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The Middle-Income Trap: Issues for Members of the Association of Southeast Asian Nations[(1)]

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Abstract. The problem faced by many of the economies making up the Association of Southeast Asian Nations (ASEAN) is whether they can avoid the middle-income trap and advance to the high-income level. What is needed for them to avoid such trap? This paper attempts to answer this question by building an analytical framework based on the factors that determine each development stage of an economy, and by comparing the current situation of four ASEAN middle-income countries with the experience of the Republic of Korea, a country that managed to overcome the middle-income trap and reach the high-income level in the late 1990s. The paper concludes that for ASEAN middle-income countries (Indonesia, Malaysia, the Philippines, and Thailand) to avoid the trap, they should strengthen research and development capability, emphasize the quality and appropriateness of human resources, and improve the institutional system for nourishing a dynamic private sector. These efforts can be expected to result in dynamic changes in the structure of comparative advantage toward higher skill and more innovation-intensive contents of products. For a low middle-income country such as Vietnam, reforms and policies to increase the productivity of capital, land, and other resources are essential to avoid the early appearance of the trap.

Keywords: Economic development, growth, middle-income trap.

1. Introduction

The world economy today can be divided into four groups: group 1 comprises low-income countries which are still encountering the poverty trap. Group 2 is the countries which reached middle-income level many years ago (more than 50 years for many cases) but have experienced low or no growth since then. Many Latin American countries belong to this group. Group 3 consists of the countries which have recently reached or are approaching the middle-income level. Several Association of Southeast Asian Nations (ASEAN) economies and the People's Republic of China (PRC) are included in this group. Group 4 is composed of high-income countries such as members of the Organisation for Economic Co-operation and

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Development (OECD) and several others. The countries in group 2 can be referred to as old middle-income countries; those in group 3 can be called new middle-income countries.

The phenomenon that group 2 countries stagnate after reaching the middle-income level may be described as the "middle-income trap" (Gill and Kharas 2007; Spence 2011). The issue faced by ASEAN and other new middle-income countries is whether they can avoid the middle-income trap and advance to the high-income level. What are the conditions needed for ASEAN countries to avoid such a trap? This paper attempts to offer an answer to this question.

The remainder of the paper is organized as follows: section 2 provides the analytical framework which incorporates development stage, institutions, turning points in the labor market, input-driven growth and total factor productivity growth, and dynamic comparative advantage. Section 3 discusses the current development stage of ASEAN and other East Asian countries. Based on the analytical framework, section 4 analyzes the current issues of ASEAN middle-income countries in light of the experience of the Republic of Korea (henceforth Korea), a typical example of a country that has successfully avoided the middle-income trap and has moved on to become a high-income economy. Section 5 looks at the case of Vietnam, a country that has grown out of the poverty trap and reached a low middle-income level but is now encountering macroeconomic instability and structural difficulties which appear to prevent further sustained growth. Without drastic reforms, Vietnam may provide a case of an early appearance of a middle-income trap. Finally, the concluding section summarizes the issues currently facing ASEAN countries and offers policy recommendations for those countries to successfully advance to become high-income economies.

2. The Analytical Framework

Our basic conceptual framework begins with three major development stages of an economy, as shown in Figure 1. B in the figure corresponds to group 1, E corresponds to group 2, C to group 3, and D to group 4; C shows the middle-income stage. For a country starting with a per capita annual income $500, if the average annual growth rate of per capita income is 7% (the income doubles in 10 years), incomes must double four times (40 years) to reach the upper-middle income level (about $8,000). If the growth rate is 5% (the income doubles in 14-15 years), it takes nearly 60 years to reach the upper-middle income level[(2)]. Thus, the transition from a poor to a middle-income country requires sustained periods of growth. However, from an upper-middle income level, the country needs only 15 years to reach the high-income level if the average annual growth rate is 5%. This is a short period. But, as Spence (2011: 20) noted, the "doubling from middle to high income looks easier than it is," but "it has proven for many countries to be a difficult passage". This difficulty is referred to as the middle-income trap.

To understand the nature of the middle-income trap, we have to characterize the turning point C in Figure 1. The path from B to C is a long process that transforms the country from an agricultural to an industrial economy, with increasing shares of the manufacturing and services sectors in total output and employment.

[(2)] This exercise is adapted from Spence (2011: 19-20).

In this process, the economy experiences many aspects of structural change, including factor markets, technological levels, and comparative advantage. When the economy reaches C—the middle-income stage—those changes become major challenges which the country must overcome for successful transition to the high-income level.

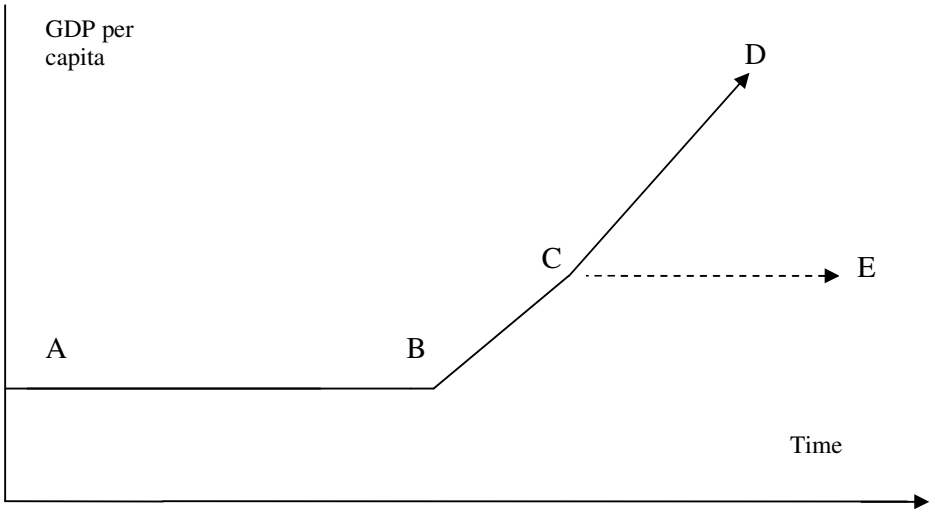

Figure 1: Development Stages of an Economy.
Source: Author

A–B: Traditional society, underdevelopment, facing poverty trap.
B–C: Initial development stage, escape from poverty trap, initial development of markets.
C: Middle-income level.
C–D: Continuing sustained growth to high-income level (D).
C–E: Stagnation or low growth—the middle-income trap.
Note: GDP = Gross Domestic Product.

Let us elaborate on these points. First, in the factor markets, real wages rise along with the shift of the economy from labor surplus to labor shortage, the "turning point" in the Lewis (1954) model. This turning point approximately coincides with C in Figure 1[(3)].

From this point, labor must be more productive to match the rise in wages. Also from this point, the quality of labor must be upgraded to enable the transformation of the industrial structure from being less skill-intensive to being high skill-intensive. Effort by the government is thus required to place more emphasis on a higher level and higher quality of education to supply a qualified labor force for the transition to the high-income level[(4)].

Second, the earlier stage of development (B–C in Figure 1) can also be characterized as being input-driven (intensive use of labor and capital). In this stage, such a growth pattern can be justified since labor is abundant ("unlimited

[(3)] This point can be confirmed by the experience of Japan and Korea. In the case of Japan, for example, the turning point appeared in the early 1960s (see Minami 1973) when the country reached the middle-income level.

[(4)] A variation of the middle-income trap in this context is the distortion in the labor market where there exists concurrently a labor surplus in rural areas and a labor shortage in urban areas, as shown by Tran (2010a: 198-213) in the case of Vietnam. Such distortion, therefore, must be avoided before the Lewis turning point is reached.

supply"). Capital is relatively scarce but the need for it in initial investment in infrastructure and in industrial production has increasingly expanded, while technology remains underdeveloped. However, for sustained growth toward the high-income level, the country must be increasingly endowed with highly technological and managerial resources, and capital must be efficiently utilized. In other words, the growth of the economy should be increasingly attributed to total factor productivity (TFP)[5]. Thus, the turning point between input-driven growth and TFP-based growth may approximately coincide with C.

Third, along with the catching up by later comers to industrialization, and as wages rise, middle-income countries are increasingly losing their comparative advantage in labor-intensive industries. Eventually these industries will fade away. Further growth of middle-income countries must therefore increasingly rely on high skill-intensive industries and a deeper stock of physical and human capital. Middle-income countries are squeezed between low-wage, low-income competitor countries that dominate labor-intensive mature industries and the high-income country innovators that dominate industries undergoing rapid technological change. In other words, middle-income countries must successfully climb the development ladder and catch up with advanced countries in the transition to the high-income level. That also means that the comparative advantage structure of the country must change over time. Such dynamic comparative advantage is enabled only by changes in factor endowments, which are increasingly characterized by relative abundance of human capital and increasing availability of technological and managerial resources.

Among these three issues, the first two—the turning point in the labor market and in the growth pattern—are necessary conditions for maintaining the international competitiveness of the economy (the third issue), since international competitiveness at this stage has to rely increasingly on high quality of labor and on technological improvement for higher efficiency.

In an open economy, particularly in the age of globalization and regional free trade agreements, improvement of international competitiveness over time is essential for sustained growth. This is reflected in the dynamic changes in the export structure toward higher skill and more innovation-intensive contents of products. This point can be illustrated by the changes over time in the comparative advantage of a sustained growing economy; it is reflected in the changes in the international competitiveness index of industries.

The international competitiveness index (i) can be defined as

$$i = (X - M) / (X + M)$$

where X is the export value of a product and M is the import value.

We can observe the development process of an industry by examining the changes in its international competitiveness index. The typical trend of that index can be traced in Figure 2. In the early stage of development of an industry there is almost no export and the domestic market

[5] The argument by Krugman (1994) on the East Asian Miracle (World Bank 1993) is well-known. He argued that the high growth of East Asia was not miraculous since it was input-driven, not based on TFP. He emphasized that this pattern was similar to that of the former Soviet Union, so that the economy will eventually collapse, due to decreasing returns of inputs, as shown by the experience of the former oldest socialist country. The argument put forth by Krugman brought about a controversy among economists and policymakers, particularly among those in Asia. Among scholars arguing against Krugman, I think Hayami (2000) was most convincing. Hayami showed that the growth pattern of an economy in the early stage of development tends to be input-driven, but turns to be TFP-based in its later stage. The insight of Hayami is useful for understanding the separation between middle- and high-income levels of development.

is supplied mainly by imports, so that the index is –1. With increasing import substitution, the index approaches zero, the point where there are no more imports but exports have yet to start. The index also reaches zero when exports and imports are almost equal. If the international competitiveness of the industry is further strengthened, exports will continuously expand and the index approaches 1 when there are almost no more imports. Of course, where there is intra-industry trade, the index is close to zero.

Sustained growth requires the successful shift of the comparative advantage from a mature industry (industry 1) to a new industry that is more skill-intensive (industry 2), and prepares conditions to move to a newer industry (industry 3). The process continues to industries 4, 5, and so on, which are increasingly innovative and high skill-intensive. If the country fails to continue that process, industry 2 loses its comparative advantage earlier than anticipated (shown by the dotted line in Figure 2) due to rapid changes in international markets, and the country is not able to generate a newer industry (industry 3). Thus, the middle-income trap appears when a middle-income country fails to sustain growth through the generation of new comparative advantage over time.

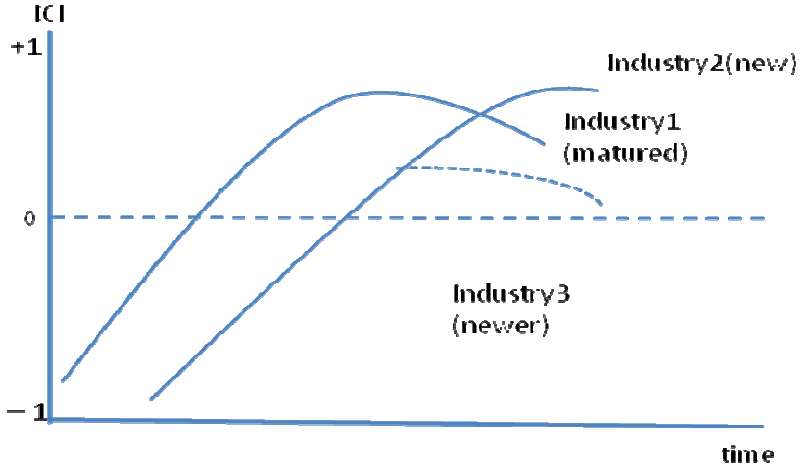

Figure 2: Pattern of International Competitiveness of a Sustained Growth Economy.

Source: Author

Note: ICI = International Competitiveness Index

What are the conditions for the dynamic transformation of comparative advantage to avoid such a middle-income trap? Two areas seem important. One is the timely shift of focus of policy and public sector investment in infrastructure and human capital so as to develop new technology- and knowledge-intensive industries. The second area is high-quality institutions that generate and maintain a dynamic private sector which is innovative and sensitive to changes in international markets. Let us elaborate on these two areas.

On the shift of policy, promotion of higher education, applied research, and development of high-quality infrastructure should be emphasized to move the economy toward the high-income level, which is characterized by high skill and knowledge intensity. One example of high-quality infrastructure is telecommunications, which is particularly important for a knowledge economy. As remarked by the World Bank, telecommunications plays a variety of crucial

roles in the public and private sector. It can aid education, transparency initiatives, and the delivery of government services… Telecommunications promotes widespread access to financial services. It also enables trade in services (a rapidly growing area of commerce) and links to global supply chain. (World Bank 2008: 36).

Among middle-income countries, there are several cases which require special attention. In a resource-rich middle-income country, for example, there are powerful vested interests that prevent the shift of policies and there is lack of motive for new development strategies. This phenomenon is usually referred to as the "resource curse" (Coxhead 2007, among others). In this case, the country needs strong leadership which is development-oriented and powerful enough to prepare the economy to move to the new direction. Another example is that of former socialist countries in the process of transition to market economies; here the continued protection of state-owned enterprises and other vested interests is one of the major impediments to more efficient growth. Drastic reforms are thus necessary. The case of Vietnam will be examined in section 5.

The second area for dynamic transformation of comparative advantage is on the building of high-quality institutions. In the earlier stages of development, sophisticated institutions are not necessary and the capacity for building such institutions is also not available. Given the factor endowment (agricultural resources, labor abundance), the direction of development has been quite clear so that policy formation has been simple. Government intervention, including establishment of state-owned enterprises, has been necessary and justifiable. Such "crude" institutions are not inappropriate at the input-driven growth stage.

For sustained growth toward high-income levels, however, the country needs a different set of institutions which are sophisticated and of high quality. The contents of "high-quality institutions," a term coined by Rodrik (2007), include good governance; corporate governance; wide participation of various stakeholders in the policy decision process; effective cooperation among academics, businesses, and government in the formation of strategy for strengthening international competitiveness; efficient and transparent relationship between government and businesses; and increasing investment in research and development (R&D). For building high-quality institutions, the country needs qualified bureaucrats, efficient government, and a strong private sector (Rodrik 2007). High-quality institutions are also necessary for (i) improvement of human capital over time, which enables the upgrade of industrial structure toward skill-intensiveness; and (ii) strengthening over time of the international competitiveness of the private sector.

As emphasized by the World Bank (2008), when the economy is far behind the leading economies, i.e., in the B-C stage of Figure 1, it is very clear what has to happen, but as the economy catches up with the leaders, it becomes less obvious what should happen and where prosperity lies. That is why more must be left to the decisions of private investors. However, as argued convincingly by Ohno (2010), even in the age of globalization which emphasizes the market mechanism, the role of government is still very important in conducting a proactive industrial policy which facilitates the dynamism of the private sector by providing qualified human resources, incentives for R&D investment, and appropriate infrastructure. In this context, high-quality institutions are essential for promoting

entrepreneurship and lowering the business costs of the private sector.

So far, we have discussed the turning points related to the possible trap dividing the middle-income and high-income levels. These turning points can be synthesized into three factors:

(i) Effort of the middle-income country to strengthen R&D activities and quality of human resources. This factor is essential for facilitating the transition from a labor-surplus to a labor-shortage economy, the transition from input-driven growth to TFP-based growth, and for upgrading the industrial and export structure to high-skill and technology-intensive products.

(ii) Effort of the middle-income country to build high-quality institutions. This factor is essential for creating a new business environment to stimulate a dynamic private sector which is innovation-oriented.

(iii) The results of those two factors can be expected to reflect on the dynamic changes in the structure of comparative advantage.

3. Current Development Stage of ASEAN Economies

According to the World Bank's classification, in 2009 low-income economies are those with a gross national income (GNI) per capita of US$995 or less (converted into dollars at the current exchange rate); middle-income economies are those with a GNI per capita of $996-$12,195[(6)]. Lower middle-income and upper middle-income economies are separated at a GNI per capita of $3,946 ($4,000). High-income economies are those with a GNI per capita of $12,000 dollars or more (World Bank 2010). Because the GNI per capita here is in nominal terms, the levels of income for classifying these groups of economies were of course lower when we chose an earlier year for examination.

Table 1 and Figure 3 record the GNI per capita in 2009, GNI trends over about the past five decades, and the average growth rates of real GNI per capita for 10 ASEAN countries (data are not available for Myanmar and for some periods for several other countries). For reference, data for the PRC, India, Japan, Korea, the US, and the world average are included in Table 1. Also for reference, trends of GNI per capita of Japan; Singapore; Hong Kong, China; and Korea (four of the five high-income economies in East Asia[(7)]) are illustrated in Figure 4. The following points can be observed from these data:

First, in the World Bank criteria cited above, among ASEAN countries, Malaysia has reached the level of an upper middle-income country; Thailand, Indonesia, and the Philippines are lower middle-income countries; and Vietnam has just emerged as a lower middle-income country.

Second, most middle-income countries of ASEAN recorded high growth during the mid-1970s to 1997, the year the Asian financial crisis started. However, in 1998-2008, growth slowed substantially in most countries. Looking at the per capita GNI of middle-income ASEAN countries relative to the US level, Malaysia and Thailand rapidly caught up with the US during 1985-1997, but the catching-up was much less impressive in 1998-2008. The recent performance of Indonesia has also been poorer than in preceding periods. The case of the Philippines deserves more attention: the

(6) For rounding the figures, hereafter we will use $1,000 and $12,000 as benchmarks.

(7) The other high-income economy is Taipei, China.

country did not catch up with the US in the 1970s, and the income gap with the US has grown since the 1980s. This has been due to a long period of slow economic growth (Table 1).

Third, among high-income economies in East Asia, Korea joined the upper middle-income group in the latter half of the 1980s and reached the high-income level around 2000. As shown in Figure 4, the country reached the high-income level in the latter half of the 1990s, but fell back to the upper middle-income level due to the financial crisis in late 1997, before returning to the high-income level in the early 2000s. The year 2000, therefore, marked the successful transition of Korea from an upper middle-income country to a high-income country. It took about 15 years for such transition to take place. In fact, in East Asia, over the last four decades, except for the city-states of Hong Kong, China; and Singapore, only Korea and Taipei, China have steadily risen to the income levels of the rich countries. To what factors can this success be attributed? Given the size of the population and other aspects, Korea can be used as a case of reference for ASEAN middle-income countries.

Table 1: Gross National Income (GNI) per Capita of ASEAN Economies (%)

Country	Nominal GNI per capita in 2009	Average growth rate of real GNI per capita			
		1960-73	74-84	85-97	98-08
Singapore	36,537	…	5.3	5.6	4.1
Brunei Darussalam	30,391	…	…	(0.5)	0
Malaysia	7,030	4.0	5.3	5.2	3.3
Thailand	3,893	4.7	5.0	7.0	3.8
Indonesia	2,349	2.8	5.7	5.3	3.1
Philippines	1,752	2.1	1.5	0.7	2.2
Vietnam	1,113	…	…	6.2	6.1
Lao PDR	940	…	…	…	4.9
Cambodia	706	…	…	…	8.0
Myanmar	…	…	…	…	…
Reference:					
Korea	17,078	7.3	6.5	7.0	4.5
PRC	3,744	…	9.3	8.7	9.2
India	1,192	1.9	2.3	3.6	5.4
Japan	39,738	8.0	3.4	2.6	1.0
US	45,989	4.8	2.3	1.8	1.7
World	8,599	0.7	1.4	1.4	1.8

Source: Calculated from World Bank, World Development Indicators.
Note: PRC = People's Republic of China.

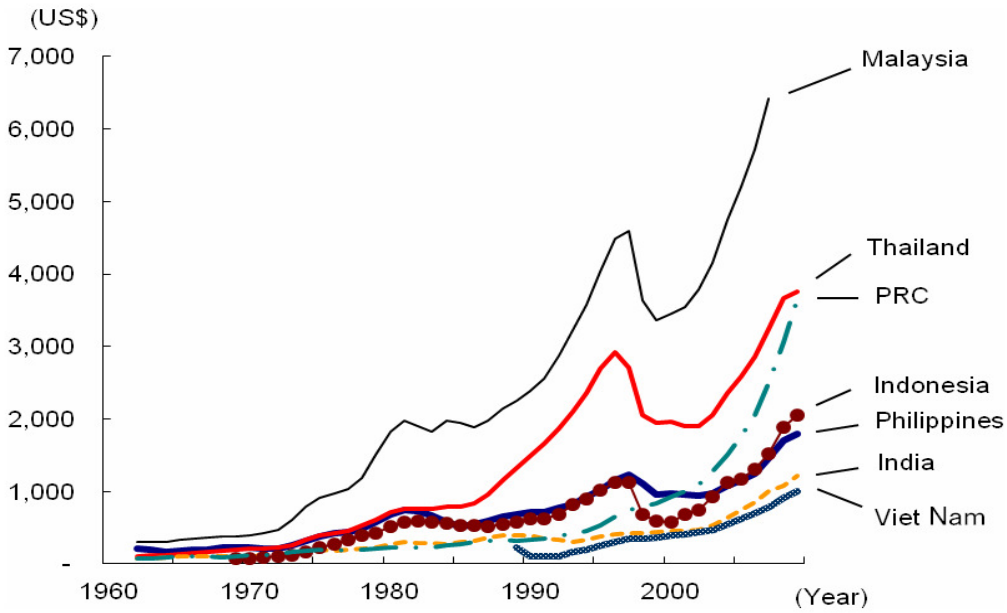

Figure 3: Trends in Nominal Gross National Income (GNI) per Capita for Association of Southeast Asian Nations and Other Economies.
Source: World Bank 2011.
Note: PRC = People Republic of China.

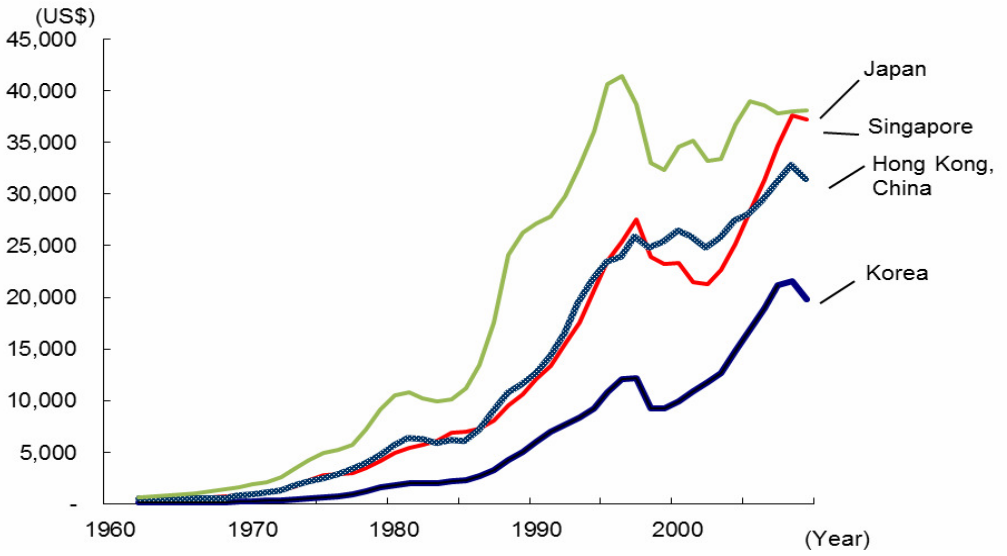

Figure 4: Trends in Nominal GNI per Capita for Asian High-Income Economies.
Source: World Bank 2011.

4. Policy Issues for ASEAN to Avoid the Middle-Income Trap: With Implications from the Experience of the Republic of Korea

In this section, we will compare the current situation of ASEAN middle-income countries with that of Korea in the late 1980s, i.e., about 15 years prior to the transition of this country from middle-income to high-income status. This time span is considered as a period to prepare conditions for such successful transition. As stated in section 2, the analysis will focus on three factors (R&D and human resources, institutions, and international competitiveness) which are supposed to affect the transition.

Research and Development Activities and Quality of Human Resources

The important role of R&D was discussed in section 2. At present, however, R&D expenditure as a percentage of gross domestic product (GDP) is extremely low in four ASEAN middle-income countries (Table 2). Malaysia's figure was the highest among these countries, but it was only 0.64% in 2006, compared with 2.40% for Korea 10 years earlier. In fact, the same indicator for Korea in the early 1980s had already reached 1% and continued to rise in subsequent years (Tran, 1986). Also, according to Park (2000), Korean firms have emphasized the development of technology and R&D activities since the early 1980s. It is noteworthy that small and medium-sized enterprises (SMEs) in Korea have also been active in R&D activities. For many of them, the percentage of R&D expenditure in total sales was as high as 10% in the early 1990s (Park 2000: 338, Table 12.1). This positive behavior of private firms has been enhanced by government policy. The Government of the Republic of Korea has supported private R&D by giving tax credits, allowing accelerated depreciation, and lowering import tariffs (Yusuf et al. 2003: 147). In fact, in Korea, R&D activities have been directly conducted by the government since the mid-1960s. However, since the early 1980s the emphasis has gradually shifted to the private sector[(8)] and the role of government has been to provide incentives through fiscal and trade policies. Of course, the direct role of the government has declined only in relative terms. The public advanced research institutes set up in the 1960s and 1970s, such as the Korean Advanced Institute of Science and Technology and the Korean Institute of Science and Technology, are still major bases of basic and applied research.

The performance of R&D activities has been partly reflected in the number of patents granted. Table 3 shows the trends in the number of patents granted by the US Patent and Trademarks Office, the most important organization in this field in the world. We may compare the performance of ASEAN countries in recent years with that of Korea during 1970-2000. If we divide the cumulative number for Korea in 2000 (156,800) by 30 (years), we get the annual average number of patents of the country—about 5,200. For the 1980s and 1990s, the annual average number would be much higher (about 8,000) if we divide the cumulative number by 20 instead of 30. It is clear from these figures and the information in Table 3 that there is a large gap between the current situation of ASEAN and that of Korea in the 1980s.

(8) According to Tran (1986), based on the data of the (Korean) Ministry of Science and Technology, in 1970, Korea's R&D expenditure as a share of GNP was 0.39%, and the government accounted for 70% of total R&D expenditure. In 1984, the R&D–GNP ratio rose to 1.3% but the share of government declined to 20%.

Table 2: Research and Development Expenditure (% of GDP)

	Malaysia	Thailand	Indonesia	Philippines	Korea
1996	0.22	0.12	…	…	2.42
1997	…	0.10	…	…	2.48
1998	0.40	…	…	…	2.34
1999	…	0.26	…	…	2.25
2000	0.47	0.25	0.07	…	2.30
2001	…	0.26	0.05	…	2.47
2002	0.65	0.24	…	0.15	2.40
2003	…	0.26	…	0.14	2.49
2004	0.60	0.26	…	…	2.68
2005	…	0.23	0.05	0.12	2.79
2006	0.64	0.25	…	…	3.01
2007	…	…	…	…	3.21

Source: World Bank 2011.

Table 3: Number of Patents Granted as Distributed by Year of Patent Grant

	Pre 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Japan	1,612,362	33,223	34,858	35,515	35,348	30,341	36,807	33,354	33,682	35,501	44,814
Taipei, China	171,046	5,371	5,431	5,298	5,938	5,118	6,361	6,128	6,339	6,642	8,238
Korea	156,800	3,538	3,786	3,944	4,428	4,352	5,908	6,295	7,548	8,762	11,671
PRC	18,946	195	289	297	403	402	661	772	1,225	1,655	2,657
Singapore	10,272	296	410	427	449	346	412	393	399	436	603
Hong Kong, China	9,080	237	233	276	312	283	308	338	311	305	429
Malaysia	2,614	39	55	50	80	88	113	158	152	158	202
Philippines	830	12	14	22	21	18	35	20	16	23	37
Thailand	744	24	44	25	18	16	31	11	22	23	46
Indonesia	374	4	7	9	4	10	3	5	5	3	6
Vietnam	36	0	0	0	1	2	0	0	0	2	2

Source: US Patent and Trademark Office 2011.

The related issue is the quality of human resources. The results of R&D activities have to be commercialized into new products (product innovation) or used for improving the process of production of existing products (process innovation). This must be supported by availability of high-quality human resources. This involves not only improving the educational level of the labor force but also increasing the supply of labor needed by firms. In other words, for sustained growth to attain high-income country status, middle-income countries need more tertiary graduates who are interested in engineering and industrial technical training. Looking at the current situation of ASEAN middle-income economies, we find that it is quite different from the case of Korea in the 1980s and 1990s. In Thailand, the Philippines, and Indonesia, graduates in industry fields such as engineering, manufacturing, and construction accounted for only approximately 10% of all graduates, while the share of social sciences in total graduates was as high as about 40%. In contrast, the situation in Korea in 1999 was reversed (Table 4). My earlier paper (Tran, 1986), which analyzed the case of Korea before the mid-1980s, also showed that, compared with the then major developing countries such as Mexico and Brazil, the emphasis in tertiary education in Korea was on engineering and other natural sciences. In ASEAN today, among middle-income countries, only Malaysia is close to the pattern of Korea 10 years earlier, but the gap is substantial (Table 4).

According to Ohno (2009b), middle-income countries must be equipped with industrial human resources that enable the countries to internalize technology and management capability, and to expand localization from physical inputs to human resource, and thus dependency on foreign resources will be reduced. Table 4 and other information suggest that ASEAN is not ready for sustained growth to achieve high-income economy status.

Table 4: Share of Tertiary Graduates in Engineering, Manufacturing, and Construction
(in parentheses are shares of graduates in social sciences)

(%)

	Korea	Malaysia	Thailand	Philippines	Indonesia
1999	35(21)	…	…	…	…
2000	32(21)	…	…	…	…
2001	32(20)	…	…	…	…
2002	30(19)	…	…	…	…
2003	28(19)	…	…	10(34)	…
2004	28(19)	23(22)	…	14(33)	…
2005	29(20)	…	…	…	…
2006	28(20)	24(25)	…	…	…
2007	26(20)	28(31)	…	…	…
2008	25(20)	25(33)	…	…	…
2009	24(20)	…	9(42)	…	16(38)

Source: United Nations Educational, Scientific and Cultural Organization 2011.
Note: Figures are shares in total tertiary graduates.

International Competitiveness and Dynamic Comparative Advantage

With R&D effort and high quality of human resources, middle-income economies can be expected to upgrade their industrial structure to high skill-intensive products and improve over time their competitiveness in international markets. Let us confirm this with the case of Korea.

Figure 5 illustrates the position of Korea and ASEAN economies in terms of labor productivity and wages compared with the US levels (US = 100). The 45° line shows the base where both labor productivity and wages in the US are equal to 100. As wages rise, labor productivity must increase at the same rate or faster in order to maintain international competitiveness. Taking the US as a reference base, the countries on the upper part of the line are relatively competitive in terms of labor cost. According to Figure 5, the position of Korea was well above the line on the upper part, suggesting that the country was quite strong in terms of international competitiveness in 2000.

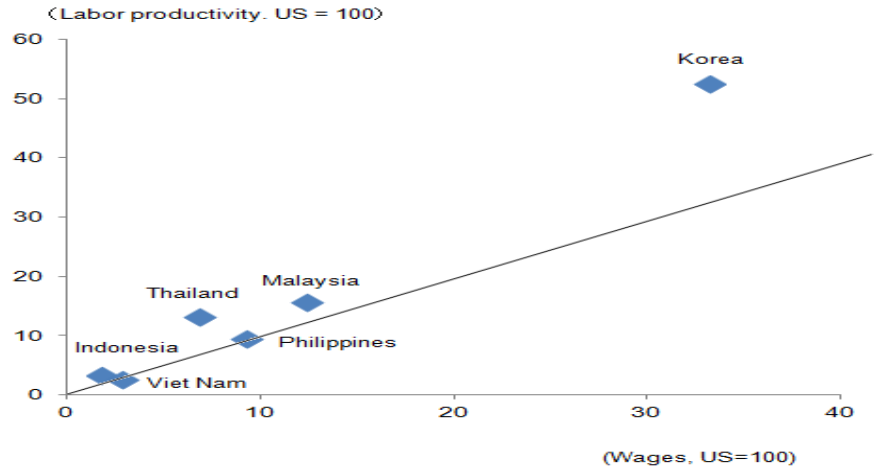

Figure 5: Labor Productivity and Wages in 2000.

Source: United Nations Conference on Trade and Development (UNCTAD) 2002
Note: In both labor productivity and wages, figures of each country are calculated as percentages of the US levels which are shown by the 45° line.

Figure 6 traces the long-term changes in Korea's international competitiveness indexes of low skill-intensive and high skill-intensive manufactured products. Until the mid-1980s, the country had been very competitive in low skill-intensive products, but the competitiveness index of these products has steadily declined since the late 1980s. However, from the mid-1990s, the international competitiveness of high skill-intensive products has strengthened.

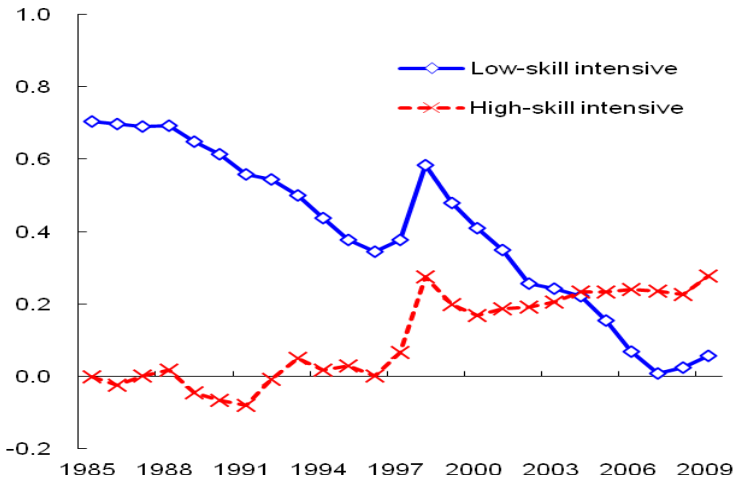

Figure 6: Change in Korea's International Competitiveness Index.
Source: Calculated from United Nations, various years
Note: For the calculation method of the index, see Section 2

Due to data constraints, manufactured products have been classified into only two groups, but we can confirm the success of Korea in shifting over time from low to high skill-intensive products. Firm-level information further confirms that trend. For example, let us look at the case of thin film transistor (TFT) liquid crystal displays (LCDs). LCDs were pioneered in the late 1970s and 1980s by Japanese firms, first in their simpler form (twisted nematic and supertwisted nematic) and then in their more complex form (TFT). By the mid-1990s, Samsung, Hyundai, and LG, in collaboration with the Korean ministries in charge of promoting technological innovation, had succeeded in entering the TFT-LCD industry, providing a challenge to Japanese hegemony[(9)]. At present, many Korean firms such as Samsung and LG are among the top five suppliers of such high-tech electronics products as slim TVs, LCD panels, mobile phones, and computer memory chips (DRAM) in the world market. That strength reflects the dynamic transformation to innovation-intensive products, and demonstrates that Korea has successfully overcome the middle-income trap and become a high-income country.

Next, let us analyze the current situation of ASEAN middle-income economies. According to Figure 7, unlike the case of Korea in 2000 (Figure 5), four ASEAN middle-income economies in 2006 were not in a strong position in terms of labor cost. Malaysia is on the line with the US; the other three countries are slightly above the line. This suggests that productivity of labor has not risen much faster than that of wages.

[(9)] Amsden and Chu (2003: 104-5) and Amsden (2001: 223, Table 8.9) show substantially rising percentages of value-added in high-tech industries from 1980 to 1995 in Korea.

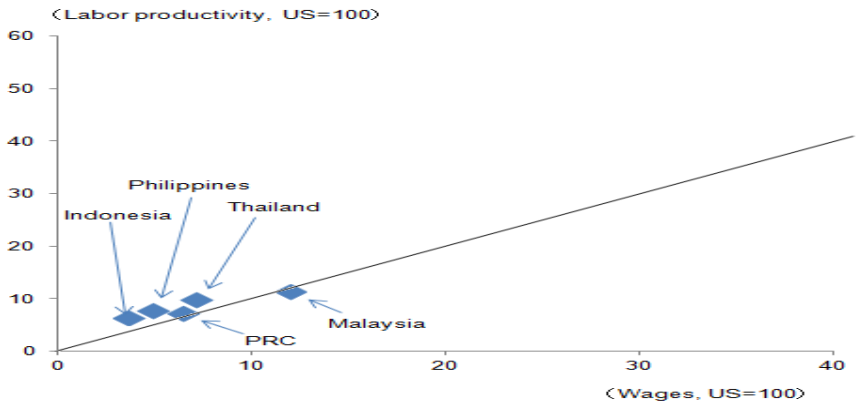

Figure 7: Labor Productivity and Wages in 2006.

Source: United Nations Conference on Trade and Development (UNCTAD), 2002

Note: In both labor productivity and wages, figures of each country are calculated as percentages of the US levels, which are shown by the 45° line.

In addition to weak R&D effort and inappropriate structure of tertiary graduates, which characterized a shortage of supply of engineers and an over-supply of graduates in other fields, the slow improvement of labor productivity relative to wages appeared to weaken the international competitiveness of ASEAN middle-income countries. In the case of Malaysia, since around 2000, while the international competitiveness index of low skill-intensive manufactured products became stagnant, that of high skill-intensive products also lost momentum and showed a slight decline after achieving a modest net gain following the Asian financial crisis in 1997. This suggests that, since around 2000, Malaysia has lost its comparative advantage in both low and high skill-intensive goods (Figure 8).

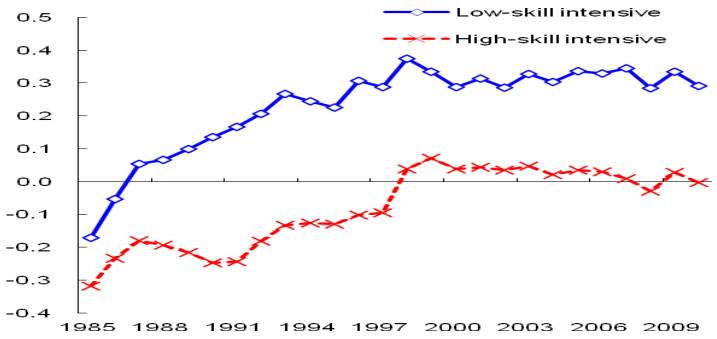

Figure 8: International Competiveness Index of Two Groups of Industries in Malaysia.

Source: Calculated from United Nations, Comtrad Database, various years

In the case of Thailand (Figure 9), the international competitiveness index of low skill-intensive products has steadily declined since the late 1990s, but at the same time the

index of high skill-intensive goods just reached the zero level and has shown almost no improvement since then. Therefore, in the manufacturing sector as a whole, Thailand tends to show a decline in international competitiveness.

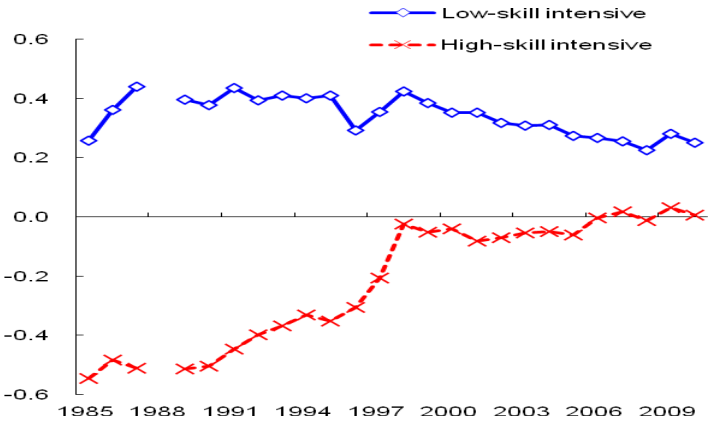

Figure 9: International Competiveness Index of Two Groups of Industries in Thailand.

Source: Calculated from United Nations, various years.

The Philippines has been a net exporter of high skill-intensive manufactured products since 2008 but international competitiveness has improved only very slowly (Figure 10). In addition, the country seems certain to become a net importer of low skill-intensive products in the coming years since the index of these products is only slightly higher than the zero line and has declined steadily.

The most serious case is that of Indonesia. Since around 2000, the international competitiveness index of low skill-intensive products has declined, though at a slow rate, but the index of high skill-intensive products has shown no improvement. Moreover, since 2006, the international competitiveness index of both types of products has declined sharply. If this trend continues, in the coming years Indonesia will become a net importer of low skill-intensive products while the deficit of trade in high skill-intensive products also continues to grow. This dis-industrialization phenomenon may be a result of the export boom of primary commodities, such as natural gas and crude oil, from this country which is rich in natural resources. Since the turn of the 21st century, the prices of primary goods in world markets have risen rapidly. For example, according to Datastream (2011), prices of primary goods such as iron ore and crude oil jumped by three to four times from 2002 to 2008 [8]. On the other hand, along with rapid growth for as long as 30 years, since the mid-1990s the economy of the PRC has relied largely on external sources of primary products. Price rises and increased demand for natural resources from the second-largest economy in the world have had a strong impact on resource-rich neighbors such as Indonesia, Malaysia, and Vietnam. One such impact is the dis-industrialization brought about by the so-called "natural resource curse"[(10)].

(10) See Coxhead (2007), and Coxhead and Jayasuriya (2009) for good studies on the impact of the PRC on resource-rich Southeast Asian economies.

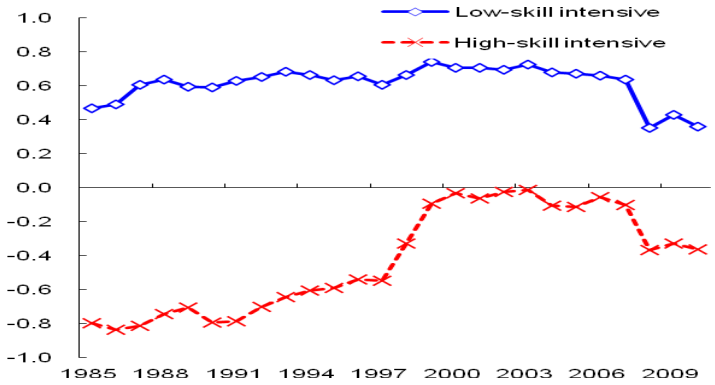

Figure 10: International Competitiveness Index of Two Groups of Industries in Indonesia.
Source: Calculated from United Nations, various years.

The Institutional Factor

As noted in section 2, building high-quality institutions is essential for a middle-income country to prepare for a successful transition to a high-income economy. Given the severe data constraints, in this subsection let us examine the indicators on economic incentive and institutional regime which are important for lowering business costs, reducing uncertainties, and encouraging the private sector to invest in R&D and new industries.

Data for Figures 12-13 are taken from the results of the most recent survey of the World Bank (2010) for 146 countries. The largest circle in Figure 11 and Figure 12 shows the highest levels (10 points) of innovation-related indicators among the countries surveyed. The smaller circle shows an average quality (5 points) of each aspect of institutional indicators. This average quality level is also approximately the average position of all countries surveyed.

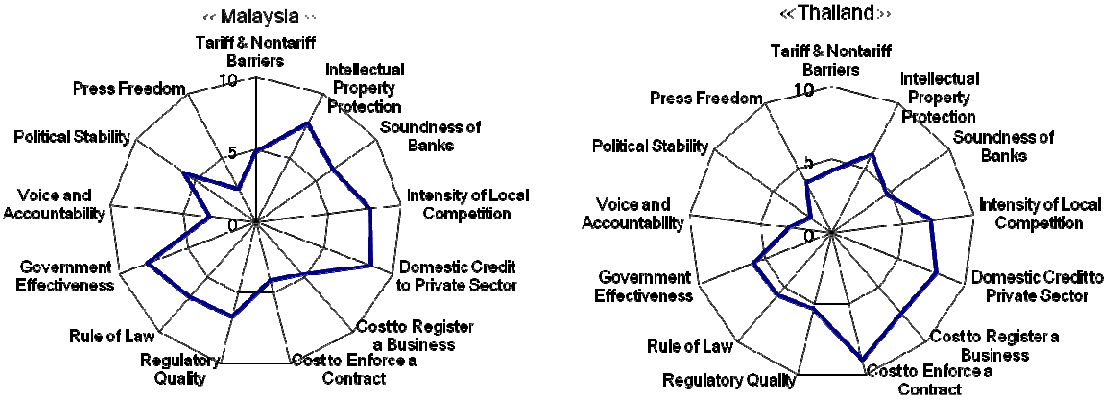

Figure 11: Relative Position of Association of South East Asian Nations (ASEAN) on Economic Incentive and Institutional Regime in Malaysia and Thailand.
Source: World Bank 2010

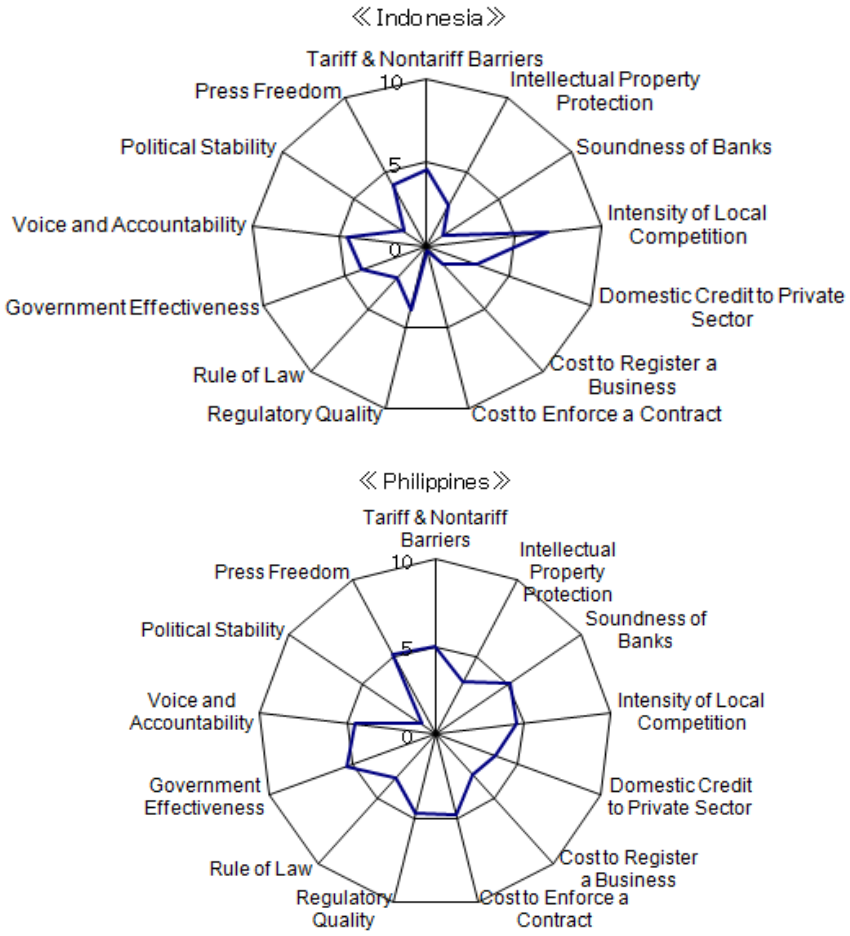

Figure 12: Relative Position of Association of South East Asian Nations (ASEAN) on Economic Incentive and Institutional Regime in Indonesia and Philippines.
Source: World Bank, 2010.

Malaysia is in a relatively strong position in such indicators as domestic credit to the private sector, government effectiveness, and intellectual property protection, but there is much room to improve press freedom, cost to enforce contracts, and voice and accountability. For Thailand, the position is relatively good in cost to enforce contracts, domestic credit to the private sector, and intensity of local competition, but in many other aspects its position is relatively weak. In the case of the Philippines, most indicators are much lower than the average position of the countries surveyed. In particular, political stability, rule of law, and intellectual property protection are major fields which need substantial improvement. Indonesia appears to be in an extremely weak position in most indicators and thus the quality of institutions for a sound business environment should be substantially improved.

The data set for the ASEAN 2030 Project prepared by the Asian Development Bank Institute (ADBI) are also useful for analyzing the institutional factors of ASEAN countries. Looking at these data, we find that the Philippines and Indonesia were classified in the negative side of all indicators on governance (voice and accountability, political stability, government effectiveness) and on the regulatory system (rule of law, regulatory quality index)[(11)]. Thailand was also on the negative side of all those indicators, except for government effectiveness. Malaysia is on the positive side for most indicators, except for voice and accountability, but its scores are generally low.

Regarding the control of corruption, the situation in Indonesia and the Philippines is particularly serious; the index in these two countries was -0.7 in 2009. The index of Thailand was also negative, even though its situation was better than in the Philippines and Indonesia[(12)].

5. The Case of Vietnam: The Possibility of an Early Appearance of the Middle-Income Trap?

As shown in section 3, the per capita GNI of Vietnam was US$1,000 in 2008, and thus by the World Bank standard the country joined the middle-income group. In fact, middle income is widely defined as ranging from $1,000 to $12,000 but analysts discussing middle-income trap issues tend to look at the countries which have reached about $5,000 or more (e.g., Spence 2011). In other words, if middle-income countries are divided into low and high subgroups, the trap issues have often been referred to as the high subgroup of middle-income countries. How should we view the case of low middle-income countries? Will they continue to grow to the level of high middle-income countries without worrying about the trap? Or will the trap appear early so that the economy stagnates or shows slow growth, with per capita GNI at around $2,000? These questions are currently relevant to Vietnam.

Since the start of *Doi moi* (renovation) in 1986, and especially after the drastic reforms in 1988 and 1989, Vietnam has experienced fairly good economic development until recently. Economic growth was high, averaging about 7.5% per annum in 1990-2010. Real per capita GNI has shown average growth of more than 6% (Table 1). Poverty incidence declined from about 70.0% of the population at the end of the 1980s to 10.6% in 2010.

This performance has been attributed to the early reform in agriculture (by shifting production from cooperatives to the family-based system in the late 1980s) and later to increasing integration into world markets, which resulted in the expansion of exports and inflows of foreign direct investment (FDI). Since the early 1990s, the economy of Vietnam has been characterized as trade-oriented and highly dependent on FDI. Exports as a percentage of GDP steadily rose from 26% in 1990 to 70% in 2010. The share of FDI in fixed capital formation averaged around 15% during 2001-2009, and was even higher in the previous decade.

In the process of *Doi moi,* however, reforms of state-owned enterprises (SOEs) have been slow and the factor markets have not been well developed. Many small SOEs have been privatized or semiprivatized, but larger SOEs

(11) The position of each country was assessed by a score ranged from –2.5 (the worst) to 2.5 (the best).

(12) The analysis of Coxhead (2007) also showed the serious situation in Indonesia and the Philippines regarding the control of corruption.

have been reorganized and diversified into economic groups which have enjoyed protection and advantages in access to credit, land, and information on public investments. Private firms, particularly small and medium-sized firms, face many difficulties in accessing financial and physical resources. Allocation and implementation of resources for public investment have also been distorted by vested interests and corruption. The market for land has not been developed due to state ownership of this resource; each farmer is allocated only 3 hectares and cannot own it. In addition, local governments may take back that land any time for reasons such as development of infrastructure, industrial parks, or even golf courses. In such cases, compensation paid to farmers is usually far lower than market prices. Land disputes therefore often occur in almost every province. The limit of land allocation for each farmer and lack of private land ownership are institutional impediments to higher agricultural productivity and more efficient use of land resources. Social unrest in rural areas also has adverse effects on the future development of Vietnam's economy.

The first 20-25 years of reforms in Vietnam, the first phase of *Doi moi*, can be characterized as gradualist in the sense that the strategy postponed the reforms on ownership of production means, such as SOEs and land due to political sensitivity, while providing incentives for farmers and private investors (mainly foreign investors in the case of Vietnam) to expand production. As shown earlier, such strategy has so far been effective and Vietnam has been able to escape from the poverty trap and join the group of low middle-income countries.

In the earlier phase of *Doi moi,* the gradualist strategy was effective because reforms focused on agriculture and FDI, and the existence of SOEs was not an obstacle in resource allocation. But since 2006, SOEs have become state conglomerates which have affected Vietnam's economic policies and factor markets. In addition, due to deepening integration into international markets, marked by the accession of Vietnam to the World Trade Organization in January 2007, Vietnamese industries have been increasingly exposed to intense competition and thus further reforms for increasing their productivity have become essential.

In an earlier paper (Tran, 2008), I emphasized the necessity to have new reforms characterized by high-quality institutions which include private ownership of production factors, development of factor markets, corporate governance of SOEs and economic groups, wide participation of stakeholders in policymaking processes, transparency of policy and its implementation, and increasing quality of bureaucrats and technocrats. I argued that, without these new reforms, the Vietnamese economy will soon fall into stagnation or slow growth, as depicted by C–E in Figure 1. I did not use the term "middle-income trap" as it was not popular at that time, but the essence of my point was the same as what I have explored in this paper.

Thus, even though Vietnam is just entering the low level of middle-income, the trap may appear soon if the country fails to shift from gradual to drastic reforms of SOEs and economic groups, factor markets, and policy formulation[13]. While the problem for high

[13] Another problem encountered by Vietnam has been the impact of the rise of the PRC. Continuing expansion of manufactured imports from the PRC has resulted in a large trade deficit amounting to more than 10% of Vietnam's GDP in 2011. In addition to the rapid industrialization of its giant neighbor, the fundamental reason for this serious imbalance is Vietnam's lack of international competitiveness in manufactured products. Moreover, by 2015 when tariffs of most manufactured goods imported from the PRC will be removed or substantially lowered, the impact from the PRC will have

middle-income countries such as Malaysia and Thailand is in promoting innovation-oriented policy to maintain international competitiveness to avoid the trap, the problem for a low middle-income country such as Vietnam is promoting development of factor markets and ensuring equal competition among economic actors for efficient use of capital, land, and other resources. Otherwise, countries such as Vietnam may encounter the early appearance of a middle-income trap.

6. Concluding Remarks

In this paper, from the perspective of development economics, we have discussed the features of the middle-income trap so as to identify relevant development issues. We also identified five middle-income ASEAN countries. Except for Vietnam which has just joined this group and was therefore analyzed in a different context, the other four countries - Indonesia, Malaysia, the Philippines, and Thailand - have been studied to see whether they can avoid the middle-income trap and transition to high-income economies. For an answer to this question, the analytical framework suggested three factors be considered - R&D effort and high quality of human resources, dynamic shift in comparative advantage, and the high quality of institutions. Another characteristic of our methodology was to compare the current situation of the four ASEAN countries on those three factors with the situation of Korea in the late 1980s or early 1990s (depending on the availability of data). Korea was successful in overcoming the middle-income trap and made the transition from an upper middle-income to a high-income economy around 2000, so the efforts of this country about 15 years before that turning point would provide lessons for contemporary ASEAN middle-income countries.

From the results of our analysis of the trends in the structure of comparative advantage, characteristics of tertiary education, R&D capability, and the institutional system, it appears highly possible that the four ASEAN countries under study will fall into the middle-income trap. Policies to strengthen R&D capability, emphasize the high quality and appropriateness of human resources, and improve the institutional system for nourishing a dynamic private sector are essential. For a low middle-income country such as Vietnam, reforms and policies to increase the productivity of capital, land, and other resources are essential to avoid the early appearance of the trap.

become much stronger (Tran 2010b). This impact appears to strengthen the possibility of an early appearance of the middle-income trap in Vietnam. For Vietnam, therefore, further reforms aimed at strengthening the international competitiveness of manufactured products are essential if the country is to escape this trap.

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