform due diligence in their investment decisions independently; (iv) Disclosure should be fair, complete, clear, and not misleading; (v) Disclosure should be presented to facilitate analysis by investors; (vi) Parties responsible for the disclosure should be clearly identified; (vii) Information should be available to the public on a timely basis; (viii) All investors and market participants should have equal and simultaneous access to disclosure; (ix) Disclosure should be equivalent in all markets; (x) Ongoing reports should be filed with or otherwise made available to the relevant regulator; and (xi) The information should be
stored to facilitate public access to it. The principles were recommended based on the recognition that the current disclosure principles and standards of IOSCO are not wholly applicable to public offerings and listings of ABS due to the unique nature of both ABS and ABS issuers.

2. Recommendations for enhancing financial disclosure by firms with international accounting and auditing standards and strengthening transparency of OTC derivatives

In 2008, G20 Summit on Financial Markets and the World Economy, G20 leaders (G20, 2008) declared the commitment in immediate actions by March 2009, including (i) working of the key global accounting standards bodies to enhance fortify guidance for valuation of securities, also taking into account the valuation of complex, illiquid products, especially during times of stress; (ii) advanced working of accounting standard setters to address weaknesses in accounting and disclosure standards for off-balance sheet vehicles; enhancing the required disclosure of complex financial instruments by firms to market participants by regulators and accounting standard setters; and enhancing the governance of the international accounting standard setting body by reviewing membership and maintaining an appropriate relationship between this independent body and the relevant authorities (G20, 2008, p. 4).

In 2009, continuing the efforts to strengthen financial stability, the G20 leaders (2009) agreed that the accounting standard setters should improve standards for the valuation of financial instruments based on their liquidity and investors’ holding horizons, while reaffirming the framework of fair value accounting. G20 leaders also appreciated the FSF recommendations on accounting issues and urged the accounting standard setters to take action by the end of 2009 to:

“(i) reduce the complexity of accounting standards for financial instruments; (ii) strengthen accounting recognition of loan-loss provisions by incorporating a broader range of credit information; (iii) improve accounting standards for provisioning, off-balance sheet exposures and valuation uncertainty; achieve clarity and consistency in the application of valuation standards internationally, working with supervisors; (iv) make significant progress toward a single set of high quality global accounting standards; and (v) within the framework of the independent accounting standard setting process, improve involvement of stakeholders, including prudential regulators and emerging markets, through the IASB’s constitutional review” (G20, 2009a, pp. 5-6).

Following the response of G20, IOSCO (2008c) rapidly evaluated the issue of accounting and valuation of securities products after the crisis started its contagion from US to other markets. The organization realized that the recent market turmoil unfolded the increasing importance of asset valuation and accounting (IOSCO, 2008c). To discuss the issue of accounting treatment revealed by the crisis, the IOSCO’s “Report on Subprime Crisis” said:

“Central to the accounting issues involved in the recent market turmoil is the role of fair value accounting and how both U.S. Generally Accepted Accounting Principles (U.S. GAAP) and International Financial Reporting Standards (IFRS) treat investments in structured finance products on the books of a financial firm. (…..) Fair value accounting requires that assets be valued at their current market prices (rather than at, for example, the price the firm originally paid for the assets). Some critics of fair value accounting have noted, however, their view that under conditions of severely limited liquidity in the secondary markets, mark-to-market valuation can be difficult. Even where possible, (…), valuation models that require marking to severely depressed asset prices can exacerbate risk aversion in the market and contribute to a pro-cyclical worsening of a market crisis as investors flee financial firms holding these depressed assets. In contrast, it is important to note that a number of investors have indicated that they believe fair value accounting is appropriate for these types of assets and results in companies providing information that is beneficial to investors in the current market” (IOSCO, 2008c, p. 16)

It was stated by IOSCO (2009n) that the financial crisis has brought to light a huge number of issues relating to information disclosure of traded securities products. The Technical Committee of IOSCO pinpointed that while a lack of post-trade information is not widely regarded as a direct cause of the difficulties experienced by the market of structured finance products (SFP), the

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30 Financial Stability Forum;
31 Cited from (G20, 2009a) with modification;
32 Cited from (IOSCO, 2008c) with modification;
33 IOSCO defined SFPs as financial instruments that are: (i) based on a pooling of assets usually sold to a special purpose vehicle; (ii) the assets can be either cash instruments or credit derivatives; (iii) but the credit risk of the asset pool is de-linked
absence of accurate information – both in terms of an efficient price formation process and for accurate valuations – does matter. In the context that a mandated post-trade transparency regime for SFPs does not exist in any member jurisdiction, IOSCO (2009n) asserted that greater information on traded prices of SFPs could be a valuable source of information for market participants and therefore encouraged its members to actively consider enhancing post-trade transparency of those products.

In June 2009, IOSCO (2009c) published a consultative report entitled Disclosure Principles for Public Offerings and Listings of Asset-Backed Securities, setting up disclosure principles for listings and public offerings of ABS, defined for the purposes of that report as securities that are primarily serviced by the cash flows of a discrete pool of receivables or other financial assets that by their terms convert into cash within a finite period of time.

According to IOSCO (2009f), the international community of securities regulators have made many efforts to restore the market confidence by enhancing transparency of complex financial products and disclosure by the market participants involved in issuing, trading and rating them. The efforts were reflected in the IOSCO’s report “Transparency of Structured Finance Products”:

“.... several international industry groups – the Securities Industry and Financial Markets Association (SIFMA), European Securitization Forum (ESF), American Securitization Forum (ASF) and Australian Securitization Forum (ASF) – have set up a Joint Global Initiative in an attempt to help restore confidence in the securitization and structured credit markets. The Joint Global Initiative made several recommendations for improving key market practices including independent third-party sources of valuation, reporting and disclosure practices for residential mortgage-backed securities (RMBS) and enhancing transparency into the credit rating agency process. It also made recommendations for proactively guarding against future crises through education programs and the establishment of a Global Securitization Markets Group to report publicly on the market” (IOSCO, 2009n, pp. 6-7).

In September 2009, the G-20 leaders stated that all standardized OTC derivatives contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by the end of 2012 in order to improve transparency, mitigate systemic risk, and protect against market abuse in the derivatives markets (G20, 2009a; IOSCO, 2011i). Building on this commitment, in June 2010, the G-20 leaders agreed to work in a coordinated manner to speed up the implementation of OTC derivatives regulation and supervision and to increase market transparency and product standardization.

To support G-20 leaders’ commitments on strengthening supervision over derivatives markets, OTC Derivatives Working Group, led by representatives of the Committee on Payment and Settlement Systems (CPSS), the International Organization of Securities Commissions (IOSCO), and the European Commission was formed to set out policy options. The OTC Derivatives Working Group produced the “Report on Trading of OTC Derivatives”, which sets forth twenty objectives be taken in order to maximize the number of standardized derivative products that can be appropriately traded on organized platforms, and the reporting of OTC derivatives to trade repositories. The report was adopted by the FSB and submitted to the G-20 Finance Ministers and Central Bank Governors in October 2010 (IOSCO, 2011i, p. 4). The report concluded that it is appropriate to trade standardized derivatives contracts with a suitable degree of liquidity on “exchanges or electronic trading platforms,” provided that a flexible approach encompassing a range of platforms that would qualify as “exchanges or electronic trading platforms” for derivatives trading is taken. The report highlighted:

“Based on the benefits to be gained from increased trading on organized platforms, the Task Force recommends that a flexible approach to defining “exchanges or electronic trading platforms” for the purposes of addressing the G-20 objectives be taken in order to maximize the number of standardized derivative products that can be appropriately traded on organized platforms. With this approach, market regulators would have the flexibility to specify the types of trading platforms that are most appropriate for derivatives trading in their jurisdiction, depending upon the mix of products traded in a given market” (IOSCO, 2011i, p. 4).
To support the G20 leaders’ commitments regarding the operation of OTC derivatives markets, including the statement that all OTC derivatives contracts should be reported to trade repositories (TRs) in order to improve transparency, mitigate systemic risk and protect against market abuse in the OTC derivatives markets, IOSCO (2011d) proposes twenty one recommendations concerning standardization, central clearing, organized platform trading, and the reporting of OTC derivatives to trade repositories. IOSCO also issued ‘Report on OTC derivatives data reporting and aggregation requirements’ in January 2012 (IOSCO & BIS, 2012). The report recommended: (i) Minimum data reporting requirements, including at least transaction economics, counterparty information, underwriter information, operational data and event data; (ii) Defining general principles of authority to access the data and data dissemination TRs to facilitate an assessment of market activity and concentration of the market; (iii) Methodology and mechanism for aggregation of data; (iv) International legal entity identifiers (LEI) development and principles; (v) Continued international consultation regarding LEI implementation; and (vi) Development of a standard international product classification system. Given the context that before the 2008 GFC, derivatives were subject to minimum regulation, this is a turning point in the history of securities market regulation.

Source: developed for this research, data covers the period 2008-3/2016
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<tr>
<th>Table 6.6. List of regulations to strengthen supervision of securities products of 24 developed markets in 2008-3/2016</th>
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<tbody>
<tr>
<td><strong>17 EU developed markets:</strong> Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom</td>
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<tr>
<td>Commission Implementing Decision (EU) 2015/1612 of 23 September 2015 amending Decision 2008/961/EC on the use by third countries' issuers of securities of certain third country's national accounting standards and IFRS to prepare their consolidated financial statements;</td>
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Commission Delegated Regulation (EU) No 149/2013 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council with regard to regulatory technical standards on indirect clearing arrangements, the clearing obligation, the public register, access to a trading venue, non-financial counterparties, and risk mitigation techniques for OTC derivatives contracts not cleared by a CCP;


Commission Implementing Regulation (EU) No 1249/2012 of 19 December 2012 laying down implementing technical standards with regard to the format of the records to be maintained by central counterparties according to Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories;


Commission Implementing Regulation (EU) No 1248/2012 laying down implementing technical standards with regard to the format of applications for registration of trade repositories according to Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories;


Commission Delegated Regulation (EU) No 862/2012 of 4 June 2012 amending Regulation (EC) No 809/2004 as regards information on the consent to use of the prospectus, information on underlying indexes and the requirement for a report prepared by independent accountants or auditors;

Commission Implementing Decision of 11 April 2012 amending Decision 2008/961/EC on the use by third countries’ issuers of securities of certain third country’s national accounting standards and IFRS to prepare their consolidated financial statements;

Commission Implementing Decision of 11 April 2012 amending Decision 2008/961/EC on the use by third countries’ issuers of securities of certain third country’s national accounting standards and IFRS to prepare their consolidated financial statements

Commission Delegated Regulation (EU) No 486/2012 of 30 March 2012 amending Regulation (EC) No 809/2004 as regards the format and the content of the prospectus, the base prospectus, the summary and the final terms and as regards the disclosure requirements

Directive 2010/73/EU of the European Parliament and of the Council of 24 November 2010 amending Directives 2003/71/EC on the prospectus to be published when securities are offered to the public or admitted to trading and 2004/109/EC on the harmonization of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market

**Australia**

RG 251 Derivative transaction reporting, issued 13 February 2015;
RG 249 Derivative trade repositories, issued on 10 April 2015;
RG 247 Effective disclosure in an operating and financial review, Issued 4 March 2013
RG 212 Client money relating to dealing in OTC derivatives, issued 9 July 2010;
RG 244 Giving information, general advice and scaled advice, Issued 13 December 2012;
RG 234 Advertising financial products and advice services including credit: Good practice guidance, Issued 15 November 2012;
RG 231 Infrastructure entities: Improving disclosure for retail investors, Issued 24 January 2012
RG 227 Over-the-counter contracts for difference: Improving disclosure for retail investors, Issued 12 August 2011
RG 221 Facilitating digital financial services disclosures Issued 29 March 2016;
RG 219 Non-standard margin lending facilities: Disclosure to investors, Issued 10 November 2010
RG 198 Unlisted disclosing entities: Continuous disclosure obligations, Issued 18 June 2009

**Canada**

SECURITIES RULES, amendments up to B.C. Reg. 67/2015, May 5, 2015
SECURITIES REGULATION, amendments up to B.C. Reg. 238/2014, January 11, 2015
41-101 General Prospectus Requirements [NI] 2015-12-08
51-102 Continuous Disclosure Obligations [NI] 2015-11-17
51-101 Standards of Disclosure for Oil and Gas Activities [NI]
51-105 Issuers Quoted in the U.S. Over-the-Counter Markets [MI] 2015-11-17
51-201 Disclosure Standards [NP] 2013-05-31
91-301 Model Provincial Rules - Derivatives: Product Determination and Trade Repositories and Derivatives Data Reporting [CSA Consultation Paper] 2012-12-06
91-302 Updated Model Rules – Derivatives Product Determination and Trade Repositories and Derivatives Data Reporting [Multilateral CSA Staff Notice] 2013-06-06
91-402 Derivatives: Trade Repositories [CSA Consultation Paper] 2011-06-23

**Hong Kong**
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<th>Regulations/Acts</th>
<th>Effective Dates/Notes</th>
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<td>Securities and Futures (Amendment) Ordinance 2014 (Amendment Ordinance)</td>
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<td>Securities and Futures (OTC Derivative Transactions – Reporting and Record Keeping Obligations) Rules, Cap.571AL (Reporting Rules)</td>
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<td>Securities and Futures (Stock Markets, Futures Markets and Clearing Houses) Notice, Cap.571AM</td>
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<td>Comprehensive Guidelines for Supervision of Financial Market Infrastructures 2014</td>
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<td>Comprehensive Guidelines for Supervision of Financial Instruments Business Operators, etc.</td>
<td>June 2014</td>
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<td>New Zealand</td>
<td>Financial Markets Conduct Regulations 2015 (amendment) Most provisions came into force on 1 December 2015 but some will come into force on 17 December 2015 or 1 June 2016</td>
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<td>Securities and Futures (Markets) (Amendment No. 2) Regulations 2014-01 Jul 2014; Securities and Futures (Reporting of Derivatives Contracts) (Exemption) Regulations 2014-01 Jul 2014</td>
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<td>Securities and Futures (Clearing Facilities) (Exemption) Regulations 2013-01 Aug 2013</td>
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<td>United States</td>
<td>33-8998 Jan. 13, 2009 Enhanced Disclosure and New Prospectus Delivery Option for Registered Open-End Management Investment Companies</td>
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<td>33-9022 Apr. 16, 2009 Adoption of Updated Electronic Data Gathering, Analysis, and Retrieval system (EDGAR) Filer Manual</td>
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<td>33-8998A May 28, 2009 Enhanced Disclosure and New Prospectus Delivery Option for Registered Open-End Management Investment Companies; Correction</td>
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<td>33-9058 Jul. 28, 2009 Adoption of Updated EDGAR Filer Manual</td>
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<td>33-9077 Oct. 26, 2009 Adoption of Updated EDGAR Filer Manual</td>
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<td>33-9087 Dec. 15, 2009 Extension of Filing Accommodation for Static Pool Information in Filings With Respect to Asset-Backed Securities File No.: S7-23-09 Effective Date: December 31, 2009</td>
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<td>33-9089A Feb. 23, 2010 Proxy Disclosure Enhancements (Correction)</td>
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<td>33-9115 Apr. 1, 2010 Adoption of Updated EDGAR Filer Manual</td>
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<td>July 21, 2010, Dodd-Frank Wall Street Reform and Consumer Protection Act</td>
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**Source:** developed for this research, data covers the period 208-3/2016, list of documents adopted from websites of securities regulators
In 2009 IOSCO issued several reports to address the issue of market conduct oversight. As short selling emerged as one of the serious problems in the 2008 GFC, one of the first reports by IOSCO after the crisis was the “Final Report on Regulation of Short Selling” (IOSCO, 2009e). IOSCO (2009b) stressed the need for securities regulators to reassess the current approaches to market surveillance in and to re-evaluate whether the existing approaches are effective in detecting and preventing potential market abuses, given the context post-crisis securities markets.

IOSCO (2009e) also developed high-level principles for the effective regulation of short selling to assist regulators in terms of setting up an adequate short selling regulatory regime. It was assumed that this international initiative is an essential global response to restore and maintain investor confidence under the current financial crisis, as the principles were formulated to address the objectives of investor protection, helping to ensure that markets are fair, efficient and transparent, and reducing systemic risk.

In view of the financial crisis the IOSCO set up the Task Force on Short Selling within IOSCO’s Technical Committee to develop high-level principles for the effective regulation of short selling. These principles are designed to assist regulators in terms of setting up an adequate short selling regulatory regime. IOSCO (2009e) argued that this international initiative is an essential global response to restore and maintain investor confidence under the current financial crisis, as the principles were formulated to address the objectives of investor protection, helping to ensure that markets are fair, efficient and transparent, and reducing systemic risk. The reports recommended four principles of effective short selling regulation as follows: (i) Short selling should be appropriately controlled to minimize the potential risks that could affect the orderly and efficient functioning and stability of financial markets; (ii) A specific reporting regime should be set up to provide timely information about short selling to the market or to securities regulators; (iii) Short selling activities should be monitored by an effective compliance and enforcement system; (iv) Regulation of short selling should allow appropriate exceptions for certain types of transactions for efficient market operation and development (IOSCO, 2009e, p. 4).

In December 2009, IOSCO issued a survey report, titled “Approaches to Market Surveillance in Emerging Markets” (IOSCO, 2009b). The report stressed the need for securities regulators to reassess the current approaches to market surveillance in and to re-evaluate whether the existing approaches are effective in detecting and preventing potential market abuses, given the context post-crisis securities markets:

Globalization of financial markets reinforces the need for surveillance approaches to stay abreast with global changes in order to meet the challenges posed. Regulators must be able to respond quickly to market crises that have systemic implications. Further, regulators need to remain effective supervisors in a global marketplace where no single regulator necessarily possesses all the requisite information to regulate the market. (IOSCO, 2009b, p. 24)

The recommendations and implications for emerging securities market regulators drawn from the findings of that survey report can be summarized as follows:

- First, the primary responsibility and accountability of market surveillance must be clearly communicated to the market, particularly in cases where the securities regulator and stock exchange are both involved in the process of market surveillance. Where market surveillance is conducted by an SRO, the securities regulator must ensure that the SRO is capable in terms of skills and resources to perform the function, and that proper oversight by securities regulator is taken place to ensure fair and orderly markets (IOSCO, 2009b, p. 23);

- Second, sufficient and effective market surveillance is essential for maintaining market confidence. It is essential for securities regulators and exchanges to keep pace with market developments and to adapt its regulatory tools to prevent and detect market abuses in response to challenging market conditions (IOSCO, 2009b, p. 23);
Third, similar issues and challenges of market surveillance are faced by emerging market securities market regulators. These include difficulties in identifying end-clients or beneficial owners, multiple layers of bank transactions and collaboration of corporate insiders with market manipulators (IOSCO, 2009b, p. 23);

Fourth, technological capabilities and systems employed are not a primary determinant of the quality of market surveillance. The limited choice of available systems and the high ownership and maintenance costs of these systems may potentially affect emerging market securities regulators in developing relevant surveillance programmes (IOSCO, 2009b, p. 23);

Fifth, an adequate emphasis should be placed on the regulatory capacity and competency development of market surveillance. Securities regulators and stock exchanges should focus on constructing of appropriate technical capacity and capabilities to effectively identify and analyse potential abnormalities in stock market place and respond rapidly (IOSCO, 2009b, p. 24);

Sixth, securities regulators should enhance market surveillance efforts on derivatives markets and cross-border trading activities. Therefore, securities regulators must understand clearly the transmission mechanisms and inter-linkages between markets and the fundamentals driving the markets (IOSCO, 2009b, p. 24); and

Seventh, arrangements between securities regulators, domestically and internationally should be set up to enhance market surveillance capabilities. It is critical for securities regulators to share of information on trading in securities and derivatives, regulatory actions imposed, beneficial account ownership, information on shareholders, records of blacklisted investors/intermediaries, and information of suspicious trading of shares dually listed on several markets, market surveillance techniques and approaches (IOSCO, 2009b, p. 24);

At the same time, IOSCO (2009f) issued a guideline for securities regulators on assessment of adequacy of securities practitioners, titled “Fit and Proper Assessment – Best Practice”. Objective of this guideline is to reduce the risk that responsible persons of the regulated institutions are not fit and proper for their roles. IOSCO (2009f) claimed that the maintenance of fit and proper standards is essential to ensure that securities activities are conducted with high standards of market practice and integrity. The Best Practices are intended to support the members of IOSCO in ensuring that financial institutions are subject to adequate regulations and supervision and that competent authorities take necessary legal or regulatory measures in this matter. IOSCO (2009f) emphasized that:

“The fit and proper assessment is both an initial test undertaken during consideration of an application for licensing or authorisation, and also a continuing and cumulative test which takes into account the ongoing conduct-of-business and the history of compliance with all applicable laws, regulation and codes” (IOSCO, 2009f, p. 4)

The purposes of the Best Practices include (i) supporting a common understanding of what fit and proper assessments of securities practitioners; (ii) outlining the principles of applying fit and proper tests; and (iii) indicating good practices in the effective design and implementation of a fit and proper assessment approach (IOSCO, 2009f, pp. 3-4). Three key fit and proper standards of (i) competence and capability; (ii) honesty, integrity, fairness, ethical behaviour; and (iii) financial soundness should be applied by securities regulators to ensure that a practitioner is suitable for the sound and prudent management of a regulated institution in the securities market. Subjects of the standards are individual practitioners, corporate securities intermediaries and any of its officers, its directors, chief executive, managers and executive officers within the framework of the functions and duties undertaken by any of these persons in any regulated activities in the securities market (IOSCO, 2009f, p. 7).

Source: developed for this research, data covers the period 208-3/2016
Box 6.7. Data analysis of 35 selected cases of strengthening of market conduct oversight

Developed markets (14)

1. **Australia:** In Australia, a strong response of securities regulator to the 2008 GFC is taking away some responsibilities of SROs. The role the Australian Stock Exchange (ASX) in market surveillance as a front-line regulator was taken over by the ASIC in 1st August 2010. With three new legal documents, ASIC became the ‘whole-of-market’ supervisor (Wadling, 2010) that has the ability to supervise trading activities and conduct-of-business by market participants in relation to domestic licensed markets, and take enforcement action. With the transfer of these functions, ASIC, the new Market Integrity Rules have the force of legislation and their breach will invoke civil penalties. Breaches of the rules may by sanctioned by civil penalties ranging from $20,000 up to $1 million. Integrity of Australian securities market was also further reinforced by a new responsibility of ASIC for enforcement through the establishment of its own Market Disciplinary Panel, with increased powers in relation to conducting investigations and penalties (Wadling, 2010).

2. **United States:** On July 27, 2011, the Securities and Exchange Commission adopted Rule 13h-1 or the "Large Trader Rule" and related Form 13H as a great effort to strengthen market surveillance. According to Lofchie, Barrentine & Trunzo (2011), Rule 13h-1 requires each "large trader" as defined in the Large Trader Rule: (i) to identify itself by filing and periodically updating Form 13H with the SEC and (ii) to disclose to each SEC-registered broker-dealer, through which it trades its large trader identification number ("LTID") and all accounts to which that LTID applies. Lofchie, Barrentine & Trunzo (2011) also noted that Rule 13h-1 requires registered broker-dealers to scrutinize accounts for the purpose of identifying "unidentified large traders" and obtain information relating to all transactions on behalf of large traders and unidentified large traders who are directly or indirectly effected by or through it. Besides, the broker-dealers also have to make such information available to the SEC through the electronic blue sheets. This Rule was depicted by Aguilar (2011) as the means for the SEC to identify and track the trading and market impact of significant market participants and a step forward in the SEC’s ability to oversee the market.

3. **Finland:** Amendments to the Act on the Financial Supervisory Authority gave Finland Financial Supervisory Authority (FINFSA) more power in administrative sanctions, expanding the scope of application of financial sanctions and increasing fee up to euro 1 million. The Financial Supervisory Authority is a member of the Single Supervisory Mechanism since 2014.

4. **France:** Law n°2010-1249 of 22 October 2010 on banking and financial regulation provided the chairman of the French Financial Market Authority (AMF) with the authority to implement emergency measures to restrict the negotiations in the financial markets in the event of exceptional circumstances. The Law extends the competence of the AMF with respect to market abuse sanction and reporting of suspicious transactions to, in particular, certain derivative markets.

5. **Germany:** In 2014, High Frequency Trading Act was promulgated in Germany for reinforcement of legal framework on market manipulation. In 2016 BaFin is under a big reorganization to perform it new operations that were enabled by new legislation. In securities supervision, BaFin handles a massive amount of new statutory provisions. To this end, there will be a new department of consumer protection and new department of prospectus supervision that will bring the Securities Supervision directorate up to six departments, rather than the previous four. The other new tasks, such as product and distribution supervision, the monitoring of repo and

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35 Luis A. Aguilar is SEC Commissioner;
securities transactions, and new reporting requirements, have been integrated into existing departments

6. Guernsey: The Financial Services Commission (Administrative Financial Penalties) Regulations 2010 came into force to empower the commission to give fine on the late submission of financial statements; The Regulation of Fiduciaries, Administration Businesses and Company Directors, etc. 2010 came into empower the Commission to make rules in relation to the carrying on of regulated activities by licensed fiduciaries and generally as to the manner in which licensed fiduciaries conduct their business.

7. Italy: In 2011, Consob underwent an important reorganization in order to adapt to the new needs of the financial system. The number of people directly involved in inspections and supervisory tasks has been increased and their respective functions are better organized. A new division has been created with the mission to coordinate regulatory activities. Instrumental activities have been concentrated under one division, out of the previous three. This reform help optimize staff distribution and thus reduce Consob's staff costs. Besides, centralization of financial supervision in EU is another consolidation of supervisory structure.

8. Ireland: Central Bank Supervision and Enforcement Act 2013 has significantly strengthened and standardized its supervision and enforcement powers.


10. New Zealand: The FMA is New Zealand’s financial conduct regulator. FMA was established on 1 May 2011 by the Financial Markets Authority Act 2011, in response to the need to address failures in New Zealand’s financial markets, which were exacerbated by the GFC. FMA proactively monitors and enforces securities legislation and works with the prudential regulator – the RBNZ – as well as other regulatory and public sector enforcement bodies. Financial Markets Conduct Act 2013 (FMC Act) and the Financial Supervisors Act 2011, bring the majority of financial service providers into a supervisory relationship with the FMA.


12. Portugal: The Committee of Financial Innovation (CIF) was established at early 2011 to centralize and coordinate the supervision of the CMVM in matters related to financial innovation, notably within the complex financial products context.

13. Singapore: MAS enhanced Regulatory Regime to Raise Market Conduct Standards and Safeguarding Interests of Retail Investors and Public on 28 July 2011. In 2013, the MAS (Amendment) Bill was passed by Parliament giving MAS additional resolution powers and a broader range of regulatory options to deal with market failures, as well as share information with foreign resolution authorities in market supervision, where necessary.

14. Switzerland: FINMA commenced its activities on 1 January 2009, the Swiss Parliament granted it a greater degree of independence than its three predecessor institutions. FINMA's power of enforcement was extended by the revised Stock Exchange Act in 1 May 2013.

Emerging markets (21)

2. Cyprus: On 10 July 2009, the operation of the CySEC was strengthened by the new Cyprus Securities and Exchange Commission Law of 2009 (Law. 73(I)/2009), providing it the power of the supervision and enforcement and necessary tools to ensure the compliance of the supervised entities with the relevant legal framework.


4. Greece: The organization and the responsibilities of the departments of the Hellenic Republic Capital Market Commission (HCMC) are revised by Presidential Decree 65/2009 (Government Gazette 88/9.6.2009). In 2010, the IT systems used for monitoring and analysing transactions were substantially upgraded. Moreover, the Capital Market Commission is utilizing for supervisory purposes a multitude of data and information that are disclosed or made available to it.

5. Indonesia: In 2014, the OJK issued more than 20 regulations on the capital markets sector, which is divided into three sub-sectors: investment management, securities transactions and institutions, and issuers and public companies. The Financial Services Authority (OJK) launched on November 2015 a nationwide campaign to encourage the development Sharia-compliant capital market with new initiatives and regulations.

6. Israel: Israeli Securities Authority (ISA) is the securities regulator. Streamlining of ISA Enforcement Procedures Law (Legislative Amendments) of 2011 became effective, establishing an administrative enforcement mechanism which would exist side-by-side with the criminal enforcement system under the Securities Law. Under the law, an enforcement committee which included six members was established. The committee includes two panels of three members each. The chairmen of both panels are retired judges appointed by the ISA, and the other four members of the committee are lawyers and capital market professionals appointed by the Minister of Justice. Other regulations also expand the power of ISA to pre-crisis unregulated markets and products.

7. Jamaica: The FSC is seeking to enhance its regulatory framework by strengthening its consolidated supervisory regime in order to more effectively assess the risks that other members of the group may pose to its licensees and registrants. The Fourth Schedule to the Financial Services Commission Act (FSC Act) was updated to empower the commission with fixed penalties. The role of the FSC is likely be expanded to include the regulation of non-deposit taking financial institutions that provide international financial services to clients residing outside of Jamaica.

8. Jordan: New and amendment of legislation to enhance the power of JSC. JSC was empowered by new measures applied to Securities Issuing Companies Fail to Provide the Commission with Periodic Financial Statements.

9. Kenya: The Capital Markets (Amendment) Act No. 48 of 2013 strengthened the Authority’s supervision, investigation, intervention and licensing powers to ensure investor protection in conjunction with market growth and expansion.

10. Latvia: December 2012, FCMC has been authorised to carry out on-site searching and inspecting upon receipt of permission by a judge and in the presence of the State Police.

11. Mexico: the CNBV advanced the establishment of new controls that will make it possible to suspend the quotation of securities in presence of transactions considered unexpected in the Consumer Price Index of Brazil (IPC) (Circuit Breakers).

12. Mauritius: The FSA was amended by the Economic and Financial Measures (Miscellaneous Provisions) Act 2013 to enable the Chief Executive of the FSC Mauritius to conduct special investigations and extend power of FSC to apply administrative penalties.

13. Palestine: The securities sector has undergone major developments in 2014. The securities directorate within Palestine Capital Market Authority (PCMA) cooperated with
Palestine Exchange to review the existing disclosure system and propose measures to improve its mechanisms, which led to the development of an electronic disclosure system. This system was created to facilitate the automation of the disclosure operations within the capital market sectors and enable those who are subject to PCMA’s oversight to provide their disclosures to PCMA and Palestine exchange through filling an electronic form and sending it to PCMA who publish these disclosures to the public after scrutinizing them and saving them in the database.

14. Philippines: Amendment of SEC Memorandum Circular No.8 series of 2009 was revised in 2011 to extend the power of SEC in administrative penalties. SEC adopted regulatory reform and initiatives for capacity building to enhance surveillance and enforcement in 2012. Functions and duties of its departments and divisions were realigned in 2012.

15. Qatar: The Qatar Financial Market Authority (QFMA) new law No. 8 of 2012 has been issued to give the QFMA wider responsibilities and obligations to supervise and monitor the securities industry in the state of Qatar and increase the scope of international cooperation.

16. Romania: In 2014 The Financial Supervisory Authority strengthens its functions and capacity of reaction, while reducing staff costs by approximately 70 million lei. The new organization shall incorporate the IT operations and support, legal, human resources, communication, financial and administrative functions, centralize the consumers’ protection function and processing of petitions, establish the Strategy and Financial Stability Department and strengthen the supervisory and control functions.

17. Sri Lanka: Securities and Exchange Commission of Sri Lanka. The amendments to the SEC Act was initiated in 2011, empowering the SEC to regulate demutualized stock exchanges, derivative exchanges, clearing corporations, futures brokers, futures dealers, futures fund managers, corporate investment advisers and financial planners in addition to the other market participants already under regulation. In addition, the SEC will be empowered to institute civil actions against capital market offenders in order to disgorge investors who have incurred losses due to their actions.

18. Tanzania: In 2010 the Capital and Securities Market Authority (CSMA) Act was amended to extend the power of CSMA in supervision and international corporation for compliance with the requirements on becoming a signatory to the International Organization of Securities Commissions (IOSCO) MMoU on information sharing and international cooperation. In the financial year 2013/2014 the drafting of the new capital markets and commodity exchanges legislation was initiated in order to improve the regulation and supervision powers of the CSMA, to bring it in line with developments taking place internationally and to include provisions for effective regulation and supervisory aspects of commodity exchanges.

19. Trinidad and Tobago: In December 2012, the SIA 1995 was repealed and replaced by the Securities Act (SA 2012) “an Act to provide protection to investors from unfair, improper or fraudulent practices; foster fair and efficient securities markets and confidence in the securities industry in Trinidad and Tobago; to reduce systemic risk and for other related matters”. The Act came into operation on December 31, 2012.

20. Ukraine: National Securities and Stock Market Commission (NSSMC) was established by the Decree of the President of Ukraine dated 23.11.2011 №1063/2011 with the aim to provide complex regulation of relations arising on securities market, protection of interests of Ukrainian citizens and the State, prevention of abuse and violations in this area. Law of Ukraine “On Introduction of Amendments to Some Legal Acts of Ukraine on Improvement of Legislation on Securities” (#5042-VI) was passed on 05.07.2012 by the Verkhovna Rada of Ukraine.

21. Vietnam: New Department of Market Supervision was set up in 2008 to be in charge of market surveillance and enforcement. New Government Decree was promulgated in 2015 to reorganize the structure of State Securities Commission. A new department was set up within the SSC to undertake the responsibility of supervision of public companies.

Source: Source: Developed for this research, data covers the period 208-3/2016; wordings are cited or adapted from annual reports of 35 securities regulators.
Box 6.8. Data analysis of 12 cases where SROs are stronger in coordination with securities regulators in market supervision post-crisis

1. Brazil: Bovespa Market Supervision (BSM) is a separate arm to manage conflicts of interest and conduct market surveillance for the Brazilian exchange. BSM also has rule-making and enforcement duties, conducts examinations of intermediaries, oversees listing rules, and supervises market participants. Brazilian Association of Investment Analysts (APIMEC) was authorised to act as a self-regulatory entity and its oversight authority is formally recognized in Securities and Exchange Commission of Brazil (CVM) regulations in 2010 with the enactment of CVM Instruction No. 483/10. Relationship with SROs was strengthened to enhance market supervision.

2. Canada: Investment Industry Regulatory Organization of Canada and the Mutual Fund Dealers Association of Canada. Roles of SROs were strengthened rather than weakened.

3. Chile: La Superintendencia de Valores y Seguros (SVS): Roles of SROs were strengthened.

4. China: Self-regulation and coordination between regulator and SROs were strengthened.

5. Colombia: Colombia has developed economically viable self-regulatory systems and operation of SROs is expanding after the crisis. Capital Market Authority (AMV) oversees all types of intermediaries, whose membership in AMV is mandatory. Since 2010, AMV has offered a voluntary self-regulation scheme for the foreign exchange market. Currently, AMV is considered to expand to reach over other market participants, such as financial advisers, if those professionals are recognized by law.

6. India: Securities and Exchange Board of India (SEBI) proposed amended regulations in early January 2013 that effectively launched India’s first official self-regulatory body in the financial services area. SEBI issued a master circular dated March 17, 2010 updating the earlier circulars concerning the oversight of members. This circular mandates the stock exchanges/clearing corporations to inspect all active members in various segments every year. In 2010, Committee for Review of Ownership and Governance of Market Infrastructure Institutions (MIIs) has been constituted to look into the ownership and governance norms for stock exchanges, clearing corporations and depositories (collectively termed as MIIs). One of the content of review is the balance between regulatory and business functions of stock exchanges and clearing corporations, in the context of their ‘for profit’ status.

7. Jordan: Roles of SROs are stronger. Amendment of Articles (12/b/1), (12/b/2) and (14) of the Listing Directives of the Amman Stock Exchange in 2011; Instructions for Listing Securities on the Amman Stock Exchange in 2012. Adoption and amendment of a number of instructions and administrative and technical regulations for the ASE and SDC in 2013; Guidance Rules on Measure in Cases Involving Influencing the Price of Securities at ASE in 2013; Amendment of the ASE By-law of 2004, where the ASE was granted the power to impose fines on its members and their associates in the event of violating the instructions, regulations and decisions issued by the ASE(JSC, 2014)

8. Kenya: SROs were promoted. SROs were recognized and CMA was empowered to delegate specific powers to an SRO that is subject to its supervision in 2011-2012; Power of CMA in supervision, inspection and intervention into operation of Central Depository was strengthened through amendement of Central Depositories Act.in 2011-2012. Demutualization of the Nairobi Stock Exchange was taken during 2009-2014 (June 2014)

9. New Zealand: FMA of New Zealand admitted that though Amendments to the Securities Markets Act in 2011 have given FMA an expanded oversight over SROs, the front-line regulators such as trustees and statutory supervisors, accredited bodies and New Zealand Stock Exchange (NZX), still play a crucial role in overseeing the conduct of market participants including fund managers, Kiwisaver providers, listed issuers and auditors (FMA, 2015).

10. Russia: The Bank of Russia considers the increased role of self-regulation as an integral part of its overall strategy to develop the financial market in the non-bank financial institution segment. In 2013, the federal law ‘On Self-regulatory Organizations in the Financial Markets’ was enacted to set up National Securities Market Association as an SRO. This law gave SROs powers to pre-
examination of registration documents submitted for licensing. Moreover, the law allows the Bank of Russia to transfer the following powers to SROs: (i) supervision of compliance with legislation and regulations; (ii) collecting mandatory reports from market participants for initial processing and later submission to the Bank of Russia; (iii) certification of directors and personnel of market participants (BOR, 2013).

11. Sweden: Self-regulation has a long history in Sweden and still has a far greater role here than in many other European countries. Self-regulation remains an important part of the regulatory structure in securities markets. In particular the role of the dominant stock and derivatives exchange, NASDAQ OMX, remains significant, particularly as regards the supervision of listed companies. Another self-regulatory body, the Swedish Securities Council (SSC) acts in takeover situations using powers delegated to it by Finansinspektionen (FI). In recent years, FI’s powers over exchanges have been significantly strengthened.

12. Turkey: To expand the framework of the “Capital Market Intermediary Institutions Association of Turkey” amended as “Capital Markets Association of Turkey” (CMAT, ssociation) in accordance with article 74 of the Capital Market Law (CML) No.6362, and to increase its functions so as to make contributions in the capital markets as more efficient self-regulatory institution within the scope of recently delegated duties and authorities.

Source: developed for this research, data covers the period 208-3/2016; wordings are cited or adapted from annural reports of 12 securities regulators.
Box 6.9. Data analysis of 19 selected cases of strengthening supervision over SROs and stock exchanges in 2008-3/2016

1. **Bahrain**: The Central Bank of Bahrain (CBB) granted its in principle and conditional approval to Bahrain Bourse on 25th March 2013, for establishing an independent, Single Person Company that will offer clearing, settlement and central depository services. Bahrain Bourse succeeded in updating its Automated Trading System as well as the regulations relating to the settlement, clearing, central depository and central registry during 2014. The CBB expects the Bahrain Bourse to finalize and issue its regulations and requirements related to Listing and Trading, as well as the regulations related to the Clearing, Settlement, Central Securities Depository (CSD) during the year 2015.

2. **Croatia**: Securities regulators issued new regulations on supervision of Zagreb Stock Exchange. In 2013: Ordinance on the form, content, deadlines and manner of submitting reports on transactions and trading in financial instruments executed on the regulated market managed by the stock exchange (Official Gazette 155/13); Ordinance on the structure and contents of annual financial reports of the stock exchange (Official Gazette 155/13); Ordinance on the conditions for performing the function and on the procedure for granting approval for the position of a member of the management board of the stock exchange (Official Gazette 117/13); Ordinance on the content of the application and documents for granting authorisation to the stock exchange (Official Gazette 117/13).


4. **Greek**: New regulations on SROs and MIs was issued: Rules no. 23/530/12-11-2009 (Gazette B 2432/9-12-2009) on authorisation and withdrawal of authorisation of central counterparty, clearing and settlement facilities; Rules 1/527/30-10-2009 (Gazette B 2320/3-11-2009) on Authorisation of security system operation to Hellenic Exchanges SA and approval of rulebook. This rule concerns the authorisation of the operation of a securities system by the ATHEX and the approval of the Rulebook pursuant to law 3606/2007; Rule No.1/502/6-3-2009 on amendments on rules of Hellenic Exchanges; HCMC Rule 7/556/8.7.2010 —Authorisation of Derivatives System operation to the Athen Exchange Clering House and Derivative's Clearing Regulation approval; HCMC Rule 667/9.12.2013 (Gazette B/3307/23.12.2013) concerning the approval of the transfer of all responsibilities concerning the operation of the Dematerialized Securities System that currently performs by Hellenic Stock Exchange as manager of the Central Securities Depository to the new company Hellenic Central Securities Depository SA pursuant to HCMC Rule 2/507/28.4.2009 (Gazette B/998/27.5.2009).

5. **Hong Kong**: Stronger supervision by implementing an enhanced supervisory approach to Hong Kong Exchanges and Clearing Limited (HKEx), including conducting on-site inspections of its business operations beyond listing, in light of its strategic plans and changing business model.

6. **Iran**: Law on development of new financial instruments and institutions 2009 specifies: upon the request made by Securities and Exchange Organization (SEO), all regulated self-regulatory
organizations shall have to submit records, documents, information and reports requisite for the exercise of the functions and responsibilities legally vested in the organization. The managers of self-regulatory organizations inclusive of the board members and the managing directors shall hold the required professional qualifications; The issuers of self-regulatory organizations and also the persons who are appointed as their directors shall be deemed to be violators in the case of infringing the laws and regulations relating to the activity of each of them and the organizations shall have the authority to receive cash penalty from the violators in addition to the disciplinary actions prescribed in the Securities Market Act.

7. Israel: Stock Exchange and Trading Platforms Supervision Department of ISA was established in 2013 as a separate department for supervision over trading platforms and the structural change of the Stock Exchange. The Department coordinates the ISA’s supervision and control over the proper and fair management of the Tel Aviv Stock Exchange and Stock Exchange's clearing house.

8. Malaysia: The gaps in Bursa Malaysia’s governance and controls were identified in the 2013 regulatory assessment. The SC then focuses in 2014 was on strengthening governance arrangements and risk management of Bursa Malaysia, ensuring compliance and assurance as well as managing the conflict of interest and the independence of Bursa Malaysia’s regulatory functions. Given the emerging risks arising from system failure, glitches and cyber threats, the scope of SC's regulatory examination now includes assessing Bursa Malaysia’s systems reliability, recoverability and its resilience. SC focuses on the state of governance and controls in our annual regulatory assessments on front-line and SROs in the capital market. SC also further strengthens its oversight over such institutions in line with the recommendations contained in the IOSCO Objectives and Principles, which include reviewing the adequacy of existing guidelines, such as the Guidance on the Regulatory Role of Bursa and Rules of Bursa Malaysia Securities Bhd, as well as developing SRO Guidelines for the Federation of Investment Managers Malaysia.

9. Mexico: CNBV focused its supervisory strategies on making sure that the Mexican Association of Securities Intermediaries puts in place some improvements in terms of quality of certification exams and changes to the certification revalidation procedures.


11. Nigeria: Introduction of a Code of Conduct for Shareholders Associations in 2009. Establishment of the Association of Asset Managers. In 2010 Commission directly intervened in the Council of the Nigerian Stock Exchange (NSE), following allegations of serious malpractices, as well as governance issues, which were eroding investor confidence and undermining the integrity of the Capital Market. One of the measures taken was the replacement of the Director General and Chief Executive Officer of the Exchange by an Interim Administrator and the appointment by the Commission of an Interim President for the Council.

12. Norway: Harmonization with EU legislation on supervision of SROs and Stock Exchange, in addition, responsibility for operative prospectus control for transferable securities, which previously rested with Oslo Stock exchange, was transferred to Finanstilsynet with effect from 1 May 2010. The Stock Exchange Act and the Securities Trading Act were revised in 2014.

13. Pakistan: Corporatization, Demutualization and Integration of Stock Exchanges Act was promulgated in 2012. The amendments were approved to the General Regulations of the Karachi Stock Exchange (KSE) in 2013. A comprehensive rule book was approved for the KSE, which ensures harmonization and consistency among the different regulatory requirements, incorporating...
necessary changes consequent to the demutualization process, and accommodating the resulting structural changes at the KSE in 2014. In order to provide protection to investors and to resolve pending settlements in case of defaults, a serious effort is being made to enable the National Clearing Company of Pakistan Limited (NCCPL) to function as a central counterparty in 2013.

14. Palestine: In 2013 PCMA, with technical assistance from the World Bank, reviewed its supervisory and regulatory frameworks used to oversee the Palestine Exchange and the Depository and Settlement Centre (CDS) and adopted a risk-based supervision and inspection methodologies.

15. Philippines: SEC issued Memorandum Cicular No. 1 on adoption of the Broker-Dealer Chart of Accounts and Memorandum Circular No. 10 on Rules of Procedure on appeals from decisions of Self-Regulatory Organizations (SROs) in 2010. SEC supported the spin-off plan of the Philippine Stock Exchange (“PSE”) to turn over its audit, compliance and surveillance functions to a separate entity, named “Capital Markets Integrity Corporation” (“CMIC”). The Commission approved its articles of incorporation and by-laws on 14 March 2011.On 10 November 2011, the SEC granted CMIC a provisional authority to operate as an SRO after its Rules, Code of Ethics for Officials and Personnel and other requirements were approved by the Commission. SROs rules were revised in 2013.

16. Slovenia: Amended Market in Financial Instruments Act (ZTFI-D) was made in 2012. The amendment repealed the provision stipulating that the KDD and the Stock Exchange should use the provisions of the administrative procedure in their operations, while the KDD’s superiority in relation to issuers when issuing its decisions was cancelled, and the elimination of administrative and legal elements enabled a significant part of the entry in the central register to be legally and operationally transferred to the European settlement system (Target II Securities – T2S). Furthermore, the method of obtaining an approval of the tariff for the KDD and the Stock Exchange was also altered. In 2012, the Agency issued one approval of a change of general regulations of the Ljubljana Stock Exchange and issued one approval of a change of general regulations of the KDD and refused to issue authorisation to acquire a qualifying holding of KDD.


18. Trinidad and Tobago: The Securities Act 2012 empowered the Commission to conduct compliance reviews (on-site inspections) of Self-Regulatory Organizations (“SROs”) and persons registered as broker-dealers, investment advisers, underwriters and reporting issuers. In January 2014, the Commission formally established the Division of Compliance and Inspections to determine whether market intermediaries or SROs are complying with the provisions of the SA 2012, the Proceeds of Crime Act, the Anti-Terrorism Act, any written law in relation to the prevention of money laundering and combating the financing of terrorism, or any other law that is administered by the Commission.

19. United States: Strengthen the viability of self-regulation: SEC adopted Rule on Fair Administration and Governance of Self-Regulatory Organizations; Disclosure and Regulatory Reporting by Self-Regulatory Organizations; Recordkeeping Requirements for Self-Regulatory Organizations; Ownership and Voting Limitations for Members of Self-Regulatory Organizations; Listing and Trading of Affiliated Securities by a Self-Regulatory Organization (Release No. 34-
50699; File No. S7-39-04); and SEC Concept Release Concerning Self-Regulation (Release No. 34-50700; File No. S7-40-04). Since 4/2013, SEC has also made major strides in improving critical market structure, including through the Commission’s adoption of comprehensive new controls to strengthen key technological systems at securities exchanges, clearinghouses and other market infrastructures, as well as additional reforms developed with the Financial Industry Regulatory Authority (FINRA), the Municipal Securities Rule-making Board (MSRB) and the exchanges. On June 11, 2013, the US SEC charged the Chicago Board Options Exchange (CBOE) and an affiliate for various systemic breakdowns in their regulatory and compliance functions as a self-regulatory organization, including a failure to enforce or even fully comprehend rules to prevent abusive short selling.

“CBOE agreed to pay a $6 million penalty and implement major remedial measures to settle the SEC's charges. The financial penalty is the first assessed against an exchange for violations related to its regulatory oversight. Previous financial penalties against exchanges involved misconduct on the business side of their operations. Self-regulatory organizations (SROs) must enforce the federal securities laws as well as their own rules to regulate trading on their exchanges by their member firms. In doing so, they must sufficiently manage an inherent conflict that exists between self-regulatory obligations and the business interests of an SRO and its members. An SEC investigation found that CBOE failed to adequately police and control this conflict for a member firm that later became the subject of an SEC enforcement action. CBOE put the interests of the firm ahead of its regulatory obligations by failing to properly investigate the firm's compliance with Regulation SHO\(^{36}\) and then interfering with the SEC investigation of the firm” (SEC, 2013)

**Source:** developed for this research, data covers the period 208-3/2016; wordings are cited or adapted from annual reports of 19 securities regulators.

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\(^{36}\) Regulation of short selling of SEC
To follow up the commitments of G20’s leaders, IOSCO promptly responded to the crisis by efforts to enhance supervision over CRAs. In March 2008, IOSCO issued a report titled The Role of Credit Rating Agencies in Structured Finance Market (IOSCO, 2008d). This report marked out several specific issues related to ratings of SFPs and how the IOSCO CRA Code could be amended to better address the activities of CRAs in the structured finance markets. It was noted in the report that CRAs’ activities related to rating SFPs raised concerns about (i) CRA transparency and market perceptions, (ii) independence and avoidance of conflicts of interest, and (iii) CRA competition and the interaction of this competition on CRA independence (IOSCO, 2008d).

Perceiving the role of CRAs in the credit crisis, in May 2008 IOSCO published a revision of the IOSCO Code of Conduct Fundamentals for CRA to address issues related to the rating activities in the structured finance market. The updated version aimed to improve the quality and integrity of the rating process, disclosure of ratings methodologies and historic performance data, and prevention of interest conflicts (IOSCO, 2008a). It was specified in an IOSCO Review (2009m) that:

The revised Code incorporates changes designed to directly address certain conflicts of interest and transparency issues associated with ratings of structured finance instruments. The IOSCO CRA Code remains designed to be useful for all CRAs, regardless of their business model or size. However, not all of its provisions may be applicable to all CRAs, as a number of CRAs do not rate SFPs. Changes also were made to the Code to clarify certain of its provisions that appeared to cause confusion among CRAs and which came to light while the Task Force was preparing its 2007 Report (IOSCO, 2009m, p. 5).

In 2009, IOSCO’s Technical Committee made public a review on how the Code of Conduct was implemented by the CRAs in different securities market. The purpose of that review was clearly stated:

Given the gravity of the credit crisis, and the critical role of the CRAs in financial markets, in September 2008 the IOSCO Technical Committee directed the CRA Task Force to follow up on the 2007 Report and assess (1) the degree to which CRAs have adopted codes of conduct that reflect the updated provisions of the IOSCO CRA Code, and (2) whether any trends exist with regard to whether CRAs consistently choose to “explain” (rather than comply with) specific provisions of the IOSCO CRA Code (IOSCO, 2009m, p. 5).

The Review found that seven out of 21 reviewed CRAs have implemented the 2008 IOSCO CRA Code revisions, including the three largest CRAs, namely Fitch, Moody’s and S&P. Fourteen of the CRAs did not address the 2008 revisions to the IOSCO CRA Code. And 11 of the 14 CRAs that did not implement the 2008 Code revisions have implemented partially or substantially the 2004 IOSCO CRA Code. IOSCO assumed it is an encouraging sign:

…that CRAs of all sizes and methodologies are more aware of the concerns surrounding the credit rating industry and are taking steps to address those concerns (IOSCO, 2009m, p. 14).

The efforts to fortify supervision and regulation over CRAs of IOSCO became more internationalized in 2009 with its plan for International Cooperation in Oversight of Credit Rating Agencies (IOSCO, 2009l). The IOSCO Technical Committee and its Task Force on Credit Rating Agencies has continually monitored and evaluated the impact of credit ratings on the financial markets and the activities of CRAs in issuing credit ratings, and their focus was on the 2008 GFC and the role credit ratings have played in the crisis (IOSCO, 2009l, p. 2). To justify its plan for international cooperation in supervision of CRAs, IOSCO said:

Given that CRAs played such a prominent role in the recent financial market crisis, many jurisdictions are now considering ways to regulate CRAs. However, as jurisdictions adopt regulations for the oversight of CRAs, the issue of regulatory fragmentation becomes a concern for CRAs, investors and regulators. Because the IOSCO CRA Code is viewed as the international consensus regarding the regulatory issues stemming from the activities of CRAs and the processes by which CRAs develop credit ratings, the IOSCO CRA Code can serve (and is serving) as a template for regulation of CRAs. Given the importance of the issues involved and the fact that the largest CRAs operate across borders (complicating enforcement and inspections efforts for any
single regulator), IOSCO has been considering ways to avoid fragmentation in the supervision of CRA activities while enhancing the abilities of IOSCO members to oversee the CRA industry globally (IOSCO, 2009l, p. 3).

According to IOSCO (2009l), enhanced international cooperation in oversight of CRAs could: (i) promote the harmonization of efficient regulatory design by better regulatory communication and coordination of responses to market threats in without duplicative or inefficient requirements; (ii) facilitate monitoring and surveillance with greater insight into CRAs’ activities in domestic markets by gathering information about the activities of CRAs in foreign jurisdictions; and (iii) allow a greater degree of cross-border regulatory efficiency through cross-border cooperation (IOSCO, 2009l).

In 2010, IOSCO published its consultation report: “Regulatory Implementation of the Statement of Principles Regarding the Activities of Credit Rating Agencies” (IOSCO, 2010h) to review the how the CRA regulatory programs in different jurisdictions promoted the objectives of the IOSCO CRA Principles. The evaluation revealed that:

… while the structure and specific provisions of those programs may differ, the objectives of the four IOSCO CRA Principles – quality and integrity of the ratings process; management of conflicts; transparency; and treatment of confidential information – are embedded into each of the programs, albeit in varying degrees of implementation. As the evaluation of these regulatory initiatives – currently in various stages of implementation across the jurisdictions – illustrates, the transition from conceiving a CRA supervisory program to effectively applying its requirements in practice involves an ongoing process of re-evaluation as practical considerations emerge (IOSCO, 2010h, p. 38).

More importantly, the 2010 IOSCO’s Objectives and Principles of Securities Regulation has a new set of principles for regulation auditors, credit ratings agencies, and other information service providers. The principles 22 and 23 of the document clearly specified that CRAs should be subject to adequate levels of oversight. It means that registration and ongoing supervision shall be applied to ensure sound performance of CRAs whose ratings are used for regulatory purposes (IOSCO, 2010f). Besides, to protect investors, IOSCO required that all entities that offer investors analytical or evaluative services should be subject to oversight and regulation appropriate to the impact their activities have on the market or the degree to which the regulatory system relies on them (IOSCO, 2010f). Besides, Principle No. 20 also calls for adequate oversight of auditors and recommended that auditors should be independent of the issuing entity that they audit and auditing standards should be of a high and internationally acceptable quality (IOSCO, 2010f).

**Source:** developed for this research, data covers the period 208-3/2016
Box 6.11. Data analysis-strengthening supervision over credit rating agencies in 6 selected jurisdictions

In Australia, the financial regulator announced its decision to require CRAs to be licensed in November 2008. This action followed a review ASIC and the Australian Department of the Treasury, announced in May 2008. Since CRAs give financial advice”, which was defined under the Australian Corporations Act to include opinions or reports that could be regarded as influencing a person in making a decision to buy or sell a financial product, CRAs are subject to the existing Australian licensing regime for all financial services providers. Therefore, on January 1, 2010, ASIC terminated previously existing licensing exemption for the three largest CRAs operating in Australia. Beginning on that date, CRAs operating in Australia are required to hold an Australian Financial Services (AFS) license (IOSCO, 2010h).

In European Union: November 2009, the EU promulgated a Regulation requiring the registration and oversight of CRAs, which became effective on December 7, 2009. The EU Regulation requires that all CRAs established in the EU seek authorisation from the relevant national authorities and, among other things, provides that only credit ratings issued by CRAs subject to the new regulations can be used by entities based in the EU for regulatory purposes (IOSCO, 2010h).

In Japan, legislation was passed in June 2009 to introduce a regulatory framework for CRAs, which came into full effective in April 2010, requiring CRAs to be registered with the Financial Services Agency of Japan (JFSA). This framework also imposed additional obligations on broker-dealers, effective in October 2010, to provide detailed explanations to customers upon using ratings issued by unregistered entities. Besides, several other IOSCO member jurisdictions, including Hong Kong are in the process of developing regulations for CRAs (IOSCO, 2010h).

In Mexico, licensing of CRAs has been required since the December 1999 by the Regulation for CRAs, which included requirements to obtain authorisation of National Banking and Securities Commission (CNBV) to operate as a CRA, requirements to maintain internal controls for the rating process, and qualification requirements for analysts. However, after the financial turbulence in the 2008 GFC, the CNBV has been working on amendment of the Securities Market Law in order to enhance its powers to regulate, supervise and sanction misconduct of CRAs. Besides, a proposal to improve the Regulation for CRAs was sent to CRAs in November of 2009, opening a consultation period finished by the end of January 2010 (IOSCO, 2010h).

In UK, Financial Services Authority (FSA) published the Turner Review, which also highlighted the responsibility of CRAs in its analysis of the causes of the financial crisis in March 2009 (FSA, 2009; Utzig, 2010). The review came to the conclusion that the growth of the credit derivatives market created the possibility that: (i) the use of credit ratings in counterparty collateral arrangements would produce a strongly pro-cyclical effect; (ii) ratings for structured credit proved far less vigorous forecaster of future developments than ratings for the single name securities which had existed for many decades; and (iii) there are concerns about whether the governance of rating agencies has properly dealt with the issues of interest conflicts and analytical independence (FSA, 2009, p. 76). The FSA was committed in more stringent regulation and supervision of CRAs and fully supported the legislation to be launched by EU:

Regulation can and should address issues relating to the proper governance and conduct of rating agencies and the management of conflict of interest. Legislation to achieve this aim is now being formulated by the EU with regulation likely to enter into force in late summer 2009 if it is passed in first reading. The FSA supports the aims of this legislation.(FSA, 2009, p. 78).

Beside, the FSA (2009) claimed that supervisory oversight of CRAs should require that CRAs only accept rating assignments where there is a reasonable case, based on historical record and adequate transparency for ensuring that a consistent rating could be produced.

In US, it was found that the most sensible way to go over the challenges of the crisis is by establishing a registration process with competent authorities, which thoroughly would screen CRAs for licensing and supervise them on an ongoing basis and revoke the licenses in cases of
non-compliance (Maris, 2009). The event that the SEC for the first time has included the CRAs in the list of institutions subject to comprehensive registration was commended by Maris (2009):

It involves for the first time a comprehensive registration mechanism, ongoing oversight, and empowers the SEC to censure, limit, suspend, or revoke registration of the Nationally Recognized Statistical Rating Organizations (NRSRO) should the latter “fail to file the [annual] certification required” or “fail to maintain adequate financial and managerial resources to consistently produce credit ratings with integrity”. Most importantly however, the Act removes the barrier of “nationally” or “generally recognized” for NRSROs, and simply requires a three year prior presence in the credit rating industry. This will substantially enhance competition and serve to further disentangle the quality of credit ratings from the reputational capital view (Maris, 2009, p. 13).

For investor protection and improvement of securities regulation, the Dodd-Frank Wall Street Reform and Consumer Protection Act launched in 2010 has a whole subtitle C of Title IX on Improvements to the Regulation of Credit Rating Agencies (US Government, 2010). Seventeen sections from 931 to 939H of this Subtitle impose requirements to enhance regulation, accountability, transparency, qualification and independence of CRAs. Among them, the most important are those about removal of statutory references to credit ratings, review of reliance on ratings, elimination of exemption from fair disclosure rule and SEC’s study on strengthening CRA independence. 

Source: developed for this research, data covers the period 2008-3/2016; wordings are cited or adapted from annual reports of securities regulators.
Box. 6.12. Discussion of responsiveness in supervision by 20 selected securities regulators

**Australia:** ASIC intends to continue to be a high performing and responsive agency that delivers on our objectives as set out in the ASIC Act to contribute to Australia’s economic growth. Depending on our resources and powers, we respond to misconduct or the risk of misconduct by: (i) educating investors; (ii) providing guidance to gatekeepers (iii) disrupting harmful behaviour (iv) taking enforcement action, and (v) providing policy advice to Government. Cited from (ASIC, 2014a).

**Bahamas:** Developing the Securities and Investment Act, 2011, its Regulations and Rules speaks to its commitment to industry collaboration to ensure a responsive, flexible yet strong regulatory framework (SIA, 2012, p. 2).

**Bahrain:** We consult with practitioners and the various other stakeholders in the financial sector to understand their needs and desires, and we strive to be responsive to those needs. A fundamental premise of our approach is that we make considerable efforts to ensure that our licensees understand the importance of, and implement and comply with, recognized international best practice in their field (Rasheed, 2012).

**Barbados:** Values of Financial Services Commission include: Accountability, Excellence, Integrity, Impartiality, Responsiveness (FSC, 2015c).

**Canada:** The Canadian securities regulator must be accessible and responsive to investors and market participants, large and small, in all regions of Canada. It must provide strong enforcement to deal with abuses at all levels. And it must deliver regulation that does not impose an excessive burden on market participants(Hyndman, 2009).

**France:** The subprime crisis has highlighted the need for better organized market supervision at global level. Crucial factors in this regard are the responsiveness and coordination of the international bodies that regulate financial markets and market participants. Cited from (AMF, 2008).

**Gibraltar:** The Government of Gibraltar is working to establish Gibraltar as the EU domicile of choice across the full spectrum of financial services. Critical to the achievement of this objective is efficient, robust and responsive regulation. Cited from (FSC, 2015b, p. 3).

**Guernsey:** A vital objective for the GFSC is to develop and sustain an open and responsive two-way relationship with the regulated community and the individual firms that make it up. Open and responsive communication is a key to effective regulation designed to meet this objectives. It is also a key to a regulatory approach which supports the efforts of firms who see meeting regulatory standards as a matter of substance not mere form, and who integrate compliance into their business strategies, management structures and commercial operations. But it is equally important that firms, and those who manage their affairs, should take responsibility for assessing the implications of regulatory standards and requirements for their own business. Cited from(GFSC, 2015, p. 1).

It is a fact of life that respectable and responsible financial services businesses want to be regulated. They also want to be in Guernsey because it is recognized as being responsive and accommodative, but without compromising on regulatory quality. Guernsey’s government recognizes the need for greater governmental involvement in business development, and is currently working with the Commission and industry to devise a financial services strategy. Cited from (GFSC, 2013, p. 8).

**Indonesia:** The system is designed to handle consumer questions and complaints effectively, rapidly, responsively, transparently and accountably. Cited from (OJK, 2014).

**Ireland:** The Financial Regulator has continued to strive for a regulatory system that is robust and is internationally credible but that also allows financial institutions to manage themselves. We believe in a regulatory system that will not stifle innovation, that is open to change and is responsive. In adopting this position we have listened closely to our own industry. Insofar as we can, we continue to implement European regulation in a manner consistent with this approach.
However, in keeping with this form of implementation, we must be able to depend on the industry to deliver on the responsibilities that this model of supervision creates. Cited from (Neary, 2006).

**Israel:** We have improved supervision by making the dialogue between the ISA and public companies more hands-on, more responsive and more service oriented. We have raised the bar on accountability by demanding more from principals and gatekeepers. We have made enforcement more effective by taking a proactive approach to detection, deterrence and prosecution. This approach draws on a deep well of civil and criminal enforcement strategies which enables us to address problems swiftly and equitably. Cited from (ISA, 2007).

**Japan:** The Securities and Exchange Supervisory Commission (SESC) will continue to optimize the effects of the authority and functions given to it and will seek to develop a more responsive and effective surveillance system so as to protect investors. Since sound market operation requires shared recognition of problems and close information exchange with self-regulatory organizations and relevant authorities, the SESC will further strengthen its cooperative relationship with such organizations. Responding to the changing environments in the markets and revision of the regulatory systems, the SESC will do its utmost to establish fair, highly transparent and healthy markets and maintain the trust of investors. Cited from (SESC, 2009).

**Malta:** The Malta Financial Supervisory Authority (MFSA) operates through a prudent, dynamic and proactive regulatory framework which is based on high standards and promotes sustainable and inclusive growth. The MFSA embraces a culture which values open communication with stakeholders and constantly reviews the delivery of the regulatory framework. The MFSA is responsive to the requirements of existing licence holders, mindful of potential new entrants joining the market and cognisant of new operating models which have transformed established markets. Cited from (Greh, 2015).

**Mauritius:** The effectiveness of the regulatory regime depends to a significant extent on maintaining an open and cooperative relationship between the FSC and those it regulates. The FSC exercises its enforcement powers in a manner that is transparent, proportionate, responsive to the issue, and consistent with its publicly stated policies. The FSC ensures a fair treatment when exercising its enforcement powers. The FSC aims to change the behaviour of the person who is the subject of its action, to deter future non-compliance by others, to eliminate any financial gain or benefit from non-compliance, and where appropriate, to remedy the harm caused by the non-compliance. Cited from (FSC, 2015a).

**Mexico:** The future challenges demand a huge commitment and high responsive abilities from the CNBV. Both myself and all the officials collaborating in the National Banking and Securities Commission are committed to keep working responsibly in order to protect Mexico’s interests by supporting the construction of a robust financial sector, to the service of the country, its companies and citizens. Cited from (CNBV, 2014, p. 8).

**Pakistan:** To develop an efficient and dynamic regulatory body that fosters principles of good governance in the corporate sector, ensures proper risk management procedures in the capital market, and protects investors through responsive policy measures and effective enforcement practices. Cited from (PSEC, 2011, p. cover).

**Philippines:** By December 2000, the SEC had successfully transformed itself into a leaner organization, governed by a structure more responsive to the changing demands of capital market regulation, staffed with vibrant and highly-qualified professionals, and supported by a computerization program that would both modernize and transform the SEC and its services. Cited from (SECP, 2013).

**Singapore:** Tenet 4: “Responsive to Change and Cycles” recognizes the need for the regulatory framework to be updated to keep pace with changes in the industry and as new risks emerge. Regulation should also require the pre-emptive build up of prudential buffers in financial institutions to weather a downturn or stress events, including financial, operational and business conduct risk events, as well as be able to respond to macro-prudential risks across the financial system. Cited from (MAS, 2010).
**Spain**: The architecture of the supervision system would appear to be vital to success in maintaining financial stability. Without a model of supervision that is responsive to the current financial system, which is more complex and global, we will depart from that public goal and will fail to take full advantage of the positive effects of a more competitive, efficient financial system. Since the old models of sectorial supervision (banking, insurance and securities) have become obsolete, a sole supervisor or twin-peaks are the two options around which countries are adapting their structures. Cited from (Lorente, 2008).

**UK**: Long term business sustainability depends on an open, transparent and flexible risk-responsive culture. These ideas and thoughts are not new but they are worth reiterating; especially as the industry grows in confidence and profitability. Cited from (Dermott, 2014).

**Source**: *developed for this research, data covers the period 2008-3/2016.*
Table 6.7. List of post-crisis IOSCO public documents regulatory and policy themes studied in this research

<p>| 1. Principles and Standards of Securities Regulation; Assessment Methodology of the Principles |
| 2. OR06/2015 Progress Report on the CCP Workplan, Chairs of the BCBS, CPMI, FSB ReSG, FSB SRC, and IOSCO 22 Sep 2015 |
| 3. OR05/2015 2015 CCP Workplan, Chairs of the BCBS, CPMI, FSB ReSG, FSB SRC, and IOSCO 22 Sep 2015 |
| 5. FR03/2015 Public quantitative disclosure standards for central counterparties, Report of the Committee on Payments and Market Infrastructures and the Board of IOSCO 26 Feb 2015 |
| 7. Margin Requirements for Non-Centrally Cleared Derivatives, Report of the Basel Committee on Banking Supervision and the Board of IOSCO 02 Sep 2013 |
| 9. FR06/13 Principles for the Regulation of Exchange Traded Funds, Report of the Board of IOSCO 24 Jun 2013 |
| 10. FR05/13 Principles for the Valuation of Collective Investment Schemes, Report of the Board of IOSCO 03 May 2013 |
| 11. FR01/13 Suitability Requirements With Respect To the Distribution of Complex Financial Products, Report of the Board of IOSCO 21 Jan 2013 |
| 17. FR02/12 Principles on Ongoing Disclosure for Asset-Backed Securities, Report of the Board of IOSCO 27 Nov 2012 |</p>
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<td>29.</td>
<td>Principles for Periodic Disclosure by Listed Entities, Report of the Technical Committee of IOSCO 08 Apr 2010</td>
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<td>32.</td>
<td>Regulation of Short Selling, Report of the Technical Committee of IOSCO 19 Jun 2009</td>
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### II. Strengthening Accounting, Auditing, Disclosure and Transparency Requirements

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<td>FR24/2015 Transparency of Firms that Audit Public Companies, Report of the Board of IOSCO 06 Nov 2015</td>
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<td>3.</td>
<td>MS06/10 Non-Professional Ownership Structures for Audit Firms Consultation Report - Comment Letters, Report of the Technical Committee of IOSCO 28 Oct 2010</td>
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<td>4.</td>
<td>MS05/10 Comments Received in Response to Consultation Reports on Issues Pertaining to the Audit of Publicly Listed Companies - Comment Letters, Report of the Technical Committee of IOSCO 28 Oct 2010</td>
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<td>6.</td>
<td>Comments Received in Relation to the Consultation Report, Auditor Communications, Report of the Technical Committee of IOSCO 10 Feb 2010</td>
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### III. Strengthening Secondary Markets Regulation and Market Surveillance

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IV. Financial Market Infrastructure

2. **FR18/2015 Application of the Principles for financial market infrastructures (FMIs) to central bank FMIs**, Report of the Committee on Payments and Market Infrastructures and the Board of IOSCO 19 Aug 2015
3. **FR09/2015 Implementation monitoring of PFMIs: Second update to Level 1 assessment report**, Committee on Payments and Market Infrastructures (PFMIs) and the Board of IOSCO 11 Jun 2015
5. **Assessment methodology for the oversight expectations applicable to critical service providers**, Report of the Committee on Payments and Market Infrastructures and the Board of IOSCO 23 Dec 2014

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**Total: 281**

**Source:** developed for this research, data covers the period 208-3/2016. Documents in the lists are obtained from IOSCO website: [https://www.iosco.org/publications/?subsection=public_reports](https://www.iosco.org/publications/?subsection=public_reports)