

# **Employment Transformation in the Vietnamese Economy in Light of the Lewis-Fei-Ranis Growth Model of A Labor-Abundant Economy**

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## **Abstract**

*This paper studies structural changes in the Vietnamese economy during the reform era, with emphasis on the role of the manufacturing sector in employment generation. A stage-setting survey of analytical framework and empirical evidence of employment transformation in a labor-abundant economy in East Asia has enabled a statistical analysis of employment transformation in Vietnam over the two recent decades. The findings suggest that the manufacturing sector has shown an improved performance in attracting massive amounts of unskilled workers from agriculture. Within manufacturing, the private sector firms, in particular the foreign-invested enterprises, have been increasingly responsible for job creation, contributing to the gradual erosion of the dominant state enterprises.*

**Keywords:** Employment transformation; structural change; labor-abundance; manufacturing employment; private sector firms.

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## 1. Introduction

The transition of labor from agriculture into manufacturing in labor-abundant economies facing structural change has generated wide scholarly interest<sup>1</sup>. This labor reallocation is reflected in the spirit of the Lewis-Fei-Ranis economic growth model of a labor-abundant economy. A switch toward an export-oriented industrialization specializing in manufacturing for exports is arguably a backbone for employment generation in the manufacturing sector. Thus, the employment transition reflects the experience of economies in East Asia, including newly industrialized economies, namely Taiwan and South Korea (NIEs-2), and the bigger Southeast Asian economies of Indonesia, Malaysia, the Philippines and Thailand (ASEAN-4).

Similar to these East Asian economies, the Vietnamese economy also experienced rapid growth over the two recent decades. This growth has thus been attributed to the transformation from a centrally planned to a market-oriented economy in the late 1980s. In this view, it was argued then that Vietnam should adopt an industrialization strategy that specializes in the production of manufacturing for exports (Riedel, 1993). The main reason is that this industrialization strategy is well suited to exploit the comparative advantage of Vietnam's labor abundance and to have the potential of providing employment for the newcomers to the workforce.

Recently, there has been growing interest in labor market adjustment following the economic reforms in Vietnam. However, the few available studies are now much dated, as they are based on data for the 1990s when industrialization

was still in the formative stage (Athukorala, Manning and Wickramasekara, 2000; Diehl, 1995; Jenkins, 2004; McCarty, 1999). This paper aims to fill this gap by examining structural changes in the Vietnamese economy and the employment implications of these changes, with an emphasis on the role of the manufacturing sector over the decades up to 2010.

The purpose of this paper is to discuss the shift in labour away from agriculture into manufacturing in a labour-abundant economy facing structural transformation in the initial stages of economic development by employing the analytical framework of the Lewis-Fei-Ranis model for a labor-abundant economy. Then, the paper specifically focuses on how economic structure and employment patterns have changed during the two decades of reforms, in particular the role of the manufacturing sector in employment generation in Vietnam.

The rest of this paper is as follows. Section 2 provides an interpretative survey of the theoretical and empirical literature on manufacturing employment in a labor-abundant economy, in order to provide the analytical context for the Vietnam case study. Section 3 examines changes in economic structure and employment transition in the Vietnamese economy, with a focus on the implications of a manufacturing sector on these changes. Section 4 examines the ownership pattern of manufacturing and its performance. The final section provides conclusions and offers policy implication on employment creation during the process of industrialization.

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## 2. Structural change and employment transformation: An analytical framework and empirical survey

### 2.1. Analytical framework

This study employs the Lewis-Fei-Ranis model for studying growth and structural transformation in a labor-surplus economy. In doing so, this section first considers the basic Lewis model of a dual economy, and then discusses the Fei and Ranis extension to the Lewis model in an open economic context.

#### *The Lewis model*

The Lewis model of economic growth with unlimited supplies of labor (Lewis, 1954) is based on a dichotomy between the subsistence and modern sectors<sup>2</sup>. In the modern sector, profit maximization operates in competitive markets as postulated by the neoclassical economists; labor is paid the value of its marginal product. Demand for labor in this sector depends on the availability of capital, technological progress, and the demand for industrial goods. In the subsistence sector that is not limited to agriculture, traditional methods of production employ simple technology with little capital; and the wage rate is *institutionally determined* at or near the subsistence level in the tradition of classical economics.

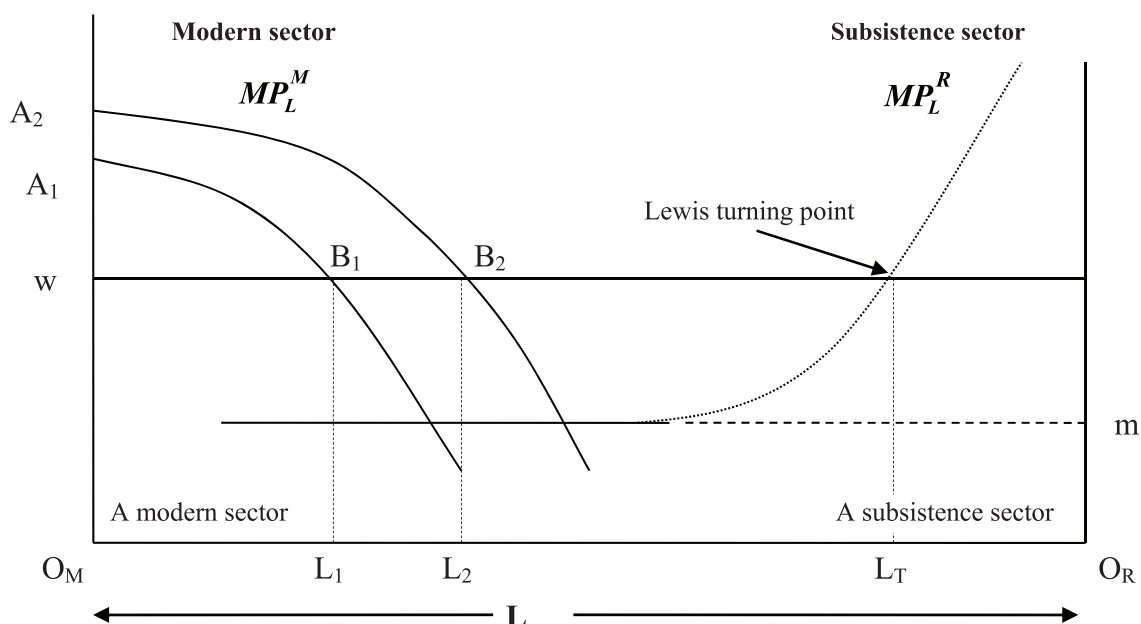
In the subsistence sector, there is an excess supply of labor at the institutionally determined wage. This situation ensures perfectly elastic supply of labor from the subsistence sector to the modern sector. However if the modern sector wishes to attract workers, it must pay a higher wage rate that is set slightly above the subsistence level to compensate for the higher costs of living in the modern sector over the subsistence economy. Given the abundant sup-

ply of labor at this wage rate, output expansion in the modern sector does not raise wages but increases the share of profits in the national income.

The operation of the Lewis model showing a shift of labor away from the subsistence sector to the modern sector is illustrated in Figure 1. In this diagram,  $O_R$  and  $O_M$  are origins of the subsistence sector and the modern sector, respectively. Next,  $L$  is the total labor force in the economy, leaving the role of population change aside. The marginal product of labor in the subsistence sector ( $MP_L^R$ ) is assumed to be constant at the subsistence level. In the modern sector, the marginal product of labor ( $MP_L^M$ ) is rigid downward and the modern-sector wage ( $w$ ) is significantly higher than the subsistence level. In the period 1, the marginal product of labor ( $MPL$  curve) is  $A_1B_1$ . In order to maximize profits, a modern-sector employer as a wage taker recruits  $O_ML_1$  units of labor. Thus, the remaining labor,  $O_RL_1$  stays in the subsistence sector with marginal earning ( $m$ ).

Investment in the modern sector is the driving force for labor reallocation in the model. This model assumes that workers are too poor to save. Only enterprises in the modern sector save and invest their total profits to expand their production. Suppose some economic policy changes trigger production expansion in the modern sector: for example, a policy transition from a planning to a market economy, or an industrial development plan proposed by a government, or technological progress that enhances production efficiency. The profit in the modern sector in the initial period is  $A_1B_1w$ . As output expands, profits increase and capital stock rises due to profit augmentation.

**Figure 1: Labor reallocation in the Lewis model**



Source: This diagram from Basu (2003, chapter 7, p.154).

Thus, the marginal product of labor rises and its curve becomes  $A_2B_2$  lying above  $A_1B_1$ . As a result, modern-sector employment rises to  $O_M L_2$  and subsistence-sector labor is  $O_R L_2$ . The newly gained profit ( $A_2B_2w$ ) is reinvested, leading to an additional movement in the modern-sector marginal product of labor. Industrial development continues a positive transformation process: gained profits, promoted investment, continual industrial expansion, and additional employment creation until there is no surplus labor left.

Absorption of labor in the modern sector continues at the given wage rate until the surplus labor pool is depleted. This critical stage of labor market transition is called the 'Lewis turning point'. At that time,  $O_M L_T$  units of la-

bor are employed. Up to this point, the total increase in GDP resulting from the expansion of the modern sector does not result in a reduction in subsistence-sector output. That is, the output growth in the modern sector makes a net contribution to an aggregate GDP. Beyond that point, the wages in the two sectors begin to move toward maintaining parity and the economy begins to look very much like a developed economy. Then, the dualistic character of the economy disappears; the subsistence sector becomes a part of the modern economy in which the wage rate and per capita income continue to rise along the upward-sloping labor supply curve. Finally, increased capital formation in the modern sector causes an increase in wages, reduction in profits, and a low level of savings

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and investment.

*Extensions of the Lewis model by Fei and Ranis*

The basic Lewis model discussed so far assumes a closed economy with no trade between the two sectors. Fei and Ranis extended the Lewis model in three ways: adding product dualism in the model; establishing the requirement for continuous labor reallocation into industry; and integrating the model into the international economy (Fei and Ranis, 1964, 1997).

First, while the Lewis model examines only organizational dualism, Ranis and Fei (1961) incorporate ‘the product dualism’ between the two sectors. Product dualism relates to the exchange between foods produced by the agricultural sector and the industrial goods produced in the modern sector. Agricultural and industrial goods cannot substitute for each other, because the food-producing sector ensures a necessary input for industrial development, but the inverse condition does not exist.

Second, Fei and Ranis establish the precondition for labor movement from agriculture to industry. Initially, the economy is characterized by unfavorable resource endowments and increasing labor force pressure. However, a process of labor reallocation must be rapid in order to transform the economy’s center of gravity to the industrial sector<sup>3</sup>. It means that the growth rate of industrial employment ( $\eta_I$ ) must exceed growth rate of the labor force ( $\eta_p$ ) as a necessary condition (Fei and Ranis, 1997).

Furthermore, Fei and Ranis suggest that the growth of industrial labor absorption is caused by capital accumulation, technology change, and wage growth in the industrial sector. Of these, the technological factor is related to the

rate of innovation intensity as well as the level of labor-using in this related technology. These causal factors can be summed up in the following formula:

$$\eta_p < \eta_w = \eta_K + (J + B_L)/\varepsilon_{LL} - \eta_{w_{na}} \quad (1)$$

where

$\eta_K$ : the rate of industrial capital accumulation;

$J$ : the innovation intensity;

$B_L$ : the labor-using bias of innovation;

$\eta_{w_{na}}$ : the growth in non-agricultural wages;

$\varepsilon_{LL}$ : the law of diminishing returns to labor.

However, given the unlimited labor supply and that the wage rate is institutionally determined in the agricultural sector, the real wage does not rise until the labor supply is depleted; that is  $\eta_{w_{na}} = 0$ . Then, the inequality (1) becomes

$$\eta_p < \eta_w = \eta_K + (J + B_L)/\varepsilon_{LL} \quad (2)$$

Finally, a novel feature of the Fei and Ranis reformulation of the dual-economy model is the extension to an open economic context. In this extended model, goods, services, and capital are assumed to freely move within the world economy. These open economy interactions such as international trade and investment, and technology transfer would facilitate labor withdrawal from agriculture to industry in the following ways. First, international trade can contribute to industrial employment growth through the expansion of labor-intensive manufacturing exports. Secondly, foreign capital contributes to capital accumulation and innovation intensity in the modern sector, thereby inducing labor reallocation. Finally, this economy can choose a full range of technology alternatives through imported capital equipment

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and foreign investment in order to facilitate better labor utilization.

On the whole, manufacturing employment growth is stimulated by the withdrawal of labor from agriculture in the open economy dualistic model. This process is initially triggered and then accelerated by appropriate economic policies that regulate capital accumulation and technological change. However, the Lewis-Fei-Ranis model carries with it some limitations. First, Rosenzweig (1988) argues that agricultural worker behaviour is more relevant within an analytic framework of work-leisure choice taken from neoclassical economics. Up to this point, the theoretical model is used to examine labor transition at the macro level. From this view, these microeconomic-based critiques do not matter.

The assumption on the elasticity of labor supply in agriculture has been challenged by actual labor markets in most developing countries. However, in his retrospective work (Lewis, 1972, p.77) clarifies that “whether marginal productivity is zero or negligible is not at the core of fundamental importance to our analysis...this has led to an irrelevant and intemperate controversy”. Evidently, it is not necessary to assume an infinitely elastic labor supply or zero marginal product of labor in the subsistence sector. What is necessary is that the labor supply to the modern sector is elastic in the early stages of development. Another limitation is that the labor markets are often fragmented into many parts, and then dualism is rather restrictive. However, Basu (2003) argues that the assumption of duality is merely for analytical convenience, thus dualism is the simplest one. Thus, the assumptions of elastic labor supply

and duality are sufficient in this analysis.

In short, the Lewis-Fei-Ranis growth model predicts a shift in labor away from agriculture into manufacturing, coupled with wage growth during the economy’s structural change. At the outset of development, real wages of unskilled workers are repressed by an abundant labor supply in agriculture. Low-paid labor is the important impetus for capital accumulation, thus the profit share increases and industry expands. Only when the industrial sector starts to withdraw a considerable proportion of unskilled workers, does labor become scarce and so real wages begin to rise. During this economic development process, capital accumulation in the manufacturing sector is an important thrust for changing the employment pattern in the economy.

## **2.2. Empirical evidence**

There is significant evidence to support the transfer of labor from agriculture to manufacturing in East Asian economies over the previous decades<sup>4</sup>. At the outset of industrialization, these economies fitted well with the Lewis-Fei-Ranis growth model.

Taiwan is a classic example of transformation from an agricultural to an industrialized economy based on utilization of labor abundance. As a result of industrialization, this country experienced an extremely rapid shift of low-income workers into more productive work. Agriculture accounted for around 60 per cent of the total employment and a third of domestic production at the early stage of economic development (Ranis, 1995). The economy went through stable rapid growth over the 1950s - 1970s. The agricultural sector reduced to less than 15 per cent of GDP by the

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early 1970s, counterbalanced by an accelerated share of manufacturing to nearly 40 per cent (Kuznets, 1979). Accompanying this structural change was a dramatic shift in employment pattern. On average, industrial employment grew nearly six per cent per annum during the 1950s, reaching a striking figure of ten per cent during the 1960s (Ranis, 1979). By 1975, the industrial sector absorbed over 40 per cent of the labor force. More importantly, manufacturing employment accounted for over 27 per cent of the total (Athukorala and Manning, 1999).

South Korea is also an interesting case of a labor-abundant country that underwent a remarkable employment transformation. In the early 1960s, a majority of the non-agricultural workers were involved in low productivity rural sectors while urban manufacturing employment accounted for only a small fraction of the labor force (Bai, 1985). Then, over the 1960s-1970s the country's manufacturing became the dominant sector and the expansion of labor-intensive manufacturing contributed to employment growth (Athukorala and Manning, 1999).

Compared to Taiwan and South Korea, less dramatic job growth was experienced in Malaysia and Thailand. The Malaysian economy displayed a slow steady shift in employment in the 1970s-1980s (Snodgrass, 1976) with sustained growth in real wages around the mid-1980s, a decade after it embarked on export-oriented industrialization (Manning, 1995). On the other hand, in Thailand there was an uneven and slow shift in labor from agriculture to manufacturing in the 1960s, perhaps due to its large agricultural sector (Athukorala and Manning, 1999). To a considerable extent, the experience

of these two Southeast Asian followers is consistent with the employment pattern in two labor-abundant East Asian leaders.

Unlike the economies discussed so far, the Philippines and Indonesia experienced a slow and less intensive shift in employment to manufacturing due to a longer period of import substitution. The Philippines illustrates a disappointing case of employment growth during the 1960s-1980s (Tidalgo, 1976, 1988). In Indonesia, the shift of labor into manufacturing was slower than Taiwan, and less decisive over the same period (Manning, 1995).

Finally, the experience of the Taiwan economy is the single most remarkable one that matches well with the predictions of the model. As shown before, employment patterns in the ASEAN-4 were not consistent with the remarkable employment of the Taiwanese economy, particularly in the case of the Philippines. However, other East Asian developing economies with a large labor endowment are still consistent with the predictions of the Lewis-Fei-Ranis model (Ranis, 2006). Possibly the economic development model of a labor-abundant economy could work well in other Southeast Asian followers.

The industrialization of these East Asian developing economies indicates that a labor-intensive growth has facilitated labor absorption. A greater access to the international market for labor-intensive manufacturing goods increased the capacity to withdraw unskilled workers from agriculture into manufacturing in a labor-abundant country. Therefore, at the outset of industrialization, this labor-abundant developing economy should follow the industrialization exploiting the economy's comparative

advantage.

### 3. Structural changes and employment transformation in the Vietnamese economy

#### *Growth and structural change*

The data in Table 1 summarizes the growth and structure of the Vietnamese economy over the period 1986-2010. With an average annual growth rate of seven percent during that period, Vietnam is one of the fastest-growing countries in the developing world. It is evident that growth has been broad-based, but the industrial

and services sectors have grown much faster than the primary (agriculture, forestry, and fishery) sector. During this period, the industrial sector grew at an average annual growth rate of about nine per cent. Its share in the total GDP increased from about 27 per cent in 1986 to 42 per cent in 2010. Within industry, the share of manufacturing in GDP increased from 17 per cent to about 25 per cent over the examined period. Meanwhile, the services sector has expanded at around seven per cent per annum

**Table 1: The Vietnamese economy: growth and structural change, 1986-2010**

	1986-1994	1995-1999	2000-2010	1986-2010
<b>Annual growth (%)</b>				
Agriculture, Forestry & Fishery	3.2	4.4	3.6	3.5
Industry	7.3	10.7	9.2	8.7
<i>Manufacturing</i>	4.3	11.1	10.5	8.3
Services	8.1	5.8	7.2	7.0
<b>Gross Domestic Product</b>	<b>6.3</b>	<b>7.0</b>	<b>7.3</b>	<b>7.0</b>
<b>Contribution to output increment (%)</b>				
Agriculture, Forestry & Fishery	15.9	15.8	9.7	11.9
Industry	32.1	48.6	49.3	46.3
<i>Manufacturing</i>	11.0	26.1	31.5	27.2
Services	52.0	35.6	41.0	41.8
<b>Gross Domestic Product</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Composition (%)</b>				
	<b>1986</b>	<b>1995</b>	<b>2000</b>	<b>2010</b>
Agriculture, Forestry & Fishery	34.7	26.2	23.3	16.4
Industry	26.8	29.9	35.4	42.4
<i>Manufacturing</i>	17.4	15.5	18.8	25.2
Services	38.4	43.8	41.3	41.2
<b>Gross Domestic Product</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>GDP (Billion VND at 1994 prices)</b>	<b>109,189</b>	<b>195,567</b>	<b>273,666</b>	<b>551,609</b>

Notes: - These data refer to value-added growth rates and its share in constant prices (1994 prices).

- Growth rates are shown as annual averages between the reported years.

Source: Compiled from GSO, Statistical Yearbook (various issues).



while the primary sector has fallen behind with an average growth rate of about four per cent per annum. The share of the primary sector in GDP declined from above 34 per cent in 1986 to only 16 per cent in 2010.

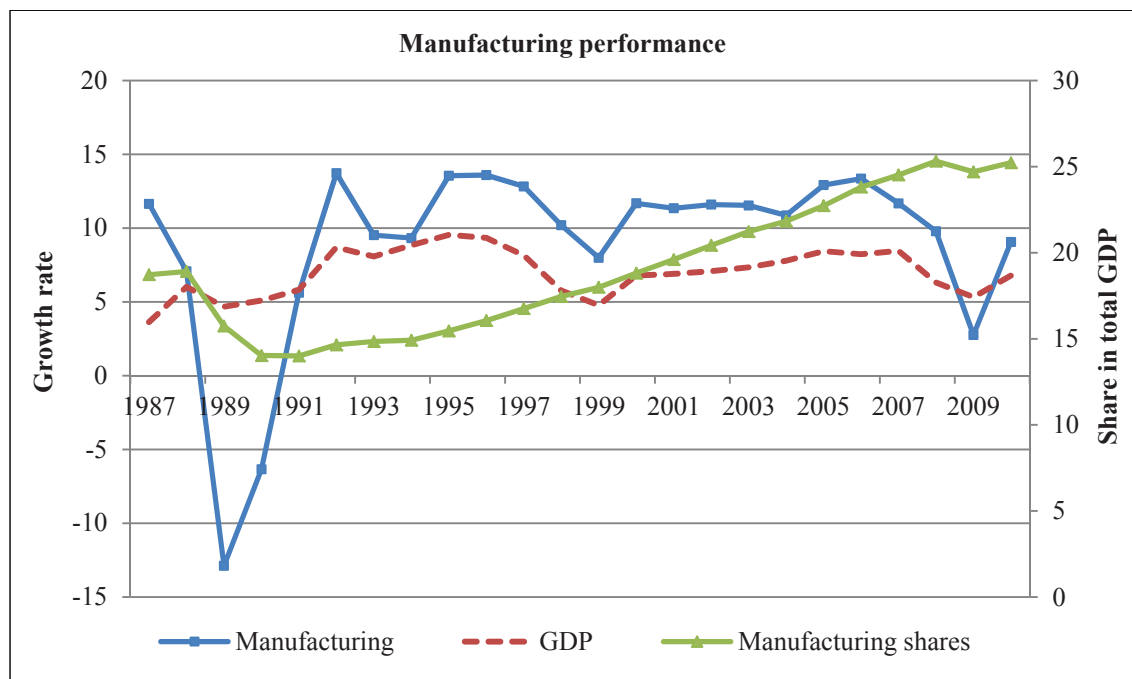
Growth in the manufacturing sector has been particularly rapid since the early 1990s when significant trade liberalization and enterprise reforms were implemented (Figure 2). The data reflect the close association between output growth acceleration and manufacturing expansion. Over the period 1995-2010, the manufacturing sector grew from a minuscule average annual rate in the late-1980s (even being sluggish in 1989) to above ten per cent per annum over the period 2000-2010. Manufacturing continued to account for a dominant proportion

of industrial output in the 2000s, with its share in GDP increasing from just above 14 per cent in 2000 to over 25 per cent in 2010. Of particular note is that over the period 1995-2010, this sector contributed to 28 per cent of the total GDP growth during this period, compared to a mere 11 per cent during the period 1986-1994.

### *Employment transformation*

The period since 2000 has witnessed an impressive employment expansion in Vietnam. Total employment grew at an average annual rate of about three per cent during the period 2000-2010 compared to 2.3 per cent during the previous decade (Table 2). This growth has generally surpassed that of the working age population except in the period 1995-1999 where its growth did not exceed that of the labor force.

**Figure 2: GDP and manufacturing growth and its share in GDP (in %)**



Source: Based on data compiled from GSO, Statistical Yearbook (various issues).

The agricultural sector had the smallest average annual growth rate, only 0.8 per cent over that period. On the other hand, the services sector provided over half of all new jobs created in the economy: its proportion of the total employment was almost 30 per cent in 2010.

As with the industrial sector, this sector had a striking employment growth rate, around 5.8 per cent per annum. Of particular interest is the rapid growth from the early 2000s, reflecting the impact of widespread economic reform. In the second decade of the export-led industrialization in Vietnam, industrial employment increased considerably to about nine per cent despite smaller, more modest growth in the first

decade of the industrialization. In this trend, manufacturing was the main contributor to overall job growth. The direct contribution of manufacturing to the overall increment in employment was above 22 per cent between 1990 and 2010; in particular, 28 per cent of all new jobs were generated in this sector during the first decade of the 2000s. All contributed to an expansion in job opportunities, which induced a large shift in labor away from the declining agricultural sector.

A presentation of this shift in employment into non-agricultural sectors can be observed in Figure 3. The growth rate of non-agricultural employment often exceeds that of the labor

**Table 2: Employment growth, Vietnam 1990-2010 (in %)**

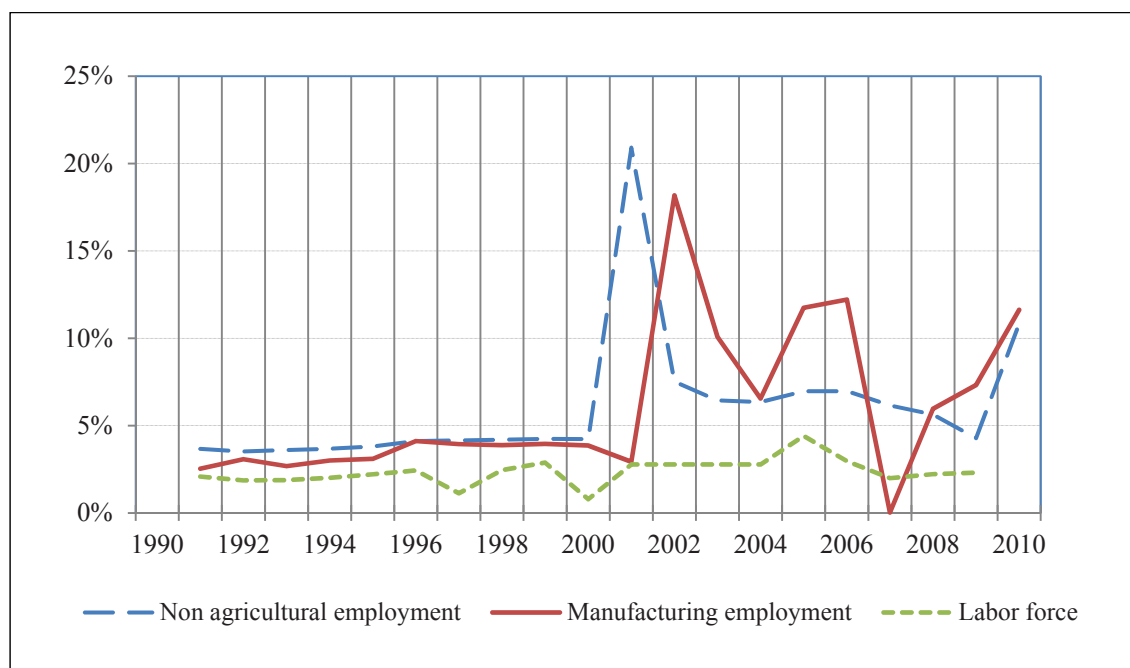
	1990-1994	1995-1999	2000-2010	1990-2010
<b>Annual growth rate in labor force<sup>a</sup></b>	2.0	2.7	2.2	2.2
<b>Average annual employment growth</b>				
Agriculture	1.9	1.3	-0.3	0.6
Industry <sup>b</sup>	2.5	3.4	8.7	5.8
<i>Manufacturing</i>	2.8	4.0	7.6	5.4
Services	4.4	4.6	7.2	5.8
<b>All sectors</b>	<b>2.4</b>	<b>2.2</b>	<b>2.9</b>	<b>2.6</b>
<b>Contribution to employment increment</b>				
Agriculture	58.1	42.7	-6.2	13.9
Industry	12.1	18.5	47.2	35.6
<i>Manufacturing</i>	9.3	15.1	27.8	22.5
Services	29.8	38.8	59.0	50.6
<b>All sectors</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Notes: (a) Labor force is the working age population that refers to people aged 15 and over who are employed or unemployed.

(b) The industry sector consists of mining and quarrying, manufacturing, construction and public utilities.

Source: Based on data compiled from GSO, Statistical Yearbook (various issues).

**Figure 3: Labor absorption in non-agricultural sectors, Vietnam 1990-2010**



Note: The non-agricultural sector comprises the industrial and services sectors.

Source: Based on data compiled from GSO, Statistical Yearbook (various issues).

force over the whole period. All year points satisfy the condition of critical minimum effort in the Lewis-Fei-Ranis model (Equation (1)) which requires the growth rate of non-agricultural employment to be higher than that of the working-age population. But since 2000 not only has the required condition been met every year, but the growth rate of non-agricultural employment has far exceeded that of the labor force. This shows how the non-agricultural sectors have generated sufficient job opportunities to absorb the pressure from the wave of labor force entrants and have recruited unskilled workers from rural agriculture over the period 2000-2010.

The manufacturing sector has followed a

similar pattern of growth to that of non-agricultural employment except in the period 2006-2010. The number of workers employed in manufacturing was almost static in 2007. On average, a trend of employment growth in the period 2000-2005 was higher than in the following period.

The data on employment composition in Table 3 depicts several features of labor transition from agriculture into manufacturing. First, the share of agricultural employment declined sharply from above 70 per cent to around 50 per cent between 1990 and 2010. By 2010 the agricultural employment share in Vietnam was quite large compared to similar shares seen in NIEs-2. For example, the agricultural sector in

**Table 3: Employment composition, Vietnam 1990-2010 (in %)**

Sector	1990	1995	2000	2010
Agriculture	73.0	71.3	68.2	49.5
Industry	11.2	11.4	12.1	21.3
<i>Manufacturing</i>	7.8	8.0	8.7	13.5
Services	15.7	17.4	19.6	29.5
All sectors	100	100	100	100
Total employment ('000)	29,412	33,031	36,702	49,048

*Note: The industry sector consists of mining and quarrying, manufacturing, construction and public utilities. Source: Based on data compiled from GSO, Statistical Yearbook (various issues).*

Taiwan (which followed an export-led industrialization model in the 1960s), only accounted for 30 per cent of the total in 1975; similarly in South Korea agricultural employment accounted for about 45 per cent in the same year (Athukorala and Manning, 1999).

Second, the employment share of industry increased from 11 per cent in 1990 to 21 per cent in 2010. The proportional increase in employment in this sector was much faster compared to that of the services sector. In particular, manufacturing had the largest share of employment within industry. Its share in total employment increased from approximately eight per cent in the early 1990s to over 13.8 per cent in the late 2000s.

Finally, the direct contribution of the manufacturing sector to the overall increment in employment was above 23 per cent between 1990 and 2010; in particular, a third of all new jobs were generated in this sector during the period 2000-2010. This is likely that this shift in employment into the manufacturing sector was stimulated by the expansion of exports from manufacturing (Fu and Balasubramanyam, 2005).

However, the number of workers employed in manufacturing has been almost static since about 2007. Thus, the overall picture for manufacturing employment was a clear 'bounce' in the wake of liberalization reforms since the early 2000s, followed by a growth trend that was substantially lower in the period 2006-2009 than in the period 2000-2005 (Figure 1). This slowdown in manufacturing employment can be mainly attributed to the macroeconomic disturbance over the years after 2006 (Pincus, 2009; Riedel, 2009).

#### **4. Ownership structure and manufacturing performance**

The discussion so far has placed emphasis on the role of manufacturing expansion in employment transformation. The success of East Asian industrialization over the period 1970s-1980s reveals the important role of the private enterprises rather than SOEs in job creation (Ranis, 1979; Song, 1990). Thus, the development of private sector firms is expected to play an important role in this transformation in Vietnam.

The growth in manufacturing has been underpinned by a notable shift in the ownership

structure (Table 4). First, the position of SOEs has significantly eroded in the face of the rapid output growth in private sector firms.<sup>5</sup> The share of SOEs in manufacturing output declined from above 40 per cent in 2000 to less than 13 per cent in 2010. Second, the private sector firms have become more and more important for the industrial development of the Vietnamese economy. The output share of FIEs in whole manufacturing was above 40 per cent throughout the examined period. In particular, the wholly owned FIEs have been the most dynamic with their output share increasing from only a fifth in 2000 to a third in 2010. This reflects the crucial role of foreign direct investment in the process of economic transition.

There has been a noticeable development of domestic private firms over the period 2000-2010. The number of these firms increased by four-fold in the period 2000-2005 compared to the 1990s (CIEM, 2008). To some extent, this development was attributed to the removal of many of the formal restrictions on the domestic private firms (Van Arkadie and Mallon, 2003). More importantly, these firms have grown strongly since 2006 in the wake of liberalization reforms. All of these factors contributed to the average annual output growth rate of 27 per cent for the whole period.

In short, the private sector firms have been the driving force of manufacturing expansion in Vietnam, as has been the case in most

**Table 4: Ownership structure of manufacturing output in Vietnam, 2000-2010 (in %)**

Firm ownership category	Composition			Annual growth
	2000	2005	2010	2000-2010
<b>State-owned enterprises</b>	40.2	25.2	12.4	3.9
<b>Private sector firms</b>	59.7	74.8	87.4	21.4
Domestic private enterprises	18.4	32.6	42.4	27.0
Foreign-invested enterprises (FIEs)	41.3	42.2	45.0	17.8
<i>Joint ventures with state enterprises</i>	17.3	13.3	9.8	10.4
<i>Joint ventures with domestic private firms</i>	2.0	2.1	1.8	15.9
<i>Wholly owned FIEs (100% foreign capital)</i>	22.0	26.8	33.4	21.8
<b>Whole manufacturing</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>16.8</b>

Notes: (a) State-owned enterprises include companies with 100% state capital and under control of central or local governmental administrations.

(b) Domestic private enterprises consist of business entities with 100% domestic capital and run by collectives, private enterprises or households.

(c) Foreign-invested enterprises (FIEs) refer to all firms with foreign capital participation, regardless of the size of the foreign equity-capital share and operated under the Laws of Foreign Direct Investment.

(d) Private sector firms include domestic private firms and foreign-invested enterprises.

Source: Based on data compiled from the unpublished returns to the GSO Enterprise Survey 2000-2010.

East Asian newly industrialized economies (NIEs). The expansion in private enterprises has induced a shift in unskilled labor away from a low-productivity agricultural sector to a high-productivity manufacturing sector. However, the contribution of the Vietnamese private firms in manufacturing has been modest, compared to the early experience of NIEs (Hill, 1990; Koo, 1985; Kuznets, 1988; Tidalgo, 1976).

As the distribution of output by ownership in Vietnamese manufacturing changed remarkably over the period 2000-2010, one would expect a major change in this distribution of factor intensity. Using a standard measure of capital intensity that is the ratio of capital per worker measured in millions of dong of fixed capital assets (at the constant value) per worker, Table 5 shows the factor intensity by ownership groups. Three noteworthy facts deserve

comment.

First, FIEs become more labor-intensive. In these FIEs, the capital intensity was highest in 2000 due to the promotion of domestic-oriented industries by import restrictions. This policy encouraged the FIEs to concentrate on those import-substituted industries which required a large amount of capital. Over time, this FIE group has been increasingly involved in export-oriented production, which naturally tends to be more labor-intensive industries in a labor-abundant economy.

Second, there was a shift toward high capital intensity in domestic private firms in just five years from 2005 to 2010. In 2005, these firms recorded a low capital intensity, compared to that of the whole of manufacturing, reflecting the insecurity that domestic investors were facing in their business operation up to that time. A possible reason is that throughout the period

**Table 5: Capital intensity\* of Vietnamese manufacturing by ownership group, 2000-2010**

<b>Firm ownership category</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>
<b>State owned enterprises</b>	44.9	71.2	101.2
<b>Private sector firms</b>			
Domestic private enterprises	38.5	40.2	49.2
Foreign-invested enterprises			
<i>Joint ventures with state enterprises</i>	650.8	328.7	218.6
<i>Joint ventures with private enterprises</i>	190.2	98.2	170.8
<i>Wholly owned FIEs (100% foreign capital)</i>	287.3	117.1	148.0
<b>Whole manufacturing</b>	<b>73.2</b>	<b>53.3</b>	<b>60.3</b>

Notes: \* Capital intensity is measured as fixed capital per worker – VND million per worker – compiled from the unpublished GSO Enterprise Survey, 2000-2010. The current values of fixed capital are deflated using the deflator of fixed-capital formation (2000=100) from national income accounts.

Source: Based on data compiled from the unpublished returns to the GSO Enterprise Survey 2000-2010.

Source: Based on data compiled from the unpublished returns to the GSO Enterprise Survey 2000-2010.

**Table 6: Comparisons of manufacturing employment by ownership group, Vietnam 2000-2010 (in %)**

<b>Firm ownership category</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>
<b>Composition</b>			
<b>State owned enterprises</b>	48.4	22.4	7.6
<b>Private sector firms</b>	46.5	73.0	88.7
Domestic private enterprises	29.6	42.5	48.2
Foreign-invested enterprises	22.0	35.1	44.2
<i>Joint ventures with state enterprises</i>	4.2	2.7	1.8
<i>Joint ventures with private enterprises</i>	0.9	1.9	1.9
<i>Wholly owned FIEs (100% foreign capital)</i>	16.9	30.5	40.5
<b>Growth rate 2000-2010</b>	<i>Growth rate</i>	<i>Share of increase*</i>	
<b>State owned enterprises</b>	-7.9	-15.3	
<b>Private sector firms</b>	18.1	112.4	
Domestic private enterprises	16.3	58.7	
Foreign-invested enterprises	20.9	53.8	
<i>Joint ventures with state enterprises</i>	1.4	0.4	
<i>Joint ventures with domestic private firms</i>	19.8	2.5	
<i>Wholly owned FIEs (100% foreign capital)</i>	20.9	53.8	

Note: \*Contribution to employment increment.

Source: Based on data compiled from the unpublished returns to the GSO Enterprise Survey 2000-2010.

2000-2005, government authorities in Vietnam still treated private business as an ‘attack’ on the state sector. Then, since 2006 a policy switch toward the establishment of a consistent business environment for all investors witnessed the emergence of numerous domestic private businesses. This rapid growth is partly a result of the privatization as well as the equitization of SOEs. However, the proliferation of domestic private investors was mainly concentrated on small-and medium-sized projects; as a result, this capital intensity was lower than that for FIEs in 2010.

Finally, there has been a significant increase in the capital intensity of the SOEs over the pe-

riod 2000-2010. The high capital intensity is a result of the inefficient expansion of SOEs and their subsidiaries. The government continued to nurture these state enterprises by ensuring better access to loan capital, public loans, and preferential credit, especially following the WTO accession in 2007 (Leung, 2009). SOEs were also given privileged access to public land as collateral for capital loans. Moreover, many large state conglomerates were able to obtain implicit guarantees from the government to obtain international loans (Leung, 2010). These factors explain the high growth on the capital intensity of these enterprises.

Data on manufacturing employment by own-

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ership groups depicts three features (Table 6). First, employment in FIEs has expanded very rapidly and has doubled its employment share in manufacturing between 2000 and 2010. In particular, wholly owned FIEs have been outstanding in terms of job creation, which has meant that the majority of new jobs (above a half) were generated by wholly owned FIEs – a group which also had the highest annual growth rate of 20 per cent. In addition, employment in joint ventures with domestic private firms also grew at a high rate. The robust and sustained performance of FIEs has underpinned the strong role which foreign investment has played in Vietnamese manufacturing employment.

Second, even though employment growth was slightly lower than in the FIE group, the domestic private firm group had the largest employment share (above 48 per cent in 2010). Its share has exceeded that of SOEs since 2005; both the domestic private firms and the FIE group contributed equally to the increase in employment growth. A plausible reason for this is that along with these remarkable reforms in about 2006, a possible expansion in employment of domestic private firms was also expected from the cumulative effects of the 2000 Enterprise Law and consequent reforms that gradually removed the disgrace of being a private business that existed through at least the 1990s. Finally, the share of state employment dropped rapidly over the examined period due to government efforts to restructure state manufacturing enterprises. Employment in these enterprises fell by seven per cent over that period.

The changing employment patterns by own-

ership have implications for enterprise and investment reforms. The new legislation on enterprises, which came into effect in 2006, has provided private sector firms with a consistent legal framework as well as a congenial investment climate. As a result, the attraction of foreign capital has played a powerful role in employment generation. Having advantages in export market expansion as well as technology transfer, the contribution of the FIEs to job creation has been outstanding, in particular in wholly owned FIEs. Combined with the domestic private firms, jobs growth in all private sector firms has not only compensated for the decline in job creation in the SOEs but has also induced a large-scale movement of labor into manufacturing. Private sector firms in Vietnam have the potential to be the most dynamic source of employment generation in developing labor-intensive manufacturing exports, as has happened in other East Asian economies.

### **5. Concluding remarks**

To sum up: the major view from the literature is that the model of labor dynamics of Lewis-Fei-Ranis is helpful for understanding employment transformations in a country having labor abundance. In addition, the experience of labor abundant economies in East Asia has verified the crucial role of the manufacturing sector on job creation and poverty reduction in these countries.

Using both macroeconomic and firm-level data, the study shows there has been dramatic changes in the employment pattern in a Vietnamese economy which faced structural changes over the two decades of the reforms. Manufacturing employment has shown an impressive growth over that period, especially in



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the second decade (2000-2010). Manufacturing performance has been significantly associated with the withdrawal of unskilled workers away from agriculture and into manufacturing. Employment growth in the manufacturing sector has accompanied notable structural change in the sector's ownership structure. Thanks to the substantial liberalization since the 2000s of trade, investment and enterprise policies, the private sector firms, especially FIEs, have been a mainstay for remarkable job creation in this sector. Consequently, the significant transition of unskilled workers from the agricultural sector to the manufacturing sector accords with the predictions of the Lewis-Fei-Ranis growth model.

Some important policy implications can be derived from this analysis. First, during structural change in any labor-abundant economy, increasing manufacturing employment is an ap-

propriate vehicle to generate blue-collar workers' income and to alleviate poverty. As capital accumulation is a crucial factor of employment growth, particularly in the manufacturing sector, Vietnam has reformed its enterprise policies as well as other related policies in order to attract investment from the private sector firms (both domestic and foreign enterprises) into the manufacturing sector. Thus, the promotion of manufacturing is likely to be the best strategy for achieving an objective of job creation in the Vietnamese economy, which has an abundance of unskilled labor. Second, the promotion of private-sector enterprises as an integral part of the development strategy is very important in generating job opportunities. This study finds that these enterprises have a higher degree of employment creation when compared to the SOEs, in particular in the foreign-invested enterprise through an attraction of foreign capital.

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### Notes:

1. For useful surveys of this literature see Athukorala and Manning (1999), Galenson (1992), Manning and Pang (1990) and Ranis (1995).
2. For a succinct textbook treatment of the model, see Basu (2003, chapter 7).
3. The history of the economic developments of Japan around 1920, and Taiwan and South Korea in the 1970s provides evidence of the successful rapid movement of agricultural labor into the industrial sector.
4. This survey mainly covers the literature pertaining to labor-abundant economies in East Asia, namely Taiwan, South Korea and Indonesia, Malaysia, the Philippines, and Thailand.
5. Defined as domestic private firms as well as foreign-invested enterprises.

### References

Athukorala, P and Manning, C (1999), *Structural change and international migration in East Asia : adjusting to labour scarcity*, Oxford University Press, South Melbourne.

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- Athukorala, P., Manning, C and Wickaramasekara, P (2000), *Growth employment and migration in Southeast Asia : structural change in the greater Mekong countries*, Edward Elgar, Cheltenham, UK ; Northampton, Mass.
- Bai, MK (1985), 'The turning point in the Korean economy', *The Developing Economies*, Vol. 20, No. 2, pp. 117-40.
- Basu, K (2003), *Analytical development economics: the less developed economy revisited*, the MIT press, Cambridge, Massachusetts.
- CIEM [Central Institute for Economic Management] (2008), *Vietnam economy in 2007*, Hanoi.
- Diehl, M (1995), 'Structural change in the economic transformation process: Vietnam 1986-1993', *Economic Systems*, Vol. 19, No. 2, pp. 147-182.
- Fei, J and Ranis, G (1964), *Development of the labor surplus economy : theory and policy*, R.D. Irwin, Homewood, Ill.
- Fei, J and Ranis, G (1997), *Growth and development from an evolutionary perspective*, Blackwell Publishers, Malden, Mass.
- Fu, X and Balasubramanyam, VN (2005), 'Exports, foreign direct investment and employment: The case of china', *The World Economy*, Vol. 28, No. 4, pp. 607-625.
- Galenson, W (1992), *Labor and economic growth in five Asian countries : South Korea, Malaysia, Taiwan, Thailand, and the Philippines*, Praeger, Newyork.
- Hill, H (1990), 'Indonesia's Industrial Transformation Part I', *Bulletin of Indonesian Economic Studies*, Vol. 26, No. 2, pp. 79-120.
- Jenkins, R (2004), 'Vietnam in the global economy: trade, employment and poverty', *Journal of International Development*, Vol. 16, No. 1, pp. 13-28.
- Koo, BY (1985), 'The role of direct foreign investment in Korea's recent economic growth', in W Galenson (ed.), *Foreign trade and investment: economic development in the newly industrializing Asian countries*, University of Wisconsin Press, Madison, Wis, pp.141-175.
- Kuznets, PW (1988), 'An East Asian Model of Economic Development: Japan, Taiwan, and South Korea', *Economic Development and Cultural Change*, Vol. 36, No. 3, pp. S11-S43.
- Kuznets, S (1979), 'Growth and Structural Shifts', in W Galenson (ed.), *Economic growth and structural change in Taiwan: the postwar experience of the Republic of China*, Cornell University Press, Ithaca, N.J, pp.15-131.
- Leung, S (2009), 'Banking and financial sector reforms in Vietnam', *ASEAN Economic Bulletin*, Vol. 26, No. 1, pp. 44-57.
- Leung, S (2010), 'Vietnam: an economic survey', *Asian-Pacific Economic Literature*, Vol. 24, No. 2, pp. 83-103.
- Lewis, W (1954), *Economic development with unlimited supplies of labour*, Bobbs-Merrill Company, College Division.
- Lewis, W (1972), *Reflections on Unlimited Labor*, Academic Press, New York.
- Manning, C (1995), 'Approaching the turning point ? : Labor market change under Indonesia's new order', *The Developing Economies*, Vol. 33, No. 1, pp. 52-81.
- Manning, C and Pang, PE (1990), 'Labour market trends and structures in ASEAN and the East Asian NIEs', *Asian Pacific Economic Literature*, Vol. 4, No. 2, pp. 59-81.
- McCarty, A (1999), 'Vietnam's Labour Market in Transition', in *Law and Labour Market Regulation in Asian: proceedings of the Law and Labour Market Regulation in Asian*, University of the Philippines.
- Pincus, J (2009), 'Sustaining Growth in Difficult Times', *ASEAN Economic Bulletin*, Vol. 26, No. 1, pp. 11-24.

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- Ranis, G (1979), 'Industrial development', in W Galenson (ed.), *Economic growth and structural change in Taiwan : the postwar experience of the Republic of China*, Cornell University Press, Ithaca, N.J. , pp. 206-62.
- Ranis, G (1995), 'Another look at the East-Asian Miracle', *World Bank Economic Review*, Vol. 9, No. 3, pp. 509-534.
- Ranis, G (2006), 'Is dualism worth revisiting ?', in A DeJanvry and R Kanbur (eds), *Poverty, Inequality and Development: Essays in Honor of Erik Thorbecke*, Vol. 1, pp. 371-85.
- Ranis, G and Fei, JCH (1961), 'A Theory of economic development', *American Economic Review*, Vol. 51, No. 4, pp. 533-565.
- Riedel, J (1993), 'Vietnam: On the trail of the tigers', *The World Economy*, Vol. 16, No. 4, pp. 401-422.
- Riedel, J (2009), 'The global economic crisis and its long-run implications for Vietnam', Prepared for the United Nations Development Programme, Hanoi.
- Rosenzweig, M (1988), 'Labor market in low income countries', in H Chenery and TN Srinivasan (eds), *Handbook of development economics*, North-Holland Amsterdam Vol. 1, pp. 714-762.
- Snodgrass, DR (1976), 'Growth and utilization of Malaysian labor supply', *The Philippine Economic Journal*, Vol. 15, No. 1-2, pp. 273-313.
- Song, B-N (1990), *The rise of the Korean economy*, Oxford University Press, Hong Kong.
- Tidalgo, RL (1976), 'Labor absorption in the Philippines, 1956-73', *The Philippine Economic Journal*, Vol. 15, No. 1-2, pp. 183-237.
- Tidalgo, RL (1988), 'Labor markets, Labor flows and Structural change in the Philippines', in PE Fong (ed.), *Labour market developments and structural change : the experience of ASEAN and Australia*, Singapore University Press, Singapore, pp. 139-94.
- Van Arkadie, B and Mallon, R (2003), *Vietnam: a transition tiger?*, Asia Pacific Press at the National Australian University, Canberra.