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Harnessing the Private Sector for Social Development

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Abstract

We examine an NGO-led project of rural industrialisation that brings together the comparative advantages of rural villagers and private sector firms to improve local employment and community health outcomes. Based on household survey data from Northeast Thailand, we find that the industrialisation project raises the income earning and other prospects of the workers. Significantly, the employment exhibits a pro-poor bias, thereby providing jobs for people whose poverty might place them at increased risk of out-migration and HIV infection. In resource-constrained developing countries, mobilising resources from the private sector may assist in overcoming important development challenges. Programs such as this add another important policy tool in the fight against poverty and HIV/AIDS.

Keywords: Rural industrialisation; social development; poverty reduction; HIV/AIDS; Thailand

Introduction

The scope of corporate social responsibility has broadened considerably, to include not just environmental and human rights concerns, but also the pivotal issue of poverty. Recent influential work suggests that profit maximisation can work hand-in-hand with poverty alleviation (Sullivan, 2003; Prahalad, 2005; Kolk and van Tulder, 2006). Yet such work has been criticised on at least two grounds. First, it fails to treat poverty as a multidimensional concept, for example by ignoring issues of social and physical isolation, powerlessness and low social status. Second, despite extensive reference to case studies and real-world

illustrations, there remains a gap in actually quantifying the purported impact of business on poverty alleviation (Prieto-Carron et al., 2006).

Our paper addresses these concerns. In a study of rural Northeast Thailand, we highlight causal links between low incomes, migration, HIV infection, stigma and social isolation. We then present an NGO-mediated business-village partnership that attempts to break the links via local rural industrialisation, principally involving employment and income generation for the poor. Our econometric results suggest a positive impact of business in providing local jobs for the poor, a group at high risk of poverty-induced migration, HIV/AIDS infection and social isolation.

Rationale for the Study

Poverty and HIV/AIDS are two of the most pressing issues in contemporary development policy. Poverty remains a significant problem in developing countries, with poverty rates (at US\$1 per day in 2002) as high as 44 percent in sub-Saharan Africa and 31.2 percent in South Asia (World Bank, 2007). Meanwhile, worldwide about 33.2 million people are infected with HIV with the vast majority of new infections occurring in developing countries (UNAIDS and WHO, 2007). Given that poverty and HIV/AIDS are closely related, we offer several important reasons for pursuing research into potential solutions that address poverty and HIV/AIDS simultaneously.

First, despite decades of development efforts, poverty and inequality remain endemic in less developed countries, and the income gaps between and within countries have widened (UNDP, 2003). Creative solutions are required to increase rural incomes and encourage social development - leveraging global resources and corporate social responsibility may be one avenue (Jenkins, 2005). Developing interventions that reduce poverty and inequality are particularly important when the potential complementarities between public health and industrialisation programs are considered (Sweat and Denison, 1995; Pinstруп-Andersen and Pandya-Lorch, 2001).

Second, poverty, inequality and HIV/AIDS are gender-related. Differences in social and economic roles, unequal access to resources, and different patterns of behaviour characterise the relationship between development, disease and gender, with women at greater risk of both poverty and HIV infection (Smith and Cohen, 2000). To be effective, the role of the private sector in social policy must include directing resources in ways that address the special vulnerabilities of women (Prieto-Carron et al., 2006).

Third, anti-poverty programs to combat HIV/AIDS have been recognised as an important and sustainable public health intervention (Fenton, 2004; Hsu, 2005). Until recently, development projects and government assistance have been viewed as instruments in helping poor households to cope *ex post* with health shocks such as HIV/AIDS (e.g., see Loewenson and Whiteside, 2001). The approach illustrated in this paper seeks to invert this by suggesting a rural development approach that reduces the economic and social conditions promoting HIV infection, thereby preventing the health shocks from occurring in the first place.

Fourth, poverty and HIV/AIDS are closely related issues. Income poverty leads to adverse social and health outcomes, including susceptibility to HIV infection (Krueger et al., 1990; Lim et al., 2004; Shelton et al., 2005). For instance, migration and commercial sex work may increase as the poor seek alternative means of earning a living, leading to an increase in HIV

infection. Further, the sick become stigmatised and excluded from market opportunities, exacerbating the social disruption in which HIV infection flourishes (Danziger, 1994), while their households face increased vulnerability to poverty (Kongsin et al., 2002). The key is to break such poverty-HIV relationships with decisive interventions.

We suggest that the resources and skills of businesses, including multinationals, can be leveraged towards this goal by (re-)locating their factories near poor, rural communities. Business enterprises, working in tandem with appropriate NGOs, the government and local villagers, can have a pivotal impact in reducing poverty, rural out-migration and HIV infection. As the paper will show, a program that encourages such a relocation of factories can have direct (financial) and indirect benefits for the businesses and village workers, and external benefits for the wider community due to reduced migration and HIV spread.

This paper examines one such program, the Thai Business Initiative in Rural Development (TBIRD). TBIRD is an NGO-sponsored project in Thailand that promotes the establishment of factories at sites in relatively poor, remote areas. In the following sections of the paper we provide a fuller overview of the TBIRD program and examine its key elements, including aligning the goals of seemingly disparate, self-interested groups, and linking market forces to corporate social responsibility. These elements allow mutually beneficial employment interactions to emerge between business and other stakeholders, producing positive social and community health outcomes.

Our examination of the TBIRD program raises two important questions, which we address by examining data from a TBIRD site in Northeast Thailand. First, does the TBIRD program actually improve the wealth, income generation and other material prospects of the factory workers at the TBIRD sites? Second, do the jobs created by TBIRD tend to actually go to the poor, i.e., to the people who are more likely to migrate from the countryside to find work in urban centres, including work that places them at greater risk of contracting HIV. This site was selected for our case study because it is located in the poorest region of Thailand, with the region having an adult HIV prevalence of around 1 percent. The Northeast region is also a major source of migrant workers for Bangkok and other urban centres, particularly for the commercial sex industry.

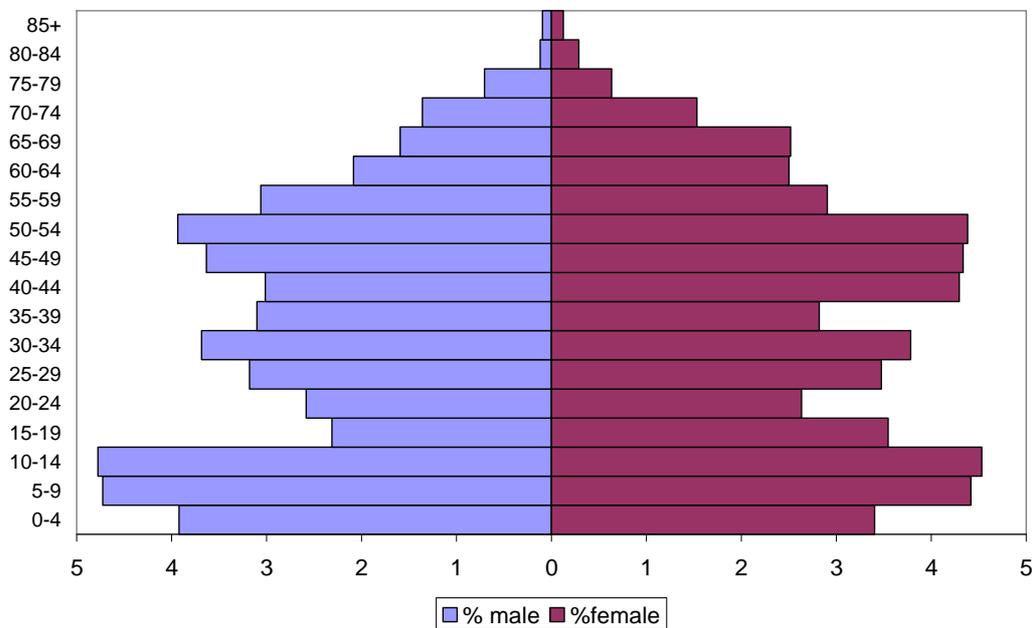
The Problem

We begin with the multidimensional nature of poverty. In our case study we focus on several key dimensions: income earning opportunity, social isolation and low status (e.g., see Prieto-Carron et al., 2006). Such elements of poverty are closely related to migration and HIV/AIDS. The Northeast is arguably Thailand's poorest region; as such, it exhibits significant out-migration (Larson et al., 1993). Out-migration is closely associated with HIV/AIDS risk behaviours, while return migration contributes to the spread of infection within local rural communities (Fuller, Kamnuansilpa and Lightfoot, 1990; Singhanetra-Renard, 1997; Ogena and de Jong, 1999; Skeldon, 2000; UNDP South East Asia HIV and Development Programme, 2002; du Guerny et al., 2003; Ford and Chamrathrithirong, 2007). Young migrants are particularly vulnerable (Ford and Kittisuksathit, 1996).

Our surveys and extensive stakeholder interviews in Thailand in June-October 2003 confirm the relative youth of migrants from the Northeast and the magnitude of the migration (see Lim et al., 2004). In our study we surveyed 660 households in two districts, Ban Phai and Phon, in Khon Kaen Province, a major province in the Northeast (a fuller description of the

survey method is presented in the empirical section, below). Figure 1 presents the observed population structure from the survey.

Figure 1: Population pyramid for Khon Kaen survey (Source: developed by this research).



A striking feature of the results is the absence of a stratum of younger people in the households surveyed. Just under 45 percent of the households surveyed had permanent migrants, i.e., people who were not part of the household at the time of survey. The migrants mostly fell within the 20-35 age range. They tended to be either young adults in search of first employment or parents seeking better employment opportunities to support their households. For men, typical migrant or travel-related occupations included taxi driving in major cities like Bangkok, inter-city truck driving, or construction work. Their itinerant occupations and lifestyle, including purchases of commercial sex, place them at greater risk of HIV infection (Morris et al., 1996; Podhisita et al., 1996). On their return, HIV/AIDS has the potential to come to the village.

Our subsequent survey of people living with HIV/AIDS (PLWHA) in Khon Kaen Province suggests a strong link between migration and HIV/AIDS. Fifty-one percent of the PLWHA surveyed were recent migrants at the time when they were likely to have contracted HIV, and at least 14 percent more were the spouse of a recent migrant. Many of the PLWHA we interviewed cited migration as a main factor in their HIV infection, or stated that their partner was infected while working as a migrant. The flow-on effects on non-income aspects of poverty were considerable. In this and other research with PLWHA, we have repeatedly encountered reports of social stigma and isolation (for further details, see Apinundecha et al., 2007). Social networks, including that of the family, have the ready potential to collapse with the spread of HIV/AIDS, reinforcing low social status and income poverty.

A Proposed Solution

The TBIRD initiative in Thailand demonstrates a particularly interesting development in the evolving fight against poverty and HIV/AIDS. The approach centres on exploiting the benefits of globalisation, and aligning the interests of business, NGOs and the government in furthering the position of the ultimate stakeholders of the development process: the people themselves. This structural intervention concentrates on providing improved local employment opportunities, higher rural incomes, empowerment of women, and a reduction in rural-urban migration. The vehicle for such changes is a program of export-oriented rural industrialisation, by bringing factories to rural villages, particularly to those in poorer regions of Thailand. Rural industrialisation has long been recognised as an important policy initiative with positive economic and income distributional impacts (e.g. see Islam, 1991; Rozelle, 1994). A suitably flexible and focused rural employment strategy can absorb surplus labour in the rural economy, reducing rural-urban migration and associated population problems, including the spread of HIV (Briones, 2006).

TBIRD is an initiative of the Population and Community Development Association of Thailand (PDA). It encourages large private companies (sponsors), including foreign multinationals, to collaborate in activities with rural villagers that benefit both the sponsor and the rural community. Each sponsor 'adopts' a village and assists its development through a range of activities, which may include establishing factory jobs near the villages, developing the business skills of the employees, strengthening local institutions, and improving the natural environment. By mediating the village-private sector exchange, the PDA contributes to the development of the rural village and exerts a moderating influence on business behaviour. The facilitation role of the PDA represents a novel approach to engaging the sponsor in corporate social responsibility, separate from the strategies presented by Winston (2002).

The TBIRD program is co-ordinated through the PDA's Community Based Integrated Rural Development (CBIRD) centres, one of which is located in Ban Phai District of Khon Kaen Province, approximately 450 kilometres northeast of Bangkok. The CBIRD Ban Phai Centre is located close to main road and rail links from Bangkok, and provides a home to several manufacturing firms, ranging in size from just a few employees to several hundred. The two largest employers produce shoe parts for Nike and medical and other uniforms for export.

Potential Benefits to Rural Villagers

The villagers, as the central stakeholders, may benefit significantly from the TBIRD program. Despite being lower than in Bangkok, the wages paid by the TBIRD sponsors exceed on average those paid by local firms in the same area. In some of the TBIRD factories, employees and other local villagers and cooperatives have also been given the opportunity to become shareholders in the factory, thereby further sharing the benefits of profitability and performance of the factories with the local community (PDA, 2000). The CBIRD centre also provides other benefits, including low-cost meals and an on-site clinic that provides basic health services to workers for free.

In addition to higher incomes, these rural industrial projects create employment for otherwise under-employed rural villagers and generate more stable household incomes. The income stream earned by the predominantly female factory workforce can buffer the seasonal agricultural incomes earned by male household members, thus reducing the need for men to seasonally migrate to cities for work. Further, increasing the incomes of women is potentially

important in reducing gender disparities in access to resources, as well as reducing the prevalence of migration of women to Bangkok for the purposes of commercial sex work (Bond et al., 1997).

The sponsor also has access to a diverse range of resources that poor rural villagers may not otherwise access, including technical knowledge, market knowledge and contacts, and financial resources. Leveraging these resources is the key to long-term benefit for the rural villagers. By accessing new markets for their products, building relationships with suppliers and customers, and learning how to conduct business, the villagers can develop key skills that may benefit them long after the sponsor ceases its involvement in the program.

Finally, workers at the TBIRD factories are encouraged to participate in a wide range of training courses facilitated by the PDA, including family planning, HIV prevention, team building, business skills development and interpersonal workplace relations. Training courses further the goals of the PDA in family planning and health promotion, and are particularly well targeted given the young and predominantly female workforce at the TBIRD factories (see Table 1). Team building and interpersonal skills workshops raise the human capital of the rural villagers, providing them with key skills that benefit both the employer and the worker. Workers can then leverage their increased human capital for increases in wages, whether in the TBIRD project or elsewhere, or to develop their own business opportunities.

Benefits to the Private Sector Sponsor

The sponsor also benefits from their involvement in the program. Businesses associated with TBIRD have an opportunity to display their social responsibility, thereby improving public relations. In a world where price and quality are no longer the sole determinants of buying behaviour, firms are increasingly differentiating their products based on image, branding and reputation. Reputation affects shareholder value and is guarded jealously by most multinationals. Firms can enhance their reputation by actions that are perceived to be socially desirable. It is not surprising, then, to sometimes see multinationals providing the best wages and working conditions (e.g. see *The Economist*, 2001), despite expectations to the contrary (e.g. see Klein, 2000). At the TBIRD factories, high health and environmental standards are maintained and receive regular external verification.

However, as Lim and Cameron (2003) note, good public relations are hardly the only benefit that sponsors gain from their involvement in TBIRD. By moving production activities to rural areas, the businesses gain access to relatively cheaper land and labour which more than compensates for the increase in transport costs when shipping factory products to Bangkok for export. Companies may also receive tax relief from the government for locating away from Bangkok and the central region of Thailand. Further, the wage and worker benefits provided by the companies also form an important source of competitive advantage. Higher wages and better working conditions relative to other firms competing for the same labour act as an efficiency wage (Brickley et al., 2000). This encourages a larger number of job applications from higher quality employees, provides strong incentives for workers to perform well to keep their jobs, and decreases worker turnover and absenteeism. This results in higher productivity as well as lower costs for the firm in terms of hiring and training.

The Role of Government

Rural development planning is often characterised as employing either a ‘top-down’ or a ‘bottom-up’ approach (e.g. see Holloway, 1989; Chambers, 1983). The TBIRD program adopts elements of both approaches. The government plays a key enabling role by providing the NGO with an attractive package to offer to potential private sector sponsors. Using appropriate incentives, such as corporate tax advantages, the government is able to steer manufacturing to economic zones outside Bangkok, reducing urban congestion and spreading employment to the less prosperous regions of Thailand. Furthermore, in this program the government need not face the transactions costs associated with facilitating the exchange between the private sector organisation and the village. This can be passed on to an NGO that may be significantly more efficient, having developed a comparative advantage in facilitating rural development projects.

Empirical Analysis

Two research questions are suggested by the above discussion of TBIRD and its relationship to poverty alleviation and HIV/AIDS prevention. In the following analyses, we test two hypotheses: First, does the TBIRD program actually improve the wealth, income generation and other material prospects of the TBIRD factory workers? Second, do the jobs created by the TBIRD program actually go to the poor, i.e., are the TBIRD workers initially poorer than comparable adults from a representative household sample undertaken in the region? If so, this would provide *a priori* evidence of TBIRD’s potential contribution to reducing (poverty-related) migration and thus HIV risk behaviours, including entry into the commercial sex industry.

The authors and their research team collected data in two related surveys conducted in the latter half of 2003. The first was a representative survey of the households of 48 factory workers from two largest TBIRD employers in Ban Phai District. The second was a representative survey of 660 households, covering all sub-districts in Ban Phai and Phon districts of Khon Kaen Province. In the second survey, villages were selected using stratified random sampling, and ten households were selected randomly from a list of all households in each of the 66 selected villages.

The two surveys collected data about demographic characteristics, household composition, employment, asset ownership and migration. In addition, the factory worker survey collected data on work experience at the TBIRD factories, previous employment, hopes for the future, and a migration history for each worker. Selected results from the factory worker survey are presented in Table 1.

Table 1: TBIRD factory worker survey sample summary statistics (Source: developed by this research)

	Number	Proportion
Gender		
Male	8	16.7%
Female	40	83.3%
Current marital status		

Never married	12	25.0%
Married	34	70.8%
Divorced	2	4.2%
Previous occupation		
Student	4	8.3%
Agriculture or fishing	14	29.2%
Trade	11	22.9%
Transport	1	2.1%
Industry	16	33.3%
Unemployed	2	4.2%
Previously a migrant		
Yes	25	52.1%
No	23	47.9%
Reason for getting a job at CBIRD		
Location / Proximity to home	28	58.3%
Income	15	31.3%
Other reasons	6	12.5%
Considered another job		
Yes	21	43.8%
No	27	56.3%

	Mean	Median	S.D.	Min.	Max.
Age	28.0	27	6.5	19	45
Formal Education (years)	8.5	6	3.4	4	14
Months working at TBIRD	38.7	39.5	22.3	5	96
Monthly income at previous occupation (Baht)	3650	4000	2278	0	9250
Previous two weeks income from TBIRD (Baht)	2489.5	2350	576.1	1600	3800

On average the TBIRD factory workers had spent over 38 months working at the TBIRD factories, with the longest current period of employment being eight years. Despite the young average age of the workers, only four of the 48 factory workers surveyed had been hired immediately out of secondary school. There was a significant number of workers who had previously been employed in agriculture. However, most of the workers (33.3 percent) had previously been employed in some other factory, many of those in Bangkok. Just over half of the factory workers surveyed had recent migration experience (within five years before beginning their job at TBIRD), with nearly all of those having migrated to Bangkok for employment.

Results

Using the data described above, we now address the specific research questions.

Wealth and Income Gains

The first research question relates to whether the TBIRD program actually improves the wealth, income generation and other material prospects of the TBIRD factory workers. If a TBIRD factory job significantly increases income for the individual and his or her household, we might expect that measures of wealth would increase over time and that relative wealth would increase the longer the worker remains in the factory job. Unfortunately longitudinal data are not available to directly test this hypothesis.

However, it does appear from the available data that income generation is improved by the project. On average, the TBIRD factory workers interviewed earned significantly more than in their previous job. As noted in Table 1, in the two weeks prior to interview the workers had earned on average 2489.5 baht (equating to a monthly wage of approximately 5390 baht), compared with an average earning of 3650 baht per month at their previous job. A paired *t*-test (excluding former students with no previous earnings) confirms that the earnings from the TBIRD factory job were significantly higher than those in the workers' previous job ($p = 0.0103$). This result is robust even when inflationary increases in wage income over time are accounted for – sensitivity analysis suggests that wage income would have to have grown annually by 7.2 percent on average for this difference in income to become insignificant, much greater than the real wage growth rates for Thailand reported by Richter (2006). This is consistent with the TBIRD factory workers improving their income-earning potential by working at TBIRD.

Additional benefits of TBIRD factory jobs were revealed when workers were asked about perceived changes in their lifestyle as a result of their TBIRD factory job. Workers gave responses that indicated overwhelmingly positive changes, including increased income (60.4 percent), increased savings (22.9 percent), reduced debts (8.3 percent), better living standards (4.2 percent), and a happier or more satisfied family (20.1 percent). These results appear to confirm the earlier quantitative findings about improved material prospects for TBIRD factory workers. As for the non-income poverty problem of social and physical isolation, note that from Table 1 almost 60 percent of respondents claimed 'location/proximity to home' as a major determinant in their decision to seek work at a CBIRD centre.

Jobs and the Poor

The second research question relates to whether the jobs created by the TBIRD program tend to actually go to the poor. Table 2 presents a comparison of the demographic and household characteristics of the TBIRD factory workers with those of adults from the representative household sample, and the results of *t*-tests of whether the two means are the same. Factory workers are significantly younger, and there is a significant bias towards the employment of women. The results confirm earlier findings of Lim and Cameron (2003), although the gender bias has decreased from 94 percent female to 83 percent between 2001 and 2003. This gender bias in employment is important in increasing women's income, human capital, and access to resources, thereby reducing the push factors associated with commercial sex work.

The factory workers are significantly better educated than adults from the representative household survey, with greater rates of literacy and numeracy. This is not surprising given the younger age of the factory workers, as increases in the level of compulsory basic education in Thailand over the last two decades would lead the younger sample to have higher levels of formal education.

The wealth of factory workers' households is significantly lower than that of the representative household sample, whether measured as total household assets per capita (value of all household assets such as refrigerators, televisions, motorcycles, as well as livestock) or total assets per capita (including the value of household assets plus the value of the house and farmland). This result provides some support for the hypothesis that jobs created by the TBIRD program are targeted at relatively poorer households. However, further

analysis suggests that the period of time working in the TBIRD factory has no significant relationship with measures of wealth (after controlling for age, gender, and education).

This last result is somewhat surprising. We might expect that factory workers who have been working at the factory and earning a higher than average wage for some time may have increased their wealth significantly relative to other households, while the data show this is not the case. In fact, the workers may be using their additional income to increase consumption, or may have used their additional income to repay debts (as noted previously) or to increase financial assets such as savings (which were not included in the measures of wealth presented in Table 2). This is a key point since debt and poverty are often cited as the leading motivators in women moving into or remaining in sex work (e.g., see Booranapim and Mainwaring, 2002).

Table 2: Comparisons of TBIRD factory workers (FW) demographic and household characteristics with those of adults from the representative household sample (RHS) (Source: developed by this research)

	FW Mean	RHS Mean	t	P > t
Age	28.0	46.4	13.68	< 0.001 ^{***}
Gender (% male)	16.7%	44.9%	6.16	< 0.001 ^{***}
Education (years)	8.5	5.5	10.43	< 0.001 ^{***}
Can read (%)	100.0%	94.4%	2.72	0.007 ^{***}
Can write (%)	100.0%	95.8%	2.34	0.019 ^{**}
Can do mathematics (%)	100.0%	93.2%	3.02	0.003 ^{***}
Can use a computer (%)	14.6%	6.1%	3.66	< 0.001 ^{***}
Household size	4.08	3.82	1.75	0.080 [*]
Migrant household	49.8%	37.7%	0.87	0.383
Total household assets (Baht)	82 839	113 890	2.06	0.040 ^{**}
Total assets (Baht)	484 181	653 804	3.83	< 0.001 ^{***}
Total household assets per capita (Baht)	18 754	33 651	2.78	0.005 ^{***}
Total assets per capita (Baht)	115 151	201 519	5.08	< 0.001 ^{***}

* weakly significant at $p < 0.1$; ** significant at $p < 0.05$; *** significant at $p < 0.01$

The observed differences in wealth between factory workers and the representative household sample might be explained by differences in age and education between the two samples. Younger people are likely to have accumulated less wealth, particularly in the form of land and housing, while less educated people are likely to have lower incomes and therefore less accumulated wealth. To further test whether TBIRD factory workers were less wealthy than other adults after controlling for differences in age, education, and gender, multiple regression analysis was performed with a dummy variable for whether the individual was a TBIRD factory worker. In this analysis, data from the factory worker sample and the representative household sample were pooled, with the factory worker sample weighted equal to the mean weighting of adults (aged 18 or over) from the representative household sample.

The estimated model is presented in Table 3 and confirms that, controlling for age, education, and gender, TBIRD factory workers are significantly poorer than comparable adults from the representative household sample. This provides some support for the contention that TBIRD factory jobs go to the poor, particularly since some of these workers have spent a number of years working at the TBIRD factories and their wealth may have already increased as a result.

Policy Implications

As highlighted early in this paper, the search for creative solutions to the poverty-HIV/AIDS problem has become more and more pressing. In Asia, a greater emphasis on non-state resource mobilisation, including that of NGOs, community groups and the private sector, may be necessary to supplement public health programs (Pothisiri et al., 1999). Prevention programs must move beyond awareness and condom promotion to combat the social factors, especially poverty, that underlie the population's susceptibility to HIV infection.

Businesses are increasingly looking to promote themselves as socially responsible, and this provides an opportunity for policymakers to leverage the private sector towards social goals. This requires advocacy, as business managers by themselves are unlikely to recognise the social contributions they make (Prieto-Carron et al., 2006). The external economic, social and community health outcomes resulting from the employment generated by factories in a specific region are very complex. They are not likely to be anticipated, let alone understood, by business managers acting alone (Lim and Cameron, 2008 forthcoming). Thus, markets relating to corporate social responsibility may fail due to information deficiencies.

The TBIRD program in many ways provides a model for the use of rural industrialisation programs that leverage the skills and resources of the private sector to address social goals such as poverty alleviation and HIV/AIDS reduction. However, some important caveats should be noted.

First, the willingness of the TBIRD multinationals to invest in job creation and worker education in Northeast Thailand results from the convergence of three important factors. These are the resource complementarities between multinationals and villages; the existence of favourable conditions, including physical and human infrastructure, that reduce direct business costs for multinationals; and the profit-enhancing reputation effects of meeting social responsibility goals. The important point is that these factors coincide with and support efforts to reduce both poverty and HIV prevalence.

Second, providing more employment for rural women in their local area will not solve the

problems of commercial sex work and HIV/AIDS completely. A falling supply of sex workers will put upward pressure on the wages from prostitution, possibly inducing more women to leave their villages. Further, if the increased incomes from rural industry are claimed by men, this may facilitate increased purchases of commercial sex. Ultimately, safer sex practices and policies to reduce the demand for prostitution will remain cornerstones in the fight against HIV/AIDS.

Table 3: Regression model of wealth of adults, comparing factory workers with others

	Coefficient	Std. Error	t	P > t
TBIRD factory worker dummy variable	-17770.5	5658.42	-3.14	0.002***
Age	372.552	108.892	3.42	0.001***
Gender (1 = male)	1180.11	2746.71	0.43	0.668
Education	3254.89	497.412	6.54	<0.001***
Constant	-1853.55	7023.41	-0.26	0.792

Adjusted R² = 0.0257

* weakly significant at $p < 0.1$; ** significant at $p < 0.05$; *** significant at $p < 0.01$

Conclusion

The TBIRD approach offers a number of important insights into the impact of rural industrial development on local communities. The insights counter some of the more adverse, but commonly held, views about business in general, including the zero-sum nature of commerce. This paper has described how the profit goals of firms can be aligned with social development goals, including poverty alleviation and reductions in migration and HIV/AIDS. This provides a situation where opportunities for mutual gain exist between rural communities and firms.

The discussion of the TBIRD project and its relationship to social development goals highlighted important research questions, which were addressed with data from a TBIRD project in Northeast Thailand. It is clear from these data that income generation of rural villagers is improved, with the TBIRD factory workers earning significantly more on average at the TBIRD factory than in their previous job. These results are consistent with qualitative responses from workers, many of whom noted the positive effects of working at the factory on income and savings and on debt reduction. While factory jobs are not explicitly targeted at poor villagers, there is some support for the assertion that the income benefits accrue to the poor. Even after controlling for gender, age and education, TBIRD factory workers are significantly poorer than comparable individuals from a representative sample of the local general population.

These results are potentially important for many developing countries where resource complementarities between multinationals and rural villages, and suitable pre-conditions, allow the goals of private sector firms and social development goals to coincide. Under such conditions, the government and NGOs can harness the private sector, and programs such as TBIRD add another important policy tool in the fight against poverty and HIV/AIDS.

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