Development and Structural Diversification of the Thai Economy: The Cause of Labour Immigration

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1. Introduction

Thailand, the latest in the wave of successful Asian economies, has recently emerged as the new Asian migratory pole, following Japan the Asian NICs, and Malaysia. Thailand is now the third largest labour-receiving country in the region, while remaining one of the major labour-sending countries. This paper discusses social, political, and structural changes in the Thai economy with, particular attention paid to economic development. It illustrates why Thailand has become a major migratory pole in Asia and, in so doing, explains the causes of the demand for foreign workers in the country. Following the background section, the paper begins with a brief overview of the country's economic development strategies, as this is fundamental to understanding the country's economic development. Then, to place the Thai economic situation into a broader regional context, Thailand's past and present economic performance will be compared to that of its Southeast Asian neighbours. The paper will then examine the development of the three most important elements of economic growth – capital, labour and technology – from the period after the country's first National Economic Development Plan (NEDP), in an attempt to show how the changes in these elements led to a demand for, and therefore, the presence of migrant labour in Thailand.

2. Background

Not very long ago, Thailand – in socio-economic terms – was an agrarian economy and authoritarian state. Even though, unlike other Asian countries, Thailand managed to keep hold of its independence during the colonial period, the country was, as a matter of fact, economically colonised, under the so-called 'treaties of friendship and commerce' ratified with most of the occidental colonial powers – England, United States, and France, to name a few – and Japan (Dixon 1999: 31; Siamwalla 1975: 32). Not surprisingly, after the absolute monarchy was overthrown in 1932 in favour of a constitutional monarchy, *coup d'état* became somewhat customary as a method for changing the government (usually by bloodless means). The last military coup was in as recently as February 1991. By the early 1980s, the country was still an agriculturally-based, inward-looking economy, depending largely on a narrow

range of export agricultural products, such as rice, rubber, tin, and teak. The bulk of Thai people engaged in subsistence agriculture, forestry and fishing, living in remote rural areas.

However, the country today, by any measure, has changed out of all recognition. Thailand even has a new constitution, which received Royal Assent on 11 October 1997. The military coups have become a distant memory for many Thai people, and unimaginable for the young generation. Never before in contemporary Thai history, has the government achieved a parliamentary majority. The current government has not just once but twice in a row overwhelmingly won the majority of seats in the House of Representatives. In Bangkok, sky-trains and subways have already started running. To connect every part of the vast country, more highways linking all major cities have been built, extended and expanded. Budget airlines are operating. TV and telephone are now a part of Thai people's life. Current statistics also show that just about half the Thai population are mobile-phone subscribers (Toomgum 2005: online). Today, the world perceives Thailand as one of Asia's Newly Industrialising Countries – NICs. To many, this transformation began with the implementation of the country's first National Economic Development Plan (NEDP) in 1961. The structural transformation of the country has been responsible for the country's economic growth and has, thus, brought about a widespread demand for immigrant labour in the economy today. This, therefore, sets the framework of the discussion in this paper.

3. Thailand's economic development strategies

Even though the current strong Thai economy evolved from the country's first NEDP, it is commonly believed that the modern Thai economy came into being during the regimes of King Mongkut (1851-1868) and his son, King Chulalongkorn (1868-1910), who liberalised the economy and opened it up for extensive foreign trade and international affairs. Since then, the focus of Thai economic development strategies can be summarised as: Agriculture-Export-Led policy, state–owned enterprises, import substitution, and export-oriented industrialisation.

3.1 Agriculture-Export-Led policy

Before the Second World War, with abundant fertile land and a capital deficiency, Thailand pursued a policy of 'Agriculture-Export-Led' as the country's main economic development

strategy. Farmers were encouraged to increase their production, especially of rice, for export. This was reflected in the development of irrigation systems and in the government's tax concessions for frontier development that hastened the expansion of plantations (Dixon 1999: 41). Especially prior to 1950, unlike some countries such as Japan at the time, the increase of Thai agricultural products depended very much on expanding paddies rather than relying on exercising advanced agricultural techniques, or technological development (Dixon 1999: 41-42; Manarungsan 1989: 83-89). The land frontier practice was eventually abandoned around 1980, by which time there was better use of irrigation systems and of more modern technology and know-how about higher-yielding production. There was, as well, an increase in the cultivation of other kind of crops with higher-earning and drought-tolerant traits, in particular maize, cassava and sugarcane (Office of the Prime Minister 1979: 171-172; Office of the Prime Minister 1991: 159-161; Siamwalla 1996: 4). It is also noteworthy that Thai agricultural activity has concentrated more on arable farming than livestock and fishery.

3.2 State-owned enterprises

Today, agriculture still plays an important role in the country's economic activities. It began to gradually give way to manufacturing as the major contributor to the nation's current source of foreign exchange earnings after the end of the Second World War. As a mark of modernisation and a means to moderate the country's dependence on the export of a few primary commodities, like many post-war economies, the nationalist government of the time promoted industrialisation through 'state-owned enterprises' and import protection. Nevertheless, this strategy later proved corrupt, loss-making and failed, plundering vast public funds (Siamwalla 1975: 34-36).

3.3 Import substitution

In the early 1960s, under the country's first NEDP (1961-1966), the government shifted its policy from state direct involvement to an 'import-substituting strategy' which was based primarily on labour-intensive industries and local natural resources, and encouraged private-sector participation. The government promoted private investment (and at the same time protected local production) through a combination of tariff protection, tax holidays, and tax cuts on imported raw materials and machinery, among others. In addition, to fostering

manufacturing industry and encouraging further private investment, the Thai government embarked on provision of basic physical infrastructure necessary for industrial development, especially in transportation, telecommunication, and energy. However, this 'import-substituting strategy' failed to fulfil the government's expectations. This is because the growth in manufacturing was based heavily on production geared toward the small domestic market, which in time was curbed by the limited scope for economies of scale. As a corollary to that, the cost of protection rose. Hence, by the middle 1970s, the domestic market was saturated and the national balance of payment deteriorated, so the government was yet again forced to reassess its economic development strategy.

3.4 Export-oriented industrialisation

Under the fourth NEDP (1977-1981) (which by 1972 was renamed the 'National Economic and Social Economic Development Plan' – NESDP), the government reoriented its economic development strategy, this time toward an outward-looking, export-oriented development policy. By this point in time, Thailand already possessed reliable basic infrastructure. And, together with calculated tax incentives and other subsidies, the government aimed to attract further foreign speculation, as well as fostering domestic investment (Suphachalasai 1995). Nevertheless, due to an unfavourable external economic environment – particularly worldwide recessions following the two oil shocks, the positive effects of the government's new strategy were not obvious until the end of 1986. This is when Thailand, for the first time, achieved double-digit economic growth, and growth continued at a steady high pace at an average of 8.6 percent per annum throughout the first half of the 1990s. The Thai economy quickly became the world's fastest-growing economy.

3.5 Thailand's current economic development ambition

Thailand has already progressed from a resource based to a labour based economy; and it is pursuing a capital and knowledge based realm. This desire is manifest in the statement of Prime Minister Thaksin Shinawatra (2001-Present), 'we [the Thai people] don't even have to wait until 2020 like Malaysia to realise the goal of becoming a developed country. We can do it faster' (Ruangdit 2003: online). Thus, to understand the vigour of Thailand's current

economy, it is important to examine it from a regional comparative perspective. A discussion of this therefore follows.

4. The Thai economy: a regional comparative perspective

Geographically, Southeast Asia sits between the Indian subcontinent to the west, and Japan, Korea and China to the east and north. It is important to note from the outset that this study recognises that East Timor (Democratic Republic of Timor-Leste) is part of Southeast Asia. However, because East Timor only became internationally recognised as an independent state in 2002 and there is, thus, a shortage of information, this paper with some reluctance omits East Timor from the discussion.

Excluding East Timor, the Southeast Asian region consists of ten countries – in alphabetical order, Brunei (Negara Brunei Darussalam), Cambodia (Kampuchea), Indonesia, Lao PDR (Laos), Malaysia, Myanmar (Burma), the Philippines, Singapore, Thailand and Vietnam, all of which are currently members of the Association of South East Asian Nations (ASEAN). ASEAN currently aims to establish regional cooperation not only in relation to regional security, but also in economic, social, cultural, technical, educational and other matters (ASEAN 2005: para 1-2). Thailand is, therefore, not only geographically closely tied to its Southeast Asian neighbouring countries but, through ASEAN, it is also socially, politically and economically linked to, and interdependent with, the region (Petchsiri et al. 2001). Thailand is geographically located in the mainland peninsula of Southeast Asia bordered by Myanmar, Lao PDR, Cambodia, and Malaysia on the west, northeast, east and south, in that order.

There is, of cause, considerable diversity between Southeast Asian countries to a greater or lesser degree in many aspects. Illustrating the strength of Thailand's current economy compared to other nations in the region provides some explanation of the causes of international labour migration into Thailand. The socio-political and, particularly, the economic diversity, yet similarity, of these Southeast Asian countries will, therefore, be the main focus of this discussion.

4.1 Socio-political and economic diversity and similarity between the Southeast Asian countries

In general, Thailand, like Cambodia and Vietnam, has a relatively homogeneous population, as well as cultural and language uniformity (Dixon 1991: 44). Thailand is regarded, by some observers, as one of only two liberal democratic economies in the region, albeit by Southeast Asian standards. The Philippines is the other (Mallet 2000). While Brunei is ruled by the Melayu Islam Beraja (MIB) – an influential monarchy (sultanate) system – the rest of the region is either under a military junta, or so-called 'soft' authoritarian rule (Brunei Economic Development Board 2005; Hewison, Robison, and Rodan 1993; Mallet 2000; Neher 1994). Historical comparison of Thailand with other Southeast Asian nations reveals one obvious difference. Irrespective of treaties of friendship and commerce (and despite historical periodic invasions by Burmese and Khmer and brief occupation by the Japanese during the Second World War), Thailand is the only country that has never actually been colonised. However, it was economically, although to a much less extent, politically afflicted by colonialism through treaties, but did not experience the full impacts of colonialism in the way experienced by its regional neighbours (Tarling 1998).

Comparatively, Thailand's neighbours have been politically unstable. Today, Myanmar, a former British colony, still faces political feuds; the government army regularly clashes with ethnic minority insurgent militia (Mawdsley 2002; Nanuam and Khuenkaew 2005). Likewise, Malaysia, another British former colony, experiences the strain of ethnic tension (Mahathir bin Mohamad 1996). As for the ex-French possessions, Laos, Vietnam and Cambodia are socialist states. They have just endured traumatic wars, which lasted for decades, as well as sluggish economic development. In contrast, Thailand is the most politically stable and settled state of all ten Southeast Asian countries, largely a result of its historical independence. Paul Keating (2000: 181), the former Prime Minister of Australia (1991-1996), whose foreign policy focused very much on the Southeast Asia region, has this to say:

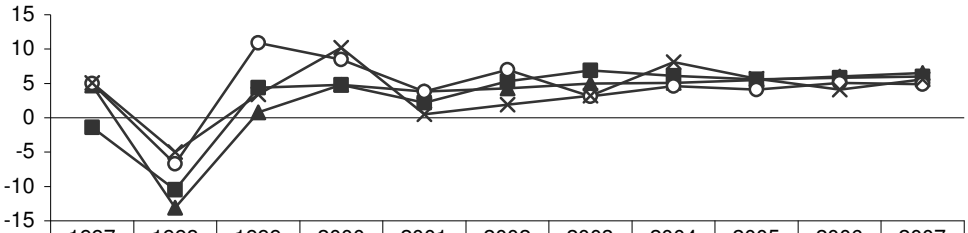
> With [over] 60 million people, Thailand is the most culturally cohesive and confident of all the ASEAN countries. A large part of that cohesion derives from the symbolic and actual role played by the king and the royal family who are held in universal respect. The Thais have impressive diplomatic skills which kept them, alone of the region's states, independent of European control during the colonial period.

Economically, Thailand is one of the most successful countries in the region. In the space of a few decades, Thailand has transformed itself from a peasant economy to a NIC of Asia, a process often called a 'miracle'. However, this reputation was tarnished by the 1997 Asian Economic Crisis, sometimes impishly called the 'Tom Yum Kung' disease. (*Tom Yum Kung* is a famous spicy Thai soup.) The Crisis hit Thailand first and hard, but the nation survived the crisis. Within less than three years, Thailand exited the International Monetary Fund (IMF) program, from which it had accepted a US$ 17.2 billion standby credit arrangement. By the end of July 2003, the country had paid outstanding liabilities two years ahead of schedule to the IMF and other international creditors (Buaroy 2003: online).

The empirical elements presented in Figure 1 indicate that the recent economic growth in Thailand, notwithstanding the lethargic world economy, the SARS epidemic, and the Iraq and terrorist crises, is increasing. In the next few years, the economy is expected to continue growing at some five to six percent, picking up where it had left off years ago. What is more, the post-crisis GDP growth of Thailand accelerated at a more relatively steady rate, if not faster than, that of the other three countries – Indonesia, South Korea, and Hong Kong – most stricken by the 1997 Economic crisis (Figure 1). Thus, it cannot be doubted that the effect of the crisis is waning and the Thai economy is now sound. Other Southeast Asian countries were also affected by the economic crisis, but all experienced much less severe effects than the four most stricken economies who were forced to seek aid from the IMF (Arndt and Hill 1999; Mallet 2000).

Despite differing history, racial and cultural characteristics, and political differences in the region, all ten Southeast Asian countries strive for the ultimate goal of economic success. Yet, for an array of reasons, the economic development of the region is lopsided. Each country has grown at a very different pace (Dixon 1991; Dobbs-Higginson 1993; Hill 1993; Pangestu 1991; Rodan, Hewison, and Robison 1997; Rohwer 1996). The following sections, therefore, examine and compare two fundamental aspects of the Southeast Asian countries' economic performances, their economic growth and structural changes in their economies. The examination of theses countries' economic development demonstrates the region's economic diversity, which in turn positions the Thai economy within its region and highlights the country's comparative economic strengths.

Figure 1 **Growth of GDP since 1997 (percent per year)**



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Thailand	-1.4	-10.5	4.4	4.8	2.2	5.3	6.9	6.1	5.6	5.8	6
Indonesia	4.7	-13.1	0.8	4.8	3.8	4.3	5	5.1	5.5	6	6.5
S. Korea	5	-6.7	10.9	8.5	3.8	7	3.1	4.6	4.1	5.1	4.9
Hong Kong	5.1	-5	3.4	10.2	0.5	1.9	3.2	8.1	5.7	4.1	5.6

Note: The situations should be seen in the context of the worldwide deterioration in 2001 and the outbreak of SARS in 2003.
Source: From 1997 to 1999: ADB (2003), p. 281.
From 2000 to 2007: ADB (2005), p. 303.

4.2 Economic growth trends

The economic performance of Thailand in comparison to other Southeast Asian countries is evident in cross section and time series economic indicators for all ten Southeast Asian economies shown in Table 1. It is, nevertheless, important to note that the subject of economic performance and development could cover a gamut of issues that stretch from 'quality of life' to 'welfare and human development'. However, for reasons of brevity, this paper limits its discussion to GDP per capita. And all the more so because it is generally held that the increase of GDP per capita is a crucial component in both economic development and social well-being of any nation.

The empirical evidence in Table 1 clearly indicates that in the first half of the 1990s Thailand and all other countries in the region enjoyed growth in GDP per capita. Even though GDP per capita in 1990 of some countries had decreased when compared to 1980, owing somewhat to the increase of population and/or economic mismanagement of their governments, all ten Southeast Asian countries appeared to enjoy significant increases in GDP per capita from the first half of the twentieth century. As can be simply calculated from statistics presented in Table 1, by the end of 1995, GDP per capita for Cambodia rose most in the region at 203.8 percent in US dollar terms; Vietnam's increased to 136.1 percent; Singapore's 96.6 percent; and Thailand's was fourth at 86.2 percent. The lowest increase was for the Philippines; its GDP per capita increased almost 63 percent.

Table 1 **Basic Economic Indicators, 1980-2002**

	1980	1990	1995	1999	2000	2001	2002
Population (millions)							
Brunei	0.185	0.253	0.287	0.316	0.324	0.332	0.340
Cambodia	6.5	8.6	10.2	12.7	12.8	13.2	13.5
Indonesia	147.5	179.4	194.8	207.4	205.8	208.4	211.1
Lao PDR	3.2	4.1	4.7	5.1	5.2	5.4	5.5
Malaysia	13.9	18.1	20.7	22.7	23.5	24.0	24.5
Myanmar	33.6	40.8	44.7	49.1	50.1	51.1	52.2
Philippines	48.1	60.7	68.6	74.8	76.5	77.9	79.5
Singapore	2.4	3.0	3.5	4.0	4.0	4.1	4.2
Thailand	47.0	56.3	59.5	61.7	61.9	62.3	62.8
Vietnam	53.7	66.2	72.0	76.6	77.7	78.7	79.9
GDP per capita (US$)							
Brunei	25,534	13,972	17,624	12,747	12,755	11,606	11,509
Cambodia	n/a	104	316	261	259	257	272
Indonesia	587	638	1,038	675	715	665	804
Lao PDR	301	210	382	286	330	324	333
Malaysia	1,780	2,432	4,294	3,485	3,837	3,664	3,868
Myanmar	186	68	123	189	210	162	175
Philippines	672	718	1,092	1,035	978	924	980
Singapore	4,854	12,110	23,806	20,598	22,769	20,544	20,849
Thailand	696	1,518	2,826	1,985	1,964	1,832	1,990
Vietnam	514	122	288	372	391	393	428
External Debt (Million of US$)							
Brunei	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cambodia	251.0	1,845.0	2,283.5	2,518.5	2,635.2	2,704.3	N/A
Indonesia	16,671.0	69,872.0	124,398.0	150,991.0	144,057.0	135,704.0	N/A
Lao PDR	75.0	1,768.0	2,164.9	2,526.7	2,502.1	2,494.9	N/A
Malaysia	6,611.0	15,328.0	34,343.0	41,903.0	41,797.0	43,351.0	N/A
Myanmar	1,524.0	4,694.8	5,770.5	6,003.5	5,927.8	5,670.1	N/A
Philippines	8,721.0	30,580.0	37,829.0	52,210.0	52,060.0	52,355.0	53,874.0
Singapore	437.6	37.5	N/A	N/A	N/A	N/A	N/A
Thailand	5,239.0	28,095.0	100,832.0	95,051.0	79,715.0	67,511.0	59,459.0
Vietnam	2,603.0	23,270.1	25,426.7	23,260.0	12,834.9	12,577.9	N/A
International Reserves (minus gold: Million of US$)							
Brunei	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cambodia	N/A	N/A	192.0	393.2	501.7	586.8	776.2
Indonesia	5,392.0	7,459.0	13,708.0	26,445.0	28,502.0	27,246.0	30,969.0
Lao PDR	N/A	1.8	92.1	101.2	139.0	130.9	191.6
Malaysia	4,387.0	9,754.0	23,774.0	30,588.0	29,523.0	30,474.0	34,222.0
Myanmar	260.6	312.8	561.1	265.5	223.0	400.5	470.0
Philippines	2,846.0	924.0	6,372.0	13,242.0	13,052.0	13,442.0	13,144.0
Singapore	6,567.0*	27,748.0*	68,695.0*	76,843.0*	80,132.0*	75,375.0*	82,021.0*
Thailand	1,560.0	13,305.0	35,982.0	34,063.0	32,016.0	32,362.0	38,055.0
Vietnam	N/A	N/A	1,324.0	3,326.0	3,417.0	3,675.0	4,121.0

Note: * Includes gold reserves
Source: UNESCAP (2005), online.

Not many people doubt the success of these countries in GDP per capita performances; however, in available relevant literature, opinions differ about the origins and sustainability of their economic successes. Irrespective of the question of economic sustainability, a combination of high levels of foreign direct investment, physical and human capital accumulation, and macroeconomic stability are most often cited as the sources of the success of many countries in the region (Jomo K. S. 2001; Kim 1997; McVey 1997; Rigg 2003). Also,

rapid growth in many Southeast Asian countries is facilitated by their rich national resources and/or abundant cheap labour forces.

It is important to compare Thailand's current economic development with that of other nations in the region. As mentioned earlier, Thai economic success started just before the beginning of the twentieth century, with the implementation of an export-led policy. Unlike Indonesia, Malaysia and Brunei, Thailand had no large oil resources. Unlike Singapore, Thailand at the early stage of its economic growth was also deficient in capital and technology. But, like many other countries, such as Cambodia, Myanmar, the Philippines, Vietnam and Indonesia, Thailand has a surplus of *cheap* labour. Therefore, the country's early economic expansion hinged on its surplus of cheap labour; concentration was exclusively on the development of labour-intensive industries, such as textiles and clothing. However, what set Thailand apart from the other labour-surplus economies is the fact that, even before the beginning of the twentieth century, Thailand already possessed sufficient infrastructure to facilitate industrialisation. And, together with the government's sound economic policy, Thailand attracted sizeable foreign investment inflows, in response to the country's strong economic growth, especially in the early 1990s. Thus, at the early stage of Thailand's modern economic development, the economy depended very much on its abundant cheap labour, sound economic policy and foreign investment.

As mentioned above, the successes of Thailand and this region were disrupted by the Asian economic shock which started in Thailand in July 1997 and resonated throughout the region, and disturbed many other economies as far afield as the Soviet and South America (Arndt and Hill 1999; Mallet 2000). The economic crisis confirmed scepticism of some critics about the region's economic success and its sustainability. Thus, as Krugman (1994: 63) warned, the economic growth of this region (Asia) was ominous. It was a product of a massive 'expansion of inputs', and because the growth is not based 'on growth in output per unit of input, [it] is inevitably subject to diminishing returns.' However, the crisis proved to be of short duration, especially for Thailand.

Table 1 suggests the economic downturn was short-lived for all ten Southeast Asian countries. With an exception of Brunei, where population is still growing constantly, from the year 2000, GDP per capita of all other nine countries is perceptibly increasing, and is comparatively

higher than the figures in 1990, as is evident from Table 1. This means that, despite the crisis, people of these countries are still richer than they were a decade ago. In all, examination of the growth of per-capita GDP demonstrates that Thailand and its other Southeast Asian counterparts have improved economically over time. Nonetheless, all ten Southeast Asian countries have not fared equally. Despite the fact that trends in economic growth were similar over the last decade, it is important to remember that they have been, and still are, at much different stages of economic development. The lopsided economic development in this region is apparent when gross per-capita GDP, external debt and international reserves are compared.

4.3 Economic might

With the highest per-capita GDP since 1995 and substantial international reserves, Singapore stands out as the sturdiest economy in the region. Cambodia, Lao PDR, Myanmar and Vietnam seem lacklustre by comparison. In a stark demonstration of how lopsided economic development in the region has been, since 1990, the per-capita GDP of Singapore singly has been as high as roughly twenty times the sum of the four laggard countries' per-capita GDP (Table 1). In fact, the current per-capita GDP of Singapore is higher than that of many developed nations (Mallet 2000: 263). Because of the lack of data available, Brunei's economic performance cannot be compared in total here. However, with constant high GDP per capita (the second highest since 1995) and abounding oil and liquefied natural gas resources, Brunei is undoubtedly far from being economically at risk.

With regard to the current level of gross per-capita GDP, Thailand can be bracketed with the other three remaining countries – Malaysia, Indonesia, and the Philippines – as the 'middle-class' of Southeast Asian economies. As of 2002, Malaysia had the highest GDP per capita among the 'middle-class' at US$ 3,868, followed by Thailand (US$ 1990), the Philippines (US$ 980), and Indonesia (US$ 804). In regard to foreign debt and international reserves, Thailand has a little more international reserves than Malaysia in recent years; Malaysia's foreign debt is much smaller than that of Thailand. Indonesia's international reserve is not much different from those of Malaysia and Thailand. However, it has massive external debts, twice the size of Thailand's and more than threefold that of Malaysia in 2001 (Table 1). Even though the Philippines has a smaller external debt than Indonesia and Thailand, its international reserves are undersized by comparison with all other 'middle-class' economies.

What is especially interesting is that, while the external debts and international reserves of the other three 'middle-class' countries (or of all other Southeast Asian for that matter) have been increasing or relatively stable since 1995, the size of Thailand's foreign debt continuously declines and its international reserves increased after the 1997 Economic Crisis (Table 1). This is not least because of the deal made with the IMF rescue program. However, the trend persisted even after Thailand exited the program in 2000. According to Table 1, the vast size of Thailand's external debt has been remarkably almost halved from US$ 100,832 million in 1995 to US$ 67,511 million in 2001 and to US$ 59,459 million in 2002. The international reserves of Thailand first declined (due largely to the devaluation of Thai baht) from US$ 35,982 million in 1995 to US$ 34,063 million in 1999 and US$ 32,016 million in 2000, but increased to US$ 32,362 million in 2001 and US$ 38,055 million in 2002. This not only illustrates the quick economic recovery of Thailand, but also demonstrates that Thailand's current economic performance is sound, comparatively strong and sustainable, albeit the country's growth is at a slower pace than in the pre-crisis period. While Thailand has managed to become one of the leading economies of the region, it has also left its neighbours very much behind. This, thus, helps to explain the large inflows of unskilled labour from particularly Myanmar, Laos, and Cambodia.

4.4 Economic structural changes

This section discusses the leading determinant of economic growth of Thailand and of the other Southeast Asian countries by examining the composition of their GDP. Because of the lack of comparable data, Brunei is omitted from the examination. However, as the third largest oil producer in Southeast Asia and the world's fourth largest producer of natural gas, there is no doubt that crude oil, petroleum products and liquefied natural gas constitute the lion's share of Brunei's GDP, although the shares of Non-oil and gas sectors apparently have shown some significant increase in recent years (Government of Brunei Darussalam 2005: online).

In fact, somewhat similar structural changes to that of Brunei emerged throughout the region, as Table 2 depicts. Over the past two decades, all other Southeast Asian countries, though to varying degrees, have also been expanding their economic activities. However, movement has been away from agriculture in the race for the higher productivity in industry, especially in manufacturing. This is not, of course, a peculiarly Southeast Asian phenomenon. The same

pattern also prevailed in many countries in Europe, USA, Japan and East Asia at the time of the industrial revolution, decades before. Likewise, Brunei follows a similar course to the Organization of Petroleum Exporting Countries (OPEC) of the Middle East in terms of practising economic diversification (Mallet 2000: 273).

Table 2 **Sectoral Shares in GDP (percentage)***

Sectoral	Agriculture			Industry			*Manufacturing***			Services		
Classification	1981	1990	2003	1981	1990	2003	1981	1990	2003	1981	1990	2003
Brunei	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cambodia	N/A	55.6	37.2	N/A	11.2	26.8	N/A	5.2	19.3	N/A	33.2	36
Indonesia	23.9	19.4	16.6	41.2	39.1	43.6	12.1	20.7	24.6	34.9	41.5	39.8
Lao PDR	81.2	61.2	48.6	9.9	14.5	25.9	N/A	9.9	19.2	8.9	24.3	25.5
Malaysia	23.0	15.0	9.1	35.6	41.5	47.0	19.7	23.8	30.2	41.4	43.5	43.9
Myanmar	47.4	57.3	57.1	12.4	10.5	10.5	9.3	7.8	7.8	40.2	32.2	32.4
Philippines	24.9	21.9	14.4	39.2	34.5	32.4	25.5	24.8	22.9	35.9	43.6	53.2
Singapore	1.2	0.3***	0.1***	37.9	32.7	33.0	28.5	25.5	26.3	60.9	67.0	66.9
Thailand	21.4	12.5	9.7	30.1	37.2	44.0	22.6	27.2	35.2	48.5	50.3	46.3
Vietnam	55.0	38.7	21.8	25.0	22.7	40.0	N/A	12.3	20.8	20.0	38.6	38.2

Note: * The sectoral classification has been revised to be in accordance with the International Standard Industrial Classification of all Economic Activities (ISIC): Agriculture also contains the Forestry and Fishing sub-sectors; Industry includes the Mining and quarrying, Manufacturing, Electricity, gas, and water supply and Construction sub-sectors. All other sub-sectors are classified under Services. Also, apart from figures of Lao PDR in 1981 that are calculated from data at a constant 1986 factor cost, all figures are calculated from data at current market prices.
** Manufacturing is a component of Industry.
*** Comprises the Mining sub-sector, which is normally a component of Industry.

Source: For 1981: ADB (1999), p. 72-376;
For 1990 and 2003: ADB (2004), p. 119-327.

The extent of structural change in this region has been proportionately greater in the 'middle-class' countries than in the other nations (Table 2). In the economically more advanced city state of Singapore, the sectoral composition has barely changed over the last two decades. Nevertheless, there has been a small change among the three main sectors. As can be seen in Table 2, both the share of agriculture and industry's share in Singapore's GDP has decreased since 1981. This decline coincided with an expansion of the services sector's GDP. (It is important to note that the services sector of Singapore has always had a major share and has always been based mainly on high value-added activities such as trades, transport and communication, and finance.)

For the rest of the region, the share of agriculture has also declined rapidly, especially in the 'middle-class' countries. The share of agriculture in Malaysia dropped from 23 percent in

1981 to 15 percent and to 9.1 percent in 1990 and 2003, respectively. The agricultural share in Thailand declined from 21.4 percent in 1981 to 12.5 percent in 1990 and to 9.7 in 2003. While, in 2003, the agriculture sector constituted 16.6 percent and 14.4 percent of Indonesia's and the Philippines's GDP, the agricultural shares of Cambodia, Lao PDR and Vietnam were still relatively high at 37.2, 48.6, and 21.8 percent, respectively (Table 2). Interestingly enough, however, Myanmar's agricultural share in GDP actually increased from 47.4 percent in 1981 to 57.3 percent in 1990 before declining slightly in 2003 to 57.1 percent. This indicates that Myanmar is still very much an agriculturally based economy. The industry sector of Thailand and many other Southeast Asian countries – especially the manufacturing sub-sector has expanded along with agricultural decline over the past twenty years. In other words, manufacturing has become a major source of income for Thailand and many countries in this region. The sectoral changes toward manufacturing in the region in part can be explained by the intensification of foreign and domestic investment in labour-intensive industry that has been taking advantage of cheap labour surplus in the Southeast Asian region. Therefore, manufacturing has been the major contributor to the region's current economic growth.

4.5 Conclusion and remarks

In summary, Thailand's and the region's economic development and structural changes demonstrates that, as the economies shift away from their traditional sources of income toward the higher income generating Industry and Services sectors, Thailand and the whole Southeast Asian region have grown economically over the last few decades. Yet, the strides were made at different paces in the different countries. In terms of economic development, Singapore and Brunei lead the pack, followed in respective order by Malaysia, Thailand, Indonesia, the Philippines, and the four 'laggards' – all of which are Thailand's neighbouring countries. It is often the case – especially in capitalist economies – that the higher the economic development of an economy is, the better the employment benefits (e.g. higher wages and better work conditions) proffered. There is, without a doubt, no exception for this region (Mallet 2000). And, as Adam Smith (1999 (1776): 201) pointed out:

> The whole of the advantages and disadvantages of the different employments of labour and stock must, in some neighbourhood, be either perfectly equal or continually tending to equality. If in the same neighbourhood, there was any employment evidently either more or less advantageous than the rest, so many would crowd into it in the one

> case, and so many would desert it in the other, that its advantages would soon return to the level of other employments.

It is, therefore, logical that the lopsided economic development of the region explains the flows of labour, and the burgeoning economy of Thailand is responsible for the emergence of the country as the new migratory pole in Asia.

Traditionally based on agricultural production, Thailand has now transformed into one of Asia's NICs and positioned itself as one of the region's leading economies. The quick recovery from the Asian Economic Crisis indeed reflects the strength of Thailand's current economy. Like many countries in the region, the 'miracle' growth performance of Thailand prior to 1997 meant the nation was becoming an industrialised economy. In order to further study the country's economic achievement in relation to the causes of labour migration into Thailand, the next section provides an empirical examination of changes in production function over the past few decades.

5. Changes in the production function of the Thai economy and the upshot

> Until the laws of thermodynamics are repealed, I shall continue to relate outputs to inputs – i.e. to believe in production functions. (Merton 1972: 174)
>
> Today, in the era of globalisation, as much as in Marx's time, production is at the heart of social and economic development. (Munck 2002: 64)

According to the Neoclassical theory of growth, changes in GDP (or a nation's economic development) can be explained by the underlying level of productive potential. Given that land is fixed, this depends on changes in the capital stock, labour and (exogenous) technological improvement, so-called 'economic resources' or 'factors of production'. (Theoretically, improvements of technology or new-found methods of production simultaneously make capital and labour more productive.) Based on this view, the impressive growth of the Thai economy in the past few decades is in essence the product of capital accumulation, growth in labour force and technological progress.

Land, as total cultivated area, also played a key and defining role in the economic expansion of Thailand; however, land as a current factor of production has become finite and very scarce since the early 1980s after the abrogation of the land frontier practice. This claim is

corroborated in the growth-accounting analysis of Tinakorn and Sussangkarn (1994; 1998). The result of their study indicates that the contribution of land to Thai economic growth has constantly declined from 2.8 to 0.9 to 0.4 and to almost -0.5 percent in the period 1978-1981, 1982-1986, 1987-1990 and 1991-1995 respectively. There is no doubt the contribution of each factor of production is varied from year to year, as detailed elsewhere (Chandrachai, Bangorn, and Chockpisansin 2004; Tinakorn and Sussangkarn 1994; Tinakorn and Sussangkarn 1998). Rather than discussing in detail the contribution of each economic resource or the effects of the changes in economic resources to the country's economic growth, the intention here is to shed light on how changes in economic factors in Thailand bring about the demand for foreign workers in Thailand. The study will, therefore, discuss the subject matter under three headings: Capital, Labour and Technology.

5.1 Capital

According to Todaro (2000: 115), capital accumulation comes about 'when some proportion of present income is saved and invested in order to augment future output and income.' In assessing that, it is important to note that 'money' in itself is not 'capital', but a mediating device that creates capital. Capital is indeed quite a broard term; nevertheless, it covers physical and human capital. In the usual course of events, it is imperative that the government invest in physical capital (or infrastructure) such as roads, ports, power and water supply, and advances its human capital through education and formal training and so forth, so as to aid and raise private investments and economic growth. Therefore, at the national level, capital can be accrued both publicly and privately.

5.1.1 Accumulation of public capital

Government annual spending illustrates the public capital increment in Thailand. Figure 2, thus, shows the proportion of the government's current expenditure and capital expenditure since 1985, for it was the time when the country's exponential economic growth started. Note that 'current expenditure', on the one hand, consists of wages and salaries of public servants, purchases of goods and services, interest payments, subsidies and transfers. 'Capital expenditure', on the other hand, is associated with physical capital formation, consisting of

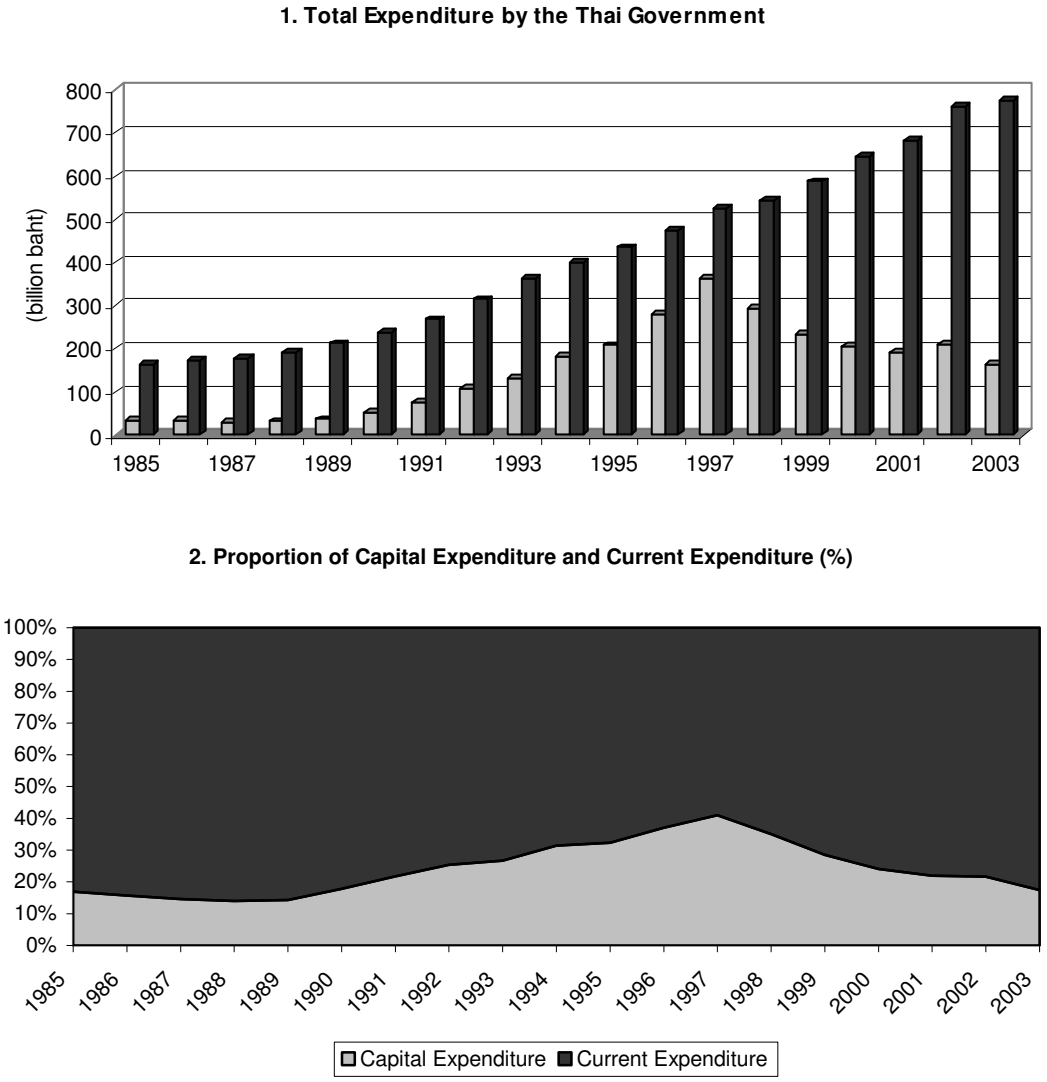
acquisition of fixed capital assets, and investment in other sorts of capital, such as share and financial assets (Lim Chong Yah 2001: 223).

Over the last two decades, the total spending of the Thai government increased considerably and continuously (Figure 2.1). The actual accounts of the government's total spending escalated from about 197 billion baht in 1985 to just over 888 billion baht in 1997 and more than 938 billion baht in 2003. To put that in perspective, government spending increased almost fivefold from 1985 to 2003 (Figure 2.2). More importantly, the Thai government, prior to 1997, seems to have invested a great deal in physical capital, as the proportion of capital expenditure grew enormously from only 16.9 and 14 percent of the Government's total expenditure in 1985 and 1988, respectively, to 41 percent in 1997 (Figure 2.2).

Nevertheless, Figures 2.1 and 2.2 reveal that, whereas the actual amount of current expenditure continued to rise after 1997, capital expenditure decreased in both absolute and proportional terms. Prior to 1997, Thailand was still very much an under-developed economy with a relatively low state of infrastructure development. In order to boost the already growing economy during the first half of the 1990s, much government expenditure went directly to investment in infrastructure. But, due to the economic austerity following the 1997 Asian Economic Crisis, the government was forced to cut its expenditure. To curtail its expenditure, while maintaining salaries and essential functions, the government had no choice but to put off or call off various, if not all, major infrastructure development projects. The Thai government's capital expenditure thus plummeted (Figure 2).

Recently, the government has again embarked on major infrastructure investment projects. For instance, Thailand's brand new multi-million-dollar 'Suvarnabhumi' international airport is scheduled to open in early 2006 (Mahitthirook 2005: online; Suvarnabhumi Airport 2005: online). The first subway network around the inner city of Bangkok commenced operation in August 2004 and a 280-billion-baht expansion project is underway (Nation 30 May 2005: online; MRTA 2005: online). Furthermore, it has recently been reported that, under the next year (2006) government's fiscal budget, the government has revealed its plan in investments of 'hundreds of billions of baht worth' of various so-called mega-projects, especially in transportation, power, water, health and education, 'to help boost the country's competitiveness and core infrastructure' (Yuthamanop and Theparat 2005: online).

Figure 2 **Government Expenditure, 1985-2003**

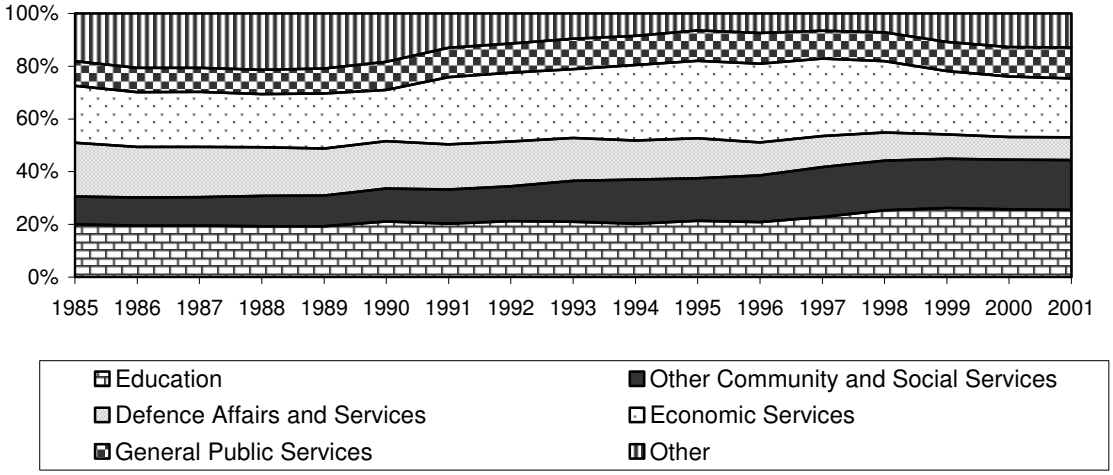


Note: Data for both figures are extracted from tables titled either 'Government Budgetary Expenditure by Economic Classification' or 'Government Expenditure by Economic Classification' from the source.
Source: BOT (1985-2003)

Regarding the development of human capital, it is evident from Figure 3 that, in the last decade, the government of Thailand spent resources in upgrading its human resources; whereas expenditure on national defence is proportionally in decline. Figure 3 clearly illustrates the share of total government expenditure on defence was at 20.3 percent in 1985, but then shrank to 15.2 percent in 1995 and to only 8.6 percent in 2001. In fact, the government's expenditure on Education alone has long been moderately high. Together with expenditure on the other community and social services (i.e. public health, social welfare, communities' improvement), this so-called 'human development' expenditure (Education and Community and Social Services) has, since 1985, constituted the largest share of total

government annual spending; its share has constantly been on the rise. The share of 'human development' was 30.6 percent of the total government expenditure in 1985, and then increased to 33.6 percent in 1990 and rose further to just over 44 percent in 2001. It is also worth noting that, since 1985, and especially after 1990, a large share of total annual government expenditure – between 19 to 30 percent – has been on Economic Services, including investment in, and maintenance of, public infrastructure, as well as the supply of other economic-related services such as technical advice, training and research. With such proportionally high spending on economic services, it is shown that the Thai government clearly encourages economic growth.

Figure 3 **Government Expenditure by Functional Classification, 1985-2001**



Note: 1) The functional classification has been revised to be in accordance with the current classification used by the BOT. However, in Other Community and Social Services government expenditure on Education is excluded; Education expenditure is presented separately.
2) Data are extracted from tables titled 'Actual Government Expenditures by Function and Sources' from the source.
Source: BOT (1985-2001).

Altogether, since 1985, more than half of the government annual expenditure has gone to physical and human capital investment and maintenance. With the high 'human development' spending (especially as a large share goes to Education), one may expect to see a good quality labour force. The extent to which this is so will be explored in the next section. However, there is no doubt that human development of Thailand, in general, has improved significantly over the past few decades. Empirical evidence shows that Thailand currently has lower rate of infant mortality, lower fertility rate, better life expectancy and higher literacy rate than they had decades ago. As for physical capital, according to the Board of Investment (BOI) (2005:

online), through the culmination of years of infrastructure development, Thailand currently possesses six international airports (which at the moment manage over 215,000 flights, 823,000 tons of cargo and in excess of 33 million passengers, per year), over 250,000 kilometres of an extensive road transportation network (40 percent of which are international standard highways), and at least a hundred ports, wharves and quaysides (that can assist maritime vessels), as well as eight international deep sea ports (which currently provide capacity of over 4.5 million TFU (Twenty Foot Equivalent Unit) and is expected to double their capacity when current expansion projects are completed). Reflecting government annual expenditure, the Thai government has accumulated physical and human capital.

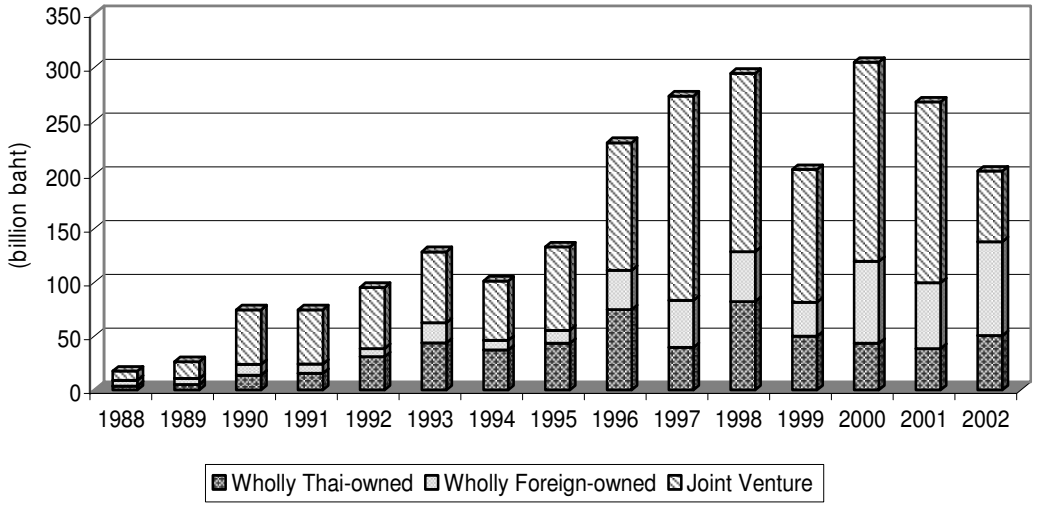
5.1.2 Accumulation of private capital

Development of public capital has, no doubt, attracted private investment in the Thai economy over the past decade, both from within the country and from overseas. The resulting increase in private investment is partially displayed in Figure 4. It is impossible, because of the inadequacy of available data, and due to the complexity of the subject matter, to detail all private investment in Thailand especially in dealing with the measurement of investment in private, informal micro-business. However, examination of figures of Board of Investment (BOI) promoted investment demonstrates trends in the development of private investment in Thailand over the past decade or so. In fact, these figures are the most relevant for this study, as the BOI-promoted firms, by law, have the privilege of attracting and/or employing foreign workers and because the BOI assists not only local but also foreign investors (BOI 1998; Royal Thai Government 1977). In addition, rather than 'portfolio' investment or 'foreign loans', the BOI-promoted foreign investments are in the form of 'direct' investment and mirror private capital accumulation (in the country in the economic sense) (BOI 1998).

It is apparent from statistics collected by the BOI that total annual private investment was close to doubling every two or three years between 1988 and 1998. Total investment grew from 17.8 and 26.4 billion baht in 1988 and 1989, respectively, to about 95.4 billion baht in 1992, and escalated to 133.1 billion baht in 1995 and further mounted to 294.6 billion baht in 1998 (Figure 4). Then, it peaked in 2000 at 304.8 billion baht. Perhaps not surprisingly, in spite of the peak in 2000, the amount of total investment declined in 1999, after the 1997 Economic Crisis. Nonetheless, the deterioration in total private investment was contributed to

by a decline in the local investment (which also to some extent shaped investment in international join venture operations) (Figure 4). However, total investment in Wholly Foreign-owned operations continued to rise, even after the slump of 1997, and has surpassed the total investment of Wholly Thai-owned operations since 2000. This demonstrates the growing role of foreign (direct) investment in the development of the Thai economy (both wholly foreign-owned operations and joint ventures, as shown in Figure 4).

Figure 4 **Investment by Newly Started BOI-Promoted Operation, 1988-2002**



Note: 1) Joint Venture includes all types of join venture operations.
2) Data are extracted from tables titled 'Distribution of Started Operation by Country' from the source.
Source: BOI Computing Unit (1988-2002).

5.1.3 Consequences of capital accumulation

The increase in foreign investment (along with increases in domestic investment described previously) undoubtedly will lead to a rise in overall employment in the economy. New investments have thus been creating between 85,419 and 177,122 new jobs each year since 1990 (Table 3). The total of 203.6 billion baht in investments in 2002, for example, generated new jobs for more than 130,000 workers (Figure 4 and Table 3).

Jobs created by the new investments do not only create additional employment opportunities for Thai workers, but may also create demand for workers with skills not yet easily found in the Thai labour force. Thus, between 1,175 and 2,642 new foreigners with special skills were employed by the newly established BOI-promoted operations each year from 1990 to 2002

(Table 3). Not only did the wholly and partly foreign-owned operations employ foreign workers, but Thai-owned operations employed skilled foreigners. In 2002, for instance, 127 new foreign workers were employed by Thai-owned operations, 935 recruited by foreign-owed companies and 694 for new joint venture operations (Table 3). The need for foreign specialists, however, seems to vary by year, depending on the size of the investment (Figure 4 and Table 3).

Table 3 **Number of Total Employees, Thai Employees, and Foreign Employees of Newly Started BOI-Promoted Operations by Type of Operation, 1990-2002**

Type of Operation	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total Number of Employees													
Thai-owned	24050	24582	36202	29716	43857	34993	44694	33554	46683	35098	27847	28134	34729
Foreign-owned	16694	14098	7726	20074	12063	23087	43830	46295	48777	21519	55686	39685	40992
Joint Venture	47819	46739	43610	39762	37401	37550	85722	64605	81662	45460	60485	64116	54777
Total	88563	85419	87538	89552	93321	95630	174246	144454	177122	101077	144018	131935	130498
Total Number of Thai Employees													
Thai-owned	23978	24515	36067	29434	43582	34387	44258	33293	45742	34811	27535	28041	34602
Foreign-owned	16274	13822	7492	19564	11798	22828	42973	45527	47800	20793	54563	38628	40057
Joint Venture	46184	45931	42669	39006	36766	37111	84480	63282	80108	44469	59278	62860	54083
Total	86436	84268	86228	88004	92146	94326	171711	142102	173650	100073	141376	129529	128742
Total Number of Foreign Employees													
Thai-owned	72	67	135	282	275	606	436	261	941	287	312	93	127
Foreign-owned	420	276	234	510	265	259	857	768	977	726	1123	1057	935
Joint Venture	1635	808	941	756	635	439	1242	1323	1554	991	1207	1256	694
Total	2127	1151	1310	1548	1175	1304	2535	2352	3472	2004	2642	2406	1756

Note: 1) Joint Venture includes all types of join venture operations.
2) Data are extracted from tables titled 'Distribution of Started Operation by Country' from the source.
Source: BOI Computing Unit (1990-2002).

Thus, it is clear there is a demand for workers with special skills. To solve a skill shortage, the government has three alternatives: it can develop the skill locally (or through overseas training); it can temporarily import specialists; or it can allow entry of permanent immigrants with the required special skills (Lloyd 1996: 74). Likewise, at the company level, skilled workers – like physical capital – can be recruited from the local labour force, brought in from abroad or equipped through in-house (formal and informal) on-the-job training. It stands to reason that if the education and training program generally yield results over a long period (especially because there will be a lag in the impact of the education modification) and the

admission of 'permanent' residents is not in the national interest, in the short-term, the importation of contract workers with the necessary skill is the easiest solution.

Not only did skilled workers become scarce, but shortages of labour in varying degrees have occurred throughout the skill spectrum of the Thai labour force since the middle 1980s. This is in evidence partly from the growth of unskilled foreign workers attracted from neighbouring countries. Undoubtedly, the rapid investment since the middle 1980s has increased aggregate demand for labour in the economy significantly. As shown in Table 3, between 84,268 and 173,650 extra Thai workers were required each year to take up the new jobs created by additional investment. The local supply of labour, for reasons that shall be examined in the next section, seems to be unable to keep pace with the increase in demand for labour. However, Thai law strictly proscribes the employment of unskilled foreigners (although skilled workers are permitted entry). As is the case for skilled workers, it is logical that if local resources are insufficient, 'borrowing' workers is the obvious remedy. So, it is not surprising that, before the Economic Crisis, the Thai authorities countenanced the presence of large numbers of illegal unskilled and semi-skilled foreign workers in the country. It was only in 1992 that the Thai government started to control the influx of illegal foreign workers by implementing the 'Illegal Migrant Worker Registration' scheme. However, it was not until 1996, and in particular after the 1997 Economic Crisis, that the government actually made a serious attempt to manage illegal foreign workers; this was primarily because the government wanted to retain jobs for large number of Thai workers made redundant as a result of the Crisis.

To summarise, rapid economic expansion in Thailand was primarily ignited by the government's economic outward-looking strategy and was largely contributed to by the country's capital formation. Public investment in 'infrastructure' and 'human' capital has been providing the economy with fertile ground for the private sector. Therefore, over the past two decades, Thailand has witnessed the growth of private investment, not only from within the country but even more so from abroad. Despite the effect of the 1997 economic turmoil, the overall rapid expansion of economic activities in Thailand has been accompanied by a rapid rise in the aggregate demand for labour, especially at both ends of the skill spectrum of the labour force. The Thai government reacted to the problem by relaxing the restriction on foreign labour recruitment and opening up the labour market at the high skill end. Prior to the Economic Crisis, it also closed its eyes to the influx of illegal foreign workers filling low

status jobs. This, though, presents only one dimension, namely the changes in labour demand. Therefore, the next section examines the other side of the equation – changes in the Thai labour force.

5.2 Labour

> The vital catalyst in any country's development is always the human being, himself [or herself] (Wit 1968: 43)
>
> Material production requires labour power. For a capitalist economy to function, its labour force must be produced, maintained, and renewed (Bolaria and Bolaria 1997a: 2)

Changes in the size and growth rate of a population are affected by changes in mortality and fertility of that population. International migration can also play a role in population growth in many countries. Changes in population size and growth, in turn, change the age structure and, thus, alter the labour force. It is, therefore, appropriate to briefly examine the country's demographic trends, including population growth, mortality and fertility transition, shifts in age-structure, and international population movement, before examining the characteristics of the Thai labour force.

5.2.1 Demographic trends

In order to observe Thailand's demographic trends, the population growth, mortality and fertility transition, shifts in age-structure, and movements in international population migration are examined next.

Population growth: According to its most recent census, Thailand, as of 1 April 2000, had a population of 60,606,947 (with the sexes almost equal in number). In comparison, Thailand had the fourth largest population in Southeast Asia, following Indonesia (209 million), Vietnam (79 million), and the Philippines (74 million) (NSO 2000a: 31). At the time of the first national census in 1909, Thailand's population was just around 8 million people but had doubled by the time of the fifth census in 1947. Between the sixth census (in 1960) and the latest census (in 2000), the population of Thailand grew by over 34 million people (Table 4).

Even though historical record suggests that the country's population size seemingly expanded rapidly, its population growth rate has been declining since 1960. The annual population

growth rate peaked by 1960 at a rate of 3.15 percent. However, since then, the rate has been continuously falling, to 2.7 percent by 1970, to 2.65 by 1980, and to 1.96 by 1990. From 1990 to 2000, the annual population growth rate was merely 1.05 percent, the lowest rate ever recorded since the first census (Table 4).

Table 4 **Population Size of Thailand since 1909**

Year	Population	Annual Growth Rate (%)
1909	8,149,487	-
1919	9,207,355	1.22
1929	11,506,207	2.23
1937	14,464,105	2.86
1947	17,442,689	1.87
1960	26,257,916	3.15
1970	34,397,374	2.70
1980	44,824,540	2.65
1990	54,548,530	1.96
2000	60,606,947	1.05

Note: Thailand's census has normally been conducted at an interval of every ten years. However, to avoid confusion, the records of the fourth and fifth census were taken in 1937 and 1947 (or B.E 2480 and B.E. 2490), respectively, which were in the B.E. years ending with '0'. To comply with UN recommendations and for the sake of international comparison, after the sixth census, Thailand's census was carried out every ten years years ending with '0' in the western calendar.

Source: NSO (2000a), p. 32.

Mortality and fertility transition: Both infant and under-five mortality rates have declined steadily during the past two decades (Table 5). During the same twenty year time span, the total fertility rate (the number of children that would be born to a Thai woman if she were to live to the end of her reproductive years and bear children) declined significantly (Table 5). Importantly, Thailand's total fertility rate has been below the replacement rate (i.e. the total fertility rate of 2.1) since 1995. Providing there is no imbalance created by international migration, the population of Thailand will eventually decline. The age structure of the population means total population is not yet in decline, but the rate of population growth has been declining since 1970 (Table 4). There are factors responsible for the continued fall in both mortality and fertility rates. According to 'demographic transition theory', as commonly known, economic and social changes are the major causes for the decline of a population's mortality and fertility. There is little doubt that medical improvement, urbanisation, higher education, and industrialisation can play a significant role in lowering mortality and fertility (Hirschman and Young 1998: 4). As well, it is generally believed that the rapid decline in fertility and mortality in Thailand is largely, but not exclusively, a result of the successful national family planning programs of the Thai government, as well as the strong support of NGOs' programs (D'Agnes 2001; Phananiramai 1997; Wongboonsin and Ruffolo 1993).

Additionally, life expectancy at birth has been rising for both males and females. Note that life expectancy at birth is in fact an alternative indicator of mortality that takes into consideration varying age structure and mortality conditions (Ratanarat et al. 1987: 8). Thus, both Thai men and women today are, on average, expected to live longer than their parents and grandparents. At present, it is expected that Thai males (born in 2000) would survive until 67 years of age and females (born in 2000) would live until 71 years of age. This life expectancy at birth for men has increased from about 56 in 1960 and, for women, from about 62 in 1960 (Table 5).

Table 5 **Basic Demographic Statistics since 1960**

	1960	1970	1980	1990	1995	2000
Infant mortality rate (*per 1000 live births*)	N/A	N/A	45	34	29	25
Under-five mortality rate	N/A	N/A	58	40	34	29
Total fertility rate	6.6	5.6	3.5	2.3	2.0	1.8
Life expectancy						
-- Male	56	58	61	66	67	67
-- Female	62	64	66	71	71	71
Age distribution (*percentage of total*)						
-- Population aged under 15	43.2	45.1	40.0	33.4	25.1	23.3
-- Population aged 15-59	52.2	50.0	54.6	60.6	66.9	67.5
-- Population aged 60 and over	4.6	4.9	5.4	6.1	8.0	9.2
-- Total population (million)*	26.3	36.4	46.7	56.2	59.5	61.9

Note: * Due to the different sources, the total population may be slightly different from figures in Table 4.

Source: Infant mortality rate, under-five mortality rate, total fertility rate, and life expectancy data from 1960-1970: Mason, Andrew, and Burnham O. Campbell (1993), p. 2; and data from 1980 to 2000: World Bank (2005) online.
Age distribution and total population data from 1960-1990: Mason, Andrew, and Burnham O. Campbell (1993), p. 2; and data from 1995-2000: NESDB (2003) online.

Shifts in age-structure: The age structure of the population of Thailand is in transition. By 1970, the share of population under 15 years of age constituted close to half of the entire population (43.2 percent in 1960 and 45.1 percent in 1970). Its share, however, started to decline from 40 percent in 1980 to 33.4 percent in 1990, to 25.1 percent in 1995, and to 23.3 percent in 2000 (Table 5). The continued decline in the share of under 15 year olds since 1980 coincided with the increase in the share of the working age population (age between 15 and 59) and the share of aged population (60 years old of age and older). The working age population represented about 54.6 percent of the total population in 1980 and swelled to 60.6 percent in 1990 and to 66.9 percent in 1995. By 2000, the working age population made up around 67.5 percent of the entire Thai population (Table 5). The share of the older aged population has also been continuously increasing since 1960, from 4.6 percent to 4.9 percent in 1970, to 5.4 percent in 1990 and to 9.2 percent in 2000.

Movement in international population migration: Table 6 displays permanent trans-boundary migration for Thailand. Because no data on permanent emigration are available, the annual net balance of Thai departures and Thai arrivals (from broad statistical border registration) are presented here. It must be borne in mind, however, that the net population loss of Thai citizens includes the myriad of temporary, cyclical and recurring emigrants – such as diplomats, business persons and, especially, Thai migrant workers. The extent of Thai migrant workers will be detailed later in this chapter.

There is, therefore, little doubt that the number of Thai citizens emigrating and foreigners immigrating permanently is very small in relation to the total population of the country. As Table 6 reveals Thailand even experienced population gains of returning Thai citizens, in some years – notably, in 1985, 1986 and 1990. This trend is indeed not so different for permanent immigrants. In the period between 1985 and 1995, only 2,517 foreigners in total were granted permanent residency. The largest number of foreigners granted permanent residency in one year was just 402 people in 1995.

Table 6 **Number of Thai Departures, Thai Arrivals, and Granted Permanent Resident**

	Thai Departure*	Thai Arrival*	Net Balance of the Thai Departure and Thai Arrival	Granted Permanent Resident
1983	723,389	576,367	147,022	N/A
1984	773,046	698,161	74,885	N/A
1985	540,315	569,124	-28,809	61
1986	489,577	512,930	-23,353	81
1987	602,283	594,986	7,297	106
1988	709,449	662,894	46,555	164
1989	788,169	769,019	19,150	293
1990	831,060	850,825	-19,765	253
1991	969,638	938,526	31,112	330
1992	1,23,1063	1,193,399	37,664	280
1993	1,486,664	1,412,266	74,398	277
1994	1,627,837	1,551,799	76,038	267
1995	1,786,633	1,725,543	61,090	402
1996	1,875,763	1,839,375	36,388	N/A
1997	1,836,525	1,817,705	18,820	N/A
1998	2,597,442	2,453,201	144,241	N/A
1999	1,673,880	1,621,317	52,563	N/A
2000	1,866,765	1,763,620	103,145	N/A
2001	1,805,552	1,660,154	145,398	N/A

Note: * Data are extracted from tables titled 'Departures Classified by Nationality' or 'Arrivals Classified by Nationality' from the source.

Source: Departures and arrivals of Thai citizens: NSO (1987-2002).
Granted permanent resident: Archvanitkul, Kritaya, Vanna Jarusonboon, and Anchalee Varangrat (1997), p. 14.

5.2.2 The situation of Thailand's labour supply

The current age structure of the population is crucial to the change in size of the labour force – indeed, it is responsible for the growth of the labour force. Temporary or permanent emigration can also influence the size of labour force. The size of the labour force also fluctuates when women's participation rates and compulsory schooling periods alter. Even though it is difficult to measure the effects of culture and social mores on the labour force, it seems logical that attitudes towards women's employment, as well as focus of education and preferred vocation can effect the participation of the population in the labour market. In all, many factors affect labour supply. Therefore, the next section examines the size, structure and past trends in labour force and employment, as well as the international migration of Thai workers.

It is important to note at the outset that, even though the current Labour Protection Act (commonly known as the Labour Law of Thailand) prohibited the employment of under 15 year olds since the beginning of 1998, it was not until the year 2001 that the National Statistical Office (NSO) started to re-classify the minimum age of the labour force (Royal Thai Government 1998: 11). Therefore, some data presented in this part from this source should be treated with some caution. Prior to 2001, the legal working age in Thailand was 13 years old, and 11 years old before 1989. Furthermore, although the NSO currently conducts its labour force survey on a quarterly basis, this study, for simplicity and brevity, draws on only data from Round 3 of the survey. Because Round 3 takes place during the agricultural season, total employment of the population is generally expected to be a little higher than at other times (NSO 2004: online). While variations in the data between rounds may not great, they should be acknowledged.

Size of the labour market: As shown in Table 7, between 1991 and 1995, the size of the total labour force of Thailand grew by almost 8.6 million people. Nevertheless, despite the fact that the working age population (age between 15 and 59) has increased constantly since 1970, the size of the total labour force after 1995 became relatively stable at around 32.7 million and 35 million people (or between 54.5 and 55.5 percent of the total population). After the year 2000, the size of the total labour force crept up a little from 33.2 million (53.7 percent) in 1999 to over 33.9 million (54.4 percent) in 2000, to 34.4 million (54.7 percent) in 2001 and to more

than 34.9 million people (55.1 percent) in 2002 (Table 7). Statistically, the steadiness of labour force growth is accounted for by dwindling population growth rates (Table 4) and by the increased size of the so-called 'non-labour force' (i.e. those of working ages who are not in the labour force), especially the increased number of students.

Table 7 **Labour Force by Work Status and Gender, 1991-2002**

		1991	1995	1996	1997	1998	1999	2000	2001	2002
					(thousand)					
Total Population		57234.5	59450.8	60045.3	60648.9	61248.4	61856.7	62481.3	63001.1	63526.9
	%	100	100	100	100	100	100	100	100	100
1. Total Labour Force		32143.2	33001.8	32750.0	33560.7	33352.9	33210.2	33973.0	34487.7	34969.6
	%	56.2	55.5	54.5	55.3	54.5	53.7	54.4	54.7	55.1
- Employed		31138.4	32575.0	32232.2	33162.3	32138.0	32087.1	33001.0	33483.7	34262.4
	%	54.4	54.8	53.7	54.7	52.5	51.9	52.8	53.1	53.9
- Unemployed		869.3	375.1	353.9	292.5	1137.9	985.7	812.5	896.3	616.1
	%	1.5	0.6	0.6	0.5	1.9	1.6	1.3	1.4	1.0
- Seasonally Inactive Workers		135.2	51.6	163.7	105.7	76.9	137.2	159.2	107.7	91.1
	%	0.2	0.1	0.3	0.2	0.1	0.2	0.3	0.2	0.1
2. Not in Labour Force		8907.3	12194.1	13119.4	13238.0	13912.9	14763.7	14739.0	12646.7	12784.9
	%	15.5	20.5	21.8	21.8	22.7	23.9	23.6	20.1	20.1
-Housework		2360.5	3031.8	3539.3	3450.1	3589.7	3723.7	3485.1	3805.8	3669.4
	%	4.1	5.1	5.9	5.7	5.9	6.0	5.6	6.0	5.8
-Staying in school		3322.8	5168.3	5518.9	5580.4	5912.5	6176.6	6228.4	4223.4	4401.4
	%	5.8	8.7	9.2	9.2	9.7	10.0	10.0	6.7	6.9
-Too young/ old or incapable of work		2400.3	3221.2	3377.4	3517.1	3623.7	3799.0	3854.0	3797.1	3806.5
	%	4.2	5.4	5.6	5.8	5.9	6.1	6.2	6.0	6.0
-Other		823.5	772.7	683.8	690.3	786.8	1064.2	1171.3	820.3	907.6
	%	1.4	1.3	1.1	1.1	1.3	1.7	1.9	1.3	1.4
3. Person under 13 (15) years of age		16184.1	14254.8	14175.8	13850.2	13982.5	13882.7	13769.2	15866.8	15772.4
	%	28.3	24.0	23.6	22.8	22.8	22.4	22.0	25.2	24.8
		%	%	%	%	%	%	%	%	%
Total Population	Male	50.1	49.9	49.9	49.9	49.9	49.9	49.8	49.8	49.8
	Female	49.9	50.1	50.1	50.1	50.1	50.1	50.2	50.2	50.2
1. Total Labour Force	Male	53.6	54.4	54.8	54.6	54.9	55.1	55.0	55.2	55.1
	Female	46.4	45.6	45.2	45.4	45.1	44.9	45.0	44.8	44.9
- Employed	Male	54.1	54.6	55.1	54.6	55.0	55.2	55.0	55.2	55.1
	Female	45.9	45.4	44.9	45.4	45.0	44.8	45.0	44.8	44.9
- Unemployed	Male	40.3	44.5	52.7	52.8	54.9	55.4	55.9	57.0	60.4
	Female	59.7	55.5	47.3	47.2	45.1	44.6	44.1	43.0	39.6
- Seasonally Inactive Workers	Male	26.8	30.0	21.2	32.9	45.8	33.4	34.3	36.6	35.8
	Female	73.2	70.0	78.8	67.1	54.2	66.6	65.7	63.4	64.2
2. Not in Labour Force	Male	36.0	37.0	36.9	37.3	37.0	37.2	37.3	34.3	34.3
	Female	64.0	63.0	63.1	62.7	63.0	62.8	62.7	65.7	65.7
-Housework	Male	2.4	2.0	2.9	2.8	2.2	2.9	2.6	3.8	3.8
	Female	97.6	98.0	97.1	97.2	97.8	97.1	97.4	96.2	96.2
-Staying in school	Male	53.1	51.7	50.9	50.2	49.8	49.8	49.5	48.3	47.7
	Female	46.9	48.3	49.1	49.8	50.2	50.2	50.5	51.7	52.3
-Too young/ old or incapable of work	Male	43.8	43.3	46.5	46.5	46.0	45.0	44.9	45.4	43.5
	Female	56.2	56.7	53.52	53.5	54.0	55.0	55.1	54.6	56.5
-Other	Male	40.8	49.9	51.2	58.6	58.0	57.1	50.2	52.3	53.3
	Female	59.2	50.1	48.8	41.4	42.0	42.9	49.8	47.7	46.7
3. Person under 13 (15) years of age	Male	50.7	50.7	50.7	50.7	50.6	50.6	50.6	50.6	50.7
	Female	49.3	49.3	45.3	49.3	49.4	49.4	49.4	49.4	49.3

Note: 1) Data are extracted from tables titled 'Number of Population by Sex and Activity' from the source and based on the Round 3 (during the agricultural season).
2) Person in labour force, 13 years of age and over before 2001; and 15 years of age and over after 2001.
Source: NSO (1994-2002).

This is partly a result of extended years of compulsory basic education (initially from four years of compulsory primary schooling to six years and then to nine years of universal compulsory schooling after 1999) – the number of students increased absolutely (and proportionally) from about 3.3 million (5.8 percent of the total population) in 1991 to almost 5.2 million (8.7 percent) in 1995, to 5.9 million (9.7 percent) in 1998 and to 6.2 million (10 percent) in 2000 (Office of the Prime Minister 1991: 84; Royal Thai Government 1999: 6).

Also, the size of the 'non-labour force' increased absolutely (and proportionally) from 8.9 million (15.5 percent of the total population) in 1991 to about 12.1 million (20.5 percent) in 1995, to 13.2 million (21.8 percent) in 1997, and to 14.7 million people (23.9 percent) in 1999 before it started to decline slightly in 2000 (Table 7). And, largely because of alterations in the legal minimum working age (from 13 to 15 years of age), the size of the 'non-labour force' shrank from just about 14.7 million (23.6 percent) in 2000 to approximately 12.6 million (20.1 percent) in 2001 and 12.8 million people (about 20.1 percent) in 2002.

Gender structure of the labour market: There seems to be only a small gender gap in Thailand's labour force. Of the total labour force since 1991, men constituted between 53.6 percent and 55.2 percent; and women had between a 44.8 percent and 46.4 percent share. Both men and women, also, have fairly equal shares in the population of employed persons. As can be seen in the Table 7, between 1991 and 2002, men have never made up more than 54.1 percent of the total employed population, while women constituted at least 44.8 percent.

However, there appear to be some gender gaps in the seasonally inactive labour force, and also, more obviously, in the so-called 'non-labour force'. With the exception of the period during the 1997 economic crisis, women made up about 63.4 percent to as much as 78.8 percent of the seasonally inactive labour force between 1991 and 2002. It was, in fact, only in 1998 that the seasonally inactive labour force was divided almost equally between the sexes (Table 7).

Likewise, because the population in the 'non-labour force' comprises mainly those who are doing housework, those still at school and those too young, old and/or incapable of work, it is perhaps unsurprising that women persistently dominate this group. Since 1991, men have constituted at most 37.3 percent, whereas women have made up between 62.7 percent and 65.7 percent of the total non-labour force. Undoubtedly, this high gender gap in the 'non-labour

force' seen for women, is based largely on the concentration of women in unpaid housework. While the gender breakdown was approximately in proportion in other groups of the 'non-labour force', women have constituted at least 96.2 percent (and as large as 98 percent) of those engaged in housework since 1991. Since 1991, the total population engaged in housework has represented between 4 percent and 6 percent of the total population of the country, amounting to between 2.3 million and 3.8 million people (Table 7). Therefore, beside students and those incapable of work, the majority of the professed 'economically inactive persons' are women. This – at one remove – explains the lower labour participation rate of women than men, which will be discussed in the next section.

Participation and unemployment rate: It appears evidently that, as shown in Table 8, the participation rates of Thailand have always been relatively high, although they were in decline between 1991 and 2000. The participation rate was 78.3 percent in 1991; 73 percent in 1995; and 69.2 percent in 1999 (Table 8). The decline was, mainly, accounted for by the stagnation of the labour force which is the result of the requisite extension of education at young ages. The rapid decline of the participation rate after 1997 was, without a doubt, the result of the Economic Crisis. Nevertheless, as the effects of the Crisis waned and the total number of the total labour force increased, the total labour force participation rate started to rise in 2000 to 69.7 percent and, currently, to 73.2 percent in 2001 and 2002 (Table 7 and Table 8).

Table 8 **Labour Force Participation Rate, Current Unemployment Rate and Total Unemployment Rate, 1991-2002**

		1991	1995	1996	1997	1998	1999	2000	2001	2002
Labour Force Participation Rate*	Total	78.3	73.0	71.4	71.7	70.6	69.2	69.7	73.2	73.2
	Male	84.3	79.9	78.8	78.7	78.1	76.9	77.3	81.4	81.5
	Female	72.3	66.2	64.1	64.8	63.1	61.7	62.3	65.0	65.1
Total Unemployment Rate**	Total	2.7	1.1	1.1	0.9	3.4	3.0	2.4	2.1	1.8
	Male	2.0	0.9	1.0	0.8	3.4	3.0	2.4	2.3	1.8
	Female	3.5	1.3	1.1	0.9	3.4	2.9	2.3	1.9	1.7

Note: * Labour Force Participation Rate is the total labour force as a percentage of the total population aged thirteen (or fifteen) and over (i.e. Total Labour Force times one hundred and divided by the total number of the total population aged thirteen (or fifteen) and over). Before the year 2001, the working age began at 13 years old. After 2001, the working age begins at 15 years old.
** Total Unemployment Rate is unemployment as a percentage of the total labour force (i.e. Unemployed times hundred and divided by Total Labour Force).
Source: Based on data in Table 7

As mentioned above, because many women are in the 'non-labour force', doing unpaid housework; the participation rate of women in Thailand is slightly lower than that of men. Approximately, the gaps between the male and female labour participation rate in the past

decade were between 12 and 16.4 percentage points. Even so, the participation rate of women in the labour force of Thailand is high in comparison to other nations. For the past decade, the rate of male labour force participation has been between 76.9 percent and 84.3 percent; and the female labour force participation rate has been between 61.7 percent and 72.3 percent (Table 8).

Also, there were very low unemployment rates in Thailand since 1991 (Table 8). The total unemployment rate was down from 2.7 percent in 1991 to just 1.1 percent in 1995 and 1996 and to as low as 0.9 percent 1997. In 1998, total unemployment went up to 3.4 percent, owing to the effect of the 1997 Asian economic crisis; however, since then it appears to have continued to decline to 3.0 in 1999, to 2.4 percent in 2000, and to 2.1 percent in 2001. The unemployment rate was at 1.8 percent in 2002, with just over half a million people unemployed (Tables 7 and 8). In fact, the unemployment rates of both men and women are commensurate with the total unemployment rate and they were all just as low (Table 8). Therefore, with the substantial labour force, high participation rates of both males and females and low unemployment rates, Thailand has been verging on full employment. The employment situation in Thailand is briefly examined hereafter.

In order to throw some light on issues related to the extent of development of Thai employment and the resultant tight labour market, trends in sectoral distribution and structural changes in the work status of Thailand's labour force are examined here. Then, the international labour migration of Thai workers is discussed.

Employment structure: The total employed population of Thailand has always been comparatively substantial. Since 1991, there have been no less than 51.9 percent of Thailand's total population employed each year (Table 7). However, Tables 9 and 10 indicate quite a substantial change in the employment composition over the past decade.

The share of unpaid family workers (part of the informal sector) decreased significantly from 42.9 percent of the total employed person in 1985 to 31.2 percent in 1995 and to just over 25 percent in 2002, and the share of 'own account workers' (also part of the informal sector) has been relatively unchanged, whereas the shares of all formal sector employment swelled: the share of employers increased from 1 percent in 1985 to 2.9 percent in 1995 and to 3.2 percent

in 2002; the share of government employees grew from 6.2 percent to 7.5 percent and to 7.8 percent; and, in particular, the share of private employees increased from 19.2 percent to 28.2 percent and to 32.2 percent (Table 9).

Table 9 **Employment by Work Status, 1985-2002**

		1985	1990	1995	1996	1997	1998	1999	2000	2001	2002
		(Thousand)									
Total		25851.6	30843.4	32574.5	32231.9	33161.1	32138.1	32086.5	33000.4	33483.7	34262.6
	%	100	100	100	100	100	100	100	100	100	100
Employer		272	379.8	949.5	813.3	745.1	824.9	933.5	1100.9	956.2	1092.1
	%	1.0	1.2	2.9	2.5	2.3	2.5	2.9	3.4	2.9	3.2
Government Employee		1605.6	1848.7	2424.0	2300.5	2426.1	2693.0	2758.8	2719.3	28519	2672.7
	%	6.2	6.0	7.5	7.1	7.3	8.4	8.6	8.2	8.5	7.8
Private Employee		4955.5	6926.1	9189.0	9850.5	10062.3	9036.5	9517.4	10350.5	10687.3	11039.1
	%	19.2	22.5	28.2	30.6	30.3	28.1	29.7	31.4	31.9	32.2
Own Account Worker		7933.8	9176.0	9836.2	9940.8	9868.8	10016.8	10175.8	9940.9	10719.7	10698.4
	%	30.7	29.8	30.2	30.9	29.8	31.2	31.7	30.1	32.0	31.2
Unpaid Family Worker		11084.7	12512.8	10175.8	9326.8	10058.8	9566.9	8701.0	8888.8	8268.6	8760.3
	%	42.9	40.5	31.2	28.9	30.3	29.8	27.1	26.9	24.7	25.6

Note: 1) Data are extracted from tables titled 'Employed Persons by Work Status, Industry and Sex' or 'Number of Employed Persons by Work Status, Industry and Sex (Quarter 3)' from the source.
2) From 2001, Own Account Workers also included those in Member of Producers' Cooperatives.
Source: NSO (1987-2002).

Concurrently, the share of agricultural employment declined from 68.4 percent of total employment in 1985 to 52 percent in 1995 and to 46.1 percent in 2002, while industrial employment increased from 10.9 percent in 1985 to 19.8 percent in 1995 to about 20 percent in 2002 and service sector employment increased from 20.7 percent to 28.2 percent and to 34.1 percent. Employment in manufacturing, in particular, increased from 8 percent in 1985 to 14.7 percent in 2002 (Table 10). These trends, therefore, reflect the changes in the country's economic activities (as examined earlier), from concentration in the agricultural and informal sector towards concentration in the industrial, especially the manufacturing, sector.

Before moving on, it should be pointed out that the shift of employment away from the agricultural sector to more economically productive activities was facilitated by the spread of the use of mechanisation and new techniques (such as broadcasting rather than transplanting rice production), as well as by the increase in cultivation of less-labour intensive crops (such as maize, cassava and sugarcane) (Office of the Prime Minister 1979: 171-172; Office of the Prime Minister 1991: 159-161; Siamwalla 1996: 7). However, this by no mean means that agricultural production in Thailand is high-technology oriented. Mechanisation of agricultural production is still in rudimentary stages. Therefore, although there has been a decline in

agricultural employment, agriculture today still employs a large proportion of the labour force (over 15 million people or 46.1 percent of the total employed person in 2002) (Table 10).

Table 10 **Employment by Sector, 1985-2002**

		1985	1990	1995	1996	1997	1998	1999	2000	2001	2002
		(Thousand)									
Total		25850.8	30842.9	32574.2	32231.6	33161.2	32137.1	32086.4	33000.1	33483.7	34262.8
	%	100	100	100	100	100	100	100	100	100	100
Agriculture		17674.4	19725.7	16929.2	16127.0	16691.2	16471.7	15563.5	16095.5	15408.9	15799.8
	%	68.4	64.0	52.0	50.0	50.3	51.3	48.5	48.8	46.0	46.1
Industry		2819.4	4321.7	6436.4	6695.9	6537.6	5687.3	5889.9	6276.6	6300.2	6791.5
	%	10.9	14.0	19.8	20.8	19.7	17.7	18.4	19.0	18.8	19.8
Manufacture		2066.5	3132.7	4376.8	4334.2	4291.9	4189.4	4394.5	4784.9	4750.4	5039.7
	%	8.0	10.2	13.4	13.4	12.9	13.0	13.7	14.5	14.2	14.7
Services		5357.0	6795.5	9208.6	9408.7	9932.4	9978.1	10633.0	10628.0	11774.5	11671.5
	%	20.7	22.0	28.2	29.2	30.0	31.1	33.1	32.2	35.2	34.1

Note: 1) Data are extracted from tables titled 'Employed Persons by Work Status, Industry and Sex' or 'Number of Employed Persons by Work Status, Industry and Sex (Quarter 3)' from the source.
2) The sectoral classification has been revised to be in accordance with the International Standard Industrial Classification of all Economic Activities (ISIC): Agriculture also contains the Forestry and Fishing sub-sectors; Industry includes Mining and Quarrying, Manufacturing, Electricity, Gas, and Water Supply and Construction sub-sectors. And all other sub-sectors are classified under Services.
3) Manufacturing is a component of Industry.

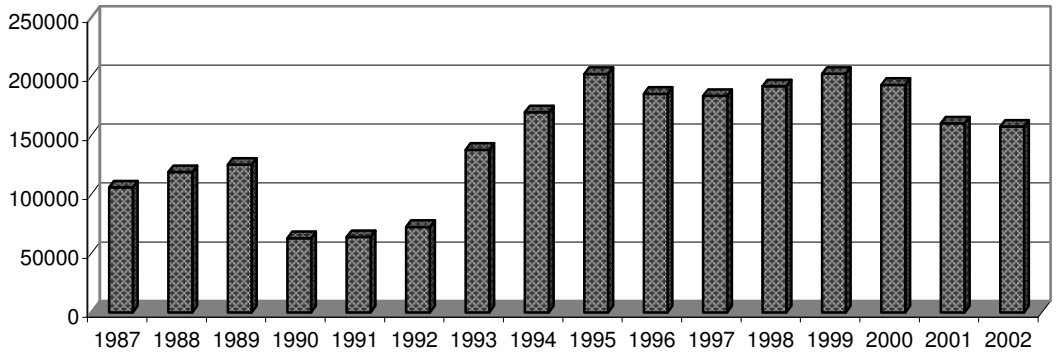
Source: NSO (1987-2002).

International migration of Thai workers: In the past two decades, Thai workers not only moved between sectors and between provinces, a number of them also moved out to work overseas. The outflow of Thai workers has shaped the labour market and contributed to the current tightness in the labour force. Again for brevity, and because of the lack of reliable data, data on legal Thai labour migration alone are presented here. Since illegal trans-boundary labour migration is always occurring, the figures presented in Figure 5, calculated from the total number of assenting workers who reported to the 'Department of Employment's Checkpoint' before departure, reveal the bare minimum of the annual outflow of Thai workers.

With the exception of the period between 1990 and 1992 (during the political conflict between Thailand and Saudi Arabia), the outflow of Thai workers has generally increased. The total number of Thais leaving for overseas employment surged from 72,434 in 1992 to 137,950 in 1993, and peaked at 202,296 workers in 1995 (Figure 5). After 1994, when there were some signs of a tight labour market in the Thai economy (as examined earlier), the trend of outflow of Thai workers, not surprisingly, proved responsive. Between 1995 and 1997, the outflow of Thai workers was in decline. However, as a result of the 1997 Economic Crisis, the number of Thai workers going abroad increased from 183,671 in 1997, to 191,735 in 1998, and to 202,416 in 1999. Yet, again, the trend declined continuously when the effects of the crisis

waned and the local demand for labour began to increase after 1999. The recent outflow of Thai workers was down to about 157,624 people in 2002 (Figure 5).

Figure 5 **Number of Thai Workers Travelling to Work Overseas, 1987-2002**



Note: Data are extracted from tables titled 'Number of Thai Workers Travelling to Work Overseas Through the Labour Check Point' or 'Number of Thai Workers Working Overseas' from the source.
Source: From 1987 to 1992: Department of Labour (1987-1992).
From 1993 to 1996: Department of Labour Protection and Welfare (1993-1996).
From 1997 to 2002: Department of Employment (1997-2002).

5.2.3 Consequences of changes in the labour force

There is enough evidence to suggest that the growth of Thailand's population is largely determined by natural increase, as the size of permanent international immigration and emigration is insignificant. Even though the age structure of the country's population is more mature than it was decades ago, and the population has already theoretically reached below replacement fertility, Thailand is not yet in a phase of stable low population growth or 'demographic instability'; it is common knowledge that it would take many years before the total fertility rate is translated into lower population. This suggests the potential for a continuing labour surplus. The proportion of working population aged between 15 and 59 has been increasing and currently constitutes 67.5 percent of the total population (Table 5). In addition, according to Navaneethan (2002: 16), the so-called 'demographic bonus' or 'window of opportunity' for Thailand will definitely persist for at least another decade. Similarly, in relation to pessimistic assumptions regarding an ageing population, it is reported that it will take about 20 years before the working population abates and the aging population actually make themselves manifest (Charoensutthiphan 2005: online). However, the age structure transition is an indicative measure of the situation of a country's labour force, providing only a

picture of the supply side. Due to the current rapid growth of Thailand's economic activities, the demand for labour has increased dramatically. It is true that Thailand before had a plentiful disposable labour supply; however, the labour market of Thailand increasingly shows signs of tightness with high participation, low unemployment, and a declining trend in international labour outflows. This means that the period of plentiful supply of cheap labour in Thailand is past. The country is verging on full employment.

It is nevertheless important to point out that it is always controversial to suggest that Thailand is facing labour shortages. It is so because, as examined earlier, a relatively large part of the economically active component of the Thai labour force is still to be found in the agriculture and informal sectors, which have always been the major supply of Thailand's disposable labour. In that respect, Thailand has not yet entered into the 'absolute' labour shortage phase. However, the existing body of empirical evidence – the low and falling unemployment rate and the constant high participation rate of both male and female – supports the fact that Thailand is indeed encountering a 'relative' shortage of labour (Bohning 1996: 12-13; Boswell, Stiller, and Straubhaar 2004: 5). Therefore, the availability of labour for expanding economic activities has been nearly completely exhausted, as it had in many other NICs previously, such as South Korea, Singapore and Malaysia. The importation of labour is therefore unavoidable.

5.3 Technology

It is important to discuss the current situation of Thailand's Research and Development (R&D) and the quality of Thai human resources, so as to catch sight of the impacts of technological changes to the economy and, thus, to international labour immigration.

5.3.1 Issues in Research and Development in Thailand

Neoclassical economic theory suggests that without technological development (or a so-called 'disembodied technological change') an economy will experience a fall in national economic growth. The labour participation rate cannot grow forever quite simply because everyone will eventually be in work, and more growth in capital than in labour will in due course induce 'diminishing returns' (Glahe 1985: 444-445; Sarel 1996: 4). The previous discussion reveals that while the economy expanded in the last two decades, Thailand's population is already

below replacement rate. Its labour market is verging on full employment and the country already has high male and female labour force participation rates. In addition a large part of Thailand's economic employment activities continuously moves from the informal towards the formal sector. With the exception of the time of 1997 Asian Economic Crisis, Thailand's capital accumulation has grown substantially in both public and private sectors over the past few decades.

In spite of that, existing studies find that, based on the growth accounting method, the growth rates of the total factor productivity (TFP) of Thailand, both as a whole and by sectors for the past two decades, have always been relatively low and seemingly sluggish even in the country's fast-growing industrial sector. This suggests low technological capability and progress of the economy (Chandrachai, Bangorn, and Chockpisansin 2004; Tinakorn and Sussangkarn 1994; Tinakorn and Sussangkarn 1998). These findings should not, on reflection, be surprising: Thailand does not have a good record when it comes to expenditure for R&D (Research and Development). Statistics collected by UNESCO reveal that the R&D intensity, or the total gross domestic expenditure on R&D (GERD) as percentage of GDP (or GNP) of Thailand since the early 1990s has always been low in comparison to that of many other countries. The figures for Thailand have been far from reaching the one percent UN set benchmark (UNESCO Institute for Statistics 2004: 3).

In 2002, for instance, Thailand used only 0.24 percent of its GDP on national research and experimental development, while Japan and South Korea spent about three percent, Singapore almost 2.2 percent, China 1.23 percent, and Malaysia 0.69 percent (Table 11). While the data for India is not available for 2002, Thailand spent only 0.25 percent in 2000, whereas India, an economically less advanced country, devoted as much as 0.85 percent of its total economic resources on R&D. In fact, prior to 1997, the statistics show a constant decline in Thailand's R&D spending, with the R&D Intensity figure for Thailand shrinking from 0.18 percent of the country's GNP in 1990 to 0.13 percent in 1995 and from 0.12 percent of the country's GDP in 1996 to 0.1 percent in 1997. It was only after 1999 that the country's R&D intensity started to increase a little, from 0.22 percent in 1999 to 0.25 percent in 2000 and to 2.4 percent in 2001 and 2002 (Table 11). It is interesting of note that, if Thailand is to become at least akin to South Korea in the early 1980s – let alone the current status – in terms of the level of

technological progress, the country would have to increase no less than five times its current share of GERD (Arnold et al. 2000 cited in World Bank 2001: 14).

Table 11 **Research and Development Intensity, by Regions and Selected Asian Countries, 1990-2002**

	GERD as percentage of GDP												
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
World	1.8	N/A	1.7	N/A	1.5	N/A	1.6		N/A	1.7		N/A	N/A
Americas	2.1	N/A	2.1	N/A	1.9	N/A	2.0		N/A	2.2		N/A	N/A
Europe	1.8	N/A	1.9	N/A	1.6	N/A	1.7		N/A	1.7		N/A	N/A
Africa	0.6	N/A	0.4	N/A	0.2	N/A	0.3		N/A	0.3		N/A	N/A
Oceania	1.1	N/A	1.2	N/A	1.4	N/A	1.6		N/A	1.5		N/A	N/A
Asia	1.8	N/A	1.3	N/A	1.1	N/A	1.2		N/A	1.5		N/A	N/A
	GERD as percentage of GNP						GERD as percentage of GDP						
Japan	3.03	2.99	N/A	2.86	2.82	2.96	2.76	2.83	2.94	2.95	2.98	3.06	3.11
Korea	1.88	1.95	2.10	2.32	2.60	2.71	2.60	2.69	2.55	2.47	2.65	2.92	2.91
China	0.68	0.68	0.64	0.75	0.67	0.61	0.60	0.68	0.70	0.83	1.00	1.07	1.23
Singapore	0.94	N/A	N/A	N/A	N/A	1.13	1.38	1.49	1.82	1.93	1.91	2.13	2.19
India	0.80	0.75	0.73	0.77	0.73	N/A	0.55	0.70	0.74	0.78	0.85	N/A	N/A
Malaysia	N/A	N/A	0.40	N/A	0.35	N/A	0.22	N/A	0.40	N/A	0.49	N/A	0.69
Thailand	0.18	0.16	N/A	0.15	N/A	0.13	0.12	0.10	N/A	0.22	0.25	0.24	0.24

Source: World and regions: UNESCO Institute for Statistics. (2004), p. 4.
Asian countries data from 1990 to 1995: UNESCO Institute for Statistics. (2005a),online; and data from 1996 to 2002: UNESCO Institute for Statistics (2005c), online.

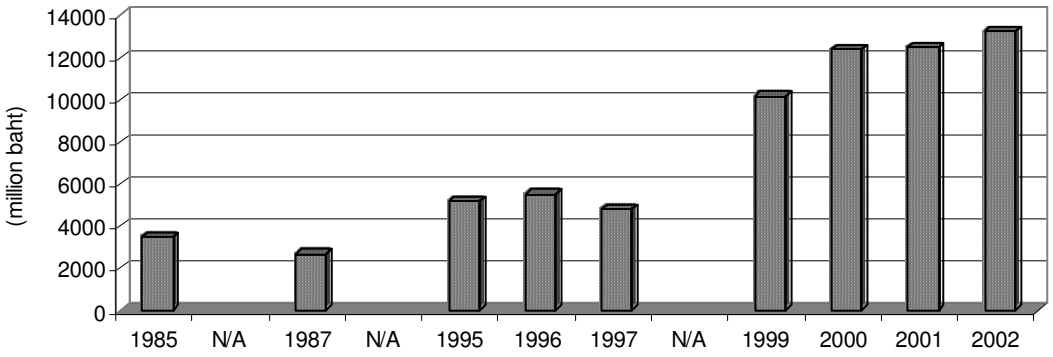
For over three decades, some have argued that the Thai economy has needed better 'science and technology' development and more R&D investment to sustain its future economic expansion (Chantramonklasri 1994: 24). However, government and business responses have been slow (Arnold et al. 2003). Since the early 1980s, as is clearly evident in the government's economic development policy, Thailand has depended on labour-intensive activities and, to some extent, on foreign capital inflow for its economic growth. The country, for a while, seemed to forget the basis of neoclassical growth theories, and so neglected the need for 'science and technology' development. In fact, trends in GERD for Thailand reveal that only in recent years has Thailand begun to address this need (Figure 6). The GERD figures for Thailand after 1999 suddenly double the size of the pre-1997 figures and the trend is upwards. According to UNESCO, current spending on R&D of Thailand is 13,264 million baht (as of 2002), an increase from 3,473 million baht in 1985 and 4,811 million in 1997 (Figure 6).

5.3.2 Quality of the country's human resource

Thailand, at present, pursues economic development through development of a knowledge-based economy. Along with H.M. King Bhumipol's philosophy – the so-called 'Sufficiency Economy' – this aspiration is the mainstay of the Ninth National Economic and Social

Development Plan (2002-2006) (NESDB 2002). However, the quality of the country's labour resources may cast doubt on the likelihood of Thailand successfully moving up the technological ladder. It is common knowledge that education plays a vital role the quality of a nation's human resources. As discussed earlier, the Thai government has been spending a large share of its total public expenditure on education; it has, however, been reported that, according to a UNESCO education survey of 127 countries, the quality of education of Thailand is still poor by global standards (ranked at sixtieth in the index poll) (*Nation* 9 Nov. 2004: online). Thailand, in fact, has the second-highest ranking budget allocation to education in Asia, following Malaysia. Even so, only a small proportion of the country's educational expenditure goes toward educational development and quality improvement (2.3 percent). The largest share of the budget always goes to construction and salary payment (about 90 percent), and a substantial part pays the cost of administration (5 percent) (Bhangananda 2003: 83). Developing countries, like Thailand, need high educational expenditure, mainly because most of their people cannot afford the cost of education (Lim Chong Yah 2001: 225-226) There is, therefore, little doubt that a low quality of education will produce inefficiency in labour manpower resources.

Figure 6 **Total Gross Domestic Expenditure on Research and Development (GERD) of Thailand since 1985**



Source: From 1985 to 1995: UNESCO Institute for Statistics. (2005b), online.
From 1996 to 2002: UNESCO Institute for Statistics. (2005c), online.

According to the fourfold industrial development patterns of Sanjaya Lall (1999: 20), an economy with at least an intermediate level of industrial development (as a minimum, with export-oriented activities in light industry and low-technology products) requires a population with at least good secondary and technical schooling in order to support technological needs. Thailand has already reached an intermediate level of industrial development based on the

country's current technological level of production and exports (Dhanani and Scholtes 2002: 18-20). However, even though the proportion of Thai workers with secondary and higher education level qualifications has increased overtime, the majority of the current Thai labour force still possess, at most, a primary education (Table 12). In 2002, of nearly 64 million Thai workers, 61.3 percent had only a primary level or lower educational attainment, plus 3.3 percent had no formal education at all. Only 23.6 percent of the country's economically active population graduated from secondary school and just about 12 percent from college or university (Tables 7 and 12).

Table 12 **Percentage of Current Labour Force, Employed Population, and Unemployed Population by Level of Education Attainment since 1986**

	1986			1990			1995			2000			2002		
	Current Labour Force	Employed	Unemployed	Current Labour Force	Employed	Unemployed	Current Labour Force	Employed	Unemployed	Current Labour Force	Employed	Unemployed	Current Labour Force	Employed	Unemployed
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
No Education	5.8	5.9	2.6	5.4	5.4	2.3	4.1	4.1	2.7	3.4	3.4	1.7	3.3	3.4	1.7
Primary and less	79.0	79.7	61.7	78.1	78.2	72.3	74.7	74.8	65.8	64.6	65.0	45.2	61.3	62.3	32.7
Secondary	9.9	9.4	23.6	11.0	10.9	17.6	14.3	14.2	21.0	21.5	21.3	33.9	23.6	23.0	39.1
Higher Education	4.8	4.5	11.9	5.4	5.4	7.7	6.8	6.8	10.5	10.5	10.3	19.2	11.7	11.2	26.5
Others	0.5	0.5	0.2	0.1	0.1	0.1	0.1	0.1	N/A	0.03	0.03	N/A	0.1	0.1	N/A

Note: 1) Data are computed from figures in tables titled 'Population 11 Years and Over by Level of Education and Sex', 'Population 13 Years and Over by Level of Education and Sex', or 'Population 15 Years and Over by Level of Education and Sex' of the source.
2) Person in labour force, 11 years of age and over in 1986, 13 years of age between 1990 and 2000, and 15 years of age in 2002.

Source: NSO (1989; 1993; 1996; 2000b; 2002)

This fact is not unexpected for there was an alarmingly low net secondary enrolment ratio in Thailand, even as recently as in 1997 (Table 13). (The net enrolment ratio is the proportion of total enrolment, regardless of age, of the population of official school age for a particular education level.) Thailand, by international standards, has always has a hight adult literacy rate, due to universal compulsory primary education and because of the resultant high net primary enrolment ratio (Table 13). However, as of 1997, Thailand's net secondary enrolment ratio was one of the lowest in the region, if not in the world. Yet, the net secondary enrolment ratios of Japan and South Korea were almost 100 percent and, in almost all other Asian countries,

exceeded 50 percent. Thailand's net secondary enrolment ratio was 47.6 percent, just 8.8 percentage points higher than that of Cambodia; and 10.7 percentage points lower than the regional average and, not surprisingly, 17.8 percentage points less than the world average. As mentioned earlier, the Thai government has recently extended the period of compulsory basic education from six years to nine years; it can, as a result, be expected that the recent net enrolment ratio of secondary school in Thailand may improve. However, the extension covers only the first three years of the secondary school program (known as 'lower secondary' education), so the improvement in the current net secondary enrolment ratio is not likely to be very high (National Electronics and Computer Technology Center 2005: 68). Thus, there are deficiencies in educational qualifications of the Thai labour force.

Table 13 **Adult Literacy Rate and Net Enrolment Ratio by Region and Selected Asian Countries, 1997**

	Adult Literacy Rate (%)	Net Primary Enrolment Ratio (%)	Net Secondary Enrolment Ratio (%)
World	N/A	87.6	65.4
Southeast Asia and the Pacific	N/A	97.8	58.3
Japan	N/A	99.9	99.9
South Korea	97.2	99.9	99.9
Singapore	91.4	91.4	75.6
China	82.9	99.9	70.0
India	53.5	77.2	59.7
The Philippines	94.6	99.9	77.8
Malaysia	85.7	99.9	64.0
Thailand	94.7	88.0	47.6
Indonesia	85.0	99.2	56.1
Lao PDR	58.6	73.0	63.4
Cambodia	N/A	99.9	38.8
Vietnam	91.9	99.9	55.1
Myanmar	83.6	99.3	54.2

Source: UNDP (1999), p. 176-179.

5.3.3 Consequences of technological change

A further breakdown of the current labour force by employment status of Thai workers reveals another problem about Thailand's education and work force (Table 12). It seems generally logical that the higher the country's level of technological and economic advancement, the greater demand for a better educated worker population. Therefore, lower unemployment of the worker group with higher educational attainment is likely. However, this seems to be only partially the case for Thailand. In keeping with the country's economic and technological development, the shares of employed population with secondary and higher education have

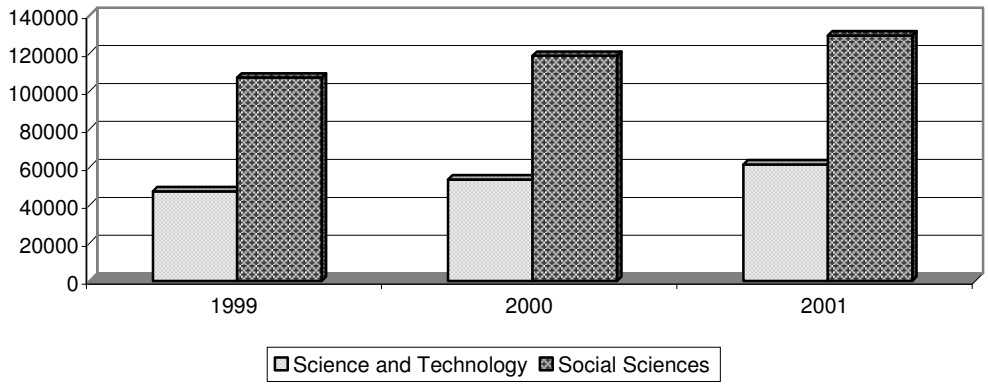
doubled in the past two decades, from 9.4 percent in 1986 to 23 percent in 2002 for the worker group with secondary education attainment; and 4.5 percent to 11.2 percent for the higher education attainment population (Table 12). The proportion of unemployed population with education beyond secondary schooling decreased in the period between 1986 and 1990; however, the shares of this group increased steadily after 1990. The share of workers with secondary schooling in the unemployed population increased from 17.6 percent in 1986 to 21 percent in 1995 to 33.9 percent in 2000 and to 39.1 percent in 2002. The percentage of workers with a college or university degree increased almost 12 percent to 7.7 percent, to 10.5 percent, to 19.2 percent and to 26.5 percent for worker groups with a college or university degree. (It is also important to remember here that the unemployment rate in Thailand is always low.)

This phenomenon reflects the so-called 'skill mismatch' in Thailand's workforce, particularly in the case of workers in the higher education attainment group. The four main causes of such 'skill mismatch' and the surprisingly high proportion of the better educated worker groups can be explained. These include the recent rise in the supply of better educated workers as the number of graduates increases, a fundamental change in the main source of demand and employment of the better educated population from the public sector to the private sector, wage discrepancies between the formal sector and informal sector (due to higher wages in the formal sector, people tend not to go to the informal sector and prefer to wait for a vacancy in the formal sector), and, most importantly, the tardy response of the education system and labour supply to the changing labour qualification needed in the new market environment (Sussangkarn 1990: 14-17).

Given earlier discussion about the country's economic development and structural changes, an increase in the demand for science and technology workers in the country's labour market would be expected. However, Thailand today still produces many more social science graduates than much-needed science and technology professionals (Figure 7). Thus, 107,160 graduates in 1999, 118,644 graduates in 2000, and 129,326 graduates in 2001 graduated from the field of social sciences; whereas there were only 47,221 science and technology graduates in 1999, 53,487 in 2000, and 61,439 in 2001. In addition, during 1994 and 1997, Thailand had a comparatively low percentage of science, math and engineering college and university students among the total enrolled higher education students, compared to those of the other

Asian countries (Table 14). Only 21 percent of the total Thai college and university students undertook Science, Math or Engineering degrees between 1994 and 1997, compared to as many as 53 percent of science, math and engineering college and university students in China, 37 percent in Myanmar, 34 percent in South Korea, 28 percent in Indonesia, 25 percent in India, and 23 percent in Cambodia and Japan.

Figure 7 **Number of Graduates by Educational Field, 1999-2001**



Source: National Electronics and Computer Technology Center (2005), p. 69.

Table 14 **Percentage of Science, Maths and Engineering College and University Students by Selected Countries between 1994 and 1997**

	College and University Students in Science, Math and Engineering (as percentage of all college and university students)
China	53
Myanmar	37
South Korea	34
Indonesia	28
India	25
Cambodia	23
Japan	23
Thailand	21

Source: UNDP (2004), p. 176-179.

6. Conclusion

By tracing something of the background to the country's historical economic development and by measuring the country's economic performance compared to that of its Southeast Asian neighbours, this paper has shed light on how Thailand began to emerge as Asia's new migratory pole. Furthermore, by examining the changes in the elements of the country's production function, the paper explains the determinants of this trend.

Through the vicissitudes of the country's economic development, Thailand has transformed from an Asian poor country to one of Asia's NICs. A comparison of the economic trends and performances between countries in the Southeast Asian region, reveals large differences in development patterns. Thailand is one of the (upper) 'middle class' and one of the region's leading economies. The four 'laggards' of the region – Cambodia, Lao PDR, Myanmar, and Vietnam – are Thailand's immediate neighbours. This makes the discrepancies more obvious, and, because of proximity, movement of labour is both possible and relatively painless.

The past economic achievement of Thailand is explained by changes in the factors of production – capital, labour and technology. Economic success is the result of capital accumulation, growth in labour force, and technological progress. This paper argues that these production factors of Thailand, over time, have become increasingly disparate. Rising capital accumulation and increasing investment have brought about a pressing demand for labour not only in terms of quantity but also of quality. However, the Thai labour force could not keep up with such demands. The country's labour supply may not be shrinking but, unlike the demand, it is not growing. The truth lies at both end of the skill spectrum of the labour market. Because of lagging education, the quality of Thailand's labour force has not truly been improved, nor has it developed according to market demand. This, thus, has caused the demand for, and the presence of, migrant workers in Thailand.

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