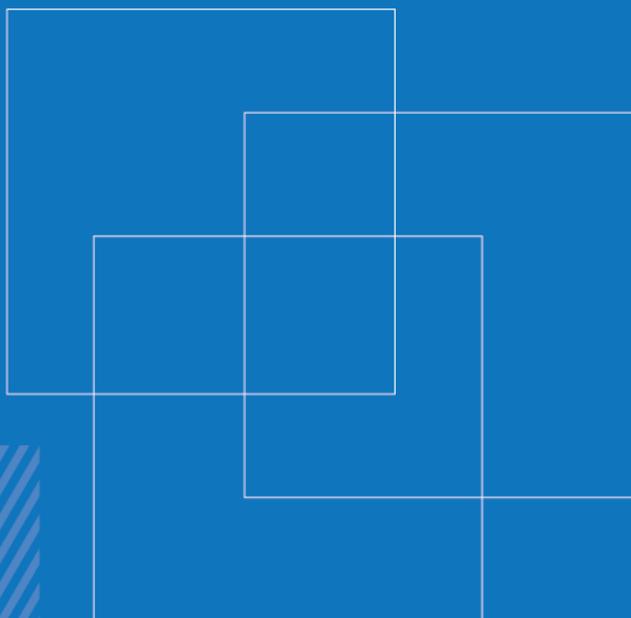


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# Use of foreign labour to meet labour shortages in dynamic East and South-East Asian economies

Manolo I. Abella



Agence canadienne de  
développement international  
Canadian International  
Development Agency

Tripartite Action for the Protection and  
Promotion of the Rights of Migrant  
Workers in the ASEAN Region

ILO Regional Office for Asia and the Pacific

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## **Preface**

Skills shortages are bound to occur in dynamic economies, even in labour surplus countries, and most East and South-East Asia Pacific countries have done fairly well in anticipating them through public investments in education, incentives to firms to engage in training, as well as responding to shortages through “employer-driven” immigration systems. Investments in education have increased supply of high skilled workers, generated pressure to emigrate but also reduced supply of low-end skills. This has exacerbated the shortage of workers at the lower end of the skills spectrum, and generated pressures to admit more foreign labour. Immigration policy liberalizing entry at the low-end of the skills spectrum however has the consequence of depressing low skill wages and widening income gaps. Policy-makers should be mindful of the impact of such policies on the wages of low skill, the displacement of locals, and on income gaps between the groups in society, recognize long-term needs and solutions.

## Table of contents

|   |     |
|---|-----|
| Preface.....  | iii |
| A. Introduction .....   | 1   |
| B. Economic transformation in East and South-East Asia.....     | 1   |
| C. Unemployment as indicator of labour shortage.....            | 4   |
| 1. Case of Japan.....   | 6   |
| 2. Case of the Republic of Korea.....                           | 9   |
| 3. Case of Singapore.....                                       | 11  |
| 4. Case of Malaysia .....                                       | 14  |
| D. Immigration policy measures to address labour shortage ..... | 16  |
| 1. Republic of Korea.....                                       | 16  |
| 2. Singapore.....   | 17  |
| 3. Malaysia .....   | 18  |
| E. Impact of employment of foreign workers on wages.....        | 19  |
| F. Brief summary and conclusions .....                          | 21  |
| References.....   | 22  |
| Appendix 1.....   | 23  |
| Annex A.....  | 25  |
| Annex B.....  | 26  |

## **A. Introduction**

Can the skills-needs of a modern, open, flexible economy be predicted with confidence? It is axiomatic that there will be no, or little, shortage of skills in stagnant economies, while shortages are bound to be a regular feature of dynamic ones. Skills take time to develop and their domestic supply is unlikely to rise at the same speed and direction as demand for them. Demand seldom if ever rises in a slow and stable upward movement that may allow for supply adjustments. The real world is characterized by sudden booms and busts, generating periods of severe shortages followed by periods of high unemployment. Growth in demand is also often specific to certain regions requiring costly relocation of people from rural to urban centres. In the process of restructuring, many enterprises go out of business or shift to new modes of production and many jobs are destroyed, just as new industries are born and new employment opportunities are created.

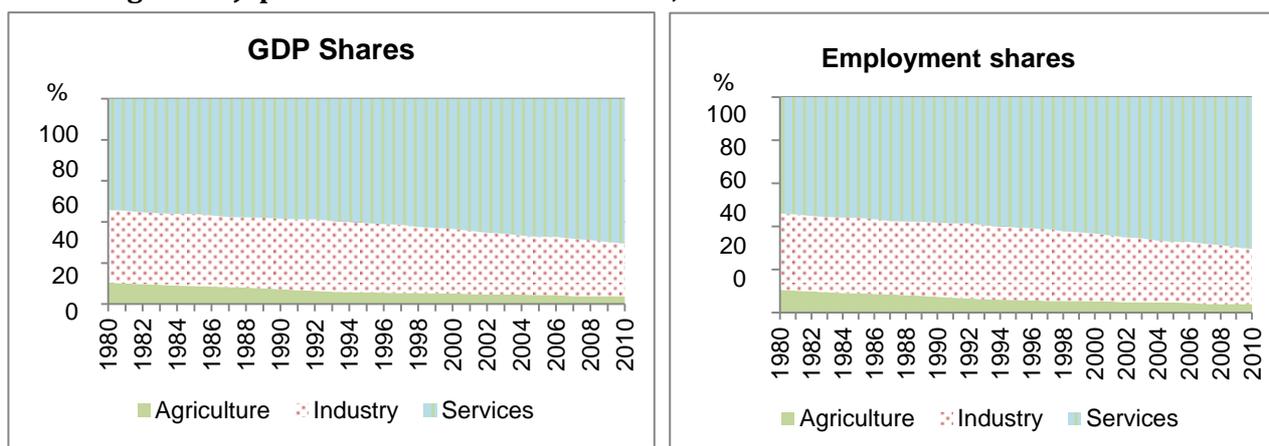
Demand for skilled labour may, in a sense, “create its own supply”, but only after some time and provided the labour market is working well and sending the right signals. This, however, is rarely the case. Wages seldom signal where excess demand may exist as well as prices of commodities. Wage levels and structures are often bound to many institutions such as collective agreements that constrain labour market flexibility. In any case, supply may respond but only over time and dependent on many factors such as the existence of unemployed or underemployed labour in other sectors, the size and rate of growth of the working age population, fertility rates and the labour force participation of women, institutional factors, such as pensions and retirement age, and factors determining more specifically the supply of skilled labour such as education and growth of the modern sector. If there were no barriers to immigration then wage differentials with other countries would also be an important determinant of labour supply.

This paper reviews how skills shortages have developed during the transformation of the economies of East and South-East Asia’s more dynamic economies, the adjustments made by firms to these shortages and how governments tried to anticipate and remedy them through education and training, through immigration. It starts with a review of the transformation of these economies as indicated by the changing shares of different sectors in GDP and employment, followed by case studies of selected countries where relevant experience has been documented by earlier observers, and ends with a brief analysis of how the labour immigration option has been used and with what consequences.

## **B. Economic transformation in East and South-East Asia**

The East Asian economies have undergone two kinds of transformation during the post-war period. The first transformation was the emergence of the industrial sector, which replaced agriculture as the major generator of income and employment; the second was the growth of services that replaced manufacturing as the provider of high productivity jobs. Japan of course was already an industrial country even before the war, but for the other East Asian economies these processes only took shape from the late 1960s. Figure 1 shows that the share of manufacturing in Japan’s GDP has been going down since the beginning of the 1980s.

**Figure 1. Japan: Economic transformation, 1980 to 2010**



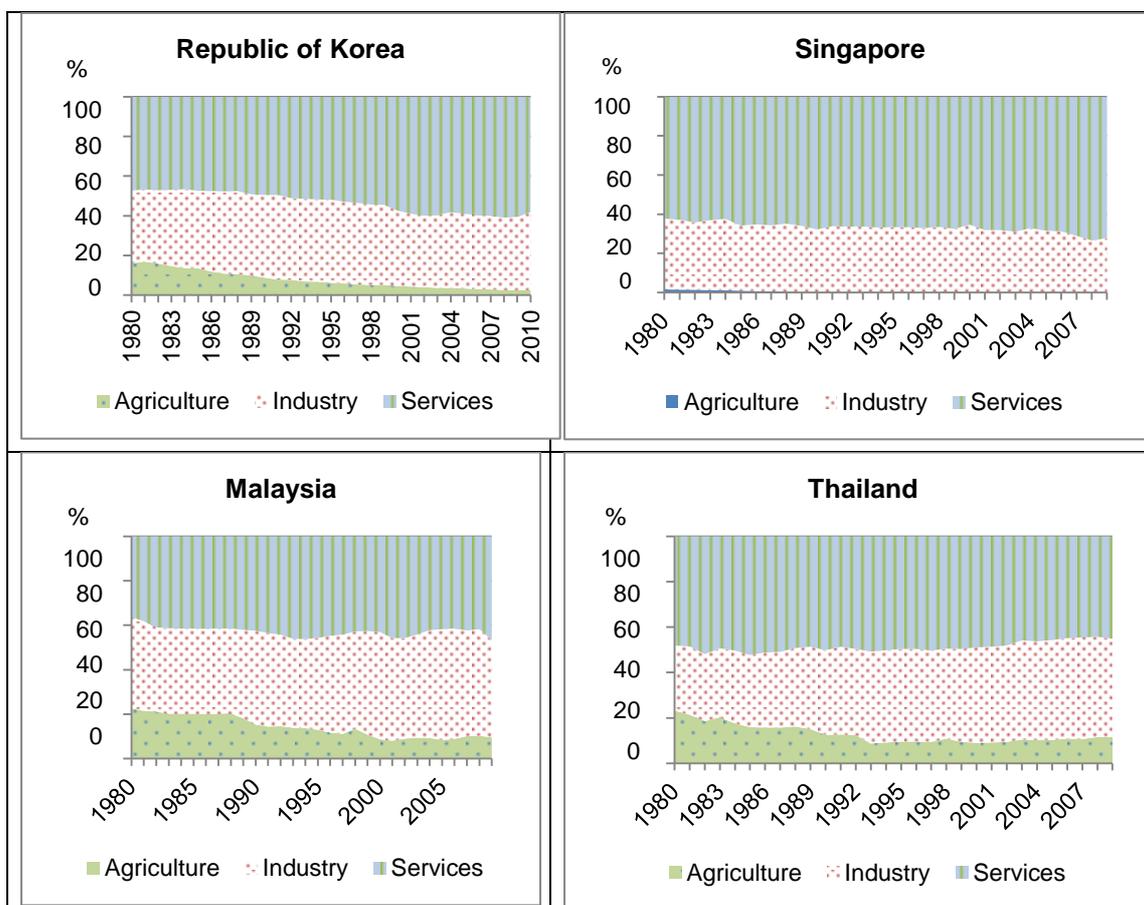
Source: ADB Key indicators for Asia Pacific 2012.

A comparison of the paths in transformation of four Asian economies – Republic of Korea, Singapore, Malaysia and Thailand is illustrated in Figure 2 on the next page.

By 1980 industrial output already exceeded that of agriculture in all the countries and huge transfers of labour from agriculture to industry have already taken place in the Republic Korea and in Malaysia. In the 1980s Republic of Korea was still an emerging industrial power. The share of manufacturing in the Republic of Korea's GDP continued its upward climb until 1990 and only started showing a shift towards services towards the end of that decade.

It is interesting to note that in Japan's case manufacturing's share of employment closely paralleled its share of output, but in the Republic of Korea its share in output was much higher than its share in employment indicating the higher labour productivity in the sector relative to the others. The changes in economic structure and employment since 1980 show a marked shift in the Republic of Korea and Singapore towards services as the key sector, both in terms of output, and more especially in terms of employment.

**Figure 2. Economic transformation of East and South-East Asian receiving countries: Share of three major sectors in GDP (%)**

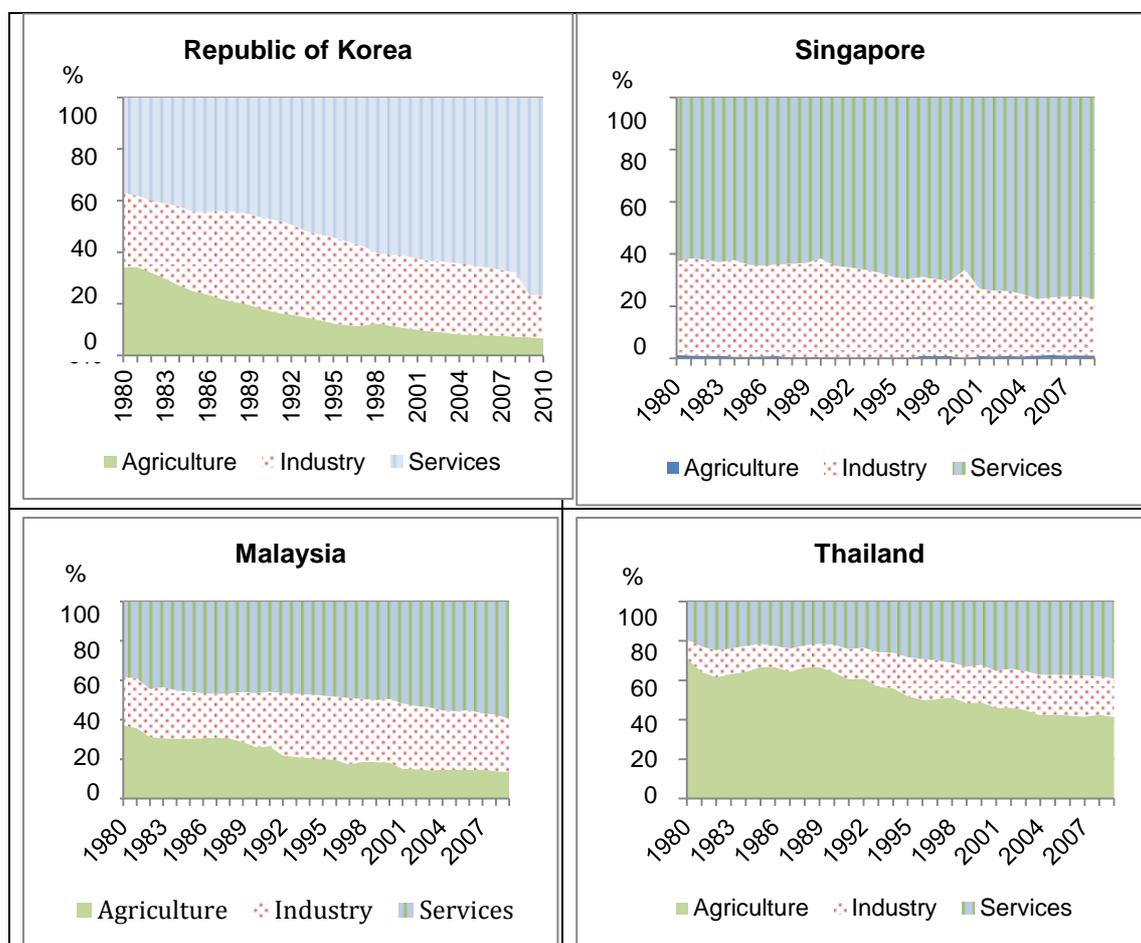


Source: ADB Key indicators for Asia Pacific 2012.

In Singapore, the services sector now accounts for almost three-quarters of GDP and more than three-quarters of employment. It has been shifting towards a larger share of services in employment for about two decades. By contrast, Malaysia and Thailand both have large, stable and even expanding industrial sectors share as well as an expanding services sector. Agriculture continues to play a major role in absorbing people into employment in Thailand, accounting for 42 per cent of total employment as of 2010 (Figure 3).

These illustrations of the shift towards higher-end services in Singapore and the Republic of Korea mask the very profound adjustments of their labour markets towards changes deliberately orchestrated by their respective governments over the past three decades. In both cases there were policies to ease labour shortages by off-shoring lower-skill, labour-intensive manufacturing to other countries and investing heavily in education and skills training. The period coincided with the opening of China to foreign direct investments, a fortuitous event especially for the Republic of Korea, which had a large manufacturing base. Aside from investing heavily in education, Singapore also orchestrated the shift by admitting skilled foreign workers.

**Figure 3. Economic transformation of East and South-East Asian receiving countries: Share of three major sectors in employment (%)**



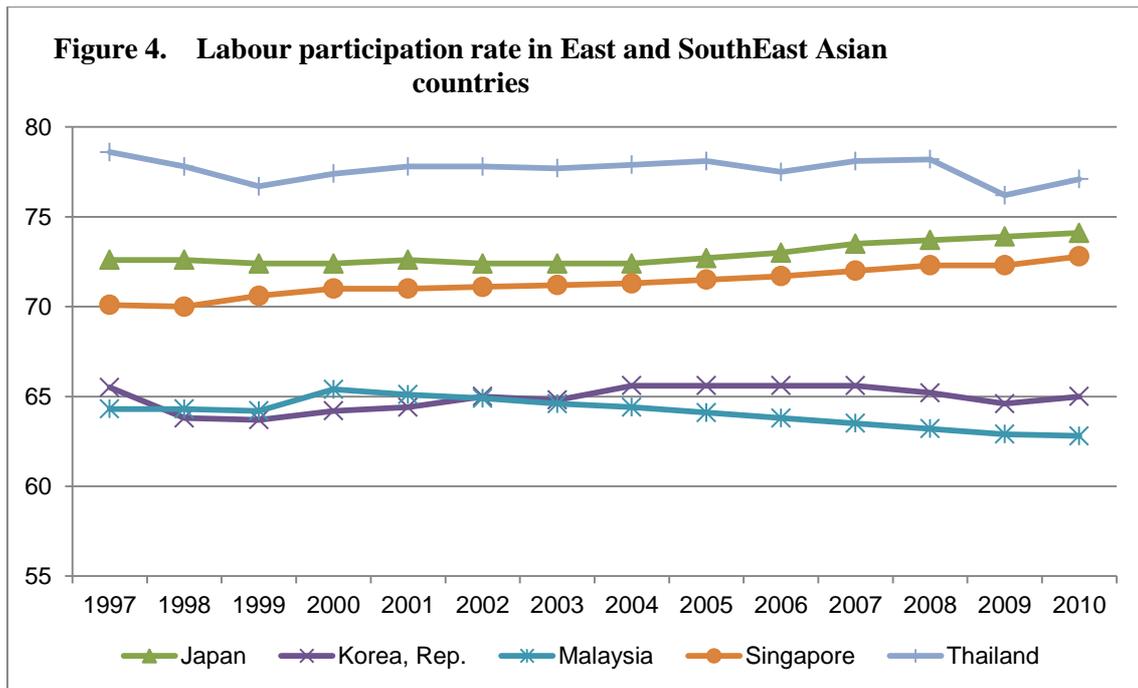
Source: ADB Key indicators for Asia Pacific 2012.

In Malaysia the second transformation has been notable more in terms of employment than in output shares, suggesting that much of those absorbed in services were still in low-productivity occupations. The same may be said of agricultural workers in Thailand whose share in employment is much larger than their share in output.

### C. Unemployment as indicator of labour shortage

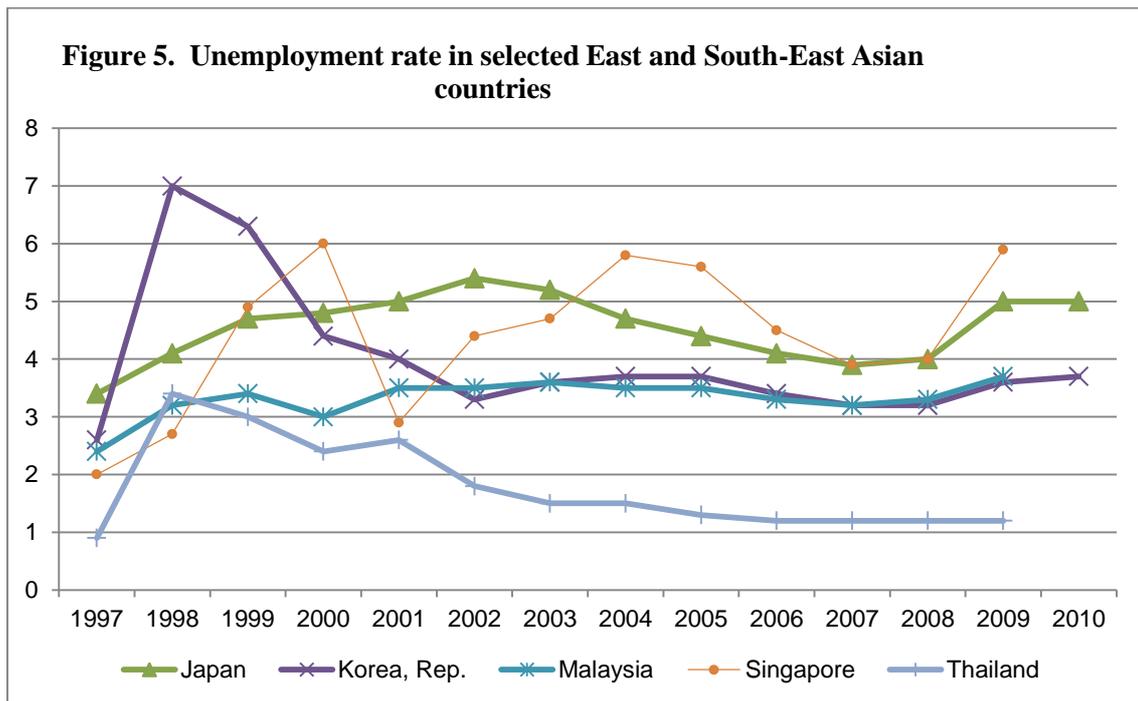
Statistics on labour force participation and unemployment taken together provide a good starting point for examining the shortage of labour in the more dynamic economies of the region. All the countries appear to have fully recovered 10 years after the Asian financial crisis of 1997-98 as their rates of unemployment tended to converge at between 3 to 4 per cent of the labour force by 2007-08.

There are some small differences. Thailand's very low unemployment (just a little over 1 per cent) is particularly significant because compared with the other countries Thailand has had historically high levels of labour force participation of women (over 80 per cent for ages 30-34). Most people can still earn a decent living from various informal sector activities like hawking. Malaysia and the Republic of Korea also have very low unemployment but it should be noted that both countries have significantly lower participation rate of women. In the case of Singapore and Japan the labour force participation is on a slow upward trend over the past few years, which means that these countries are increasingly drawing women into the labour market and getting men to work longer.



Source: ADB Key indicators for Asia Pacific 2012.

Singapore has experienced greater fluctuation in its rate of unemployment compared to the other countries. Its unemployment rate went above 5 per cent in three of the past 12 years.



Source: ADB Key indicators for Asia Pacific 2012.

In the following sections we look more closely at the historical experience of a few of these countries to illustrate the types of adjustments that have taken place in the labour market as the economies went through periods of booms and bust.

## 1. Case of Japan

Japan's experience during past two periods of economic boom is instructive in how the economy adjusts to shortages. Since the 1960s Japan has experienced two significant economic booms, the *Izanagi* boom which started in the second half of 1965 and lasted until mid-1970. The *Heisei* boom started in late 1986 and continued for 53 months until the beginning of 1991 (Mori, 1997).<sup>1</sup> According to Mori, Japan was fortunate that both booms coincided with the entrance into the labour force of the first and second generation of post-war baby-boomers. Both booms involved the absorption of new entrants to the workforce and inter-sectoral reallocation of labour especially from agriculture, and from declining industries. Mori noted that the labour shortages experienced during the two booms differed in some respects. The first boom had a widespread impact (as reflected in vacancy rates) on all industries, irrespective of size. The second boom, however, predominantly affected the firms of small size. The first boom absorbed a large number of low skilled workers into large assembly lines in factories. The second created demand for a much wider variety of skills.

What happened in the labour market during these periods of major transformation of Japan's economy? According to Mori, the earlier boom in the 1960s and 1970s was led by natural resource and energy-dependent heavy or chemical industries. In later years industrial development featured the rise of high value-added, low energy and low resource consuming industries including new types of service industries. The oil crisis of the mid-1970s added further impetus to this transformation.

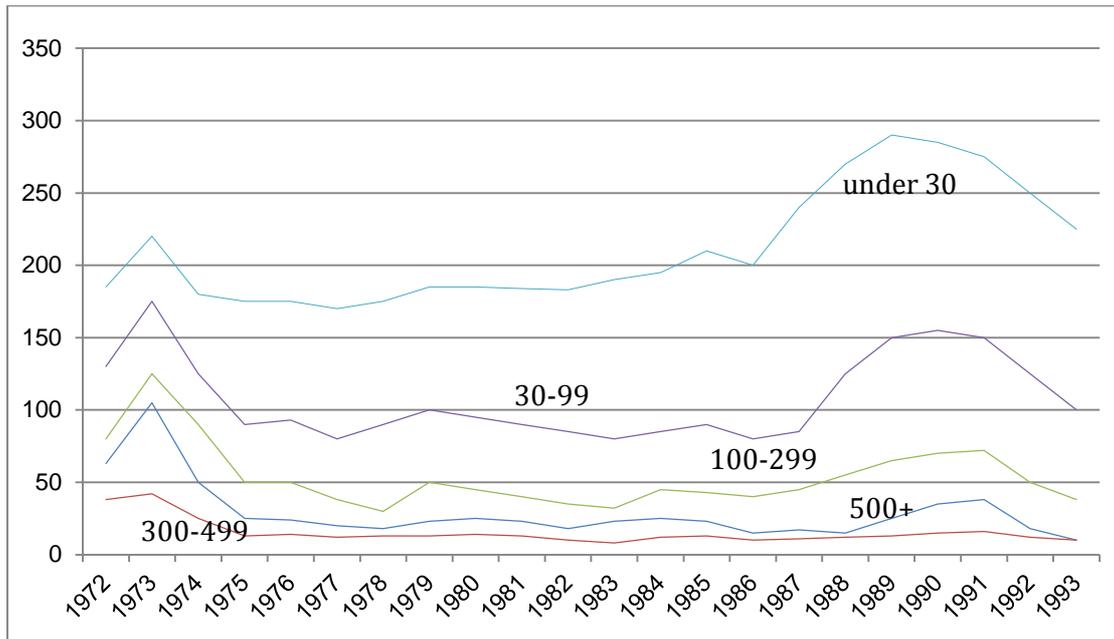
The consumption demand of a richer society, according to Mori, also generated new business opportunities. Urbanization, for example, changed lifestyles, raising the demand for new products and many household services. There was a boom in all sorts of businesses catering to people working outside the home and outsourcing things they used to produce at home. Restaurants, retail trade and a wide variety of personal and professional services flourished. Some of these were very labour-intensive, requiring manual labour, but a large proportion also required a wide range of skills more heterogeneous and of higher value than those demanded in typical assembly-line production processes.

In 1973, during the first boom, the vacancy rate (the proportion of average monthly new openings in the total number of regular employees) for firms with 1,000 or more employees was 23.6 per cent but was only 10.8 per cent for small companies (fewer than 30 employees). In 1990 the situation was reversed. The vacancy rate was 6.1 per cent for large companies and 9.5 per cent for small ones. The large firms could attract employees but the small ones could not.

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<sup>1</sup> See H. Mori *Immigration Policy and Foreign Workers in Japan* (London, Macmillan, 1997)

**Figure 6. Japan: Vacancy trends by firm size, monthly averages (from Mori 1997)**



Source: Mori, H. 1997. *Immigration policy and foreign workers in Japan* (London, Macmillan).

In a tightening labour market the wage differentials between the large and small firms tend to narrow. In the case of Japan Mori noted that wage differentials contracted remarkably during the first half of the 1960s and again during the *Izanagi* boom. Smaller firms were forced to offer higher salaries than their competitors to attract new recruits. During the *Heisei* boom, small (10-99 workers) and medium (100-999 workers) manufacturing enterprises raised their starting salaries for male upper secondary school graduates by 32.3 and 30.2 per cent respectively, while large companies with 1,000 or more workers raised their starting salaries by 29 per cent. Starting salaries offered by firms of all sizes soared, giving rise to an overall increase in the wages of young workers. Hourly wages paid to part-time women workers also jumped by 36 per cent during the seven years after 1985. The narrowing of wage gaps was most obvious among young workers. The tightening labour market allowed many young workers to shift quickly from temporary to regular status.

**Table 1. Japan: Labour sufficiency in sectors and in selected occupations, 1985-1991**

|  | 1985        | 1991        | %<br>change |
|--|-------------|-------------|-------------|
| <b>Sectors</b>                         |             |             |             |
| All industries                         | 32.5        | 17.5        | -15.0       |
| Construction                           | 44.6        | 22.0        | -22.6       |
| Manufacturing                          | 32.6        | 16.9        | -15.7       |
| Transport & communications             | 29.8        | 13.6        | -16.2       |
| Wholesale/retail trade and restaurants | 25.5        | 15.4        | -10.1       |
| Finance and insurance                  | 16.1        | 11.6        | -4.5        |
| Real estate                            | 25.3        | 18.2        | -7.1        |
| Services                               | 27.9        | 17.0        | -10.9       |
| <b>Selected occupations</b>            |             |             |             |
|  | <b>1985</b> | <b>1991</b> |             |
| Metal press machine operators          | 20.9        | 13.9        | -7.0        |
| Sheet metal workers                    | 13.4        | 7.5         | -5.9        |
| Electric welders                       | 16.5        | 8.0         | -8.5        |
| Auto assemblers                        | 29.6        | 26.9        | -2.7        |
| Auto repairmen                         | 9.9         | 5.7         | -4.2        |
| Furniture makers and joiners           | 20.7        | 13.0        | -7.7        |
| Plastic moulding workers               | 25.9        | 16.9        | -9.0        |
| Packing and bailing workers            | 25.8        | 16.9        | -8.9        |
| Construction machine operators         | 22.2        | 8.4         | -13.8       |
| Carpenters                             | 12.8        | 5.2         | -7.6        |
| Wood pattern makers                    | 15.4        | 5.7         | -9.7        |
| Plumbers                               | 13.9        | 6.9         | -7.0        |
| Civil construction and paving workers  | 37.9        | 12.8        | -25.1       |
| Warehouse workers                      | 41.0        | 20.5        | -20.5       |
| Deliverers                             | 26.5        | 15.5        | -11.0       |
| Cleaners                               | 34.6        | 17.9        | -16.7       |

Labour sufficiency ratio = (total placements/total new openings for regular employees) X 100; for occupations the denominator is new openings for regular employees in August

Source: Table 2.5 in Mori (1997)

During the *Heisei* boom the Ministry of Labour of Japan reported that the labour sufficiency ratio (number of placements/total new openings for regular employees) had declined in industries as a whole by 15 per cent between 1985 and 1991. Table 1, reproduced from Mori, shows the decline in different sectors and for different occupations.

Firms responded to the shortage by having longer working hours but the extent of the labour shortage was such that overtime work could no longer serve as a solution. The large firms were able to adopt labour saving technologies and to externalize labour intensive processes by establishing subsidiaries or branches abroad. However, sectors producing “non-tradable goods” such as construction, transport and services could not externalize their activities. Sub-contracting processes to other smaller firms became a common approach in manufacturing and construction, and in some services.

After the Second World War, the use of foreign labour which featured as a response to labour shortages did not become significant until the later years of the *Heisei* boom. This was

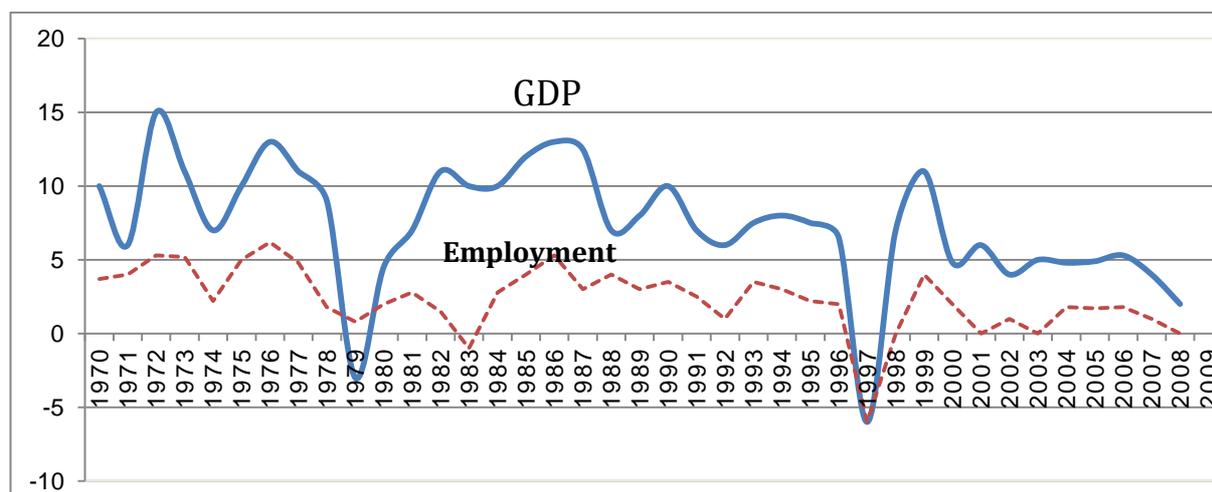
owing to various factors including the lack of legal channels for the admission of unskilled foreign labour. The employment of Taiwanese, Korean, Filipino, Bangladeshi and Pakistani workers in so-called “3-D” occupations emerged slowly and quietly during the 1980s with numbers rarely exceeding 20,000 a year. Most of the others worked illegally after overstaying their visitor’s visas, except for the many Filipino and Taiwanese women who were admitted for employment as entertainers. Between 1980 and 1993 the Ministry of Justice estimated the number who came in at just over 1 million, three out of every four from Asia (China, Philippines, Republic of Korea, Thailand, Taiwan (China), Malaysia and Bangladesh) Latin America (Brazil and Peru) and Islamic Republic of Iran.

## 2. Case of the Republic of Korea

The economic transformation of other East Asian economies had similar implications on the labour market, generating skills shortages during periods of boom even as governments injected massive public resources into education and provided incentives for firms to engage in skills training. The economic growth has by no means been smooth as Figure 7 illustrates. The period from 1970 to the present has been characterized by booms and busts, the latter particularly severe during the oil crisis of the late 1970s and the financial crisis of the late 1990s.

In the Republic of Korea, industrialization was accompanied in the early stages by massive migration to the urban areas and by the mid-1970s it had already passed the Lewisian era of unlimited supplies of labour. Real per capita income rose five times between 1965 and 1975 and three times between 1975 and 1985 (Uh, 1993; Abella and Mori, 1996). The economic boom of the 1980s, especially from the middle of the decade when manufacturing output was growing annually at double-digit rates,<sup>2</sup> had exhausted possibilities for inter-sectoral transfers of labour. Labour shortages were felt more acutely, as in Japan, by the smaller enterprises and particularly for production workers. Table 2 shows interestingly that there was already a higher shortage (as indicated by vacancy rates) for unskilled than for skilled workers in 1985, and even and more so in 1990 and 1991.

**Figure 7. Republic of Korea booms and busts**



Source: Bank of Korea.

Concerted government efforts to develop heavy and chemical industries generated a big rise in demand for technical workers particularly in the engineering fields. The government realized very early that the lack of highly trained technicians and engineers would constrain the development of these industries and thus invested heavily in human resource development. Skills training centres were established all over the country and a levy on training was imposed on enterprises which they could recover if they were to engage in skills

<sup>2</sup> Manufacturing output grew by 17.3 per cent in 1984, 18.4 in 1986, and 13 per cent in 1988.

training of their employees. The outcome has been impressive. College enrolment rates were in the neighbourhood of 25 per cent during the 1970s, rose to 60.1 per cent in 1997 and as high as 82.5 per cent in 2005. Education was made job-relevant as the government promoted vocational training and science, technical, engineering and related fields. Graduates of technical high schools rose from 27,300 in 1973 to 64,000 in 1982. Over the same 13-year period, graduates of junior engineering colleges rose from 1,600 to 32,800 while graduates of engineering at the university level rose from 6,500 to 20,600. In 2008 it was reported that 35 per cent of college degrees awarded were in STEM disciplines.

In spite of these apparent successes, the labour shortages were immediately felt by the small- and medium-scale enterprises which complained of the high turnover of local employees even as far back as the early 1990s. A survey of small industries by the Korea Labour Institute in 1993 sought to gain insights into the staffing difficulties of small enterprises (Abella and Park).<sup>3</sup> More than a third of surveyed employers (36.5 per cent) claimed that their difficulty was due to the fact that Korean workers were no longer willing to do physically demanding jobs. Low wages were cited as a key factor by only 16 per cent of the employers in subsequent surveys (Abella and Park 1996; Abella and Park 2000) and by only 13.4 per cent in a 2003 survey (Yoo and Lee 2001).<sup>4</sup> Because of the shortages these companies lobbied, through their powerful association (Korean Federation of Small Business), for the admission of foreign workers as “trainees” and later for the extension of their stay as “guest workers”.

**Table 2. Republic of Korea: Measures of labour shortage**

|                    | Min. of Labour Survey |       |      | ILO/KLI Survey |      |
|--------------------|-----------------------|-------|------|----------------|------|
|                    | 1985                  | 1990  | 1991 | 1992           | 1993 |
| By type of workers |                       |       |      |                |      |
| Total employees    | 1.8                   | 4.30  | 5.5  | 5.7            | 9.2  |
| Office workers     | 0.9                   | 1.30  | 1.3  | 1.7            | 2.1  |
| Production         | 2.4                   | 6.90  | 9.1  | 8.0            | 12.2 |
| Skilled            | 2.0                   | 5.30  | 7.3  |                | 9.5  |
| Unskilled          | 4.9                   | 16.30 | 20.1 |                | 16.8 |
| By Size of Firm    |                       |       |      |                |      |
| Less than 30       |                       | 1.97  |      | 9.50           | 21.1 |
| 30-99              |                       | 5.08  |      | 7.30           | 12.1 |
| 100-199            |                       |       |      | 6.50           | 7.8  |
| 200 or more        |                       |       |      | 3.30           | 4.7  |
| 100-299            |                       | 4.70  |      | 6.30           |      |
| 300-499            |                       | 3.33  |      | 3.48           |      |
| 500 or more        |                       | 1.78  |      | 2.14           |      |

Sources: See Abella, M. and H. Mori (1996) "Structural Change and Labour Migration in East Asia", in *Development Strategy, Employment and Migration* eds. D. O'Connor and L. Farsakh, OECD Development Centre, Paris

The study by Yoo and Lee undertaken a few years after the financial crisis of 1997-98 explored the question of how small and medium enterprises are adjusting to labour shortage

<sup>3</sup> M. Abella and Y.B Park: "Labour shortages and foreign workers in small firms of the Republic of Korea", in *Adjustments to Labour Shortages and Foreign Workers in the Republic of Korea* (Geneva, International Migration Papers, International Labour Office, 1993).

<sup>4</sup> K.S. Yoo. and K.Y. Lee *et al*: *Managing foreign workers and policy tasks*, (Korea Labour Institute, Analysis on Labour Markets for Unskilled Workers, Korea Labour Institute, 2004)

in the short and in the long term. The table below reproduces their main findings. As expected the short-term response of most enterprises is to have their workers work longer hours; but many also planned to hire foreign workers particularly among enterprises that have already experienced employing them. Over the long-term automation, hiring foreign workers, changes in work organization and increasing the skills of their workers through training were the more frequent modes of adjustment being contemplated by the employers.

**Table 3. Republic of Korea: Adjustments to labour shortage, 2001**

| Mode of adjustment                        | All enterprises | Short-term                     |                |                              | Total | Long-term                      |                |                              |
|---|-----------------|--------------------------------|----------------|------------------------------|-------|--------------------------------|----------------|------------------------------|
|   |                 | Firms employing foreign labour |                | Not employing foreign labour |       | Firms employing foreign labour |                | Not employing foreign labour |
|   |                 | Legal labour                   | Illegal labour |                              |       | Legal labour                   | Illegal labour |                              |
| More overtime                             | 41.2            | 38.1                           | 47.6           | 41.0                         | 9.6   | 7.4                            | 15.4           | 8.9                          |
| Will use foreign labour                   | 12.9            | 20.4                           | 20.3           | 1.5                          | 14.9  | 17.8                           | 32.9           | 2.6                          |
| Reform work organization                  | 11.5            | 11.5                           | 7.7            | 13.7                         | 13.9  | 17.4                           | 4.9            | 15.1                         |
| Contract out                              | 8.5             | 8.1                            | 9.1            | 8.5                          | 8.8   | 5.9                            | 9.1            | 11.4                         |
| Raise wages or better working conditions. | 7.9             | 8.1                            | 3.5            | 10.0                         | 11.7  | 14.4                           | 2.1            | 14.0                         |
| Automation                                | 6.3             | 5.2                            | 5.6            | 7.7                          | 21.6  | 23.3                           | 21.7           | 19.9                         |
| Train own workers                         | 6.3             | 5.2                            | 2.8            | 9.2                          | 12.7  | 10.0                           | 8.4            | 17.7                         |
| Move overseas                             | 0.1             | 0.0                            | 0.7            | 0.0                          | 9.6   | 7.4                            | 15.4           | 8.9                          |
| Others                                    | 5.2             | 3.4                            | 2.8            | 8.6                          | 4.8   | 2.6                            | 2.1            | 8.9                          |
| Total                                     | 100.0           | 100.0                          | 100.0          | 100.0                        | 100.0 | 100.0                          | 100.0          | 100.0                        |

Source: Yoo and Lee (2001) Table 3-3.

### 3. Case of Singapore

One of the most remarkable success stories in development is that of Singapore whose per capita income rose from US\$4,071 in 1979 to US\$50,123 in 2011. When Singapore's leaders were planning the country's transformation from an entrepot to a modern industrial economy in the early 1960s it had a population of 1.7 million. Conscious of the country's lack of technical manpower to support its ambitious development programme, the Government gave high priority to education, especially to technical education. Education consumed no less than 23 per cent of the national budget for most of the 1960s.<sup>5</sup>

Aside from pumping money into addressing the problem, the Government had to revamp the education system to equip young people with production-relevant skills. In order to succeed the planners recognized that the bias in society for white-collar occupations had to be changed. In 1968, out of 144,000 students in secondary schools only some 18,000 were in technical and vocational streams. To become a technologically advanced city state, Singapore needed a sustainable supply of indigenous scientists and engineers. A major effort was made to encourage the youth to shift to science, technology, engineering and mathematics (STEM). The results were impressive. Between 1980 and 1985 the output of science and engineering graduates totaled 5,600. Between 1986 and 1989 this almost doubled to 9,100. The pool of research scientists and engineers rose to 6,500 by 1992.

Unlike other developing countries, Singapore had no labour reserves in agriculture to draw from so the Government decided early on to admit guest workers. In 1976 of the 1,600 metal process workers, 46 per cent were foreign and of the 4,700 woodworkers, 56 per cent were foreign, as well as 60 per cent of building construction workers. There was, however, no shortage of white-collar clerical workers. Of the 150,000 clerical and related workers only two per cent were foreign. By 1984 about 10 per cent of Singapore's 1.1 million workforce were foreigners.

<sup>5</sup> G.C. Boon and S. Gopinathan, Briefing paper (Nanyang Technological University, 2006).

**Table 4. Singapore: Working persons employed in manufacturing and construction, by residence status, 1980**

|                         | Total  |       | Manufacturing | %    | Construction | %    |
|-------------------------|--------|-------|---------------|------|--------------|------|
| Permanent residents     |        |       |               |      |              |      |
| Singapore citizens      | 957    | 100.0 | 273 880       | 28.6 | 52 975       | 5.5  |
| Non-citizens            | 607    |       |               |      |              |      |
| Non-permanent residents | 40 208 | 100.0 | 16 683        | 34.0 | 3 391        | 8.5  |
| Non-permanent residents | 79 275 | 100.0 | 36 558        | 46.1 | 15 406       | 28.2 |
|                         |        |       | 327 121       |      | 71 772       |      |

Source: Saw, S.H. (1984) "The labour force of Singapore" Census Monograph No. 3, Department of Statistics, Singapore, as quoted in Ofori.

Understandably one of the most important sectors in Singapore's economy, construction, has been short of labour from the very beginning. As early as 1980 the proportion of foreign workers in construction was more than 26 per cent compared to 16.3 per cent in manufacturing. As Table 4 shows, 28.2 per cent of temporary foreign labour were in construction. By 1993 construction was accounting for 7 per cent of GDP and, with a workforce of about 166,000, for 6.5 per cent of total employment. Depending on the level of construction activity the proportion represented by foreign workers fluctuated between 50 to 80 per cent of the total employed in the sector (see Ofori, 1994).<sup>6</sup> During the construction boom of 1992, for instance, local workers only made up one in five workers in the industry. Local workers were only significant in areas where high skill levels were required such as operators of plant and equipment. Of the foreign workers, the large majority were Malaysians and Thais, while Indians and Bangladeshis constituted about 11 per cent.

Despite attempts to reduce dependence on foreign workers, Singapore through various policy measures, including taxes or levies on foreign workers and industry-specific ceilings placed on the foreign workforce, allowed in each enterprise, the admission of foreign labour has grown over the past decades. Singapore's total population increased by 69 per cent from 3.05 to 5.08 million between 1990 and 2010. The non-resident population rose by one million to a total of 1.305 million, accounting for 26 per cent of total population, up from 5.5 per cent in 1980. Among them, 1.113 million were employed, their share of total employment rising to 36 per cent of total employment. The majority of these comprised low-skilled transient workers (Hui, 2013). This liberal admission of foreign workers has given the Singapore labour market a flexibility that no doubt explains the low incidence of labour shortages over the past decade as indicated in the vacancy rates in Table 5.

<sup>6</sup> G. Ofori: "Foreign construction workers in Singapore" (Working Paper, ILO Sectoral Activities Programme, SAP 2.57/WP 106, 1994).

**Table 5. Singapore labour shortage indicators**

| Year | Job Vacancy | Job Vacancy Rate | Job Vacancy to Unemployed Person Ratio |
|------|-------------|------------------|--|
| 2000 | 27.6        | 2.7              | 0.94                                   |
| 2001 | 15.9        | 1.5              | 0.55                                   |
| 2002 | 15.0        | 1.5              | 0.36                                   |
| 2003 | 12.6        | 1.2              | 0.27                                   |
| 2004 | 16.5        | 1.6              | 0.40                                   |
| 2005 | 19.2        | 1.7              | 0.47                                   |
| 2006 | 31.2        | 2.3              | 0.66                                   |
| 2007 | 38.6        | 2.6              | 1.10                                   |
| 2008 | 37.8        | 2.4              | 0.92                                   |
| 2009 | 30.4        | 1.8              | 0.52                                   |
| 2010 | 44.2        | 2.5              | 0.98                                   |

Source: Singapore Ministry of Manpower

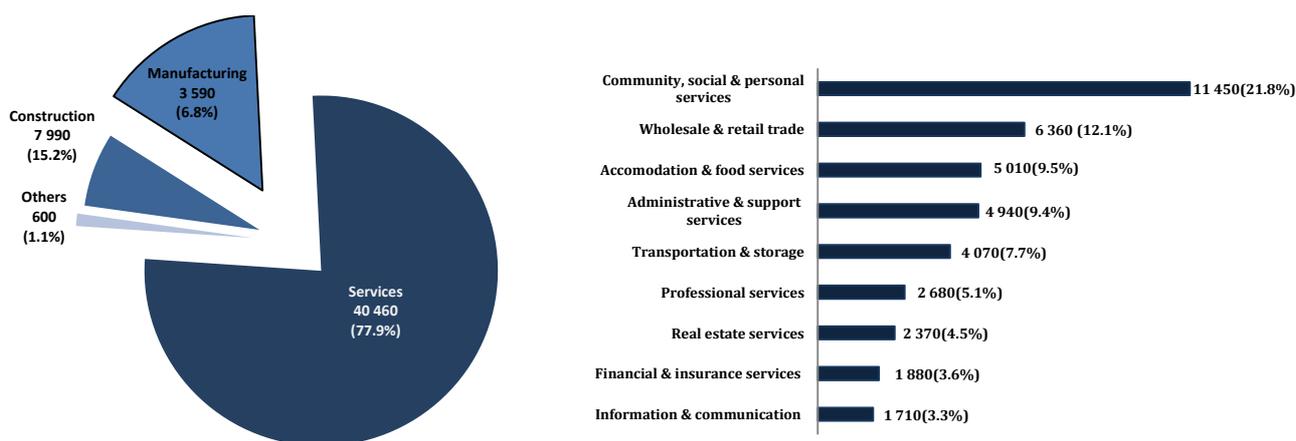
Note: There is a break in the job vacancy and job vacancy rate series. Before 2006, data on job vacancies pertain to private sector establishments each with at least 25 employees. From 2006 onwards, data also include the public sector. See

<http://www.mom.gov.sg/statistics-publications/national-labour-market-information/statistics/Pages/job-vacancy.aspx> [accessed 31 May 2013]

These general vacancy rates however hide significant vacancies at more detailed industry and occupational levels. The Ministry of Manpower (MOM) conducts job vacancy surveys and reports the findings in their website to inform jobseekers and to guide the youth in making career choices. From the chart reproduced below from the MOM website service related jobs are the ones hardest to fill. In September 2011, for example, there were 11,450 jobs waiting to be filled in Community, Social and Personal Services, while another 5,000 jobs were in accommodation and food services.

**Figure 8. Singapore: Job vacancies by industry, 2011**

**Chart 4. Number and share of job vacancies by industry, 2011 (as of September)**



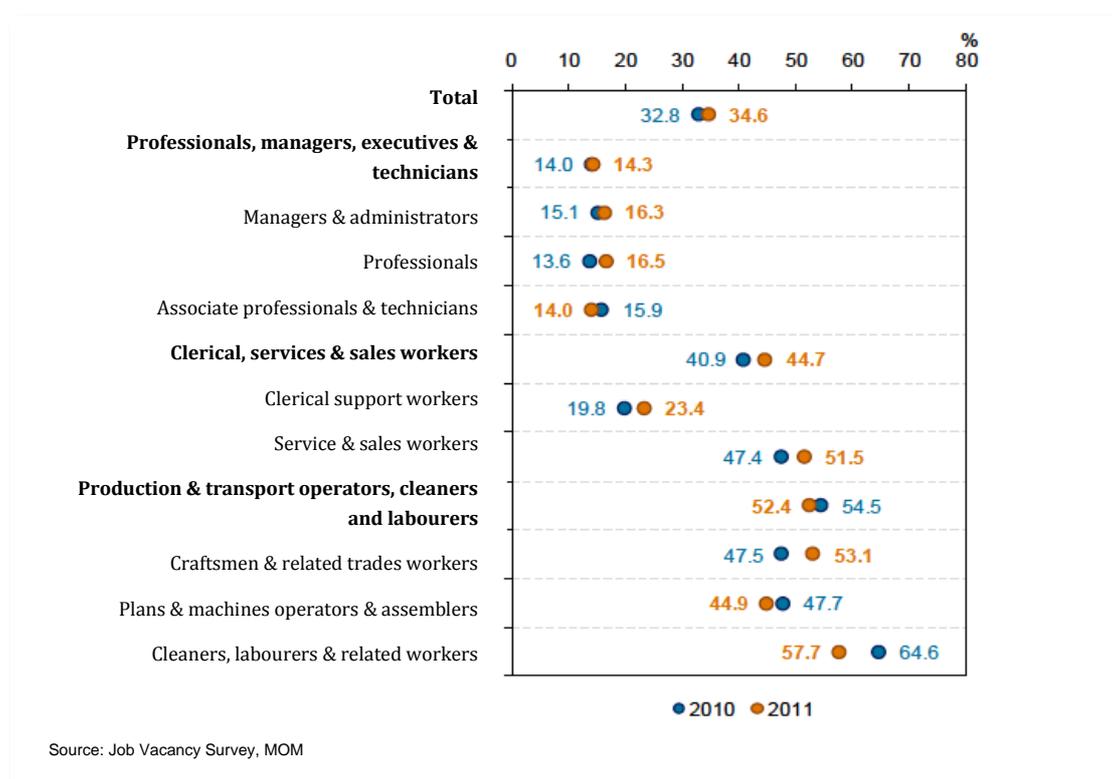
Source: Job Vacancy Survey, MOM

Note: Figure in parenthesis refer to the share of job vacancies for the respective industry

The data on hard-to-fill job vacancies at specific skill levels reflects Singapore's success in using immigration as one of the principal means for expanding its human resource pool particularly for professionals in business and academic fields.

Although the country has undergone a second transformation into a service economy, creating high-productivity jobs in finance, medical services, education, biotechnology research and other sectors, the main shortages have been reported by employers in low-skill occupations. Figure 8 shows the percentage of unfilled jobs, at each skill level, for six months or more. The largest percentages are for the lower skill categories (cleaners, labourers, transport, service and sales) or blue-collar occupations. Vacancies appear to be much lower for professionals and managers.

**Figure 9. Singapore: Vacancies unfilled for at least six months by occupation**

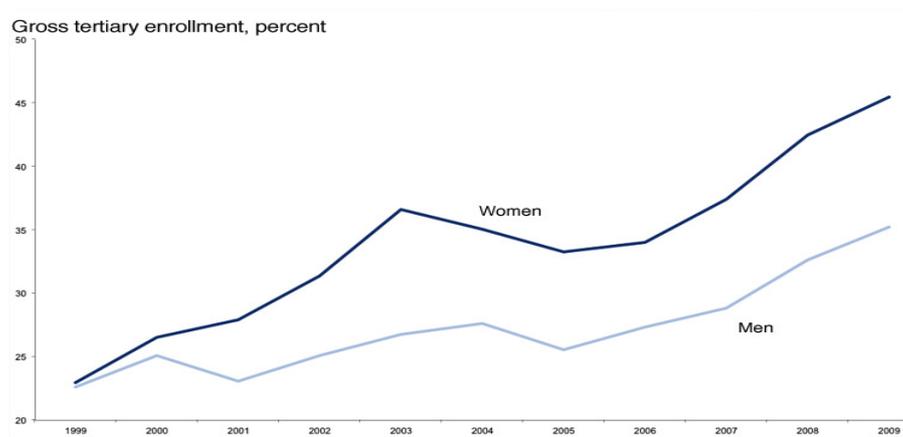


#### 4. Case of Malaysia

Over a period of just two decades, the share of services in Malaysia's GDP has risen from 44 per cent in 1990 to 59 per cent in 2010, and the World Bank predicts that in another ten years its share will be as much as 64.5 per cent. The sector already employs almost 60 per cent of the workforce.

Because of a relatively high fertility rate, Malaysia has a youthful population and the working age population has been growing faster (at 2.9 per cent) than employment (2.3 per cent). The unemployment rate has remained low because of a decline in labour force participation as Malaysian youths invest more years in schooling.

**Figure 10. Malaysia: Growth of tertiary enrolment**

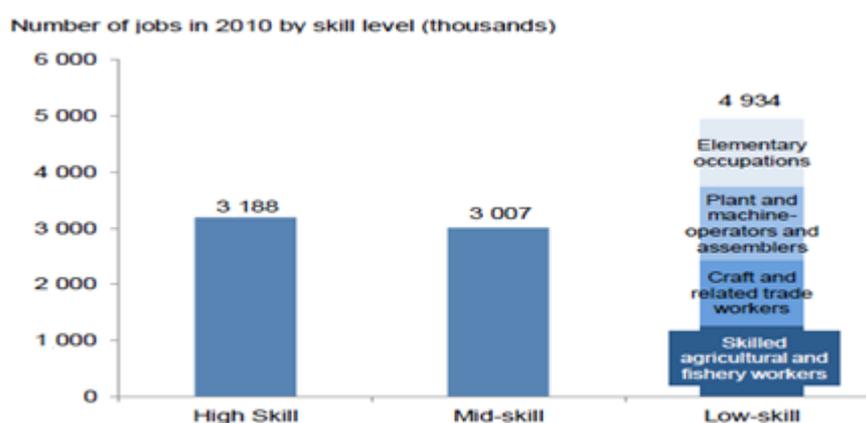


Source: Statistical Appendix of UNDP Human Development Report, 2012.

The Government estimates that there are approximately 1 million Malaysians living and working in other countries, a third of them with tertiary education. There continues to be a high brain drain, although the situation appears to have improved. In 1990, for example, there were 79,000 Malaysians with tertiary education overseas compared with 222,000 at home (or a brain drain intensity rate of 26.2 per cent); whereas ten years later the number abroad rose to 96,000 while the number at home almost quadrupled to 818,000 making for a brain drain rate of 10.5 per cent compared to 7.5 per cent for the Republic of Korea and 1.2 per cent for Japan.

Low-skill jobs still account for 44 per cent of all employment in Malaysia, 29 per cent of positions are high-skill and the rest are mid-level skills. However most of the employment created in recent years has been in skilled categories. Between 2,000 and 2010 Government statistics show that 910,000 new jobs were for the high skilled, while another 826,000 jobs were medium skilled. The investments in the services sector are exceeding those in manufacturing (by 14 per cent in 2011) and much of these new investments are going to logistics, banking, consulting, telecommunications, etc. that create high productivity jobs.

**Figure 11. Malaysia: Employed workforce distributed by skill level, 2010**



Source: DOS Labor Force Survey 2010.

The steep increase in the admission of foreign workers during the 1990s ended with the Asian financial crisis but as Table 6 shows the migrant worker population again climbed up steeply over the past decade reaching over 2 million in 2008. Very low unemployment rates and increased enrolment in tertiary education (Figure 9) help explain what is taking place in Malaysia's labour market. As educational attainments increase the reservation wage of local

workers rise and they are no longer offering themselves for low-skill jobs. However, unlike the Republic of Korea, Malaysia has not offshored many of its labour-intensive exports and its major agricultural commodity exports like rubber and palm oil still require a large unskilled workforce.

**Table 6. Malaysia: Foreign workers 1999-2009\***

| Year | Workers   |
|------|-----------|
| 1999 | 897 705   |
| 2000 | 819 684   |
| 2001 | 769 566   |
| 2002 | 1 057 156 |
| 2003 | 1 412 697 |
| 2004 | 1 474 686 |
| 2005 | 1 821 750 |
| 2006 | 1 871 038 |
| 2007 | 2 044 805 |
| 2008 | 2 062 596 |
| 2009 | 1 918 146 |

Notes: \* Based on issuance of work passes, *Pas Lawatan Kerja Sementara* (PLKS) or in English, Visit Pass (Temporary Employment), or VP (TE)

Source: Department of Immigration, Putrajaya and Azizah Kassim (2008)

#### **D. Immigration policy measures to address labour shortage**

Although there are a few exceptions, admission policies in East Asia are generally of the “employer driven” variety, the type built on the assumption that labour market imbalances are temporary or even cyclical and can be met through the judicious use of temporary or “guest workers”. The key objective of their immigration policy is to meet the current labour requirements of industry and have the flexibility to adjust the size of the foreign workforce in the country depending on conditions in the labour market. This means being able to bring in foreign workers when labour market conditions are tight, and sending them home when the market loosens.

The government may identify the skills for which there is excess demand but does not open avenues for legal admission of foreigners unless they have a job offer from a local employer. Employers are the ones who initiate the process by making requests for the admission of foreign workers through a procedure that involves proving to the national authorities that there are no suitably qualified local workers available.

Common to all “employer-driven” systems in the region and elsewhere is the role played by employers in initiating the process of recruiting foreign workers, with the government simply ascertaining that all efforts have been taken to find and employ a local worker. A typical requirement is for the employer to first advertise the job vacancy for a minimum period of time, usually two weeks, before an application for a work permit is considered. Since there is seldom any effective way of checking if there has been a genuine and serious effort to find local workers national authorities inevitably have to develop their own information on what skills are in short supply.

##### **1. Republic of Korea**

The Republic of Korea does not impose quotas or labour market tests for the admission of professionals for short term employment (C-4 visa) or for three-year renewable visas as professional or skilled (E-1 to E-7 visas). The Government has adopted measures to facilitate their entry and departure by issuing multiple visas (Gold card, IT card, and Science card). They become eligible for permanent residence after their aggregate period of stay reaches 10

years. Highly skilled foreign students in the Republic of Korea are allowed to seek part-time employment (20 hours per week). There are quotas set by the Joint Committee for Migrant Workers for those in non-professional employment. Workers admitted under for non-professional employment under the Employment Permit System (EPS) are issued E-9 visas which enables them to work for a period not exceeding three years in firms with fewer than 300 employees, or in agricultural/livestock farming industry or coal/inshore fishing industry. Migrant workers are covered by labour laws and are also covered by the four major social insurance systems – National Health Care Insurance, National Pension Insurance, Industrial Accident Compensation Insurance, and Employment Insurance.<sup>7</sup>

## **2. Singapore**

Singapore has pioneered the use of a “foreign worker levy” in order to raise the cost to employers of hiring foreign workers who earn less than S\$3,000 a month. Through the levy the Government aims to reduce dependence of industries on foreign labour and pressure them to upgrade their production technologies or get out of labour-intensive production processes altogether. The policy comprises a managed system for “taxing” the use of foreign labour, as well as setting a ceiling on degree of dependence. There are about six foreign worker levy rates depending on sector of the economy, the level of skill required for the job, and the ratio of foreign to national workers in an enterprise’s work force (See Table).

To employ foreign nationals, employers must apply with the Ministry of Manpower (MOM) and secure work passes. MOM issues three types of work passes: Employment Pass (EP) for foreign professionals, specialists, middle management and highly qualified persons; Work Permit (WP) for low-skill workers who typically earn no more than S\$1,800; and S Pass for mid-level skilled workers who must have a degree and a job offer of at least S\$1,800 a month.

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<sup>7</sup> See J-J Hur and K. Lee: “Korea country study” in *PECC-ABAC Conference on Demographic Change and International Labour Mobility in the Asia Pacific Region* (Seoul, 2008).

**Table 7. Singapore: Foreign worker levies and dependency ceilings**

| Sector        | Dependency Ceiling (DC)                       | Worker Category                      | Monthly Levy Rate (\$) |
|---------------|---|--------------------------------------|------------------------|
| Manufacturing | Basic Tier 1: Up to 35% of total workforce    | Skilled                              | 160                    |
|               |   | Unskilled                            | 260                    |
|               | Tier 2: above 35% to 55% of total workforce   | Skilled                              | 180                    |
|               |   | Unskilled                            | 280                    |
|               | Tier 3: above 55% to 65% of total workforce   | Skilled(1)                           | 450                    |
|               |   | Unskilled(1)                         | 450                    |
| Construction  | 1 local full-time worker to 7 foreign workers | Skilled and on MYE(2)                | 160                    |
|               |   | Experienced & exempted from MYE(3)   | 310                    |
|               |   | Unskilled                            | 470                    |
| Marine        | 1 local full-time worker to 5 foreign workers | Skilled                              | 160                    |
| Unskilled     |   | 300                                  |                        |
| Process       | 1 local full-time to 7 foreign workers        | Skilled and on MYE(2)                | 160                    |
|               |   | Experienced and exempted from MYE(3) | 310                    |
|               |   | Unskilled                            | 300                    |
| Services      | Basic Tier 1: Up to 25% of total workforce    | Skilled                              | 160                    |
|               |   | Unskilled                            | 260                    |
|               | Tier 2: above 25% to 40% of total workforce   | Skilled                              | 300                    |
|               |   | Unskilled(1)                         | 300                    |
|               | Tier 3: above 40% to 50% of total workforce   | Skilled                              | 450                    |
|               | Unskilled                                     | 450                                  |                        |

Source: Table 7 in Yap Mui Teng, "Singapore's system for managing foreign manpower"

There is no ceiling on the number of EP holders that a company may employ and the employer is not charged a foreign worker levy. There are three kinds of employment passes: P1, P2 or Q1 depending on the basic monthly salary, qualifications and experience.

Low-skilled workers may be issued a Work Permit or an R pass. The government specifies the ratio of foreign to local workers that a firm may employ (the so-called "dependency ceiling") and this varies by sector depending on the difficulty of attracting local workers. There is also a restriction on source country. Employers are required to pay a monthly foreign worker levy for each WP holder hired and are also required to post a security deposit of \$5,000. The deposit is refunded upon cancellation of the WP and repatriation of the foreign worker.

### 3. Malaysia

The Government specifies the sectors where foreign workers may be employed; the countries from which they can be sourced and the foreign worker levy (annual instead of monthly as in Singapore) that must be paid. Work permits have always been liberally issued for work in the plantation and construction sectors, while in the manufacturing and services employers have to show evidence of difficulty of finding qualified local workers. Employers have to make a mandatory contribution to the Social Security Organization (SOCSSO), bear the cost of recruitment and repatriation and be accountable for foreign workers.

Work permits are granted for a period of three years, with possibility of extensions of one year on two successive occasions. In the case of skilled workers extensions beyond the five-year period are permitted, subject to the workers being from industries which are experiencing severe skill shortages. The predominance of any one nationality among foreign workers is discouraged. The levy for workers has been raised a number of times during the past two decades, the most recent ones shown in Table 8. The requirement that employers of all migrant workers (except domestic maids) make payments of 12 per cent to the Employee Provident Fund, supplemented by employee contributions of 11 per cent of monthly wages

was revoked in 2001.

**Table 8. Malaysia: Foreign workers levies 2009**

| Sector                            | Fee (RM)           |               |
|-----------------------------------|--------------------|---------------|
|                                   | Peninsula Malaysia | Sabah/Sarawak |
| 1. Manufacturing                  | 1 200              | 960           |
| 2. Construction                   | 1 200              | 960           |
| 3. Plantation                     | 540                | 540           |
| 4. Agriculture                    | 360                | 360           |
| 5. Services                       |                    |               |
| a) Restaurant                     | 1 800              | 1 440         |
| b) Cleaning Services              | 1 800              | 1 440         |
| c) Cargo handling                 | 1 800              | 1 440         |
| d) Laundry                        | 1 800              | 1 440         |
| e) Caddy                          | 1 800              | 1 440         |
| f) Barber                         | 1 800              | 1 440         |
| g) Retailing and whole-<br>saling | 1 800              | 1 440         |
| h) Textile Merchant               | 1 800              | 1 440         |
| i) Scrap iron                     | 1 800              | 1 440         |
| j) Welfare Homes                  | 600                | 600           |
| k) Resort Island                  | 1 200              | 960           |
| 6. Others (Special approval)      | 1 800              | 1 440         |
| 7. Domestic Helper                |                    |               |
| a) First Domestic Helper          | 360                | 360           |
| b) Second Domestic<br>Helper      | 540                | 540           |

Source: Department of Immigration, Malaysia.

Table 9 shows the distribution of foreign workers by sector. The share of construction doubled from 2001 to 2009 while the share of manufacturing hardly changed. It appears that the loss of share was heaviest for domestic services, while it is not clear if the apparent loss of share of plantations is only due to a new category of agriculture.

**Table 9. Malaysia: Distribution of foreign workers by sector (%), 2001-2009**

| Sector                       | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Domestic services<br>(maids) | 20.3  | 21.4  | 18.4  | 19.4  | 17.7  | 16.6  | 15.4  | 14.2  | 13.1  |
| Construction                 | 7.8   | 13.9  | 19.9  | 15.7  | 15.5  | 14.3  | 14.4  | 14.9  | 15.6  |
| Manufacturing                | 36.8  | 31.5  | 29.3  | 32.4  | 32.1  | 34.6  | 35.9  | 35.3  | 34.6  |
| Services                     | 7.2   | 6.1   | 6.7   | 6.3   | 8.8   | 8.9   | 9.9   | 10.3  | 10.6  |
| Plantations (1)              | 27.9  | 27.1  | 25.7  | 26.2  | 23.5  | 19.0  | 16.5  | 16.2  | 16.6  |
| Agriculture                  | -     | -     | -     | -     | 2.5   | 6.6   | 8.1   | 9.1   | 9.5   |
| Total (2)                    | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Notes: (1) Includes the agriculture sector for 2001-2004. (2) Slight discrepancies may occur due to rounding

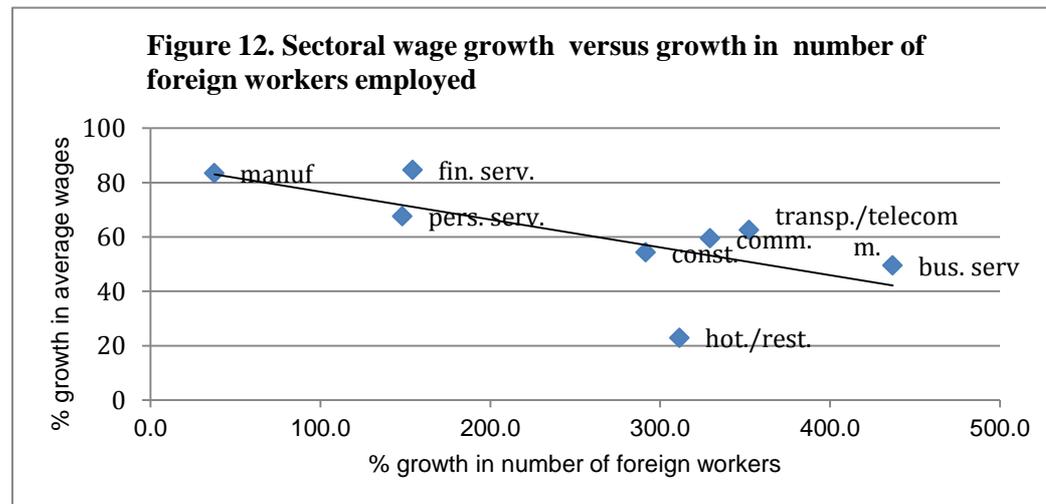
Source: Azizah Kassim, 2005; Dairiam, 2006; Kanapathy, 2008 & Department of Immigration, Malaysia, 2006, 2007, 2008.

## E. Impact of employment of foreign workers on wages

Has the employment of foreign workers any perceptible impact on domestic wages especially of workers in the same levels of skill? Any impact is unlikely to be observable where the size of the foreign worker population is insignificant relative to the size of the local workforce (as in Japan or in the Republic of Korea) but it would clearly make sense to expect a perceptible impact in the case of Singapore and perhaps in the case of Malaysia for certain sectors.

We compared the growth of average wages from 1990 to 2000 by industry in Singapore with the growth in the number of foreign workers employed in those industries. The existence of a negative correlation is quite apparent as shown in Figure 12. The Spearman

correlation coefficient is relatively high (-0.64) and statistically significant (at the 10 per cent level). It shows that sectors where foreign worker percentage growth was higher tended to have slower wage growth, on average.



Source: Data is taken from Miyamoto (2006) citing Singapore Department of Statistics; Correlations are author's own computations.

This is consistent with that of Hui (2013) who found that between 1998 and 2010 real wages of employed residents in the bottom quintiles of the wage distribution declined by about 8 per cent while those in the upper five deciles gained significantly during the period, anywhere from 8 to 28.4 per cent. He wrote: "...significant resources have also been ploughed into subsidized job upgrading and training schemes for locals since the late 1990s. Despite this, depressed wages have plagued those at the lower end of the wage structure due to the huge influx of foreign labour leading to worsening income inequality."

**Table 10. Singapore: Sectoral wage growth and growth of employment of foreign workers**

| Sector   | No. of foreign workers ('000) |              |              | % of foreign workers in total |             |             | Average wages |              |               |
|--|-------------------------------|--------------|--------------|-------------------------------|-------------|-------------|---------------|--------------|---------------|
|  | 1990                          | 2000         | % change     | 1990                          | 2000        | % change    | 1990          | 2000         | % change      |
| Manufacturing  | 106.5                         | 146.6        | 37.7         | 24.0                          | 33.6        | 9.6         | 1 637         | 3 003        | 83.4          |
| Construction   | 47.0                          | 184.0        | 291.5        | 38.2                          | 67.1        | 28.9        | 1 496         | 2 308        | 54.3          |
| Others   | 0.7                           | 2.2          | 214.3        | 3.3                           | 11.7        | 8.4         |               |              |               |
| Commerce   | 7.8                           | 33.5         | 329.5        | 7.3                           | 17.7        | 10.4        | 1 688         | 2 691        | 59.4          |
| Hotel/Restaurant   | 5.3                           | 21.8         | 311.3        | 5.5                           | 18.9        | 13.4        | 1 073         | 1 318        | 22.8          |
| Transport/Telecommunication  | 4.2                           | 19.0         | 352.4        | 2.9                           | 9.6         | 6.7         | 1 890         | 3 071        | 62.5          |
| Financial Service  | 3.5                           | 8.9          | 154.3        | 5.7                           | 9.2         | 3.5         | 2 642         | 4 877        | 84.6          |
| Business Service   | 6.5                           | 34.9         | 436.9        | 5.8                           | 15.4        | 9.6         | 2 170         | 3 245        | 49.5          |
| Social/Personal Service  | 66.4                          | 164.9        | 148.3        | 22.2                          | 36.4        | 14.2        | 1 969         | 3 300        | 67.6          |
| <b>Total</b>   | <b>93.7</b>                   | <b>283.0</b> | <b>202.0</b> | <b>9.8</b>                    | <b>20.6</b> | <b>10.8</b> | <b>1 793</b>  | <b>3 030</b> | <b>68.991</b> |
| Spearman's Correlation of (% change in # of foreign workers) and (% change in average wages) |                               |              |              |                               |             |             | -0.64         |              |               |
|  |                               |              |              |                               |             |             | p-value 0.09  |              |               |
| Pearson's Correlation of (% change in # of foreign workers) and (% change in average wages)  |                               |              |              |                               |             |             | -0.68         |              |               |
|  |                               |              |              |                               |             |             | p-value 0.06  |              |               |

Source: Data is taken from Miyamoto (2006) citing Singapore Department of Statistics; Correlations are author's own computations

Other studies recently carried out in the region invariably show that the impact on local wages of an increase in the foreign workforce is negative but very small. In Thailand the World Bank Study undertaken by Lathapipat suggests that immigration has a negative impact on wages but only on the wages of foreign workers. A doubling of immigrant workforce across all skill groups leads to a decline of -1.94 for immigrants with lower primary education and -2.45 per cent for immigrants with upper primary education, but wages of high-school and college-educated Thai workers increase by more than half a per cent.<sup>8</sup>

## F. Brief summary and conclusions

The countries of East Asia and the Pacific have passed through significant stages of economic transformation, each of which has caused considerable turbulence in their labour markets. One impact has been the emergence of labour shortages for certain skills which could at the beginning be met from existing labour reserves in agriculture. Industrialization brought millions out of the countryside to factories in the cities, in the process raising productivity and incomes and changing consumption tastes and lifestyles. These changes in turn gave rise to new economic activities, which required different skills and raised the demand for new occupations. In some countries the emerging labour shortages could no longer be met since their labour reserves have already been depleted, hence the opening of labour markets to foreign workers. Moreover, the young entrants to the workforce are better educated than earlier cohorts, no longer willing to take up the so-called 3-D jobs, and demanding better conditions of employment and higher wages.

The countries of the region have all resorted to “employer-driven” systems for importing temporary foreign labour or so-called “guest-workers”. Although countries experimented with various safeguards to discourage dependence on supplies of cheap foreign labour, such as by imposing sector quotas and imposing levies, the latter’s growth has been spectacular in some countries. This may be partly on account of the fact that economies go through cycles of boom and bust in their transition, rather than through smooth upward movements of their GDPs. This unstable character of growth has created short-run labour shortages during upswings which may quickly disappear in the ensuing downswing. The consequence has been periods of excess supplies of foreign workers which has been observed to put downward pressure on real wages of low-skilled workers and a worsening of income distribution.

The current stage of transformation has been the shift from industry to services, as indicated by share in output but also, and more significantly, by the share in employment. Services have replaced industry as the principal absorber of labour. The sector’s growth has been in occupations requiring more skills and education. The increased demand for skilled labour has so far been largely met from domestic sources because countries have all invested heavily in education, but the increasing global competition for the highly skilled is drawing attention of policy makers to the need for more effective instruments to attract skills and talents. These include immigration policies that facilitate and promote their settlement or permanent immigration.

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<sup>8</sup> D. Lathapipat: “The effects of immigration on the Thai wage structure” in R. Adams and A. Ahsan (eds) *Managing international migration for development in East Asia* (Washington DC, World Bank, forthcoming).

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## Appendix 1

### Singapore: Average daily wages of local & foreign workers, August 1990-93

|                       | 1990  | 1991  | 1992  | 1993  |
|-----------------------|-------|-------|-------|-------|
| <b>Bar bender</b>     |       |       |       |       |
| Singaporean           | 48.98 | 52.11 | 52.68 | 53.57 |
| Malaysian             | 37.51 | 40.61 | 51.96 | 47.37 |
| NTS                   | 17.85 | 19.31 | 19.02 | 19.54 |
| <b>Bricklayer</b>     |       |       |       |       |
| Singaporean           | 48.14 | 55.86 | 55.32 | 55.30 |
| Singaporean           | 45.05 | 49.89 | 54.62 | 51.02 |
| Malaysian             | 18.00 | 18.24 | 18.90 | 19.62 |
| NTS                   | 18.00 | 18.24 | 18.90 | 19.62 |
| <b>Carpenter</b>      |       |       |       |       |
| Singaporean           | 47.92 | 53.66 | 53.13 | 56.06 |
| Malaysian             | 45.26 | 42.19 | 53.31 | 46.54 |
| NTS                   | 18.00 | 18.63 | 19.13 | 20.34 |
| <b>Electrician</b>    |       |       |       |       |
| Singaporean           | 44.30 | 51.06 | 57.25 | 53.32 |
| Malaysian             | 32.67 | 41.03 | 49.68 | 53.55 |
| NTS                   | 16.00 | 17.22 | 18.75 | 17.98 |
| <b>Painter</b>        |       |       |       |       |
| Singaporean           | 45.34 | 56.35 | 55.24 | 55.50 |
| Malaysian             | 46.64 | 48.16 | 47.85 | 52.97 |
| NTS                   | 27.33 | 20.86 | 19.17 | 22.91 |
| <b>Plant operator</b> |       |       |       |       |
| Singaporean           | 45.34 | 56.35 | 55.24 | 55.50 |
| Malaysian             | 46.64 | 48.16 | 47.85 | 52.97 |
| NTS                   | 27.33 | 20.86 | 19.17 | 22.91 |
| <b>Plasterer</b>      |       |       |       |       |
| Singaporean           | 43.81 | 57.19 | 59.28 | 57.43 |
| Malaysian             | 41.13 | 52.63 | 57.45 | 53.97 |
| NTS                   | 20.00 | 18.32 | 19.12 | 19.57 |
| <b>Plumber</b>        |       |       |       |       |
| Singaporean           | 42.39 | 56.08 | 53.80 | 54.80 |
| Malaysian             | 43.81 | 44.21 | 49.82 | 49.86 |
| NTS                   | 16.82 | 18.02 | 17.98 | 19.32 |
| <b>Scaffolder</b>     |       |       |       |       |
| Singaporean           | 50.00 | 41.57 | 52.11 | 52.09 |

|                |       |       |       |       |
|----------------|-------|-------|-------|-------|
| Malaysian      | 38.13 | 34.50 | 46.41 | 45.55 |
| NTS            | 19.00 | 19.93 | 18.45 | 18.73 |
| Steelworker    |       |       |       |       |
| Singaporean    | 50.59 | 54.32 | 57.12 | 53.23 |
| Malaysian      | 44.00 | 45.22 | 49.49 | 52.61 |
| NTS            | 20.00 | 19.16 | 16.97 | 19.44 |
| Tiler          |       |       |       |       |
| Singaporean    | 52.78 | 60.24 | 56.19 | 58.84 |
| Malaysian      | 51.40 | 54.11 | 55.83 | 54.56 |
| NTS            |       |       | 18.32 | 17.01 |
| General worker |       |       |       |       |
| Singaporean    | 36.40 | 35.51 | 35.34 | 33.78 |
| Malaysian      | 27.42 | 28.59 | 29.60 | 34.06 |
| NTS            | 17.86 | 16.62 | 18.24 | 16.96 |

NTS means non-traditional sources

Source: CIDB (1994c)

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## Annex A. Increase in tertiary education enrolment in Selected East and South-East Asian Countries

|   | 2010       | 1999  |          | Per cent<br>in science |
|---|------------|-------|----------|------------------------|
|   | ('000s)    |       | % Change |                        |
| Cambodia                                  | 123        | 22    | 555      | 9.2                    |
| China                                     | 31 047     | 6 366 | 488      | ...                    |
| Indonesia                                 | 5 001      | 3 126 | 160      | ...                    |
| Malaysia                                  | 1 001      | 473   | 211      | 14.0                   |
| Philippines                               | 2 651      | 2 209 | 120      | ...                    |
| Republic of Korea                         | 3 270      | 2 838 | 115      | 8.8                    |
| Thailand                                  | 2 497      | 1 814 | 138      | 8.2                    |
| Viet Nam                                  | 2 020      | 810   | 249      | -                      |
| <br>EAP - East Asia                       | <br>53 049 |       |          | <br>2.9                |
| <br>Countries with upper middle<br>income | <br>76 886 |       |          | <br>9.4                |

## **Annex B. Estimating labour shortage: institutions and information sources**

### **Republic of Korea**

The Korea Labour Institute, the research arm of the Ministry of Labour, undertakes annual surveys of enterprises to enquire into skills shortages faced in different industries. The official organ tasked with analysing the required response to identified shortages is the Sector Human Resource Development Council (SHRDC) which was created in 2003 to build a “demand oriented” skills delivery system. The need for such a system arose out of a recognition that enterprises will not invest in training workers unless the skills are only specific to the firm. They otherwise stand to lose their investments if the workers move to other firms. This is an example of market failure and government recognized that it had to step in to minimize inefficient market outcomes. SHRDC analyses and forecasts the demand of Korean industries for manpower, develops competency standards, and links providers of vocational training with industries. There are now 23 SHRDCs established by industry. Examples are: Electrical machinery, shipbuilding, steel, semiconductors, automobile, petrochemicals, medical appliances, etc.

### **Singapore**

Although the exact process for arriving at the appropriate foreign worker levy is not made known outside of the committee charged by the government to make such decisions it appears that information on current skills shortages is an important consideration. The Ministry of Labour has a website that lists the occupations that are judged to be in scarce supply (see Box).

The survey is conducted by mailed questionnaire sent to private establishments with at least 25 employees and the public sector comprising ministries, statutory boards and organs of state. A total of 12,600 establishments responded to the 2011 survey, a response rate of 89 per cent. Establishments were asked to provide the following information pertaining to job vacancies in their organizations as of 30 September 2011:

- Job title
- Number of vacancies
- Minimum educational qualifications required
- Whether working experience was required; and
- Whether the vacancies were vacant for at least 6 months

### **Malaysia**

In Malaysia the assessment of labour shortages involves several agencies notably the Economic Planning Unit in the Office of the Prime Minister, the Human Resource Ministry (MOHR) especially the Institute of Labour Market Information and Analysis (ILMIA) under the Ministry, the Public Service Department (PSD), the Talent Corporation, and the Performance Management and Delivery Unit (PEMANDU). With respect to the determination of labour shortages their specific functions are:

- Employment forecasts at the macro level, by sector and occupation, are prepared by EPU which is the main economic planning office of the government.
- The Ministry of Human Resources regularly liaises with the private sector and monitors labour market developments through its various offices and in the discharge of its usual functions. However, ILMIA is the office under the ministry which undertakes studies of the manpower requirements of industry at sub-sector levels (e.g. health sector, business services sector).
- The PSD undertakes the human resource planning for the public sector.

- PEMANDU takes care of determining the human resource requirements for key government projects such as the new economic sectors falling under the Economic Transformation Programme;
- The Talent Corporation, a newly-established agency, was given the task of identifying high level skills and talents needed by the country, for retaining in the country Malaysians with such skills, and attracting skilled foreign nationals to come to Malaysia.

The sources of information on the labour force and employment are those obtained by surveys of DOSM namely: quarterly Labour Force Surveys and annual surveys of households, manufacturing establishments, and construction establishments, and the economic census done every five years.

The Employment Services Division of the Labour Department issues monthly reports on employment which include data on: job applicants or registrants by educational level, age, employment status, job vacancies and job placements by industry and occupation, and education level. Every two years it undertakes an establishment survey called the “National Employment Return”.

In Malaysia employers are required to notify vacancies to the Department of Labour to allow local job seekers registered with JobsMalaysia to fill the vacancy. This requirement is largely applied to low-skill jobs and interpreted more liberally for high skill ones. If no local workers are available and interested in these jobs, employers are allowed to hire foreign workers but within quotas which are set by government across different sectors.

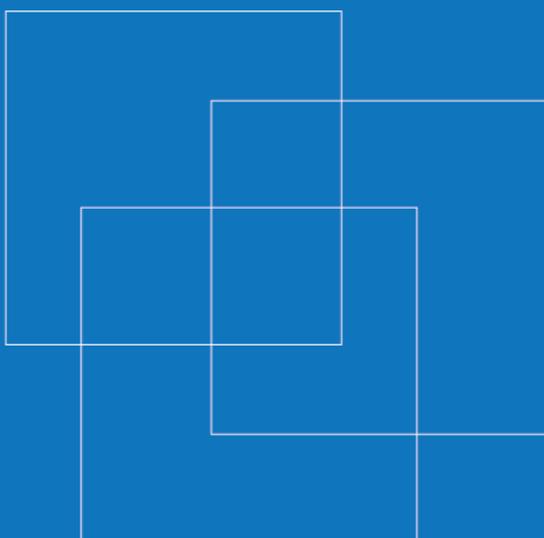
## Use of foreign labour to meet labour shortages in dynamic East and South-East Asian economies

This paper reviews how skills shortages have developed during the transformation of the economies of East and South-East Asia's more dynamic economies, the adjustments made by firms to these shortages and how governments tried to anticipate and remedy them through education and training, and through immigration. It starts with a review of the transformation of these economies as indicated by the changing shares of different sectors in GDP and employment, followed by case studies of selected countries where relevant experience has been documented by earlier observers, and ends with a brief analysis of how the labour immigration option that has been used and with what consequences.

This is part of a series of papers being published by the Tripartite Action for the Protection and Promotion of the Rights of Migrant Workers in the ASEAN Region (ASEAN TRIANGLE) project, ILO Regional Office for Asia and the Pacific.

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ILO Regional Office for Asia and the Pacific  
United Nations Building  
Rajdamnern Nok Avenue, Bangkok 10200, Thailand  
Tel: +66 2 288 1234 | Fax: +66 2 288 3062  
Email: [BANGKOK@ilo.org](mailto:BANGKOK@ilo.org)



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