The Migration of Professionals in an Integrating East Asia

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Asian professionals have been going to the US, Canada, Australia, the UK and other western European countries over much of the contemporary history of migration.[2] This is partly a legacy of a long history of colonial relationship especially in the case of the Philippines and the US, Malaysia, Hong Kong, Singapore and the UK, and Indonesia and The Netherlands, and also due to strong trade and investment links between them which occasion movements of traders, managers and technicians including intra-company transfers. The desire of many young Asians to acquire advanced degrees from western educational institutions has reinforced these trends, while shortages of skills and talents in the western industrial countries have prompted the adoption of welcoming immigration policies. Compared to other destinations these countries also offer easier access to certain niches of their labour market because of language and early steps taken to recognize professional degrees and qualifications acquired in foreign countries.

The rise of East Asian economies has deflected some of these flows towards destinations within the region and there are signs that the flows are accelerating, albeit from a low base. Expatriate Japanese managers have for some time been ubiquitous in the region's capitals from Seoul to Jakarta, but today one also finds among their ranks Koreans, Taiwanese, Filipinos, Malaysians and Thais. They manage factories in China and Thailand, run banks in Laos and Cambodia, staff hospitals in Singapore and Brunei, and pilot passenger airlines from Hong Kong and Malaysia. The numbers engaged in these movements are difficult to ascertain but they have clearly grown over the past decade and likely to continue into the future in spite of the global economic crisis. Intra-corporate transfers and the movements of professional managers and engineers are bound to grow with the extension of supply chains among East Asian economies as evidenced by the growth in the volume of intra-regional trade in intermediate goods and commodities, related services and direct foreign investments.

Integration of East Asia

According to the Asian Development Bank intra-regional trade in East Asia has grown from less than 35 percent of total trade in 1980 to 54 percent in 2003. This is a lower proportion than in the European Union, but higher than NAFTA's, which is around 46 percent .[3] The growth of intra-regional trade, according to ADB, reflects intra-industry trade in parts, components, semi-finished products and finished goods as multinational

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[2] In this paper we use the terms highly educated, tertiary-educated, highly skilled and professionals interchangeably.

[3] See speech of Mr. Haruhiko Kuroda, President of ADB, before Asia Society Meeting in New York, Sep 2005 (http://www.asiasociety.org/speeches/kuroda05.html).

companies diversify their operations and create production networks across the region. These have led to rapid growth of foreign direct investment flows within the region. Nearly half of total foreign direct investments in China and in the ASEAN countries are said to come from companies in Singapore, Hong Kong and Taipei (China) almost half of the value of recent bond issues by East Asian economies have been purchased by East Asian banks.

More than 60 percent of tourists in ASEAN countries are from East Asia. This growing regionalization is also manifest in the increased labour mobility across countries in the region. It is estimated that there are more than 6 million cross-border migrant workers within East Asia. Thailand has an estimated 1.8 million migrant workers, more than three-quarters of whom are estimated to come from Myanmar, and most of the rest from Cambodia and Lao PDR. Malaysia hosts 1.4 million registered migrant workers from other Southeast Asian countries, 80 percent of whom are from Indonesia, 9 percent from Myanmar, and others from Vietnam, the Philippines, Thailand, and Cambodia. There are about 400 thousand migrants to Japan from Thailand, Singapore, the Philippines, and Malaysia collectively.

The integration of the East Asian economies reflected by these indicators prompt the following questions:

- Is there a redirection of flows of professional migration towards destinations in East Asia?
- Are immigration policies likely to induce significant redirection of flows?
- How rapidly are East Asian countries producing highly-educated workers?

These are relevant questions to raise in view of the obvious importance of skilled human resources in the transformation of the region's economies. The common trajectory taken by the more successful East Asian economies is to gain initial success at low-end manufacturing, and then move eventually to higher-end manufacturing and service industries. Such a move, particularly if occurring rapidly, requires the employment of a greater number of higher-skilled workers than the countries themselves could supply. Since supply has tended to be outpaced by demand, most countries have started to open their door wider to highly-skilled workers, offering them incentives that are typically denied the more abundant lower-skilled workers. Their relative scarcity means that mobile higher-skilled workers are among the largest gainers in the emerging global economy. Many are able to earn in another country a multiple of what they would have earned at home.

Asian Professionals in the OECD Countries

The Organization for Economic Cooperation and Development (OECD) has developed a database that permits a closer examination of these issues. Its recently constructed database on skilled migration for the year 2000 provides a count of tertiary educated

migrants in each OECD country and to trace their countries of origin.[4] Pertinent data on Asians with tertiary education who migrated to the OECD countries have been extracted and shown in Annex Table 1. They include Japanese and Koreans who emigrated to other OECD countries. Of the two OECD Asian member-states only Japan however has reported data on the population of foreign professionals.

At the turn of the century there were about 3.7 million from East Asia with tertiary education who were residing in OECD countries. The most striking feature is their heavy concentration (over 77 percent) in North America, with 8 out of every 10 of them in the US. Japan has less than 5 percent of the total for all OECD countries.

In terms of origin, the largest numbers in OECD countries were from China (including those from Hong Kong and Taiwan), with more than 1.2 million tertiary-educated migrants. The Philippines follows next with 891 thousand tertiary-educated migrants, also heavily concentrated in the US but with substantial numbers in Canada, Australia, and Japan. Vietnam has 347 thousand tertiary-educated migrants in OECD countries, mostly in the US but also in Canada, France, and Australia.[5]

Korea and Japan, themselves in need of and are admitting skilled workers, have substantial numbers of professionals in other OECD countries. Japan has some 277 thousand tertiary educated professionals abroad, largely in the US (77 percent). Korea has 425 thousand tertiary-educated migrants in OECD countries, mainly in the US, Japan, and Canada.

East Asian professionals who have been admitted to Japan numbered some 184 thousand nearly half of whom are Koreans, and the rest are mostly Chinese and Filipinos. Unfortunately no data are available on the Republic of Korea as a destination country.

What kind of work are these professionals doing in foreign countries?

Not all of these highly educated migrants were employed. Some are accompanying spouses and other family members. In the US, those employed migrants from East Asia numbered some 1.7 million. They were spread out in a variety of occupations the more prominent of which were healthcare and technical occupations, management, office and administrative support, and computer and mathematical occupations. See Annex Table 2.

The Japanese were largely in management occupations, running subsidiaries and branches of Japanese companies in the US. Some 63,700 Chinese (from HK, Taiwan, China) were in computer and mathematical science occupations, and another 40,000 in management. Filipinos were more likely to be in healthcare and technical occupations

[4] See http://www.oecd.org/document/51/0,3343,en_2649_33931_40644339_1_1_1_1,00.html

[5] India is also an important source of high-skilled migrants to OECD countries, with almost a million tertiary-educated migrants in the US, UK, and Canada.

and administrative occupations; South Koreans were probably mostly with Korean companies in sales and related occupations, but there were also many health practitioners.

East Asian professionals work in Japan in a number of occupational categories. The Koreans however tend to be more concentrated in white collar jobs performing professional, managerial and sales functions. One of every three Chinese is in IT or another technical job. Tertiary-educated Filipinos are found in a variety of occupations but one of every two is in blue-collar production job. See Annex Tables 3a and 3b.

Has there been a shift to destinations within the region?

There are no comparable statistics on the population of tertiary educated migrants residing in non-OECD countries which would allow us to have a full global picture of where most are going. Moreover, the OECD database is only for the year 2000 or thereabouts, so we cannot say what has changed over time. To answer the question we need to look at other data bases and individual country sources. A study by Docquier and Marfouk which incorporated data for 1990 makes it possible to compare change over ten years to 2000.[6] This study of migrants to OECD countries shows that those with tertiary education rose in number from 12 to 20 million. See Annex Table 3. Among them Asian migrants rose by 83 percent. Those who migrated to North America almost doubled in number from some 2.6 million to 5.1 million but the number who were reported as residents in other Asian countries hardly increased from 295 to 296 thousands. Intra-region migration of East Asians thus appears to be bucking overall trends.

We next look at more recent statistics from immigration authorities of destination countries and from regulatory bodies in origin countries. The numbers of tertiary educated migrants who reported being admitted into another East Asian country or leaving from one to another appear to have grown somewhat in the first half of the current decade but from a very low base. The total number of foreign professional and skilled workers [7] residing in Japan (from all sources) rose from 121 thousand at the end of 2002 to 158 thousand at the end of 2006. See Annex Table 5. The largest share was occupied by 'specialists in humanities' (36 percent), but there was also a very notable increase in the number of intra-corporate transferees. Recent flow data indicate a more rapid increase in the number of professionals and skilled workers. Japan's Immigration Bureau reports that the number of foreign engineers admitted from all countries (but very largely from Asia especially China and Korea) rose from 16,500 in 2000 to 23,200 in 2004.

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[6] Docquier and Marfouk incorporated data on 170 countries for 1990 into the OECD data for 190 countries for 2000. See Docquier, Frederic and Abdeslam Marfouk, 2006, *Measuring the International Mobility of Skilled Workers (1990-2000)* – Release 1.0 CADRE, University of Lille 2 (France) http://www.ires.ucl.ac.be/CSSSP/home_pa_pers/docuier/oxlight.htm . For an analysis of the OECD and Docquier data sets see also Lowell, Lindsay (2007) *Trends in International Migration Flows and stocks, 1975 – 2005, OECD* Social , Employment and Migration Working Papers No.58, Paris.

[7] Excluding entertainers who are also in the category of professionals in Japan's immigration law.

In Singapore the Government reported that the admissions of unskilled foreign workers outnumbered the skilled by about 4.5 to 1 between 1999 and 2004. Work permit holders (issued for unskilled) rose in number by 3.5 percent a year from some 450,000 to 540,000. On the other hand holders of employment passes (for the skilled and professional workers) from all origin countries has fluctuated between 70,000 and 100,000, revealing no particular rising trend in spite of its well-known policy of attracting the best talents in arts and sciences. In the Republic of Korea there was a very significant growth in the number of foreign workers admitted, rising by almost 10 times from 30,500 in 1994 to 297,000 in 2004. Most of them were admitted as unskilled foreign worker trainees. From 2004 to 2007, the number of professionals and skilled workers (with employment visa E1 to E7) grew 16 percent per year to reach 32 thousand in 2007 from 20 thousand in 2004. See Annex Table 6. Growth has been especially strong among foreign language instructors,[8] research professionals, and those under 'special occupations'. However, in contrast to the earlier trend, the number of non-professional foreign workers barely changed over the same period.

In Taiwan Province of China, as of 2006, there were an estimated 15 thousand foreign professionals with employment permit. Of these, 60 percent are from East Asia, mainly from Japan. The preponderant proportion of foreign workers however are blue collar workers from East Asia employed in manufacturing and services. In Hong Kong the annual admission of professional and managerial workers from all origin countries rose steadily but slowly from 16,500 in 1997 to 19,200 in 2004.

Thailand and Malaysia have the largest populations of foreign workers in East Asia. Most of their foreign workers, however, are in low-skill occupations in plantations, petty trading, manufacturing, and services. Those in Thailand are mainly from neighboring Myanmar, Laos and Cambodia, while in Malaysia they come from Indonesia, Myanmar, the Philippines and from South Asia (especially Bangladesh and Nepal). Malaysia has actively sought out foreign professionals to work in its high priority industries but the numbers have remained insignificant compared to the admissions of unskilled or low-skilled migrant workers. In 2008 some 11 thousands foreigners from all countries of origin who were registered under the "expatriates" or professional category.

The circular cross-border movements of professionals are not well tracked by immigration statistics since they are able to move about more easily than others and are often admitted under temporary visit categories. This is especially true of those belonging to one of the countries of ASEAN which has an agreement for visa-free travel for nationals of member-states (with some exceptions like Myanmar). There are a few growth poles for migration in East Asia but these do not represent the overall trend. It has been estimated by some observers, for example, that Shanghai alone already has half a million professionals, managers & technical workers mostly from Hong Kong and Taiwan, but admissions into Japan, Singapore, and Hong Kong have not been impressive in volume and have fluctuated in recent years.

[8] Most are from Anglo-Saxon countries who teach English.

Trends in the temporary migration of professionals from the Philippines offer a glimpse of the phenomenon from an origin country. The data in Annex Table 7 comes from the Philippine Overseas Employment Administration which regulates recruitment and registers Filipino contract workers leaving for employment abroad.[9] Its records show an initial upward trend in the emigration of professional, technical and managerial workers from the Philippines from 65 thousands in 1993 to slightly over 100 thousands in 2002, but the trend was reversed and numbers were down to 44 thousands by 2007.

The available data thus permit of only a few guarded conclusions. The OECD database indicates that the US and Canada are hosting a large population of professionals from East Asia notably from China (including Hong Kong and Taiwan), Japan, Republic of Korea, the Philippines and Vietnam. We know from other sources that many of them arrived only recently.[10] In East Asia individual country statistics on recent admissions of professionals do not follow a uniform pattern – some show rapid increases while others show fluctuations, but in all cases the numbers are much smaller than those reported as residing in the western countries. In other words, from the distribution of professionals among the OECD countries in year 2000 and from data on recent admissions into individual countries in the East Asian region we find nothing to suggest that a significant shift has occurred in the direction of highly-skilled migration flows. We had hypothesized that because of the rapid integration of the East Asian economies there should have been a shift away from traditional destinations in the west towards East Asia, but this is not supported by the evidence available.

Predicting the absorption of foreign workers

To what extent do countries "depend" on foreign sources for their professional workforce? We know that countries in early stages of development tend to import managers and technical workers to start their industries as well as their public services. Their educational institutions are not yet well developed hence they are not in a position to send skilled or educated workers abroad. As countries advance their need to rely on foreign sources for skills will rise just as their capabilities to develop those skills at home improve. They then enter a stage when they experience rising immigration as well as emigration of educated workers. Net migration may be positive or negative depending on circumstances. Eventually they become more or less self-sufficient, and much later even become net "exporters" of skills as their economic interests spread beyond their borders. The driving force is not higher wages abroad but the need to trade or develop subsidiaries or branches abroad. The demographic changes that accompany rising affluence however often lead to declining fertility rates, and eventually a shrinking and ageing work force. This brings in a new era of progressive dependence on foreign sources of labour, first for the unskilled and low skilled, and eventually for the skilled and professional workers as well.

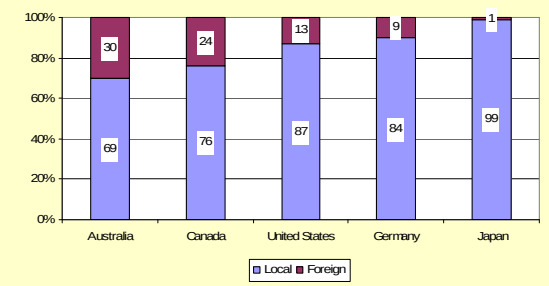
[9] Filipinos leaving the country to settle in another country abroad are not included in these statistics.
[10] Most of them were trained in their origin countries but a significant number did acquire higher education in the countries of immigration upon arrival. Educational institutions in the US, Canada, Australia, and the UK have been referred to at times as immigration "gatekeepers".

This highly simplified paradigm does not take into account a host of other factors, most notably a country's geography and history, which may have stronger impacts on the patterns of migration than simply demographics. For example, Canada's proximity to the US and close political relations have led to a virtually integrated labour market for the two countries. Canada loses a good proportion of her talents (i.e. athletes, artists, medical graduates) to the US in spite of very similar standards of living.

In this paper we do not attempt to explore the evidence on the experience of countries at different stages of development. Such an exercise demands data which are not readily available. Instead we confine ourselves to exploiting available data from OECD in order to see if dependence on foreign sources of skilled labour can be predicted by looking at possible determinants.

From the OECD data base we are able see the degree to which the rich countries have absorbed foreign professionals into their workforces. In Fig. 1 we compare the share of local and foreign-born among skilled workers in major destination countries - Australia, Canada, the US, Germany, and Japan. Among them Australia has the largest proportion (30 percent) of foreign-born among her skilled workforce. Canada follows with 24 percent and the US with 13 percent. By contrast, only 1 percent of Japan's skilled workforce are foreigners. Indeed Japan accounts for an insignificant proportion of the total tertiary educated migrants in the OECD countries.

Fig. 1 Share of Local and Foreign-born among Skilled Workers Source:OECD



From Figure 1 it appears that Japan, among the world's richest economies, is an outlier in terms of its use of foreign labour. How much of an outlier is it?

Since there is no "norm" on which to base an answer to the question we have to develop a kind of paradigm to estimate, on the basis of past experience of many countries, how much foreign labour will be needed given certain conditions. These conditions are largely economic and relate to the labour market. Excess demand for foreign labour depends, on the one hand, on how fast an economy is growing and how dependent that growth is on skilled labour, and on the other, on the size and growth of its own native workforce, among others. This amounts to a kind of "prediction model" indicating what would be the likely degree of dependence on foreign labour should certain conditions exist. This

likely degree of dependence can thus be treated as a norm with which the actual degree of dependence can be compared.

We have constructed such a model combining data from the OECD, the World Bank's Word Development Indicators, and the UN's World Population Projections. The model is described below.

Prediction Model:

We hypothesize that the share of foreigners in a country's stock of total and of skilled workers is a function of several factors:

- *per capita income level* and *growth,*
- *economic* structure (share of GDP, growth rate)
- *demographic structures* (share of population 15-64 to total population)
- *labour market tightness(*average unemployment *2001-2005)*

(1) Foreign workers' share of total workers

The first model makes no distinction by skill among foreign and local workers.

Share of foreign workers among total workers in OECD countries = f(per capita GDP level and growth, economic structure, demographic structure, labour market tightness).[11]

After eliminating insignificant variables, the regression analysis yields the following final model :

Table 1 Prediction Model: Foreign Worker Share

fwrkr_sh	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
lnpcgdp_us	8.217883	3.396933	2.42	0.028	1.016708	15.41906
ser_sh	.8571361	.2877927	2.98	0.009	.2470429	1.467229
ind_gr	2.360702	1.055975	2.24	0.040	.1221357	4.599269
pop_1564	2.690094	1.022545	2.63	0.018	.5223954	4.857793
unemp	-1.109055	.4492474	-2.47	0.025	-2.061417	-.1566932
_cons	-305.776	99.99992	-3.06	0.008	-517.7664	-93.78568

Linear regression Number of obs = 22

[11] Variable definitions

Dependent Variables	
fwrkr_sh	share of foreign workers to total workers
fprof_sh	share of foreign skilled workers to total skilled workers
Independent Variables	
lnpcgdp_us	natural logarithm of per capita GDP (US$ 2000)
pcgdp_gr	average per capita GDP growth rate 2001-2205
ind_sh	share of industry sector to total GDP
ind_gr	average annual growth rate of industry sector 2001-2205
ser_sh	share of services sector to total GDP
ser_gr	average annual growth rate of services sector 2001-2205
pop_1564	share of population 15-64 to total population
unemp	average unemployment rate 2001-2005

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F(  5,    16) =    6.39
Prob > F      =  0.0019
R-squared     =  0.7118
Root MSE      =  6.0243
```

The variables that emerged as significant predictors of the share of foreign workers are the level of per capita GDP, the share of services in total output, the growth rate of industry, the share of the working age population in total population, and the unemployment rate. The share of services in output is taken as a measure of the "knowledge economy" or how far an economy has advanced technologically. The signs of the coefficients are as expected –the more affluent a country is, the more advanced its economy is, the faster the growth of the relatively more labour-dependent industrial sector, the tighter the labour market is, and the smaller the share of the working age population, the higher the expected share of foreign workers in the total workforce. Note the model is highly significant and the R^2 is high at 0.71.

Table 2 below compares the predicted values with actual shares of foreign workers in the labour force around the year 2000 for OECD countries. Most of the countries have an actual share which is close to what is predicted by the model. The most notable exception is Japan (1.1 vs. 11.8) where the actual share of foreign workers is less than a tenth of what is predicted given its economic structure and growth, the tightness of its labour market, and its demographic structure.

Table 2. Actual vs Predicted Share of Foreign Workers to Total Workers

Country	Actual	Predicted	Mean Absolute Proportional Error
Australia	24.5	19.1	0.2
Austria	13.8	17.7	0.3
Belgium	9.7	9.3	0.0
Canada	20.5	15.8	0.2
Czech Republic	4	5.7	0.4
France	10.8	10.8	0.0
Germany	12.3	7.6	0.4
Greece	13.6	13.5	0.0
Hungary	2.9	7.7	1.7
Ireland	12.1	-	-
Italy	5	4.1	0.2
Japan	1.1	11.8	9.7
Luxembourg	42.6	35.9	0.2
Mexico	0.4	-	-
Netherlands	9.8	-	-
New Zealand	19.8	12.3	0.4
Norway	7.5	4.5	0.4
Poland	0.9	-4.4	5.8
Portugal	8.5	3.7	0.6

Slovak Republic	2.6	6.5	1.5
Spain	6.8	12.2	0.8
Sweden	10.9	16.8	0.5
Switzerland	25.3	20.2	0.2
Turkey	1.8	-	-
United Kingdom	8.8	12.8	0.4
United States	13.6	21.9	0.6

Note: No predicted value indicates missing value for at least one explanatory variable.

(2) Foreign skilled workers' share of total skilled workers

The second model looks only at skilled workers, foreign and local. We postulate the same determinants as above for the share of foreigners in the total skilled workforce of each country.

After eliminating insignificant variables, the regressions yielded the following final model:

Regression Model: Share of foreign skilled workers among total skilled workers in OECD countries = f(per capita GDP level and growth, economic structure, demographic structure, labour market tightness)

Table 3 Prediction Model: Foreign Skilled Worker Share

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------------------------------------------------------------------------------
             |               Robust
    fprof_sh |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      ser_sh |   1.139978   .4683799     2.43   0.025     .1596477    2.120308
    pop_1564 |   3.137316   1.334729     2.35   0.030      .343695    5.930936
       unemp |   -2.01448   .5046765    -3.99   0.001     -3.07078   -.9581802
       _cons |  -261.9402   111.9845    -2.34   0.030    -496.3264   -27.55407
------------------------------------------------------------------------------
Linear regression                                      Number of obs =      23
                                                       F(  3,    19) =    6.17
                                                       Prob > F      =  0.0041
                                                       R-squared     =  0.5462
                                                       Root MSE      =  7.9219
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The variables that emerged as significant predictors of the share of foreign skilled workers to total skilled workers are the share of services in total output, the share of the working age population in total population, and the unemployment rate. As a measure of the level of advancement of an economy, it is assumed that the higher share of services to total output the greater its need for higher-skilled workers. The signs of the coefficients are as expected. Note the model is highly significant and the R^2 is still relatively high at 0.55.

Table 4 below compares the predicted values with actual shares of foreign skilled workers to total skilled workers. Most of the countries have an actual share which is

reasonably close to what is predicted by the model. Once again, the most notable exception is Japan (1.0 vs. 13.3) where the actual share of foreign workers is less than a thirteenth of what is predicted given its economic structure, the tightness of its labour market, and its demographic structure.

Table 4. Actual vs Predicted Share of Foreign Skilled Workers to Total Skilled Workers

Country	Actual	Predicted	Mean Absolute Proportional Error
Australia	30.0	18.3	0.4
Austria	12.5	19.2	0.5
Belgium	9.6	12.3	0.3
Canada	23.8	15.9	0.3
Czech Republic	5.9	13.6	1.3
France	11.0	11.2	0.0
Germany	9.6	9.0	0.1
Greece	11.0	11.5	0.0
Hungary	5.1	17.0	2.3
Ireland	17.0	11.2	0.3
Italy	5.5	8.1	0.5
Japan	1.0	13.3	12.3
Luxembourg	49.1	35.3	0.3
Mexico	0.9	-	-
Netherlands	10.0	-	-
New Zealand	22.6	12.2	0.5
Norway	7.4	1.0	0.9
Poland	1.5	-3.8	3.5
Portugal	15.5	17.0	0.1
Slovak Republic	3.5	2.4	0.3
Spain	6.0	10.5	0.8
Sweden	11.3	11.8	0.0
Switzerland	25.6	22.1	0.1
Turkey	3.9	-	-
United Kingdom	14.6	18.8	0.3
United States	13.0	24.3	0.9

Note: No predicted value indicates missing value for at least one explanatory variable.

Unfortunately, Korea, a more recent OECD member, is not part of the database. But were it part of the database, it would likely also show that the country to be an outlier in its relatively much lower admission of foreign workers in general, and high-skilled workers in particular. Based on its record of foreign professional and technical workers

residing in Korea in 2000 it probably accounts for a mere 0.03 percent of the total residing in all OECD countries.[12]

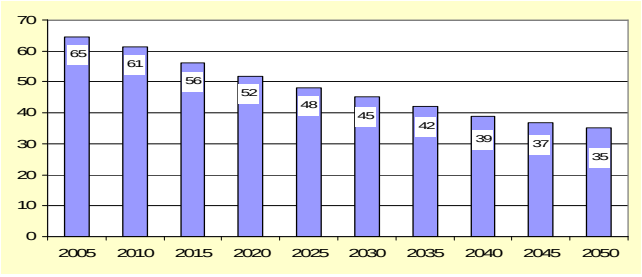
Demographic outlook on the supply of workers

The relatively insignificant proportion of foreigners in the workforce of Japan and Korea is likely to change in the coming decades. An important factor likely to lead to a relaxation of immigration policies is fertility decline and ageing of the workforce which will also be felt by other East Asian countries like Singapore and Thailand.

The younger cohorts of the population of the region's most economically advanced countries have started to shrink in number. Fig. 2 shows the decline from 2005 to 2050 of the combined young population (defined as those from 15 to 39 years of age) of Japan, Singapore, Hong Kong and Republic of Korea. Their young workforces are projected to decline rapidly by 9 million from 2010 to 2020.

Given its fertility decline Japan is already facing a gradual decline in labor force for the next 20 years and a more rapid decline almost 20 years later. Iguchi estimated that the decline of labor force in Japan is around 200,000 rising gradually to 300,000 persons per year until 2020. By 2030 the decline will be much higher at more than 400,000 a year, rising further to 500,000 by 2040. These predictions assume that people are able to work up to 70 years of age and that women workers will have no problems between child-bearing and pursuing their occupational career.[13]

Fig.2 Projected Population 15-39 in Developed East Asian Economies
(HK, Singapore, Korea, Japan) in Millions



Projections of population change in selected countries by the UN Population Division after taking into account fertility decline shows that Japan will experience a sharp drop of 21.7 million people over the half century between 2000 and 2050 if zero immigration is assumed. The share of those aged 65 years and over in the total population will rise from 17 percent to 32 percent making it only next to Italy as the most aged population among the OECD

[12] See Lowell

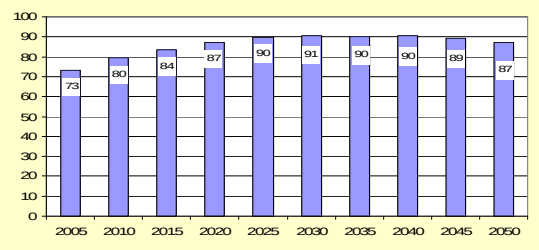
[13] Iguchi, Y. *Possibilities and Limitations of Japanese Migration Policy in the Context of Economic Partnerships in east Asia*, UN EXPERT GROUP MEETING ON INTERNATIONAL MIGRATION AND DEVELOPMENT, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, New York, 6-8 July 2005.

countries. By comparison the US will still see an increase in its population by 71 million and its aged population representing 22 percent of the total by 2050.[14] Whether or not a decision will be made to open immigration doors more widely to slow down the population ageing process remains to be seen. For societies not used to facing the challenges posed by multi-ethnicity the social adjustments required cannot be underestimated. However, continuation of the present policy of very restrictive immigration is likely to entail a heavy cost in terms of foregone incomes and welfare as the most productive segments of the workforce shrinks, and those employed are made to bear the burden of supporting a third of the population that retires.

We have already seen some policy shifts in the region. Despite an avowed earlier policy to reduce dependence on foreign workers especially through industrial restructuring and technology upgrading Singapore was forced to open its borders even more widely because of declining birth rates and an ageing population. Today a third of her workforce are non-Singaporeans. Even with a permanent immigration of 50,000 over the next 30 years, economists and demographers project that the annual growth rate of the resident labour force will drop from about 2 percent in 2004 to less than 1 percent from 2020. According to Hui[15] this means that increases in the labour force will drop to about 28,000 from 2020 making it difficult for Singapore to meet its own long-term economic growth targets.

By contrast, the young populations in the more populous developing countries of East Asia are expected to continue rising up to 2020. Fig. 3 shows the combined young populations of Indonesia, the Philippines, and Vietnam from 2005 to 2050. Growth of their young populations is expected to continue until their combined numbers reach 90 million in about 2025, after which their numbers will stabilize. A decline is not expected until after 2045.

Fig. 3 Projected Population 15-39 in Developing East Asian Economies
(Indonesia, Philippines, Vietnam) in Millions



[14] See Replacement Migration: Is It a Solution to Declining and Ageing Populations? New York: United Nation, Population Division of the UN (2001).

[15] See Hui, Weng Tat (2004). "Balancing Employment of Foreigners and Employment for Singaporeans". Paper prepared for presentation at the Institute of Policy Studies Conference on "Singapore Perspectives 2004: At the Dawn of a New Era", 13 January.

Of the three countries, Vietnam is closest geographically, culturally, and linguistically to Japan, Korea and Taiwan (Province of China). Pressures for integration of its labour markets with those of the latter are likely to become strong in the coming decades especially if reinforced by integration of their markets for goods and capital. In fact the flows of unskilled Vietnamese workers to Korea and Taiwan have been accelerating in recent years but supply scarcities in Vietnam for skilled and educated workers have restrained their movements.

East Asian countries have invested heavily in education which at first glance may be seen to explain the relatively small proportion of foreigners among their skilled workforces. Japan still produces over a million tertiary education graduates each year, while Korea produces another 605 thousand. The East Asian region as a whole produces more than 9 million tertiary graduates every year. China alone accounts for about 5.6 million tertiary graduates or slightly over 60 percent. Four ASEAN countries – Indonesia, the Philippines, Thailand and Malaysia account for another 1.7 million. Table 5 below provides the country breakdown.

Table 5 Annual Tertiary Graduates, Most Recent Year

Country	Number	Year
China	5,622,795	2006
Indonesia	612,975	2004
Japan	1,067,939	2006
Malaysia	183,940	2005
Philippines	410,067	2006
Korea	605,160	2006
Thailand	483,924	2006
Vietnam	182,489	2005

Source: UNESCO

In some countries there are signs of an excess supply of workers with tertiary degrees relative to demand. Filipino college graduates are, for example, twice as likely to be unemployed as elementary school graduates. The existence of a growing pool of unemployed tertiary education graduates explains the pressures to seek employment in foreign countries. Indeed some governments have adopted foreign employment programs because of the problems with soaring numbers of the educated unemployed. Over the past 5 years more and more Filipino professionals have left for Europe and North America for employment. Paradoxically, their employment in East Asian countries has been on a decline.

The high unemployment among the educated may not, however, be simply on account of an excess supply of skills. Recent studies of the ILO and a survey by the Economist Intelligence Unit reveal that many countries in the region in fact face severe skill shortages. These indicate a problem with mismatches between skills demanded and skills

supplied.[16] The ILO conducted Workplace Practices Surveys in China, India, and Malaysia in 2007, and in Republic of Korea in 2008. These surveys focused on fast growing industries in each country and within these, the leading domestic companies. The surveys revealed that more than 70 percent of surveyed employers in Malaysia and China reported difficulty in recruiting suitable employees. [17] The biggest shortages noticed were in managerial, technical, and professional occupations.

The EIU conducted two "Asia Business Outlook Surveys", one at the end of 2006 and another at the end of 2007, among the members of its corporate network in the region.[18] The findings are consistent with those of the ILO surveys in that companies found lack of qualified workers, especially middle level managers, as a serious constraint to growth. The most affected sectors were ICT and professional services, and electronics and engineering.

Various other studies have shown that there is a need to improve the quality of education in the region to provide the cognitive and professional skills necessary for raising productivity and competitiveness. These skills appear to be unevenly developed in the region, with some Southeast Asian countries faring poorly in comparison with member countries of the OECD. For example, Indonesia and Thailand participated in the Programme for International Student Assessment (PISA) surveys to assess the extent to which 15 year old students have acquired key competencies and cognitive skills for work and daily life as an adult. The Indonesian and Thai students tested in math, sciences and reading scored below the average for 28 middle-income economies, and significantly below the OECD average in all three subject areas.[19]

Comparing attractiveness of immigration policies

Do the East Asian countries have immigration policies which welcome the highly educated? How do their policies compare with those in the western countries?

By and large, one can say that from the standpoint of immigration policy East Asian countries are less attractive destinations for the migrant professionals than their western counterparts. A country that offers the possibility of permanent settlement (and thus also the possibility of economic and social integration) will, *ceteris paribus*, be a more attractive destination than those which do not. Those admitted for limited periods of stay generally enjoy less rights and entitlements under national laws than those admitted for settlement. In East Asia however, almost all countries offer only temporary admission to

[16] See ILO, Labour and Social Trends in ASEAN 2008: Driving Competitiveness and Prosperity with Decent work, Regional Office for Asia and Pacific, Bangkok.
[17] Interestingly, the survey in India revealed that the ICT and pharmaceutical industries had the greatest difficulties filling up vacancies.
[18] EIU surveyed 241 companies in the first survey and 600 in the second.
[19] See OECD: PISA 2006: Science competencies for tomorrow's world: Vol 1: Analysis, Paris as quoted in ILO, Labour and Social Trends in ASEAN 2008.

foreign nationals, regardless of skill,[20] and admission programs sometimes restrict them to certain nationalities.

While there are also no equivalent immigration countries in Europe, most countries do make it possible for foreigners to qualify for permanent residence and eventually for citizenship after a number of years of legal residence. Germany introduced a number of years ago a special admission program to entice foreign professionals including from third countries[21] to work in the country. There are now more opportunities for foreign students to pursue tertiary level studies in Germany in what is seen as a move to attract foreign talents into the country. Foreign graduates from German universities can now stay in Germany for up to one year to find a job. In Denmark foreigners with a specific job offer with a yearly salary of at least EUR 50,300 can obtain a residence permit. In Ireland a "Green Card" program was introduced in 2007 for highly-skilled employees in most occupations with an annual salary above EUR 60,000. After 2 years of legal stay they can apply for permanent residence.

An emerging trend in policies to attract professionals is the increasing transparency of criteria and procedures for admission. Canada pioneered the adoption of the points-based system of which there are now variants being followed by Australia and the UK. Their common feature is that admission is based on a clearly stated criteria for each of which points have been assigned. In principle each candidate's admission depends on how well he or she scores on certain qualifications like experience, education, language skill, health condition, having a close family member permanently residing in the country, etc. The UK boasts that interested foreign professionals can already get an idea of how they score simply by visiting the migration office website on the internet and supplying the required information.

Australia admits foreigners where there is demand for their particular occupational skills, outstanding talents or business skills. Independent migrants or those not sponsored by an employer or relative in Australia must pass a points test which includes skills, age and English language ability. One may also be admitted as so-called "Skilled-Australian Linked" if one passes a points test on skills, age and English ability and receive additional points for sponsorship by relatives in Australia.[22]. Australian employers may nominate (or 'sponsor') personnel from overseas through the Employer Nomination Scheme (ENS), Regional Sponsored Migration Scheme (RSMS) and Labour Agreements. The Government encourages successful business people of foreign nationality to settle permanently in Australia and develop new business opportunities, and also has a separate scheme for distinguished individuals with special or unique talents of benefit to Australia.[23]

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[20] The exception is Singapore which offers permanent residence status to certain categories of professionals deemed in short supply.

[21] Those who are not nationals of other EU member states.

[22] The shortage of skills in some regions led to the so-called "Regional Linked Admissions" which are not tested by points as long as one is sponsored by relatives in regional areas

[23] See Hugo Graeme, *Australia Country Report*, Workshop on Migration and Labor Markets in Asia jointly sponsored by the Japan Institute of Labor, OECD, and ILO, Tokyo, 2005.

Immigration policies in the East Asian countries clearly dichotomize between skilled and unskilled. There is generally a more liberal approach to the entry of skilled compared to unskilled foreign workers. In Hong Kong, professionals satisfying certain age, education and skill requirements are allowed to enter even without a prior job offer under the "Admission of Talents scheme".[24] In both Japan and Korea, skilled migrant workers in specific categories are admitted and given multiple entry visas, are entitled to extend their stay, move into new jobs, and more or less enjoy the same rights as local workers. In both Singapore and Malaysia, high-skilled workers enter through a different visa than lower-skilled workers, and are given more privileges, such as the right to bring dependents (depending on income) and the opportunity to become permanent residents. Foreign professionals who want to work or do business in Singapore and are able to command a monthly basic salary of more than S$2500 are issued "Employment Passes". EP holders are not subject to the limitations imposed by the Employment of Foreign Workers Act hence are allowed to bring their families to Singapore and are eligible for consideration for permanent residency after a short stay. In early 2003 the plans to make Singapore a hub for medical services prompted the Singapore Medical Council to approve the direct hiring of foreign doctors by private hospitals and clinics. Previously these were required to be supervised for one year in public hospitals and clinics before they could register with the council and work in the private sector. [25]

Japan has traditionally adhered to a long-standing policy of not admitting unskilled foreign workers.[26] But the need to remain competitive in the global economy is prompting some changes. In 2004 the Japanese Government decided to make it possible for foreigners who have graduated from Japanese universities to search for jobs. Students of graduate schools, universities, colleges and vocational colleges in Japan with valid "college student" status could from then on apply for a change in their status of residence to "engineer", "specialist in humanities/international service" or another status that enables them to work.[27] They would need to have the necessary qualifications and their academic background must satisfy the requirements of the status applied for.

In a similar vein, the Japanese Government adopted a program to promote acceptance of foreign researchers and foreign information processing engineers. Adopted initially as an experiment and implemented in the Special Zones for Structural Reform until the end of fiscal year 2005, the program has since been implemented nationwide. The Immigration Control and Refugee Recognition Act was correspondingly amended in 2006 to allow foreigners to be employed in designated research activities, but only for temporary period since the maximum term of residence was only extended from three years to five years.

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[24] Hong Kong also had a special scheme for professionals from the mainland called the "Admission of Mainland Professionals".

[25] See Yap, Mui-Teng, *Singapore Country Report*, Workshop on Migration and Labor Markets in Asia jointly sponsored by the Japan Institute of Labor, OECD, and ILO, Tokyo, 2005.

[26] The only exceptions are foreign nationals of Japanese descent or the so-called *Nikkeijin* who may stay permanently if they belong the second generation Japanese even if unskilled, or after meeting certain requirements if they belong to third generation Japanese descent.

[27] Japan's Immigration Law allows the admission of foreign professionals under 27 categories.

Policies of East Asian countries towards the less skilled are clearly aimed at precluding settlement or more permanent stay. The countries limit the stay of the less skilled to only a few years, deny them the right to bring their families with them, restrict their right to change employers, and exclude them from social security altogether or to entitlement to old age benefits under social security. In Singapore IT and biotechnology researchers are encouraged to stay and enjoy the same rights as Singaporeans but domestic helpers risk losing their work authorization if they become pregnant.

Conclusions:

Our examination of available evidence on the movements of the highly skilled in East Asia has led us to conclude that they still largely go outside the region, in particular to North American destinations. While demographic trends suggest that there will be more pressures in the future for intra-regional movements, their numbers in the rich countries of the region have so far remained unimpressive and changes over the last decade do not point to any particular trend. The small share of foreigners in the skilled workforce of Japan (and probably also the Republic of Korea) appears to be due to reasons other than those that can be explained by level and rate of per capita income growth, structure of the economy, the age structure of the population, or tightness of the labour market. In much of the literature this has frequently been attributed to cultural factors (like Japanese preference for maintaining a homogeneous society) but we are in no position to say if this is true. What our prediction model found is that Japan differs markedly in this respect from other economically advanced countries.

Japan and the Republic of Korea are faced with prospects of rapidly declining work forces. Whether or not this will lead to a choice of opening up their borders to more workers remains to be seen. Our comparison of the immigration polices of East Asian countries with those of the advanced countries in North America and western Europe suggest that they are unlikely to win in the global competition for brains and talents. The latter are offering not only guarantees of equal treatment but also easier access to labour market opportunities and eventually the option of permanent settlement. Pressures will inevitably mount in the East Asian countries to change immigration policies in the future so as to improve access to the skilled and educated human resources that are so vital to replacing their ageing workforces and to remaining competitive in the global economy.

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Annex Table 1. Migrants with Tertiary Education from East Asia to OECD Countries

	Country of Destination										
Country of birth	United States	Canada	Australia	Japan	United Kingdom	France	Netherlands	New Zealand	Italy	Others	Total
Brunei	322	1,395	692	0	849	20	0	48	2	30	3,373
China	508,333	127,260	45,405	62,863	19,943	7,851	0	8,703	2,051	17,425	807,169
Hong Kong	0	99,480	21,628	0	22,273	468	0	2,421	0	845	147,354
Indonesia	34,572	5,260	15,232	2,284	2,683	1,190	51,247	1,134	263	3,007	118,948
Japan	211,275	14,395	8,883	0	17,299	8,745	0	1,389	2,927	11,908	281,565
Cambodia	19,642	3,140	2,092	89	257	10,413	0	273	20	528	36,861
South Korea	351,119	38,530	11,359	90,309	6,117	5,534	0	2,424	1,425	9,477	520,875
Lao PDR	25,854	2,725	1,422	88	164	6,781	0	66	7	362	37,764
Myanmar	15,264	1,765	3,065	1,293	2,986	219	0	207	41	170	25,103
Malaysia	24,449	10,525	34,852	1,118	24,330	502	0	4,242	79	1,895	102,719
Philippines	659,852	123,070	36,195	21,608	17,952	1,751	0	3,681	7,053	15,491	891,343
Singapore	11,862	4,785	12,787	463	13,719	351	0	1,284	89	976	46,805
Thailand	53,295	1,740	5,960	3,120	4,387	1,340	0	675	294	3,608	76,926
Timor-Leste	0	0	904	0	0	0	0	0	12	452	1,368
Taiwan, China	213,037	33,460	6,970	0	4,085	1,642	0	2,214	221	1,457	263,914
Vietnam	237,142	34,560	24,856	1,159	4,163	30,343	0	435	338	9,748	347,249
Total	2,366,018	502,090	232,302	184,394	141,207	77,150	51,247	29,196	14,822	77,379	3,709,336
India	662,121	124,855	42,510	2,589	132,812	5,416	0	7,089	2,736	16,685	996,813

Source: OECD Database

Annex Table 2. Distribution of Employed Tertiary-educated Migrants from East Asia to the US by Occupation

Occupation	Brunei	China	Indonesia	Japan	Cambodia	South Korea	Lao PDR	Myanmar	Malaysia	Philippines	Singapore	Thailand	Taiwan, China	Vietnam	Total East Asia		India
1 Management occupations	24.8	11.1	12.5	19.9	7.1	12.9	5.5	9.5	14.8	6.7	17.2	11.3	16.1	7.1	10.8		
2 Business and financial operations occupations	8.3	8.8	10.1	7.9	8.7	6.8	7.1	9.0	8.4	8.7	11.3	6.8	9.9	8.7	8.5		
3 Computer and mathematical science occupations	12.0	17.6	11.2	5.5	9.9	5.7	7.0	7.5	15.0	4.6	13.6	6.9	16.8	13.2	10.0		
4 Architecture and engineering occupations	14.5	9.9	8.8	5.7	8.7	4.2	7.4	9.2	10.8	4.2	8.1	5.5	9.6	13.5	7.3		
5 Life, physical, and social science occupations	0.0	10.4	3.3	4.5	1.8	3.1	1.7	3.6	4.1	1.6	4.6	2.3	4.6	2.4	4.4		
6 Community and social services occupations	0.0	0.9	1.3	1.7	3.8	3.3	5.0	0.8	1.6	1.1	1.6	1.2	1.0	1.7	1.5		
7 Legal occupations	0.0	0.8	0.7	1.5	0.6	1.5	0.7	0.3	0.9	0.7	1.5	1.1	1.0	1.0	1.0		
8 Education, training, and library occupations	0.0	9.5	5.9	9.7	5.8	7.3	7.1	3.7	7.4	3.0	8.3	6.5	6.6	3.6	6.2		
9 Arts, design, entertainment, sports, and media occupations	4.1	2.3	3.1	5.6	2.6	4.0	1.8	1.6	3.0	1.4	3.9	3.1	2.8	2.3	2.6		
10 Healthcare practitioner and technical occupations	10.3	6.7	8.9	6.0	8.2	10.1	5.7	16.4	10.1	26.2	5.8	11.8	7.8	9.4	13.4		
11 Healthcare support occupations	0.0	0.6	1.5	0.6	1.4	0.7	1.4	1.6	0.5	3.9	0.7	1.0	0.4	1.2	1.7		
12 Protective service occupations	4.1	0.2	0.4	0.9	0.5	0.5	1.2	0.3	0.5	0.9	0.2	0.4	0.2	0.6	0.6		
13 Food preparation and servicing related occupations	0.0	1.9	3.8	2.2	1.9	2.5	1.9	2.7	3.4	1.6	1.4	9.2	1.2	1.5	2.0		
14 Building and grounds cleaning and maintenance occupations	0.0	0.4	0.8	0.6	1.1	0.8	1.1	0.6	0.7	1.4	0.5	1.2	0.2	0.7	0.8		
15 Personal care and service occupations	0.0	0.9	1.4	2.1	2.0	2.1	1.5	1.0	1.1	2.1	0.9	1.8	0.8	2.9	1.7		
16 Sales and related occupations	3.3	6.0	8.2	9.5	7.8	16.4	7.2	7.7	6.5	6.2	8.8	9.0	9.1	7.0	8.3		
17 Office and administrative support occupations	18.6	7.8	10.7	10.9	12.6	8.7	13.9	12.9	7.9	16.4	8.0	12.0	8.8	10.3	11.3		
18 Farming, fishing, and forestry occupations	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1		
19 Construction and extraction occupations	0.0	0.3	0.9	0.7	1.1	1.0	1.1	0.5	0.3	0.7	0.0	0.6	0.2	0.7	0.6		
20 Installation, maintenance, and repair occupations	0.0	0.9	1.3	1.1	3.2	1.2	3.8	2.7	0.8	1.9	0.9	1.6	0.8	3.2	1.6		
21 Production occupations	0.0	2.3	3.2	2.1	9.5	5.8	15.2	7.0	1.5	4.7	1.2	5.0	1.7	7.7	4.3		
22 Transportation and material moving occupations	0.0	0.6	1.7	1.1	1.6	1.1	2.3	1.2	0.6	1.6	0.8	1.7	0.5	1.1	1.1		
23 Military specific	0.0	0.0	0.1	0.3	0.1	0.2	0.3	0.0	0.0	0.2	0.4	0.2	0.1	0.1	0.2		
Total (#)	242	362,312	22,410	142,865	14,671	229,359	19,136	11,222	18,873	486,051	8,465	36,264	149,446	180,138	1,681,454		48

Source: OECD Database

Annex Table 3. Regional Distribution of All Adult Migrants with a Tertiary Education by Source and Receiving Region

Source Area	Receiving Area						
	Europe	Northern America	Latin America and the Carribean	Asia	Oceania	Table Total	Number of residents
	2000						
Total	23.6	64.8	0.7	2.4	8.5	100	20,082,686
Europe	36.7	49.9	0.6	1.6	11.3	100	6,686,361
Northern America	24.9	62.1	4.6	2.3	6.1	100	947,801
Latin America and the Carribean	8	88.3	1.3	1.4	1	100	3,655,136
Asia	14.5	73.1	0.1	4.2	8	100	7,041,367
Oceania	22.4	27.2	0.1	0.7	49.6	100	364,055
Africa	47.8	44.5	0.1	0.1	7.6	100	1,387,966
	1990						
Total	20.3	64.9	1	3.2	10.7	100	12,086,508
Europe	27.2	57.2	0.8	0.9	13.9	100	4,803,501
Northern America	19.1	67.2	4.8	2.9	6	100	722,634
Latin America and the Carribean	7.9	87.3	2.2	1.2	1.5	100	1,856,287
Asia	13.5	69	0.2	7.7	9.6	100	3,836,581
Oceania	15.3	28.5	0.1	0.8	55.3	100	215,591
Africa	46.8	43.2	0.1	0.1	9.8	100	651,916

Source: Lowell, L. (2007) *Trends in International Migration Flows and stocks, 1975 – 2005, OECD* Social , Employment and Migration Working Papers No.58, Paris.

Annex Table 4a. Employed Tertiary-educated Migrants from East Asia to Japan by Occupation

Table 4a. Employed Tertiary-educated Migrants from East Asia to Japan by Occupation

Occupation	China	Indonesia	Cambodia	Korea	Lao PDR	Myanmar	Malaysia	Philippines	Singapore	Thailand	Vietnam	Total East Asia		India
1 Agricultural, forestry and fisheries workers	189	29	0	115	2	2	4	179	0	29	5	554		4
2 Clerical and related workers	6,282	114	2	12,600	9	65	149	663	80	151	43	20,158		231
3 Managers and officials	1,297	4	0	4,925	0	4	25	41	17	18	9	6,340		113
4 Production process workers and labourers	9,165	895	25	9,008	26	213	172	5,990	32	788	510	26,824		269
5 Professional and technical workers	14,052	244	18	15,091	11	76	232	1,291	97	224	146	31,482		761
6 Protective service workers	21	5	0	114	0	2	1	7	0	3	1	154		2
7 Sales workers	5,109	60	2	12,751	2	65	103	583	34	126	54	18,889		296
8 Service workers	4,141	80	4	7,545	4	552	52	2,491	10	270	33	15,182		124
9 Workers in transport and communications	171	4	2	905	1	1	6	92	2	5	6	1,195		4
10 Workers not classified by occupation	1,477	44	7	1,736	4	72	14	467	8	116	31	3,976		53
Total	41,904	1,479	60	64,790	59	1,052	758	11,804	280	1,730	838	124,754		1,857

Source: OECD Database

Annex Table 4b. Distribution of Employed Tertiary-educated Migrants from East Asia to Japan by Occupation

Occupation	China	Indonesia	Cambodia	Korea	Lao PDR	Myanmar	Malaysia	Philippines	Singapore	Thailand	Vietnam	Total East Asia		India
1 Agricultural, forestry and fisheries workers	0.5	2.0	0.0	0.2	3.4	0.2	0.5	1.5	0.0	1.7	0.6	0.4		0.2
2 Clerical and related workers	15.0	7.7	3.3	19.4	15.3	6.2	19.7	5.6	28.6	8.7	5.1	16.2		12.4
3 Managers and officials	3.1	0.3	0.0	7.6	0.0	0.4	3.3	0.3	6.1	1.0	1.1	5.1		6.1
4 Production process workers and labourers	21.9	60.5	41.7	13.9	44.1	20.2	22.7	50.7	11.4	45.5	60.9	21.5		14.5
5 Professional and technical workers	33.5	16.5	30.0	23.3	18.6	7.2	30.6	10.9	34.6	12.9	17.4	25.2		41.0
6 Protective service workers	0.1	0.3	0.0	0.2	0.0	0.2	0.1	0.1	0.0	0.2	0.1	0.1		0.1
7 Sales workers	12.2	4.1	3.3	19.7	3.4	6.2	13.6	4.9	12.1	7.3	6.4	15.1		15.9
8 Service workers	9.9	5.4	6.7	11.6	6.8	52.5	6.9	21.1	3.6	15.6	3.9	12.2		6.7
9 Workers in transport and communications	0.4	0.3	3.3	1.4	1.7	0.1	0.8	0.8	0.7	0.3	0.7	1.0		0.2
10 Workers not classified by occupation	3.5	3.0	11.7	2.7	6.8	6.8	1.8	4.0	2.9	6.7	3.7	3.2		2.9
Total	41,904	1,479	60	64,790	59	1,052	758	11,804	280	1,730	838	124,754		1,857

Source: OECD Database

Annex Table 5 Japan stock of foreign workers by admission category 2002-2006

Status of Residence	2002	2003	2004	2005	2006
Professor	7,751	8,037	8,153	8,404	8525
Artist	397	386	401	448	462
Religious Activity	4,858	4,732	4,699	4588	4654
Journalist	351	294	292	280	273
Investor/ Manager	5,956	6,135	6,396	6743	7,342
Legal/accountant Service	111	122	125	126	141
Medical Service	114	110	117	146	138
Researcher	3,369	2,770	2,548	2494	2,232
Instructor	9,715	9,390	9,393	9449	9511
Engineer	20,717	20,807	23,210	29,004	35,135
Specialist in Humanities	44,496	44,943	47,682	55276	57,323
Intra-corporate Transfere	10,923	10,605	10,993	11,977	14,014
Entertainer	58,359	64,642	64,742	36374	21053
Skilled Labour	12,522	12,583	13,373	15112	17,869
Subtotal ※	179,639	185,556	192,124	180,465	178,781
	121,280	120,914	127,382	144,091	157,728
Designated activities	47,706	55,048	63,310	87,326	97,476
Part-time work of student	59,435	98,006	106,406	96,959	103,595
Worker of Japanese desc	220,844	239,744	231,393	239,259	241,325
Overstay	224,067	220,552	193,745	207,299	193,745
Non-designated activities	-	-	-	-	-
Total	710,000	80,000	800,000 +α	800000 +	80,000+
Ordinary permanent resic	39,154	86,942	101,904	113,899	128,441
Grand total	750,000+α	870,000+α	900,000+α	920,000+α	930,000+α

Source: Iguchi (2008)

Annex Table 6 R.O. Korea : Stock of Foreign Professionals 2004-2007

Profession	2004	2005	2006	2007
Foreign Language Instructor	11,072	12,296	14,806	17,615
Special Occupation	3,432	4,412	5,527	6,753
Arts & Performances	2,821	3,268	3,189	3,038
Researchers	1,569	1,738	2,076	2,291
Others	1412	1563	1652	1915
Total	20,306	23,277	27,250	31,612

Source: Hur and Lee (2008)

Annex Table 7 Philippines: New-hired Filipino Professional, Technical, and Managerial Workers by Sex

Year	Male	%	Female	%	Total
1993	48,617	*74.6*	16,539	*25.4*	65,156
1994	57,716	*78.0*	16,324	*22.0*	74,040
1995	30,908	*70.3*	13,067	*29.7*	43,975
1996	24,302	*66.8*	12,058	*33.2*	36,360
1997	37,306	*71.8*	14,647	*28.2*	51,953
1998	41,720	*74.7*	14,121	*25.3*	55,841
1999	50,736	*80.7*	12,097	*19.3*	62,833
2000	67,530	*85.5*	11,439	*14.5*	78,969
2001	83,161	*85.0*	14,672	*15.0*	97,833
2002	84,967	*84.9*	15,095	*15.1*	100,062
2003	67,439	*85.0*	11,904	*15.0*	79,343
2004	80,637	*85.1*	14,075	*14.9*	94,712
2005	52,097	*80.9*	12,334	*19.1*	64,431
2006	24,335	*57.8*	17,740	*42.2*	42,075
2007	22,185	*50.0*	22,179	*50.0*	44,364

Source: POEA