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Movement of people in East Asia and ASEAN

Shigeharu Nomura[†]

Abstract

With regard to trade of goods and service as well as movement of capital, it is considered to be the most efficient in general that free trade and perfect capital mobility are executed. However, regarding migration, free movement is not always desirable due to external effects such as brain drain and congestion effects in public institutions such as hospitals and schools. In particular, when domestic economy is getting worse, the brunt of the people's complaint will often fall on the immigrants. It is not always true that, a decline in wages as well as a rise in unemployment rate is due to influx of migrants. It seems that they are mainly ascribed to some regulations as well as rigid institutions

On the other hand, some developed countries have been suffering from labor shortage and fiscal burden of social security due to low fertility rates as well as aging society. In addition, diversity that immigration would bring has possibility of causing innovation. Thus, the point is that what kind of system is desirable for accepting migrants, or to what extent migrants should be introduced. This paper deals with those problems in East Asia and ASEAN.

JEL Classification: F2, J6, O1

Key words: labor mobility, external effect, demographic factor, diversity

1. Introduction

With regard to trade of goods and services, since free trade attains the most efficient distribution of resources, it is usually set as policy target. In the case of capital mobility, though perfect capital mobility is the most desirable in general, some capital control is thought to be necessary in order to constrain excess fluctuation of asset prices in international financial markets. However, immigration is quite different from them. It has external economy effects such as brain drain and congestion effects. In addition, since people have their own history and culture, they would not be able to adjust to new environments so easily. The fact that the riots as well as civil wars have been often occurring tells of that. The integration is not easy. Therefore there are some arguments both for and against it. Furthermore, in recent years, public security has been getting worse due to the threat of terrorist, which can be thought as one of evidences that immigrants are not integrated in receiving countries

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fairly. In addition, refugee problem has been getting serious these days. In Asia, Rohingya people are living in Myanmar fleeing from the persecution, but they are not approved as refugee by reason of the illegal immigrants. When people move, they carry not only their dream and family's wishes but also their historical background on their back. We need to think over international migration from the various perspectives.

By the way, according to Piketty (2014), the value of agricultural land played a great share of national wealth from the 18th to the 19th century in Britain and France. In Britain, the value of agricultural land was above four times the national income, and in France, that was a little bit below five times the one. On the other hand, In America, that was almost equal to national income in the end of 18th century. That is, Europe was land-scarce and labor abundant, and America was land abundant and labor-scarce country. Therefore, the mass migration from Europe to America starting from the latter half of 19th century, followed by Asian countries could be considered to be the mass migration from the labor-abundant to the labor-scarce countries. We could say that market mechanism functioned.

As economy develops, industrialization also advances. As a result, people migrate from rural area(or agricultural sector) to urban area(or industrial sector) to meet the labor demand of industrial sector and redistribution of labor takes place. This is the story of Harris-Todaro (1970) model. It seems that internal movement of labor worked well in many of East Asian countries as the theory teaches. However, when we look at South Asia and ASEAN, There exist a lot of people who is working in informal sector and living on the road. So, some measures should be taken to solve the problem.

The extent of economic development in Asian countries differs from country to country. Some countries' main industry is still agriculture and other countries' one is service industry. The former have excess supply of labor, and young people are suffering from finding decent jobs. In the latter, the number of people who would like to succeed to a farmer has been getting fewer and fewer. We need to consider how to adjust such a situation in Asian labor markets.

Labor mobility is related closely with size of population. The diminishing population country such as Japan faces to the lack of labor. The fertility rate in East Asian countries is very low compared with European countries and U.S, and the population of working cohort is shrinking. How to deal with the aging and shortage of labor is the serious problem in those countries. The problems with the aging are also associated with social security or pension financing. Some policy makers insist that acceptance of immigration might reduce the burden of natives. Including this issue, we would like to consider about population dividend as well as population onerous.

Governments' role on migration is extremely important. The key point is whether the migrants can work for a long time as full-time worker or work only for a short time as a temporary worker. Their behavior varies depending on the working conditions and living environments. If they can work for a long time, they try to enhance their human capital, which is conducive to their future career. However, in this case, the receiving countries have to provide them with the supporting system financially as well as spiritually so as to live a sound and cultural life. We should be willing to bear the costs if we would like to accept them as full-time skilled workers.

The structure of this chapter is as follows. The second section is explained about the present situation on migration in East Asia and ASEAN. The third section is explained from the perspective of demographic transition. The forth section deals with relationship between movement of people and real economy in Asian countries. The fifth is summary and conclusion.

2. International migration in Eat Asia and ASEAN

Let's look over the movement of people in East Asia and ASEAN (refer to table 1). Number of the migrants in East Asia has not increased very much compared with ASEAN, and that of refugee in Asia doesn't increase very much compared with European countries. Japan experienced the serious shortage of labor in the sectors of manufacture and construction in the 1980s. However, it didn't try to introduce foreign workers from foreign countries positively. The government established the system of trainee and the labor permit policy for foreigners of Japanese extraction, in particular Brazilians. The duration of their visa was limited. According to table 9, over 100,000 trainees were registered in 2008 in Japan, but after that, the number has been stabilized at the level of about 80,000s. However, this policy's object is just to meet the labor shortage temporarily, not to introduce foreign workers as full-time proper workers. Unskilled workers are not allowed to work as status of proper full-time workers in Japan.

Table 1: international migration in 1960 and in 2015, and refugee

year	migration stock		net migration		refugee	
	1960	2015	1962	2012	1990	2014
Vietnam	4,010	72,793	n.a	-200,002	21,150	0
Thailand	484,839	3,913,258	n.a	100,000	99,821	75,137
Singapore	519,246	2,543,638	428	397,936	146	3
Philippines	219,676	211,862	364	-700,000	19,860	222
Myanmar	286,559	73,308	n.a	-474,278	0	0
Malaysia	56,895	2,514,243	80,684	450,000	14,862	99,086
Macao, China	79,831	342,703	19,802	35,000	205	0
Laos PDR	19,646	22,244	76	-117,700	0	0
Korea, Rep.	135,551	1,327,324	-281,388	300,000	230	1,173
Japan	692,651	2,043,877	209,163	350,000	6,819	2,560
Indonesia	1,859,466	328,846	-107,486	-700,000	3,278	4,270
India	9,410,535	5,240,960	-85,382	-2,598,218	212,743	199,937
Hong Kong	1,627,488	2,838,665	224,481	150,000	8,161	170
China	245,684	978,046	-1,058,832	-1,800,000	287,276	301,052
Brunei	20,562	102,733	5,209	2,102	n.a	0

Source: world bank, international migration stock, 2015

Korea was once negative toward introducing foreign workers and had adopted the same trainee system as Japan did, but since it recorded the lowest total specific fertility rate of 1.08 in the world in 2000s, it has turned the closed policy into the open one dramatically, and has introduced foreign

workers positively. The number of migrants to Korea in 2013 was about 1.23 million, and about 0.66 million was Chinese of Korean extraction and 0.26 million was from ASEAN countries (refer to Table 3).

Taiwan has already come in the stage with the aging society and low fertility rate. As a result of that, the government is introducing foreign workers positively, but has controlled the number of the unskilled foreign workers strictly. In 2015, the number of foreign workers were about 0.59 million, and 0.24 million from Indonesia, 0.12 million from Philippines, 0.058 million from Thailand, and 0.17 million from Vietnam (refer to Table 2).

Table 2: Foreign workers by nationality in Taiwan

	total	Indonesia	Philippines	Thailand	Vietnam	others
2001	304605	91132	72779	127732	12916	46
2002	303684	93212	69426	111538	29473	35
2003	300150	56437	81355	104728	57603	27
2004	314034	27281	91150	105281	90241	81
2005	327396	49094	95703	98322	84185	92
2006	338755	85223	90054	92894	70536	48
2007	357937	115490	86423	86948	69043	33
2008	365060	127764	80636	75584	81060	16
2009	351016	139404	72077	61432	78093	10
2010	379653	156332	77538	65742	80030	11
2011	425660	175409	82841	71763	95643	4
2012	445579	191127	86786	67611	100050	5
2013	489134	213234	89024	61709	125162	5
2014	551596	229491	111533	59933	150632	7
2015	587940	236526	123058	58372	169981	3

Sources: workforce development agency, MOL
Others include Malaysia, Mongolia, and countries

Starting in the 1980s, some Asian countries such as Japan, NIEs, Thailand and Malaysia attained economic development, and a lot of labor in ASEAN migrated within it. There existed two main hubs of absorbing them within ASEAN. One is Thailand and the other is Singapore as well as Malaysia (refer to Table 1 to Table 5)¹.

There is strong movement of people between Malaysia and Singapore, which results from the same country before the independence of Singapore in 1965. In 2013, there lived the foreign workers of 2.32 million in Singapore and 1.04 million of them were Malay. There exist a lot of international commuters on the border of the both countries. Hong Kong and China are also the similar case. Supposing the two countries are different ones, the international labor mobility are frequently happening here. In 2013, the migrants from the foreign countries in Hong Kong were about 2.8 million, and 2.28 million of them were from China.

¹ In the 1970s, oil-produced countries in the Middle East also attracted a lot of Asian labor due to the rise in oil price.

Table 3: Bilateral Migration Matrix (1)

Source,down	Australia	Brunei	Cambodia	China	Hong Kong	India	Indonesia	Japan
Australia	0	934	119	13,286	8,982	677	9,476	13,365
Brunei	3,556	0	6	0	0	25,861	0	0
Cambodia	33,616	0	0	464	0	0	0	2,750
China	447,407	1,047	1,550	0	2,280,210	7,240	63,172	655,480
Hong Kong	96,704	6,560	119	6,827	0	0	0	0
India	364,764	11,367	97	15,051	17,789	0	10,465	22,101
Indonesia	78,744	352	108	58,639	132,985	835	0	29,058
Japan	2,896	102,441	127	66,159	14,016	730	16,522	0
Korea	107,360	10,588	57	222,276	4,774	0	27,907	699,290
Laos	12,016	0	265	1,373	0	0	0	0
Malaysia	145,227	643	175	10,954	15,091	12,672	1,979	9,237
Myanmar	23,742	0	53	39,776	0	51,529	0	99
Philippines	189,969	3,468	156	121,320	116,505	0	3,517	226,179
Singapore	63,077	2,285	125	12,191	9,761	4,308	19,681	2,796
Thailand	57,176	25,451	31,472	23,357	18,963	0	19,681	19,681
Vietnam	225,749	0	37,225	36,205	10,799	575	0	37,973
World	6,468,640	206,173	75,566	1,133,324	2,804,753	5,338,486	295,433	2,437,268

Source: World Bank 2015, Bilateral Migration Matrix

Table 4: Bilateral Migration Matrix (2)

source	Korea	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	World
Australia	5381	17	3,518	0	4,018	9,267	11,298	205	487,275
Brunei	0	0	976	0	82	0	0	121	43118
Cambodia	14,550	1,201	17,226	0	40	0	750,109	2,485	1118878
China	656,846	3,014	54,980	47,742	36,171	380,766	149,352	8,639	9,651,150
Hong Kong	0	0	345	0	258	55,948	1,206	1,136	784,079
India	5,924	0	61,092	37,004	10,705	138,177	46,113	1,673	13,885,099
Indonesia	34,215	0	1,074,737	0	3,325	152,681	2,952	7,671	4,116,587
Japan	24,244	0	6,080	0	13,834	0	80,957	669	1,012,924
Korea	0	0	4,912	0	6,948	0	14,569	154	2,604,888
Laos	0	0	0	0	0	0	926,427	4,284	1,294,218
Malaysia	0	0	0	0	798	1,044,994	8,199	0	1,683,132
Myanmar	4,748	282	79,691	0	424	0	1,892,480	9,783	3,139,896
Philippines	49,273	0	410,149	0	0	14,176	17,581	292	6,001,696
Singapore	0	0	42,474	0	825	0	2,962	466	282,213
Thailand	34,372	1,652	93,635	0	342	17,644	0	512	1,007,294
Vietnam	122,449	11,447	28,223	0	416	0	17,663	0	2,592,233
World	1,232,220	21,801	2,408,329	103,117	213,150	2,323,252	4,490,941	68,290	247,245,059
ASEAN	259,607	14,582	1,747,111	0	6,252	1,229,495	3,618,373	25,614	8,079,612
Asia	946,621	17,596	1,874,520	84,746	74,168	1,804,386	3,910,570	37,885	14,193,032

Source: World Bank: Bilateral Migration Matrix 2013, 2015

Table 5: Mutual Migration in ASEAN

Source,down	ASEAN	outward	inward ratio	Asia	Asia outward	Asia inward
Australia	38852	0.08	0.13	80543	0.17	0.13
Brunei	1185	0.03	0.16	30602	0.71	0.80
Cambodia	771061	0.69	0.92	822441	0.74	0.95
China	746433	0.08	0.27	4793616	0.50	0.54
Hong Kong	65572	0.08	0.11	169103	0.22	0.93
India	316693	0.02	0.02	742322	0.05	0.02
Indonesia	1241826	0.30	0.15	1576302	0.38	0.55
Japan	220630	0.22	0.13	328675	0.32	0.70
Korea	65135	0.03	0.21	1098835	0.42	0.77
Laos	930976	0.72	0.67	944365	0.73	0.81
Malaysia	1056788	0.63	0.73	1249969	0.74	0.78
Myanmar	1982713	0.63	0.00	2102607	0.67	0.82
Philippines	449339	0.07	0.03	1152585	0.19	0.35
Singapore	68818	0.24	0.53	160951	0.57	0.78
Thailand	190389	0.19	0.81	343938	0.34	0.87
Vietnam	94974	0.04	0.38	528724	0.20	0.55

Source: world bank, Bilateral Migration Matrix 2013, 2015, calculated by the author.

The migrants to Thailand in 2013 were about 4.49 million, and 0.75million were from Cambodia, 0.93 million from Laos PDR, 1.89 million from Myanmar and 3.62 million were from ASEAN countries. In the case of Laos PDR, since the language is similar to Thai very well, there are no obstacles for them to live in Thailand. Regarding Myanmar, since it is very difficult for young people to find jobs, a lot of people move to Thailand. Because these three countries border Thailand by land, it would be an attractive factor for people with low income class to migrate.

About 6 million of people have been migrating from Philippines to foreign countries in 2013. One of characteristics of Philippines is that they tend to migrate outside of ASEAN. U.S.A has the biggest share of the migrants and about one third of them move to U.S.A and 0.45 million migrate to Canada, 0.19 million to Australia. They also tend to migrate to the oil-producing countries. For example, 0.67 million of the migrants to Saudi Arabia and 0.19 million of them migrate to Qatar. The skilled workers such as nurses and doctors tend to migrate to OECD countries.

There is a huge difference in income level within ASEAN, which make high income countries attractive destinations for labors in low income countries.

3. Demographic transition

Labor mobility takes place to adjust excess supply or demand in the labor market which originates from demographic transition to some extent. Thomas Malthus insists that a rise in population is constrained by food supply. However, as opposed to his prediction, population increased remarkably

as seen in baby boom after the world war two². The neo-classical theory insists that increases in population reduce capital per capita and turn out to be reduction in economic growth (Solow 1956). Increases in dependents due to rises in fertility rate induce increases in consumption to support them, and as a result of that, investment would decline and economic growth would turn out to go down³.

On the other hand, according to endogenous growth theory, increases in population would raise economic growth (Jones 2002). In this theory, output depends on new ideas which are a positive function of population that becomes the sources of economic growth by causing new investment and enhancing productivity. The previous theory on economic growth based on physical capital accumulation. In this case, supposing that the marginal return of the capital diminishes, it finally stops and economic growth couldn't go up. However, the marginal return of new idea doesn't show the diminishing marginal return because it is utilized by all the people equally as public goods. Recent arguments insist that innovation is a very important factor for economic growth. Thus population gets an indispensable factor for it.

Furthermore, when we take population transition into account, the change in the share of working population cohorts have great effects on economic growth (Bloom D etc. 2001). At the low state of economic development, the fertility rate tends to be relatively high. During this period, while the share of working people cohorts is relatively large, one of dependents' cohorts is small. This is said to be "population bonus".

On the other hand, when economy arrives at high level of economic development, the fertility rate tends to decline and the aging begins. While the share of working cohorts gets small, one of dependent's ones gets large. This is said to be population onerous. This would give negative effects on economic growth. In fact, many countries in East Asia are facing with the problems.

Hong Kong, Taiwan, Korea and Singapore have attained economic development remarkably from 1965 to around 1990, which were called "the Asian miracle". In that process, the labor demand was mainly satisfied by the internal labor movement. Therefore, we didn't experience a great mass international migration⁴. Bloom and Sachs (1988) and Bloom and Williamson (1988), and Bloom, Canning, and Malaney (2000) insist that one forth or two fifth of the Asian miracle could be explained by population bonus. So, it is considered that the effects of demographic factors on economic growth are tremendously large.

When we take a look at history roughly, it seems that there would be positive relationship between economic growth and population size. So we need to take demographic factors into account seriously. America's population was less than 40 million in 1870 (Williamson J.1997), but amounted to 100 million in 1910, and exceeded 300 million in 2010. This increase is mainly ascribed to rises in immigrants. According to Piketty (2014), the growth rate population from 1820 to 1913 in Europe was about 0.8% on average, and declined to 0.4% from 1913 to 2012 and in North America it was about

² Malthus didn't consider the effects of the capital accumulation and technical development on economy at all.

³ In fact, China adopted one child policy in order to constrain negative effects of population growth on economic growth.

⁴ Paul Krugman insists that the Asian miracle was attained not by technical development but the increase in productive factors such as labor and capital.

1.9% and 1.7% respectively, which could explain the part of difference of economic growth between Europe and North America.

Asian countries experienced very high fertility rate as well as great population increases. Japanese population amounted to only 35 million in 1873, but 45 million in 1902, 65 million in 1931. And it amounted to 85 million in 1952, exceeded 100 million in 1967, and it amounted to 128 million in 2007⁵. In the periods from the late 19 century to the early 20 century, even in Japan, such dramatic increases in population gave people a possibility of fear of a food famine. Thus, the government also tried to induce people to migrate to the countries such as America and South America in order to sweep away the worries of famine

Many countries in East Asian countries have nowadays passed the peak of population bonus and turned into the new phase “population onerous” (refer to table 6 and table 7). When we look at table 6, we can observe the effect of policy between the countries with open policy and the ones with closed policy. The latter case is Japan. Since Japan hesitates to introduce foreign workers, the share of working population is the lowest. On the other hand, In Singapore, Taiwan and Korea that took open policy, though their fertility rates are substantially low, their share of working population are relatively high rather than low compared with other Asian countries. In addition, in the aging society, how to finance the social security expenditure is the big issue. Immigration could be considered to be one of solutions to deal with the financing problems.

Table 6: the share of the working population in Asian countries (%)

	Aged 15–64 Years					
	1990	1995	2000	2005	2010	2014 ^a
China	65.8	66.3	68.3	72.4	74.3	73.6
Hong	69.8	70.9	71.8	73.7	75.0	73.6
Korea	69.4	71.1	71.7	72.3	72.7	73.0
Taipei	66.7	68.6	70.3	71.6	73.6	74.0
Brunei	62.8	64.4	67.1	69.3	71.2	72.3
Cambodia	52.8	50.5	55.3	59.5	62.9	64.2
Indonesia	59.8	62.2	64.6	65.3	66.2	66.9
Laos PDR	52.3	52.1	53.1	55.8	59.3	61.1
Malaysia	59.3	60.6	62.8	65.5	67.8	69.4
Myanmar	58.2	60.6	63.3	64.4	65.2	66.7
Philippines	55.9	57.2	58.3	59.5	62.2	63.3
Singapore	72.9	71.4	71.2	72.6	73.6	73.1
Thailand	65.3	67.4	69.5	70.1	71.9	71.9
Viet Nam	56.9	58.5	61.9	66.3	69.8	70.3
Japan	69.7	69.6	68.2	66.3	63.8	61.4

Source: key indicators for Asia and the Pacific 2015, 46th edition, Asian Development Bank

⁵ Refer to Japan statistical yearbook 2016, Statistics Bureau, Ministry of Internal Affairs and Communications.

Table 7: share of people aged 65 over in Asian countris

	Aged 65 and Over (% of total population)					
	1990	1995	2000	2005	2010	2014 ^a
China	5.3	5.9	6.7	7.5	8.2	9.2
Hong	8.7	9.6	11.0	12.2	12.9	14.5
Korea	5.0	5.9	7.3	9.2	11.1	12.7
Taipei	6.2	7.6	8.6	9.7	10.7	12.0
Brunei	2.7	2.7	2.4	3.0	3.5	4.2
Cambodia	2.9	3.0	3.1	3.4	3.7	4.0
Indonesia	3.8	4.2	4.7	4.8	4.9	5.1
Laos PDR	3.5	3.5	3.6	3.7	3.7	3.8
Malaysia	3.6	3.7	3.8	4.4	4.9	5.6
Myanmar	4.2	4.6	4.8	4.9	5.0	5.2
Philippines	3.1	3.1	3.2	3.4	4.2	4.5
Singapore	5.6	6.3	7.3	8.2	9.0	11.1
Thailand	4.5	5.5	6.6	7.7	8.9	10.1
Viet Nam	5.7	5.9	6.4	6.6	6.5	6.6
Japan	11.9	14.4	17.2	19.8	22.9	25.7

Source: key indicators for Asia and the Pacific 2015, 46th edition , Asian Development Bank

When we look at table 7, Japan is the top runner among the aging societies, and Korea, Hong Kong, Taiwan and Singapore also have already fallen into the aging societies and have suffered from shortage of labor. Considering the difference of demographic transition in Asian countries, there would be room for people to move from labor-abundant countries to labor-scarce countries. On the other hand, the wage differences among Asian countries have been narrowing gradually. For example, according to table 8, Korea's GNI in 1990 was about 9 times Vietnam, but Japan's wage was about 21 times. So, Vietnamese choose Japan automatically. However, this ratio changed to about 6.1 times and about 6.8 times in 2015. It has been getting difficult for Japan to attract them in terms of wage differences.

It is said that now has been coming in the age of competition in obtaining foreign

Table 8: GNI per capita, PPP (current international \$)

year	1990	2015
Australia	16,670	44,570
Brunei	16,950	72,230
Cambodia	790	3,290
China	980	14,160
Hong Kong	16,950	57,650
India	1,130	6,020
Indonesia	2,760	10,680
Japan	19,350	38,870
Korea	8,420	34,700
Laos	n.a	5,380
Malaysia	6,470	26,140
Myanmar	n.a	n.a
Philippines	2,550	8,900
Singapore	21950	81,900
Thailand	4,240	15,210
Vietnam	910	5,690
World	5,336	15,415
East Asia & Pacific	3147	15,702
OECD	16,363	40,002

Source: World Bank, 2016

Table 9: Migration flows of trainees

	2008	2009	2010	2011	2012	2013
Japan	101,879	80,480	77,727	82,331	85,925	83,929
Korea	13,586	11,371	11,849	13,337	12,214	12,454
Australia	5,437	5,332	3,726	3,480	3,831	3,641
U.S.	3,427	2,084	1,778	2,108	2,927	2,712

Source: world bank

workers. We need to provide them with favorable environments where their human capital would be enhanced. Furthermore, in order for people to move easily internationally, it should be examined to make portability of pension system possible (Gloria 2011).

4. Relationship between movement of people and real economy

(1) Real Benefit of Immigration

In general, as trade volume and capital movement increase, people also seem to move complementally. In the process, firms have been recruiting not only skilled workers but also unskilled ones. On the other hand, it has been often said that the former are welcomed but the latter aren't favorable for receiving countries. Let's consider about it theoretically.

We suppose that there are two productive inputs, i.e. skilled and unskilled labor. Let's consider the effects of an influx of unskilled workers⁶. The wage would decline due to the diminishing productivity when holding the skilled labor constant, and in this case, the payments to them are less than the rise in output⁷. However, these arguments can be applied to the skilled labor equally. That is, the rise in output exceeds the payments to the skilled labors. The only case when natives take no gain at all is that the immigrants bring the same skill as natives. In this case, the ratio of unskilled to skilled labor remains constant. So the wage also becomes constant and the rise in output would be equal to payments to the immigrants. Therefore we could conclude that the bigger are the difference of skill between natives and immigrants, the greater are the benefits of natives⁸.

By the way, in order to make the story more real, let's introduce physical capital in this model (Ottaviano and Peri (2008)). The productive inputs are unskilled, skilled workers and physical capital⁹. In this model, the key points are the elasticity of substitution among the inputs and the effects of capital movement. We assume imperfect substitution among them¹⁰. A rise in unskilled labors would

⁶ We assume Cobb-Douglas production function with unskilled and skilled labor as productive inputs and the usual assumptions such as constant returns to scale and concave function. We also suppose that the economy is in a steady state initially, then suppose it admits them who are similar to native, except that they have no skill.

⁷ We assume that production function is $F(L, S)$ and admit immigration of unskilled workers (M). The effect is $F(L+M, S) - F(L, S) - F_{L+M}(L+M, S)$, which is positive since $\frac{F(L+M, S) - F(L, S)}{M} > F_{L+M}(L+M, S)$

⁸ In the long-run equilibrium, this economy is supposed to return to original steady state. That is, the ratio of unskilled to skilled labor is adjusted, which is determined by the technical development.

⁹ When we think about relationship between capital and labors, labors are aggregated between skilled and unskilled.

¹⁰ It is often asserted that there is complementarity between unskilled workers and physical capital. However if this would be true, the share of capital income would continue to increase. It seems that the reality is not the case.

Table 10: share of expots and imports in Southeast Asia and in East Asia

	ex.2015		1990		im.2015		1990	
	S.Asia	E.Asia	S.Asia	E.Asia	S.Asia	E.Asia	S.Asia	E.Asia
Brunei	18.41	58.64	20.93	70.61	45.52	32.74	41.90	19.46
Cambodia	12.65	16.13	74.56	8.77	54.04	37.75	43.27	18.12
China	12.23	27.03	6.61	59.19	11.64	29.55	5.82	49.95
Hong. Kong	8.83	57.35	7.36	36.93	12.67	67.5	7.94	66.25
Indonesia	22.32	31.92	9.96	56.79	27.45	39.29	8.44	39.61
Japan	15.21	36.08	11.61	18.15	15.11	32.81	12.74	14.66
Korea	14.24	39.32	7.52	26.06	10.31	35.31	6.84	27.74
Laos	48.38	30.07	68.41	16.47	72.04	23.3	60.90	26.25
Malaysia	25.28	35.24	29.45	27.39	27.9	37.92	19.07	36.14
Myanmar	30.00	48.47	28.21	23.61	37.33	52.34	26.03	42.01
Philippines	13.73	51.79	7.27	29.93	23.14	45.67	10.57	34.55
Singapore	29.83	37.8	22.35	22.58	21.5	35.79	17.12	33.79
Taiwan	16.05	55.81	11.27	27.15	14.64	42.66	8.00	41.32
Thailand	25.72	29.52	11.93	26.04	18.98	43.63	13.08	43.21
Vietnam	11.73	32.39	13.81	25.63	15.97	64.43	18.99	16.37

Source: IMF, Directions of Trade Statistics (DOTS), 2016

Table 11: Cumulative FDI inflows and share, in million \$US**East Asia**

East Asia	Partner	1990	2000	2005	2009
Cumulative FDI	S.Asia	60.46	35134.14	55942.17	84415.38
	E.Asia	2749.98	230678.29	416040.24	672098.28
	World	9327.42	551788.20	1013040.30	1659831.04
Cu. FDI share (%)	S.Asia	0.65	6.37	5.52	5.09
	E.Asia	29.48	41.81	41.07	40.49
FDI share	S.Asia	N/A	N/A	11.72	13.39
	E.Asia	N/A	N/A	37.11	50.28

Southeast Asia

S.Asia	partner	1990	2000	2005	2009
Cumulative FDI	S.Asia	267.37	16543.14	30547.09	49630.07
	E.Asia	1988.46	41208.68	66371.73	93800.82
	World	11548.9	21230.78	346842.19	537785.53
Cu. FDI share (%)	S.Asia	2.32	7.79	8.81	9.22
	E.Asia	17.22	19.42	19.14	17.44
FDI share	S.East	N/A	N/A	9.77	14.24
	E.Asia	N/A	N/A	5.82	7.29

Source: Asian Regional Integration Center, 2016

Table 12: Foreign workers in Korea in 2010

country	sex	skilled	unskilled	no work	total
World	total	41,990	305,497	222,800	570,287
	male	27,835	209,786	78,414	316,035
	female	14,155	95,711	144,386	254,252
China	total	2,798	29,584	60,086	92,468
	male	1,532	18,226	23,074	42,832
	female	1,266	11,358	37,012	49,636
China (Korean)	total	4,073	141,372	57,821	203,266
	male	2,364	80,799	20,758	103,921
	female	1,709	60,573	37,063	99,345
Taiwan	total	1,101	3,223	5,558	9,882
	male	644	1,868	2,670	5,182
	female	457	1,355	2,888	4,700
U.S.	total	12,668	6,269	15,980	34,917
	male	7,906	3,482	7,789	19,177
	female	4,762	2,787	8,191	15,740
Japan	total	2,379	1,141	12,317	15,837
	male	1,910	742	1,941	4,593
	female	469	399	10,376	11,244
	total	971	16,086	7,381	24,438
Philippines	male	598	12,598	1,400	14,596
	female	373	3,488	5,981	9,842
	total	386	14,505	2,355	17,246
Indonesia	male	322	13,418	1,615	15,355
	female	64	1,087	740	1,891
	total	169	12,672	2,709	15,550
Thailand	male	121	10,671	947	11,739
	female	48	2,001	1,762	3,811
Vietnam	total	784	32,506	25,600	58,890
	male	570	26,745	3,350	30,665
	female	214	5,761	22,250	28,225

Source: Statics of Korea, 2013

decrease their wage. On the other hand, the return of capital would increase, and as a result, capital would flow in. When substitution among the inputs is imperfect, it would be likely that demand for labor (whatever skilled or unskilled labor) would go up. It might end up with that outputs increase and exports also increase.

In the long-run equilibrium of this model, every variable is adjusted by economic growth that is determined by the rate of technical development. As long as it is constant, the wage would return to the initial one. The final effect of immigration is the rise in output and export. As Ottaviano and Peri (2008) insist, when we take capital movement into account, the substitution from domestic labor to the

Table 13: Foreign workers in Taiwan

	grand total	total	manufacture	crewmen	3k	Nurse & maid
2001	304605	191671	104143	1249	51	112934
2002	303684	182973	108404	2935	54	120711
2003	300150	179552	114856	3396	50	120598
2004	314034	182967	123684	3089	45	131067
2005	327396	183381	127027	3147	45	144015
2006	338755	184970	130799	3322	2495	153785
2007	357937	195709	134961	3786	11541	162228
2008	365060	196633	118512	4865	31806	168427
2009	351016	176073	92817	6452	41767	174943
2010	379653	193545	78772	7745	72556	186108
2011	425660	227806	53790	8670	137775	197854
2012	445579	242885	32906	9313	181339	202694
2013	489134	278919	21435	9788	216678	210215
2014	551596	331585	17330	10316	246416	220011
2015	587940	363584	15317	9898	262256	224356

Source: National Static, Taiwan, 2016

immigrants would not take place so much. In this respect, the speed of capital adjustment would be a key factor. If policy target for the number of foreign workers is set up by governments, the adjustment would be accelerated and the negative effect of immigration on wages would be weakened. Thus, it would be likely that we get gain from immigration.

Regarding movement of capital, foreign direct investment (FDI) has great effects on economic growth and movement of people. The share of foreign direct investment (FDI) in East Asia from the same region is about 40%. In addition, the share of export to East Asia and ASEAN for most of Asian countries has been increasing since 1990, and the share of import from those regions has also been increasing (refer to table 10 and 11). In particular, it would be no exaggeration to say that economic development in China has been attained by FDI.

In order to call in FDI, the receiving countries need to build favorable environments for foreign firms and foreigners that are not related with business but also with the living environments for children and family. Neither firm nor people gather to a place where there are no attractive points. In addition, since FDI brings the unique management resources in, it might urge domestic firms to change the previous way of operation, production and marketing based on the unwritten rules and custom which might have built a barrier to reform of the institution and system. One of main objects on FDI is to utilize cheap resources such as labor in foreign countries. Therefore, in a sense, FDI is similar to immigration in the sense that the investor's countries employ foreign workers, even though they do not have to leave their home countries. Furthermore, FDI would enhance labor mobility between the local branch factories and the headquarters, and need a lot of skilled workers who could manage to cooperate with the workers with different culture. That is one of reasons why high-skilled

workers with global mind are required.

In addition, change in trade pattern has been related with strong demand for skilled workers. Trade pattern has also changed from intra-industry trade to intra company one. In the past, according to the stage of economic development, export goods changed from the goods such as textile that use more unskilled labor to sequentially goods such as high-technology-ones that use more skilled labor. Such trade pattern is often said to be formation of flying geese, which is compared to movement of flying geese (Yamazawa 1993).

Firms have come to perform some activities abroad, whatever it is subsidiary or local firm due to outsourcing, when it is more economical to do so. They line up the activities in terms of the relative amount of skilled labor and compare the gains of outsourcing with the cost. The main gain is to lower labor costs, and the extra cost is transportation and communication costs¹¹. In particular, whether reducing the communication costs as low as possible or not becomes a key factor. Though they have been lowered by development of IT, it is also important to build a face to face relationship in collaboration with foreign workers. Thus, skilled workers with high communication abilities are needed strongly. Thus, the competition for obtaining them has been getting fierce. It doesn't matter whether such persons are foreigners or natives. In addition, every countries tries to specialize in the activities such as research and development (R&D) that use more skilled labor because they would bring large profits. In that process, it would be highly likely to leapfrog from lower production process to upper production process. The important thing is how to recruit such workers with high abilities or how to foster them.

Under conditions of decreasing population of labor and increasing demand for skilled and unskilled labors, let's see how the countries deal with such issues¹². The preferential measures are provided with skilled workers, and even unskilled workers have come to be allowed to work in their official capacity¹³. In Korea, the government intervenes in a contract between firms and unskilled workers, taking responsibility from recruiting until retiring. In addition, Korea concludes agreements on labor movements between Korea and the sending countries, and controls labor mobility under collaboration with them. Regarding the low rate of fertility, international marriage has been increasing in rural areas where its industries are agriculture and fishery since men have difficulty in finding a partner, they are called marriage immigrants. However some of foreign partners have problems with the language. There remain many things to solve about the supporting system of accepting foreign partners.

In the case of Taiwan, private firms intervene in a contract between foreign unskilled workers and firms. Since the intervention fee is supposed to be paid by the workers, the burden on the them is large. Singapore also imposes the strictest control on the foreign workers. For example, when firms try to hire unskilled workers, they have to pay employment tax. Because this is paid back when they quit,

¹¹ For example, we need to come in contact with local workers and adjust schedules of production target between central firm and the subsidiary with regard to output and component.

¹² When we look at ASEAN and south Asia, there are many developing countries and there are many unskilled workers who might become possible migrants. On the other hand, there are serious labor shortage in the construction and manufacture, care services and household services sectors in East Asian countries.

¹³ It is for high-skilled workers to be able to get the right of permanent residency easily.

firms have incentive to monitor them. The unskilled workers are not allowed to marry Singaporean. In Japan, the technical trainees have been introduced in the sector of labor shortage, and the duration of their visa is restricted to 5 years¹⁴. They are considered to be just temporary. When we compare the duration of visa in Japan with that in other East Asian countries, Japan's one is the shortest. If Japanese labor market keeps being closed, foreign workers wouldn't come to feel attractiveness in working in Japan.

Myanmar, Laos PDR, Cambodia, Indonesia, Vietnam and Philippines are sending a lot of workers to Malaysia, Singapore, Thailand and East Asian countries. These might be evaluated to be effective from the perspective of efficient distribution of labor. However, most of the migrants are unskilled workers and to make the things worse, many of them are the undocumented ones. Some of them are forced to be made to work under bad conditions extremely. They are forced to be yielded to employer's demand on their disadvantage. The governments should try to solve the problems.

In the case of Philippines, about 10% of population has been emigrating and amount of remittance amounts to about 10% of GDP. It is true that remittance has positive effect on the economy, but it has remained to be intermediate income country. To make the thing worse, the unemployment rate is relatively high. That's one of reasons why the emigration rate in Philippines is so high. We could say that the vicious circle is happening.

(2) Future's strategy

In the case of Malaysia and Thailand, depending on cheap foreign workers heavily might have hindered the country from improving productivity and fostering new business. In fact, Malaysia's GDP per capita stays around \$10,000 and Thailand's one is about \$6000. They have remained to be intermediate countries. We could say that they fall into "the traps of intermediate countries".

Though we have seen the positive effect of immigration, there are some arguments against immigrants. One of them is the distribution effect. Under the usual assumptions, workers' income would decrease and capitalists' income would increase. The other is the occurrence of external negative economy. For example, many public facilities such schools, hospitals and roads as public goods are thought to be congested with immigrants, which might cause the decline of quality as well as the rise of cost in those facilities. Furthermore, the order of public social life might be threatened due to the influx of people with different culture.

According to Alesina (2002), diversities, in terms of ethnicity and linguistic ones, are likely to be important determinants of economic growth and the quality of institutions. However we can't conclude the effect of diversity on economic growth precisely because of strong correlation of diversity with other potential explanatory variables¹⁵. However, in that paper, the effects of diversity on innovation are not considered. We should keep in mind that there are positive effects of diversity in the long-run. If integration of immigrants and natives would go well, diversity could be an effective way to extricate ourselves from the stagnated society with decreasing population. Though it would be far from easy to do so, it is worth challenging.

¹⁴ The duration of their visa was 3 years until 2017.

¹⁵ In this paper, diversity has negative effect on economic growth and quality of institutions.

When we look at innovation index of in 2016, Singapore is 6th, Korea is 11th, Hong Kong is 14th, Japan is 16th, China is 25th, Malaysia is 35th, Thailand is 52th, Vietnam is 59th, Philippines is 74th, and Indonesia is 88th ¹⁶. When we look at world competitive strength index in 2016, Hong Kong is the first, Singapore is 4th, Taiwan is the 14th, Malaysia is 19th, Japan is 26th, Thailand is 28th, Korea is 29th, and Indonesia is 48th ¹⁷. ASEAN's innovation is behind remarkably compared with the competitive strength. It seems that this situation would be associated with the economies depending on cheap unskilled workers.

Domestic institution and economic structure tend to become rigid in the long-run, and decision rule tend to be carried out by customary one. It would be difficult to generate innovation under such environments, which would lead to protection of vested interests.. In reverse, innovation would be produced in the environment where the way of thinking and behavior are not shackled by previous convention and institution The transparency of decision rule should be enhanced. Once the evaluation of innovation on a country is enhanced, high-skilled persons come to gather in the country from all over the world and would generate further innovation.

In order to induce further development of Asian economy, every country should try to exercise his comparative advantage. For example, Japan's comparative advantage would be in organic farming, health and care industry, and scientific technology, China would be manufactured goods, and Korea would be semi-conductor and electronics goods. When every country focuses on his comparative advantage, strategic complementarity appears and all the countries would get profits. In order to generate it, all the countries should try to open the markets including Japan. In particular, since Japanese technology has comparative advantage, Japan should exercise leadership in order to improve human capital of the migrant in Asia.

It is often said that one of the arguments for immigration is to reduce the burden of working cohorts. That is, if we don't introduce immigration, we have to accept either a rise in pension fee (or tax) or reduction in benefit. An increase in the number of immigrants would be considered to be an effective policy for avoiding such a challenge in the aging and the decreasing population society. However, when we examine about the benefit and costs in detail, we need to keep in mind that immigratim will not become a panacea for such problems.

As Feldstein warns us, we should realize that the fiscal effect of immigration would be not so large. For example, in the case of Japan, the number of the workers in 2015 is about 50 million and one of the foreign workers is about 0.9 million Let's consider effect of additional 1 million of immigrants, which is an increase of more than 100% in the present foreign workers. If we also assume that our monthly average salary per capita is about 0.3 million yen, the total payments are about 324 billion ¹⁸.

¹⁶ Cornel university, European Institute of Business Administration (INSEAD) and World Intellectual Property Organization have issued the index each year since 2007 evaluating political economic institution, human resources infrastructure, technology and creativity and transparency of market.

¹⁷ The Business School in Switzerland (IMD) makes the index evaluating economic performance, government efficiency, business efficiency and infrastructure.

¹⁸ The average person aged 45 is 350,000 in 2014 and in the case of male, 430,000 according to the national tax bureau. The average income of the foreign workers seems to be low substantially compared with the natives because a lot of the part-time workers such as students are included in the foreign workers. The pension insurance fee is about 18% of

The total pension expenditure in 2015 is about 50 trillion and of which 30 trillion is from the insurance fee¹⁹. Therefore the rise of revenue due to the additional immigration corresponds only to 1.08% of the present revenue and 0.648% of total social security expenditure. Thus, the increased revenue expected from a large rise in immigration would end up with financing only a small part of the cost in the pension expenditure²⁰.

Put differently, in the case of Japan, supposing that the average aged person gets about 170,000 yen of pension per month, the rise in the revenue of one million of immigration corresponds to reduction of about 0.53% in the benefit of the present benefit receivers²¹. So we are in a position of trade-off, that is, we choose either a relatively large increase in the number of immigrants or a relatively small reduction of benefit. However, this argument is very short-run perspective and based only on economic efficiency. We have to see it from the viewpoints of long-run horizon. In that case, it would be vital focus to hold the perspectives of how to foster the high-skilled workers.

Conclusion

The demographic transition affects not only economic growth but also influences economic structure and the way of working. People move depending on economic as well as living conditions. When we provide favorable environment, it is highly likely to attract skilled workers.

We live in a society where the fertility rate is decreasing. In order to activate such a society, we need innovation. In order to generate innovation, we have to accept diversification that would have possibility of deriving new ideas. We need to collaborate and co-live with people having different culture. Asia's population account for more than two-fifth of world population. It is very energetic and activating regions. Though it might be difficult to build a diversified society that is harmonized and stabilized, it deserves challenging when we think of positive effects of diversity on innovation.

the salary that is divided equally between workers and employers.

¹⁹ The remaining sources are 11 trillion from tax and 15 trillion from return of pension fund.

²⁰ Feldstein (2006) calculated the case of Spain and derived the similar conclusion.

²¹ The total pension expenditure is 50 trillion yen in Japan. About 30 million pension receivers (one fourth of total population) get about 170,000 yen per capita on average.