Developing an Evidence-Based Approach to Accelerating Regional City Growth: A Case Study of Victoria

Chris McDonald
*Regional Development Victoria*

Vinnie Maharaj
*Regional Development Victoria*

Follow this and additional works at: [http://epubs.scu.edu.au/jesp](http://epubs.scu.edu.au/jesp)

**Recommended Citation**
McDonald, Chris and Maharaj, Vinnie (2015) "Developing an Evidence-Based Approach to Accelerating Regional City Growth: A Case Study of Victoria," *Journal of Economic and Social Policy* Vol. 17 : Iss. 1 , Article 3.
Available at: [http://epubs.scu.edu.au/jesp/vol17/iss1/3](http://epubs.scu.edu.au/jesp/vol17/iss1/3)

ePublications@SCU is an electronic repository administered by Southern Cross University Library. Its goal is to capture and preserve the intellectual output of Southern Cross University authors and researchers, and to increase visibility and impact through open access to researchers around the world. For further information please contact epubs@scu.edu.au.
Abstract
Regional cities are an important element of the national settlement system, and supporting their growth is a policy objective for different governments across Australia. The aim of this paper is to examine how Regional Development Victoria has assembled and applied an evidence-base to support decision making about how to accelerate the growth of Victoria’s regional cities. The paper begins by outlining the policy context in Victoria and the Government’s objective to achieve more balanced growth across the State. This objective has been articulated through the Government’s land use and infrastructure planning documents. The first component of the evidence-base was a literature review to identify existing research about regional city growth and factors important to their development. The second component involved testing these factors empirically through a comparative analysis of regional city growth and all non-metropolitan local government areas in Victoria. This analysis indicates the importance of local competitiveness factors to explaining differences in regional city economic performance. These include measures of human capital such as tertiary attainment and skilled labour supply, industry mix, and the quality of local infrastructure. The third component of the work involved more detailed regional city profiling to further understand these factors. The paper concludes by discussing the implications of this analysis for future policy development and investment to accelerate the growth of Victoria’s regional cities.

This article is available in Journal of Economic and Social Policy: http://epubs.scu.edu.au/jesp/vol17/iss1/3
Introduction

The aim of this paper is to examine how RDV\textsuperscript{1} has assembled and applied an evidence-base to support decision making about how to accelerate the growth of Victoria’s regional cities. This work was developed in response to the Government’s policy objective to accelerate growth in regional and rural Victoria.

This is a multi-faceted and complex field presenting ongoing challenges for governments, researchers, and other advisors. Our research targeted the following questions:

1. What is the economic growth performance of Victoria's regional cities?
2. What factors are influencing the economic growth and development of these cities?
3. What are the competitive advantages of each city?
4. What types of economic infrastructure might be required to support these competitive advantages?

These questions align with the key themes of the Journal’s focus megatrends and its impacts on regional Australia, and the policy responses necessary to enable regions to respond appropriately.

RDVs research acknowledges that regional cities are subject to multiple forces of change that influence their economic size and growth performance. These are beyond the control of state governments (e.g. global economic conditions, globalisation of supply chains, changes in technology and its use, natural disasters). RDVs research aimed to focus on the areas of opportunity through which the Victorian Government might influence regional growth outcomes.

The next chapter provides a closer look at the policy context that has shaped activity in regional Victoria.

Policy context: growth of regional cities in Victoria

Support for the growth of regional cities as part of a state planning and economic development policy has been a consistent feature in Victoria since the 1990s. The Liberal–National Coalition Government’s *Living Suburbs – a policy for metropolitan Melbourne into the 21\textsuperscript{st} Century* included a direction to ‘Strengthen links between Melbourne and regional Victoria to increase the competitiveness of the Victorian economy as a whole’ (Government of Victoria, 1995). The Labor

\textsuperscript{1} The authors of this paper were employed at RDV at the time of writing this article, and the research reflects their work which was developed at RDV. For this reason the paper interchangeable refers to the research as the author’s research and as RDV’s research.
Government’s metropolitan planning policy – *Melbourne 2030 – Planning for Sustainable Growth* – included a direction ‘Networks with regional cities’ (State of Victoria, 2002). Both policies emphasise the importance of better infrastructure to link Melbourne with centres such as Geelong, Ballarat and Bendigo to enhance their growth capacity and performance.

The Victorian Coalition Government was elected in 2010. The Government’s policy settings focused on increasing productivity and growing export markets to ensure Victoria’s prosperity as a state that is not based on mining resources to drive growth (Victorian Government, 2012). The Government’s spatial planning objectives included accelerating long term population growth in non-metropolitan areas of the State, particularly in the larger regional cities (Walsh, 2011; Victorian Government, 2012). The Government also provided for a place-based focus to regional city investment through the Regional Cities ministerial portfolio. The Minister responsible for regional cities: coordinates Government action and responsiveness; and, advocates for regional cities within State and Federal governments (Napthine, 2011).

A key stakeholder group for this Minister has been Regional Cities Victoria (RCV). RCV was established as a self-selected group in 2000 and includes the municipalities of Ballarat, Greater Bendigo, Greater Geelong, Horsham, Latrobe, Mildura, Greater Shepparton, Wangaratta, Warrnambool and Wodonga (Figure 1). RCV has had a strong focus on investing in liveability and transport infrastructure to support future population growth, which includes implementing a whole of government approach to planning and investment (including transport, telecommunications, key social services and amenities) (RCV, 2012). In August 2012 the Government announced the development of a Regional Cities Growth Strategy for RCV to develop a strategic model for growth that will focus on the delivery of infrastructure over the next 25 years (Premier of Victoria, 2012). This strategy was to focus on four areas, including:

- economic and population drivers;
- strategic and statutory planning;
- urban and community infrastructure; and,
- governance and resources to support city growth.
In 2014 the Victorian Coalition Government released its metropolitan planning strategy *Plan Melbourne*, which includes an objective to ‘maximise the growth potential of Victoria by developing a state of cities which deliver choice, opportunity and global competitiveness’ (State of Victoria, 2014). This includes a focus on strengthening regional city central business districts, optimising the use of surplus government land, and continuing to provide rail and road upgrades between these cities and Melbourne.

Over the past three years RDV has invested in the development of an information base about the economy of regional Victoria to better inform investment decision making and policy development (McDonald, 2014). Part of this information base has been analysis regarding the growth and development of regional cities. Australia’s regional economies increasingly operate in a complex global economic system, and there are a range of challenges and limitations to the research.
presented here. The literature on regional development proposes differing ideas, and not all theories are evidence or applicable in Victoria. We have aimed to enhance the applicability of this research by undertaking analysis regarding the growth and development of Victoria’s regional cities and engaging with staff across government, local councils, research organisations and other stakeholders in an attempt to establish a robust framework for the research.

The policy debate in Victoria had largely tended to focus on how to boost the population growth of these cities as a means of reducing population growth pressures in metropolitan Melbourne. The Government objective to accelerate regional city population growth is interrelated with achieving economic development across the cities. Overall economic growth and the diversity and quality jobs would provide the basis for retaining and attracting population to these cities. Hence our research adopted a broader economic lens of how to better harness the economic growth potential of regional cities and regional Victoria².

RDV’s research has adopted the definition of the regional cities as the ten comprising the Regional Cities Victoria alliance, as this definition is used for the Victorian Government’s Regional Cities Portfolio and has been identified within the Regional Growth Plans’ settlement frameworks. This work was developed under the auspice of a Regional Development Inter-Departmental Committee (IDC) to ensure input from across Government, and was tested at key points with Local Government stakeholders.

The paper will now outline the key components of this work, the findings from it, and how it was developed.

**Developing the analytical framework**

The first task in developing our evidence-base was to review the relevant literature regarding factors that influence regional city economic performance.

This literature review was framed by national and international policy debates about cities and regional development (OECD, 2012). This policy debate has tended to focus on larger metropolitan regions where businesses reap the benefits of the availability of large labour pools, diverse backward and forward linkages, and interactions resulting in knowledge spillovers (OECD, 2006; Glaeser, 2012). In Australia, this focus is also evident particularly due to the dominance of the

---

² Whilst the focus of this paper is on regional cities, RDV’s research also covered rural Victoria and RDV acknowledges that vital role of rural industries in driving innovation and exports.
larger mainland capital cities (Budge and Butt, 2009). Although capital cities tend to dominate our settlement structure and policy conversation, regional centers have experienced comparatively strong population growth in recent times. This is also supported by evidence across the OECD which shows mid-sized cities have maintained or increased their share of national populations (OECD, 2006).

Within capital cities, economic activity is found to be concentrated in city centres where businesses have access to specialised services. However a key challenge for cities is the long and growing journey to work commute times within capital cities (Grattan Institute, 2014). This presents an opportunity for regional locations proximate to a capital city with existing clusters of employment, housing and infrastructure. O’Connor et al. (1998) argue that interactions with urban ‘mega-regions’ like Greater Melbourne that are linked into international value-chains are an increasingly important determinant of the prosperity of regional centres in closer proximity to the capitals. In a Victorian context this seems to be supported by demographic analysis which indicates higher levels of migration from Melbourne to Geelong, Ballarat, Bendigo and Latrobe than other regional centres (Budge and Butt, 2009). This proximity may also have an economic spin off where regional cities experience the growth of businesses that are complementary to those located in the larger metropolitan area due to lower land and labour costs (OECD, 2006). Recent analysis by the OECD (2009, 2011) finds that the economies of second tier and intermediate regions with a mix of urban and rural areas have generally grown quicker than larger cities. In some regions, this may be due to processes of convergence as these regions ‘catch up’ to the productivity frontier, which is consistent with neoclassical growth theory (Pike, Rodriguez-Pose and Tomaney, 2005).

Regional city growth performance is also influenced by factors which are endogenous to that location, which may lead to increasing inequalities in growth performance between cities. For example, Plummer et al. (2014) find divergence in economic performance between regions within Western Australia occurs due to differences in local competitiveness factors. Beer and Clower (2009) analysed the changing economic role and function of regional centres across Australia between 1996 and 2001, and test whether diversification or specialisation is a more effective growth strategy. The study found that these centres have tended to grow through the increasing specialisation of manufacturing and services that is linked to their resource base, infrastructure and locational endowment (Beer and Clower, 2009). The role of these cities as centres for services and value added

---

3 ABS Catalogue 3218.0
4 Defined as urban settlements with a population of over 10,000 people outside of the capital cities and beyond the satellite cities such as Geelong and Newcastle.
manufacturing to agriculture, forestry and mining in their hinterland is also identified as an important growth dynamic in the international literature (OECD, 2006).

The OECD (2006) identifies that there is a tendency for the growth of regional cities to be constrained by social costs of unemployment and the inability for manufacturing workers to transition into new employment. These human capital issues are identified as the most important factor to explaining growth performance with the largest impact on regional growth coming from increasing the proportion of people completing secondary school (Garcilazo and Martins, 2011). This aligns with more detailed analysis about the shift in the economies of Ballarat, Bendigo and Geelong from manufacturing to service based employment (DPCD, 2010). It found a strong recovery from the recession of the early 1990s with accelerating employment and population growth between 1996 and 2006. However, this has been accompanied by higher unemployment which may indicate that workers transitioning from manufacturing and lower skilled migrants have not been absorbed into the labour market.

The literature review suggests there are a range of factors which influence regional city growth performance (Table 1).

Table 1: Regional city growth determinants

<table>
<thead>
<tr>
<th>Growth determinants</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human capital</td>
<td>Knowledge, expertise and abilities of a local population</td>
</tr>
<tr>
<td>Innovation and technology</td>
<td>Capacity to generate new ideas that increase productivity and develop new markets</td>
</tr>
<tr>
<td>Agglomeration &amp; connectivity</td>
<td>Productivity benefits from access to high density employment locations and via co-location of complementary activities</td>
</tr>
<tr>
<td>Physical capital</td>
<td>Integrated investment in infrastructure and new land supply</td>
</tr>
<tr>
<td>Market size and diversity</td>
<td>Diversifying the economic base of regions and improving linkages to urban areas</td>
</tr>
<tr>
<td>Quality of life</td>
<td>Amenities and social opportunities that attract and retain people</td>
</tr>
<tr>
<td>Natural capital (resources and events)</td>
<td>Access to natural resources and physical attributes</td>
</tr>
<tr>
<td>Institutional and governance arrangements</td>
<td>Effective cross-sectoral and intergovernmental partnerships and integrated regional planning</td>
</tr>
<tr>
<td>Global economic influences</td>
<td>Global competition and changing economic landscape, globalisation of supply chains and the way business relate to the global economy, overall economic conditions</td>
</tr>
</tbody>
</table>

To identify the policy implications of these findings RDV also undertook a thematic analysis of existing policy analysis about growth strategies for regional and mid-sized cities (City of Rochester, 2003; OECD, 2006; Minister of Business, Innovation and Employment, 2012; RCV, 2012; Datu, 2013). Table 2 illustrates a sample of the potential strategic actions and focus areas identified to support regional city growth.

Table 2: Potential areas of action to support regional city growth

<table>
<thead>
<tr>
<th>Strategic actions</th>
<th>Focus areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building human capital/</td>
<td>• targeted skilled migration programs to address skills shortages</td>
</tr>
<tr>
<td>addressing the skills gap</td>
<td>• increasing the role of the university in lifting education aspiration and</td>
</tr>
<tr>
<td></td>
<td>tertiary attainment</td>
</tr>
<tr>
<td></td>
<td>• addressing low skills and social exclusion</td>
</tr>
<tr>
<td>Economic diversification</td>
<td>• attracting investment and supporting start-ups to enable value-adding to</td>
</tr>
<tr>
<td></td>
<td>the natural resource-base/ locational endowment</td>
</tr>
<tr>
<td></td>
<td>• new technologies, skills and capabilities to promote sustainable use of</td>
</tr>
<tr>
<td></td>
<td>natural capital in the rural hinterland (water, soil, forestry)</td>
</tr>
<tr>
<td></td>
<td>• attracting investment and promoting innovation to enable diversification</td>
</tr>
<tr>
<td></td>
<td>and adjustment during periods of structural change</td>
</tr>
<tr>
<td>Urban transformation (metropolitan type</td>
<td>• urban renewal opportunities (particularly CBD areas)</td>
</tr>
<tr>
<td>planning)</td>
<td>• better planning and coordination in green-field sites</td>
</tr>
<tr>
<td></td>
<td>• sustainable transport strategies to increase public transport, walking and</td>
</tr>
<tr>
<td></td>
<td>cycling</td>
</tr>
<tr>
<td>Innovation and international engagement</td>
<td>• physical connections to ports, airports and major metropolitan hubs</td>
</tr>
<tr>
<td></td>
<td>• strengthening international civic and cultural relationships</td>
</tr>
<tr>
<td></td>
<td>• enhancing the innovative capacity of local entrepreneurs</td>
</tr>
<tr>
<td>Institutional</td>
<td>• strengthening existing structures to integrate investment</td>
</tr>
</tbody>
</table>

5 These areas of focus are not exhaustive. In practice the research and advice is targeted to the policy question in focus at a point in time. A recent example is examining the opportunity for business start-up activity, which identified a range of barriers (such as constraints to venture capital funding, constraints to universities engaging in commercialisation activities) and the potential roles for government in addressing these barriers.
capacity | decision making between levels of government
|(pool and more flexible approaches to regional programs and funding)
|investing in civic and business leadership and entrepreneurship


The outcome of this literature review was an analytical framework which allowed RDV to empirically test the factors shaping regional city economic performance in a Victorian context, and identify their policy implications. This framework provided the basis for undertaking a comparative analysis of factors influencing regional city growth performance in Victoria.

**Comparative analysis of regional city growth performance**

The second component of the work drew on the analytical framework to guide an analysis of the comparative performance of Victoria’s regions and regional cities, and of the factors influencing their growth performance. This involved using widely applied techniques including both shift-share analysis and regression analysis to provide a regional Victorian assessment of:

- The key trends in regional economic and population growth, including the spatial distribution of growth;
- A decomposition of economic growth into ‘industry mix’ and ‘local competitiveness’ components to assess the role and importance of local endogenous factors of growth (Plummer et al., 2014); and
- A detailed assessment of the drivers of economic growth by local government area in regional Victoria across themes such as human capital, labour utilisation and education, physical capital, geography and connectivity, and industry diversity and structure.

Data limitations also constrained our ability to accurately isolate growth determinants. Data was largely only available covering a 10 year-time period, and for some variables for up to 20 years. Limited data meant that it was harder to accurately measure some growth drivers such as innovation, and to accurately measure some economic dynamics such as economic and trade connectivity. For the latter RDV drew on modelled estimates in the absence of data.

RDV analysed a range of headline economic performance measures across functional economic areas and local government areas including labour
productivity, gross regional product and employment change extending as long as a 20 year period from 1992-2012. For the purpose of this paper, we focus our discussion on RDV’s analysis of employment change over 2001 to 2011 as the headline measure of economic growth.

RDV have used ABS census place of work counts, which has been revised to address the issues of: a significant allocation to the geographic classification ‘Victoria-undefined’ (this was a particularly significant issue in the 2011 ABS census); and the overall undercount in employment numbers (revised upward based on the labour force survey). We note that employment is not a complete measure of industry performance – for example estimated gross value added for agriculture sector in regional Victoria has increased, while employment has decreased over the decade due to improve productivity in the sector. RDV also analysed these other indicators including estimates of gross regional product, gross value added and labour productivity.

Figure 2 shows that over the decade to 2011, employment in the traditionally larger sectors of agriculture and manufacturing declined as the composition and productivity within those sectors changed, and employment in services increased (health, education, retail). This is an overarching picture and there are differing patterns across regions and within industry subsectors. For example some sub-sectors within manufacturing are growing, whilst others are declining. Technological developments, the uptake of technology, and the globalisation of supply chains are also changing industry structure (and the degree of specialisations) across economies, and the nature of how businesses within these sectors relate to the global market (McKinsey, 2014).
Our analysis indicated that these industry changes had implications for the spatial distribution of growth across regional Victoria. Table 3 shows that in regional Victoria, the regional cities and Melbourne’s peri-urban regions lead employment (and population) growth. The analysis highlighted the significant role of the regional cities. In terms of overall scale the regional cities collectively contributed the most to regional employment growth.

Figure 2: Employment by Industry, Regional Victoria, 2001 and 2011
Source: Draft unpublished employment estimates by Department of Transport, Planning and Local Infrastructure based on ABS Census 2001 and ABS Census 2011

Employment growth in the peri-urban regions is exaggerated due to the construction of the Victorian desalination plant in the town of Wonthaggi. If the growth in construction in Bass Coast (the LGA containing the desalination plant) over the 2006-11 period is held at the same level of growth over the 2001-06 period, the employment growth rate for Melbourne’s peri-urban region is 2.8% per annum.
Table 3: Employment by Industry, Regional Breakdown, 2001 and 2011

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2011</th>
<th>AAGR % 2001-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Victoria</td>
<td>209,263</td>
<td>220,004</td>
<td>0.5%</td>
</tr>
<tr>
<td>Regional Cities</td>
<td>277,311</td>
<td>339,856</td>
<td>2.1%</td>
</tr>
<tr>
<td>Melbourne Peri-urban</td>
<td>49,933</td>
<td>67,972</td>
<td>3.1%</td>
</tr>
<tr>
<td>Metropolitan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melbourne</td>
<td>1,703,902</td>
<td>2,158,694</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

Source: Draft unpublished employment estimates by Department of Transport, Planning and Local Infrastructure based on ABS Census 2001 and ABS Census 2011

The initial analysis of regional city growth performance (2001-2011) found that growth was generally below the Victorian average, and uneven between the centres. The three largest cities and most proximate to metropolitan Melbourne - Geelong, Ballarat and Bendigo, had contributed the most to employment growth over the decade. These differences in performance pointed to a pattern of divergence in economic growth (larger cities are growing at faster rates). There was also a slowing growth rate for regional cities in the latter half of the decade (2006 to 2011), which was more pronounced than the State as a whole. This provided further evidence of divergence as Melbourne out-performed the rest of the State.

Table 4: Employment by Industry, Regional Cities, 2001, 2006 and 2011

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2006</th>
<th>2011</th>
<th>AAGR % 2001-06</th>
<th>AAGR % 2006-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ballarat (C)</td>
<td>38,012</td>
<td>44,580</td>
<td>48,276</td>
<td>3.24%</td>
<td>1.61%</td>
</tr>
<tr>
<td>Greater Bendigo (C)</td>
<td>36,845</td>
<td>43,034</td>
<td>47,264</td>
<td>3.15%</td>
<td>1.89%</td>
</tr>
<tr>
<td>Greater Geelong (C)</td>
<td>75,091</td>
<td>87,690</td>
<td>96,797</td>
<td>3.15%</td>
<td>2.00%</td>
</tr>
<tr>
<td>Greater Shepparton (C)</td>
<td>27,097</td>
<td>29,543</td>
<td>30,843</td>
<td>1.74%</td>
<td>0.87%</td>
</tr>
<tr>
<td>Horsham (RC)</td>
<td>8,811</td>
<td>9,689</td>
<td>10,080</td>
<td>1.92%</td>
<td>0.80%</td>
</tr>
<tr>
<td>Latrobe (C)</td>
<td>28,073</td>
<td>32,360</td>
<td>33,533</td>
<td>2.88%</td>
<td>0.71%</td>
</tr>
<tr>
<td>Mildura (RC)</td>
<td>21,128</td>
<td>22,724</td>
<td>22,649</td>
<td>1.47%</td>
<td>-0.07%</td>
</tr>
<tr>
<td>Wangaratta (RC)</td>
<td>12,162</td>
<td>13,344</td>
<td>13,632</td>
<td>1.87%</td>
<td>0.43%</td>
</tr>
<tr>
<td>Warrnambool (C)</td>
<td>14,480</td>
<td>15,819</td>
<td>17,043</td>
<td>1.78%</td>
<td>1.50%</td>
</tr>
<tr>
<td>Wodonga (RC)</td>
<td>15,611</td>
<td>18,803</td>
<td>19,738</td>
<td>3.79%</td>
<td>0.98%</td>
</tr>
<tr>
<td>Regional Victoria</td>
<td>536,507</td>
<td>589,219</td>
<td>627,832</td>
<td>1.89%</td>
<td>1.28%</td>
</tr>
<tr>
<td>Metropolitan Melbourne</td>
<td>1,614,959</td>
<td>1,805,479</td>
<td>2,042,134</td>
<td>2.26%</td>
<td>2.49%</td>
</tr>
<tr>
<td>Victoria</td>
<td>2,240,409</td>
<td>2,505,369</td>
<td>2,786,526</td>
<td>2.26%</td>
<td>2.15%</td>
</tr>
</tbody>
</table>
Source: Draft unpublished employment estimates by Department of Transport, Planning and Local Infrastructure based on ABS Census 2001 and ABS Census 2011

To further test this finding regarding divergence we extended the analysis to all local government areas (LGA) across regional Victoria by plotting employment growth against the log of total employment. This identified a pattern of divergence in economic growth. That is LGAs with a larger employment base grew at a faster rate over the 2001 to 2011 period. Figure 3 illustrates a positive relationship between employment in 2001 (at a log scale) and average annual employment growth rates between 2001 and 2011.

![Figure 3: Convergence – Divergence Analysis, LGAs in Regional Victoria, 2001 - 2011](image)

RDV then sought to further examine the uneven growth performance, in particular to decompose the growth performance into the influence of macro factors and that of local endogenous factors (termed “local competitiveness”). Shift-share analysis (Plummer et al., 2014; Dunn, 1960; Esteban-Marquillas, 1972; Stimson et al.) was used to deconstruct the differential growth performance of local governments compared with a ‘base economy’ which in this case is regional Victoria.

Various papers (Stimson et al., 2006; Plummer et al., 2014) have outlined limitations to, and criticisms for, using shift-share as technique for decomposing growth. These include, but are not limited to: the use of broad 1 digit ANZSIC industry classifications, where the sub-sectors within these are likely to have differing growth trends; defining ‘local competitiveness’ component as being independent of industry component; and that results are sensitive to the geographic classifications being used (e.g. LGAs versus other geographies such as groupings of LGAs). However for the purpose of RDVs research, local government areas were considered as appropriate geographies. Being
administrative boundaries, the LGA is a common basis for analysis and in regional Victoria they are relatively self-contained as economies.

Despite the limitations with shift-share analysis, the method allowed us to broadly identify the extent to which the array of industry related factors influenced local growth performance via the local industry structure, and isolate the influence of ‘local competitiveness’ component of growth (Plummer et al., 2014).

Whilst RDV undertook shift-share analysis for all regional Victorian LGAs, Table 5 illustrates the findings for the regional cities. We found that the fastest growing cities - Geelong, Bendigo, Ballarat – exhibited a strong ‘local competitiveness’ component, in fact the local component had a greater impact (in absolute terms) on growth performance than the industry component (as it did for 34 out of the 48 LGAs in regional Victoria). RDV interpreted this as implying that ‘local competitiveness’ was critical to all regions, both those that outperformed and those lagging regions.

Table 5: Decomposition of Growth – Industry and Local Component, Regional Cities, 2001 – 2011

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ballarat (C)</td>
<td>38,012</td>
<td>48,276</td>
<td>2.42%</td>
<td>9.98%</td>
<td>3.10%</td>
<td>6.88%</td>
</tr>
<tr>
<td>Greater Bendigo (C)</td>
<td>36,845</td>
<td>47,264</td>
<td>2.52%</td>
<td>11.26%</td>
<td>4.33%</td>
<td>6.93%</td>
</tr>
<tr>
<td>Greater Geelong (C)</td>
<td>75,091</td>
<td>96,797</td>
<td>2.57%</td>
<td>11.88%</td>
<td>3.11%</td>
<td>8.78%</td>
</tr>
<tr>
<td>Greater Shepparton (C)</td>
<td>27,097</td>
<td>30,843</td>
<td>1.30%</td>
<td>-3.20%</td>
<td>-2.50%</td>
<td>-0.70%</td>
</tr>
<tr>
<td>Horsham (RC)</td>
<td>8,811</td>
<td>10,080</td>
<td>1.35%</td>
<td>-2.62%</td>
<td>1.75%</td>
<td>-4.37%</td>
</tr>
<tr>
<td>Latrobe (C)</td>
<td>28,073</td>
<td>33,533</td>
<td>1.79%</td>
<td>2.43%</td>
<td>7.74%</td>
<td>-5.31%</td>
</tr>
<tr>
<td>Mildura (RC)</td>
<td>21,128</td>
<td>22,649</td>
<td>0.70%</td>
<td>-9.82%</td>
<td>-2.46%</td>
<td>-7.36%</td>
</tr>
<tr>
<td>Wangaratta (RC)</td>
<td>12,162</td>
<td>13,632</td>
<td>1.15%</td>
<td>-4.94%</td>
<td>0.07%</td>
<td>-5.01%</td>
</tr>
<tr>
<td>Warrnambool (C)</td>
<td>14,480</td>
<td>17,043</td>
<td>1.64%</td>
<td>0.68%</td>
<td>3.88%</td>
<td>-3.20%</td>
</tr>
<tr>
<td>Wodonga (RC)</td>
<td>15,611</td>
<td>19,738</td>
<td>2.37%</td>
<td>9.42%</td>
<td>4.07%</td>
<td>5.35%</td>
</tr>
</tbody>
</table>

Whilst RDV undertook shift-share analysis for all regional Victorian LGAs, Table 5 illustrates the findings for the regional cities. We found that the fastest growing cities - Geelong, Bendigo, Ballarat – exhibited a strong ‘local competitiveness’ component, in fact the local component had a greater impact (in absolute terms) on growth performance than the industry component (as it did for 34 out of the 48 LGAs in regional Victoria). RDV interpreted this as implying that ‘local competitiveness’ was critical to all regions, both those that outperformed and those lagging regions.
have a high specialisation in agriculture and manufacturing (sectors which saw declining levels of employment over the period across the State and across regional Victoria). We found that the local competitiveness component on the other hand had a positive impact across more regions of regional Victoria (21 out of 48 regions had a positive local competitiveness component). The regional cities have room for improvement in terms of local competitiveness with only 4 of the 10 cities having a positive local competitiveness component. The cities with positive local competitiveness scores were also the best performers in terms of employment growth.

These findings indicated the importance of local competitiveness as a factor in explaining differences in growth performance between regional cities. It also indicates an opportunity to enhance the capacity for growth across regional cities and regions, by improving local competitiveness factors. To uncover and better understand these factors, RDV undertook a more detailed assessment of factors shaping regional city growth performance.

RDV employed a bivariate analysis to compare and contrast the high/low regional city growth sample against various indicators of growth factors covering themes such as population and age, human capital, innovation, geography, and physical capital. An assessment of the high performing cities (Geelong, Bendigo, Ballarat, and Wodonga) identified that they differed from the underperforming cities across a range of factors. High performing cities had a higher share of working age population, school completion rates, education qualifications, average household income and households with internet connection. They were more successful at lifting labour force participation rates and lifting labour productivity over the decade to 2011. They also had higher levels of overall population and employment.

RDV complemented this analysis with single and multi-variable regressions\(^7\) across all regional Victorian LGAs, with employment growth rate over 2001-2011 as the dependent variable. The regression results confirmed the importance of the earlier findings, and that those variables identified above in fact had strong correlations and significant explanatory power (individually) in explaining growth performance. Broadly this assessment identifies that - location (distance from Melbourne), working age population, education, internet connectivity, housing market demand (assuming no major supply constraints exist across these LGAs),

\(^{7}\) A range of single and multi-variable regressions were undertaken, including stepwise regression, population weighted stepwise regressions, and combinations with different dependent variables (e.g. employment growth, Gross Regional Product growth rates)
construction activity, and population mobility have all been synonymous with higher rates of employment growth.

The analysis ranged from considering 65 to 100 independent variables across a range of themes including human capital, innovation, socio-demographics, geography and connectivity, housing, physical capital, and land use. The robustness of the analysis could be improved by identifying additional indicators under the themes of innovation, institutions and governance, local networks, amenity and quality of life. The analysis could also benefit if data was available over a longer time series, which would allow RDV to better isolate the local factors from broader macro-economic influences on growth. Whilst from a regional policy perspective, this analysis had focused on local factors; we found that these were linked to the region’s industry structure. Furthermore our analysis showed that industry structure and diversity had a significant influence on economic growth performance. Fast growing cities (exceeding Victoria’s State Growth) had more diverse economies, and higher rates of population mobility. An important driver of population mobility is employment (and industry structure). Regional cities were found to generally have the highest level of population mobility amongst Victorian regions, and the level of population mobility varied by the industry that a resident was employed in (Figure 4).
Source: Author’s analysis based on ABS Census 2011

This comparative analysis provided us with a view about the growth dynamics of regional cities, and the factors which are influencing the economic performance of these cities. It provided evidence to support recent growth theories in relation to regional development, including the importance of human capital, knowledge and innovation, and infrastructure and connectivity. It also highlighted the importance of taking a place based approach by developing a more detailed analysis of the economic performance of each city, and linking it to state government policy and investment decision making. It was important to profile the industry structure and local characteristics and factors for each city to better inform policy decisions to accelerate regional city growth.

Regional city profiling

The third component of the work involved preparing Regional City Profiles. The objective of these profiles was to provide a shared and contemporary information base about the competitive advantages of each city. They were designed for internal use by regionally and centrally based staff to assist in defining priorities areas of focus, contribute to engagement with local government, regional governance groups, and other stakeholders, and support coordinated and informed decision making by Government (for example identifying regional initiatives, investment decisions or program opportunities). Furthermore, they aimed to identify the factors that would enable or constrain future growth. This enabled us to further examine the significance of different local competiveness factors to regional city economic performance.

The framework for the profiles drew upon the themes outlined in the literature review and the comparative analysis. They were also organised in a way which broadly reflected the organisation of portfolios within State Government. A review was undertaken of the various reports that had been produced focusing on indicators associated with these themes that are used to measure city competitiveness (Table 6).
### Table 6: Framework for the Regional City Economic Profiles

<table>
<thead>
<tr>
<th>Section</th>
<th>Key themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revealed Indicators</td>
<td>• Headline growth: gross value added, employment, population, labour force participation</td>
</tr>
<tr>
<td>Industry and Employment</td>
<td>• Growth trends by sector</td>
</tr>
<tr>
<td></td>
<td>• Industrial specialisation</td>
</tr>
<tr>
<td></td>
<td>• Strategic export sectors and clusters/ firms</td>
</tr>
<tr>
<td>Human Capital</td>
<td>• Growth in the working age population – trends/ projections</td>
</tr>
<tr>
<td></td>
<td>• Skills attainment and qualifications (e.g. working age population with post-secondary education)</td>
</tr>
<tr>
<td></td>
<td>• Skills shortages</td>
</tr>
<tr>
<td></td>
<td>• Higher education (course specialisation, business links and international students)</td>
</tr>
<tr>
<td></td>
<td>• Socio-economic disadvantage (including long term and youth unemployment)</td>
</tr>
<tr>
<td>Infrastructure and connectivity</td>
<td>• Labour market catchment</td>
</tr>
<tr>
<td></td>
<td>• Access to markets/ inter-regional flows</td>
</tr>
<tr>
<td></td>
<td>• Airport/ port/ inter-modal (capacity/ growth)</td>
</tr>
<tr>
<td></td>
<td>• ICT connectivity (availability)</td>
</tr>
<tr>
<td></td>
<td>• Energy and water supply (capacity)</td>
</tr>
<tr>
<td></td>
<td>• Availability and cost of industrial land</td>
</tr>
<tr>
<td>Liveability</td>
<td>• Availability/ cost of residential land (future land budget)</td>
</tr>
<tr>
<td></td>
<td>• Housing affordability</td>
</tr>
<tr>
<td></td>
<td>• Perceptions of local liveability</td>
</tr>
</tbody>
</table>

Sources: Author’s own analysis

The objective within each section was to identify the competitive advantages of the city, the growth constraints, and growth enablers. A variety of descriptive techniques were utilised to identify these factors including multi variable analysis, location quotient analysis, time series analysis, growth indexes, composite indexes, and spatial GIS mapping. This was supplemented by qualitative analysis by reviewing key documents produced by each city (such as local economic development strategies), and testing the findings with key regional and Council staff within each location. The analysis of growth constraints and enablers was also compared and contrasted with the policy framework (outlined in Table 2) to ensure a focus on factors which governments could influence through available policy levers.

The profiles began with a detailed industry analysis. A small number of strategic industries were selected for this analysis. RDV examined the strategic industries expected to drive job growth in consultation with staff across Victorian
Government and local government, and drawing on a range of research and resources developed by RDV and consultants. The intent was to describe the strategic industries within a city that would drive employment growth, export growth, productivity growth, and/or innovation. Across the cities the key strategic industries generally were:

- Manufacturing (food and beverage, metal product, transport)
- Agriculture
- Health care and social assistance
- Tourism-related services
- Education and training
- Business-related services
- Wholesale Trade.

The nature and contribution of population related services were generally similar across the cities. The greatest variation came in agriculture, manufacturing, and business related services. The city’s had each developed different specialisations and strengths based on their resource endowment, history, and location. Each strategic industry was profiled in terms of their economic performance (growth and productivity), their supply chain linkages, their role in relation to exports, and drivers of their growth. As a result the industries spanned different types including sectors that would be considered ‘advantaged’ for competition in the global market whereby there is global demand for products, and where they build on local endowments and skillsets, and others that are more domestically focussed (McKinsey, 2014). Figure 5 shows an example of the analysis and profile for the ICT sector in Ballarat.
In addition to the individual sector analysis a regionalised input-output model was used to identify key trade linkages and estimate economic trade flows by industry by LGA, and journey to work movement patterns. The objective of this was to develop baseline understanding of connectivity between regional cities and other locations such as its hinterland, metropolitan Melbourne, interstate and overseas. We found that on average regional city economies are more reliant on international exports than the Victorian economy on average. Connectivity to these international markets via infrastructure (roads, rail, port and airports) is critical to a range of sectors across regional cities. Most regional cities have strong trade links to metropolitan Melbourne (for example via the import of business services), and also within their rural hinterlands. These findings indicate
the importance of continuing to invest in improving the quality and efficiency of connecting infrastructure (e.g. transport and ICT) in order to support the economic growth of these cities.

The profiles had a focus on identifying the key enablers and constraints in relation to improving labour market performance and attracting skills to support strategic industries. In order to target better labour and skill outcomes, the profiles considered a number of factors across the regional cities including diversity and number of existing job opportunities, quality of education offer, and the type and range of education and training on offer. General trend across the cities included:

- Loss of young people and an ageing population
- Pockets of high socio-economic disadvantage
- Higher labour force participation rate than the regional and rural Victoria average
- Relatively self-contained labour markets
- Lower levels of the workforce with a bachelor degree or higher
- Higher levels of the workforce with certificate level attainment (and occupations such as technicians and trades, and labourers).

Overall the detailed profiling demonstrated some of the challenges faced by the regional cities in terms of the skills required to increase industry growth and productivity into the future. The liveability analysis generally found that the cities had good facilities, residents enjoyed living in these locations with high levels of social capital, and housing was comparatively affordable. This analysis indicated the importance of focusing on the quality and accessibility of education and training, and targeted strategies to attract and retain skilled migrants to the future growth of these cities.

The infrastructure analysis focused on the types of economic infrastructure that is required to support strategic industries. This included land use, transport, communications, and energy and water infrastructure. Generally the cities were found to have high quality transportation, energy and water infrastructure, and an adequate supply of industrial and commercial land. They face challenges in terms of access high speed broadband and wireless technologies. The analysis of industrial and commercial land use was used to identify the location of strategic sectors across the regional cities. It encompassed an assessment of the employment lands available for future development, and an assessment of the

---

8 as reported in the Department of Transport, Planning and Local Infrastructure’s Urban Development Program
measure of economic agglomeration across SA2s within a regional city (Figure 6). Across the cities, employment was largely found to be concentrated in and around the CBDs. In some cases there are significant employment precincts outside of the CBDs such as Waurn Ponds (west of Geelong) which contains a range of activities including advanced materials research and manufacturing, health and education. Furthermore the CBDs of major cities such as Geelong, Ballarat and Bendigo have high densities of economic activity, with measures of agglomeration similar to some centres within the metropolitan area. This implied an advantage for those centres in attracting and supporting knowledge intensive jobs. This analysis indicated the importance of developing employment precincts, and the revitalisation of CBDs to future growth performance.

Figure 6: Agglomeration Analysis9 (City of Greater Geelong example)

9 The EJD Index stands for Effective Job Density (EJD), a measure of agglomeration. This measure provides an indication of the relative level of access to employment opportunities (and associated services) available across Victoria by ‘discounting’ all jobs within Victoria by the time taken to gain access to that job via car.
The regional city profiles have been useful in unpacking the local competitiveness factors that influence regional city economic performance. The productivity and employment base of each city is influenced by a small number of strategic industry sectors. Each city has a population service base (health, education, public administration) with differing specialisations in various agricultural, manufacturing and business/tourism services. The quality and efficiency of connecting infrastructure (transport and ICT) seems to be critical to the productivity and growth of these strategic industries. In terms of services the clustering of employment in precincts is also a contributing factor pointing to the significance of CBD areas. The cities generally have high levels of liveability whilst issues related to skills, workforce participation, and socio-economic disadvantage are potentially significant in constraining growth.

**Application to Regional Policy**

This evidence-base has been utilised as an input to the development of the Governments spatial planning strategies. One of the key outcomes of Plan Melbourne is ‘A State of Cities’ with the objective to ‘maximise the growth potential of Victoria by developing a state of cities which delivers choice, opportunity and global competitiveness’ (State of Victoria, 2014). The profiles were utilised to identify the competitive advantages of each city, and frame the policy narrative around land use and infrastructure actions that leverage these factors. The primary focus of this section in Plan Melbourne was twofold. The first was to support development of key employment precincts, particularly CBD areas, as a means of growing higher income jobs (State of Victoria, 2014). The second was to improve connections between the cities and Melbourne to connect businesses to national and international markets. The development of a credible and robust evidence-base enabled RDV to work with the Department responsible for Plan Melbourne to ensure a strong focus on these economic drivers of regional cities growth. Likewise, this work also informed the preparation of eight Regional Growth Plans, which focused on land use issues in non-metropolitan areas, and were developed by project teams based in these areas. The evidence-base was used to evaluate the economic components of these plans, and provide feedback to these project teams.

This work also challenges current ways of thinking and investing in regional city growth. There has been a tendency to frame the policy debate on population growth and on reducing the growth pressures on Melbourne. As a consequence policy solutions tend to focus on liveability infrastructure (social services, amenities, residential land supply), and decentralisation. This work attempts to re-frame the debate around economic factors, and the need for place-based policy
solutions that build upon and leverage the unique competitive advantages of that location. This place-based approach also challenges portfolio and program based ways of organising public administration. The Regional City Profiles identify the key business, infrastructure, and skills factors that governments should be focusing investment upon to drive growth. This could provide an important input for prioritising investments by governments, and ensuring they are targeted, integrated and sequenced effectively. However, there aren’t the corresponding institutional arrangements to organise an integrated place-based response. Decisions are still made on a portfolio basis, and programs are usually very specific with resources allocated on a competitive case-by-case basis. In the absence of institutional reform the capacity of this evidence-base to systemically influence prioritisation of investment in regional cities will be limited.

Conclusion

The aim of this paper is to examine how RDV has assembled and applied an evidence-base to support decision making about how to accelerate the growth of Victoria’s regional cities. This is a multi-faceted and complex field presenting ongoing challenges for governments, researchers, and other advisors. This work was developed in response to the Government’s policy objective to accelerate growth in regional and rural Victoria. The paper draws together various research and analysis undertaken by RDV with the intent of illustrating a logic for investigating how regional cities grow and how government can support this growth. There are limitations to the research and challenges in its application, including the data limitations outlined earlier.

A further challenge is to accurately align the research findings with the mechanisms government has to influence, and to better understand the potential extent of influence. There are various factors influencing growth outcomes across regional Victoria. These are evolving and in many cases beyond the control of governments. The research has aimed to focus on areas where the government and RDV can have greater influence, including a particular focus on infrastructure investment and programs as a means of boosting population growth in these locations.

The literature review indicated that competitive advantages and endogenous factors (such as skills, innovation and connectivity) were important to growth performance across regions. The analysis of regional growth performance in Victoria confirmed some findings across the literature. The regional cities have differed in performance, and in their industry strengths and drivers of growth. The comparative analysis found that local competitiveness factors were significant in
explaining differences in regional city growth performance. These factors included labour market utilisation, skills attainment, share of knowledge intensive industries, and the quality of connecting infrastructure. The profiling, which combined both quantitative and qualitative data enabled a deeper understanding of these factors.

Where possible, this information has been utilised to shape policy development processes within the Victorian State Government, and strengthen the advice on regional city growth. Linking various components of research into a narrative allows for a more effective application of the research.

The development of this research involved working with an Inter Departmental Committee and engagement with councils and other stakeholders. This assisted in building understanding and ownership of the approach and findings. However, its influence is limited by institutional arrangements that reinforce a portfolio, programmatic and competitive based approach to planning and resource allocation. A future direction for regional policy development and research could be on the design of institutional arrangements which enable an integrated and place-based approach to planning and investment at a city scale.

References


Budge, T and Butt, A. (2009). I’ll have my city medium thanks. What do medium sized cities offer an urban planning and policy agenda? State of Australian Cities Conference, Perth November 2009


RDV (unpublished) Regional City Profiles, August 2014


