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Foreign Workers and Labour shortages in East Asia: Implications for the EU

Manolo I. Abella ¹

Skills shortages occur in dynamic economies, and most East Asian countries have anticipated and minimized them through public investments in education, incentives for firms to provide training, and "employer-driven" immigration systems. Investments in education have increased supply of highly skilled workers, which has led to some emigration and reduced the availability of low-skilled workers, prompting employers to request foreign workers. However, making low-skilled foreign workers available becomes self-reinforcing, since it encourages more local workers to acquire skills to avoid competing with low-skilled migrants. Policy-makers should be mindful of the treadmill impacts of employer-driven low-skilled labor migration policies on inequality and social friction.

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 in the same speed and direction as the demand for them. Demand seldom if ever rises in a slow and stable upward movement which may allow for supply adjustments. The real world is characterized by sudden bursts 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 re-structuring 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 function as well as prices of commodities in signaling where excess demand may exist. Wage levels and structures are often bound to many institutions such as collective agreements

¹ Former Director, ILO International Migration Programme. Dr. G. Ducanes of the UP School of Economics provided valuable assistance in preparing the paper.

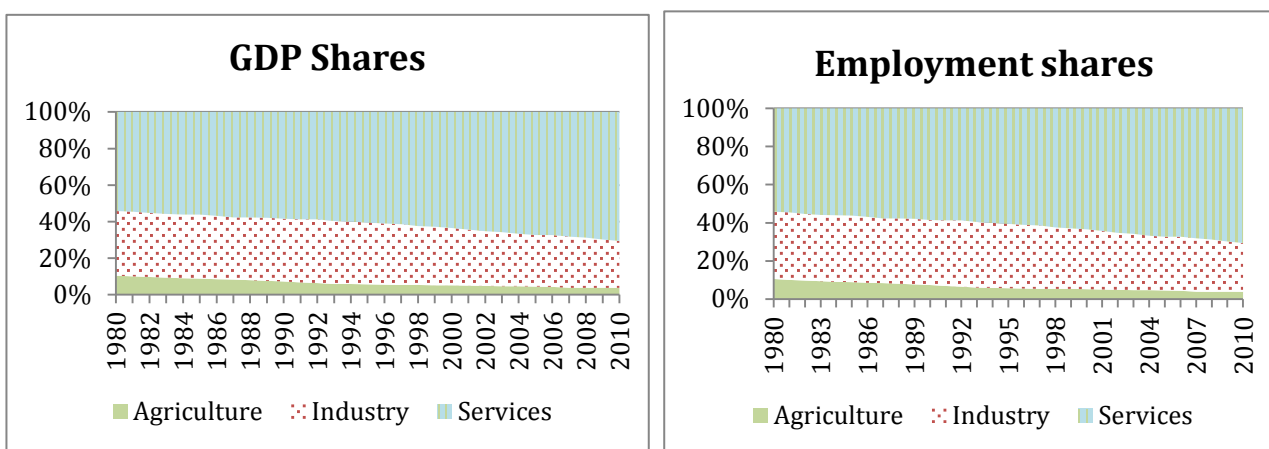
that constrain labour market flexibility. In any case supply may respond but only over time and depending on many factors such as the existence of unemployed or underemployed labour in other sectors, the size and rate of growth of the working age population, fertility rates and the labour force participation 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 are 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 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 and through immigration. It starts with a review of the transformation of their 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 Asia

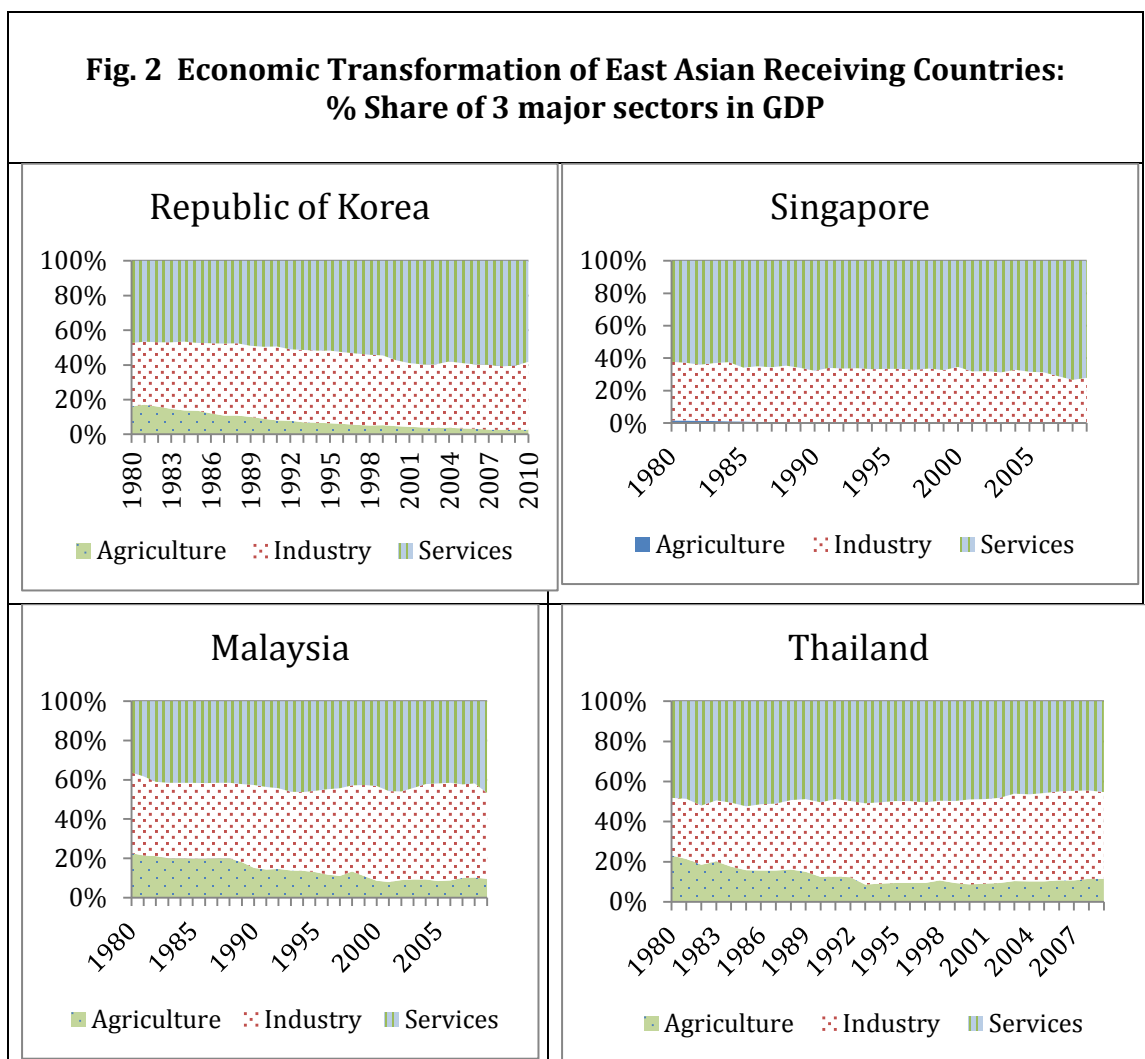
The East Asian economies have undergone two kinds of transformation since the post war period. The first transformation was the emergence of the industrial sector replacing agriculture as the major generator of income and employment; the second, was the growth of services replacing manufacturing as the 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. Fig.1 shows that the share of manufacturing in Japan's GDP has been going down since the beginning of the

Fig. 1 Japan: Economic Transformation, 1980 to 2010



1980s.

A comparison of the paths in transformation in four East Asian economies – Korea, Singapore, Malaysia and Thailand is illustrated in Fig. 2. 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 Korea and in Malaysia. In the 1980s Korea was still an emerging industrial power. The share of manufacturing in 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 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 Korea and Singapore towards services as the key sector, both in terms of output, and more especially in terms of employment.

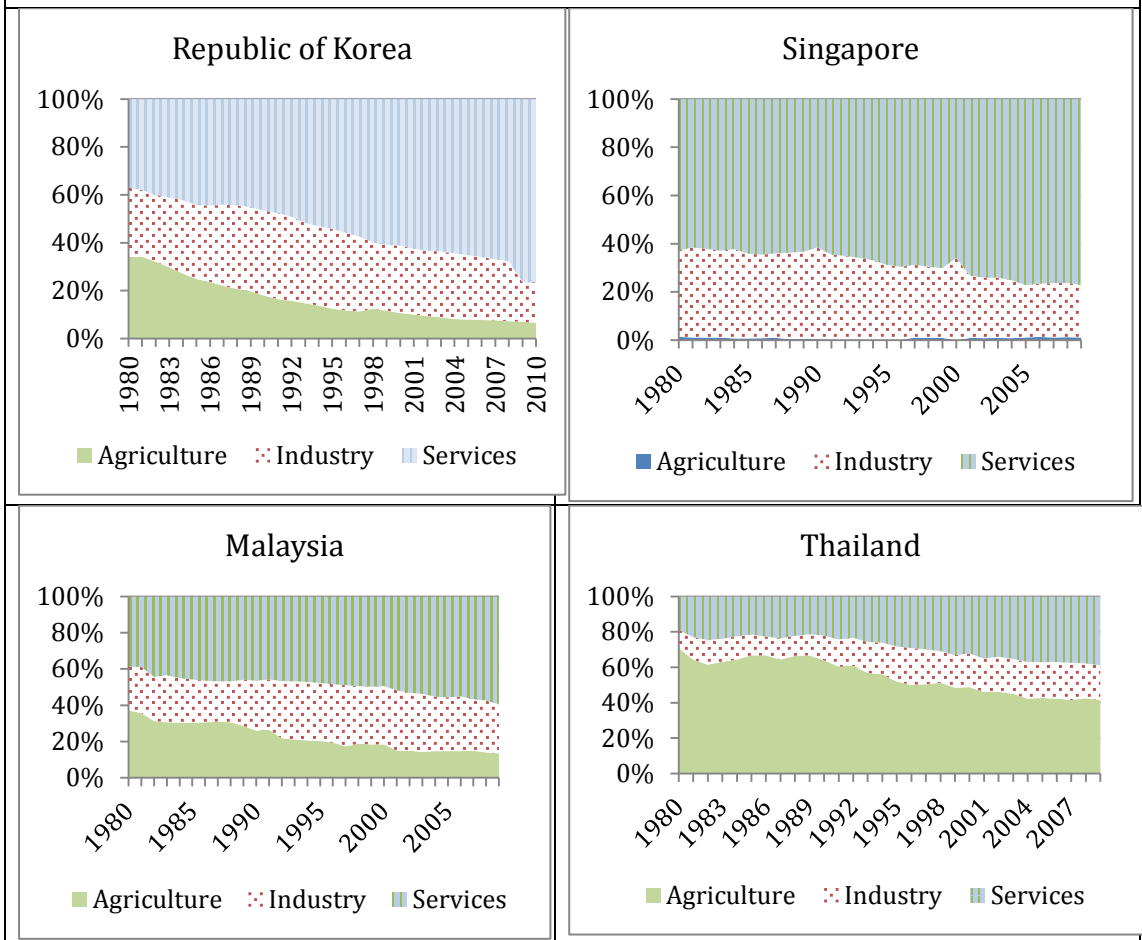


In Singapore the services sector now accounts for almost three-fourths of GDP and more than three-fourths of employment. It has been shifting towards a larger share of services in employment from about two decades ago. By contrast Malaysia and Thailand both have large, stable, and even expanding industrial

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% of total employment as of 2010 (Fig.3).

These illustrations in the shift towards higher-end services in Singapore and 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 case 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 Korea which had a large manufacturing base. Aside from investing heavily in education, Singapore also orchestrated the shift by admitting skilled foreign workers.

**Fig 3 Economic Transformation of East Asian Receiving Countries:
% Share of 3 major sectors in Employment**

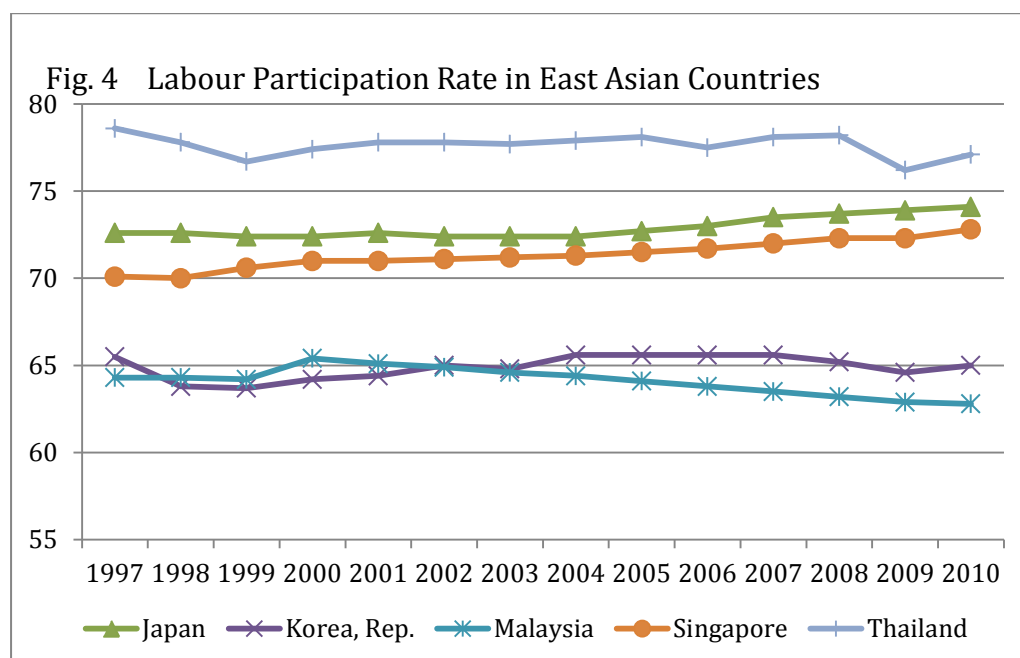


In Malaysia the second transformation has been notable more in terms of employment than in output shares, suggesting that much of those absorbed in services were still in low-productivity occupations. The same may be said of agricultural workers in Thailand whose share in employment is much larger than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

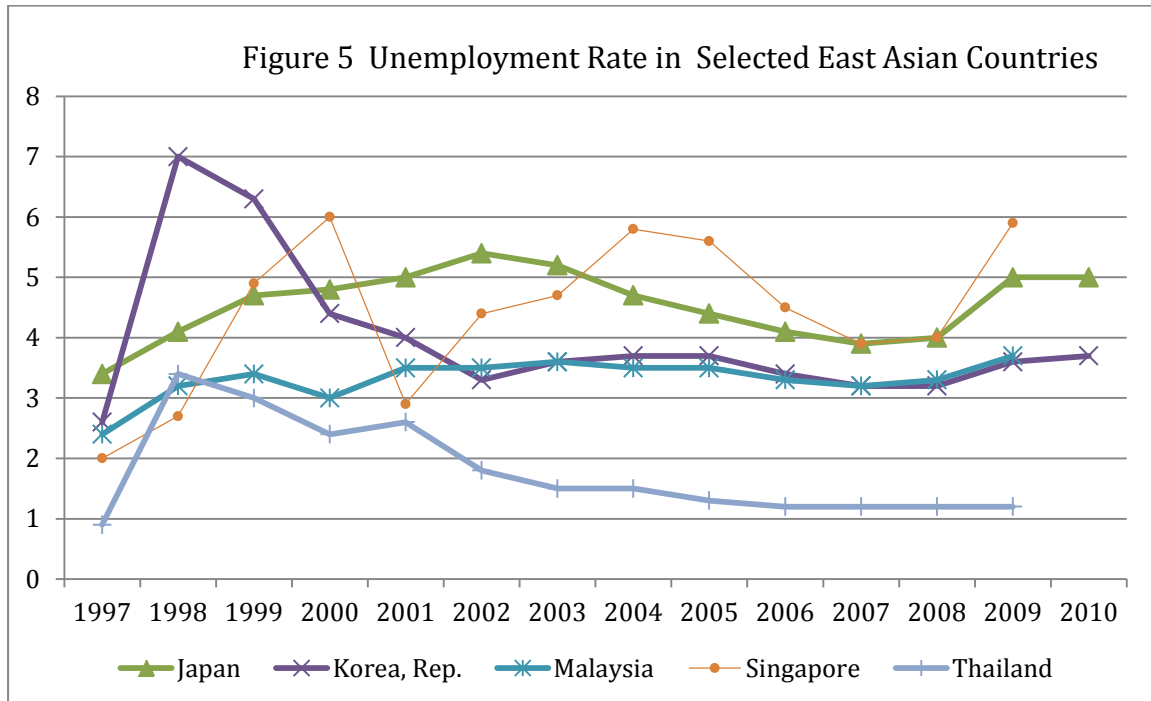
C. Unemployment as indicator of labour shortage

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 percent of the labour force by 2007/8.

There are some small differences. Thailand's very low unemployment (just a little over 1 percent) is particularly significant because compared with the other countries Thailand has had historically high levels of labour force participation of women (over 80 percent for ages 30-34). Most people can still earn a decent living from various informal sector activities like hawking. Malaysia and 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 labor 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.



Singapore has experienced greater fluctuation in its rate of unemployment compared to the other countries. Its unemployment rate went above 5 percent in 3 of the last 12 years.



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 take place in the labour market as their economies went through periods of booms and bust.

1. Case of Japan

Japan's experience during two past periods of economic boom is instructive on how the economy adjusts to shortages. Since the 1960s Japan experienced two significant economic booms, the *Izanagi* boom which started in the latter 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)². 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

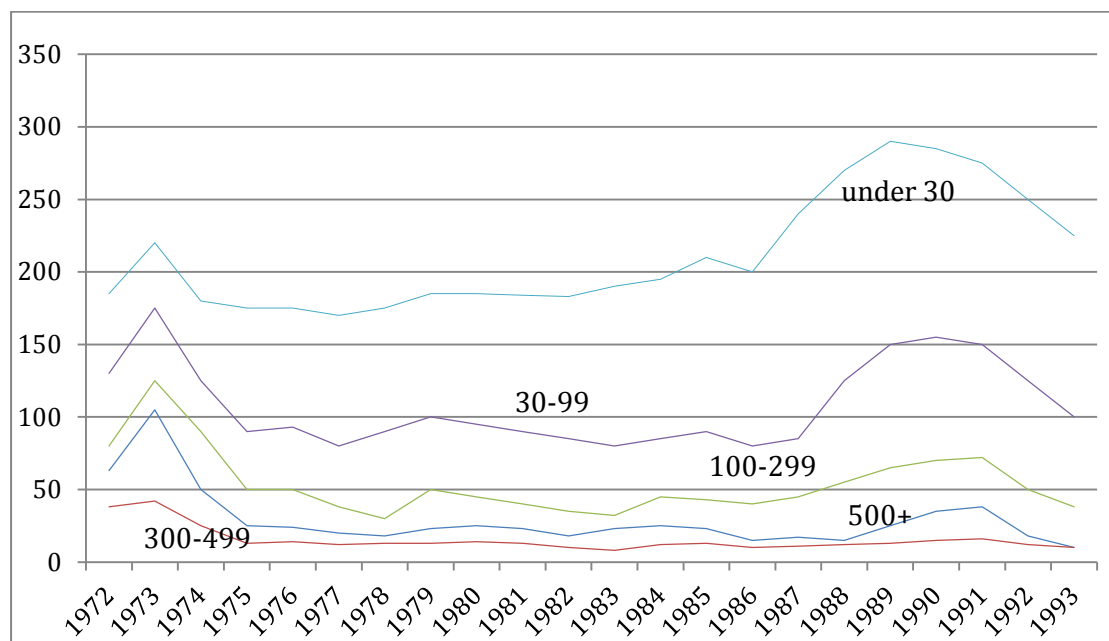
² See Mori, Hiromi (1997) *Immigration Policy and Foreign Workers in Japan* MacMillan Press Ltd. London

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 for 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 (proportion of average monthly new openings in the total number of regular employees) for firms with 1000 or more employees was 23.6 percent but was only 10.8 percent for small companies (fewer than 30 employees). In 1990 the situation was reversed. Vacancy rate was 6.1 percent for the large companies and 9.5 for the small. The large size firms could attract employees but the small ones could not.

Figure 6 Japan: Vacancy trends by Firm Size, monthly averages (from Mori 1997)



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 sized (100-999 workers) manufacturing enterprises raised their starting salaries for male upper secondary school graduates by 32.3 and 30.2 percent respectively, while large companies with 1000 or more workers raised their starting salaries by 29 percent. 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 percent 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	% change
Sectors			
All industries	32.5	17.5	-15
Construction	44.6	22	-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	-10.9
Selected occupations			
	1985	1991	
Metal press machine operators	20.9	13.9	-7
Sheet metal workers	13.4	7.5	-5.9
Electric welders	16.5	8	-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	-7.7
Plastic moulding workers	25.9	16.9	-9
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
Civil construction and paving workers	37.9	12.8	-25.1
Warehouse workers	41	20.5	-20.5
Deliverers	26.5	15.5	-11
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 percent between 1985 and 1991. Table 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-tradeable goods” like 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 featured as a response to labour shortage did not become significant until the later years of the Heisei boom 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. Except for many Filipino and Taiwanese women who were admitted for employment as entertainers most of the others worked illegally after overstaying their visitor’s visas. 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, Korea, Thailand, Taiwan, Malaysia, and Bangladesh) Latin America (Brazil and Peru) and Iran.

2. Case of Republic of Korea

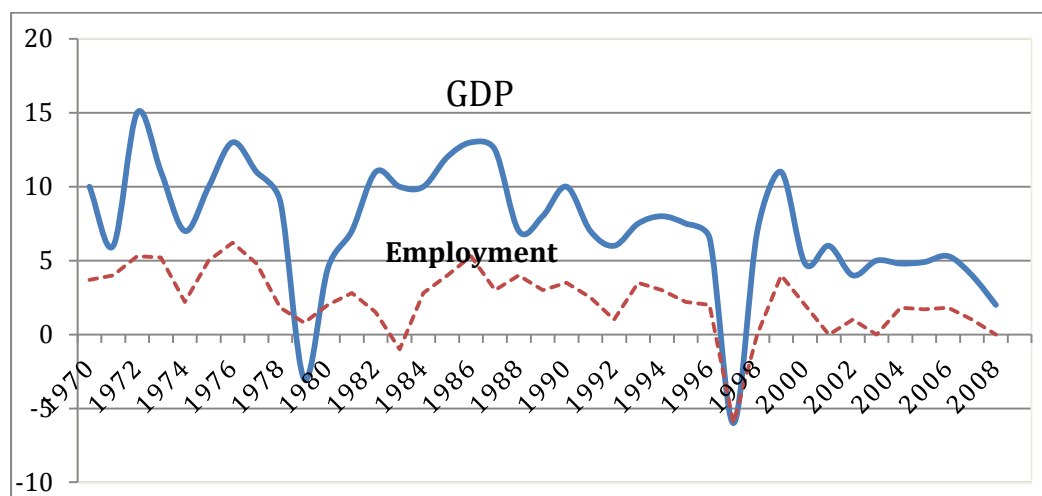
The economic transformation of other East Asian economies had similar implications on the labour market, generating skills shortages during periods of boom even as governments injected massive public resources into education and provided incentives for firms to engage in skills training. The economic growth has by no means been smooth as Fig 7 illustrates. The period since 1970 to the present has been characterized by booms and busts 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 at 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 with manufacturing output growing annually at double digit rates³ had exhausted possibilities for inter-sectoral transfers of labour. Labour shortage was felt more acutely, as in Japan, by the smaller enterprises, and particularly for production workers. Table shows interestingly that there was already a higher shortage (as indicated by vacancy

³ Manufacturing output grew by 17.3 percent in 1984, 18.4 in 1986, and 13 percent in 1988.

rates) for unskilled than for skilled workers in 1985 , and even and more so in 1990 and 1991.

Fig. 7 Rep of Korea booms and busts



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 for training was imposed on enterprises which they can back if they were to engage in skills training of their employees. The outcome has been impressive. College enrollment rates was in the neighborhood of 25 percent during the 1970s, rose to 60.1 percent in 1997, and as high as 82.5 percent 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 tat 35 percent 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 turn-over of their local employees even as far back as the early 1990s. A survey of small industries by the Korea Labor Institute in 1993 sought to gain insights into the staffing difficulties of small enterprises (Abella and Park)⁴. More than a third of surveyed employers (36.5 percent) claimed that their difficulty was due to the fact that Korean workers were no longer willing to do physically-demanding

⁴ Abella, M. and Young-bum Park (1993) "Labor Shortages and Foreign Workers in Small Firms of the Republic of Korea," in Adjustments to Labor Shortages and Foreign Workers in the Republic of Korea. Geneva: International Migration Papers, International Labor Office.

jobs. Low wage was cited as a key factor by only 16 percent of the employers in subsequent surveys (Abella and Park 1996; Abella and Park 2000) and by only 13.4 percent in a 2003 survey (Yoo and Lee 2001).⁵ 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 Rep. of Korea: Measures of Labour Shortage

	Min. of Labor Survey			ILO/KLI Survey	
	1985	1990	1991	1992	1993
By type of workers					
Total employees	1.8	4.3	5.5	5.7	9.2
Office workers	0.9	1.3	1.3	1.7	2.1
Production	2.4	6.9	9.1	8	12.2
Skilled	2	5.3	7.3		9.5
Unskilled	4.9	16.3	20.1		16.8
By Size of Firm					
Less than 30		1.97		9.5	21.1
30-99		5.08		7.3	12.1
100-199				6.5	7.8
200 or more				3.3	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 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.

⁵ Yoo, Kil-Sang. and K-y. Lee (2001) Managing Foreign Workers and Policy Tasks, Korea Labor Institute Yoo, Kil-Sang and others (2004) Analysis on Labor Markets for Unskilled Workers, Korea Labor Institute.

Mode of adjustment	Short-term				Long-term			
	All enterprises	Firms employing foreign labour		Not employing foreign labour	Total	Firms employing foreign labor		Not employing foreign labour
		Legal labour	Illegal labour			Legal labor	Illegal Labor	
More overtime	41.2	38.1	47.6	41.0	9.6	7.4	15.4	8.9
Will use foreign labor	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\$ 4071 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 took up no less than 23 percent of the national budget for most of the 1960s⁶. Aside from pumping money 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 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 5600. Between 1986 and 1989 this almost doubled to 9100. 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 to admit guest workers. In 1976 of the 1600 metal process workers, 46 percent were foreign, and of the 4,700 woodworkers 56 percent were foreign, as well as 60 percent of building construction workers. There was however no shortage of white collar clerical workers. Of the 150,000 clerical and related workers only 2 percent were

⁶ Goh Chor Boon and S. Gopinathan, Briefing paper Nanyang Technological University, 2006

foreign. By 1984 about 10 percent of Singapore's 1.1 million workforce were foreigners.

	Total		Manufacturing	%	Construction	%
Permanent residents						
Singapore citizens	957607	100.0	273880	28.6	52975	5.5
Non-citizens	40208	100.0	16683	34	3391	8.5
Non-permanent residents	79275	100.0	36558	46.1	15406	28.2
			327121		71772	

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 over 26 percent compared to 16.3 percent in manufacturing. As the Table shows 28.2 percent of temporary foreign labour were in construction. By 1993 construction was accounting for 7 percent of GDP and, with a workforce of about 166,000, for 6.5 percent of total employment. Depending on the level of construction activity the proportion represented by foreign workers fluctuated between 50 to 80 percent of the total employed in the sector (see Ofori, 1994)⁷. During the construction boom of 1992, for instance, local workers only made up 1 of every 5 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 percent.

Despite attempts to reduce dependence on foreign workers Singapore through various policy measures including taxes or levy on foreign workers and industry-specific ceiling placed on the size of 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 1 million to a total of 1.305 million, accounting for 26 per cent of total population, a rise 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 them 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 shortage over the past decade as indicated in the vacancy rates in Table 5.

⁷ Ofori, George (1994) "Foreign construction workers in Singapore" Working Paper, ILO Sectoral Activities Programme, SAP 2.57/WP 106

Table 5. Singapore Labour Shortage Indicators

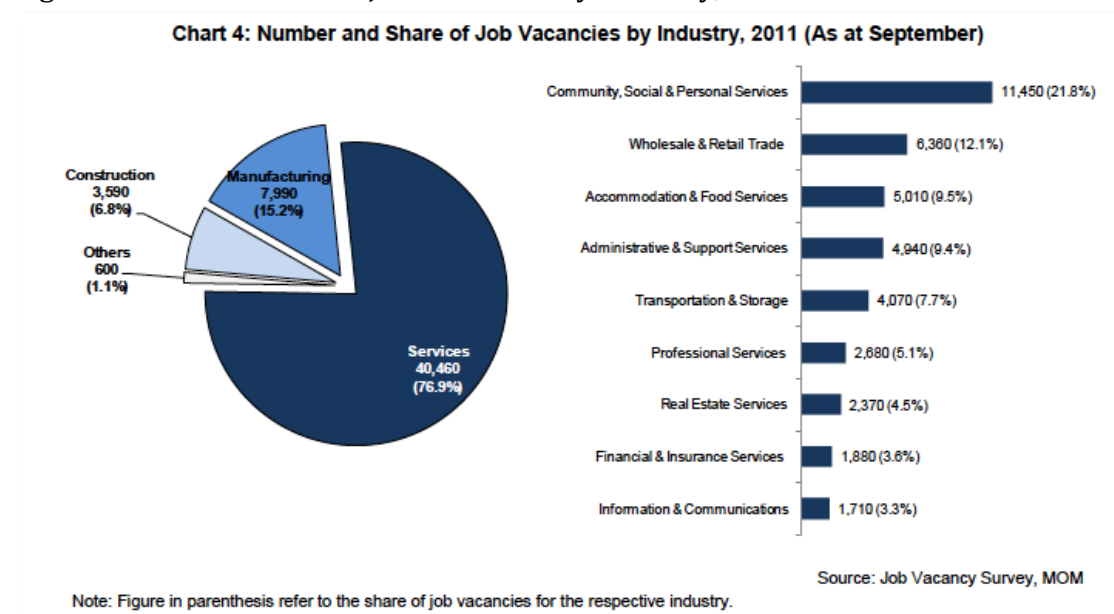
Year	Job Vacancy	Job Vacancy Rate	Job Vacancy to Unemployed Person Ratio
2000	27.6	2.7	0.94
2001	15.9	1.5	0.55
2002	15	1.5	0.36
2003	12.6	1.2	0.27
2004	16.5	1.6	0.40
2005	19.2	1.7	0.47
2006	31.2	2.3	0.66
2007	38.6	2.6	1.10
2008	37.8	2.4	0.92
2009	30.4	1.8	0.52
2010	44.2	2.5	0.98

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>

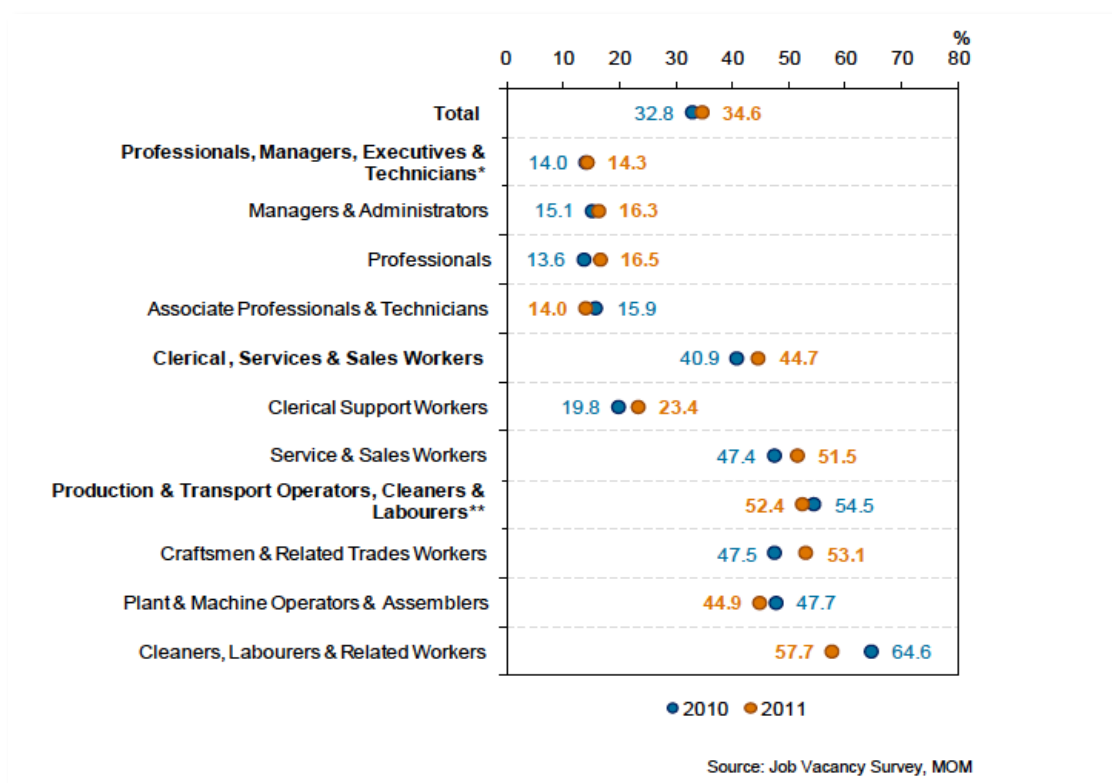
These general vacancy rates however hide significant vacancies at more detailed industry and occupational levels. The Ministry of Manpower (MOM) conducts Job Vacancy Surveys and reports the findings in their website to inform job-seekers and to guide the youth in making career choices. From the Chart 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 5000 jobs were in accommodation and food services.

Figure 7 SINGAPORE Job vacancies by industry, 2011



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 others, 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 6 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 less for professionals and managers.

Figure 8 Singapore: Vacancies unfilled for at least 6 months by occupation

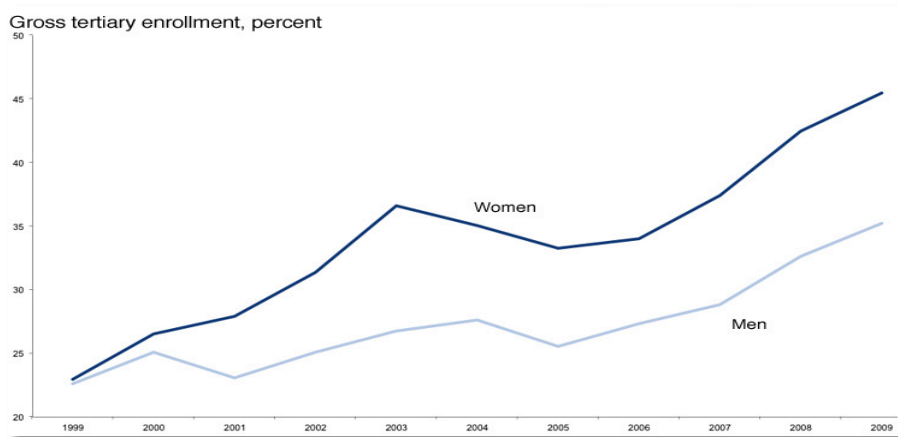


4. Case of Malaysia

Over a short period of two decades the share of services in Malaysia’s GDP has risen from 44 percent in 1990 to 59 percent in 2010, and the World Bank predicts that in another 10 years its share will be as much as 64.5 percent. The sector already employs almost 60 percent 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 percent) than employment (2.3 percent). The unemployment rate has remained low because of a decline in labour force participation as Malaysian youths invest more years in schooling.

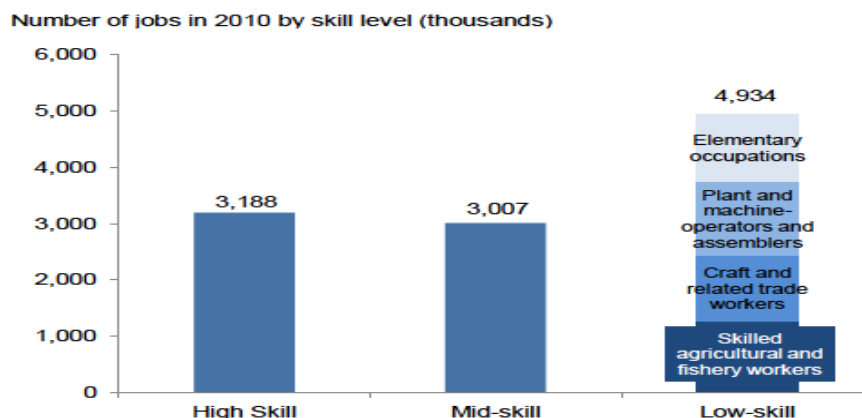
Fig. 9 Malaysia: Growth of Tertiary Enrollment



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 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 percent); whereas ten years later in 2000 the number abroad went up to 96,000 while the number at home almost quadrupled to 818,000 making for a brain drain rate of 10.5 percent compared to 7.5 percent for Korea and 1.2 percent for Japan.

Low-skill jobs still account for 44 percent of all employment in Malaysia, 29 percent are high skill and the rest are mid-level skills. However most of the employment created in recent years have been in skilled categories. Between 2000 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 percent in 2011) and much of these new investments are going to logistics, banking, consulting, telecommunications, etc that create high productivity jobs.

Fig. 10 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 enrollment in tertiary education (Fig.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 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

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 simply 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

Korea does not impose quotas or labour market tests for the admission of professionals who are admitted for short term employment (C-4 visa) or for 3 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 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 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 3 years in firms with less 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.⁸

2. Singapore

Singapore has pioneered the use “foreign worker levy” in order to raise the cost to employers of hiring foreign workers who earn less than S\$3000 a month. Through the levy the Government aims to restrain 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

⁸ See Jai-Joon Hur and Kyuyong Lee Korea Country Study in PECC-ABAC Conference on Demographic Change and International Labor Mobility in the Asia Pacific Region, 25-26 March 2008, Seoul

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\$1800 a month.

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 skill 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 \$5000. 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 (SOCSO), 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 Levy, 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 selling	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 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 agriculture.

Table 9 Malaysia: Distribution of Foreign Workers by Sector (%), 2001-2009

Sector	2001	2002	2003	2004	2005	2006	2007	2008	2009
Domestic services (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	100	100	100	100	100	100	100	100

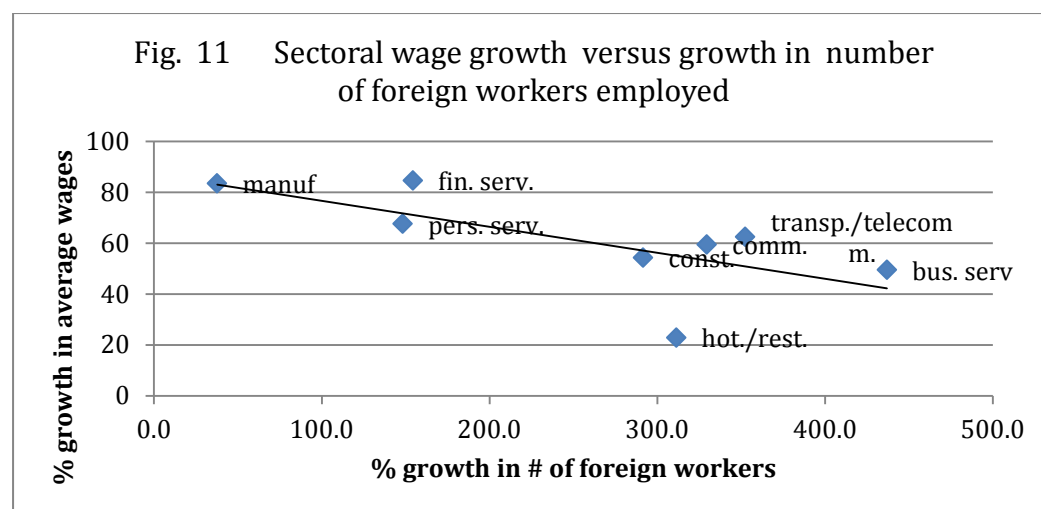
Notes: ¹Includes the agriculture sector for 2001-2004. ²Slight discrepancies may occur due to rounding

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 Korea) but it would clearly make sense to expect some 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 Fig 11. The Spearman correlation coefficient is relatively high (-0.64) and statistically significant (at the 10% level). It shows that sectors where foreign worker percentage growth were higher tended to have slower wage growth, on



average. 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 percent while those in the upper five deciles gained significantly during the period, anywhere from 8 to 28.4 percent. 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	# 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	33.6	9.6	1637	3003	83.4
Construction	47	184	291.5	38.2	67.1	28.9	1496	2308	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	1688	2691	59.4
Hotel/Restaurant	5.3	21.8	311.3	5.5	18.9	13.4	1073	1318	22.8
Transport/Telecommunication	4.2	19	352.4	2.9	9.6	6.7	1890	3071	62.5
Financial Service	3.5	8.9	154.3	5.7	9.2	3.5	2642	4877	84.6
Business Service	6.5	34.9	436.9	5.8	15.4	9.6	2170	3245	49.5
Social/Personal Service	66.4	164.9	148.3	22.2	36.4	14.2	1969	3300	67.6
Total	93.7	283	202.0	9.8	20.6	10.8	1793	3030	68.991
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 percent for immigrants with upper primary education, but wages of high-school and college-educated Thai workers increase by more than half a percent ⁹

⁹ Lathapipat, Dilaka “The Effects of Immigration on the Thai Wage Structure” in Managing International Migration for Development in East Asia, edited by Richard Adams and Ahmad Ahsan , World Bank, Washington DC (forthcoming)

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 cheap supplies of 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 booms and busts 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 pressures 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 shares in output but also, and more significantly, by the shares 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 facilitates and promotes their settlement or permanent immigration.

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Yap Mui Teng, "Singapore's system for managing foreign manpower"

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

	1990	1991	1992	1993
Bar bender				
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
Bricklayer				
Singaporean	48.14	55.86	55.32	55.3
Malaysian	45.05	49.89	54.62	51.02
NTS	18	18.24	18.9	19.62
Carpenter				
Singaporean	47.92	53.66	53.13	56.06
Malaysian	45.26	42.19	53.31	46.54
NTS	18	18.63	19.13	20.34
Electrician				
Singaporean	44.3	51.06	57.25	53.32
Malaysian	32.67	41.03	49.68	53.55
NTS	16	17.22	18.75	17.98
Painter				
Singaporean	45.34	56.35	55.24	55.5
Malaysian	46.64	48.16	47.85	52.97
NTS	27.33	20.86	19.17	22.91
Plant operator				
Singaporean	45.34	56.35	55.24	55.5
Malaysian	46.64	48.16	47.85	52.97
NTS	27.33	20.86	19.17	22.91

Plasterer				
Singaporean	43.81	57.19	59.28	57.43
Malaysian	41.13	52.63	57.45	53.97
NTS	20	18.32	19.12	19.57
Plumber				
Singaporean	42.39	56.08	53.8	54.8
Malaysian	43.81	44.21	49.82	49.86
NTS	16.82	18.02	17.98	19.32
Scaffolder				
Singaporean	50	41.57	52.11	52.09
Malaysian	38.13	34.5	46.41	45.55
NTS	19	19.93	18.45	18.73
Steelworker				
Singaporean	50.59	54.32	57.12	53.23
Malaysian	44	45.22	49.49	52.61
NTS	20	19.16	16.97	19.44
Tiler				
Singaporean	52.78	60.24	56.19	58.84
Malaysian	51.4	54.11	55.83	54.56
NTS			18.32	17.01
General worker				
Singaporean	36.4	35.51	35.34	33.78
Malaysian	27.42	28.59	29.6	34.06
NTS	17.86	16.62	18.24	16.96

NTS means non-traditional sources

Source: CIDB (1994c)

Annex A Increase in Tertiary Education Enrollment in Selected East Asian Countries

	2010	1999		percent
	(in thousands)		% Change	in Science
Cambodia	123	22	555	9.2
China	31047	6366	488	...
Indonesia	5001	3126	160	...
Malaysia	1001	473	211	14
Philippines	2651	2209	120	...
Republic of Korea	3270	2838	115	8.8
Thailand	2497	1814	138	8.2
Viet Nam	2020	810	249	-
EAP - East Asia	53049			2.9

Countries with upper middle
income

76886

9.4

Annex B Estimating labour shortage: institutions and information sources

Republic of Korea

The Korea Labor Institute, the research arm of the Ministry of Labor, undertakes annual surveys of enterprises to enquire into skills shortages faced in different industries. The official organ tasked with analyzing the required response to identified shortages lies with 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 analyzes 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 12600 establishments responded to the 2011 survey, a response rate of 89 percent. 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.