Chapter 2 Creation of the "Pan Asian Market" leading New Development of the world economy

In Chapter 1, we confirmed that the rapid economic development of emerging countries expands the final demand of emerging countries by linking consumption and investment, thereby forming a "five-billion-people market" as a new global market. This five-billion-people market is becoming the driving force of a new virtuous circle of the global economy, and the Japanese economy is strengthening its ties with this new "trade area."

With a population of three billion, it is Asia that is becoming the growth center in this five-billion-people market. Asia's role as the world's production base is being defined through direct investment from Japan; further, the incomes in Asia are improving. This brings in the prospect of a "big consumption market" having much in common with the Japanese market. In addition, there is potential for new "knowledge creation" in Asia owing to the economic development in and rich and diverse human capital of its constituent countries such as China (the "world's factory") and India (the "world's IT stronghold")[1].

Economic development as a big consumption market and knowledge creation base along with accelerated economic cooperation among Asian countries led by ASEAN[2] is expected to bring in economic unification, as a "value creation base" is established in Asia, and become the framework for Asia's autonomic development. Amid such circumstances, the role of Asia as a new economic bloc for Japan is getting stronger. In this white paper, this new economic bloc is called the Pan Asian Market.

Section 1 of this chapter will examine the status of the reflow of products and production factors such as people, goods, money, skills, and knowledge in the world, particularly focusing on Asia. We also analyze the development potential of Asia as a big consumption market and as a knowledge creation base as a result of this reflow.

Then, since the formation of a market of products and production factors in Asia and the deepening of economic linkages between Japan and other Asian countries imply the advancement to a new level of globalization in Japan, Section 2 will examine the development of economic globalization in Japan and Japan's relations with Asia.

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[1] In addition, according to Fujita (2008) "CHI NO RUNESANSU WO HIROGEYO," national initiatives are on the way as "many East Asian countries and territories including Singapore and Hong Kong are seeking to morph their societies. For example, in China, in the medium- and long-term technology development plan announced two years ago, the development of the nation to a "major scientific and technological power" that is an innovation-based nation at the same level with developed countries by the year 2020, and to the world's most advanced "scientific technological power" by the year 2050 has become the national aim." Of course, in Japan, "Innovation 25," with a view until 2025, has been summarized in June 2007.

[2] In addition to the already agreed Japan-ASEAN, Korea-ASEAN, and China-ASEAN agreements, if the India-ASEAN and Australia-New Zealand-ASEAN agreements, which are under negotiation, are signed, in all, five ASEAN+1 agreements will be in place.

Section 3 will analyze the shape of the international industrial structure in Japan with regard to the creation of the "Pan Asian Market," including the necessity of the international development of the industries, which have thus far depended on domestic demand.
Finally, this section will examine the shape of the market system of Japan's "100-million-people market" and how Japan's domestic market will play a key role as a creation base in this "pan Asian market" and lead to value creation in Asia.

Section 1 Unifying the world economy and Asia

In recent years, as a phenomenon of economic globalization, the international movement of products and production factors such as people, goods, money, skills, and ideas has risen. As we enter the new century, we notice that the flow of products and production factors is increasingly becoming more active.

In the past, globalization of goods by trade took place at the center. With the introduction of the Bretton Woods system[3] in 1944, the free trade system was promoted and globalization of goods progressed rapidly on two wheels: stable exchange rate between the countries that was set by the IMF to facilitate free trade and the removal of trade impediments in each country through the implementation of the General Agreement on Tariffs and Trade (GATT). However, in the last 20 years, financial globalization progressed rapidly owing to capital deregulation and advancement of informatization in each country as well as the prosperity of financial and capital markets. In addition, backed by the development of a knowledge economy and the growing convenience of the available means of transportation such as air travel, population globalization has also been progressing rapidly. Thus, economic globalization now involves all management resources such as people, goods, and money, and is reaching a new stage.

This section will confirm the development of globalization, focusing on people, goods, and money, and review the structure of the flow of these factors around the world. At the same time, this section will also review the position that the Asian region, including Japan, takes in this global flow of people, goods, and money.

1. Deepening of the international finance and capital market and financial integration in Asia

As examined in Chapter 1, global financial integration is progressing rapidly in combination with the prosperity of market-oriented finance. In this circumstance, we will examine the situation wherein the financial and capital markets of Europe and the U.S. are becoming the core of the global cross-border flow of money along with the diversification of financial intermediaries. The possibility of financial integration in Asia will be evaluated against this background.

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[3] The Bretton Woods system, in the context of international currency, often means the IMF-centered international monetary system based on the fixed exchange rate system. Because of the IMF agreement signed in Bretton Woods, New Hampshire, the U.S., in July 1944, it was decided that countries adopt a fixed exchange rate system based on the value of the U.S. dollar (1 dollar = 1/35 troy ounce of gold) and (1) keep the movements of the exchange to less than 1% of the par value (above/below). Further, a (2) change of par value is allowed only when fundamental disequilibrium is established.

(1) Flow of money around the world

In recent years, the cross-border flow of funds has expanded rapidly. According to the McKinsey & Company (2008) survey (hereafter, M&C (2008)), financial interdependence is growing[4].

The foreign investment balance reached an all-time high of 74,500 billion dollars at the end of 2006. In 2007, this record is expected to be broken, in spite of the credit uncertainty in European and American markets.

In addition, according to the same survey, the U.S. was the sole global finance hub in 1999; however, recently, the U.K. and the Eurozone have begun to form another hub.

With regard to Japan, the survey pointed out that "the increase in capital transactions between Japan and other countries/regions since 2000 is relatively small[5] in comparison to the increase observed among the U.S., Europe, Asia, and the Middle East during the corresponding period." Therefore, we will verify the prosperous flow of money concentrating toward Europe and the U.S.

(Concentration of the flow of money toward Europe and the U.S.)

Cross-border capital flow for the years 2006 and 2007 was reviewed using the Japan-U.S. balance of capital account statistics (see Figure 2-1-1).

The result, as expected, was that capital transactions between the three poles—the U.S., U.K., and Eurozone—are particularly active, and that cross-border capital flow is concentrated toward Europe and the U.S. There is a structure in that the world's capital is gathering in the U.S. and capital is flowing in widely not only from Europe but also from Japan and emerging countries in Asia, the Middle East, and Central and South America. In addition, what was noted is that capital flow from the U.K., which forms one of the three poles, to Japan is growing at the same level as the flow between Europe and the U.S.[6].

At the same time, the influence of the subprime mortgage crisis in the U.S. was inspected through a comparison between these two years. The largest change appeared in the capital transference from the Eurozone to the U.S. Capital export from the Eurozone to the U.S. reached 189,600 million dollars in 2006, but in 2007, there was a capital inflow (i.e., withdrawal) of 53,500 million dollars. It is suspected that European financial institutions sold American securitized papers (CDOs[7], etc.) in large quantities.

In addition, according to the Bank for International Settlements (BIS) statistics, with regard to the foreign credit balance of banks in each country (unlike the flow of funds based on the balance of

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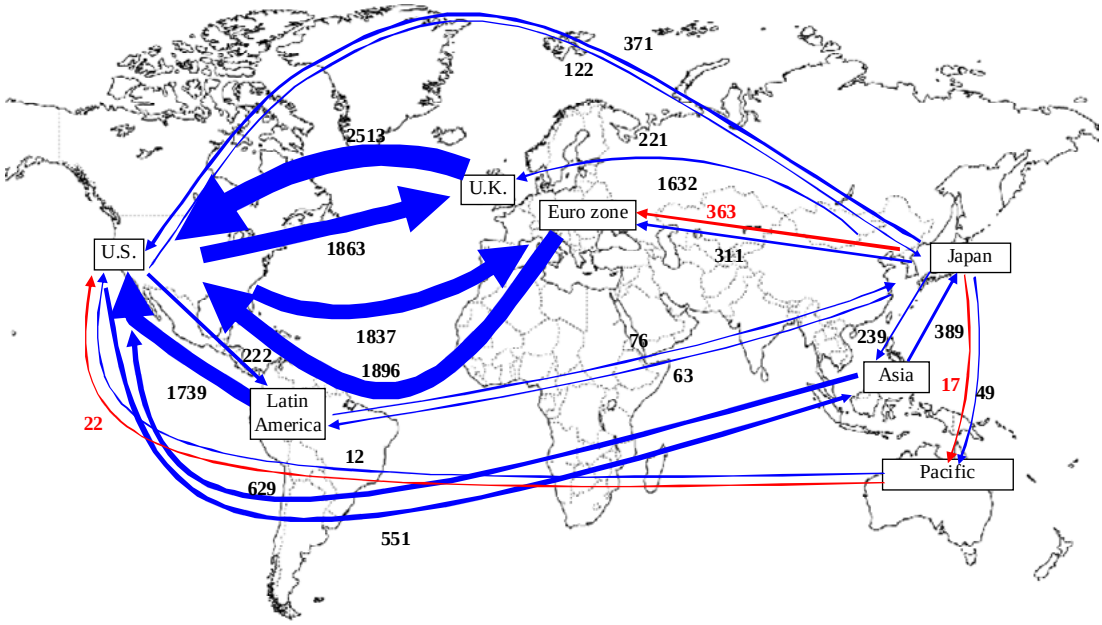
[4] McKinsey & Company (2008), "Long-term trends in the global capital markets", February 2008.
[5] Cabinet Office (2008), "SEKAI NO SHIKIN NO NAGARE", *The second Council on Economic and Fiscal Policy 2008*.
[6] It is thought that most of the capital inflow from the U.K. to Japan is the capital of oil-producing countries that have savings accounts in the U.K. (namely, oil money). The impact of capital inflow from the U.K. to Japan and its background will be discussed in slightly more detail in Column 3.
[7] Collateralized Debt Obligation (CDO) is a securitized paper, a type of asset-backed security collateralized by assets consisting of corporate bonds and rental credits (loans), etc. When products used as collateral are bonds or bond resemblance products, the paper is called a CBO, but when they are rental credits, it is called a CLO. CDO implies products including either or both CBO and CLO.

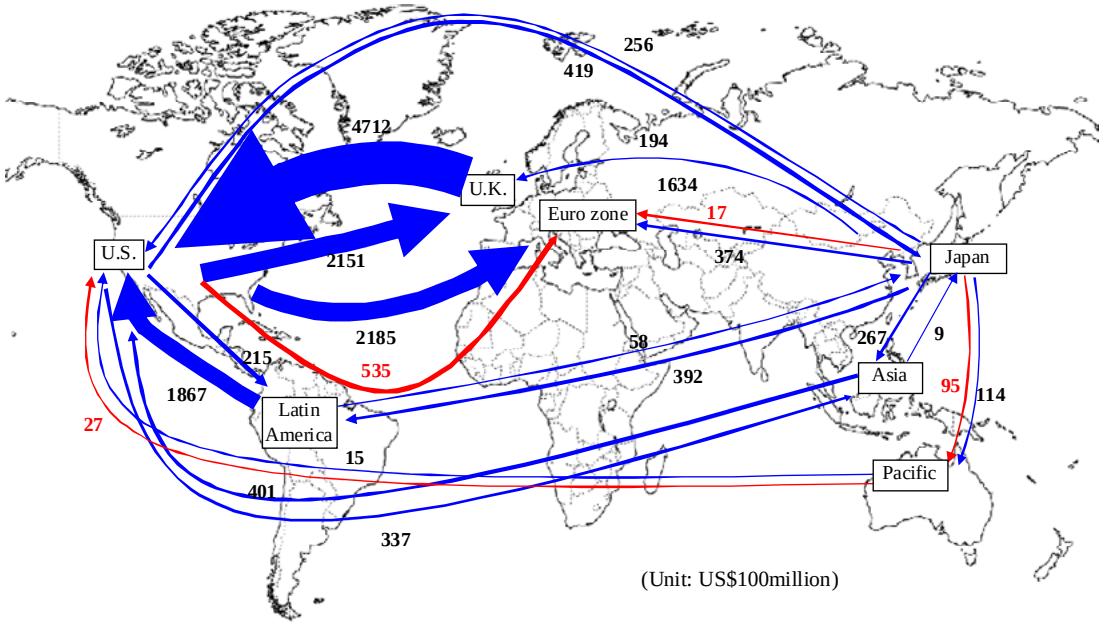
capital account where the U.S. leads), European financial institutions have a major presence in emerging countries in Africa, the Middle East, Central and Eastern Europe, and Asia. These institutions have the highest outstanding loans in these regions that have strong historical connections with Europe (see Figure 2-1-2).

Figure 2-1-1 Global flow of money in capaital account (2006)



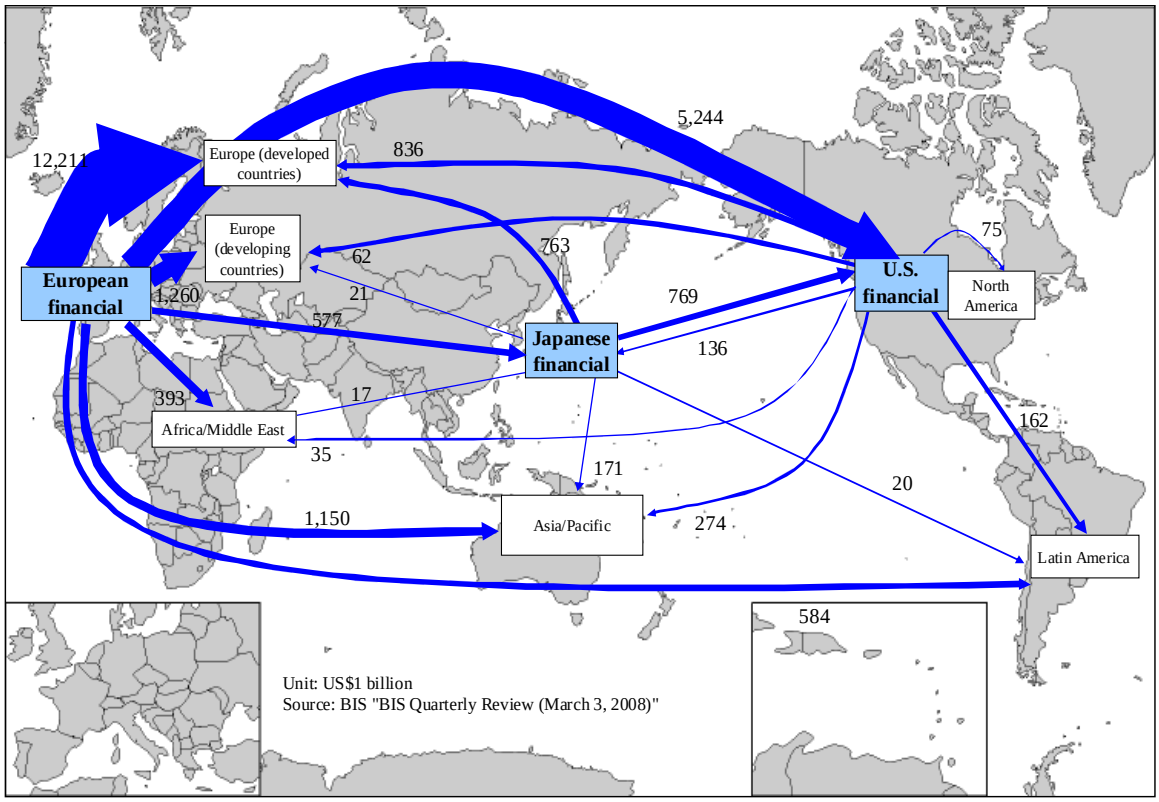
Note: January to November for Japan-related transactions. First to third quarters for U.S.-related transactions
Sources: Ministry of Finance, Japan; Bank of Japan, "Balance of Payments"; U.S. Department of Commerce "U.S. International Transactions"

Global flow of money in capaital account (2007)



Note: January to November for Japan-related transactions. First to third quarters for U.S.-related transactions
Source: Ministry of Finance, Japan/Bank of Japan, "Balance of Payments", U.S. Department of Commerce, "U.S. International Transactions"

Figure 2-1-2 Status of foreign loans by region by major Japanese, European and American banks (as of the end of



(An international finance hub formed by the U.S. and Europe)

This structure of the flow of funds where Europe and the U.S. are functioning together as an international finance hub leads to differences in the financial capital market size and its effectiveness in each country.

For example, when the transaction volume of the top 10 countries in terms of foreign exchange volume, which is an index showing the scale of financial and capital markets of each country as an "international financial center," was compared with the corresponding figures from the previous decade, although the order does not change much, we observe that London and New York have still ranked first and second, respectively. These two cities exhibit largely expanding transaction volumes and form the two poles of the global financial markets. In addition, from 1990 to 2006, trading value in the New York Stock Exchange and the London Stock Exchange increased by 1600% (to 21 trillion dollars) and 1400% (to 8 trillion dollars), respectively, while it only increased by 500% in the Tokyo Stock Exchange (see Table 2-1-3).

Table 2-1-3 Transition of Top 10 countries in foreign exchange transaction volume (Unit: US$1 billion)

	1998		2007	
Rank	Country name	Volume	Country name	Volume
1	U.K.	637	U.K.	1,359
2	U.S.	351	U.S.	664
3	Singapore	139	Switzerland	242
4	Japan	136	Japan	238
5	Germany	94	Singapore	231
6	Switzerland	82	Hong Kong	175
7	Hong Kong	79	Australia	170
8	France	72	France	120
9	Australia	47	Germany	99
10	Netherlands	41	Denmark	86
	Other	291	Other	604

Source: BIS Web site.

(Background of the activation of the international flow of funds)

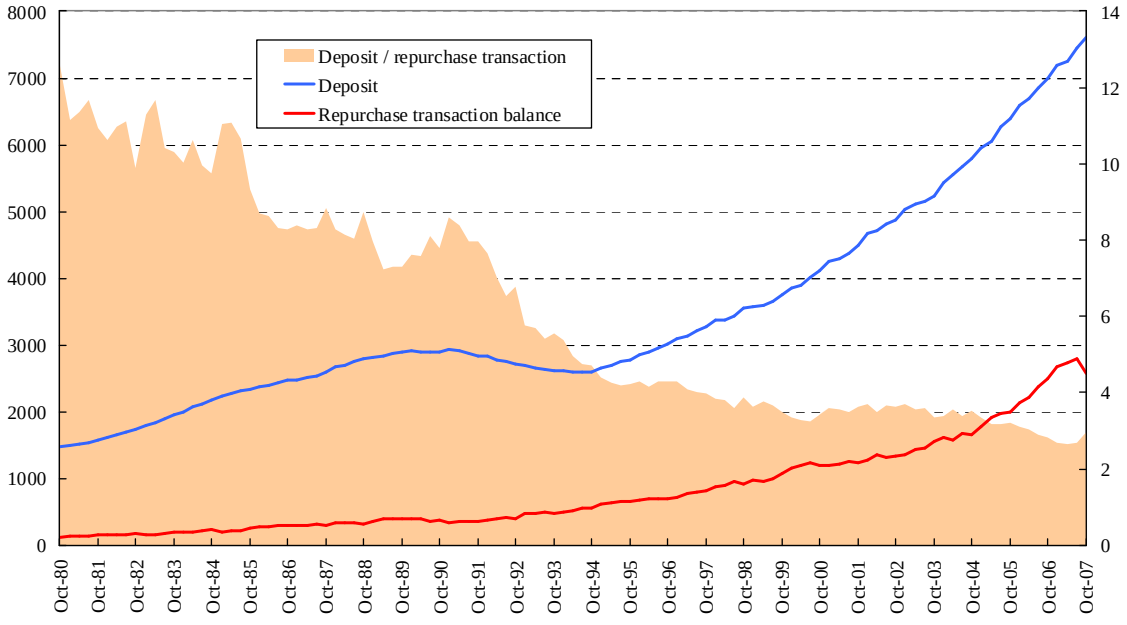
Factors that have accelerated the cross-border flow of money are the low interest rates that have been maintained on a global scale[8] and the export of capital to the U.S. owing to the expanding current account surpluses of Asian countries and resource-rich countries even though the large disproportion in current balance continues. This abundant supply of money became the source of credit creation by European and American financial institutions and was spread worldwide, mainly as private capital.

[Column 2] Expanding repurchase transaction market and the new concept of money

Expansion of bond issues associated with the rise of market-oriented financials is expanding "repurchase transactions"[9] in the world. In particular, repurchase transactions have now started being actively utilized as a means for the procurement of short-term capital, mainly among investment banks, which were in possession of a large number of bonds. In fact, in the U.S., where market-oriented finance is well-developed, the repurchase balance is more rapidly expanding than the deposit balance (money supply) and is now reaching to one-third of the deposit balance in terms of scale (see Column Figure 2-1).

(Unit: One billion dollars)

Column Figure 2-1 Trends in repurchase transaction balance and deposit



Source: The U.S. FRB "Flow of Funds".

[8] The expansion of the so-called yen-carry trade is one such example.

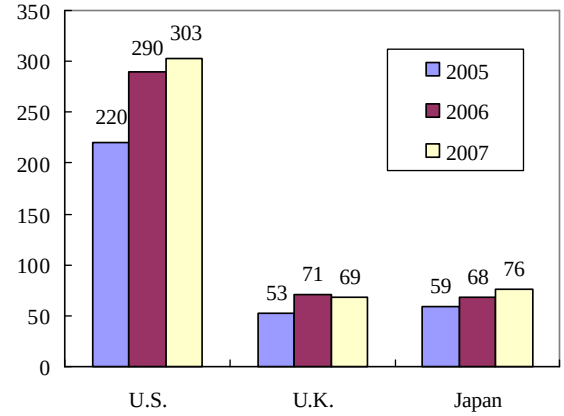
[9] A repurchasing transaction is a security credit transaction, wherein the selling and buying of bonds involves a buy-back arrangement or sale-back agreement. Subjects to transaction are liquid and highly creditworthy national bonds, government securities, and mortgage-backed securities.

The ratio of repurchase transaction to short-term money market deposit is also increasing in Japan. A comparison on the basis of the volume of transactions in these past three years reveals that although Japan is far behind the U.S., it is approaching the scale of the U.K. However, the turnover ratio (amount of transactions/amount of outstanding repurchase agreements) in Japan is lower than that in the U.S. and U.K. Consequently, it may be said that repurchase transactions still have room to expand in Japan (see Column Figure 2-2).

Column Figure2-2 Transaction volume and sales turnover at repo markets in Japan, U.S. and U.K.

(1) Level of transaction volume

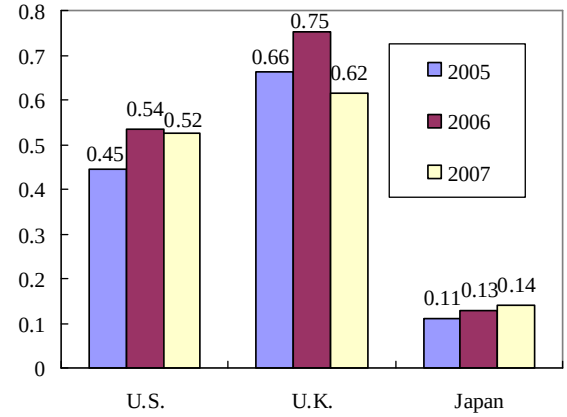
(Unit: Thousand billion yen)



Sources: FRB "Flow of Funds"
Japan Securities Dealers Association
Bank of England "Monetary & Financial Statistics"

(2) Ratio of transaction balance to outstanding issue

(Unit: Thousand billion yen)



Sources: FRB "Flow of Funds"
Japan Securities Dealers Association
Bank of Japan "Shikin Junkan"
Bank of England "Monetary & Financial Statistics"
Debt Management Office "Quarterly Review"

Moreover, the repurchase transaction market is expected to expand further in the future.

Traditionally, the supply of capital has been measured by money supply that consists of cash, deposits, etc. Money supply functioned as an index of fluidity at the time when commercial banks were playing the central role as financial intermediaries. However, at present, when new financial intermediaries such as investment banks and hedge funds have appeared and these financial intermediaries have begun to engage in off-balance-sheet financing transactions, it is necessary to add repurchase transaction balance to money supply in order to grasp fluidity precisely.

As various types of securitized papers such as mortgage-backed securities start being subjected to repurchase transactions, the repurchase transaction market will broaden even more in the future if market-oriented finance expands further and fluidity and trust in securitized paper grows.

(2) Players in the diversifying financial and capital markets

The behavior pattern of players such as investors, enterprises, and financial institutions is changing with the development of financial globalization. Investors have come to diversify their portfolio and select the most suitable investment opportunity from the wider choice of options (in terms of industry, region, and currency). In addition, multinational companies can now raise funds for their cross-border operations and M&As through both domestic and overseas financial and capital markets. Amid such

circumstances, financial institutions are exposed to severe global competition and are forced to seek for-profit sources other than conventional intermediation and fee-based businesses.

(Progressive reorganization and consolidation of financial institutions)

In fact, financial institutions in different countries have come to pursue capital adequacy that is capable of meeting their risk-taking needs in order to raise profits, investment in large-scale information systems that are necessary for operations for individual customers, and one-stop services that enable various financial dealings in one location. Reorganization of the European and U.S. financial institutions became particularly active between the 1990s and early 2000s. From 2000 onward, cross-border M&As of financial institutions have become more active, indicating that the reorganization of financial institutions is advancing at the global level (see Table 2-1-4).

Table 2-1-4 Recent industrial reorganization/M&A cases by European and American financial institutions

1995	Acquisition by SBC (Switzerland) of SG Warburg (U.K.)	2002	Acquisition by Citizens Financial Group (U.S.) of Melon Fin (U.S.)
1996	Merger between Chemical (U.S.) and Chase Manhattan (U.S.)	2003	Acquisition by HSBC of Grupo Financiero Bital (Mexico)
	Acquisition of by Credit Local (France) of Credit Communal (Belgium)		Acquisition by GE Consumer Finance (U.S.) of First National Bank (U.K.)
	Acquisition by ABN Amro (Netherland) of Standard Federal Bancorp (U.S.)	2004	Acquisition by Baclays Madrid (Spain) of Banco Saragosano (Spain)
1997	Acquisition by SBC(Switzerland) of Dillon Read (U.S.)		Acquisition by Santander Central Hispano (Spain) of Abbey National (U.K.)
	Acquisition by Travellers Group (U.S.) of Solomon (U.S.)		Acquisition by BBVA(Spain) of Grupo Financiero BBVA(Mexico)
1998	Acquisition by Nations (U.S.) of Bank of America (U.S.)		Acquisition by HSBC of BoCOMM(China)
	Acquisition by Citi Corp (U.S.) of Travellers		Acquisition by Citigroup of Hanmi Bank (Republic of Korea)
	Acquisition by ABN Amro (Netherland) of Bank Real (Brazil)	2005	Acquisition by HSBC of Bank of Bermuda (Bermuda)
	Merger between UBS(Switzerland) and SBC		Acquisition by UniCredit (Italy) of Bayerische Hypo- und Vereinsbank (Germany)
1999	Acquisition by Deutsche Bank (Germany) of Bankers Trust (U.S.)		Acquisition by Barclays (U.K.) of ABSA (South Africa)
	Acquisition by HSBC (U.K.) of Public New York (U.S.)		Acquisition by Standard Chartered PLC (U.K.) of Korea First Bank (Republic of Korea)
	Acquisition by BNP (France) of (France)		Acquisition by UniCredit of Bank Austria Creditanstalt (Austria)
2000	Acquisition by Credit Swiss (Switzerland) of DLJ (U.S.)	2006	Acquisition by Investor Group (U.K.) of Bank of China (China)
	Acquisition by HSBC of Credit Commercial (France)		Acquisition by BNP Paribas of Banca Nazionale del Lavoro (Italy)
	Acquisition by UBS of Paine Webber (U.S.)		Acquisition by Erste (Austria) of Banca Commerciala Romana (Romania)
	Acquisition by MeritaNordbanken(Finland) of Unidanmark (Denmark)		Acquisition by ABN Amro (Netherland) of Antonveneta (Italy)
	Acquisition by MeritaNordbanken of Christiania(Norway)		Acquisition by National Bank of Greece (Greece) of Finance Bank (Turkey)
2001	Merger between Chase Manhattan (U.S.) and JP Morgan (U.S.)		Acquisition by Credit Agricole (France) of Emporiki (Greece)
	Acquisition by Citigroup (U.S.) of Banacci (Mexico)		Acquisition by China Construction Bank (China) of Bank of America Hong Kong (Hong Kong)
	Acquisition by Hypo- und Vereinsbank (Germany) of Bank Austria (Austria)		Acquisition by Societe General (France) of HVB Splitska (Croatia)
	Acquisition by ABN Amro (Netherland) of Michigan National Corp (U.S.)		Acquisition by Standard Chartered (U.K.) of Hsinchu International Bank (Taiwan)
	Acquisition by Royal Bank of Canada (Canada) of Centura (U.S.)		

Note: Extracted from cross-border M&As of over US$1 billion listed in the UNCTAD "World Investment Report"
Sources: T. Nakao, (2008) "AMERICA NO KEIZAI"; UNCTAD "World Investment Report", others

(Appearance of new entities)

It is the movement of investment funds[10] and other entities in addition to the activity of multinational companies and financial institutions that is expanding the cross-border flow of capital. We particularly focus[11] on the following:

(a) Pension funds that diversified their international investment portfolio and also led to investments in international commodity markets[12] since 2006;

[10] Some pointed to the fact that the active functioning of these investment funds as financial intermediaries is fund capitalism (e.g., Moriaki Tsuchiya (2005) "FANDO SIHONSHUGI NO GENJITU," in the "DIR Strategic management research" Spring 2005 Vol 4., Daiwa Institute of Research, strategic management research).

[11] In addition, Japan's households are also increasing investment in foreign currency assets. For example, investment trusts based on foreign bonds have increased rapidly in these past 2–3 years, and today amount to 36,600 billion yen or more than 10% of Japan's external assets. For the foreign investment by Japan's households, see Section 2 of this chapter.

[12] Japan Research Institute "Research eyes" (February 6, 2007), etc. Atsushi Mizuno of the policy deliberation committee of the Bank of Japan also pointed this out in his lecture on November 14, 2007.

(b) “Oil money,” wherein working assets grew owing to the sharp rise in crude oil prices;

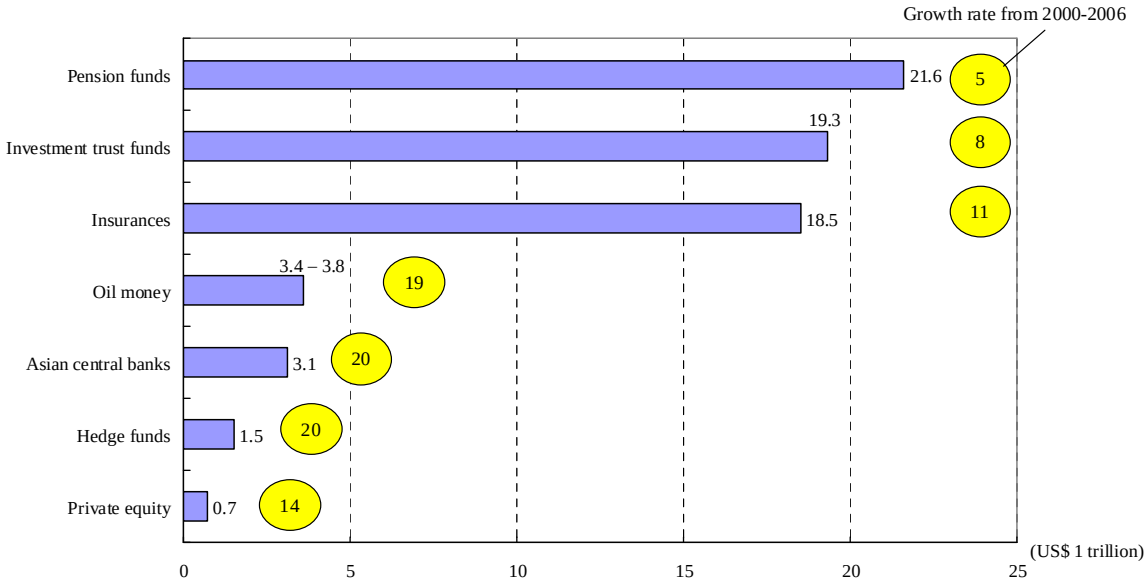
(c) “Foreign reserves”[13] that swelled to enormous scales, particularly in Asian countries;

(d) Hedge funds[14] that raise capital through private offerings and manage their assets by various methods;

(e) Private equity funds that invest in unlisted companies across borders and support the growth and establishment of these companies[15].

In M&C (2008), the asset value at the end of 2006 and average annual growth rate between 2000 and 2006 for these entities were estimated (see Figure 2-1-5). In recent years, entities that have recorded a particularly high growth rate are those from (b) to (e). By 2012, their total asset base is expected to expand to 20,700 billion dollars—equivalent to 70% of the pension funds.

Figure 2-1-5 Scale and the growth rate of each financial player



Source: Mckinsey "The new power brokers: How oil, Asia, hedge funds, and private equity are shaping global capital markets "

(Expanding pension funds)

Assets of pension funds that are expanding amid the advance of an aging society in developed countries reached 16,900 billion dollars in 2006[16]. The growth rate of pension funds between 2004 and 2006 was 9.0% in OECD countries and 9.2% in non-OECD countries. This showed that pension funds

[13] According to the IMF, the foreign reserve outstanding balance has swelled to 6,390 billion dollars as of the end of 2007.

[14] According to the Ministry of Economy, Trade and Industry “KOKUNAIGAI DE SONZAIKAN WO FUKAMERU HEDGE FUNDS NO JITTAI CHOSA” (April 2008), Alfred Jones established the first hedge fund in 1949. Asset value has been expanding since 1990—in particular, since the beginning of this century—and has reached a record high of 1,900 billion dollars at the end of 2007 (estimation of Hedge Fund Research) from 500 billion dollars at the end of 2000.

[15] Lecture of the then Governor of the Bank of Japan Fukui “KINYU GLOBAL KA TO KINYU SHIJOU NO KADAI” on November 27, 2007.

[16] OECD (2007f) “Pension Markets in Focus, No. 4, November 2007.” The fact that the OECD countries account for 16,200 billion dollars of this figure shows that the world’s pension funds have been concentrated in developed countries, where the monetary economy has developed and a declining birthrate and aging population have advanced. In addition, by country, the biggest holders of pension funds are the U.S. (9,700 billion dollars), followed by the U.K. (1,800 billion dollars), and Japan (1000 billion dollars).

are expanding in both developed and developing countries. In particular, pension funds recorded a high growth rate of 23.3% in the BRIC.

Pension funds are said to have a significant impact on the trends prevalent in the international financial and capital market. Specifically, the difference in long- and short-term interest rates was reduced[17] since the long-term national bonds of major countries (the U.S. in particular) were purchased in large quantities by pension funds. Furthermore, since major public pension funds are raising the rate of investment in foreign currency assets, the impact that pension funds have on the international financial market is expected to grow even further in the future[18].

Indications of the coming changes can be observed in the operating asset portfolios of pension funds. In particular, alternative investments[19] to raise earning rates have become more active[20]. Moreover, in spite of a flight to quality, it is said that pension funds are contributing to the expansion of goods (commodities) available for investment[21].

(The surge of hedge funds)

In comparison to other asset management entities, hedge funds have several characteristics such as (a) the ability to operate on high leverage, (b) relatively frequent buying and selling, (c) and investments on a global scale over multiple financial markets. Therefore, the impact hedge funds have on the global financial market is much larger than that illustrated by their asset value.

In fact, a look at the share of hedge funds in the turnover of financial markets reveals that hedge funds have an extremely high share in markets such as credit derivatives (60%), high-yield bonds (47%), and bonds of emerging countries (45%)[22].

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[17] Lecture of the Deliberation committee, Mizuno, at the corporate pensions communication meeting "SAIKIN NO KEIZAI KINYU JOSEI TO KONGO NO CHUMOKU TEN – KOKUSAI SHIKIN FLOW NO DOUKOU WO FUMAETE" on November 7, 2007.

[18] OECD (2007f). The ratio of pension funds in foreign currency denominated capital of Norway is 100%; New Zealand, 76%; Ireland, 35%; France, 29%; Japan, 25.5%; China, 11%. From a global perspective, it cannot be said that foreign currency investments by Japan's public pension fund are at a high level; however, the ratio has risen by 6.1% from the 2001 figure of 19.4%, and is gradually expanding. Refer to Section 2 of this chapter for the current situation and issues pertaining to the future management of Japan's public pension fund.

[19] Alternative investment is an investment into assets other than traditional assets such as domestic stocks, domestic bonds, foreign stocks, and foreign bonds that are mainly listed on the stock exchanges, have high liquidity, and have been the target for traditional investment. The purpose of investment is to gain excess profit using the low correlation with the earning ratio of traditional assets and market inefficiency.

[20] For example, the New Zealand public pension fund has expanded significantly the ratio of alternative investment from 0.5% in 2005 to 12.7% in 2006 (OECD (2007f)).

[21] The lecture of the deliberation committee, Mizuno, at the Institute of Actuaries of Japan "SAIKIN NO KINYU KEIZAI JOSEI TOUNITSUITE – TENBOU REPORT (October 2006) WO UKETE—" on November 8, 2006 pointed out that commodity products have begun to be recognized as one asset class from 2004 to 2005, and that the European and American pension funds, despite having understood that it is a risky investment target, have entered the commodity market in earnest from 2006, attracted by the expectation of high returns.

[22] Forecited McKinsey & Company (2008).

(Sovereign wealth fund attracting attention)

A sovereign wealth fund (SWF) is an investment fund that generally is operated by state capital, including that of the central government. An SWF is set up by a monetary authority in order to manage a fluidity surplus or reserve funds for future generations. SWFs are not something new as the first SWFs were established more than 50 years ago. In recent years, the number of SWFs has been increasing. This can be attributed to the growing foreign exchange reserves of emerging Asian countries through accumulated current account surpluses and the expansion of excess cash as a result of the increasing amounts of oil money being accumulated by oil-producing countries owing to the sharp rise in crude oil prices. Further, SWFs are increasing their assets and influence.

SWFs have been attracted considerable attention owing to their investments in several European and U.S. banks that suffered heavy losses because of the U.S. subprime mortgage crisis[23]. According to a private research organization[24], SWFs have made investments of up to 63 billion dollars, thereby accounting for 35% of the total 164 billion dollars spent on M&As in the world in 2007. Furthermore, the ratio of investment by SWFs in the finance sector to the total investment in the finance sector reached 93% in January 2008, thereby showing a particularly strong presence in the current finance sector[25].

On the other hand, the asset values of SWFs are increasing rapidly as these are backed by large trade surpluses and continuous oil money accumulation. The assets of SWFs exceeded those of hedge funds, and at the end of 2007, were estimated to be 3,500 billion dollars[26]. The Abu Dhabi Investment Authority of the United Arab Emirates is believed to have the largest assets, with estimates ranging from 800 billion dollars to 1 trillion dollars (see Table 2-1-6).

Investment by SWFs is basically carried out for economic earnings and is considered to bring in profit for both SWFs and recipient countries. On the other hand, some recipient countries have national security concerns as national strategy may be involved in such investments in addition to profit making. There are also concerns over the impact that the change in the flow of the large amount of public funds may have on global markets, as well as the inadequate transparency in disclosure procedures. Given this situation, the IMF and OECD are working on the best practices for SWFs and recipient countries from the viewpoints of governance, and securing the transparency of SWFs as well as investment regulations in recipient countries.

In the IMF estimation, the total asset value of SWFs is predicted to rise to 10 trillion dollars in 2013 from the present value of 6 trillion dollars. Therefore, the presence of SWFs in the world's money flow is expected to rise even further in the future.

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[23] Citigroup accepting approximately 7.5 billion dollars from the Abu Dhabi investment agency in November, UBS accepting approximately 13 billion Swiss francs from the GIC and Middle East investors, and Merrill Lynch accepting up to 5 billion dollars from the Singapore-based investment company Temasek in December 2007 are some of the examples.

[24] Forecited GLOBAL INSIGHT (2008).

[25] According to research company D logic, SWFs have poured 54 billion dollars into the finance sector since last September.

[26] Forecited GLOBAL INSIGHT (2008).

Figure 2-1-6 World's SWFs

Country	Agency	Asset size (estimated)	Resource	Ownership, asset management, etc.	Investment strategy, strategic asset distribution
UAE	Abu Dhabi Investment Authority (ADIA) / Abu Dhabi Investment Co (ADIC)	About US$250 billion - 875 billion	Crude oil	・Owned by Abu Dhabi ・Operating extra crude oil revenues overseas	・Unknown
Norway	National Insurance Scheme Fund / Global	About US$308 billion	Crude oil	・Government-owned, operated by Bank of Norway	・International diversified investment: share investment 40%, Bond investment 60%
Saudi Arabia	Saudi Arabian Monetary Agency	Over US$250 billion	Crude oil	・Operating US$225 billion as self asset, and US$51 billion on behalf of government gencies	・Unknown
Kuwait	Kuwait Investment Authority (KIA) / General Reserve Fund (GRF) / Future Generation Fund (FGF)	About US$160 billion - 250 billion	Crude oil	・Operating GRF and FGF under contract with the government	・GRF operates in Arabic region and international financial market. ・FGF engages in international diversified investment based on investment guideline approved by the committee
Singapore	Government of Singapore Investment Corporation (GIC)	Over US$100 billion	Other	・Government-owned	・International diversified investment (Not publicly vailable)
	Temasek Holdings	Over US$100 billion	Other	・Private investment company	・Asset distribution is unknown. Regional distribution: domestic 38%, other Asia 40%, OECD20%, Other 2% (As of March 2006)
China	State Foreign Exchange Investment Corp.	About US$200 billion	Other	・Unknown	・Unknown
Russia	Oil Stabilization Fund	About US$127 billion	Crude oil	・Government-owned, operated by Russian central bank	・Majority is invested in bonds: US$ 44%, Euro 46%, British pound 10%
Australia	Australia Future Reserve Fund	About US$42 billion	Other	・Government-owned, operated by Future Reserve Fund ・For the purpose of contributing to the financing of pension money payment for the future	・Domestic
Alask, U.S.	Alaska Permanent Fund Corporation	About US$35 billion	Crude oil, mineral	・Owned by Alaska state government, operated by Permanent Fund Corporation	・Share investment 53%, Bond investment 29%, Real estate investment 10%, alternative investment 8%
Brunei	Brunei Investment Agency	About US$30 billion	Crude oil	・Government-owned, operated by Brunei Investment Agency	・Investing in broad range of financial assets and real estates ・Asset distribution is not publicly vailable
Republic of Korea	Korea Investment Corporation	About US$20 billion	Other	・Operating foreign reserves	・Not publicly vailable
Canada	Alberta Heritage Savings Trust Fund	About US$15 billion	Other	・Albata State government-owned, operating Albata Finance	・Share investment 45%, Bond investment 30%, alternative investment 15%, real estate 10%
Chile	Economic and Social Stabilization Fund	About US$9.83 billion	Cupper	・Government-owned, operated by central bank of Chile	・Operating government bonds 72%, US$, Euro, Yen-denominated assets 28%
	Pension Reserve Fund	About US$1.37 billion	Cupper	・Government-owned, operated by central bank of Chile	・Operating government bonds 79%, US$, Euro, Yen-denominated assets 21%
Botswana	Pula Fund	Over US$5 billion	Diamond	・Owned by government and central bank	・Investing in shares and bonds in developed countries, not in emerging countries

Source: IMF "Global Financial Stability Report 2007 April"

(3) Signs of change in the international flow of funds

While the U.K. and Europe continue to gain power as an international financial hub, exports to the EU from emerging Asian countries such as China and oil-producing countries continue to expand and ties continue to deepen in the real economy[27]. Amid these circumstances, there are signs of a change in the financial side of the economy.

(Shift from the U.S. dollar to Euro)

The nominal effective exchange rate of the U.S. dollar has decreased consistently since 2002. However, the movement to use the Euro, which is the world's second currency after the U.S. dollar, as

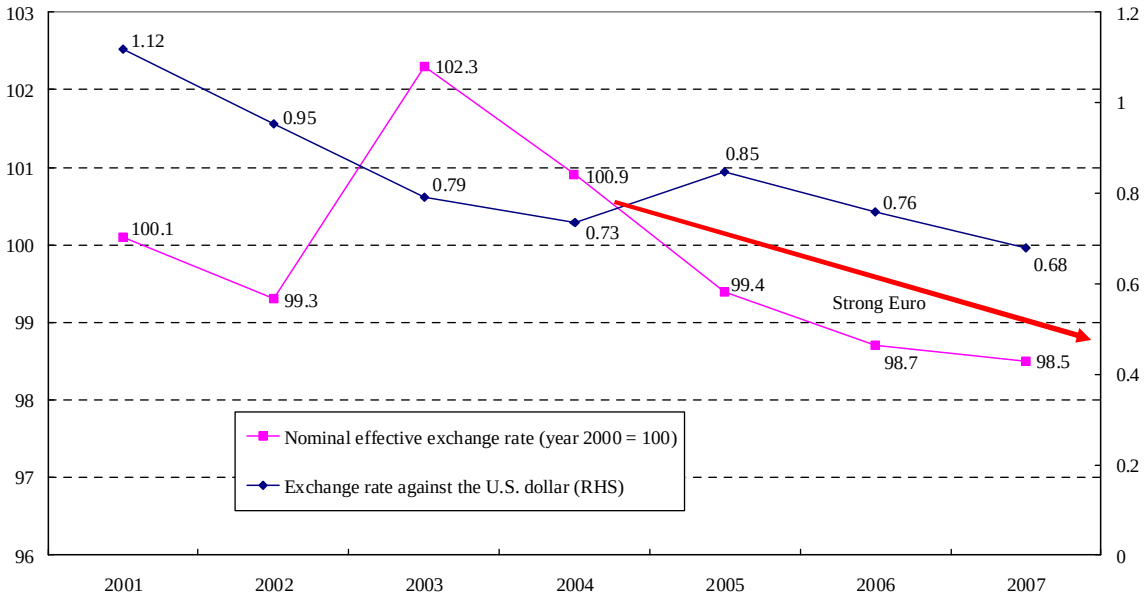
[27] EU's imports exceeded those of the U.S. in 2007. To begin with, EU's imports from oil-producing countries (Middle East, Russia) are much larger than those of the U.S. and have been expanding rapidly in recent years. In addition, in 2007, the largest destination for exports from China has changed from the U.S. to Europe.

settlement money, is being observed while the confidence in the U.S. dollar wavers owing to the slowdown in the U.S. economy after the subprime mortgage crisis that occurred in 2007.

○ Rise in the value of the Euro

Reflecting the favorable condition of the European economy, the Euro is getting stronger and its nominal effective exchange rate and exchange rate against the U.S. dollar have reached record-high levels (see Figure 2-1-7).

Figure 2-1-7 Trends in nominal effective exchange rate and exchange rate against the U.S. dollar of Euro



Source: IMF "IFS."

○ Rise of Euro's share in foreign reserves

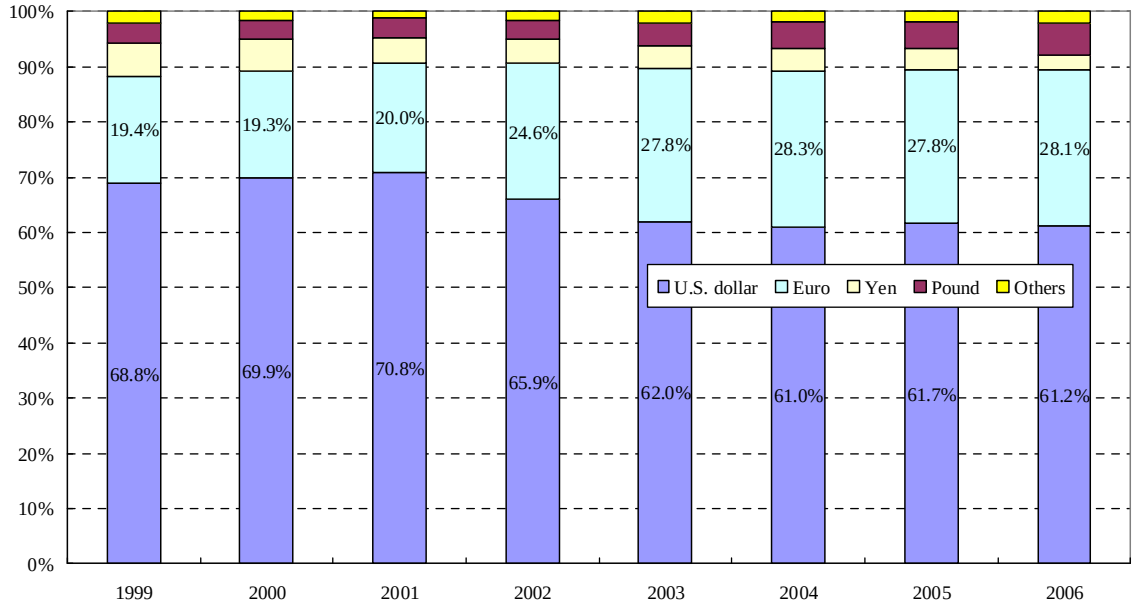
Besides the favorable condition of the European economy, there are several contributing factors with regard to the rise of the Euro as settlement money: (a) increase in dollar withdrawals that started with the subprime mortgage problem in the U.S., and (b) inflow of foreign reserves from emerging countries owing to trade links with emerging economies.

The expansion of the Euro as the settlement currency can be seen from the currency structural proportion of foreign reserves. Since foreign reserves are built up on payments from exports, the component ratio of currency depends on the structure of the settlement money of exports. Percentage of the Euro in export settlements from emerging countries is predicted to rise as global exports to Europe, largely from emerging economies, are expanding. In addition, there is a trend to raise the ratio of the Euro in the currency portfolio in order to avoid erosion in the value of foreign reserves due to the weak dollar.

In fact, Russia, whose exports to Europe are large, has raised the ratio of the Euro in its foreign reserves from 20% to 40% and reduced the ratio of the U.S. dollar from 70% to 50% in June 2006. Further, the United Arab Emirates (UAE) announced that it will shift 10% of its U.S. dollar-based foreign reserves to the Euro and another 10% to gold, out of concerns regarding a weak dollar. As a

result of the shift from the U.S. dollar to Euro, the ratio of the U.S. dollar in the world's foreign reserves will fall and those of the Euro will rise, particularly in emerging countries (see Figure 2-1-8).

Figure 2-1-8 Trends in currency composition ratio of foreign reserve of developing countries

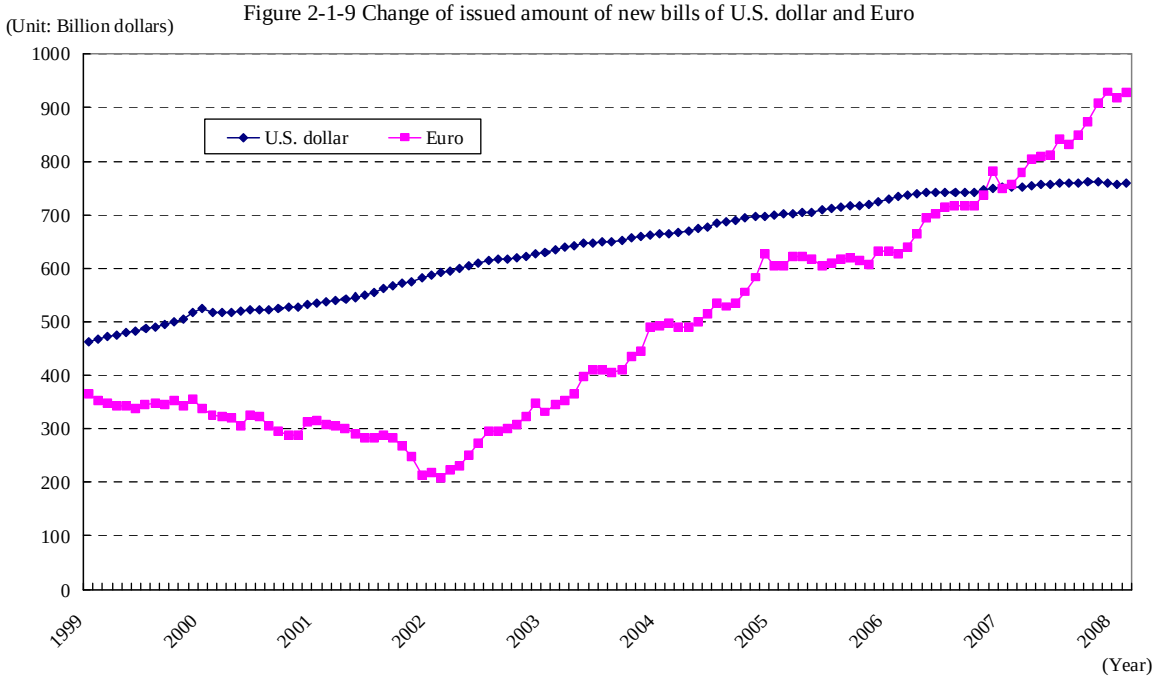


Note: Data comprises the results of the fourth quarter.
Source: IMF "Currency Composition of Official Foreign Exchange Reserves."

○ Increase in the amount of paper money issued

On observing the amount of paper money issued, we find that the Euro is exceeding the U.S. dollar. Since higher demand for paper money implies that the currency is being used to a greater extent for actual transactions, it can be interpreted that in terms of actual transactions, the presence of the Euro surpasses that of the U.S. dollar (see Figure 2-1-9).

Figure 2-1-9 Change of issued amount of new bills of U.S. dollar and Euro



○ **Backup currency of international bonds**

According to BIS statistics, the outstanding balance of bonds in the international financial market at the end of December 2006 was 17,600 billion dollars. By currency, Euro-denominated bonds hold the greatest share at 47.3%; U.S. dollar-dominated bonds are second at 36.4%; and sterling pound-denominated bonds are third at 8.3%[28].

(Future prospects for the international financial and capital markets)

As stated above, the presence of the Euro is expanding. The conventional U.S.-overconcentrated capital inflow structure may be adjusted as the slowdown of the U.S. economy is expected to continue in the foreseeable future. It is necessary to closely monitor the future developments in terms of influence this structural change, in combination with the expansion of the presence of new players such as hedge funds, may have on the international financial and capital markets.

(4) Flow of money in Asia

On the basis of the current situation of the flow of money in the world, we will confirm Asia's position in this flow. In addition, the current situation and problems of the flow of funds within Asia will be reviewed.

(Asian monetary crisis)

From 1997–98, a monetary and financial crisis occurred in emerging Asian economies including, Thailand, Indonesia, and Republic of Korea, (hereafter, the "Asian monetary crisis") that began owing to a sharp fall in currency values (monetary crisis)[29]. This sharp fall occurred due to the flight of short-term capital from the developed countries in the West, which had been flowing into these Asian countries in large quantities owing to the continuous high growth experienced by these countries.

In the beginning, direct investment accounted for the majority of the capital inflow into these countries. However, except for some countries, after direct investment peaked in the early 1990s, investment in non-real sectors such as real estate and securities investment became active, and the inflow of foreign capital that moves on a short-term basis became the main source of capital inflows. Deregulation for the inflow of foreign capital and currencies that were virtually pegged to the U.S. dollar accelerated this trend. Consequently, long-term project finance based on local currencies was carried out by short-term debts and debts in foreign currencies.

This led to a sharp fall in the value of home currencies following the flight of short-term capital from foreign countries. The sharp fall in the value of home currencies increased the foreign debts of financial institutions and companies that were borrowing in foreign currencies, including the U.S. dollar. The rapid outflow of foreign capital lead to a significant decline in the value of real estate and

[28] Yen-denominated bonds account for only 2.8%.

[29] The crisis began with the change in Thailand's exchange system amid a slowdown in exports owing to the worsening of market conditions—in particular, the semiconductor sector, which was one of the country's major export—and depression.

stock prices; this, combined with the increase in bad debts and concerns over the repayment of foreign debts, triggered the financial crisis.

That is to say, the factors behind this currency crisis are that the securities markets in Asian countries were immature in those days (financing having been inclined to indirect financing and short-term capital) and different from what they are now. Many countries were then facing current account deficits and depended on foreign countries for the supply of short-term capital. Many of these countries then adopted the floating rate system, and corresponding policies such as the diversification of the roles of financial intermediation and reinforcement of the capacity to respond to crises were developed[30].

(Development of financial and capital markets in East Asia)

From the beginning of this century, financial and capital markets have been developed as the economy emerges out of the monetary crisis and continues to grow.

According to M&C (2008), at the beginning of this century, the size of the financial and capital markets of emerging Asian countries[31] was 18,800 billion dollars in total—close to the value of Japan's financial and capital market at 19,500 billion dollars. Growth is remarkable, particularly due to China whose financial and capital markets are valued at 8,100 billion dollars.

The ratio of financial and capital markets to GDP has tripled, and the financial economy is developing even faster than the rapidly-growing real economy.

(Financial flow in East Asia)

According to MGI2008, since the beginning of this century, inward investment (direct and indirect, flow-based) in emerging East Asia economies[32] grew at an annual rate of 46% after having decreased to 39 billion dollars due to the Asian monetary crisis and the collapse of the IT bubble, and reached 299 billion dollars in 2006. China received the most investments, amounting to 166 billion dollars, of which 47% was direct and 26% was equity.

On the other hand, as of 2006, China has made 383 billion dollars worth of foreign investments; two-thirds of this came from its foreign exchange reserves. In addition, direct investment from China is expanding and reached 18 billion dollars[33].

(Necessity of further improvements in the securities market)

Asian countries that have experienced the monetary crisis have moved forward with the reform and development of domestic financial and capital markets ever since the beginning of this century. This has enabled them to achieve solid growth in their markets (see Figure 2-1-10).

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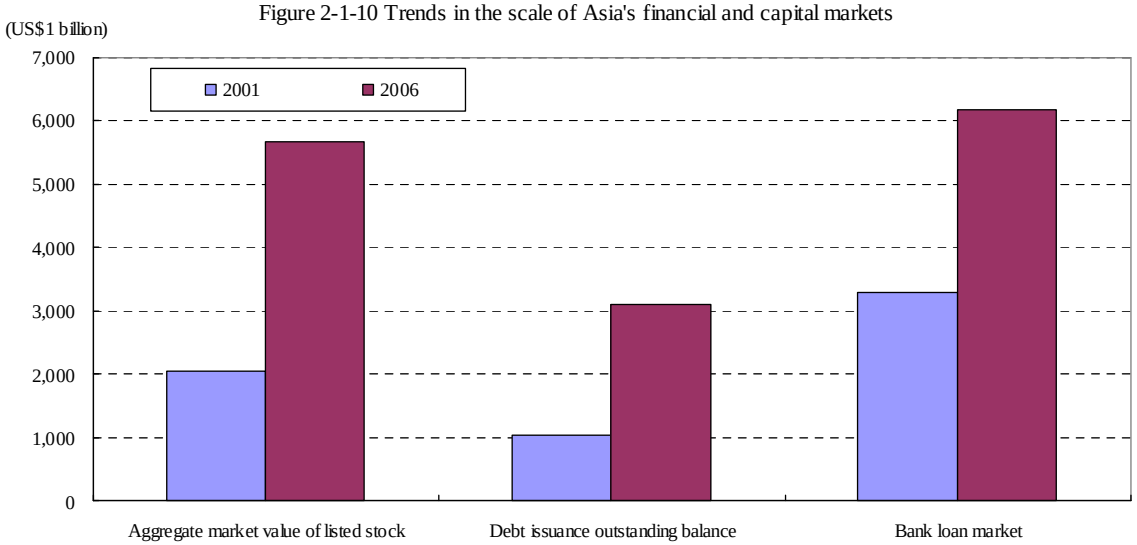
[30] Bank of Japan (2006) "TIGAIMEN KARAMITA HIGASHI ASIA KEIZAI OYOBI KINYU NO TOKUSHOKU – IKINAI KEIZAI/KINYU NO TOUGOU GIRON WO NENTOUNI—"

[31] Here, the reference is to China, India, Indonesia, Republic of Korea, Malaysia, the Philippines, Taiwan, Thailand, Singapore, and Hong Kong.

[32] Here, the reference is to China, India, Indonesia, Republic of Korea, Malaysia, the Philippines, Taiwan, and Thailand.

[33] China has become a larger net investment country than Japan and Germany.

Figure 2-1-10 Trends in the scale of Asia's financial and capital markets



Note: here Asia refers to nine countries and territories including China, Hong Kong, Taiwan, Republic of Korea, Singapore, Malaysia, Philippines, Thailand, Indonesia.
Sources: IMF "IFS", Aritcles on the ADB Website; World Bank "WDI"; Central bank of Taiwan "financial statistics monthly report of the Republic of China"
Original source: Takayasu (2008), "Sovereign Wealth Fund of resources exporting country."

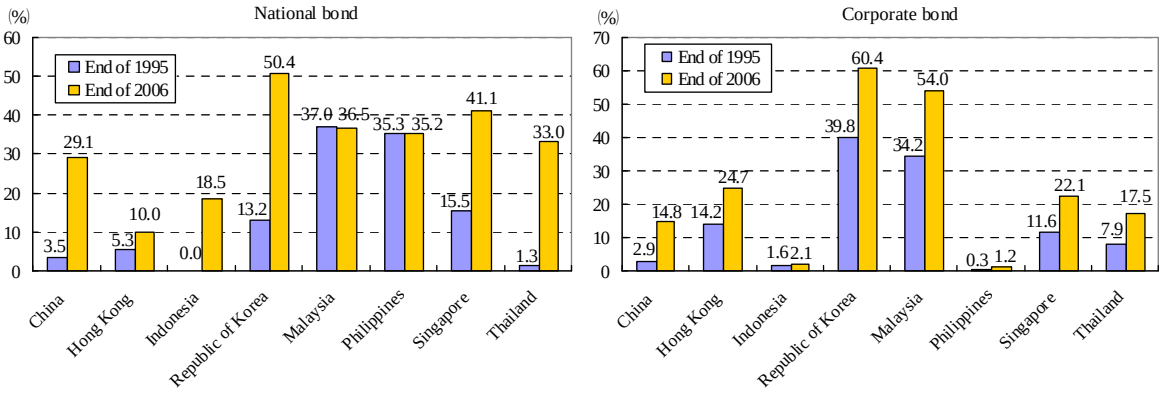
The aggregate market value of listed stock expanded 2.8 times from 2,039.9 billion dollars to 5,652.7 billion dollars in the period 2001–2006; this is equal to the scale of the bank loan market. Backed by the nation's high economic growth rate, China's[34] capital markets expanded 4.7 times; further, the growth of Republic of Korea, Indonesia, and Thailand, which have opened up their stock markets to foreign investors, is also remarkable.

Outstanding bonds have also increased steadily to about 3 trillion dollars, a growth of about 300% in the last five years until the end of 2006. China is again the biggest market. However, the market scale is smaller than the stock market or bank deposits. In Asia, on the basis of the experience of the Asian monetary crisis, bond markets have been developed and measures to shift from indirect financing to direct financing have already been taken[35]. However, some of the problems that Asia's bond markets[36] still suffer from as follows[37]: (a) market infrastructure is underdeveloped and (b)

[34] However, two-thirds of these are noncirculating stocks, and the transactions done by foreign investors are regulated (2008, Takayasu).
[35] "Sovereign Wealth Funds of Resource Exporters": The Asian Bond Fund (ABF) was founded at the Executive Meeting of East Asia and Pacific Central Banks (EMEAP), following which the governments and central banks of eight Asian countries started investing in U.S. dollar-denominated bonds. In addition, at the ASEAN+3 Ministers of Finance meeting held in August 2003, the Asian Bond Markets Initiative (AMBI), which included further reinforcement of tasks to nurture the bond market in the region, was agreed upon.
[36] The President of the Asian Development Bank, Kuroda, has pointed out that "long-term capital will not turn around if one depends on banks. It is national infrastructure that is necessary for long-term capital in Asia. The serviceable life is 50 or 100 years, and fund-raising is what corresponds to this. Therefore, the establishment of bond market is a prime task" (Toyo Keizai Shinposha (2008), "Finance business Winter2008").
[37] In the same interview, President Kuroda has pointed out problems such as "are rating company, accounting standards, disclosure and monitoring systems adequate? Are there analysts, and is a settlement system available?" In addition, he has pointed out that "some forms of institutional investors such as public pension funds exist, but private institutional investors have not matured."

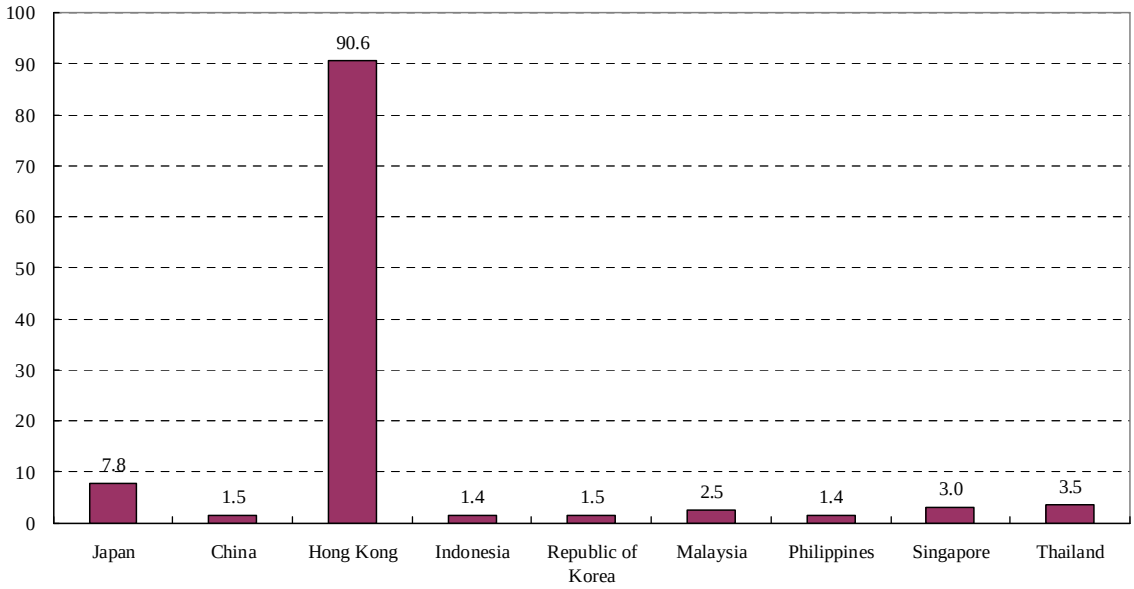
market size is still limited, resulting in few issuers and investors, low fluidity, and a small variety of items. In fact, when bond market liquidity is compared to the turnover ratio of trading, while Hong Kong has an outstandingly high ratio, other countries are at levels that are even lower than Japan (see Figures 2-1-11 and 2-1-12).

Figure 2-1-11 Trends in the scale of bond markets of Asian countries (ratio to GDP)



Source: ADB "Asian Bonds Online."

Figure 2-1-12 International comparison of receivable turnover ratio

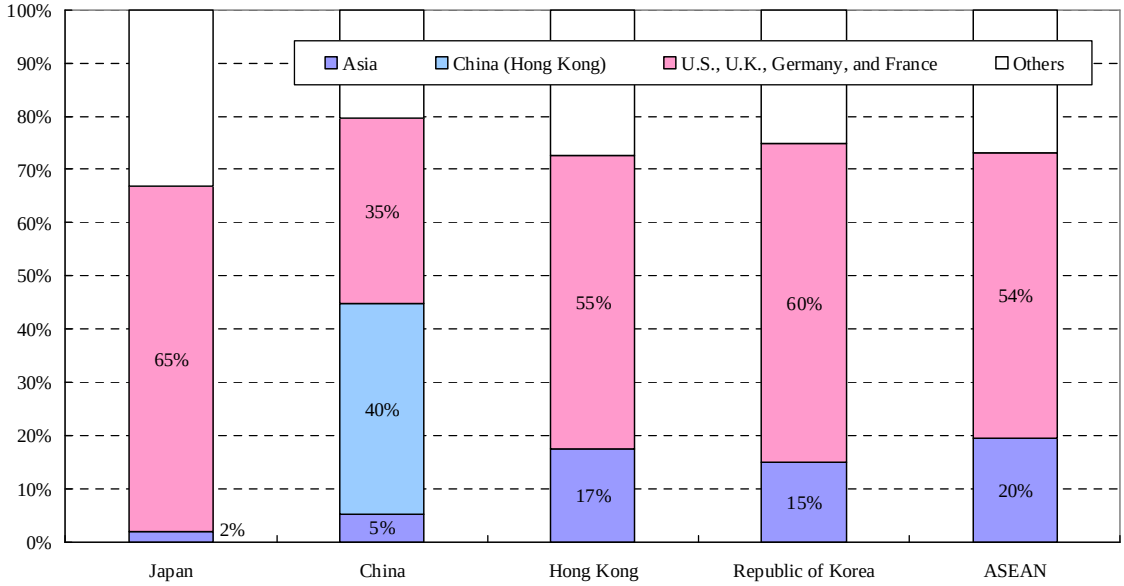


Note: Turnover ratio of trading = volume of trading ÷ aggregate market value.
Source: ADB "Asian Bonds Online."

This implies that the rich savings in Asia are invested in European and American bonds (particularly, U.S. Treasury bonds) and not in bonds of other countries in the region. This is confirmed when we observe the countries receiving foreign securities investment from Asian countries, using IMF's statistics on the securities investment balance between two countries. We find that the balance of investment is low for all Asian countries: 2% for Japan, 5% for China (except investment in Hong Kong), 15% for Republic of Korea, and 20% for ASEAN. Most of the foreign securities investment is to Western countries (the U.S., the U.K., Germany, and France). This is in contrast to intraregional trade ratio in Asia, which has reached 60% in the case of the trade of goods.

This shows that the integration of financial and capital markets is not catching up with the integration of the real economy (see Figure 2-1-13)[38].

Figure 2-1-13 Ratio of local foreign security investment outstanding balance by Asian countries/regions (2006)



Source: IMF "Portfolio Investment: Coordinated Portfolio Investment Survey (CPIS) Data."

Meanwhile, since Europe and the U.S. are actively making direct and equity investments in Asia, when looking at the whole picture, we observe that there is a pattern wherein Asian countries purchase low-rate-of-return safe assets from Europe and the U.S. and sell their own high-rate-of-return risk assets to Europe and the U.S. This is difficult to confirm statistically, but it is very likely that Asia's savings go to Europe and the U.S. and are then invested in Asia's own risk assets. As the commission charges of finance intermediation increase owing to this detour investment, the spread of the yield of bonds issued in Asia might exceed their theoretical value based on credit risk[39].

(Financial hubs in Asia)

M&C (2008) pointed out that Tokyo is losing its position as the Asian financial center, and international and regional financial hubs are not established in Asia. Among the inward investment of approximately 2,200 billion dollars to emerging Asian economies, 29% was from the U.S., 18% from the U.K., and 14% from the Eurozone, while only 6% came from Tokyo. The survey also pointed out that the investment from Hong Kong, Singapore, and Taiwan amounts to 24% in total, and that Shanghai and Mumbai are entering the race. Competition to become a hub in the region is believed to have intensified.

[38] On the other hand, according to Takayasu 2008, the Asia Pacific region, except for Japan, has accounted for 20.1%, or 44.3 billion dollars, of the world's 220 billion dollars project financing market.
[39] According to McCauley (2003), the yearly average of yield of a bond issued by Asian companies from 1997 to 2002 is 230 bpt higher than the interest rate of the U.S. Treasury.

(Possibility of financial integration in Asia)

As mentioned above, unlike real economic aspects such as trade, the progress of regional financial integration in Asia is slow as compared to other regions. For example, in the EU, banks in Western and Northern Europe are actively investing in and are holding numerous financial assets of Central and Eastern European countries[40]. In addition, even in the activities involving Asian banks, European and American banks are more actively expanding investments.

On the other hand, when we look at two-way capital flows such as mass capital inflow and investment in the foreign exchange reserves of developed countries, we find that the links with countries outside the region are deepening remarkably.

It is necessary for Asia to develop financial intermediaries in the region and to solve the abovementioned systemic problems of securities markets in order to help its financial and capital economy benefit from the growth of the real economy and become an independent economic bloc. Japanese financial institutions may find business opportunities here[41].

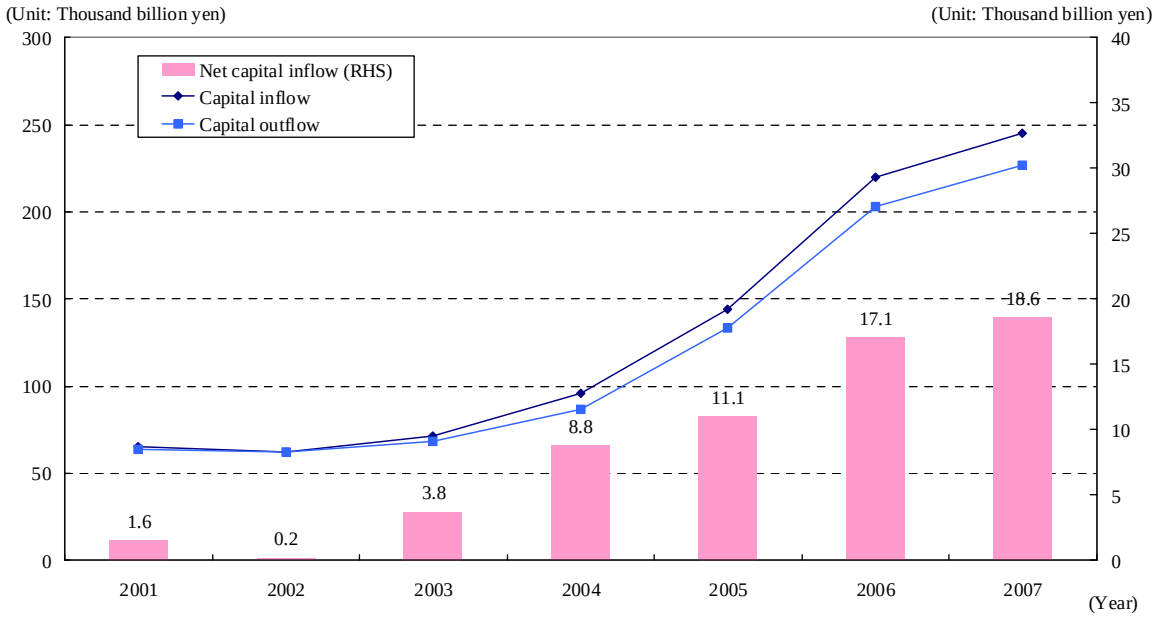
[40] BIS (2008), BIS Papers No 32 Financial Globalization (December2006), pp13–14.
[41] Section 4 of Chapter 4 will discuss the possibility of the expansion of Japan's financial institutions into Asia in detail.

[Column 3] Oil money that accelerates the inflow to Japan's capital market

(Expanding capital inflow from the U.K.)

As shown in Figure 2-1-1, capital inflow from the U.K. to Japan has almost reached the scale of capital transference between Europe and the U.S.; the U.K.-to-Japan flow is now large and deserves attention in the study of the global money flow. On observing the trends in the transaction situation of securities investment between Japan and the U.K. in the Ministry of Finance statistics "International transactions in securities," from about 2003 onward, when crude oil prices began to soar, we find that both selling and buying has increased and net capital inflow has expanded rapidly. In 2007, a large amount of capital (16,600 billion yen) has flowed in from the U.K. (see Column Figure 3-1).

Column Figure 3-1 Trend in capital inflow and outflow from the U.K. (securities investment)



Source: Ministry of Finance "Tainai Taigai Shoken Toushi."

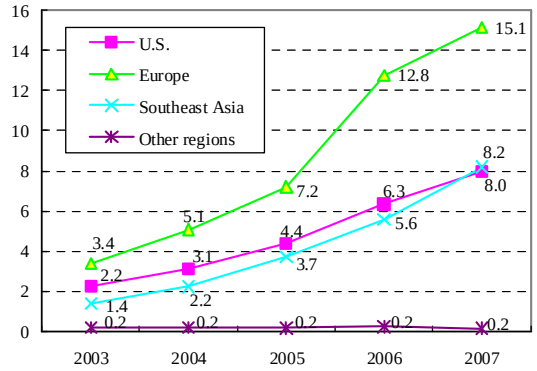
In addition, investments in listed stocks by nonresidential investors of the Tokyo Stock Exchange show that the trading volume of the European region has increased in terms of both buying and selling.

If large-scale capital inflow from the U.K. is taken into account, it is believed that trading by British investors accounts for a significant share (see Column Figure 3-2).

Column Figure 3-2 The situation of Japanese stock transactions by region

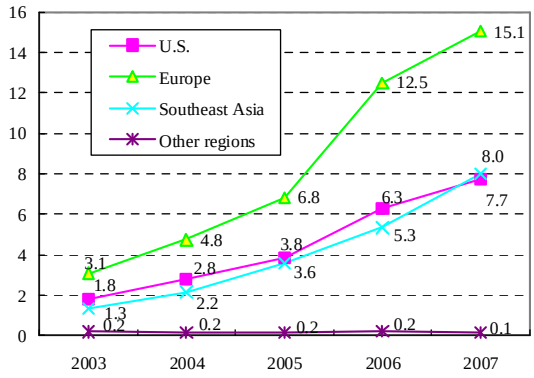
Selling

(Unit: Thousand billion yen)



Buying

(Unit: Thousand billion yen)



Source: Tokyo Stock Exchange website

(Prominence of oil money behind U.K.-sourced investment in Japan)

Oil money is considered to form a major chunk of this capital inflow from the U.K. As introduced in Section 2 of Chapter 1 (see Figure 1-2-37), in the published statistics of deposit balances of countries in the Bank of England, deposit balances of Middle Eastern countries has expanded in sync with the sharp rise of crude oil prices, and has reached 184.6 billion dollars in the fourth quarter of 2007. Thus, the oil money that Middle Eastern countries earned through crude oil exports is believed to have been deposited in U.K. banks, and then invested in several capital markets, including Japan (via the U.K.)

(Middle Eastern countries that are accelerating industrial diversification and increasing investments in Japanese companies)

The acquisition of Japanese stocks by Middle Eastern countries is supported by the industrial diversification that is being pushed forward as a national policy. While crude oil prices keep rising and economic growth can be continued through oil money, the rise in crude oil prices may not necessarily continue in the long term. Middle Eastern countries have planned industrial diversification in order to build an industrial structure that enables stable economic growth even after the rise of crude oil prices.

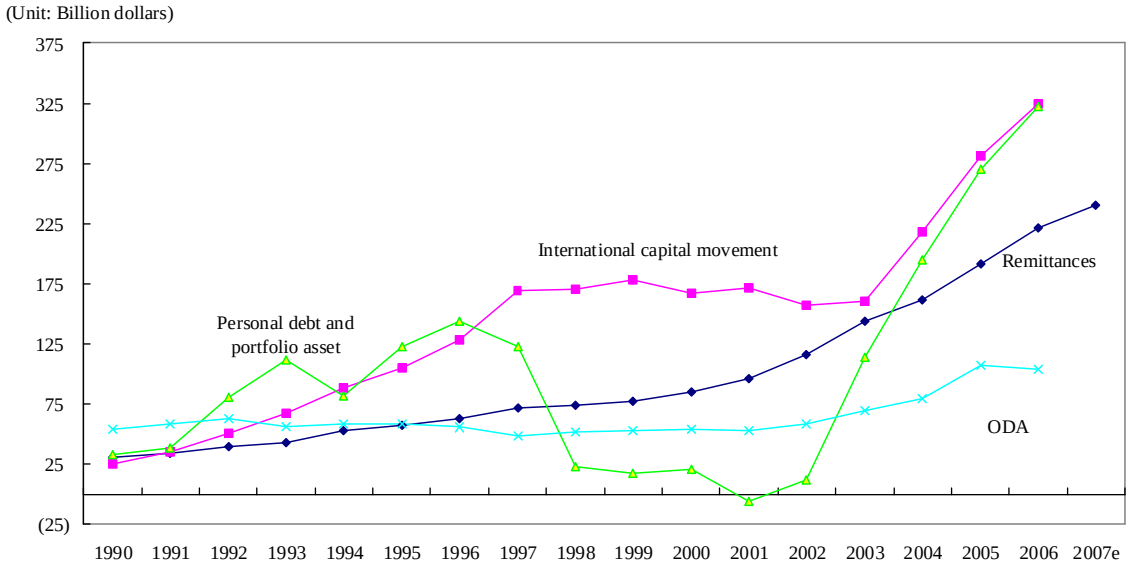
These Middle East countries have paid attention to the advanced technological capability of Japan's manufacturing industry and started to acquire stocks of Japanese companies focusing on world-famous mega corporations. For example, on November 26, 2007, the investment company Dubai International Capital (DIC), which is headquartered in Dubai, the UAE, has clarified that it has invested in Sony.

[Column 4] Movement of people and flow of money

Backed by the worldwide accelerated movement of people[42], workers' remittance has begun to have an impact on the global money flow.

On observing the breakdown of capital transference from developed countries to developing countries from the balance of payments statistics, we find that workers' remittance has reached a scale equivalent to direct investment. Workers' remittance thus has large impact on the money flow between developed countries and developing countries (see Column Figure 4-1).

Column Figure 4-1 Trends in capital flow from developed countries to developing countries

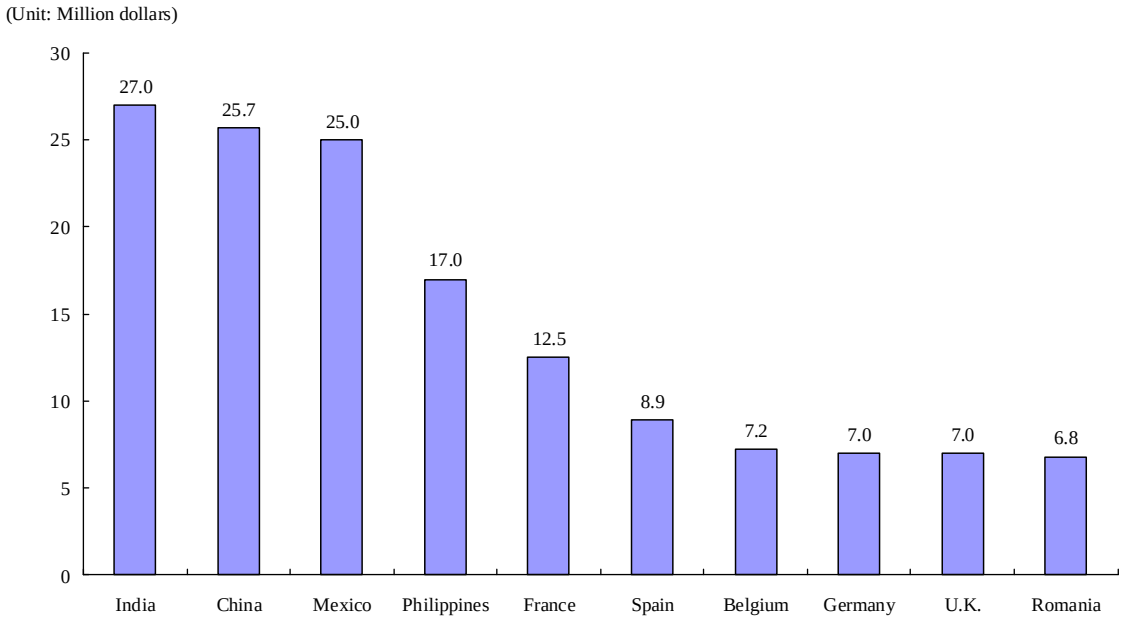


Sources: World Bank "Global Economic Prospects 2006: Economic Implications of Remittances and Migration"; "World Development Indicators 2007", and "Global Development Finance 2007".

On examining the amount of workers' remittances received by countries in 2007, we find that the highest recipient is China (27 billion dollars); the second, India (25.7 billion dollars); and the third, Mexico (25 billion dollars). It is thought that a large number of people are moving to the U.S. from China, India, and Mexico, and this results in the large amount of workers' remittances flowing into these countries. We have also observed this aspect in part (1) of this section. Further, there also exist countries where the ratio of workers' remittances to the GDP is higher than 10%. In these countries, workers' remittances have become an important source of income. From the viewpoint of technology transfer to developing countries, workers' remittances are evaluated positively as a source of funds (see Column Figure 4-2).

[42] Part 2 of this section will discuss the rise in the movement of people across the world in detail.

Column Figure 4-2 Top ten countries in received workers' remittance (2007)



Source: World Bank "Development Prospects Group."

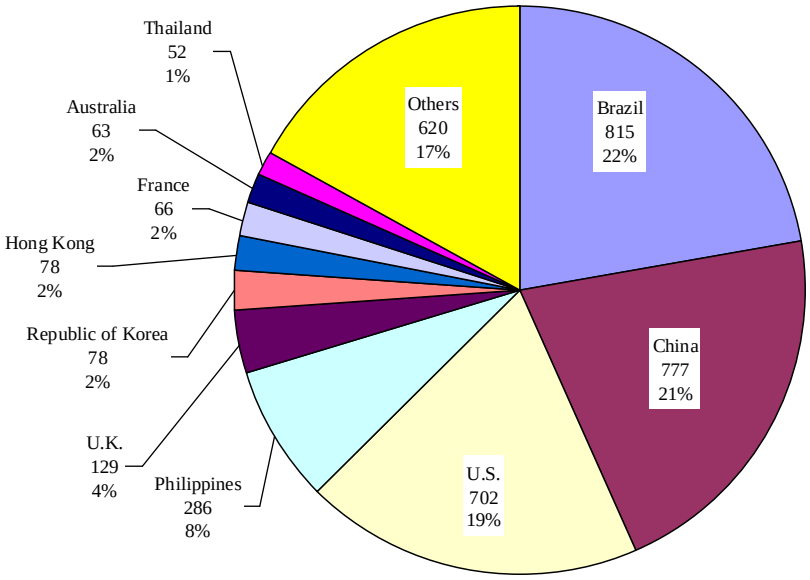
Demands for the improvement of the facilities for speedy and easy transfer of remittances will arise as workers' remittances increase. According to the statement of the Meeting of G7 Finance Ministers and Central Bank Governors held in Boca Raton (the U.S.) in February 2004 "Remittances are an important source of income for many developing economies. We aim to reduce the impediments that raise the cost of sending remittances (by migrant workers to their home countries)." This indicates that the facilitation of workers' remittance has gained importance in major developed countries.

On the other hand, for financial institutions, the expansion of workers' remittance can become a lucrative business opportunity. In fact, in the U.S., which accepts a lot of immigrants, with the entry of Citibank in the remittance business between the U.S. and Mexico, there are visible signs of financial institutions such as banks entering the remittance business where conventional fund transfer companies have run previously.

In Japan, the Ministry of Finance played a key role in establishing a partnership with regard to workers' remittances with the Philippines in August and with Malaysia in October 2004. Under this partnership, measures to introduce methods of sending remittances to home countries through financial institutions for migrant workers in Japan were considered. Further, a field survey on the route and cost of workers' remittances was conducted with the technical cooperation of the Asian Development Bank.

In addition, with the publication of the region-wise statistics of workers' remittances by the Bank of Japan from the first quarter of 2006, we can state that improvements in both the actual statistics and the methods used to obtain them have also been made (see Column Figure 4-3).

Column Figure 4-3 The current situation of workers' remittance from Japan (2006)



(Unit: 100 million yen)

Source: The Bank of Japan "Chiikibetsu Kokusaishushi (Shihanki)"

2. Competition to secure talent accelerating amid the development of the knowledge economy[43]

The cross-border movement of people, of which the cost of movement is higher and regulations on acceptance are stricter than goods and money, is becoming more active. According to the OECD (2007a), the number of new permanent immigrants to OECD countries reached approximately 4 million people in 2005, a 10% increase in comparison with 2004[44]. Among the sending countries, an increase has been seen in Central and Eastern European countries, backed by the expansion of the EU, China, India, and sub-Saharan nations.

In the history of the international movement of people, a large-scale workforce moved from the Old World to the New World in the 19th century, because industrialization was advanced by the Industrial Revolution in Europe, and a large quantity of primary commodities was necessary. Manpower was required for the production of primary commodities, and 60 million people emigrated from Europe to North America and Australia, which had very large land masses. In the nineteenth century, the movement of people was very active in this way.

However, the globalization of people, goods, and money suffered a sharp setback in the period from 1914 to 1945 because nationalism gained power worldwide after World War I, regulations on trade and capital were tightened, and strict regulations on immigrants were imposed.

[43] This concept is the same concept as that of the knowledge-based economy discussed in the OECD's (1996) "The Knowledge-Based Economy," in which the production, distribution, and utilization of knowledge and information become an important economic foundation, which indicates that knowledge has been recognized as the prime motor of economic growth and improvement of productivity.

[44] OECD Secretary General Angel Grier points out regarding these figures that international immigration is one of the major issues on the global agenda. (Comments in the OECD's released "International Migration Outlook 2007")

After World War II, the movement of people became active again. According to an estimation by the United Nations, the total number of immigrants in the world has increased steadily since 1960 and reached 190,630,000 people by 2005[45].

In recent years, the activation of the labor movement has entered a new phase. Because of the declining birthrate, aging population, and the advance of the knowledge economy in developed countries, "people" have become more important than before, increasing the acceptance of foreign human resources in these countries.

As a result, the movement of people has increased rapidly, mainly high-quality human resources with rich human capital and foreign students, who are the reserve army of these human resources.

The world has demonstrated a competition to secure talent[46].

(1) Movement of people reaching a new phase and the factors behind it

As developed countries introduce policies to expand the acceptance of high-quality human resources, the international movement of people is reaching a new phase. The declining birthrate, aging population, and the advance of the knowledge economy worldwide are responsible for this trend.

(The declining birthrate and growth of the aging population in developed countries)

The fact that many developed countries are facing a declining birthrate and aging population can be considered the factor behind the increased acceptance of high-quality human resources in major developed countries. According to the estimated trends in the future labor force population (from 15 to 64 years old) in the OECD countries, many countries will be hit by a decrease in the working population from about 2010[47].

Needless to say, the workforce is an important production factor in economic activities. Thus, the potential growth rate and the growth rate of the number of employees are loosely associated. This suggests that an increase in the workforce supply is important to boost the potential growth rate[48]. In addition, a look at the potential growth rate and the growth rate of the number of employees in time series in three countries (Japan, the U.S., and the U.K.) reveals a difference between the growth rate of the number of employees and the potential growth rate (see Figures 2-1-14 and 2-1-15).

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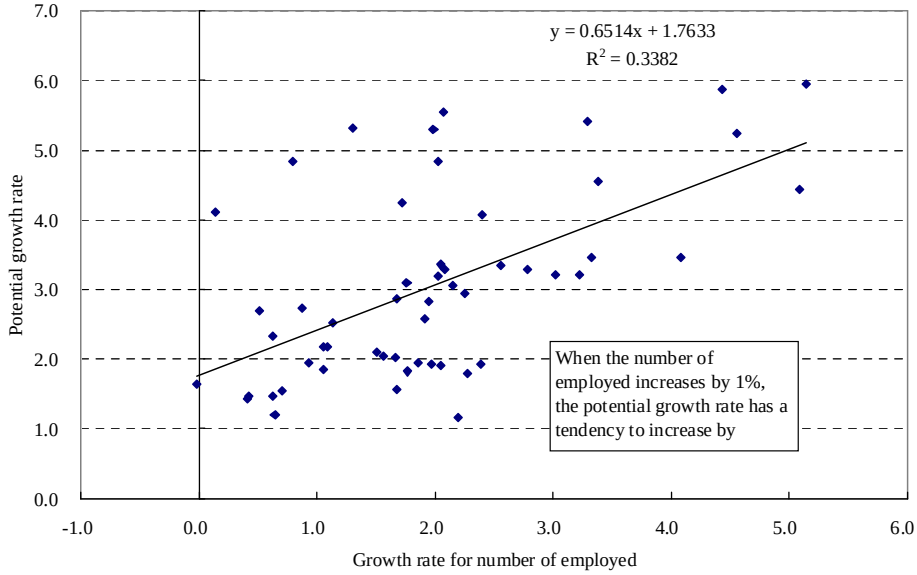
[45] We refer to the data from the International Bank for Reconstruction World Bank (2004).

[46] Aside from the direct movement of humans, the IMF points out that the indirect "globalization of the workforce," which is embodied by the movement of material goods, and the "integration of the labor market," along with it, have been rapidly increasing in the past 20 years due to the sharp integration in the global trade systems of China, India, and the old Eastern European bloc. (IMF (2007b)) This white paper briefly surveys the influence on the nation's economy associated with the integration of such a labor market in chapter 2-2.

[47] Among other things, in our country, in which the phenomenon of fewer children being born as the population ages is the highest, it is estimated that the decline in the number of potential members of the workforce population in the future will become the largest in the OECD countries.

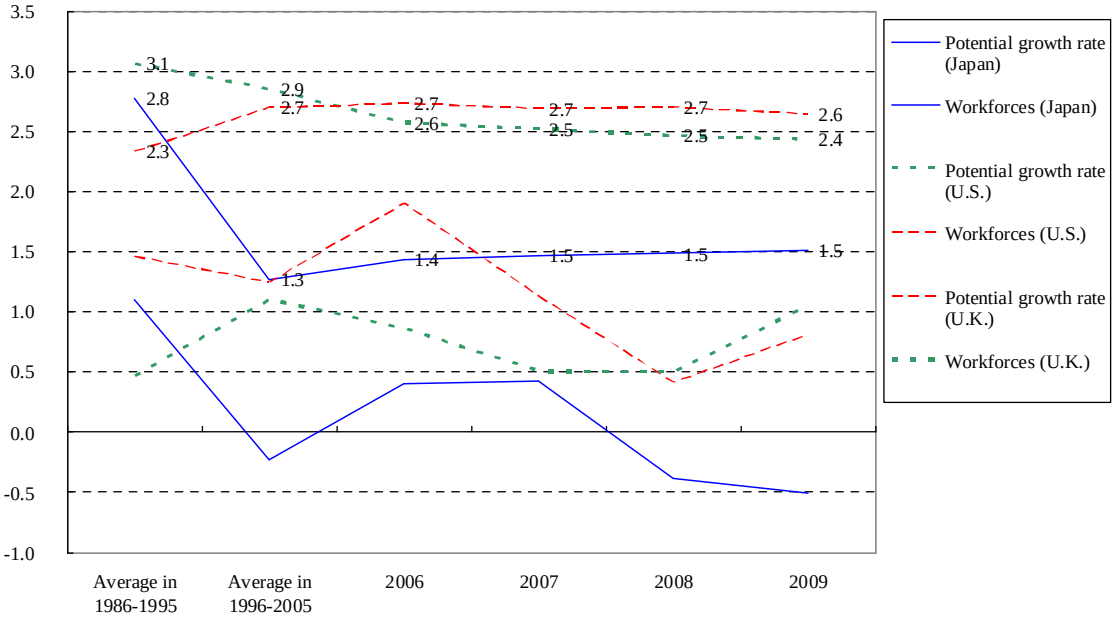
[48] The potential growth rate means the economic growth rate that is attainable when the capital stock and the labor force are capitalized without excess or deficiency with no accelerating inflation, and it is used when measuring one nation's economic supply capabilities.

Figure 2-1-14 Relations of potential growth rate and growth rate for number of employed



Note: Plotting the data for 2006 and 2007 in OECD countries
Source: *OECD Economic Outlook.*

Figure 2-1-15 Potential growth rate and growth rate of number of workers in Japan, U.S. and U.K.

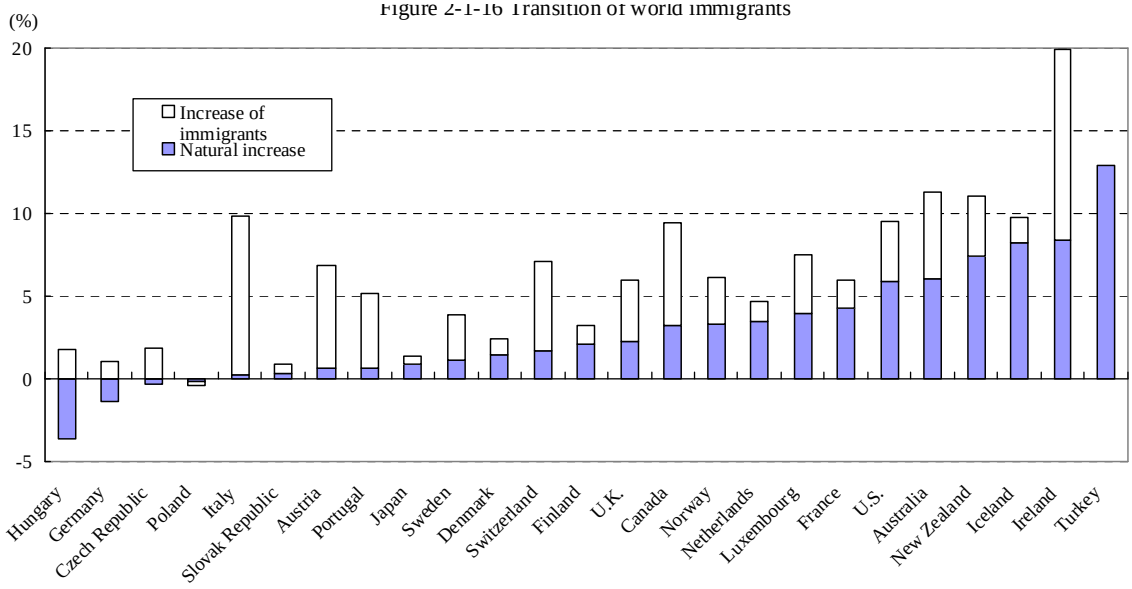


Source: OECD, *Economic Outlook*.

Thus, all countries are concerned over the decrease in the labor force population and the decline of the growth rate associated with the declining birthrate and aging population. In these circumstances, immigrants are contributing to the population increase in the OECD countries. In fact, when the population change in developed countries is broken down into natural increase and immigration, immigration has reached a scale comparable to natural increase.

In Germany, the Czech Republic, and Hungary, which have already experienced a natural decrease, immigrants are balancing out this decrease (see Figure 2-1-16).

Figure 2-1-16 Transition of world immigrants



Notes: 1. Value per population of 1,000
2.Value for Year 2000 only for Japan
Source: OECD, *International Migration Outlook 2007* .

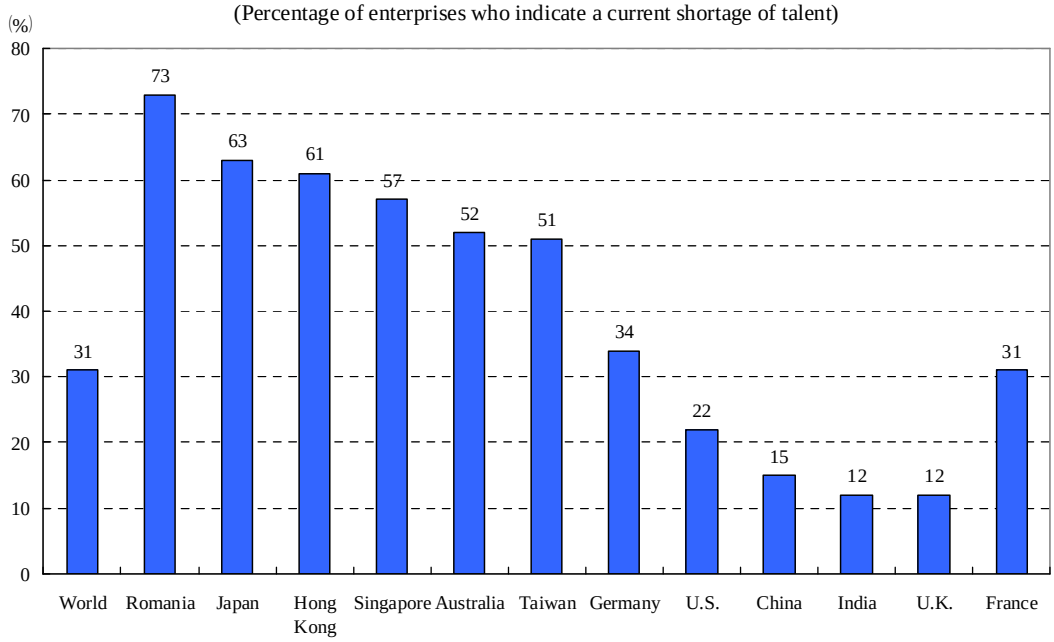
(Shortage of human resources faced by companies located in developed countries)

With the persistently declining birthrate and growth of the aging population, in many developed countries companies are facing a serious shortage of human resources. According to the "Survey on the Shortage of Human Resources"[49] carried out by a private organization, among the 43,000 companies in the world that responded, 31% have difficulty recruiting because the appropriate human resources are not available in the market. Regarding the percentage of companies having difficulty recruiting the necessary human resources, Romania is the highest, at 73%, but is followed by several Asian countries where the declining birthrate and aging population are serious: Japan (63%), Hong Kong (61%), Singapore (57%), Australia (52%), and Taiwan (51%). The implications of the shortage of human resources are also remarkable in developed countries such as Germany and the U.S. On the other hand, as the percentage is 15% in China and 12% in India, sense of shortage in countries that have an abundant workforce is weaker than in developed countries (see Figure 2-1-17)[50].

In addition, looking at the answers to the question about the professions that have the sense of a shortage of human resources in each country shows that shortage of human resources for technical and skilled jobs is high in all countries (see Table 2-1-18)[51].

[49] This survey was implemented in the latter half of January 2008 in the third survey of 43,000 companies in 32 countries conducted by Man Power.
[50] As stated later, these rapidly growing countries are going to gradually find it difficult to secure the skilled labor force matched with the manpower necessary for enterprises due to problems stemming from the rigid educational system.
[51] Due to such a global shortage of engineers, each country and area have been proactively implementing efforts to smoothly accept foreign engineers, such as measures to expand the number of visas and mutual certification of qualifications. For details, see the discussion in Chapters 2–4.

Figure 2-1-17 Talent shortage in each country (2008)
(Percentage of enterprises who indicate a current shortage of talent)



Source: Manpower, "Talent Shortage Survey 2008 Global Results".

Table 2-1-18 Human resources thought to be in short supply in each major country

	World		Japan		U.S.		U.K.
1	Highly skilled craftsmen	1	Sales	1	Engineers	1	Highly skilled craftsmen
2	Sales	2	Clerical staff, secretaries	2	Mechanics	2	Laborers
3	Skilled workers	3	Skilled workers	3	Highly skilled craftsmen	3	Cooks
4	Engineers	4	IT engineers	4	Skilled workers	4	Sales
5	Managerial staff, directors	5	Production staff	5	Sales	5	Clerical staff, secretaries
	France		**Germany**		**China**		**India**
1	Highly skilled craftsmen	1	Highly skilled craftsmen	1	Skilled workers	1	IT engineers
2	Drivers	2	Drivers	2	Sales	2	Engineers
3	Mechanics	3	IT engineers	3	Managerial staff, directors	3	Managerial staff, directors
4	Customer service staff	4	Engineers	4	Sales executives	4	Accounting/financial staff
5	Laborers	5	Skilled workers	5	Mechanics	5	Marketing/public relation staff

Notes: 1. Highlighted parts are professions in engineering.
2. "Highly skilled craftsmen" include electricians, carpenters, joiners, and welders.
3. "Skilled workers" mean mainly workers in manufacturing, driving, engineering, and maintenance.
Source: Manpower, "Talent Shotage Survey 2007 Global Results"

(Development of the knowledge economy and the "competition to secure talent")

Because of the maturity of the economy led by developed countries, the source that creates added value is shifting from tangible fixed assets to knowledge capital and human capital[52].

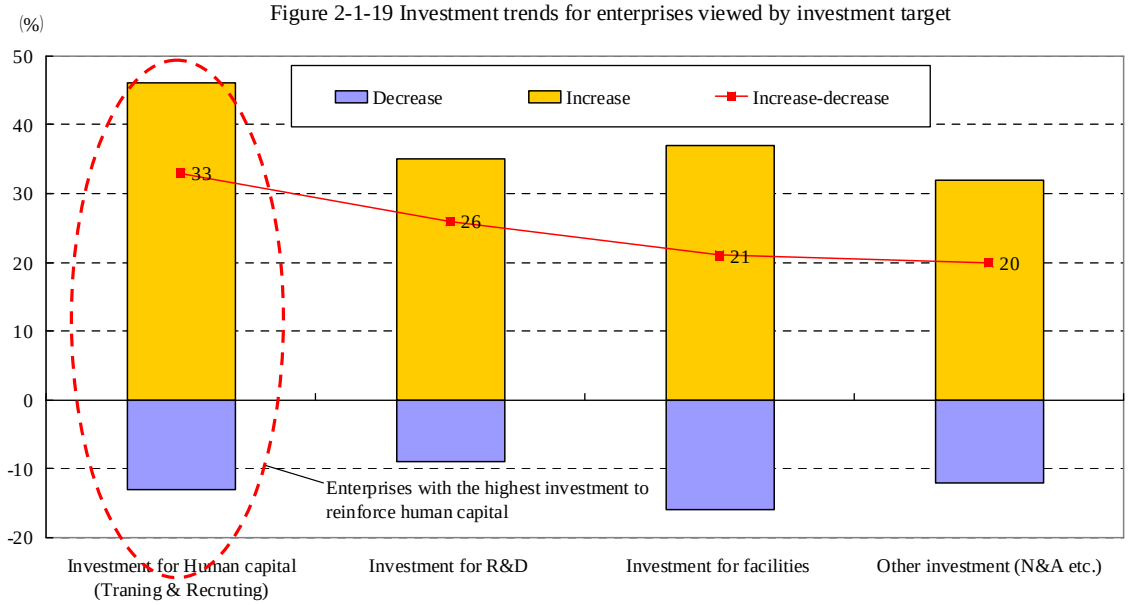
[52] "Human capital" includes a broad concept such as "intellectual abilities" of skills and knowledge, motivation, interpersonal skills, and health, and does not just mean a simple production means and labor force. According to Gary Becker, a top scholar of human capital theory, human capital investment includes school education, OJT, medical care, immigration, etc., and human capital investment improves skills, knowledge, and health, resulting in heightened incomes and consumption (The Ministry of Economy, Trade and Industry, "Intellectual abilities Report").

To revitalize the economy and maintain international competitiveness, it has become more important than ever to secure excellent talent, including foreigners.

The results of the questionnaire for managers of global enterprises carried out by a private organization shows that companies are enhancing their investment in human capital (training and recruiting) more than investing in tangible assets and research and development.

This indicates that human capital is considered an important factor of production for companies, and the global competition to secure talent is progressing (see Figure 2-1-19).

Figure 2-1-19 Investment trends for enterprises viewed by investment target



Note: 1,409 enterprises replied.
Source: McKinsey"Global Survey of Business Executives:Economic and hiring outlook, Fourth Quarter 2007"

(High mobility of high-skilled human resources)

According to the survey[53] carried out by the OECD, the percentage of college graduates among immigrants is higher than that among the natives of the receiving countries.

Generally, the higher educated the human resources are, the more active the international movement[54].

The trend that mobility is higher in higher educated human resources becomes clear when the objective is narrowed. A comparison of the percentage of physical science professionals to the overall number of college graduates in three groups (Asian immigrants, non-Asian immigrants, and the natives of the receiving countries) shows that, in any country, the percentage of the first two groups is higher than that of the third group. For example, in the U.S., as the percentage is 21.0% for Asian

[53] OECD (2007a), “Database on Immigrants in OECD Countries”
[54] The questionnaire survey that the European Commission conducted targeting 24,000 people within Europe also confirmed within Europe that the mobility rate has a tendency to be high as people have advanced academic careers. (Commission of the European Communities (2006), “Europeans and mobility : First results of an EU-wide survey”)

immigrants and 7.7% for the natives of the receiving countries; the difference between two groups is about 3 times (see Table 2-1-20).

Table 2-1-20 Percentage of domestic scientific specialists who have immigrated from other countries occupying in immigrants and receiving country native (2000)

(%)

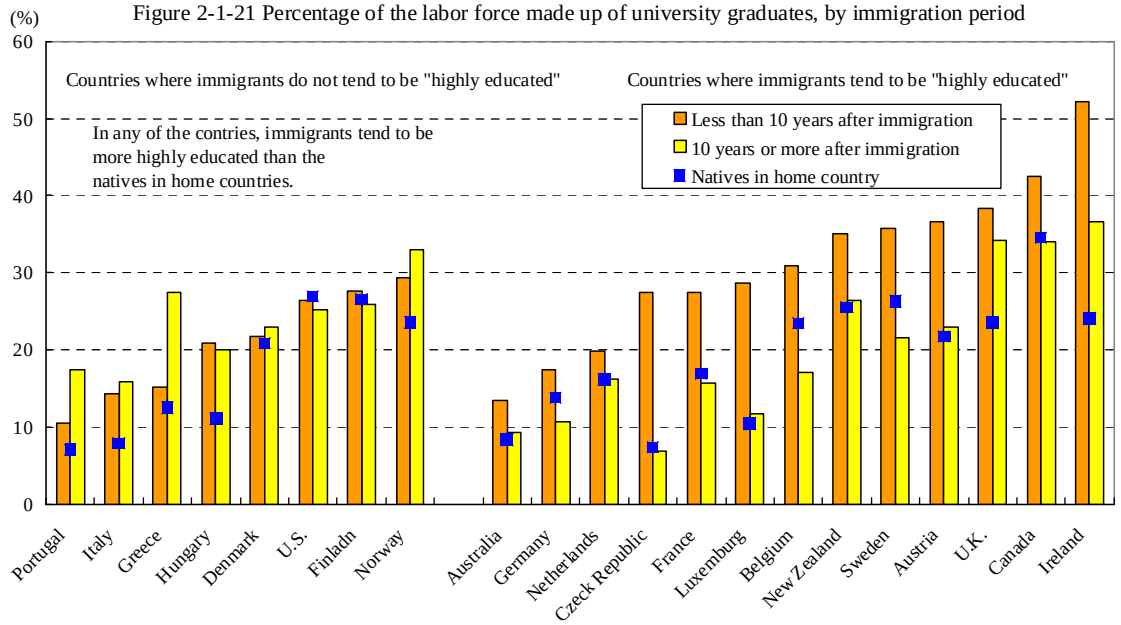
	Canada	U.S.	U.K.	Australia	France	Sweden
Asian immigrants	12.8	20.1	10.9	12.4	14.5	8.2
Immigrants from regions other than Asia	9.5	10.3	8.6	8.7	10.6	7.1
Natives in home country	5.8	7.7	9.6	6.7	8.9	8.5

Source: OECD, "Database immigrants in OECD Countries".

The fact that there are many highly educated human resources in the movement of people can also be seen from the trend of foreign students. In the comparison of the percentage of foreign students to the total student population in undergraduate courses, master's courses, and doctoral courses, in any country, the most academically advanced program shows the highest percentage of foreign students. In the U.S. where the acceptance of foreign students is the largest, foreign students accounted for approximately 40% of the students in doctoral programs.

In addition, the percentage of college graduates among immigrants has risen in recent years. Backed by the increasing acceptance of high-quality human resources in many countries, the mobility of high-quality human resources is supposed to increase further (see Figure 2-1-21)[55].

Figure 2-1-21 Percentage of the labor force made up of university graduates, by immigration period



Note: Data are before and after 2000.
Source: OECD, "Database on Immigrants in OECD Countries (DIOC)"

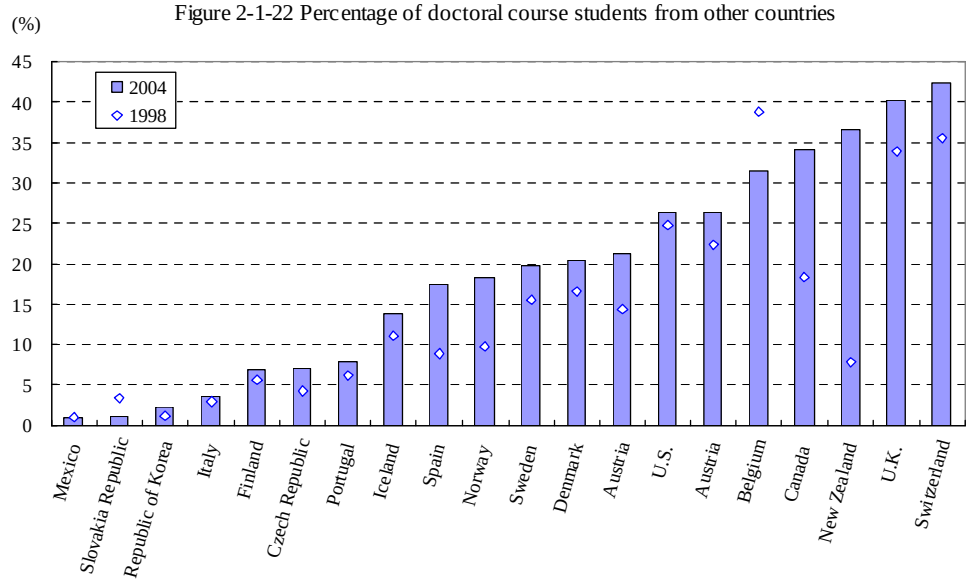
[55] On the other hand, the OECD (2007c) indicates that, according to its analysis, there are large mismatches between employees' occupation in OECD countries and the employees' qualifications, and that the possibility of underemployment in terms of qualifications is much higher in immigrants than accepted country-born persons who the same qualifications. In addition, the OECD points out that most OECD countries invite immigrants who have high-level skills and attempt to come to stay, but such a strategy is successful only when human capital is being effectively used in the labor market of the receiving country.

(Foreign students as the reserve army of high-quality human resources)

The increase in the number of students studying abroad worldwide is due to the high mobility of high-quality human resources. According to the OECD (2007a), the number of foreign students has increased in most countries. The number of foreign students in the world expanded more than 4 times[56] in the past 30 years, from 610,000 in 1975 to 2.73 million in 2005. The number of foreign students in OECD countries is about 2.3 million; about a quarter of them study in the U.S., followed by the U.K., Germany, and France. Studying abroad tends to be more popular among students with more advanced educational backgrounds.

For example, the percentage of international students[57] to students studying in the doctoral program in OECD countries is 25% or higher in all countries such as Switzerland, the U.K., New Zealand, Canada, and the U.S. (see Figure 2-1-22).

Figure 2-1-22 Percentage of doctoral course students from other countries



Note: The 2004 statistic uses data from 2003 for Republic of Korea, data from 2002 for Mexico, and data from 2001 for the U.S.
The 1998 statistic uses data from 1999 for Belgium, Mexico and Slovakia, and data from 2000 for Iceland and Portugal.
Source: OECD, "Science, Technology and Industry Scoreboard 2007"

When foreign students start working in the receiving countries after graduation, the students have advantages as they (a) do not need to take the immigration examination again since they have already resided in the receiving countries as students and (b) easily adapt to the language and social practices of the receiving countries. Therefore, such foreign students can obtain work visas relatively smoothly. In fact, it has been pointed out that most high-quality foreign employees working in Silicon Valley in the U.S. graduated from U.S. colleges[58].

[56] The number of international students in OECD countries has been increasing by approximately 9% on average since 2000. (OECD (2007a))
[57] According to the OECD's definition, foreign international students are defined as non-citizens of the country who are studying in schools.
[58] Motoyama, Y. (2003), "The Role of High-tech Immigrant Workers in Silicon Valley"

The increase in the number of students studying abroad is due to the high mobility of high-quality human resources mentioned above.

Among doctoral degree holders in physical science in the U.S., about half of the foreign students who obtained doctorates in physical science in the U.S. plan to remain in the U.S. at the time of graduation. Seventy-four percent of the students in the period of 2002-2005 planned to remain, and 49.3% have received jobs in the U.S.

This reflects the attitude of excellent talent wishing to remain in the U.S. after the graduation. In particular, a high percentage of Chinese and Indian doctorate degree holders wish to remain in the U.S. This suggests that the U.S. has attracted excellent talent in physical science from these two countries (see Table 2-1-23)[59].

Table 2-1-23 Number of doctorates earned in scientific/technical fields / Desire of doctorate holders to stay in the U.S. (2002-2005)

	Number of doctorates earned in scientific/technical fields	Of this number, those who wish to stay in the U.S. (after earning their degrees)	Of this number, those who found jobs in the U.S. (after earning their degrees)
Foreign international students in total	41071	73.8	49.3
China	11594	91.6	60.2
Taiwan	1889	65.3	38.6
Japan	713	58.8	20.8
Republic of Korea	4062	69.8	43
India	3587	88.2	62.7

Source: National Science Foundation, "Science and Engineering Indicators 2008".

In this situation, in recent years, in major developed countries that have actively accepted high-quality human resources, foreign students have been evaluated as human resources that will "become high-quality human resources in the future," and a foreign student policy has been emphasized[60].

(2) Flow of people, in particular high-quality talent centering on Europe and the U.S.

As mentioned in section (1), due to the development of the knowledge economy and the declining birthrate and aging population in developed countries, the movement of people, in particular high-quality talent, has increased.

(Movement of people around the world)

To begin with, looking at the structure of the flow of people[61] in the world without identifying categories (workers, foreign students, trainees, etc.) of human resources, Japan, the U.S., and Europe are the main destinations for foreign human resources.

A large number of people are flowing into Japan from neighboring Asian countries such as China, Korea, and the Philippines. Many people are flowing into the U.S. from Mexico, but on the other hand, although geographically distant, a considerable number of people are flowing from China and India.

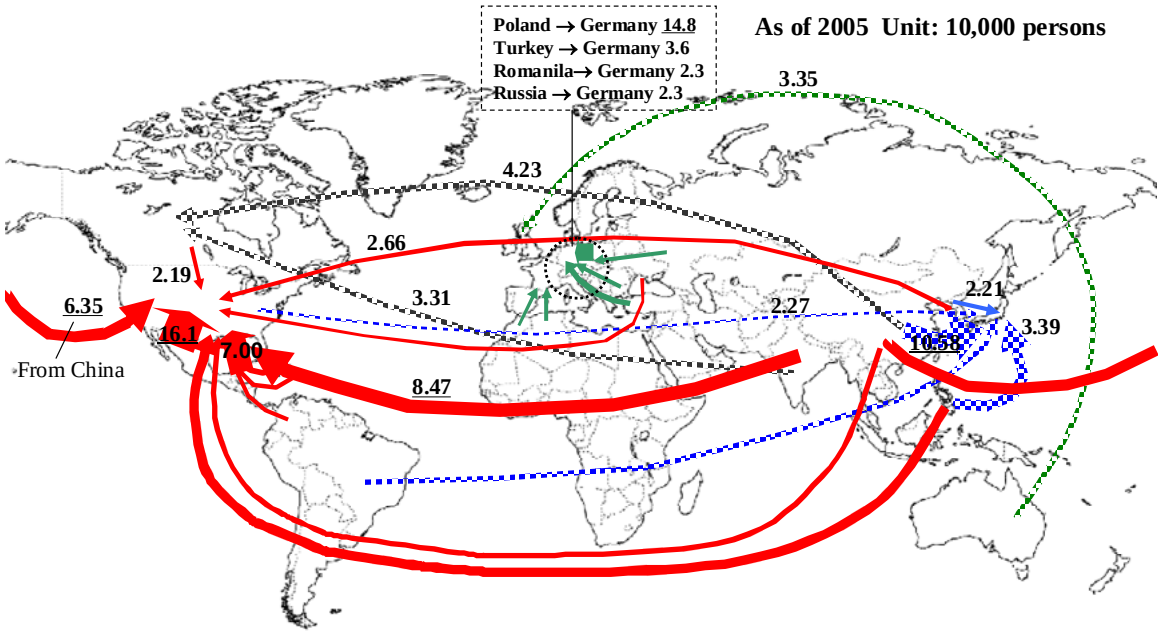
[59] Criticism by Professor Richard B. Freeman of Harvard University, "Does Globalization of the Scientific/Engineering Workforce Threaten U.S. Economic Leadership？"National Bureau of Economic Research, Working Paper 11457, June 2005.

[60] For details on the policy of each country's international students, refer to Chapter 2–4.

[61] In this section below, unless otherwise stated, the term "high-quality human resources" refers to immigrants with university graduate careers.

Germany plays a key role in the immigrant flow in Europe, as a large number of people are flowing in from Central and Eastern European and Near and Middle Eastern countries such as Poland, Romania, and Turkey (see Figure 2-1-24).

Figure 2-1-24 Immigration flows worldwide



Note: New immigrants in Japan are persons who stay for over 90 days with valid visas (excluding holders of short stay visas and re-entry visas)

Source: OECD, *International Migration Statistics*.

(Flow of high-quality human resources in the world)

The movement of high-quality talent will be reviewed.

First, in terms of the number of outgoing high-quality human resources by region, Asia has the most, followed by Europe, Latin America, and the Caribbean. This reveals that the supply capacity of high-quality human resources of Asia is the highest. Moreover, looking at the structure of sending countries by educational background shows that Asia's share tends to increase in terms of higher educational background, and Asia accounted for 58.2% of the college graduates.

However, looking at the destinations of high-quality talent shows that only 2.4% of the whole flow in the world is flowing into Asia, while about 65% is flowing into North America and about 24% into Europe.

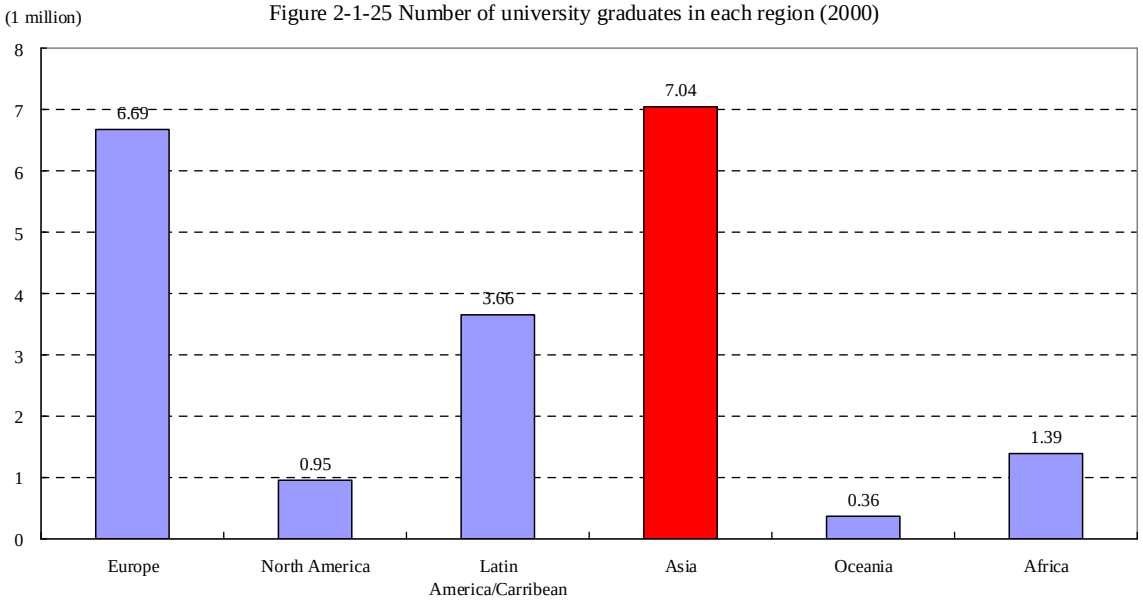
This reveals that Europe and the U.S. (the U.S. in particular) are becoming the destinations for high-quality human resources (see Figures 2-1-25 to 2-1-27).

(Flow of foreign students in the world)

In the flow of foreign students in the world, similar to high-quality human resources, the outgoing number from Asia is high. Looking at the destination countries and regions for Asian foreign students shows a tendency to study in Europe and the U.S., in particular the U.S., rather than Japan, which is geographically close. Specially, a large number of Indian students go to study in the U.S., but very few

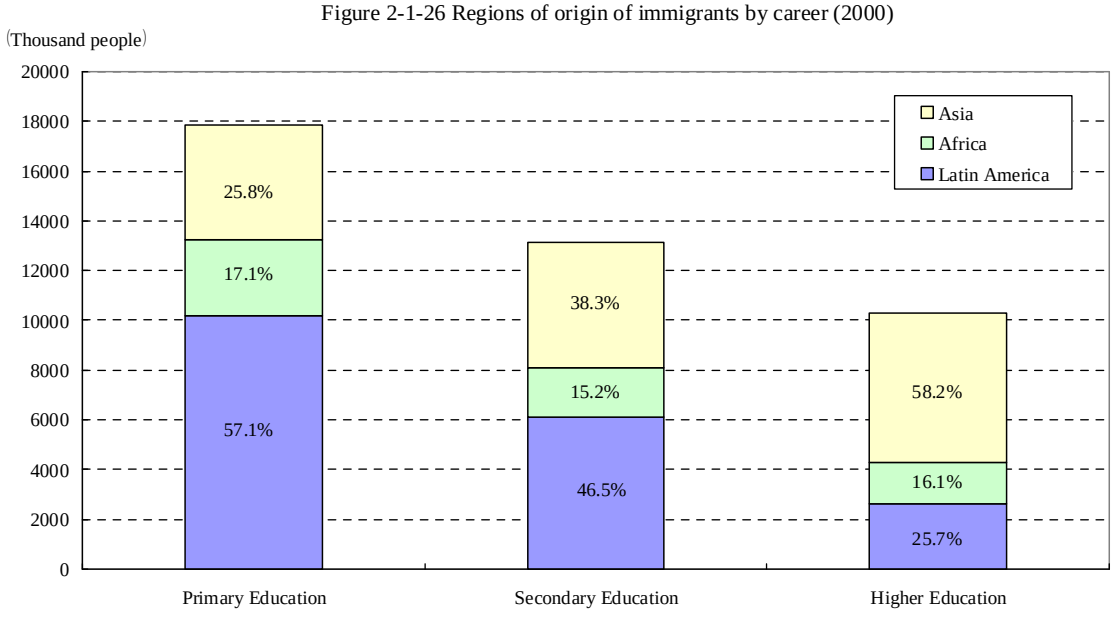
go to Japan. In contrast, in recent years, many Chinese students have come to study in Japan, almost reaching the number of Chinese students studying in the U.S. (see Figure 2-1-28)[62].

Figure 2-1-25 Number of university graduates in each region (2000)



Source: B. Lindsay Lowell, "Trends in International Migration Flows and Stocks, 1975-2005, OECD SOCIAL, EMPLOYMENT AND MIGRATION WORKING "

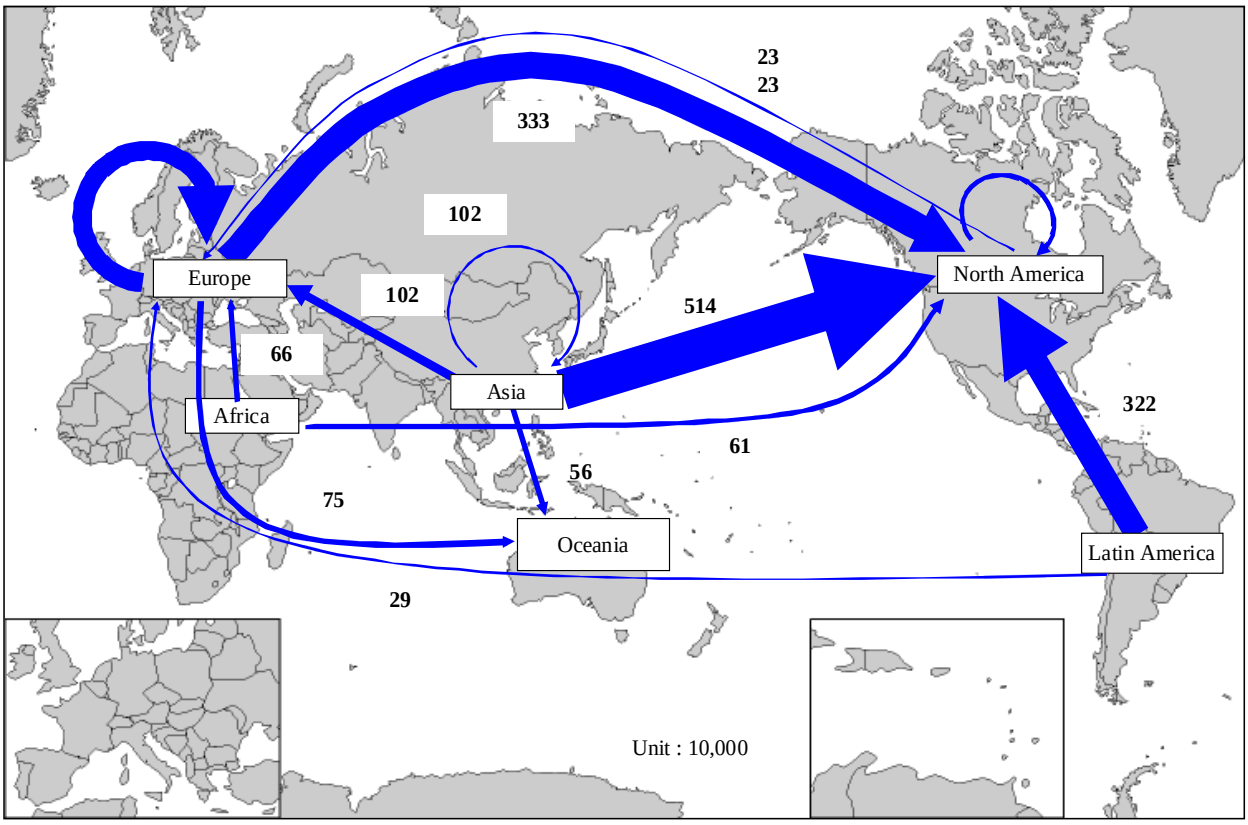
Figure 2-1-26 Regions of origin of immigrants by career (2000)



Source: OECD, "Database on Immigrants in OECD Countries (DIOC)"

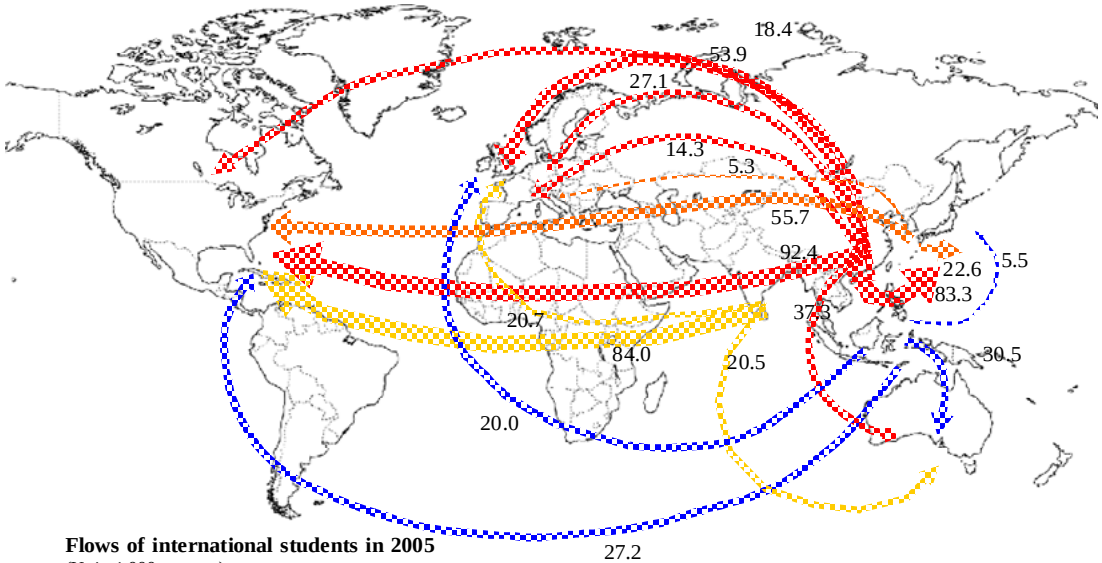
[62] As to the status quo of the movement of international students within Asia, refer to this part 3. It points out that capital is only effectively used in the labor market of the receiving countries.

Figure 2-1-27 Intra-regional movement of university graduates (2000)



Source: B. Lindsay Lowell, "Trends in International Migration Flows and Stocks, 1975-2005", *SOCIAL, EMPLOYMENT AND MIGRATION WORKING*, OECD,

Figure 2-1-28 Flows of international students worldwide (2005)



Flows of international students in 2005
(Unit: 1,000 persons)

Notes:
1. The figure only shows movements of 5,000 persons or more.
2. The values in the squares are the total numbers of international students in each country/area.
3. Thicker arrows represent greater flows of students in absolute numbers, as of 2005.
4. The asterisk (*) denotes the number of students received in ASEAN4 in 2003.
5. The double asterisks (**) denote the number of students from China received in India, Australia, and New Zealand in 2003.
6. The number of Chinese students received is shown in units of 100.
Source: OECD, Online Education Database; MOE, China, "CHUGOKUKYOUIKUNENKAN"

(Movement of people centering on neighboring countries)

The movement of people is active between neighboring countries as the active movement of people has been confirmed in the North American zone, the European zone, and the Asian zone.

In particular, in Europe, economic integration in the region, including the movement of people, is underway, with the establishment of the EU as a turning point. There have also been programs to promote the movement of workers in the region in recent years; for example, 2006 was named the "European Year of Workers' Mobility" by the European Commission to promote the mobility of the workforce in the region.

Meanwhile, there are signs that the movement of people has increased in Asia, as will be mentioned later, but the outflow centering on high-quality human resources going to Europe and the U.S. has become the mainstream.

(3) Flow of people around Asia becoming active

Here, the current situation and problems of movement of people in Asia will be reviewed using the analyses by ADB (2008), which has analyzed workers in Asia in detail. The current situation and measures of Europe, in which movement within the region is most active, will also be introduced.

(The current situation of movement of people in Asia)

In the ADB (2008), although still lower than the percentage of the Asian population to the world, the movement of people within and out of the region is becoming more active. Specifically, analyses by Sussex University and the World Bank[63] show that Asia had accepted 26.3 million people (13.8% of whole world) and had sent out 54.2 million people (28.4% of the entire world) as of 2005. The percentage of these people to the population is 0.7% and 1.5%, respectively, but increases to 1.8% and 3.3% when China and India are excluded[64]. In addition, the ILO Secretariat[65] estimates that half of these people moving in Asia are workers[66].

There are three causes of this movement of people. Firstly, it is a population dynamics matter. There is generally a great difference in the population dynamics between high-income countries (for example, Japan, where the workforce is decreasing) and Asian developing countries (where the population has increased by an average of 1.6% a year in the period from 1995 to 2005).

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[63] University of Sussex and World Bank " Bilateral Estimates of Migrant Stocks ".

[64] ADB (2008), "Asian Development Outlook 2008" points out that the data demonstrate that the census statistics of each country's government do not normally include migrant workers, and does a trial calculation that 2.4 million illegal aliens exist in Japan, Republic of Korea, Malaysia, Singapore, Taiwan, China, and Thailand, draining workers from emerging countries in Asia.

[65] ILO (2004), "Toward a Fair Deal for Migrant Workers in the Global Economy" International Labour Conference 92nd Session, Part Ⅵ, Geneva.

[66] In addition, international students, trainees, etc. exist.

In addition, the aging of citizens in developed countries has created a demand for foreign workers in the field of health care as well the difference in age structures[67] such as the disparity among the birth rates of individual countries.

Finally, it is thought that the wage differentials between sending countries and receiving countries is the decisive factor, given that the gap between the GDP per capita of OECD countries and Asia is 18%[68], and the GDP per capita of Thailand and Malaysia is nearly 10 times higher than that of their neighboring countries[69].

(Activation of movement of people in Asia)

The most recent data are not shown in the ADB (2008), but the above-mentioned analyses by Sussex University and the World Bank have explained that the movement of people within the region is increasing. In fact, according to the figure below created by bilateral statistics, both receiving countries and sending countries, sign that connection with Asian countries is rising in addition to Europe, the U.S., and the Middle East is observed (see Table 2-1-29).

(Structural factors behind the activation)

In the ADB (2008), the "increase in the service industry" associated with economic development, "women's participation in the workforce," and the "employment of cheap labor" are raised as "structural changes" that activate the movement of people in Asia. An "increase in the service industry" is considered to be both the prosperity of labor-intensive services (in particular, the prosperity of homemaking services, restaurant business, etc. that immigrants find easy to engage in) associated with the improvement in income and the "competition to secure talent" such as financial services and IT services associated with technological advances.

"Women's participation in the workforce" is considered to increase the demand for homemaking services[70].

In addition, workers in many countries are avoiding low-wage jobs, and many unskilled foreign workers are employed in these types of jobs in Asia[71].

Together with these factors, strategic and restrictive policy related to the movement of people from the perspective of the job situation and the promotion of the strategic industry of Singapore and Taiwan have been introduced as examples of the policy.

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[67] The estimates are that the number of Filipino nurses working overseas increased from 5,747 in 1992 to 13,525 in 2006. (Cited above ADB (2008))

[68] The value based on PPP. The exchange rate conversion is 6%.

[69] They observed that nurses working in the U.S. earn US$3,000 to US$4,000 per month; on the other hand, nurses working in the Philippines earn US$75 to US$200 per a month.

[70] According to the ADB (2008) cited above, in Hong Kong, Republic of Korea, and Singapore, the authority has been encouraging highly educated women to employ foreign helpers as housekeepers.

[71] The paper introduces an example of tie-ups for Malaysia and Thailand. On the one hand, globalization and integration of areas help reduce the costs incurred by the movement of "humans" and become accelerated factors, but in turn, the expansion of the production network in Asia creates a demand against factory laborers, thus restraining the sending-out of "humans." IT services and the off-shoring of BPO end up with similar effects. In India, it has been pointed out that the rise of outsourcing industries has brought a kick-off of the return home from the U.S., etc.

Figure 2-1-29 Status of moving of "people" in each Asian country

Countries chiefly with	Major destination countries[b]
[South East Asia]	
Indonesia	Malaysia, Saudi Arabia, Netherlands, Philippines
Laos	US, France, Thailand
Myanmar	Thailand, India, US, Pakistan, Philippines
Philippines	US, Saudi Arabia, Malaysia, Canada
Vietnam	US, Australia, Canada, France, Germany, Cambodia
[South Asia]	
Bangladesh	India, Pakistan, Saudi Arabia
Bhutan	India, Pakistan
India	UAE, Saudi Arabia, US, Bangladesh, Pakistan, UK
Sri Lanka	India, Saudi Arabia, Canada, Pakistan, UK, Australia
[East Asia]	
China	Hong Kong, US, Canada
Republic of Korea	US, Japan, China, Canada
[Central Asia][c]	
Armenia	Russia, Ukraine, US
Azerbaijan	Russia, Armenia, Ukraine
Georgia	Russia, Ukraine, Greece, Armenia
Tajikistan	Russia, Uzbekistan, Ukraine
Countries chiefly with	**Major originating countries[e]**
Brunei	Malaysia, Philippines, Thailand, Nepal
Hong Kong	China
Japan	Republic of Korea, China, Brazil, N. Korea, Philippines
Singapore	Malaysia, China, India, Indonesia
Taiwan	Thailand, Philippines, Indonesia, Vietnam
Countries chiefly with outflow/inflow of immigrants[f]	
Cambodia	(Destination countries) US, France, Australia, Canada, Thailand (Originating countries) Vietnam, Thailand
Kazakhstan	(Destination countries) Russia, Ukraine, Uzbekistan (Originating countries) Russia, Ukraine, Uzbekistan, Germany
Malaysia	(Destination countries) Singapore, Australia, Brunei, Philippines, US, UK, Indonesia (Originating countries) Indonesia, Philippines, China, India, Singapore, Thailand
Nepal	(Destination countries) India,Pakistan (Originating countries) Bangladesh, India, Pakistan
Pakistan	(Destination countries) India, Saudi Arabia, UK, US (Originating countries) Bangladesh, India, Nepal
Thailand	(Destination countries) US, Taiwan, Malaysia, Cambodia, China (Originating countries) China, Myanmar, Laos
Turkmenistan	(Destination countries) Russia, Ukraine (Originating countries) Uzbekistan, Russia, Kazakhstan

a: Outflow at least doubles inflow excluding India (Outflow in India nearly doubles inflow)
b: Occupying at least 5% out of all the outflowed immigrants
c: Reclassified as immigrants beyond borders in former Soviet Union after the collapse of USSR
d: Inflow at least doubles outflow.
e: Occupying at least 5% out of all the inflowed immigrants
f: Ratio of outflow to inflow (or the vice versa) is between 0.75 and 1.25

Note: Country names in each column are in the order of larger percentages. The percentage of inflow is the percentage of immigrants accepted (stocks) in the total population. The percentage of outflow is the percentage of immigrants outflowed (stocks) in the total population.

Source: University of Sussex and World Bank, "Bilateral Estimates of Migrant Stocks" (www.worldbank.org; downloaded on October 15, 2007); Development Research Centre on Migration, "Globalisation and Poverty, Global Migrant Origin Database" (www.migrationdrc.org; downloaded on January 28, 2008)

○ Effect of the movement of people in Asia

In the ADB (2008), the activation of the movement of people in Asia is considered to be effective for both receiving and sending countries[72].

[72] However, the ADB points out problematic points in different interests and concerns between the receiving countries and the sending countries that give rise to societal problems.

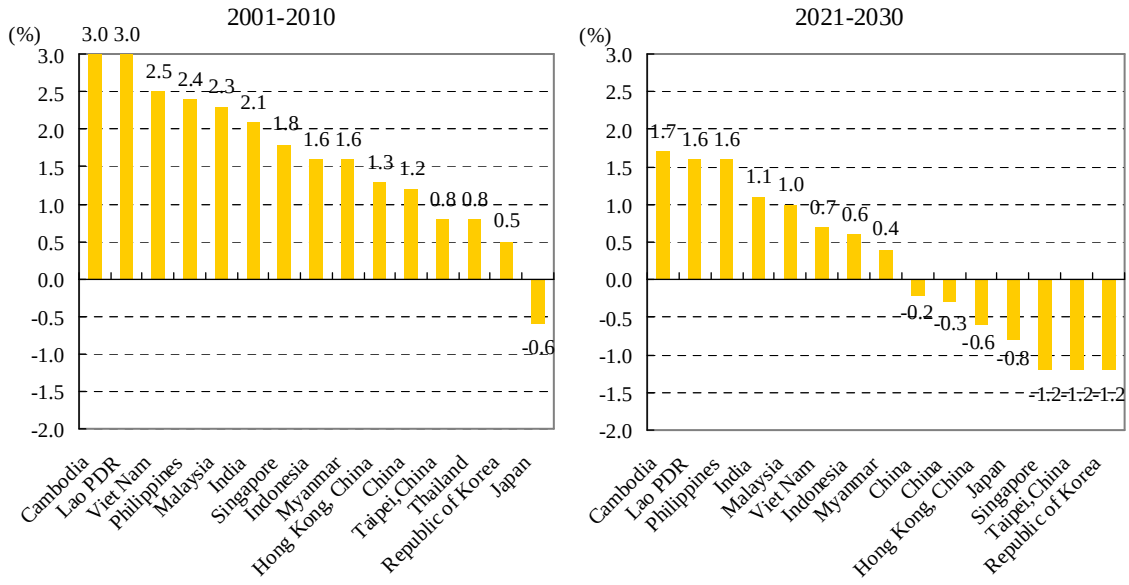
First of all, although the whole region is sending many human resources out of the region to Europe, the U.S., etc., in an era when there are regulations regarding the acceptance of foreign human resources in developed countries, the movement of people within the region has become more and more important, particularly from the viewpoint of effective utilization of human resources who lack job opportunities in their home countries.

In addition, human resources with various skills are required in emerging countries in Asia, which have fallen into a shortage of human resources due to high economic growth.

Thus, the movement of people is considered as the "safety valve" for the shortage of human resources. Specifically, in Singapore, 27.5% of the economically active population in 2006 are non-residents (18% in 1991), and 3.2% of the GDP growth rate of 7.8% in the 1990s is considered to be due to the contribution of foreign human resources. For receiving countries, foreign human resources are thought to be particularly important for maintaining the competitiveness of labor-intensive small- and medium-sized companies.

As pointed out in the ADB (2008), taking the gap that the labor force population has decreased in Northeast Asian countries (including Japan and China) while increasing in South and Southeast Asian countries as the driving force, the movement of people[73] in the region, which brings economic benefit to both sending and receiving countries, will become more and more active in the future (see Figure 2-1-30).

Figure 2-1-30 Change rate of the working-age population in Asian countries



ADB (2008) has also analyzed the effect (the changes from 2007 to 2012) in terms of the liberalization of the movement of people.

As a result, the movement of people within the region will increase by 3.2 million, the GDP of most receiving countries will rise, and the GDP of sending countries will fall. On the contrary, the

[73] According to the ILO's estimates, from 1995 to 2000, 40% of the human movement of from 2.6 million to 2.9 million people in Asia took jobs in other Asian countries.

GDP per capita is predicted to decrease in receiving countries and increase in sending countries, due to the remittances[74] from foreign countries[75].

In any case, it seems that the movement of people within the region will keep increasing. Therefore, cooperation within the region is important, and a multilateral framework should be considered as well as the utilization of economic partnership agreements[76]. The experience of Europe is a good example for Asia of accelerating economic integration within the region. The movement of people in Europe is occurring in a "single-market program,"[77] but the movement of people in Asia differs from that of goods and money, and is still developing.

○ Expectation to foreign students

In fact, although Asia faces obstacles in activating the movement of people as the languages are more diverse than in Europe, etc., taking students as an example, the momentum toward the activation of their movement within the region has begun to be seen[78]. The movement of foreign students within Asia shows that the number of foreign students is generally increasing between any two countries. This indicates that exchanges in the region are becoming active at the level of young students. With this activation of the movement within the region of students as a jump-start, it is expected that the movement of people within the region will spread to high-quality human resources (see Figure 2-1-31).

[74] Much of the percentage goes to the Philippines in particular, accounting for 4.3% of the GDP. Refer to column 4.

[75] The ADB points out that 2 million people, accounting for 62.9% out of 3.18 million people, have been accepted in Japan (of those, 840,000 people are skilled workers, and 1.42 million people are non-skilled workers), pushing up by 1% the real growth rate, thus resulting in a decrease of 1.9% in GDP per person.

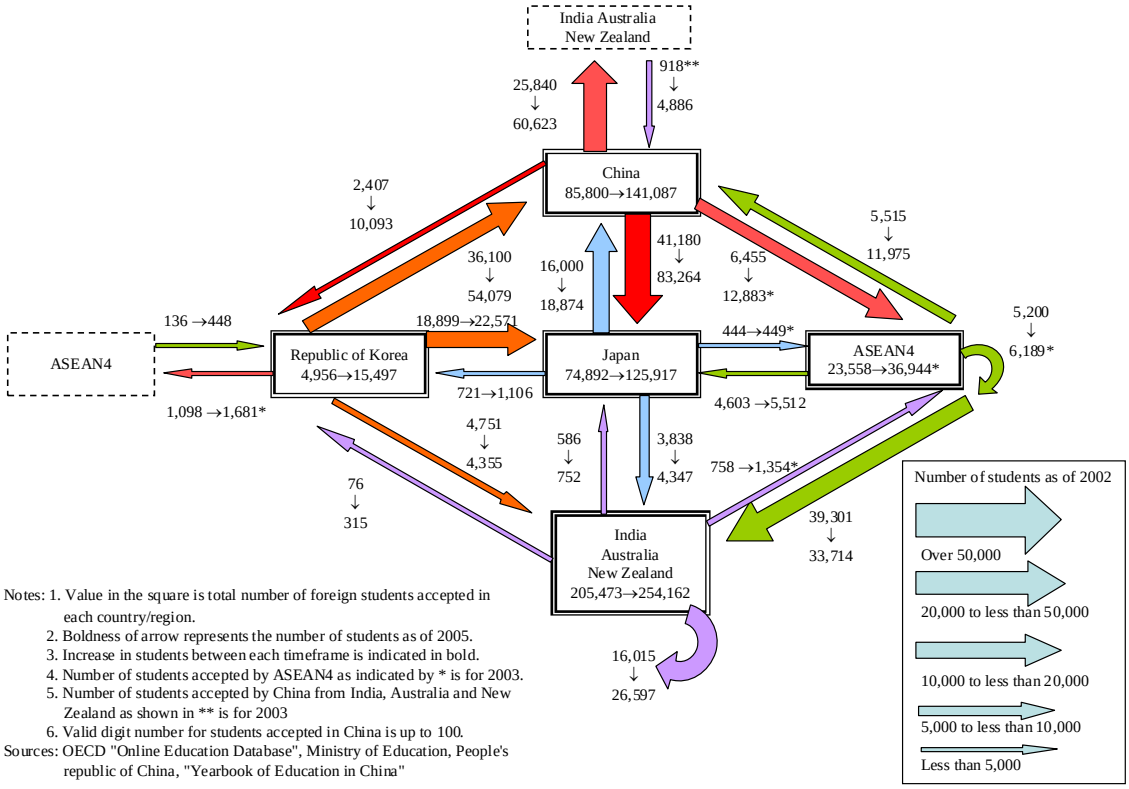
[76] For example, ASEAN aimed at liberalization in specific fields under high-level clerical consultation in 2003.

[77] Based on the "Single European Protocol" in 1986, the Asian version was aimed at a single market in which the movement of humans, goods, services, and capital is free. (From Commission of the European Communities (1996), European Economy)

[78] Our country was proud of the top rank in terms of the number of international students accepted among all East Asians as of 2003, but along with a substantial increase from 77,715 persons in 2003 to 141,087 persons in 2006 accepted by China, Japan's accepted number rank dropped to second in Asia. The features for China are increasing the accepted number on a large scale from Korea and India.

Figure 2-1-31 Flow of foreign students in Asia (2002 and 2005)

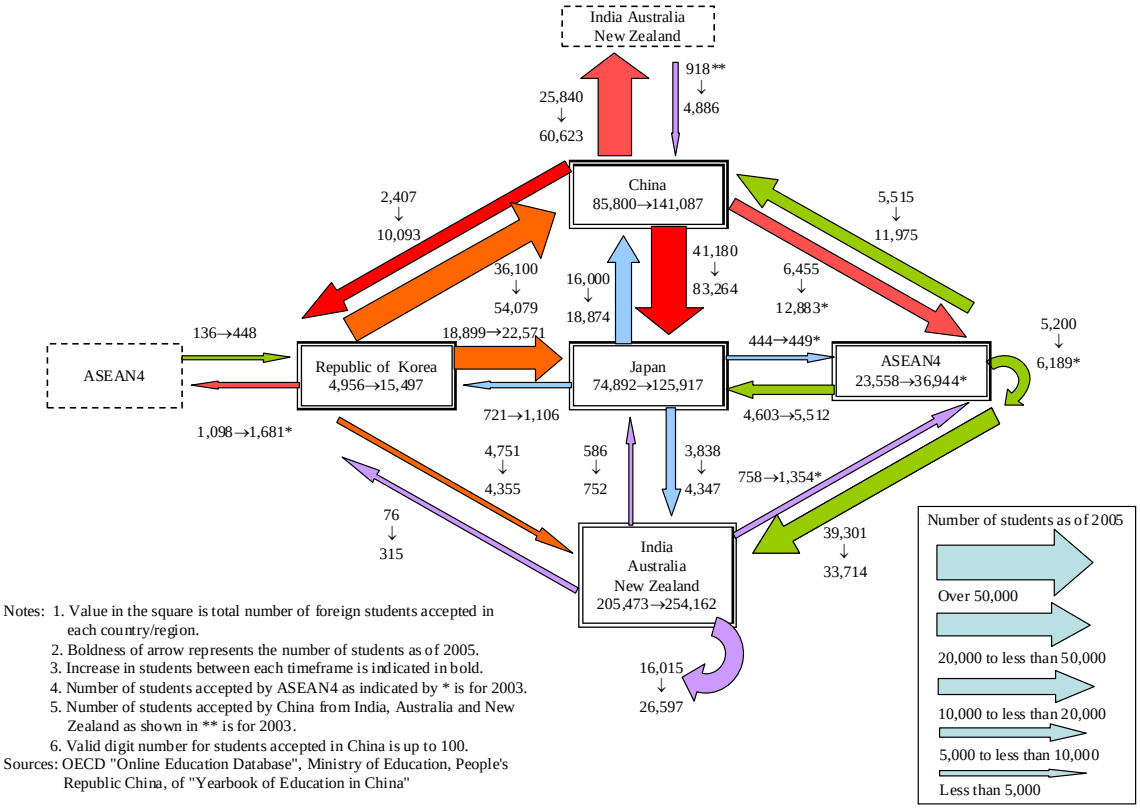
Transition of foreign students in Asia (2002)



Notes: 1. Value in the square is total number of foreign students accepted in each country/region.
2. Boldness of arrow represents the number of students as of 2005.
3. Increase in students between each timeframe is indicated in bold.
4. Number of students accepted by ASEAN4 as indicated by * is for 2003.
5. Number of students accepted by China from India, Australia and New Zealand as shown in ** is for 2003
6. Valid digit number for students accepted in China is up to 100.

Sources: OECD "Online Education Database", Ministry of Education, People's republic of China, "Yearbook of Education in China"

Transition of foreign students in Asia (2005)



Notes: 1. Value in the square is total number of foreign students accepted in each country/region.
2. Boldness of arrow represents the number of students as of 2005.
3. Increase in students between each timeframe is indicated in bold.
4. Number of students accepted by ASEAN4 as indicated by * is for 2003.
5. Number of students accepted by China from India, Australia and New Zealand as shown in ** is for 2003.
6. Valid digit number for students accepted in China is up to 100.

Sources: OECD "Online Education Database", Ministry of Education, People's Republic China, of "Yearbook of Education in China"

(Asia's serious skill shortage)

As previously mentioned in Chapter 1, elementary education and vocational training are insufficient in Asia.

This lack of education and high unemployment rates have caused concerns about a serious skill shortage in young people who will forge the future.

In Asia, which keeps developing, the demand for new products and services such as financial services, legal services, and health care is rising due to the increase in income. In addition, backed by integration in the global economy, products supplied from Asia to other countries are becoming more and more sophisticated and diversified. As a result, the skills required of Asian workers are becoming more sophisticated and diversified year by year in industries for domestic demand and for foreign demand.

On the other hand, the education systems of many Asian countries lack flexibility, and the facilities, teachers, and curricula that are necessary to acquire skills required for modern workers are crucially deficient. This system therefore cannot supply sufficient quantities of students who have skills in line with the needs of companies, which are getting more sophisticated and diversified. Such a skill shortage in workers (a shortage of the absolute number of highly skilled workers) could create a bottleneck in the modernization and growth of the Asian economy in the near future.

In fact, a questionnaire survey[79] carried out by the EIU[80] among 600 member companies operating in that Asian region shows that many companies, which have entered the Asian region, raised problems such as the following as obstacles to business development in Asia: (a) it is becoming more difficult every year to find high-skilled workers with a higher degree of expertise who are necessary for new business development[81], (b) filling vacant positions is difficult[82], (c) there is a high turnover rate[83], (d) and there has been in increase in wages, etc.[84].

In the ADB (2008), Ireland, which has transformed itself from a less developed European country into an IT developed country in only one generation, was introduced as an example that emphasizes the importance of establishing a flexible education system that can cope quickly with the ever-changing needs of industry. In Asian countries, increasing the flexibility of the current education system is required in order to be able to supply human resources in line with the needs of industry, which are getting more sophisticated and diversified.

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[79] EIU (2008), Asia Business Outlook Survey 2008

[80] The EIU (Economist Intelligence Unit) is a survey and consulting company established by the British magazine the Economist.

[81] According to the EIU (2008), among the job categories in which a shortage of manpower restrains the expansion of businesses the most are middle-class management staff, special human resources for the financial sector, and the IT sector.

[82] For example, in the Indian IT industry, it takes almost 2 weeks in small and medium enterprises and approximately 2 to 5 weeks in middle-class and giant enterprises to fill staff vacancies. (World Bank (2006a), "World Bank Enterprise Surveys")

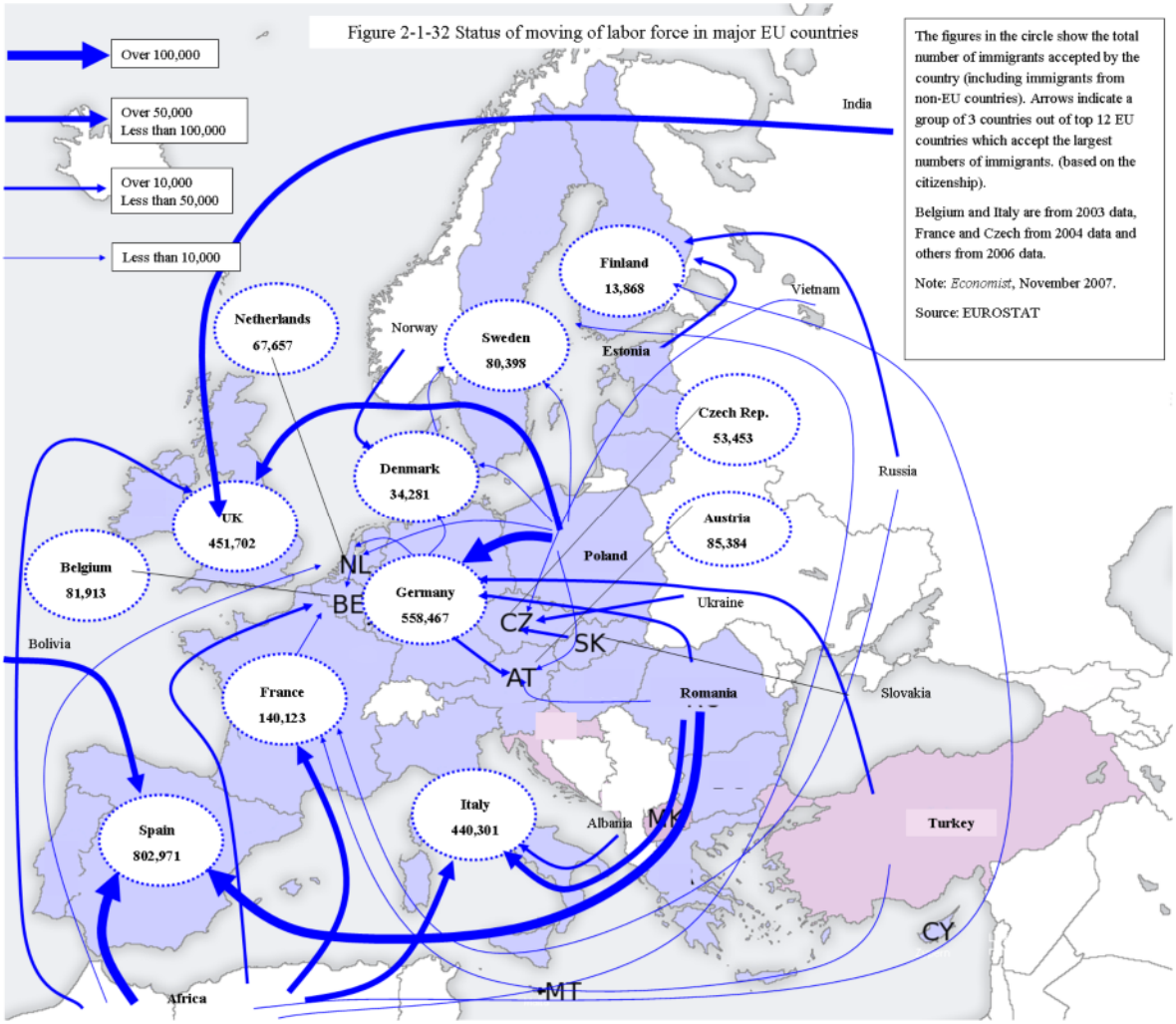
[83] According to the EIU (2008), the highest labor turnover rate is found in China, where approximately 15% of employees a year leave their jobs.

[84] According to the EIU (2008), the highest increase rate of wages (year on year) was special human resources of the financial sector and the IT sector, with rates increasing 16% in China and India, 14.5% in the South East Asia (ASEAN4, the Philippines, and Vietnam), and 6.4% in Japan.

(Labor movement within the EU becoming active)

○ The current situation of labor movement within the EU

A look at the current situation of the workforce movement in 2006 reveals that the flow of people is active within Europe (see Figure 2-1-32).



The flow from Central and Eastern European countries such as Poland and Romania to Western European countries such as the U.K., Germany, France, and Italy is particularly noticeable. This indicates that, after the EU accession[85] of ten countries, including Central and Eastern European countries, in 2004, new members have increased their presence as workforce-supplying countries. In the EU accession treaty (signed in April 2003), interim measures for up to seven years[86] on labor

[85] The new member countries are three countries of the old Soviet Union (Estonia, Latvia, Lithuania), four countries of the old Eastern Europe (Czech, Hungary, Poland, Slovakia), one country of the old Yugoslavia member country (Slovenia), and two island countries floating in the Mediterranean Sea (Cyprus, Malta).

[86] Seven years in total of the transition periods are provided, with two years for the first stage, three years for the second stage, and two years for the third stage. In addition to Britain, Ireland, and Sweden, which did not provide restrictions since early 2004, restrictions on the movement of workers were abolished at the end of the first stage (2004–2006) in Spain, Portugal, Finland, and Greece, and Belgium, Denmark, Luxemburg, and France are to examine the abolishment of the restrictions while reviewing the

movement from new to old member countries were approved. In addition to the U.K., Ireland, and Sweden, which have not imposed restrictions since the beginning in 2004, Spain, Portugal, Finland, and Greece will eliminate restrictions on labor movement at the end of the first stage (2004-2006), and Belgium, Denmark, Luxembourg, and France will consider the elimination of restrictions according to the situation during the second stage (2006-2009). Germany and Austria announced that they have no plans to eliminate restrictions until the end of the second stage on April 30, 2009.

○ Measures for activation of labor movement

On the other hand, the European Commission adopted an action plan on workforce mobility in 2002. This action plan was intended to remove obstacles to the workers' abilities to change jobs and movement between countries.

"Insufficient labor movement," "little geographic movement," and "shortage of information about the movement of people" have been pointed out as problems that should be solved. In the report for this action plan presented in 2007, the following three issues were raised as major areas that should be followed up.

(a) Building an education and training system that is not only able to cope with the labor market but is also able to support people who desire to move through foreign language acquisition

(b) Removal of legal impediments and promotion of cross-border authentication of qualifications

(c) Introduction of the recruitment portal website, "EURES." The EU is planning to promote additional workforce movement in the region[87].

○ High satisfaction among immigrants in the EU

The European Commission surveyed 24,000 citizens about their immigration experiences in the EU in September 2005[88]. According to the survey results, about one-third of citizens have experienced immigration at least one time in the past.

In addition, 46% of people looked on the free labor movement in the region as a good thing (while 11% though that it was bad). In addition, regarding the question of whether the respondents' employment and living environments changed after immigration, "improvement" largely exceeded "worsening" in terms of employment conditions, working conditions, and income. The labor movement has thus spread among EU citizens to a considerable extent, and it is perceived positively.

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circumstances during the second stage (2006–2009). Germany and Australia will not abolish the restrictions until the end of the second stage on April 30, 2009.

[87] In 15 countries that already that had become members of the EU before April 2004, the intra-areas movement of workforces has expanded from 470,000 persons in 2000 to approximately 610,000 persons in 2005. According to a report by the European Commission, approximately 2% of working-age citizens in 27 EU countries have moved within the EU. However, considering that the number of third-country citizens (outside-area citizens) residing within the EU is expected to almost double, the Commission concludes that there are few workforce movements in the intra-area. Commission of the European Communities (2007): "Mobility, an instrument for more and better jobs: The European Job Mobility Action Plan (2007-2010)", COM (2007) 773, final."

[88] This survey is an important survey because it shows that the workforce movement in the intra-EU is being performed smoothly, and citizens are satisfied by the workforce movement.

Moreover, according to this survey, a trend that unemployment is resolved by jobs found in destination countries was confirmed. In fact, the percentage of people who found jobs during the past year of people who were unemployed one year ago was 59% in the population of people who had immigrated within the past year whereas it was 35% in the population of people who had not immigrated within the past year. This result suggests that the unification of the labor market in the region has the function of promoting the efficiency of labor resource allocation by increasing matching opportunities between enterprises and workers.

In view of the European example, it is believed that the movement of people across Asia will be activated in accordance with the progress of economic integration in Asia.

3. Creation of the "pan-Asian market" by deepening the "East Asian production network"

As described at the beginning of this section, the recent globalization of "goods" has progressed ahead of the globalization of both "people" and "money." As was confirmed in Chapter 1, backed by the rise of emerging economies, even as the "five-billion-population market" continues to expand, the world's goods and service trade has become increasingly active, including rapid increases in "south-south trade."

This globalization of "goods" is now entering a new phase, following the subdivision (so-called "fragmentation"[89]) of the cross-border supply chain, by virtue of a reduction in service-link cost; as a result, the unification of the consumption market has progressed on a global scale[90]. Particularly, in Asia, the inter-process division of labor has progressed, resulting in production and distribution networks of companies within not only single countries, but also across the whole of the continent. Techniques and know-how (namely, "knowledge" and "skills") have flowed in this network, and the region's position as "the world's factory"[91] has thus been established in recent years. Therefore, world trade and distribution, which serve as Asia's platform, are changing and becoming greatly Asia-centric in structure. Moreover, while international business networks have formed in the name of value creation (i.e., the "global value chain"[92]), Asia is expected to be where companies or inter-company

[89] "Fragmentation" refers to the act of dividing production activities conducted at one place into multiple production blocks, and locating them separately under different location conditions that suit those particular activities (Ministry of Economy, Trade and Industry (2005), *White Paper on International Economy and Trade 2005*).

[90] "Production Networks in East Asia: Strategic Behavior by Japanese and US Firms" (Ando, M., S. W. Arndt and F. Kimura (2007)) (Fukao, K. and Japan Center for Economic Research (2008), *NIHON KIGYOU NO HIGASHI ASIA SENRYAKU -BEIOU ASIA KIGYOU TONO KOKUSAI HIKAKU,* Chapter 2) states that many studies analyzing international fragmentation use the Ricardo model or the Huckster-Ohlin model as the framework for analysis; however, with the Huckster-Ohlin model, cross-border fragmentation brings welfare effects similar to those resulting from technical progress. Furthermore, if the effect of the production network is analyzed within the analytical framework of the Huckster-Ohlin model, resources will shift to industries undertaking production and, as a result, production in that industry will expand.

[91] For example, see "AJIA NO TOUGOU KEIZAI TO SEKAI NO ATARASHII KEIJOUSHISHUTU FUKINKOU NO KAIKETSU", (Yoshitomi, M. and L.G. Liu (2005)).

[92] In previous versions of the White Paper on International Economy and Trade, the expression "international business network" involved the global value chain discussed by the OECD. In this white paper, we take notice of innovation-producing functions through value-linking and refer to the same as "global value chain," as necessary.

connections integrate their "knowledge" and "skills," all to create innovation. Backed by the economic development of countries—including China, which alone has already been termed "the world's factory," and India, which has become "the world's IT stronghold"—and the existence of potential human capital, the potential for new "intellectual creation" is seen in Asia.

On the other hand, the fact that Asia is exporting heavily to developed countries in Europe and United States can be interpreted as Asia's dependence on exports to those countries, because the Asian consumption market is much smaller than those of developed countries. However, Asia's growth potential as a consumption market has increased rapidly, along with its rise in personal income. In that sense, its potential as a "large consumption market"—and thus sharing a certain degree of orientation with the Japanese market—is seen.

The following will review the current state of "goods" globalization, which is entering a new phase. At the same time, it will review the directionality of the development of the "Production Networks in East Asia," which has been building to date. The potential of a "pan-Asian market" deepening so as to become an "economic bloc"—due to its development as both a "consumption base" and "intellectual creation base"—will also be confirmed.

(1) Expanding the flow of cross-border goods

As confirmed in Chapter 1, the flow of goods—i.e., the trade of goods and services—has been expanding worldwide in recent years. The world's degree of dependence upon foreign trade[93] has risen rapidly in particular from 2002, reaching 62.1% in 2007 in comparison to 48.3% in 2001[94]. In addition, according to the World Bank (2007), as a result of China's and India's foreign opening policies, the "elasticity of exports"[95] has soared, especially since 1986.

(Background of global trade expansion)

The factors behind world trade have recently given rise to a rapid growth rate—one that exceeds the GDP growth rate. First of all, improvements to the business environment that have increased trade, such as "reduction in service-link costs (i.e., distribution cost and information and communication cost)," "reduction of custom tariffs through WTO round negotiations or the EPA/FTA," and "reduction in goods-moving costs by deregulating the product market" are thought to be primary drivers, along with expansions in direct foreign investment.

○ Reduction in service-link costs

First, looking at long-term trends in distribution and communication costs, distribution costs have been declining steadily since the 1950s, after having decreased rapidly in the 1940s (see Figure

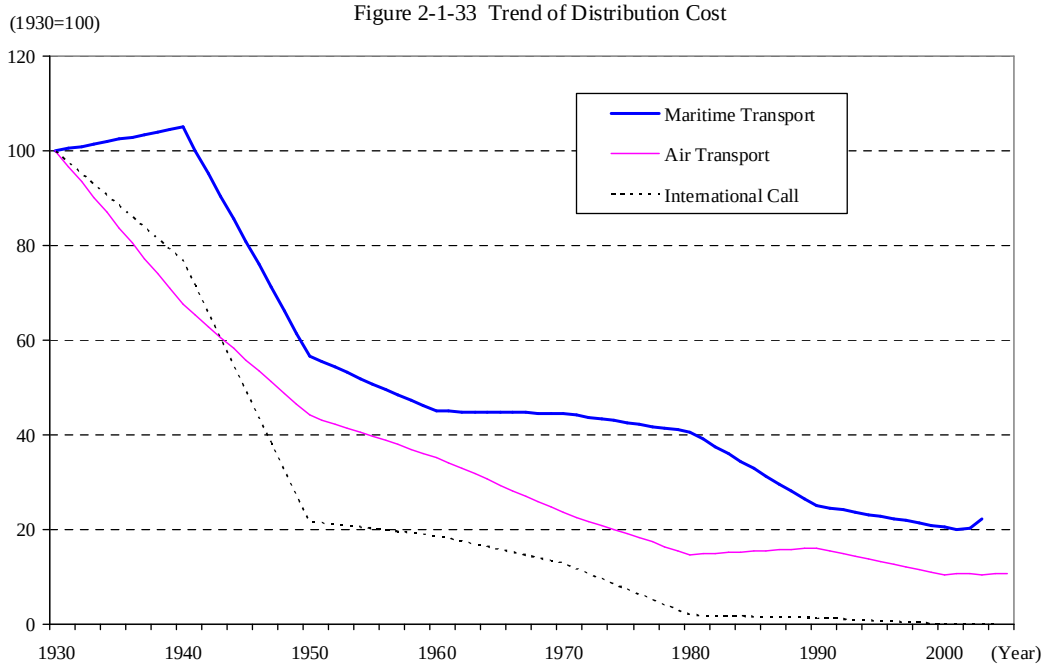
[93] Dependence upon trade in goods and services: (goods and services export + goods and services import)/nominal GDP.

[94] Looking at trade volume, in 2001, global goods exports were valued at US$6.1 trillion and services exports at US$1.6 trillion. In 2006, goods exports were valued at US$11.9 trillion and services exports at US$2.8 trillion—almost doubling in five years.

[95] This is described in Global Economic Prospects 2007 (World Bank (2007)), as the growth rate of export upon a 1% increase in production.

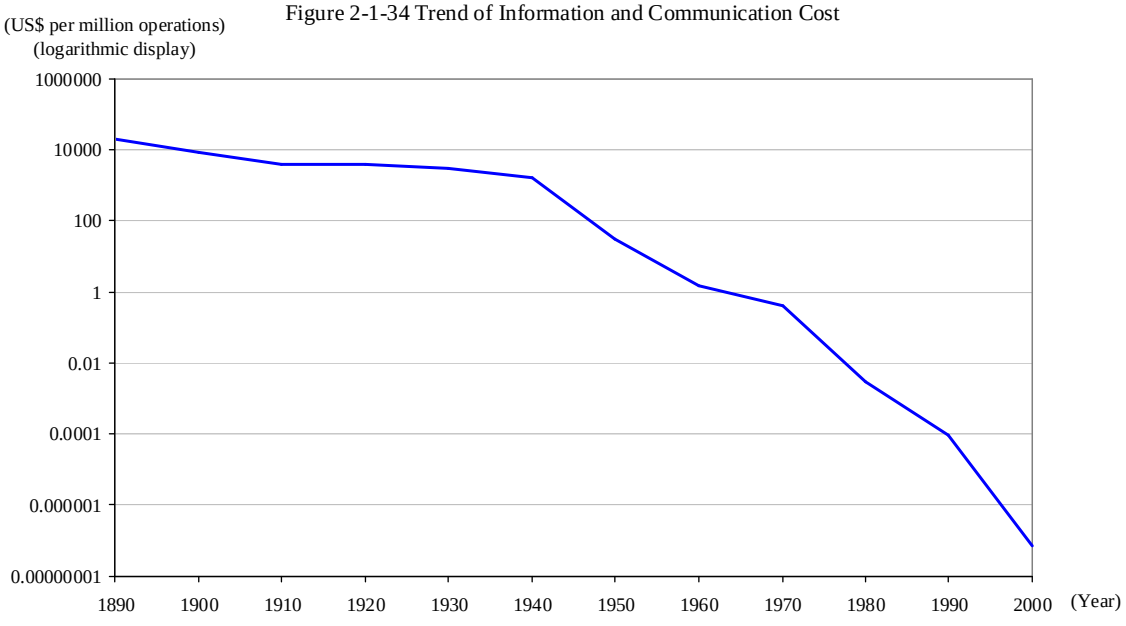
2-1-33). On the other hand, information and communication costs have been decreasing at an accelerated rate (see Figure 2-1-34). It is believed that such large cost-reductions have facilitated the formation of a worldwide supply chain and contributed greatly to the increased globalization of goods.

Figure 2-1-33 Trend of Distribution Cost



Source: OECD, *Growth and Impact of GVCs? What is so special?* .

Figure 2-1-34 Trend of Information and Communication Cost



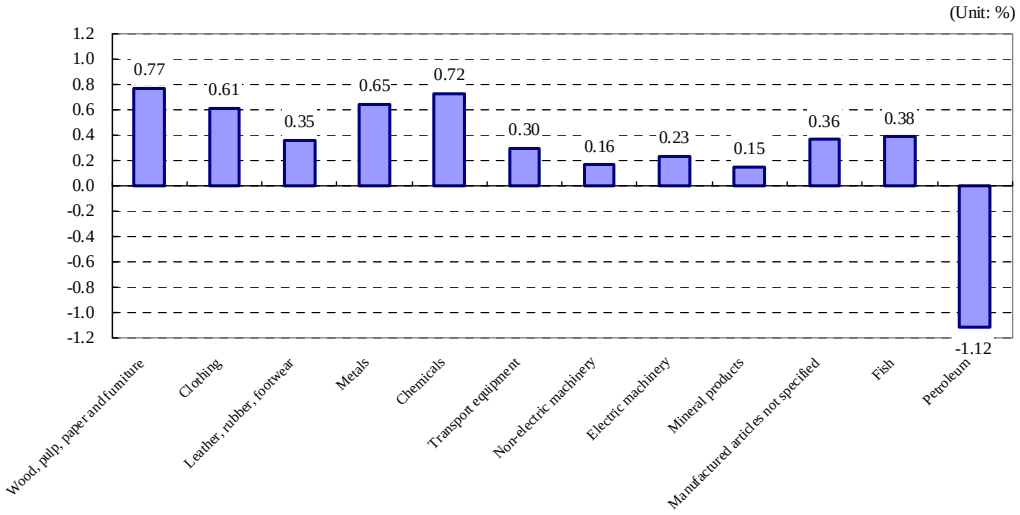
Source: OECD, *Growth and Impact of GVCs? What is so special?*.

○ Reduction of custom tariffs

Next, through repeated rounds of negotiations in GATT, custom tariffs have been reduced, mainly on the industrial products of developed countries. This tariff cut is spreading to developing countries.

For example, in looking at trends regarding the average tariff rate in Asia from 2001 to 2004, the rate fell with respect to almost all goods (see Figure 2-1-35).

Figure 2-1-35 Declining Margin of Average Tarrif Per Industry in Asia (2001-2004)

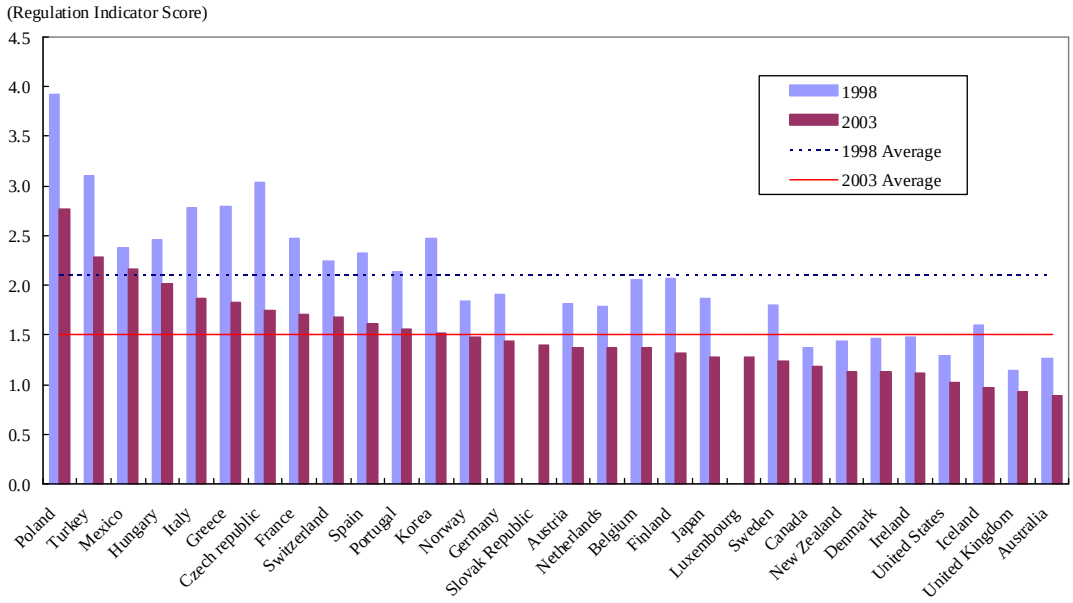


Notes: 1. Values are simple average of the tarrif of each Asian country/region.
2. The Asian countries and regions above are: Japan, Republic of Korea, China, Hong Kong, Taiwan, Indonesia, Philippines, Malaysia, Singapore, Thailand, Vietnam, India and Australia.
Source: WTO, *World Trade Report*.

○ Deregulation of product market

Moreover, it seems that deregulation in product markets has indirectly contributed to the activation of trade. Comparing figures from 1996 and 2003 of product market regulation indicators, as calculated by OECD, confirms that the deregulation of the product market is advancing in all member countries (see Figure 2-1-36).

Figure 2-1-36 Trend of Product Market Regulation Indicators of OECD Countries



Source: Conway, P., V. Janod, and G. Nicoletti (2005), "Product Market Regulation in OECD Countries, 1998 to 2003", *OECD Economics Department Working Paper, No 419.*

○ **Expansion of direct investment**

Of course, backed by the improvements to the investment environments of emerging and developing countries, foreign direct investment[96] has equally expanded, to the trade this century also has a considerable influence on world trade.

As for effects on trade, direct investment leading to "horizontal divisions of labor"[97], in the name of local market exploitation, has recently become a mainstream concern; it can be thought, theoretically[98], that the export substitution effect induced by local production is high. However, in reality, mutually linked international business networks have formed, and there are cases where increases in trade—mainly in intermediate goods—have been observed[99]. In particular, it is believed that great effects have been wrought on the expansion of trade in emerging and developing countries[100].

(Trends in the globalization of "goods": trade trends, according to types of goods)

In examining trends in world trade value from 1980 to 2005, according to the types of goods (e.g., consumer goods, capital goods[101], parts, processed goods, and materials), the trade values of processed goods, followed by those of consumer goods, have risen (see Figure 2-1-37). In addition, looking at the growth rate over the past 25 years, trade in parts and consumer goods have increased 11.8 times and 7.7 times, respectively. The increase in trade of intermediate goods—like processed goods and parts—has suggested that the international production network that formed while focusing on multinational companies has greatly influenced the expansion of world trade. Additionally, it is thought that the expansion of trade in consumer goods suggests that the global class of consumers sharing a common orientation has been expanding, and that consumer tastes have been considered different by country[102]. In addition, since the beginning of this century, growth in the trade value of materials—including primary products—has been the most swift (13.8%), reflecting the recent rise in the prices of resources and food.

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[96] See Figure 1-1-2.

[97] In the "vertical division of labor" in the 1990s, local production was based on an element price being relatively lower than that in the home country, and local production and exports were conducted in tandem. This is where interim goods—such as engines in the car industry—are imported and the finished goods are produced locally.

[98] See, for example, Brainard, L. (1993), "An Empirical Assessment of the Proximity-concentration Trade off Between Multinational Trade and Sales."

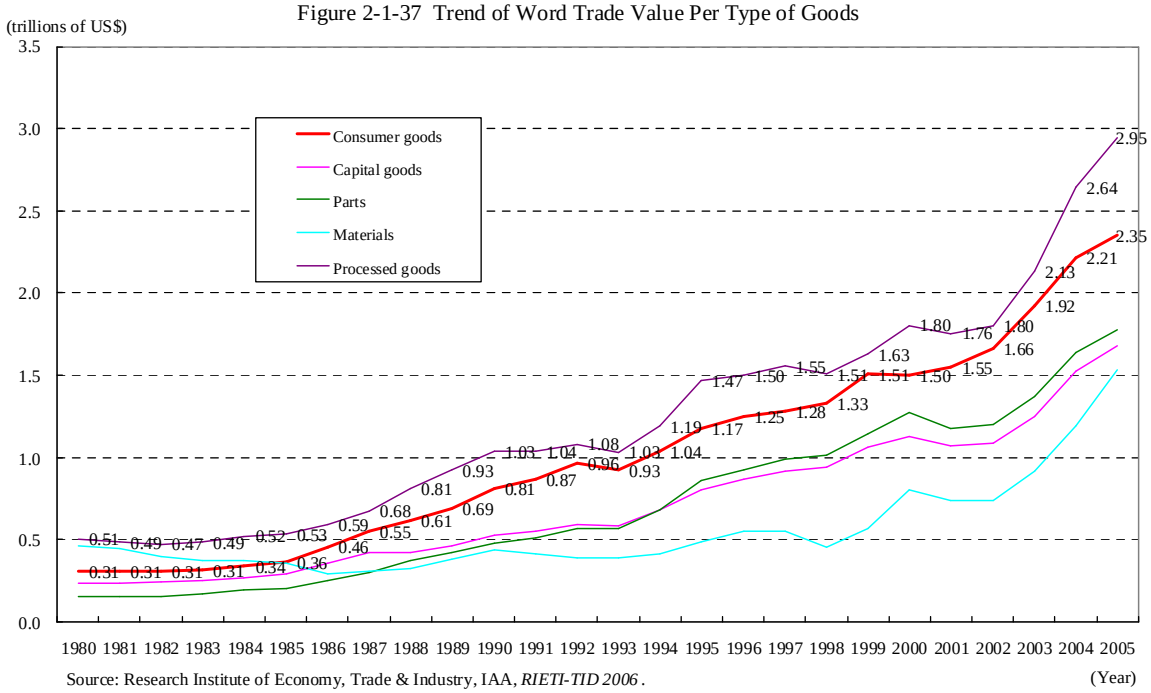
[99] White Paper on International Economy and Trade 2006 (Ministry of Economy, Trade and Industry (2006)) verifies that when the international business network in East Asia, which includes Japanese corporations, changed from making horizontal developments to making vertical developments, East Asian countries and regions were mutually activated, thereby increasing trade in parts specifically and intra-industry trade generally.

[100] The aforementioned World Bank report (2007) states that the lowering of service-link costs, the provision of new business models and inward direct investments, and the formation of skilled labor forces led to the expansion of trade goods such as car parts, aircraft, semiconductors, and home appliances—the creation of which developed countries have mainly undertaken in the past.

[101] Here, limited to final, finished goods among capital goods.

[102] A percentage-based breakdown of worldwide consumer goods trading shows that in 2005, transportation machinery (21.6%), food (21.0%), clothing (14.1%), and chemicals (14.0%) ranked highly. (These goods also account for 71% of all trade.) In comparison to 1980, it is remarkable that chemicals have rapidly increased their share, from 3.5% to 14.0%; this is mainly due to the expansion of pharmaceutical trade.

Figure 2-1-37 Trend of Word Trade Value Per Type of Goods



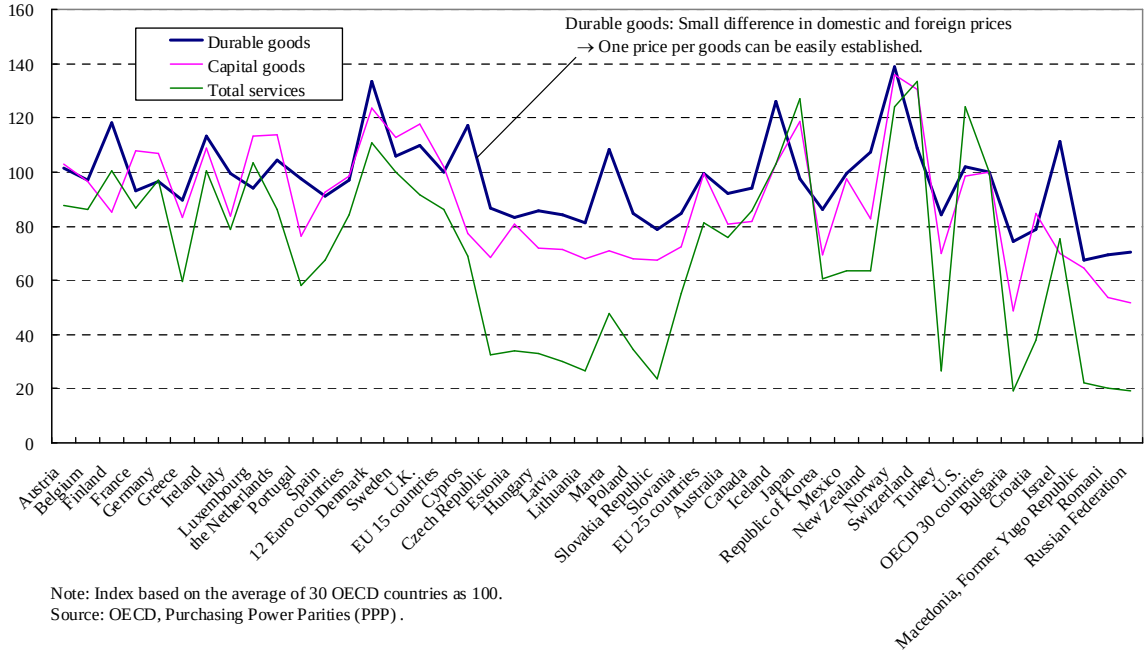
Source: Research Institute of Economy, Trade & Industry, IAA, *RIETI-TID 2006* .

(Advance of the unification of global market)

Decreases in tariff rates and product regulation lead to increases in the cross-border movement of goods; such decreases also help unify the markets of various countries. Thanks to active trade[103], a price-decision mechanism works between same and similar goods among tradable goods, and the law of indifference is seen to be at work worldwide. In comparing, worldwide, the disparities between domestic and foreign prices of final goods according to “durable goods,” “capital goods,” and “services”—and in examining the purchasing-power parity statistics of the OECD—it becomes evident that variations in the prices of tradable goods (e.g., durable goods and capital goods) are smaller than is the case with nontradable goods (e.g., services) (see Figure 2-1-38).

[103] Due to the activation of trade, in major developed countries, the import penetration rate (i.e., the ratio of imported goods and services to domestic shipments) is increasing. The import penetration rate of all OECD member countries has increased greatly, from 13.1% in 1990 to 21.4% in 2007 (source: *OECD Economic Outlook*).

Figure 2-1-38 Difference Between Domestic and Foreign Prices of Each Country Per Goods (2002)

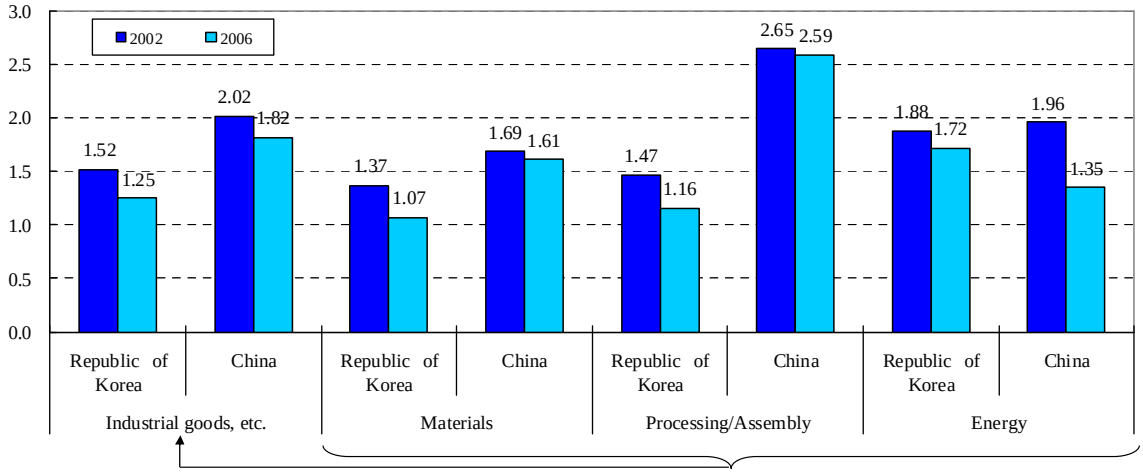


Note: Index based on the average of 30 OECD countries as 100.
Source: OECD, Purchasing Power Parities (PPP) .

Similar phenomena are witnessed with intermediate goods. An examination of trends in disparities between intermediate input prices—between Japan and Republic of Korea and between Japan and China, using data from the "Survey on disparities between domestic and foreign prices of industrial intermediate inputs" of the Ministry of Economy, Trade and Industry—shows that the disparity between domestic and foreign prices has reduced even for "industrial products," on the whole. Furthermore, in particular, there is almost no disparity in the intermediate input prices of "materials" between Japan and Republic of Korea, but the disparity in the intermediate input prices of "energy" between Japan and China is reducing rapidly (see Figure 2-1-39).

This "unification of the global market" is considered to bring about a virtuous circle, accelerating the trade of goods and services. The changes in both supply and demand that promote the globalization of "goods," as examined above, are considered the driving forces of the "five-billion-population market" as a new trade area, as argued in Chapter 1.

Figure 2-1-39 Trend of Difference Between Domestic and Foreign Prices Concerning Intermediate Input Prices in the Industry (2002, 2006)



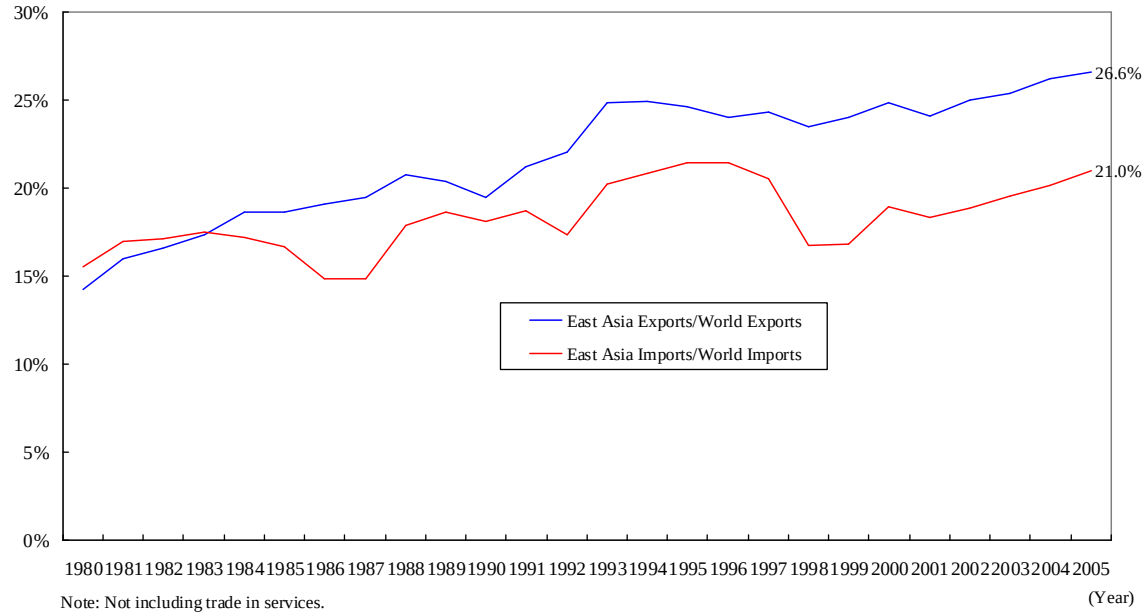
Notes: 1. Research conducted in July to September 2006.
2. For researched prices (demand home delivery price), domestic and foreign price data obtained through hearings and publicly available database, etc.
3. Difference between domestic and foreign prices = purchase power average price (yen/local currency) / exchange rate (yen/local currency).

Source: Ministry of Economy, Trade and Industry (2007), "2006 Research on Difference Between Domestic and Foreign Prices Concerning Intermediate Input iin the industry".

(2) Asia, the "world's factory"

Asia's share of worldwide trade has gradually expanded. In particular, backed by its establishment as the factory of the world, Asia's share of the world's export of goods, which is the driving force of Asia's economic growth, has expanded from 14.3% in 1980 to 26.6% in 2005 (see Figure 2-1-40). Asia's share has soared, in particular, since the beginning of this century.

Figure 2-1-40 Share of Asia in World Trade



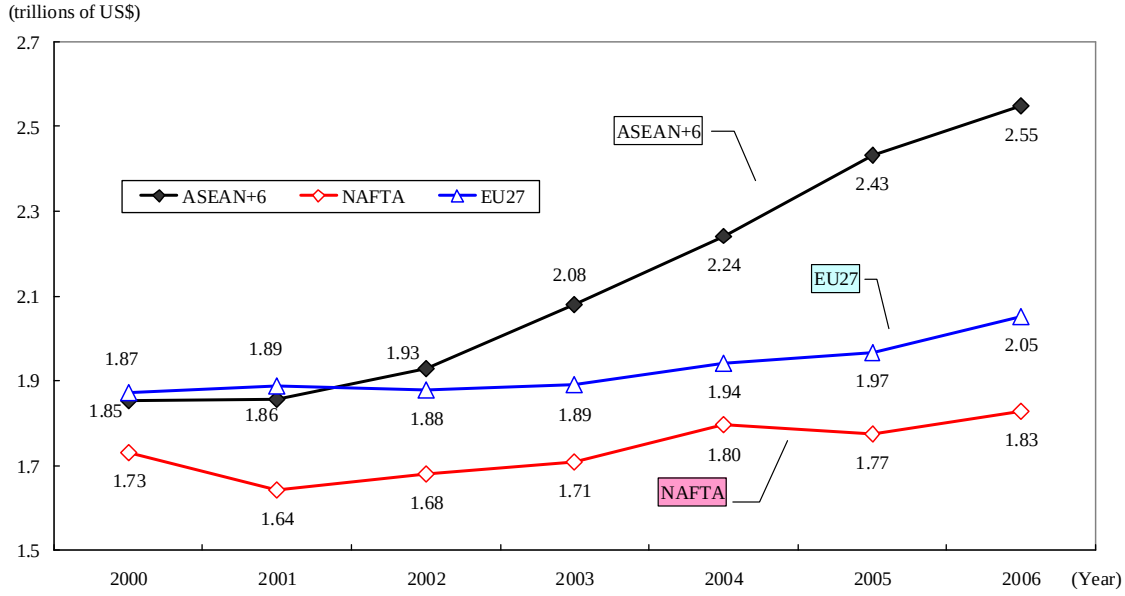
Note: Not including trade in services.

Source: Research Institute of Economy, Trade & Industry, IAA, *RIETI-TID2007*.

(Formation of the "East Asian production network")

In the Asian region, triggered in particular by the direct investments of Japanese companies, as the globalization of "goods" has advanced, the inter-process division of labor has also progressed; these changes have resulted in the development of a production network (the "East Asian production network")[104] and Asia's probability as for the position as "factory of the world." Trends in the real added value of the manufacturing industries[105] of Asia[106], NAFTA, and the EU[107] show that Asia has overtaken the EU, to become first in the world, especially since 2002. Asia's real added value has increased rapidly, leaving EU and NAFTA as distant competitors in this regard (see Figure 2-1-41).

Figure 2-1-41 Trend of Real Added Value of Manufacturing Industry in Major Countries/Regions



Source: UN, *National Acounts Main Aggregates Database* .

In Asia, integration in terms of production has advanced rapidly, given that the intra-regional trade ratio has risen to 44.3%, surpassing that of NAFTA[108]. In fact, the expansion of trade in intermediate goods within Asia is remarkable. Confirming the trend of world trade since 2000 by dividing it into intermediate goods (processed goods and parts)[109] and final goods (consumer goods and capital goods)[110], it is found that Asia's trade in intermediate goods is expanding in particular (see Figure 2-1-

[104] The aforementioned study of Ando, Arndt, and Kimura (2007) states that "such vertical division of labor has been activated across borders, developing an international production and distribution network." This network has a focus on East Asia, where the division of labor is developed by involving various countries with different income standards.
[105] The real added value of the manufacturing industry refers to the added value based on the price in 1990, as booked in "Manufacturing" in UN STATS.
[106] Here, "Asia" refers to ASEAN member-states, China, Republic of Korea, India, Australia, New Zealand, and Japan.
[107] Which is to say, the current 27 EU member-states.
[108] Further activated in the present century, combined with the execution of EPA/FTA.
[109] The "Intermediate goods" in RIETI-TID comprise the UN BEC (Broad Economic Categories) codes 121, 22, and 32 as "Processed goods" and codes 42 and 53 as "Parts and Components."
[110] The "Final goods" in RIETI-TID comprise the BEC codes 41 and 521 as "Capital goods" and codes 112, 122, 51, 522, 61, 62 and 63 as "Consumption goods."

42). In addition, from 2000 through 2005, export intermediate goods from Asia (i.e., Japan, China, ASEAN, Republic of Korea, and Taiwan) increased US$745 billion; more than a half of this (i.e., US$394 billion; 52.8%) was from the increase of exports to Asia[111]. The activation of trade in intermediate goods suggests the existence of a production network subdivided across borders in Asia, supporting Asia's position as factory of the world[112].

As can also be confirmed in Figure 2-1-42, Japan plays a key role in this " Production Networks in East Asia," as the supply base[113] of intermediate goods and capital goods[114][115]. In this figure, the increase in exports of intermediate goods to China from Republic of Korea and Taiwan is greater than that from Japan; at the same time, however, exports from Japan to Republic of Korea and Taiwan are increasing. Thus, in Asia, there has been a deepening of the inter-process division of labor among multiple countries, and a complementary supply system of various intermediate goods[116] has been established. Through this " Production Networks in East Asia," flows of exported goods between Japan and other Asian regions and between Asia and each of the EU and the United States have expanded dramatically in the last 10 years (see Figure 2-1-43).

[111] The growth of exports to Asia accounts for 24.4% (US$161 million) of the growth of final goods exports.

[112] The aforementioned study of Ando, Arndt, and Kimura (2007) confirms the global trade ratio of machinery trade and machinery parts as of 2003, and suggests there are production networks between the United States and Mexico and between Western European countries and Middle East countries, in addition to Asia.

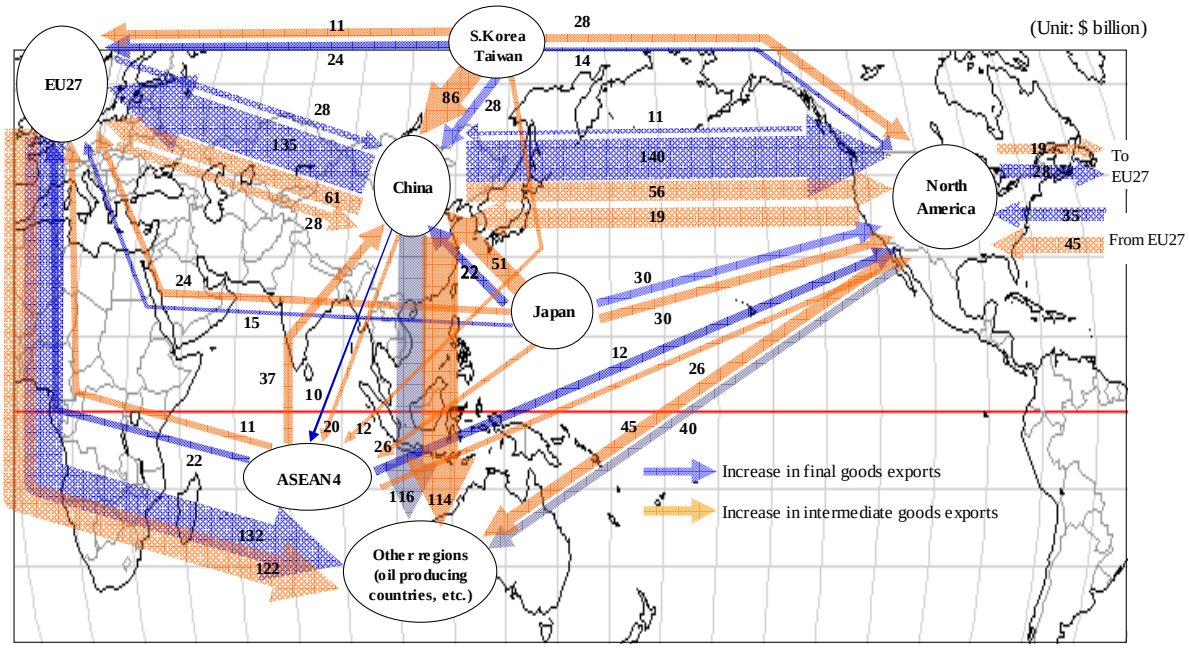
[113] For example, the supply share of large liquid-crystal displays (LCDs) by Japanese companies is approximately 10%, but many related parts account for more than half the global market: color filters, 39.9%; polarizing plates, 61.7%; plain TACs, 100%; and LCD glass substrate, 39.5% (source: Ministry of Economy, Trade and Industry, *Technological Strategy Map 2008*).

[114] HEISEI 19 NENDO MONODUKURI KIBAN GIJUTSU NO SHINKOU SHISAKU (Ministry of Economy, Trade and Industry, the Ministry of Health, Labor and Welfare and Ministry of Education, Culture, Sports, Science and Technology (2008)) indicates that a positive correlation can be seen in the trend concerning industrial goods exports made by China, NIES, and ASEAN4 and intermediate goods imports made by Japan, between 1990 and 2005; this correlation can be seen after 2000 in India, where economic growth has been especially noteworthy in recent years.

[115] The Ministry of Economy, Trade and Industry, the Ministry of Health, Labor and Welfare and the Ministry of Education, Culture, Sports, Science and Technology (2008) indicate that a positive correlation exists in the trend of industrial goods exports made by China, NIES, and ASEAN4 and intermediate goods imports made by Japan, between 1990 and 2005; this correlation can be seen after 2000 in India, where economic growth has been especially noteworthy in recent years.

[116] The inter-process division of labor among multiple countries in Asia has been analyzed in White paper on International Economy and Trade2007 (Ministry of Economy, Trade and Industry (2007)). The cross-border division of duties, with each region country specializing in portions in which they are strongly proficient, is characteristic of a so-called "one-pot dish style economic bloc."

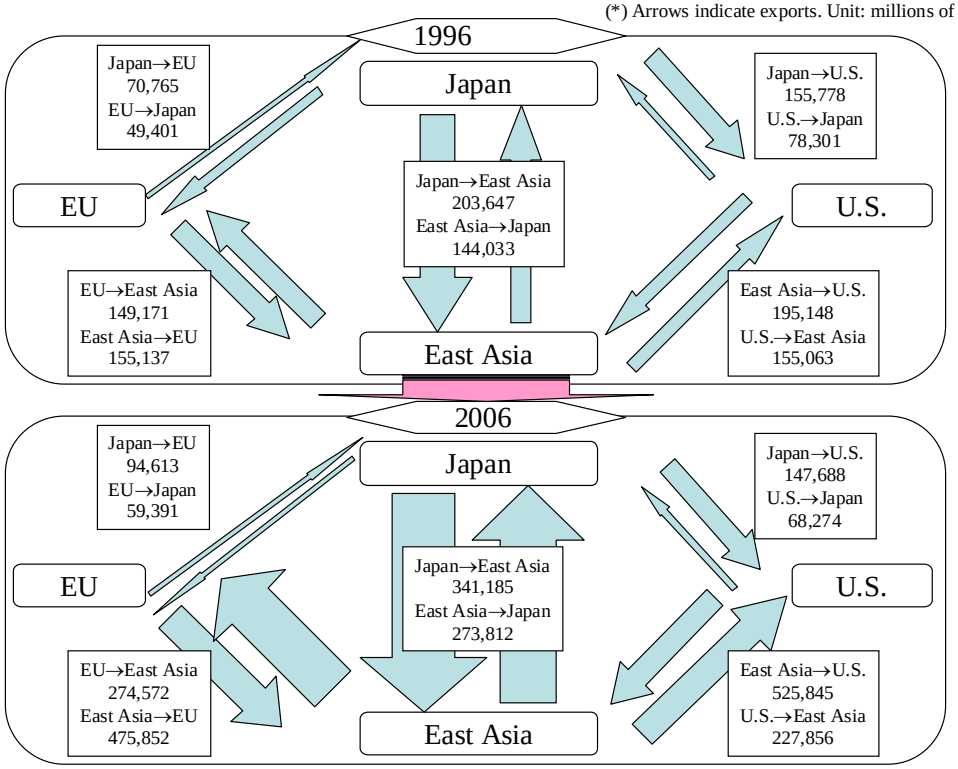
Figure 2-1-42 Change in Final Goods and Intermediate Goods Trading between Major Countries/Regions (2000-2006)



Note: Only decreases/increases over 1 billion dollars in trades during the period are stated.
Source: Research Institute of Economy, Trade & Industry, IAA, *RIETI-TID2006*.

Figure 2-1-43 Change in Trades Between Major Countries and Regions Within the East Asia Production Network

(*) Arrows indicate exports. Unit: millions of US$.



Note: East Asia represents ASEAN6 + Hong Kong + Taiwan.
Source: Research Institute of Economy, Trade and Industry, IAA , *RIET-TID2006*.

(Asia's open economic structure)

Asia's evolving production network connects the labor, capital, and techniques of various countries in the region more effectively; it is considered positive in advancing the cross-border division of labor—or, in other words, Asia's trade in tasks[117].

To confirm the positioning of this Asian production network in the worldwide flow of goods, let us confirm first how parts and final consumer goods flow in the trade-triangle comprising East Asia, the United States, and Europe.

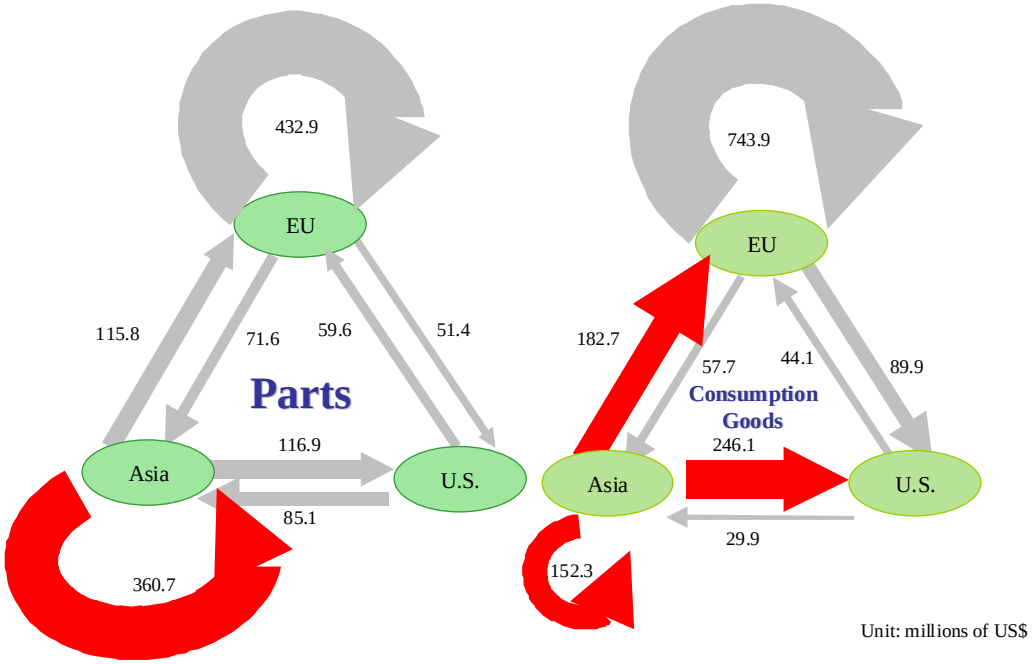
First, looking at the flow of trade of parts, exports within Asia are valued at US$360.7 billion, whereas those within the EU are US$402.9 billion—greater than export to the areas outside of the region. This indicates that production networks have formed in Asia and EU (see Figure 2-1-44, left).

Next, in looking at the flow of final, finished consumer goods, the value of exports in the corresponding figure has reached US$428.8 million, whereas exports within the region remain at US$152.3 million. That is to say, most of the consumer goods made through the Production Networks in East Asia are not consumed in Asia, but are instead exported to Europe and the United States. This suggests that, unlike Europe, consumption in the region is not sufficient to support the scale of production in the region (see Figure 2-1-44, right). Also characteristic of the export of final consumer goods across Asia is the appearance of a low ratio of exports, within the region, of final goods, including capital goods. In fact, as seen in Chapter 1, Asia's ratio of export of final goods within the region is much lower than that of the EU (see Figure 1-1-15)[118].

[117] According to the OECD and others, such a deepened inter-process division of labor that transcends time and space is called a "trade in tasks." For example, "Multinational Firms, Economic Development, and the Emergence of Trade in Tasks" (Kobrin (2007)) views the movement—whereby tasks (rather than products) are internationally traded—as one that divides the value chain into multiple, relatively small tasks from both the time and space viewpoints. Kobrin also states that if such a concept is extended, it will replace vertically integrated multinational companies and multinational companies with vertically integrated international production networks; henceforth, multinational companies would become a system integrator, administering and leading such system.

[118] The intra-region export ratio of final goods of the 27 EU member-states is 67.3%, almost twice the value of Asia's ratio of 35.4%.

Figure 2-1-44 Trades in Consumption Goods Between Asia, U.S. and Europe



Source: Research Institute of Economy, Trade and Industry, IAA, *RIETI-TID2007*.

This means that the Asian economy cannot realize self-sufficient, stable growth within its own region. Mori and Sasaki (2007)[119], introduced in Chapter 1, examined final demand of which region that income of Asian countries is depending on, using Asia's international input-output table until 2005. To some extent, NIEs and ASEAN member-states have raised their degree of dependence to economies in the region, such as that of China. On the other hand, in recent years, in China—which often processes the assembly base of many products[120]—the degree of dependence on economies of areas outside the region, including the United States, has increased (see Figure 1-1-12).

Thus, the Asian economy, while sustaining a deepening region-wide interdependence, has become an "open economy" that incorporates the growth dynamics of areas outside the region. It may be said that it is characteristic in the sense that it is open for the areas outside the region—even in comparison to the trade structures of Central and Eastern Europe, where integration with neighbor European countries is under way. However, in an era when the economic growth of developed countries, including that of the United States, is in an adjustment phase, a structure in which the destinations of exported final goods depend financially on areas outside of the region may not be sustainable.

[119] Mori and Sasaki (2007), "Interdependence of Production and Income in Asia-Pacific Economies: An International Input-Output Approach", *Working Paper Series*, November 2007, Bank of Japan.
[120] Based on "Trade and Technology Transfers: A Comparative Study of Turkey, India and China" (Lemoine, Francoise and Unal-Kesenci (2003)), the World Bank (2008) characterizes China as "being integrated in Asia's international divided production process as a processing and assembling country." Furthermore, they state that "most of China's high-tech product imports are parts, and most of the parts so imported are assembled for import."

(3) Background of the formation of the "factory of the world"

The development of a distribution network, as a platform, and the flow of "skills" and "knowledge" from developed countries (both within and without the region) to emerging and developing countries explain Asia's established position as "factory of the world."

(Development of the distribution network as the platform)

An accelerated expansion in the flow of goods around Asia has been achieved, in combination with the development of a distribution network in Asia.

○ Structure of the world's marine distribution

An Asia-centric structure has been strengthened through the use of marine transportation, a means of transporting large quantities of freight at a low cost. It is also the preferred means of international distribution, at present: It has expanded in use about 1.7-fold, from approximately 17 trillion ton miles in 1990 to approximately 29 trillion ton miles in 2005. On the other hand, the amount of container-loading has increased approximately four-fold, from approximately 20 thousand TEU in 1993 to approximately 80 thousand TEU in 2005. The importance of container transport has thus increased in marine transportation[121], but containers that arrive in and depart from Asia account for 65% of the total container freight volume.

When comparing the container-freight movement volumes of 1999 and 2006, it can be seen that while the expansion of freight between Europe and the United States (i.e., the transatlantic route) has been relatively stable, Asia-North America, Asia-Europe, and intra-Asia movements have largely expanded 2.27-fold, 2.23-fold, and 2.24-fold, respectively, suggesting that Asia's presence in the world's total marine distribution is rising dramatically (see Figure 2-1-45). This is thought to result from the fact that Asian emerging countries like China, NIES, and ASEAN have enhanced their collective presence as the "world's factory," as mentioned, and that a network structure—by which various goods are collected in Asia and then exported from there—has been fully established[122].

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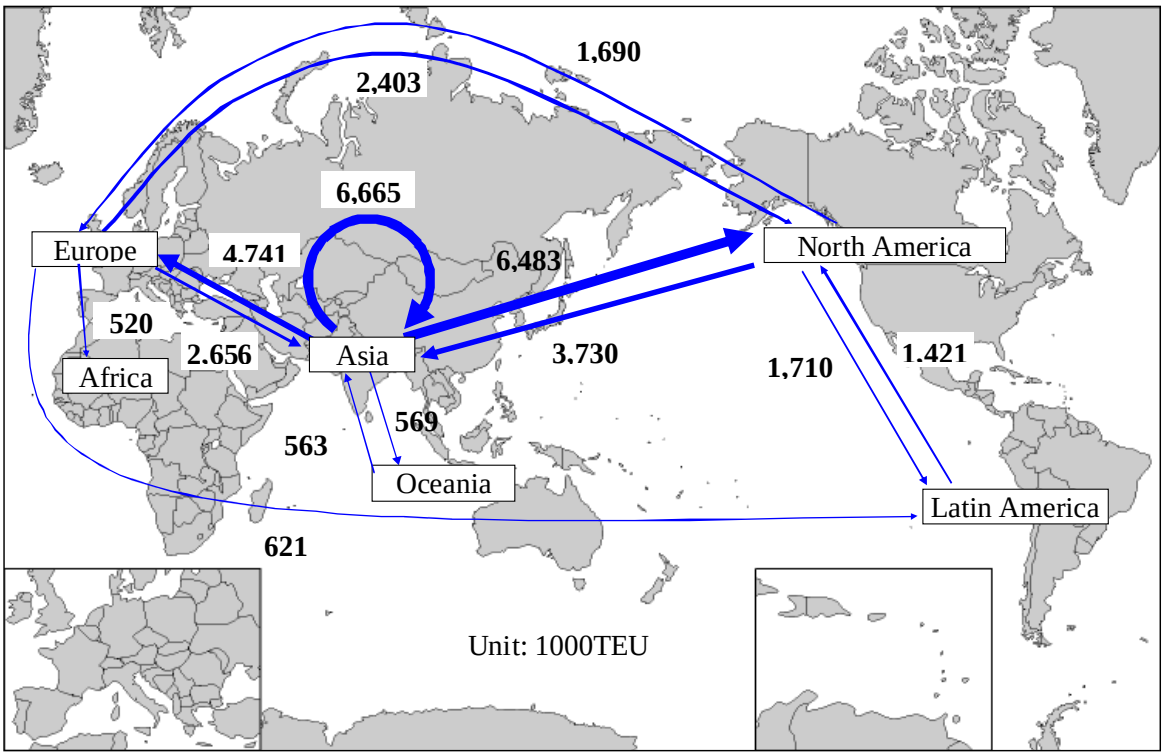
[121] Due to the large scale of container ships, the average quantity of shipped containers increased approximately 40%, from 1,619 TEU in 1995 to 2,258 TEU in 2005; these numbers are growing each year (Japanese Shipowners' Association (2007), *KAIUN TOUKEI YOURAN 2007*). The large scaling of container ships promote the concentration of ships to large-scale and convenient harbors as well as expanding feeder transportation (for improvement of transportation efficiency, in main line transportation, the direct port calls are limited to major harbors, and other harbors are covered by support transportation by reshipment from there), and the world's distribution structure is quickly changing to a hub-and-spoke style.

[122] As can be seen from a comparison of the two maps, the distribution quantities of areas that previously had small volumes of trade are growing, and the world's distribution structure is becoming denser.

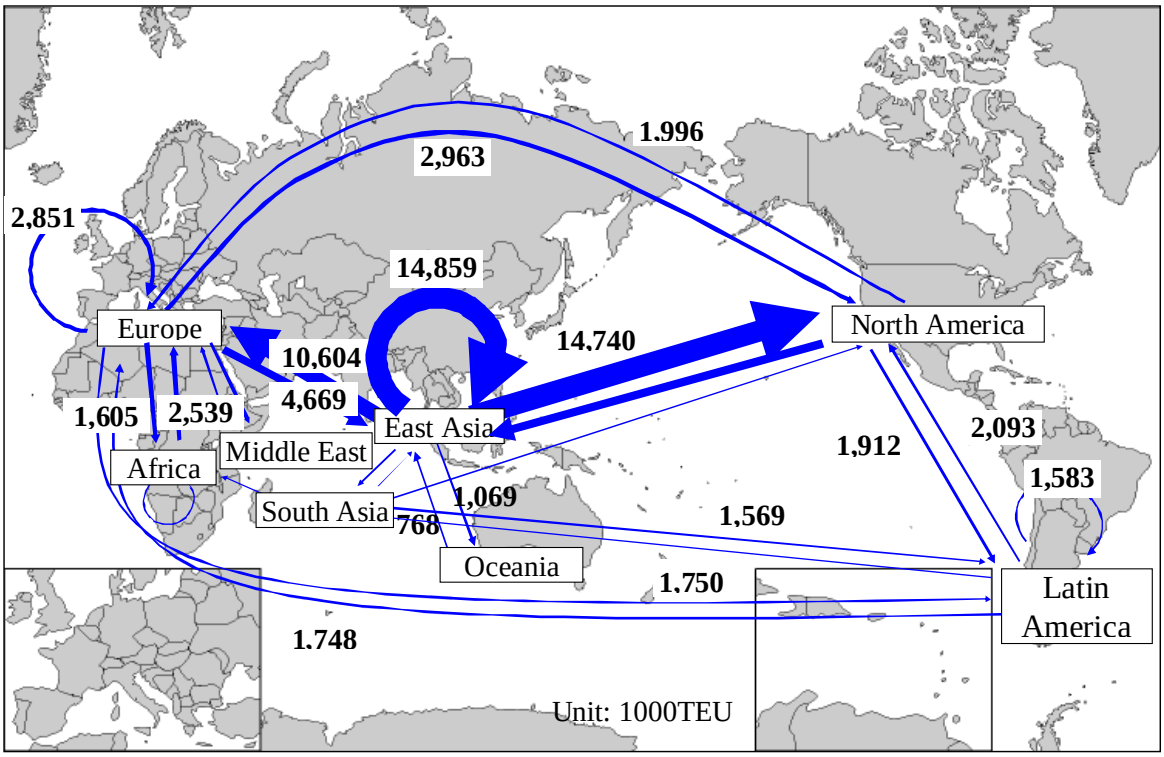
Figure 2-1-45 Current Status of World Maritime Transport

World Container Freight Movement (1999)



Source: Mitsui O.S.K. Lines, *TEIKOU KAIUN NO GENJOU 2007* .

World Container Freight Movement (2006)



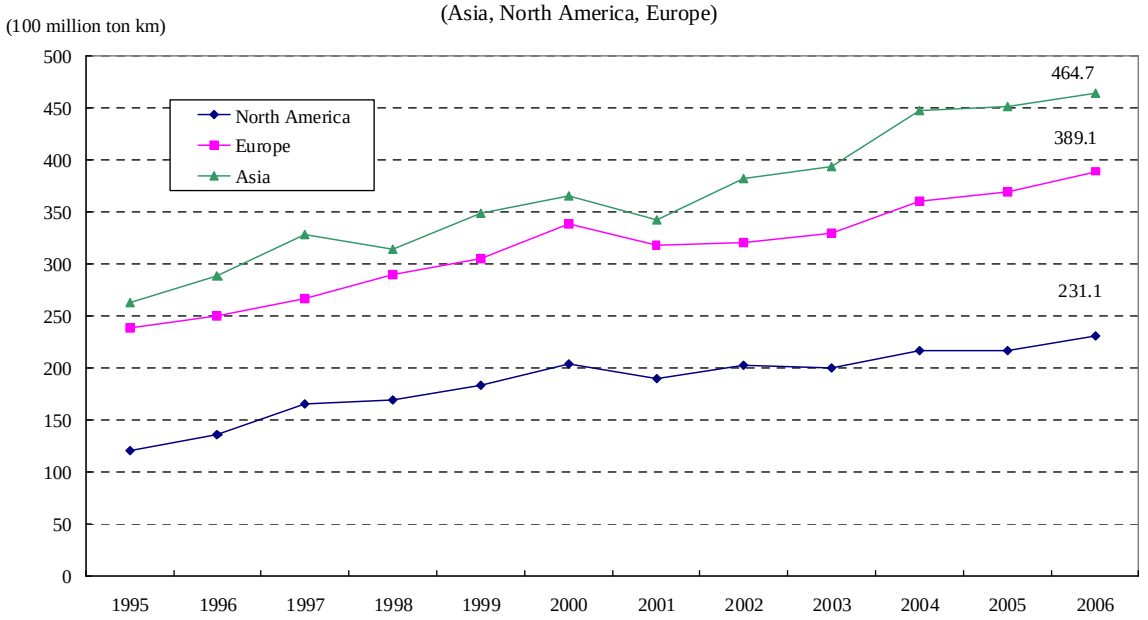
Note: Freight movements below 0.5 million TEU have been omitted.
Source: Mitsui O.S.K. Lines, *TEIKOU KAIUN NO GENJOU 2007* .

○ World aviation distribution expanding around Asia

Aviation distribution has expanded more rapidly than marine distribution, backed by (a) the fall of aviation distribution costs versus those of other transportation means[123][124] and (b) the expansion of capital-goods trade, with advances in international divisions in labor[125].

Confirming the flow of the world's aviation distribution via changes in the regular transportation (i.e., international) routes of North America, Europe, and Asia-Pacific shows that the Asia-Pacific region has maintained the top position worldwide for the last 10 years, in terms of aviation-based distribution, accounting for 34.8% of the entire world's volume in 2006 (see Figure 2-1-46)[126].

Figure 2-1-46 Change of Regular Transportation Records Per Region
(Asia, North America, Europe)



Note: Data for international flights only.
Source: Japan Aeronautic Association, *KOUKUU TOUKEI YOURAN*.

(Skills and knowledge flowing into Asia from developed countries)

In addition to the construction of a distribution network, movements of knowledge and skills from developed countries to Asia through the "import of intermediate goods and capital goods," "the granting of licenses," and "direct investments" have supported the Asian inter-process division of

[123] A confirmation of this trend in transportation unit price means show that the unit price of air distribution is continuously falling, due to technological innovation or the intensification of competition due to the removal of restrictions. Between 1995 and 2005, the transportation unit price dropped an annual average rate of 1.9% (source: Boeing).

[124] In the meantime, the Baltic Dry Index, a price index of maritime distribution, shows an underlying rising trend backed by a cost-push, due to the sudden rise in crude oil prices and impeding demands due to vigorous emerging-country demands. As a result, the unit price of air distribution against the unit price of maritime transportation is falling, creating an alternative demand for air distribution.

[125] The expansion of air cargo is believed to be due to the active trading of capital goods, with a high unit price per weight; this is in accordance with the development of an international division of labor. Goods bearing high unit prices can result in profits, even when air cargo—which incurs a higher transportation cost—is used; therefore, there is a positive trend of using air cargo to reduce distribution lead times. See Section 4 of this chapter.

[126] The total volume of air-cargo distribution in the Asia-Pacific region surpassed that of North America in 1990, and that of Europe in 1993.

labor[127]. Moreover, in recent years, the globalization of R&D by multinational companies has also progressed.

○ Import of intermediate goods and capital goods

According to the OECD (2008), the expanding trade of capital goods and intermediate goods is, in itself, a major source of technology transfer; it has been particularly noteworthy in developing countries[128]. According to the World Bank (2006), the importation of capital goods from foreign countries, including Japan, has been a key factor in technology transfer, as part of the industrial development of Asian countries (see Table 2-1-47). In fact, in Asia, the export of intermediate goods from Japan to China has increased substantially (see Figure 2-1-42). Moreover, as intermediate goods and capital (final) goods account for 70% and 24% of exports from Japan to China, respectively[129], inputs to intermediate goods and capital goods from Japan can be seen as a major driving force in technology transfer.

In addition, the World Bank (2008) has pointed out that the potential of technology transfer to developing countries through trade—such as the import of intermediate goods and capital goods—has risen in recent years. It also has been pointed out that improvements in the trade environment—such as those involving the openness of trade among developing countries, the reinforcement of a human resource base, and increases in R&D expenditures—have been important to bringing about this outcome[130].

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[127] According to the aforementioned World Bank report (2008), in addition to these factors, a network featuring Diaspora (overseas citizens) that reside in developed countries for work or research, etc., is an important means of facilitating technology or knowledge transfers, through the transfer of skills that occurs when these citizens return to their home countries or provide financial assistance via money transfers, etc.

[128] "Trade and Innovation" (OECD (2008)), provides an example of capital goods. When Samsung established its locked-in position in the international DRAM market, its manufacturing equipment was imported from Japan and the United States. Furthermore, that report introduces an experimental study that concludes that in developing countries, companies that import intermediate goods tend to adopt new technology more rapidly than companies that do not (Almeida, R. and A.M. Fernandes (2006), "Openness and Technological Innovations in Developing Countries," *World Bank Policy Research Working Paper 3985*).

[129] Source: Research Institute of Economy, Trade & Industry, RIETI-TID 2007. Furthermore, the aforementioned World Bank report (2008) indicates that imports of high-tech products by developing countries are increasing in number and volume, and are highest in developing countries in the East Asia-Pacific region, accounting for 8.4% of the GDP between 2002 and 2004 (among which, Malaysia is 37% and the Philippines is 18%). That report also says that their imports of capital goods—such as machinery and equipment—versus imports by developing countries are also growing, and that middle-income countries that are more technically sophisticated tend to import more than low-income countries.

[130] "Moving Up the Value Chain: Staying Competitive in the Global Economy Main Findings" (OECD (2007)) estimates that 70% of China's trade in high-tech products and services is concentrated in four regions, and is highly correlated with increased R&D spending and the entrance of foreign countries.

Table 2-1-47 Relative Importance of Technology Transfer Channels (Case Study, Etc.)

○ **Case Study**

Industrial Field	Foreign Direct Investment	License Grants	Injection of Capital Goods	Local Industry Development	Consignment Agreement	Local Research and Development	Diaspora (Note 2) Tech Park (Note 3)
India's Software Industry	Low	N.A.	High	High	Low to High	Low	High
Taiwan's Electrical and Electronics Industry	High	High	High	High	Low to High	High	High
Malaysia's Electrical and Electronic Industry	High	Low	High	Low	Middle	Low	Low
Malaysia's Palm Oil Industry (Note 1)	Low	Low	High	High	Low	High	Low

Note: 1. Crude oil and refine oil production
2. Citizens living abroad (including work and study abroad, etc.) (example: Indians and Chinese engaged in the U.S. high-tech industry)
3. Stands for "technology park", those cumulated by India's IT-related corporations are eminent.

○ **Factors for technology transfer**

- Direct investments: Technology is transfered within the company from the parent company to its local subsidiary. As technology is transferred within the company, sensitive technology may be transferred, bu in general, the parent company takes measures to retain its proprietary technology or know-how within the company (example: Malaysia and Taiwan's electrical and electronic industry)
- License grants: Transfer of technology from the outside through license grant or subcontract for OEM (example: Taiwan's electrical and electronic industry).
- Injection through import of capital goods: Acquisition of new technology through import of capital goods by companies in developing countries. Only effective when the importing country has sufficient technology and skill to utilize the imported capital goods (example: Malaysia and Taiwan's electrical and electronic industry).
- Domesstic industry development: Technology transfer through technology transfer or dispatch of persons to developed countries for acquisition of new technology (overseas study, etc.).
- Consignment production, etc.: Technology transfer from overseas vendor companies to vendor producers for the purpose of meeting required product or service standards (example: India's software industry, Taiwan's electrical and electronic industry)
- Domestic research and development: Research and development investments by companies or public institutions
- Diaspora: Technology transfer by retrun of international students or expatriates (example: India's software industry).

Source: Ministry of Economy, Trade and Industry from Technology, Adaptation and Exports, World Bank (2006) (Chandra, V.eds)

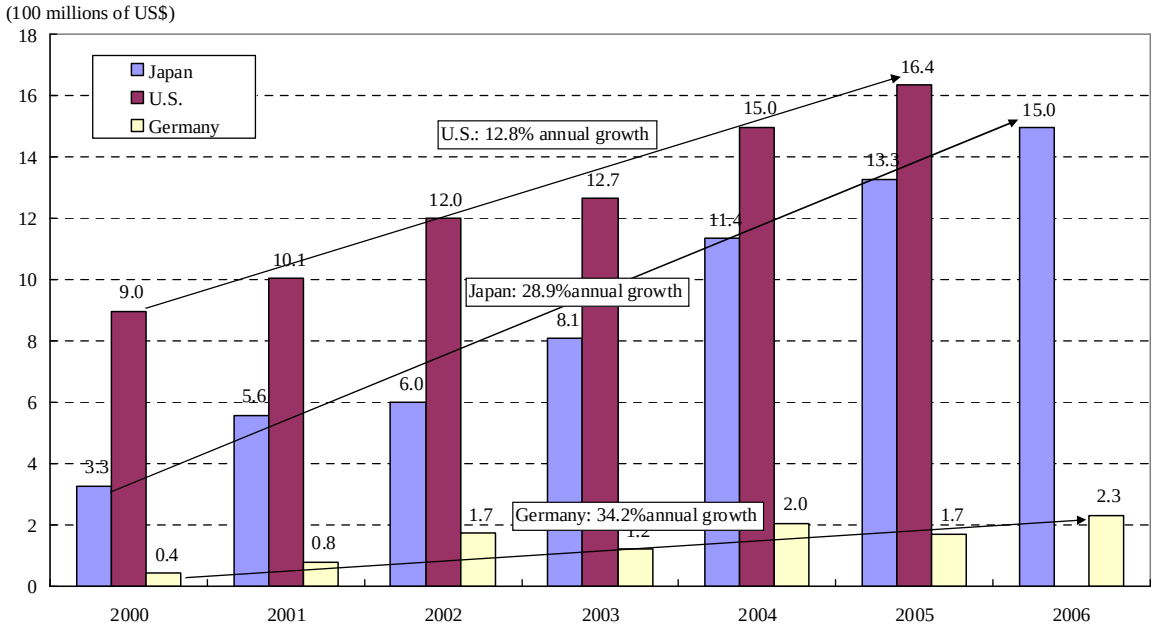
○ Technology transfer through licenses

Licensing is an important part of the technology-transfer process, as it leads directly to the procurement of patented technologies. The World Bank (2008) has pointed out that the payment of royalty and license fees by developing countries, as a proportion of their collective GDP, has increased five-fold between 1999 and 2006[131]. Based on this, it has been pointed out that the licensing of technology functions, as an alternative means of foreign direct investment in the developing countries' business environments, is in its infancy, while a certain portion of all international royalty and license-fee payments has been incurred through transfers to wholly-owned subsidiaries in multinational

[131] The aforementioned World Bank report (2008) indicates that the sudden rise in the resource prices affecting royalty and license fees—in which there are agreements to make payments in proportion to the buyer's income or sales, between India or China and oil-producing or resource-rich countries—account for much of the growth. However, payments by other developing countries are also rising suddenly, and in terms of respective GDP, are growing more quickly than those of oil-producing and resource-rich countries.

companies. As Asia becomes "the world's factory," patent royalties paid by Asian countries to developed countries have increased. For example, exports of royalties and license fees from Japan, the United States, and Germany to China and India have increased rapidly since 2000 (see Figures 2-1-48 and 2-1-49). A look at the trends in Japan's trade of technology shows that exports of technology to Asia in 2005 were ¥642.9 billion, a 2.3-fold increase over the ¥282.3 billion of exports in 1995[132].

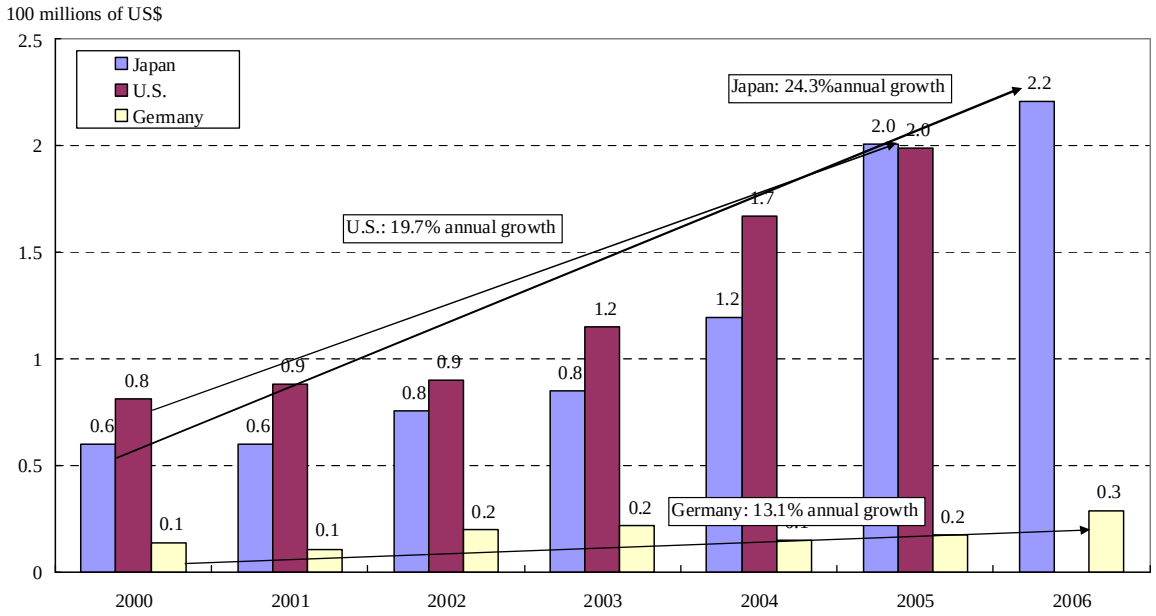
Figure 2-1-48 Trend of Royalty and License Fees from Japan, the U.S. and Germany to China



Source: UN, *Service Trade Database* .

[132] Sources: Ministry of Education, Culture, Sports, Science and Technology, *White Paper on Science and Technology 2007* and Science and Technology Agency, *White Paper on Science and Technology 1997*. According to the *Survey of Research and Development* (Ministry of Internal Affairs and Communications, Statistics Bureau), Japan's technology trading has resulted in a large surplus, on the whole, but with respect to trade between arms' length corporations (excluding parent companies and subsidiaries), imports have been in excess of exports since FY2002, with the trend changing in FY2006.

Figure 2-1-49 Trend of Royalty and License Fees from Japan, the U.S. and Germany to India



Source: UN, *Service Trade Database*.

○ Technology transfer by direct investment

Direct investment is the most important means of technology transfer, as seen in the direct investment of Japanese companies in Asia[133]. According to the World Bank (2008), direct investment financially enables investments in new machinery and equipment[134], as well as in R&D[135]. Moreover, there is spillover through the transfer of techniques and know-how to local employees and companies, the creation of a market and the promotion of competition for supporting local industry, and the transfer of know-how through transactions[136]. In addition, the aforementioned OECD report (2008)

[133] White Paper on International Economy and Trade 2000 (Ministry of Economy, Trade and Industry (2002)) examines the effect of the introduction of direct investment technology and management know-how, in connection with direct investments in Japan. It states that "Multinational companies have valuable management resources, e.g., technology, management know-how, skilled labor forces, an international manufacturing network, market access and established brand names. These management resources are factors in promoting economic growth, and the utilization of these resources will promote corporate activation. In particular, it is important that the new management and technical know-how will be transferred in quality areas that defy stereotyping." It asserts that, furthermore, by deferring to personnel educated in multinational companies who have migrated from other companies, "the management and technical know-how will be transferred to other companies."

[134] The aforementioned World Bank report (2008) states that the share of direct investments (i.e., flow) in the fixed capital formation of developing countries has expanded from 2.9% in the 1970s to 10.7% in 2000.

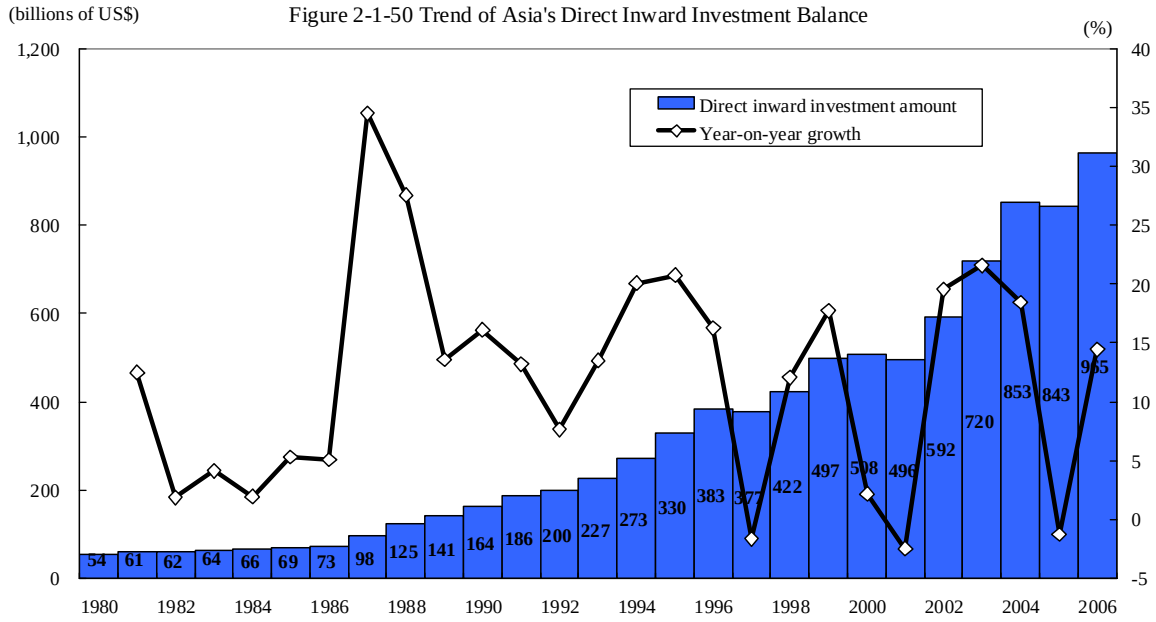
[135] The aforementioned World Bank report (2008) indicates that R&D expenditures of US-based companies in developing countries have increased from US$0.9 billion in 1999 to US$1.6 billion in 2003, and that in Hungary, R&D expenditures in developing countries by subsidiaries of foreign-based countries account for over 60% (in Asia, Thailand is a little less than 30%, and China is a little over 20%).

[136] The aforementioned Ministry of Economy, Trade and Industry report (2002) examines the effect of the introduction of direct investments in technology and management know-how, in connection with direct investments in Japan. It states that "Multinational companies have valuable management resources, e.g., technology, management know-how, skilled labor forces, an international manufacturing network, market access and established brand names. These management resources are factors in promoting economic growth, and the utilization of these resources will promote corporate activation. In particular, it is important

pointed out that direct investments and the import of licenses have recently become complimentary. It is thought that both have expanded synergistically and that technology transfer, as a result, has been promoted.

Asia's inward direct investment balance has increased steadily, reaching US$965 billion in 2006, just a little under the US$1-trillion level (see Figure 2-1-50). The World Bank (2008) has pointed out that the ratio to GDP of inward direct investment of flow to East Asia and the Pacific region was 2.8% in 1990s, and that it fell to 2.3% in the early 2000s, following the Asian monetary crisis; meanwhile, the ratios to fixed capital formation were 12.2% and 8.4%, respectively[137]. At the same time, it has been pointed out that foreign direct investment (including M&A) in developed-country companies, by companies in emerging and developing countries, has expanded in recent years, reaching US$100 billion (i.e., 9% of the world's M&A) in 2006, and that this investment has become an important route for the introduction of technology[138].

Figure 2-1-50 Trend of Asia's Direct Inward Investment Balance



Note: In the figure above, Asia refers to ASEAN+6.
Source: UNCTAD, WIR Annex Tables.

○ Globalization of R&D

Even in multinational companies, where production and sales have become globalized, the globalization of R&D activity has lagged behind the most. However, this globalization of R&D is progressing, and R&D activity—particularly in emerging countries—has seen growth. As for the

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that the new management and technical know-how will be transferred in quality areas that defy stereotyping." It asserts that, furthermore, by deferring to personnel educated in multinational companies who have migrated from other companies, "the management and technical know-how will be transferred to other companies."

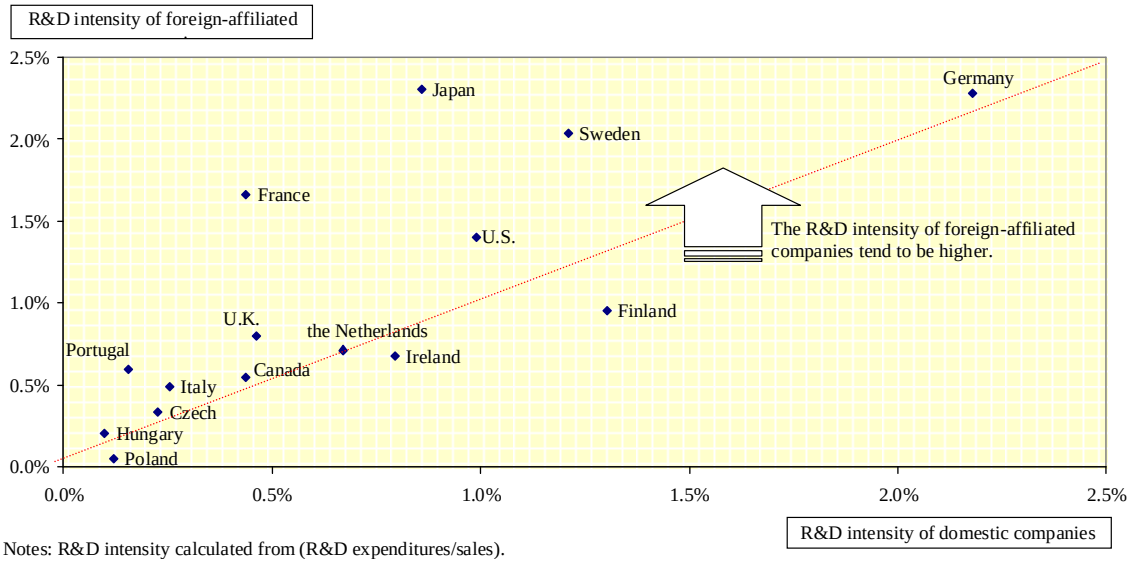
[137] Direct investments include M&As and do not always include physical investments; however, it must be noted that they carry a certain weight in the formation of fixed capital.

[138] An asset-augmenting type of direct investment to mitigate a lack of management resources. A representative example is an M&A of companies in developed countries by India and China's automobile industry, actively conducted in recent years.

purpose of this globalization, in addition to the conventional "home-base exploiting" R&D—which supports the introduction of technology to subsidiaries and carries out development for local markets by fully utilizing the superior competencies of the home country—"home-base augmentation" R&D, which aims to expand competitive advantages by utilizing overseas technical resources, has seen an increase. In particular, technological development in home-base augmentation[139], which has been carried out mainly between developed countries, is expanding its base, including efforts to utilize research in China and India.

In fact, when comparing the R&D intensity (ratio of GDP to R&D expenditure) of domestic companies with that of foreign-affiliated companies, in many countries, the R&D-to-sales ratio of foreign-affiliated companies is exceeding that of domestic companies, on average; this shows that the globalization of R&D activities is being pushed forward by multinational companies[140] (see Figure 2-1-51). In addition, according to a survey carried out by UNCTAD (2005), almost 70% of respondent companies said they would accelerate their globalization of R&D. Japanese and Republic of Korean companies, which have been conservative to date, have suggested that they would activate the globalization of R&D in particular[141].

Figure 2-1-51 R&D Intensity of Foreign-affiliated and Domestic Companies



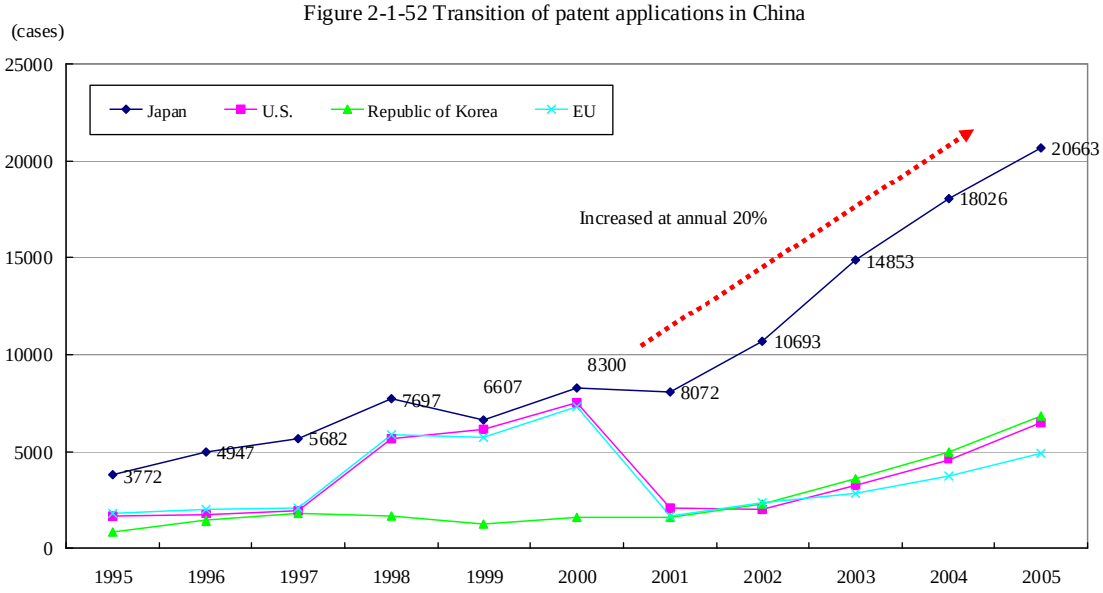
Notes: R&D intensity calculated from (R&D expenditures/sales).
Data from 2003 is used for Germany, Hungary, Ireland, Japan, the Netherlands, Sweden and the U.S. Data from 2002 is used for Portugal.
Values for Germany, Ireland and Portugal are for the manufacturing industry only.
Source: OECD (2007b), *Science,Technology and Industry Scoreboard 2007* .

[139] "Discussion Paper on Trade, Innovation and Growth" (OECD (2007c)) gives as an example an R&D base in Silicon Valley, United States, established by Asia's IT industry to monitor technology development trends and utilize human resources.
[140] "Staying Competitive in the Global Economy: Moving Up the Value Chain" (OECD (2007b)) list the following five items as factors in the progress of internationalization of R&D activities: (1) the increased flexibility of international R&D projects through the development of IT technology, (2) increased R&D cost, (3) changes in policies (such as tax systems), giving favorable treatment to the enhancement of intellectual property or R&D, (4) the world's co-authored scientific papers increasing three-fold in number, from 1995 to 2005, and (5) the ratio of co-invented patents in the world's inventions increasing two-fold in the period of 1991–1993 to 2001–2003.
[141] UNCTAD (2005), *WIR*.

In Asakawa and Som (2008), new trends in the globalization of R&D have been cited, and they differ from conventional common assumptions; those trends see more importance being placed on future potential than on cost-effectiveness, and on making purposeful investment decisions[142] to cope with rapid changes in economic society, rather than on gradual and tentative expansion.

Amid such circumstances, inward direct investment related to R&D in Asia, particularly China and India, has gained momentum. By the end of 2004, about 750 R&D centers had been established in China (most were established after 2001), and more than 100 multinational companies have established R&D facilities in India[143]. As a result, for example, the patent application number of foreign-affiliated companies in China, in particular, the number of application of Japanese companies has increased rapidly, at an annual rate of 20%, since the beginning of the 21st century (see Figure 2-1-52)[144].

Figure 2-1-52 Transition of patent applications in China



Source: WIPO website.

[142] Asakawa and Som (2008) also indicate the importance of not only processing the delegation of authority to the locals but further enhancing internal management, and that not simply relying on the local situations but fully investigating the same shall be the trend.

[143] See the aforementioned OECD report (2007b), p. 112.

[144] However, it has been indicated that invention patents include many applications made by foreign companies in China as a protective strategy (Institute for International Studies and Training (2008), "NIHON KIGYOU NO ASIA JIGYOU SENRYAKU"). Meanwhile, according to "KOETSU HATTEN SURU CHUGOKU NO KAGAKU GIJUTSU–GENJOU TO KYOUMEI NO HOUSAKU," (Tabata, Y. (2007)), 99% of China's domestic companies have not applied for patents, and 60% do not own trademarks.

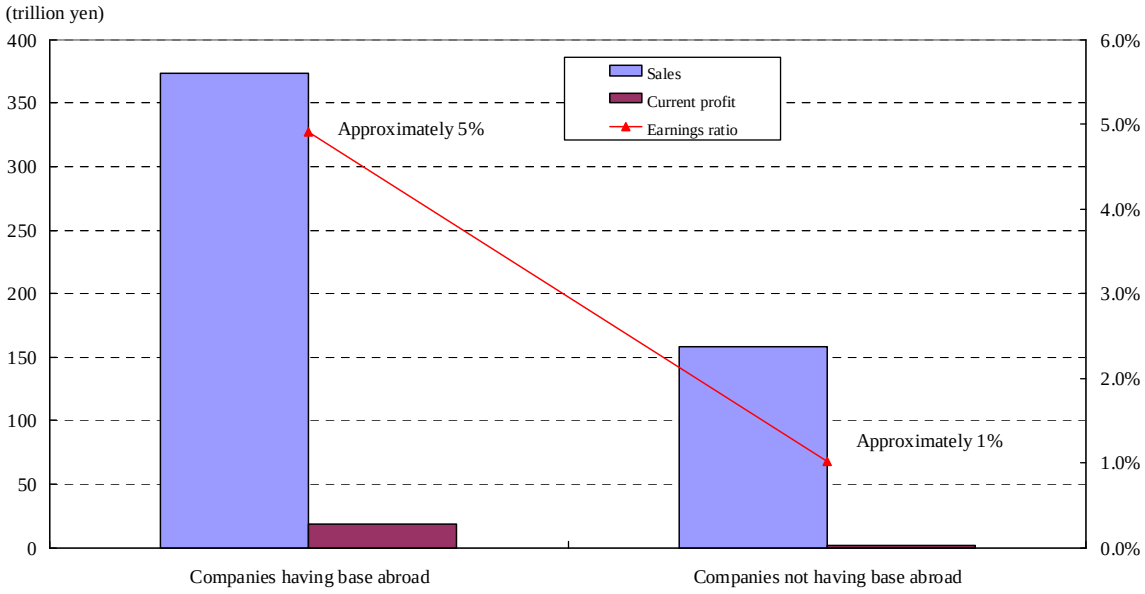
(3) Deepening of the global value chain

As seen previously, “fragmentation” has progressed in the name of an advanced inter-process division of labor; thanks to reductions in service-link costs and in the numbers of tariffs and trade barriers, the “East Asian production network” has appeared and spread broadly throughout Asia.

This has resulted in the formation of an Asia-wide globalization of the value chain—or, in other words, the appearance of a “global value chain” in Asia. According to OECD (2008), the “global value chain” is, in itself, an innovation; it is also a new structural feature of industry. The pursuits of efficiency, the exploitation of new markets, and access to strategic resources have been undertaken through this new form of organization[145].

The formation of a global value chain is thought to have facilitated more effective production activities and contributed to improved profitability among many companies. In comparing the average earning ratio of a group of 4,590 companies with an overseas base to that of a group of 7,830 companies lacking an overseas base—among Japanese companies using micro-data of Basic Survey of Japanese Business Structure and Activities—it is seen that the earnings ratio of the former is nearly five times higher than that of the latter (see Figure 2-1-53).

Figure 2-1-53 Earnigs Ratio of Domestic Companies Having and Not Having Base Abroad (2005)



Note: Companies having subsidiaries and affiliates overseas are considered as having base abroad.
Source: Ministry of Economy, Trade and Industry, "Basic Survey of Japanese Business Structure and Activities"

At first, it was said that direct investment by multinational companies has become a driving force in the formation of a global value chain. According to the OECD (2007), while the share of intra-firm exports in foreign export in Japan in 2000 was 20%, it was 60% in the United States and 70% in Sweden[146]. However, as the inter-process division of labor has progressed, it has become unnecessary

[145] The OECD (2008) lists the following four innovations as having been achieved through global value chains: innovation of products, innovation of processes (utilization of developed technology by developing countries, etc.), innovation of functions (“vertical integration” from production to design, etc.), and the mutual innovation of chains (participation of commission manufacturers in other business networks, etc.).
[146] In Section 2 of this chapter, it is indicated that Japan’s inter-company trading rate has been rising, as of late.

for companies to handle extensive production processes by themselves, in order to create value. Companies forming a global value chain have become diversified, as not only multinational companies but also local companies and small- and medium-sized companies have actively participated in[147] this movement. Mutual competition among value chains, especially in terms of how they generate innovation, has intensified[148]. In addition, there is competition among value-chain participants, *vis-à-vis* which position they may take therein and how they will divide the added value involved[149].

Moreover, change in industry structure has also become a driving force in the formation of global value chains. In the aforementioned OECD report (2008), for example, it is pointed out that the switch from a vertical integration structure to a horizontal specialization structure has advanced greatly in the computer industry, since about 1995[150]. As a result, commission manufacturers[151] and fables companies have appeared, and production processes have become further divided.

The information and home appliance industries are industries in which this development of global value chains has advanced. An examination of the current situation of these industries shows that relationships based on the division of labor, for each of the various bases and processes involved, have been established (see Figure 2-1-54). In addition, in recent years, the share of service industry as a proportion of direct, outstanding overseas investment has grown, particularly in developed countries. As pointed out in the aforementioned OECD report (2008), the establishment of a global value chain in the service industry has become active, mainly in the business-support service sector[152][153].

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[147] In Section 3 of this chapter, we will discuss the participation of Japanese small- and medium-sized enterprises in the global value chain.

[148] The aforementioned OECD report (2008) cites Nokia—which procures 400 parts from 30 countries and regions around the world, carries out production in 10 factories in nine countries, and sells in 150 countries—as an example of an orchestrator that leads the global chain. Furthermore, in Section 3 of this chapter, we will verify the possibility of the Japanese distribution/service industry and the infrastructure industry leading the global value chain.

[149] In Chapter 3-4, we will discuss the positioning of the water-related industry of Japan in the global value chain.

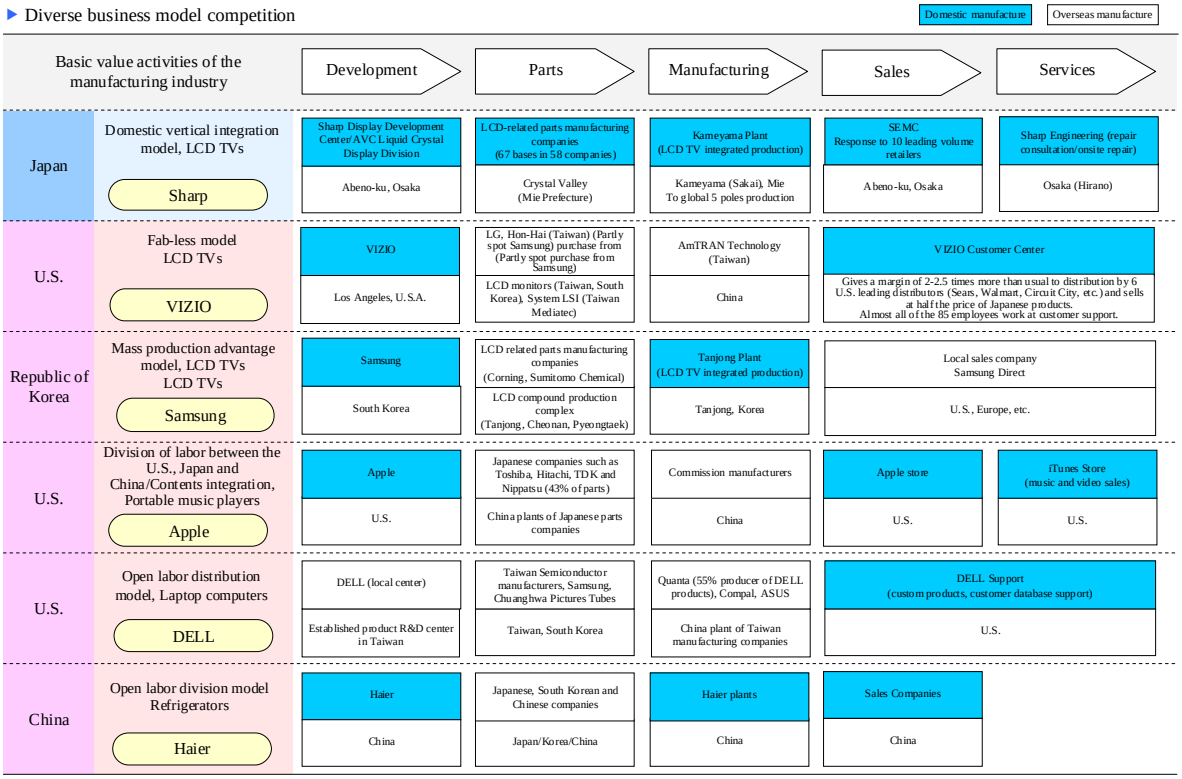
[150] The aforementioned OECD report (2008) states that because the automobile industry still involves an integrated-type structure, the international division of duties in the production process is not only limited, but is also not as standardized as the electronics/electrical industry.

[151] The aforementioned OECD report (2008) states that commission manufacturers create added value by more effectively utilizing their manufacturing abilities, compared to vertically integrated operators.

[152] See the White Paper on International Economy and Trade 2007 (Ministry of Economy, Trade and Industry (2007)). Regarding the construction of a global value chain in the service industry, in addition to citing India as an IT service base in the financial business (as introduced in Chapter 1-3), it notes that the SPA business model is used in the Japanese retail industry, which provides customers with low-cost products by having a production base in China and shortening the distribution process.

[153] See the White Paper on International Economy and Trade 2007 (Ministry of Economy, Trade and Industry (2007)). Regarding the construction of a global value chain in the service industry, in addition to citing India as an IT service base in the financial business (as introduced in Chapter 1-3), it notes that the SPA business model is used in the Japanese retail industry, which provides customers with low-cost products by having a production base in China and shortening the distribution process.

Figure 2-1-54 The Advancing Fusion of Industries/Vertical Nonintegration and Business Model Competition



Source: Japan Consumer Marketing Research Institute (2008), *JYOUHOU KADEN ME-KA- NO OKARETEIRU JOUKYOU NI TSUITE*.

In these global value chains, technology and know-how are transferred through the trade of intermediate and capital goods, the trade of technology, and direct investment, thereby promoting innovation. On the other hand, there is competition between industries in each country, how to achieve the goals of a global value chain (i.e., bring in higher added value).

In terms of the new shape that the international industrial structure will take in Japanese industry, the questions remain of how to create greater value, how to enhance the position of Japanese industry, and how to improve the position of Japan as an industrial hub in this global value chain.

Both the foreign production ratio and the foreign sales ratio have risen in Japan's manufacturing industry, particularly in the auto industry and the electronic equipment and electronics industry[154]. In all processes inherent in development and design, manufacture, and sales, it is thought that ideas from a global viewpoint are both beneficial and required[155].

(4) Potential of innovation in Asia

With the deepening of the global value chain, innovation—including R&D—is starting to be promoted, all while utilizing international networks. The advancement of "open innovation," which

[154] The Nihon Keizai Shimbun, on June 6, 2008, reported that overseas sales accounted for 45.3% of total sales in the manufacturing industry, 68.2% in the automobile industry, and 50.1% in the electronics industry, based on a survey on 1,696 listed corporations that disclosed their overseas sales during their March 2008 settlement of accounts. See Figure 2-2-15 for values as of 2006.

[155] We will examine the future of the global value chain of Japanese companies, in Section 3 of this chapter.

has become a trend among companies worldwide, has been the basis of this movement. The following will review how this trend has led to the establishment of Asia—particularly China and India—as a development base; it will also examine Asia's potential as an intellectual creation base[156], in addition to being the "world's factory."

(The advancement of open innovation)

Backed by advancements in and the increased complexity of technology, as well as transformations toward a knowledge-based economy, innovation has shifted from being part of a "vertical integration model"—in which companies carry out everything from R&D to product development on their own—to "open innovation," where companies carry out R&D and product development while utilizing external technology capabilities.

It has become difficult to provide new products and services via a single company, because the product cycle has shortened, while there has been an acceleration in the pace of change among market needs, and in advancements and increases in complexity technology. In addition, thanks to developments in information technology, the availability of useful techniques and knowledge has risen, enabling the creation of new value by using techniques and knowledge that had been previously considered as belonging to other domains. As a result, moves toward open innovation as a new type of R&D—where R&D is actively utilized by other companies, even as they cooperate beyond the corporate framework with various entities, including universities—are becoming part of a global trend[157]. In particular, as mentioned previously, in the global "competition to secure talents," building a transnational R&D network to obtain superior human capital has become a worldwide movement.

Among Japanese companies, orientation toward open innovation has increased. In fact, it has been pointed out that companies' ratios of external funding to R&D expenditures have risen[158], along with a general orientation toward a global R&D system[159].

(Improvement of innovation base in Asia)

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[156] Fujita, M. (2008), "CHI NO RUNESANSU WO HIROGEYO" (http://www.rieti.go.jp/jp/papers/contribution/fujita/02.html).

[157] The aforementioned OECD report (2008) states that "the methods of innovation creation by companies are dramatically changing. For example, in the R&D sector, a "closed innovation model" that develops technology for itself (e.g., Bell Telephone Laboratory) has rapidly become "out of date," and has shifted to a more open innovation system in which innovation is created through interaction inside and outside the company (i.e., with suppliers, competitors, customers, universities, research institutions, and the like). In this new paradigm of "open innovation," companies procure ideas and technology by inviting a flow of knowledge from the outside. In addition, through spin-off companies, the provision of technology licenses, or the disclosure of intellectual property in the public sector, companies are finding new means of further utilizing their intellectual property."

[158] For example, according to the Survey of Research and Development (Ministry of Internal Affairs and Communications, Statistics Bureau), the ratio of research expenses spent outside companies rose from 8.9% in 1995 to 13.1% in 2005, while the ratio of accepted research expenses to research expenses spent inside the company rose from 3.6% to 9.6%.

[159] See the Corporate Top Interview, in the January 14, 2008 edition of *Nikkei Electronics*, where comments such as the following are made: "Establishing laboratories in the region with the most advanced technology for each sector will become the R&D base of the Global 20."

Due to the advancement of open innovation, even in Asia, cross-border R&D is progressing, led by European and US companies[160].

Asian countries have been, for some time, bases for low-cost "manufacturing" or "IT service and software development," and they have realized rapid economic growth thus far by attracting investments from foreign-affiliated companies and accepting outsourcing from foreign countries. However, there have been obvious movements among Asian countries—particularly China and India—including those pertaining to national policy, to raise innovation capabilities and upgrade their positions in the global value chain. The base by which to carry out and achieve results from indigenous R&D activities is being built gradually, for example, through the aggressive use of returnees from developed countries[161], backed by increases in personal income and improvements to living environments as a result of economic growth. The establishment of R&D bases is also being pushed forward in China and India, by multinational companies; investments in R&D by companies from developed countries are focused on the areas of personal computers and information and communication, followed by chemistry, petrochemistry, pharmaceutical products, biotechnology, automobiles, and transportation equipment in China. In India, they are focused on the IT, communication, automobile, pharmaceutical, and biotechnology industries[162]. The following will examine the context of creating innovation bases in China and India.

[Column 5] From a closed vertical innovation model to an open network global innovation model: the IBM case

The aforementioned OECD report (2008) discusses changes to IBM's innovation model and gives it as a concrete example of open innovation[163][164].

[160] According to EIU (2008)—where 83% of the respondents were European and US multinational corporations—with respect to future R&D activities in Asia, (1) 71.3% responded that they will spend more on developments of existing products for regional markets (with 33% responding with "remarkably increased spending"), (2) 66.4% responded that they will spend more on research for new products and services (with 33% responding with "remarkably increased spending"), and (3) 30.1% responded that they will outsource a part of R&D activities to Asian companies (with 7.3% responding with "remarkably increased spending"). As for countries or regions that are attractive R&D bases, more than 60% cited China, and more than 50% cited India.

[161] There are indications that many excellent technicians who engaged in R&D operations in major US or European companies have returned to their home countries, to transfer technology in the form of starting up local R&D bases for US or European companies or opening another business (*Nikkei Electronics*, January 14, 2008 edition, and local hearing). This return phenomenon, through China's returnee encouragement program (the Sea Turtle Program) has also been seen.

[162] See the aforementioned study of Asakawa and Som (2008).

[163] The OECD (2008) indicates that as the promotion of free relationships with suppliers, competitors, and customers is necessary for the promotion of innovation, the transition to open innovation will enhance the importance of free trade and investments. Furthermore, it notes that the rise in importance of patent utilization through licensed technologies indicates that the international protection of intellectual property is becoming more important for the promotion and expansion of innovation.

[164] Corrected by the Ministry of Economy, Trade and Industry, based on information provided by the OECD (2008) and IBM.

Until the 1980s, IBM was a typical vertically integrated company; at the time, IBM worked on all of its own R&D, system development, parts manufacture, assembly, software development, distribution, and services. However, upon the reconstruction of massive vertical and specialized mainframe production processes to more horizontal structures that mutually affect each component therein—such as micro-processor development led by Intel or software development led by Microsoft—IBM recognized that it was impractical to strictly manage its abundant internal professional knowledge or the use of proprietary technology.

Accordingly, while attaching importance to the provision of technical licenses in the management of innovation[165], IBM became determined to adopt open standards in various fields, such as the Linux OS or the Java programming language. Furthermore, IBM materialized sources of innovation that led to a flow of outside knowledge, skills, and human resources, translating them into business opportunities; in the process, they rapidly changed themselves into a solution provider that uses the best technology from inside and outside the company.

IBM also changed its global strategy. Whereas it had previously exported finished goods while leaving most of the functions at its headquarters—during its initial development of international business and when incorporating many subsidiaries around the world that had headquarter functions—it now professes to have become a Globally Integrated Enterprise (GIE) with an efficient corporate structure. Over the past six years, IBM has concentrated most of its functions (e.g., procurement, manufacture, finance, HR, R&D) to a limited number of countries, with an eye to cost, skills, and business environment; above all, it has reduced its number of procurement centers from 300 to three in Europe and Asia. Offices in each country can use the resources of other offices; so, for example, it is possible for the Swiss office to receive computer data support from the Indian office and software support from the Brazilian office166. The source of competitiveness no longer lies within a single country167.

○ Chinese manufacturing industry raising added value

An examination of trends real added value in China's manufacturing industry shows that China surpassed Japan to become the world's second-most supplier, after the United States, in 2006 (see Figure 2-1-55).

Added value of industrial products manufactured in and exported from China has been increasing gradually, particularly in IT-related products[168]. In addition, although both the ratio of foreign-

[165] IBM's licensing revenue increased from US$0.8 billion in 1996 to US$1.7 billion in 2000. Since then, as a result of the promotion of open innovation in the overall market—resulting in Linux and other open-source software in the copyright field and Patent Commons in the patent field, as well as divestitures—that figure became US$0.96 billion in 2007.

[166] Under such circumstances, IBM also promotes the selection and concentration of R&D functions; for example, in the nanotechnology field, it has taken the initiative in cooperating with Saudi Arabia.

[167] According to IBM, in an open-network innovation model, open markets, a better trade investment environment, the harmonization of international systems, and world-class human resources all hold important roles (hearing by the Ministry of Economy, Trade and Industry).

[168] According to "Reviews of Innovation Policy, China, Synthesis Report" (OECD (2007d)), the share of high-tech product exports in China's total exports has expanded from 14.1% in 2000 to 29.9% in 2005.

affiliated companies in exporting (see Figure 1-3-35) and the ratio of processed goods being exported (see Figure 1-3-36) are high, they are showing declining trends.

In fact, an examination of trade in IT-related products shows that both Japan's exports and imports have gone unchanged. On the other hand, China's exports have already largely surpassed those of Japan and the United States (see Figure 2-1-56)[169]. As the increase of exports from China has lead to a supply of intermediate goods from Japan and the United States, this linkage has attracted attention. However, in the field of IT-related products, recently, this relationship has not necessarily become clear. China's trade balance in this field has expanded year over year, suggesting that China has begun to add a certain amount of added value.

Meanwhile, some have pointed out that the export of these IT-related products, including the exports of foreign-affiliated companies[170], are supported by the continuing importation of technologies from foreign countries[171].

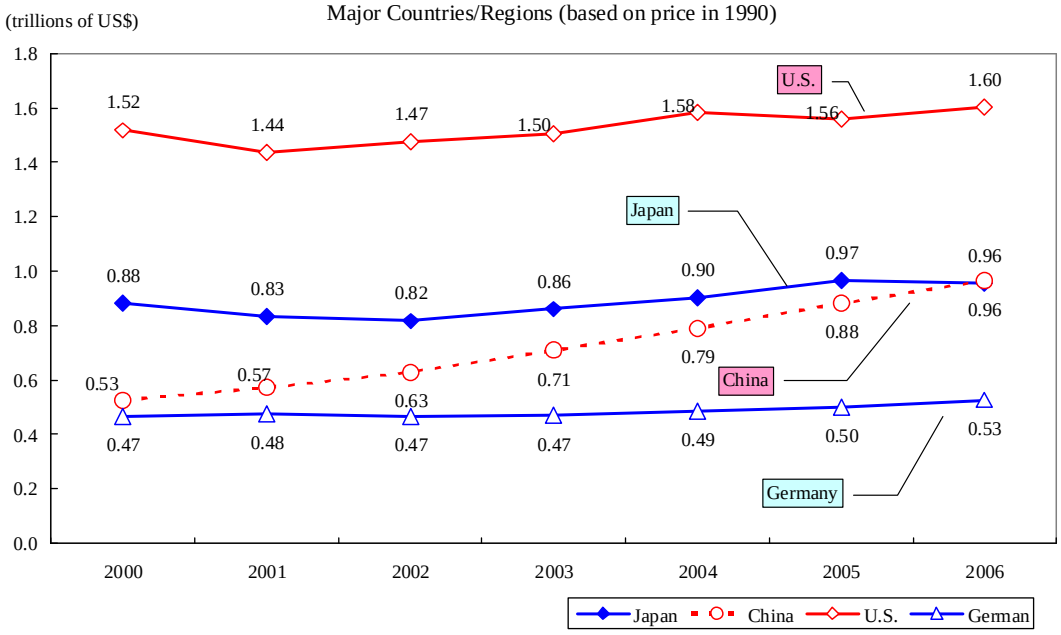
Furthermore, the 11th five-year plan focuses on the introduction of advanced technologies for creating a manufacturing base of added-value products.

[169] According to data from "COMTRADE" (UN), world exports of China's IT-related products increased at an average of 36.7% per year between 2000 and 2006. Meanwhile, exports of IT-related products from Japan and the United States to China increased 20.2% and 21.0% per year, respectively, while exports from South Korea to China increased 33.4%, exceeding the growth of exports from Japan and the United States. The aforementioned OECD report (2007) confirms China's trade surplus in IT-related products in 2005, and indicates a structure wherein imports exceed exports in Asia (e.g., Taiwan, Republic of Korea, and Malaysia) and exports exceed imports (e.g., Hong Kong, United States, and the EU-15).

[170] In the export ranking of foreign-based companies, published by China's Ministry of Commerce, IT-related companies such as Hon Hai Precision (Taiwan), Motorola (U.S.), and Nokia (Finland) rank highly and are taking exports of China's IT-related products. Meanwhile, exports by China's local IT-related companies—such as Huawei, Lenovo, and Haier—are accelerating; however, exports from Huawei—China's largest exporting company, from among the top 100 IT-related companies in China, in terms of operating revenue—is only about one-quarter of that of Hon Hai Precision (Taiwan). The presence of China's local companies in high-added value IT-related products is still small compared to that of foreign-based companies.

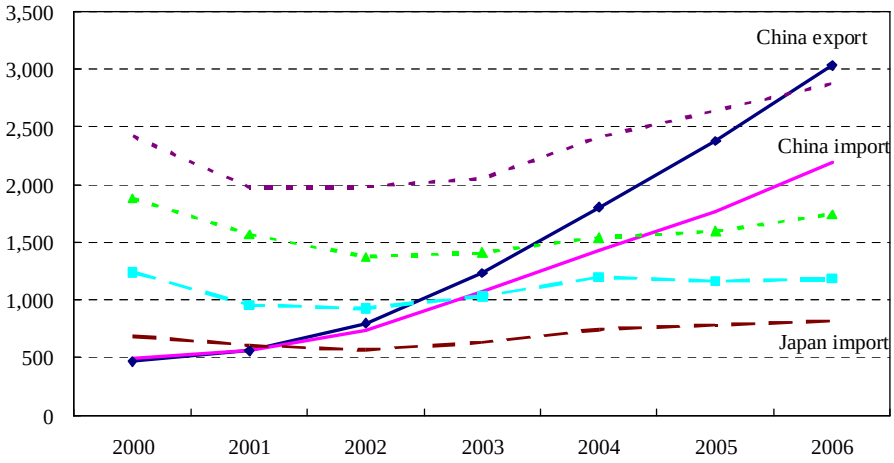
[171] Tabata (2007) discusses China's small independent technology base and its large reliance on foreign technology; among China's high-tech exports, 90% are by foreign-based companies. For example, the price of DVDs exported by China is US$40 per machine; however, overseas, they must pay US$21 per machine in patent fees. Meanwhile, IT-related companies are actively promoting R&D; according to Tokyo University (2005), the ratio of R&D in sales as of 2004 is 14% at Huawei, 8% at ZTE, and over 4% at Haier.

Figure 2-1-55 Trend of Real Added Calue of the Manufacturing Industry of Major Countries/Regions (based on price in 1990)



Source: UN, National Accounts Main Aggregates Database.

Figure 2-1-56 Trade Trends in IT-related Products



○ Indian industry raising added value to IT services

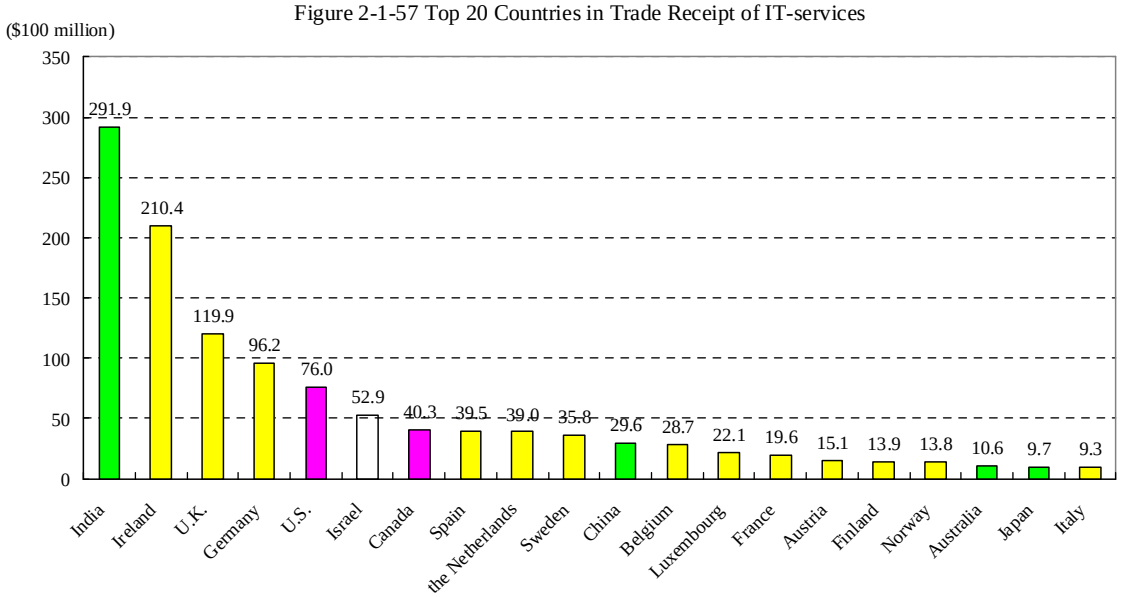
On the other hand, India has achieved remarkable growth in the field of IT-related services and, moreover, is increasing added value therein.

India's trade receipt for IT-services[172] in 2006 was US$29.2 billion, surpassing developed countries to become the world's top supplier in this area (see Figure 2-1-57)[173]. Furthermore, India has recorded 32.6% growth from 2005, whereas the worldwide growth rate was 17.2%. Such a large

[172] Here, "IT services" refers to "information," a service item. "Information" includes receipts concerning computer data services (development and maintenance of database, development and processing of programs, etc.) between residents and non-residents, as well as news-related services (delivery of news or images to the news media, etc.).
[173] IMF, "BOP."

surplus in the trade of IT services depends on extensions of so-called offshoring[174] and BPO (business process outsourcing)[175], in addition to software exports.

Figure 2-1-57 Top 20 Countries in Trade Receipt of IT-services



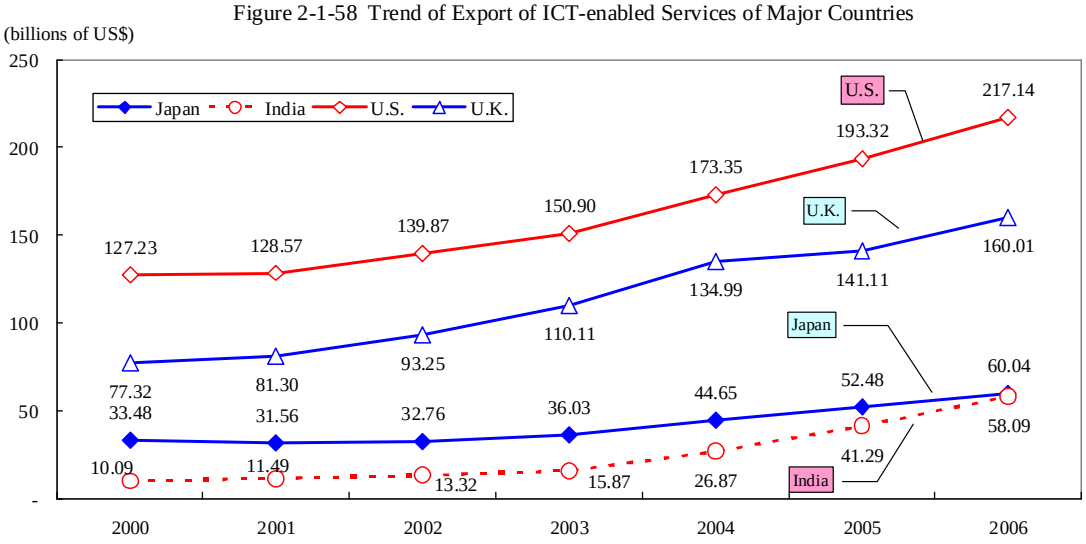
Notes: 1. Green: Asia; Yellow: Europe; Pink: North America.
2. States top 20 countries in trade receipt of IT-services.
Source: Institute for International Trade and Investment website.

In particular, in recent years, IT's use of rich human resources and know-how has broadened the outlook of IT-enabled service industries, such as finance. As mentioned in Chapter 1, Indian major IT-service companies are trying to increase their share of R&D services, such as semiconductor design and embedded system development, to bring in higher added value than can be realized through offshoring and BPO, in terms of sales[176]. As a result, in the export of these IT-enabled services in Asia, India has ranked alongside Japan and is about to surpass it; India has already ranked fourth in the world (see Figure 2-1-58). Amid such circumstances, these Indian IT companies established service and training bases in various parts of the world and begin to have characters as global companies[177].

[174] "Offshoring" means that a company purchases (imports) products or services from overseas, rather than purchase it from domestic manufacturers. Also called "offshore outsourcing," it generally refers to the import of services through the utilization of IT.
[175] This refers to a company that outsources to outside providers, as part of its business process.
[176] "What's Next for India—Beyond the Back Office" (Wharton (2007)) states that India's BPO companies aim to instead use KPO (Knowledge Process Outsourcing), beyond back office functions, by introducing the provision of a more sophisticated service via India's leading service providers, through cooperation with US and European companies.
[177] "INDO TO INOVATION – SONO GENJOU TO KADAI" (Shrestha, M.L. (2007)) indicates that the growth of companies comprising India's IT industry is continuously outpacing (global) IT offshore growth, and that those companies are establishing service and human resources development bases in Europe and the United States, as well as operations bases in emerging countries. In this sense, they are growing no longer growing as an "Indian company," *per se*, but as a global company. Furthermore, in the Innovation Index published by the US Council of Competitiveness, 12 companies among the top 20 have already established a software operation and development base.

However, some have pointed out that India's innovation capability, in terms of the current situation, mostly depends upon the implementation of existing technologies, rather than the development of cutting-edge intellectual property[178].

Figure 2-1-58 Trend of Export of ICT-enabled Services of Major Countries



Notes: The definition of the export of ICT-enabled services is as defined by the INFORMAION ECONOMY REPORT2007-2008 (UNCTAD (2008)).
Specifically, the total of communication, insurance, finance, computer/information, royalty and license fees, other office services, personal/cultural/recreation-related exports.
Source: IMF, DOT.

○ Potential as a "human resource major power"

China and India are major population centers possessing sizeable amounts of high-quality talent in the field of technology. In fact, these resources from China and India are engaging in employment or research in developed countries, thus supporting innovation[179]. According to Mitra (2007), the number of college graduates majoring in engineering in 2004 were 184 thousand in India, 352 thousand in China, and 76 thousand in the United States[180]. Furthermore, there is a cost-reduction effect, as these talented individuals are working in India at salaries roughly one-fifth those in the United States[181], along with 30% longer working hours.

In addition, according to the "OECD Science, Technology and Industry Scoreboard 2007," in terms of number of researchers, China has grown rapidly, to 1,119 thousand people in 2005 from 695

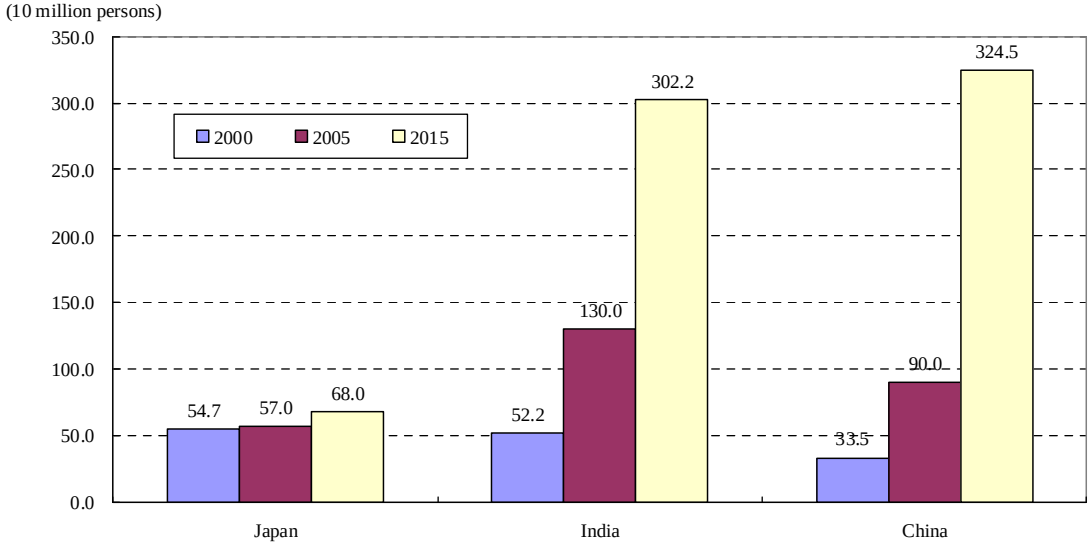
[178] Mitra (2007). The same paper points out that the introduction of technology can be made efficient through cooperation among industry members, government officials, and academia with foreign-based companies.
[179] The aforementioned study of Shrestha (2007) states that among technical companies incorporated in the United States by non-US citizens, 26% have been incorporated by Indians; India thus ranks first, in this respect. The aforementioned study of Asakawa and Som (2008) states that 20% of all non-US citizens holding a PhD in a science or technology field in the United States, as of 1999, were Chinese.
[180] Sources: India, NAASCOM; China, China Statistics Almanac, the United States, Morgan Stanley. According to OECD (2007d), 61% of China's graduates are science and technology graduates, and there are 1.12 million researchers in China, thus ranking them second in the world (Japan has 0.7 million researchers).
[181] "India's Emergence as a Global R&D Center" (Mitra and M. Raja (2007)) states that China's wages are a little higher than in India, but are roughly at the same level.

thousand people in 2000, also exceeding Japan's 2005 figure of 705 thousand people (India's figure in 2000 was 116 thousand people).

In fact, China and India generally have large numbers of IT human resources. In 2005, the numbers of employees in the IT industry[182] were 1.3 million in India and 0.9 million in China, greatly exceeding Japan's 0.57 million employees; these numbers continue to expand rapidly (see Figure 2-1-59).

However, concerning the skill of these human resources, many issues have arisen, such as the sizeable gap between extremely excellent talent and the balance of the employees, and the fact that most new graduates have little practical experience in undertaking project or team work[183][184].

Figure 2-1-59 Trend of Number of Workers in the IT Industry in Japan, China and India



Note: The 2015 data is estimated on the assumption that 50% of IT-related new graduates of Japan and 70% of that of India and China enter the IT industry (not considering resigned persons) (estimate by the Ministry of Economy, Trade and Industry).
Source: Industrial Structure Council, Information Economy Subcommittee, Koudo IT Jinzai no Ikusei wo Mezashite.

○ Development of R&D base

Backed by market developments and the existence of potential human resources, as mentioned above, foreign-affiliated companies are accelerating the establishment of R&D bases in China and India. A look at the locations of the R&D bases of global companies shows that many have established R&D bases in emerging countries like China or India (see Table 2-1-60)[185]. In addition, for the

[182] i.e., Number of persons engaged in IT services in the information services industry.
[183] ADB (2008), based on EIU (2007), discusses the lack of skills among Asian human resources and the need to improve form education in these areas. Accenture 2006 makes similar statements with regards to China's new graduates.
[184] In the Conference on the review of China's National Innovation System and Policy, August 2007 sponsored by OECD, held in Beijing in 2007, attendees from European and US companies commented that they have "established laboratories in China, attracted by the possibility of the market, but there are only a few excellent human resources" there (see the aforementioned study of Tabata (2007)).
[185] According to the aforementioned study of Tabata (2007) in the 2004 survey, the country-by-country proportion of R&D centers in China that were of foreign-based companies were: the United States: 47.6%; Hong Kong, Macao and Taiwan: 11.9%; Japan: 9.5%; Germany: 8.3%; South Korea: 7.1%. With respect to

purposes of investment, it is thought that investments in R&D to supplement lacks in technical resources (i.e., the aforementioned "home-base-augmentation" R&D) have increased, in addition to R&D that exploits the local market.

Table 2-1-60 Examples of Companies in Developed Countries Having R&D Base in Emerging

Company	Country	R&D Base	Location of Newest Base
Microsoft	U.S.	U.S. (3), **China, India,** U.K.	**India**
Pfizer	U.S.	U.S. (5), Canada, **China** (scheduled), France, Japan	**China**
Ford	U.S.	U.S., Germany	Germany
DaimlerChrysler	Germany	Germany (4), U.S. (4), **China, India**, Japan	**China,** Japan
Toyota Motor	Japan	U.S. (2), Europe (2), Australia, **Thailand**	**Thailand**
General Motors	U.S.	Australia, Brazil, **China**, Germany (scheduled), South Korea, Mexico, Sweden (scheduled), U.S. (11)	Germany, Sweden
Siemens	Germany	150 locations in 30 countries (with 15% in Germany)	**China, India, Russia**
Matsushita Electric	Japan	U.S, (10), Canada, **China**, Europe, Malaysia	**China**
IBM	U.S.	U.S. (4), **China, India**, Israel, Japan, Switzerland	**India**
Johnson & Johnson	U.S.	Australia, Belgium, **Brazil**, Canada, **China**, France, Spain, Switzerland, U.K., U.S.	U.S.

Source: UNCTAD (2008), *INFORMATION ECONOMY REPORT 2007-2008* .
Original Source: Booz Allen Hamilton (2005).

A look at R&D expenditure in purchase power parity conversion (according to the OECD) shows that, in recent years, the growth of R&D expenditure in China is particularly remarkable. There are other markers of China's strong R&D base. China ranked third in 2006, rapidly approaching Japan's level of R&D expenditure (see Figure 2-1-61)[186]. R&D intensity has risen 0.1% each year, in spite of a high GDP growth rate, to become 1.43% in 2006[187] (The figure for Japan was 3.3%, the highest of all developed countries); moreover, this R&D intensity is being enhanced by national policy[188]. As for the number of scientific papers[189] (2005), China (68,226) ranked fifth in the world, after fourth-place Japan (93,746). The Relative Citation Index for papers (2001–2005, only in natural science)[190] of China has become 0.58, versus the 0.96 of Japan and the 1.42 of the United States.

Japan's ratio, Tabata indicates that compared to the proportion of Japanese companies among more than 500 foreign-based companies in China (40%, 2004), the ratio of Japanese companies in the number of R&D center establishments was small.

[186] India's R&D expenditures as of 2004, after purchasing power parity conversion, was US$24 billion; as of 2005, China's value was US$115.2 billion, while Japan's was US$131 billion (source: OECD Statistics).

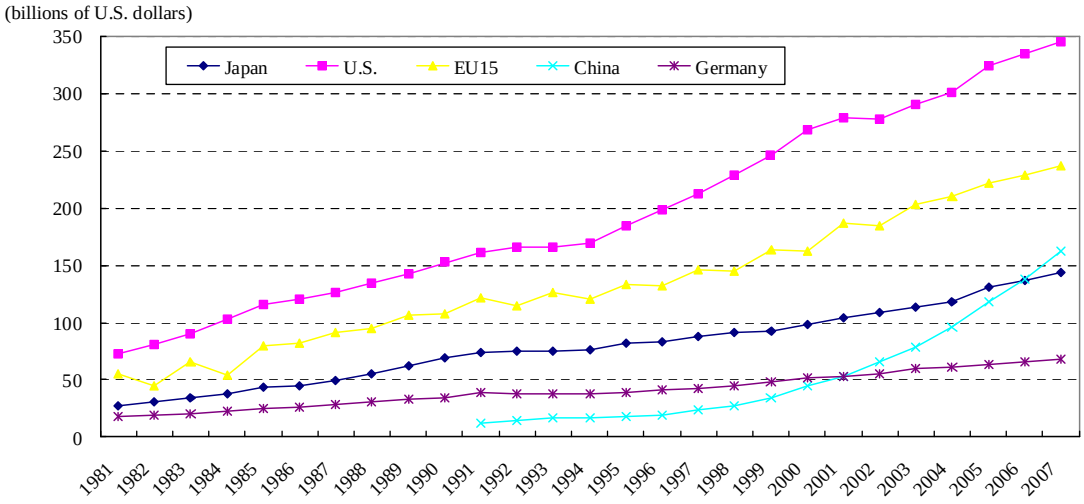
[187] The value for India in the same year was 0.69% and stagnant. There are statistic issues such as for India, higher education and small-scale industries were only partly covered.

[188] The 11th five-year plan (2006) aims to enhance the country's R&D independence, to above 2.0% by 2010; the China Mid- and Long-term Science Technology Plan aims to bring the same value to above 2.5% by 2020.

[189] This number reflects the recording journal of the SCI database, which covers all areas of natural science and engineering. The United States ranked first, with 417,777 papers; meanwhile, the United Kingdom had 111,367 and Germany, 95,256.

[190] The Relative Citation Index refers to the number of citations per paper per country, divided by the number of citations per paper around the world.

Figure 2-1-61 Gross Domestic Expenditure on Research and Development



Notes: 1. The values for 2006 and 2007 are estimated figures on the assumption that the growth rate from 2001 to 2005 will continue.
2. The amount of expenditures by each country is converted into dollars based on OECD's purchasing power parity.
Source: OECD Stat website.

However, as the World Bank (2008) has pointed out, a transfer of technology from outside a country through trade and direct investment leads to technological advancements within that country; improvements to the business environment, making it more favorable in terms of technical absorption capacity[191] (i.e., improvements in quality of technology human resource and promotion of R&D activities at enterprise level) are necessary, along with open trade and improvements to the investment environment, in the name of promoting technology transfer from the outside[192]. Aggressive measures are under way, spearheaded by the Chinese and Indian governments, to construct such a mechanism. Amid such circumstances, cooperation is needed between public research organizations—such as universities, which are at the core of R&D in the two countries—and multinational companies[193]. In China, in particular, companies traditionally consign research to universities and research organizations, and technology is eventually transferred back from those entities[194]; however, even Japanese companies like Omron Corporation has actively utilized the technological resources of Chinese universities.

[191] China is giving preferential tax measures, under the 11th five-year plan to incorporate R&D activities under the rubrics of "self-innovation" and "innovative nation." CSIR (the Council of Scientific and Industrial Research), India's largest national research institute, has 38 laboratories and 39 regional centers across India; it is also in a state of reformation (see the aforementioned study of Shrestha (2007)).
[192] The Chinese government is pushing an initiative called "Plan 111" from 2006, to bring in more than 1,000 established scientists from the top 100 universities and research institutions around the world and establish 100 world-class science centers in Chinese universities; a plan called the "China Scholarship Council" looks to send abroad 5,000 students per year to overseas doctoral programs, at public expense.
[193] The aforementioned Accenture report (2006) states that, for example, as of 2006, in China, Tsinghua University has entered into a technology agreement with General Electric (US), Alcatel Lucent (France), and Procter & Gamble (US).
[194] See the aforementioned report of Motohashi (2005) and local hearings. In China, the design of products is also outsourced; in the past, foreign-based companies had taken on design roles, but recently, local design companies are emerging.

Case Industry: University cooperation with Shanghai Traffic University in Omron Corporation

Omron Corporation has carried out a collaborative research umbrella agreement with Shanghai Traffic University, since 2004. Since September 2007, on the site next to Shanghai Traffic University, the "Omron Shanghai R&D Collaborative Innovation Center" has been setting up, and an R&D company (the "Omron Institute of Sensing & Control Technology (Shanghai) Co., Ltd.") has taken up residence. Collaborative research partners have expanded to Qinghua University, Xi'an Traffic University, and Zhejiang University. From 2004 to September 2007, more than 100 projects—mainly involved in image-sensing—have been carried out in partnership with universities. Man can read particularly enormous and comprehensive numerical English paper and catch-up the highest technique. The original R&D themes proposed by this Shanghai base will be further examined in the future.

○ Potential of China and India as intellectual creation bases

China and India have already shown promise as intellectual creation bases, and their potential therein is highly anticipated. The questionnaire survey of EIU (2004) asked the question, "In which countries will you invest the most R&D funds, in the next three years?" Companies that answered "China" comprised the largest group (39%). Companies that answered "India" comprised the third-largest group (i.e., 28% of respondent companies), after the United States (29% of respondent companies).

About China and India as R&D base and this possibility, various issues have been raised, as to whether a cross-border innovation base or an element of performing "acquisitions" (see Table 2-1-62) is most efficient in building intellectual creation bases. For example, there have been issues raised about using the Chinese business environment as an R&D base for multinational companies, including those concerning the protection of intellectual property rights in China. On the other hand, in course of rapid globalization and the transformation to a knowledge-based economy, open innovation involving various technological resources has been in great demand, and aggressive measures have progressed with European and US global companies.

In Japanese industry, strategic countermeasures supporting the utilization of India's and China's technical resources are required, including the creation of appropriate infrastructure to reinforce internal controls[195].

[195] The aforementioned study of Tabata (2007) notes a comment made by a research manager at a European/US cell phone manufacturer that "though we are concerned that our technologies may flow out to China, we must make rules regarding access to information technology and employment and respond to the issue within a reasonable scope. The risk of fearing the worst and doing nothing is bigger." This sentiment indicates that not only with China but generally upon developing various levels of cooperation in science and technology with foreign countries, discussions must be had with respect to reasonable management rules—especially those rule regarding the research results (e.g., the management of access to research information and the establishment of confidentiality rules). See Section 4-5 of this chapter, regarding the prevention of technology flow-out.

Table 2-1-62 Myths and Reality in R&D in China and India

Points	Myth	Reality
Education from abroad	Advanced technology is created in Europe and the U.S. India and China only adapt to Western	Not always true. Joint researches by India and China with European and U.S. companies are rapidly growing quantity-wise.
Low-cost R&D	The development of technology in India or China is extremely low-cost.	Not always true. In particular, in China, it is costly to overcome differences in practices or standards.
Role of returnees	Returnees with high education or work experience in Europe and the U.S. become key players for improving technology standards and enterpreneur minds in India and China	Not always true. The contribution of returnees is very important in both countries but are often overvalued. In both countries, there are among returnees scientists and technicians who were unable to survive in the U.S. In China, the local manager class are dissatisfied that technicians with low quality
Standardization	China is more interested in establishing its own standards rather than meeting international standards.	Not always true. China is becoming interested in participating both its own standards and international standards.
Local innovation purposes	The purpose of R&D in Asia is only for local adaptation ratehr than for global innovation.	Not always true. There are many cases of global innovation based on R&D in India and China. Example) Adobe's PageMaker7.0 was completely developed in India by Indian staff but used around the world. In China, Nokia's N2100 and N6108 were developed locally and spread to the global market.

Source: Asakawa and Som (2008).

(Asia-wide R&D network)

When Japanese industry explores overseas markets, in addition to undertaking production and sales activities in region that may become marketable, it is important to integrate them with R&D activities, to provide products and services that can flexibly take into account the tastes and preferences of local markets. Furthermore, besides undertaking these R&D activities geared towards the exploitation of local markets, by strategically utilizing local technological resources, it is believed that Japanese industry will further strengthen its competitive advantages.

Japan should aim to create innovation within Asia (i.e., “Asian innovation”), using Asia as its “intellectual creation base.” In so doing, it would link R&D activities in Asian countries—including those in China and India—while carrying forward the division of roles and the functional division of labor with a domestic R&D base[196][197].

When pursuing innovation in Asia, it is expected that through the active exchange of various management resources, including Asia’s excellent human resources which is most important, longed management resource in particular in the era of transformation to knowledge economy, inherent knowledge and skills will be “fused,” and innovations will come to fruition. It is necessary that “people,” “knowledge,” and “skills” existing in Asia, together with “money,” which bridges all of these factors, build a circulating mechanism in the region like intermediate goods.

In addition, it is expected that companies, which can reach beyond national border, will locate production bases and R&D bases in such a way as to take into account the different systematic

[196] The main R&D base of Japan’s manufacturing industry is within Japan; in order for the Japanese manufacturing industry to maintain and enhance competitiveness in the future, it is important that it continuously create new products and new services within Japan.

[197] The salaries of Chinese and Indian technicians are increasing, and the advantages of low labor cost therein have eroded. Accordingly, the idea of a low-cost development base is no longer cogent.

abilities of each country and region[198]. For example, Fujimoto, Amano and Shintaku (2007) and Ono and Fujimoto (2006), based on analyses of products and production process architecture, wherein basic product design concepts and production processes are made "integral" and "modular," have suggested that the "international division of labor in products and production process architecture should be done on the basis of abilities and countries business environments, as well as their comparative advantages in manufacturing"[199].

Such a realization of Asian innovation would also lead, in turn, to the effective utilization of human capital and the advancement of both the industrial and employment structures in Japan and China—both of which are confronting declining birthrates and an aging population—and India and ASEAN countries—which have large young population but are concerned about the low levels of skill within, due to shortages of educational opportunities. It is expected that "learning each other" will be done with respect to knowledge and skills of each country and region.

(5) Prospects of a pan-Asian consumer market

The source of Asia's economic growth, to date, has been its advanced production network, which was formed broadly in the region by internal and external direct investments and by the sale of exports from this network. Although this network has exceeded those of the United States or the EU in terms of investment, Asia lags behind these two regions in terms of consumption. In fact, in comparing the economic structures of Asia, the United States, and the EU by structure of final demand, Asia accounts for 31.3% of the world's fixed capital formation, including capital investments, but accounts for only 20.4% of the world's real household consumption expenditure (see Figure 2-1-63). That is to say, backed by lower household income levels in comparison to those in Europe and the United States, the consumption structure of the entire region is weak[200].

It is important to upgrade consumption market in Asia to realize autonomous development by well-balanced structure of demand including intra-region demand from economic structure that take export to the areas outside of the region as the driving force of growth. A more solid unification as an economic bloc will be seen as a result of this. As confirmed in Chapter 1, signs of consumption-market activation have gradually come about, due to the formation of wealthy and middle classes in Asian countries like China and India, following improvements to household income (see Figure 2-1-64).

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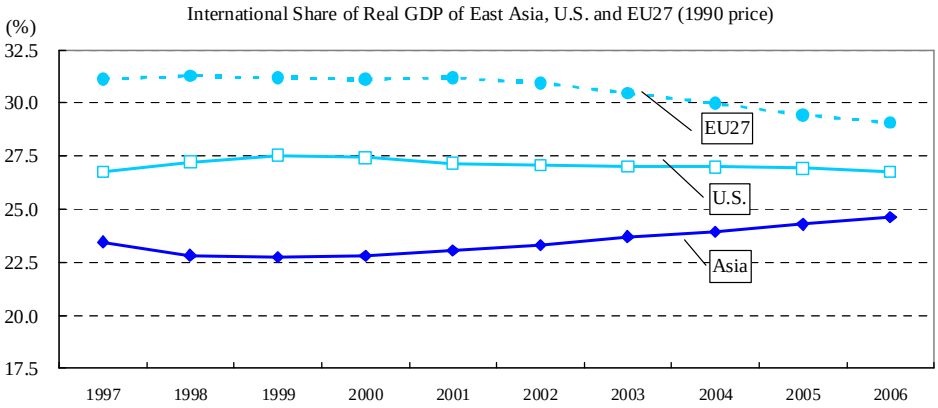
[198] Such actions by companies to place the right persons in the right jobs currently lead to the "globalization of labor" in the form of the Asian production network; by proceeding further in the same direction, it will lead to the "globalization of information" through a knowledge-creation network.

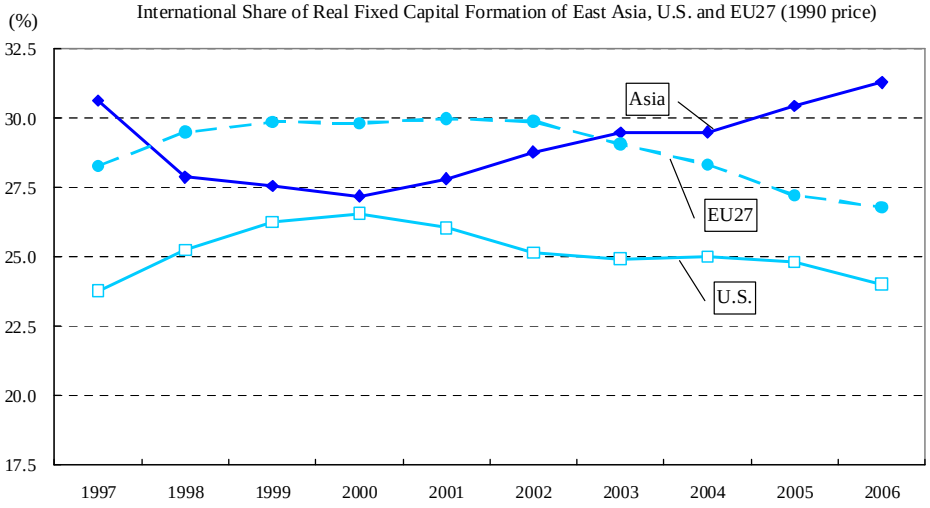
[199] For example, Fuijmoto, T., T. Amano and J. Shintaku (2007), "ARCHITECTURE NI MOTODUKU HIKAKU YUI TO KOKUSAI BUNGYOU: MONODUKURI NO KANTEN KARA NO TAKOKUSEKI KIGYOURON NO SAIKENTOU" and Ohno, K. and T. Fujimoto (2006), "Industrialization of Developing Countries: Analyses by Japanese Economists" state that cross-border companies will create products with comparative advantages, by looking at the world market in each local base. In addition, these studies hypothesize that Japan has an advantage as a matching base, and though China has an advantage on open modular products, India and ASEAN have similar possibilities as a matching base.

[200] Such an economic structure, inclined towards fixed-asset formation, is thought to be the reason behind low intra-region trade in final goods in Asia.

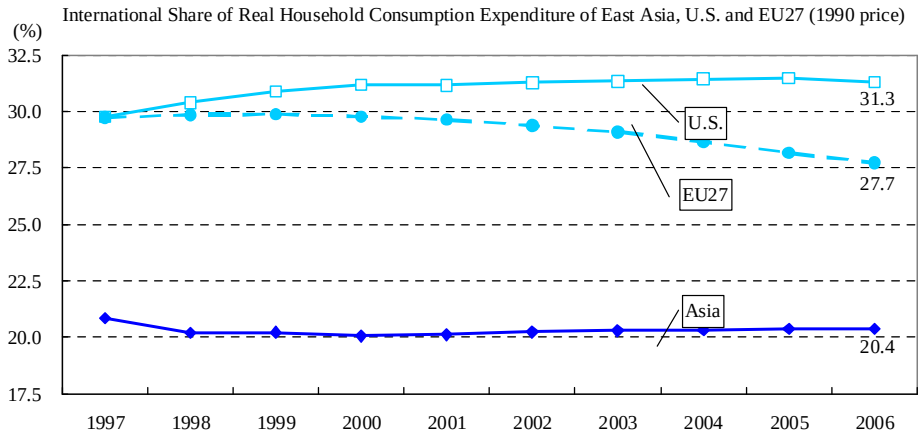
Figure 2-1-63 Comparison of Economic Structure of Asia, U.S. and EU27
(Global Share of GDP, Fixed Capital Formation and Household Consumption Expenditure)



Notes: Asia in the figure abore refers to Japan, Republic of Korea, China, India, Australia, New Zealand and ASEAN.
Soruce: UN, National Acounts Main Aggregates Database.

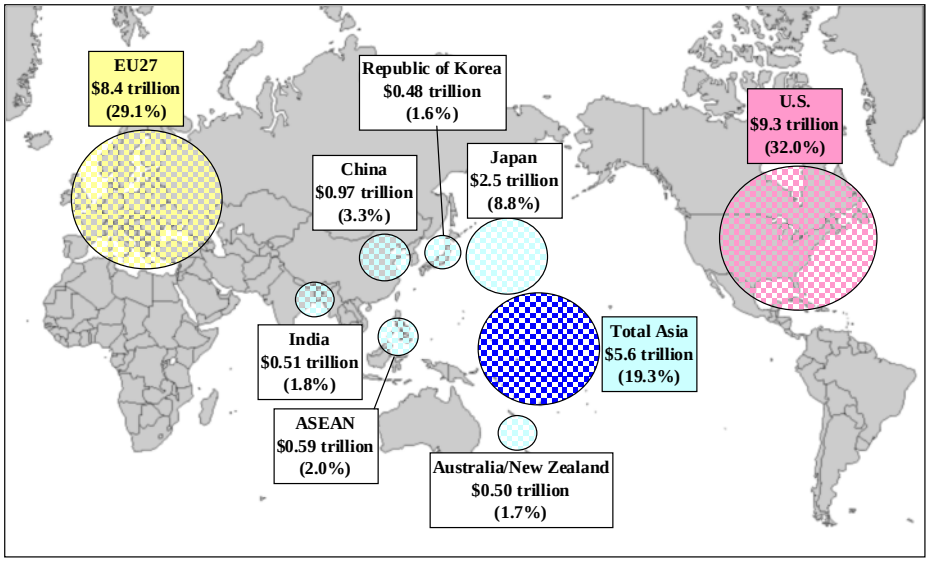


Notes: Asia in the abore refers to Japan, Republic of Korea, China, India, Australia, New Zealand and ASEAN.
Soruce: UN, National Acounts Main Aggregates Database.



Notes: 1. Asia in the abore refers to Japan, Republic of Korea, China, India, Australia, New Zealand and ASEAN.
2. Asia does not include Myanmar due to statistic restrictions.
Soruce: UN, National Acounts Main Aggregates Database.

Figure 2-1-64 Household Consumption Expenditure of Major Countries and Regions (Nominal Base) (2006)



Source: UN, *National Accounts Main Aggregates Database* .

(Asian consumer market gradually showing signs of modernization and unification)

As described above, the consumption level is lower in Asia's economic structure than in those of Europe or the United States; however, as discussed in Chapter 1, income levels have risen in Asian countries such as China and India, backed by high economic growth. These changes have manifested in the appearance of rich and middle-income classes, the gradual revitalization of the consumer market, and changes toward modernization and unification that can be seen in their consumption structures. These changes will be verified hereafter by the 2003 and 2006 studies called the "Asian Barometer"[201] (Asia's largest opinion survey), as well as the trends, etc. of consumption goods trading over Asia.

○ Modernization of consumption in Asia

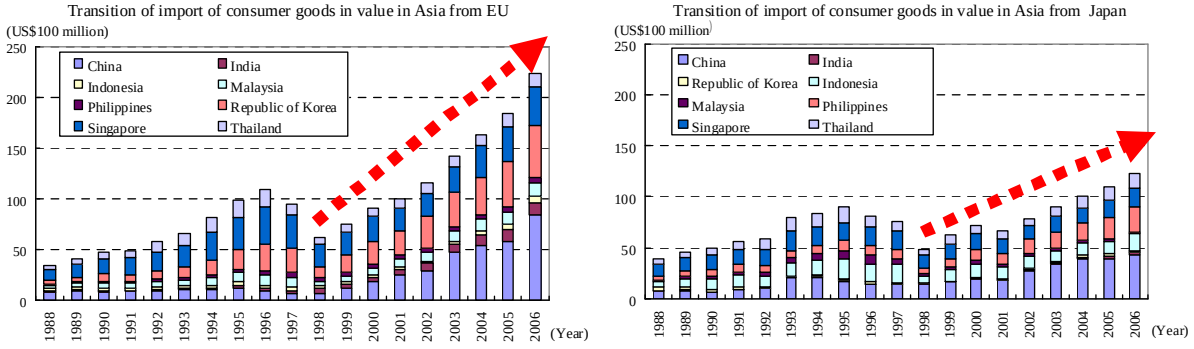
The increasing numbers of Asians who have reached a certain income level—such as the rich and the middle-income class—are believed to be increasing the sales-volumes of high-priced goods produced in developed countries[202]. Accordingly, changes in Asia's consumption of goods imported from developed countries (Japan, United States, EU) show that imports from Japan and from the EU have continuously increased since 1998, since the Asian currency crisis; in particular, the increase of

[201] A public opinion research project led by Takashi Inoguchi, professor of Chuo University, with the aid of a science and technology subsidy from the Ministry of Education, Culture, Sports, Science and Technology (science and technology number 17002002). For 2006, over 1,000 samples from each of China, Hong Kong, Japan, Republic of Korea, Singapore, Taiwan, and Vietnam were collected. For 2003, over 800 samples were collected from each of Japan, Republic of Korea, China, Thailand, Malaysia, Vietnam, Myanmar, India, Sri Lanka, and Uzbekistan. Subjects are all 20- to 69-year-old adults in each country.

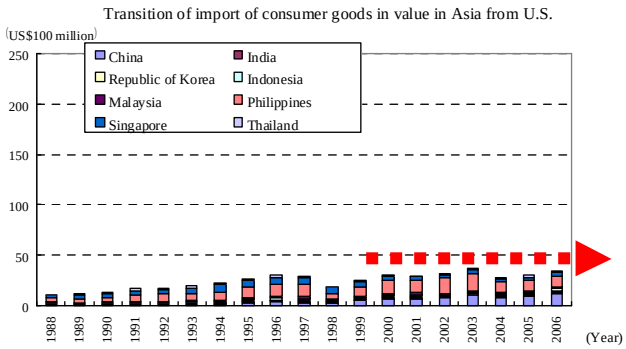
[202] Asian Barometer 2003 surveys purchases of food A ("purchases of better-quality goods, even if the price is higher") or B ("purchases of goods that are less expensive"). As a result, households that replied that they were closer to A were 42.6%, and households that answered that they are comparatively closer to A were 24%, totaling 66.6%. We therefore see a sophisticated consumer profile that seek not low price, but high quality.

imports from the EU and Japan has been remarkable (see Figure 2-1-65). Such increases in Asia's imports from developed countries indicate that Asia's consumption structure is catching up with those of developed countries[203].

Figure 2-1-65 Transition of import in value in Asia from Japan, U.S. and EU



Source: Research Institute of Economy, Trade and Industry, "RIETI-TID 2007"



Source: Research Institute of Economy, Trade and Industry, RIETI.

○ Unification of the Asian consumption market

According to Asian Barometer 2006, self-identification as an Asian is high in Asian countries, except Japan; it is especially high in Southeast Asia[204]. The trend of nuclear families in connection

[203] Furthermore, according to Asian Barometer 2006, it has become clear that in Asian countries, more persons consider the development of technology as more important than traditional authority. The percentages of persons regarding the development of technology as important and those regarding traditional authority as important were, respectively: in Vietnam, 93.4% and 42.2%; Taiwan, 77.5% and 52.4%; Singapore, 68.0% and 47.9%; Republic of Korea, 81.8% and 57.2%; Japan, 67.2% and 13.6%; Hong Kong, 54.2% and 33.1%; and China, 88.9% and 32.5%.

[204] According to Asian Barometer 2006, to questions regarding categorization in terms of multi-national groups (e.g., "Asian," "race," "language," "religion," etc.), 86.9% of the Vietnamese, 62.2% of the Singaporeans, 58.9% of the Taiwanese, 43.5% of the Chinese, 41.5% of the Hong Kong, 31.5% of the Republic of Koreans, and 19.6% of the Japanese responded that they were "Asian," becoming the largest selection in all countries except Japan.

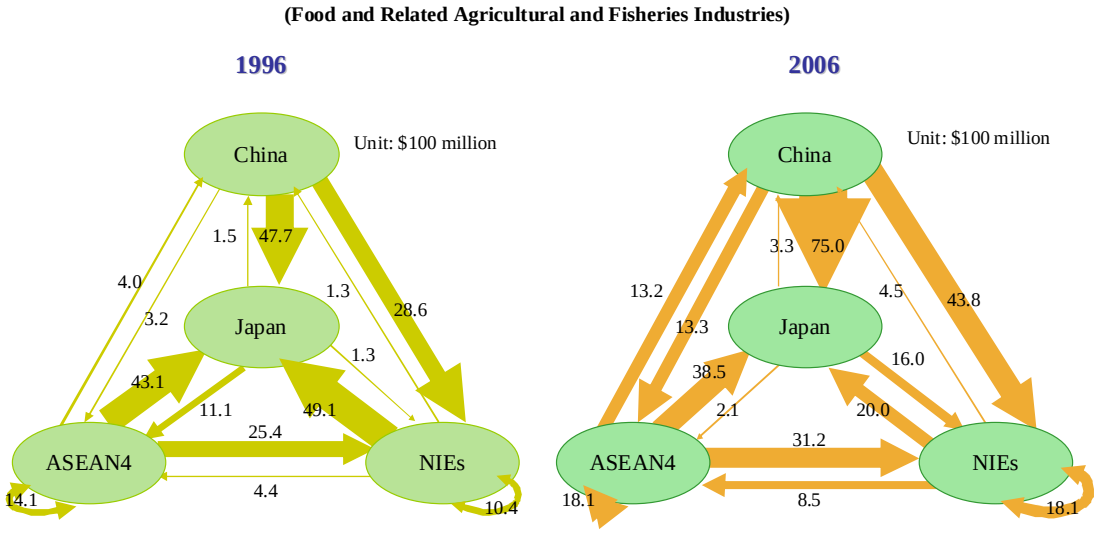
with urbanization is also common[205]. Furthermore, the 2003 research showed that middle-class self-identification is high[206].

Under such circumstances, trade in some consumption goods is increasing within the Asian region. First of all, as shown in Figure 2-1-65, the increase of exports in consumption goods from Japan since the beginning of the century has been 13.2% per annum—not quite equal to that of the EU, but growing at a rate far exceeding the 3.4% increase in exports from the United States.

Furthermore, the intraregional trade in food and agricultural goods[207]—which are thought to be imported only when incomes reach a certain level—show that in 1996, exports within the region were concentrated to Japan. In 2006, however, the destinations for exports were decentralized, demonstrating the proliferation of mutual trade within the region (see Figure 2-1-66). The same trends can be seen in transport machinery, which comprise consumer durables.

Closer relations in consumption goods trade within the Asian region signify an increasing preference for the same consumption goods; they also imply that the consumption structure in the Asian region is about to unify.

Figure 2-1-66 Trend of Trades in Consumption Goods Within Asia
(Food, Agricultural and Fisheries Products, Transportation Machinery)



Source: Research Institute of Economy, Trade and Industry, IAA , *RIETI-TID2007*.

[205] A confirmation of family composition in Asian Barometer 2006 resulted in more than 60% of each country becoming nuclear countries (i.e., husband and wife and their unmarried child, husband and wife only, or father or mother and his or her unmarried child). The percentage of nuclear families were 79.9% in Republic of Korea, 75.5% in Hong Kong, 73.2% in Vietnam, 71.7% in Taiwan, 70.7% in Singapore, 67.1% in Japan (single households, 10.5%), and 64.2% in China.

[206] Asian Barometer 2003 confirmed through its questions that around 70% of its respondents consider themselves middle-class.

[207] White Paper on International Trade and Economy 2004, Chapter 3-4 (Ministry of Economy, Trade and Industry (2004)) examines the relationship between the import of oranges, pears, peaches, and nectarines with the per-capita GDP, and confirms that the import of these fruits begin when the per-capita GDP reaches US$3,000–5,000.

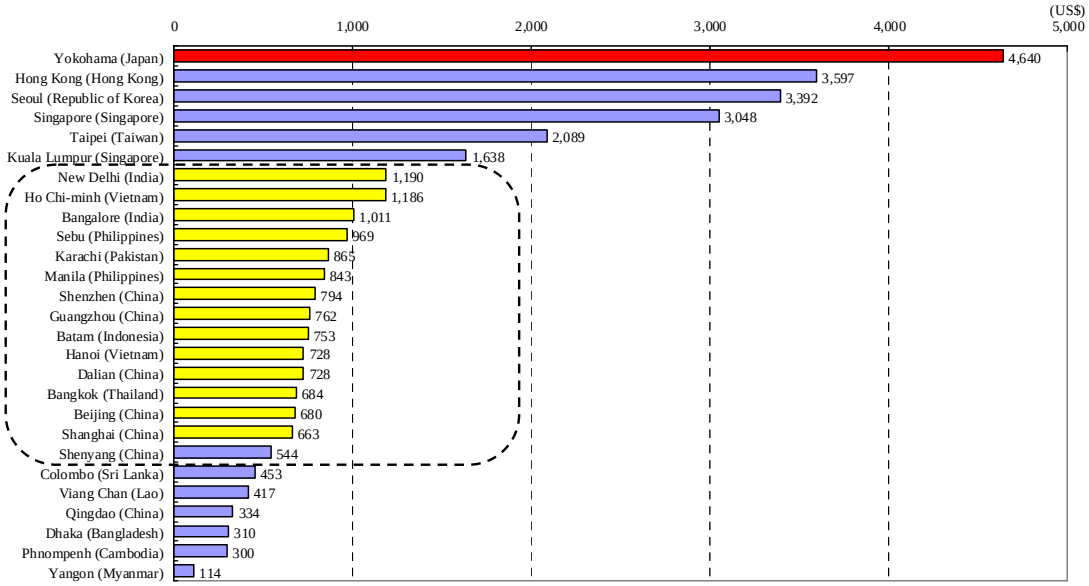
○ Unification of the Asian consumption market and background

Various factors, including the cultural commonality discussed by the Ministry of Economy, Trade and Industry (2005)[208], support the unification of the Asian market, but here, we offer discussions that focus on (a) the convergence of inter-city income levels, (b) the uniformity of consumption structure, (c) the spread of the Internet, and (d) the growing popularity of credit cards.

(a) Convergence of inter-city income levels

The economic disparity among Asian countries is wide[209]; however, the economic disparity is narrow when limited to a certain income level in urban areas. Actually, a comparison of inter-city middle-management wages (assumed to be middle-class to upper-class levels) in the major cities of Asian countries shows that cities in countries with low nationwide income standards (such as India or Vietnam (i.e., New Delhi, Ho Chi-Minh)) rank highly, and many cities concentrate in the relatively narrow income level of US$600–1,200 per month (see Figure 2-1-67).

Figure 2-1-67 Wage Standards of Middle Management Levels in Major Asian Cities (Monthly Salary) (2006)



Source: JETRO, "TOUSHI KOSUTO CHOUSA"

In response to such increases in income levels[210], the per-capita GDP values of various Asian urban areas are growing, establishing a class that can be referred to as an "urban middle-income class"[211] (see Figure 2-1-68). As discussed in Chapter 1, Asia's urbanization rate is currently low, but

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[208] Ministry of Economy, Trade and Industry (2005), *White Paper on International Trade and Economy 2005*.

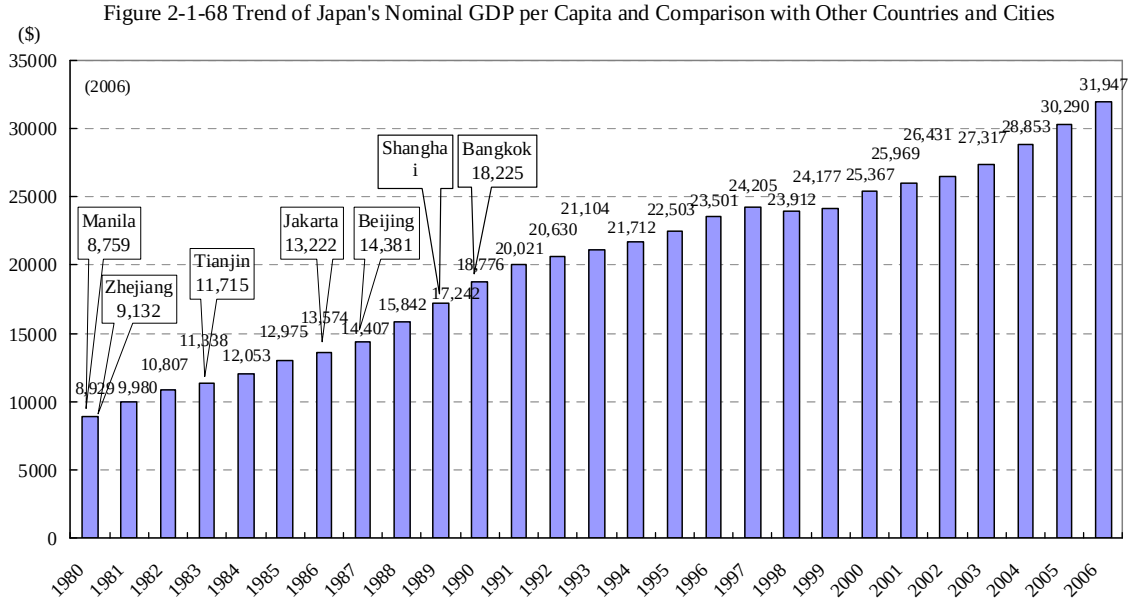
[209] The per-capita GDPs of Asian countries vary widely, and the disparity between Japan (the highest value) and Cambodia (the lowest value) was 92 times (in comparison, the comparable EU gap is 24 times, and that in NAFTA is six times).

[210] According to the aforementioned EIU report (2008), the salaries of financial and IT professionals have increased in recent years at an average rate of 16% in China and India and 14.5% in Southeast Asia.

[211] The Council on East Asian Community (2005), "The State of the Concept of East Asian Community and Japan's Strategic Response thereto" refers to an "urban middle-income class" as ""wealthy people" having "common factors" in terms of income, educational background, family, hobby, business

is expected to dramatically increase in the future. The progress of urbanization will lead to a population concentration in urban areas and an increase in productivity; concomitantly, as urbanization progresses, the urban middle-income class will further increase in size.

Figure 2-1-68 Trend of Japan's Nominal GDP per Capita and Comparison with Other Countries and Cities



Note: Real GDP used for Jakarta. Manila's population as of 2007.
Source: WDI, CEIC database; China National Statistics Bureau, China Statistics Almanac.

(b) Uniformity of consumer spending structure

Asia's consumer spending structure, through time, has shown a common tendency to increase in the terms of spending on durables; in particular, ASEAN4, possessing similar income levels, shows a trend of a converging consumer-spending structure in recent years (see Figure 2-1-69). Such uniformity of consumer spending is thought to be contributing to the unification of the market.

(c) Spread of the Internet

In recent years, backed by the global trend of IT progress, the penetration rate of personal computers and the Internet is rapidly growing, not only in developed countries but also in emerging countries. Changes to the Internet penetration rate in Asian countries show that the Internet is steadily proliferating throughout China, India, Thailand, Vietnam, and the Philippines, whereas it was virtually unused in those countries in 1999 (see Figure 2-1-70). With the spread of the Internet, information around the world can be easily accessed; opportunities now abound for accessing foreign product information and making online purchases, both of which have greatly affected household consumption activities[212].

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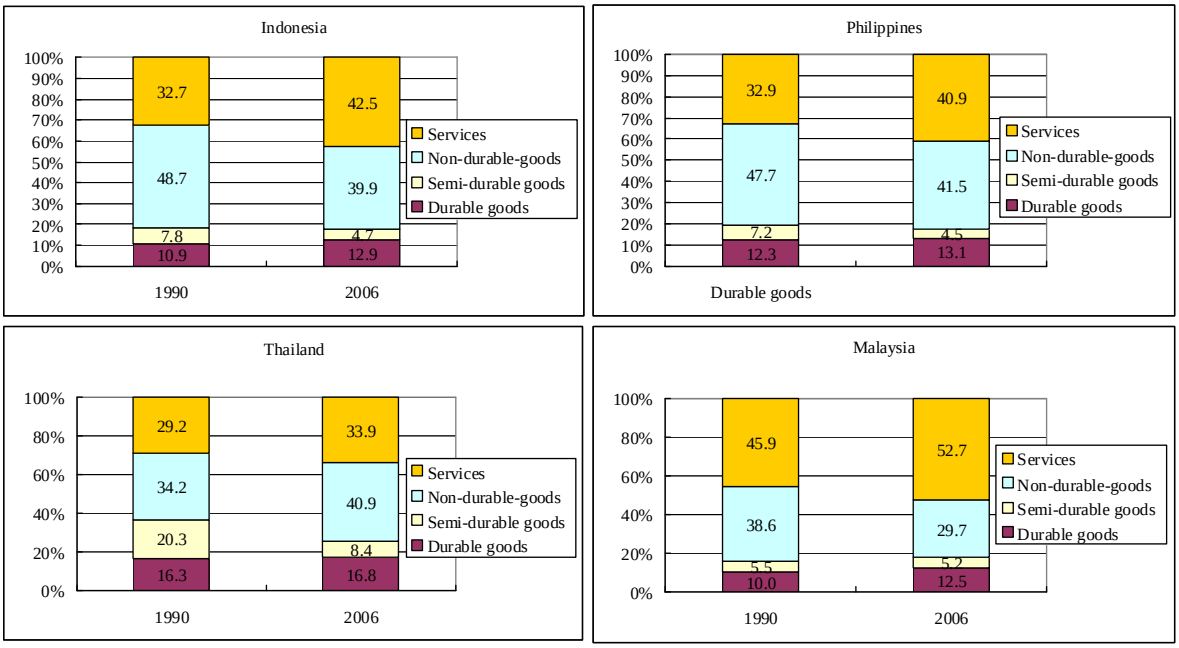
internationality, overseas trips, etc., which transcend country or region; they tend also to have lives and self-identification dramatically different from those of their parents generation."

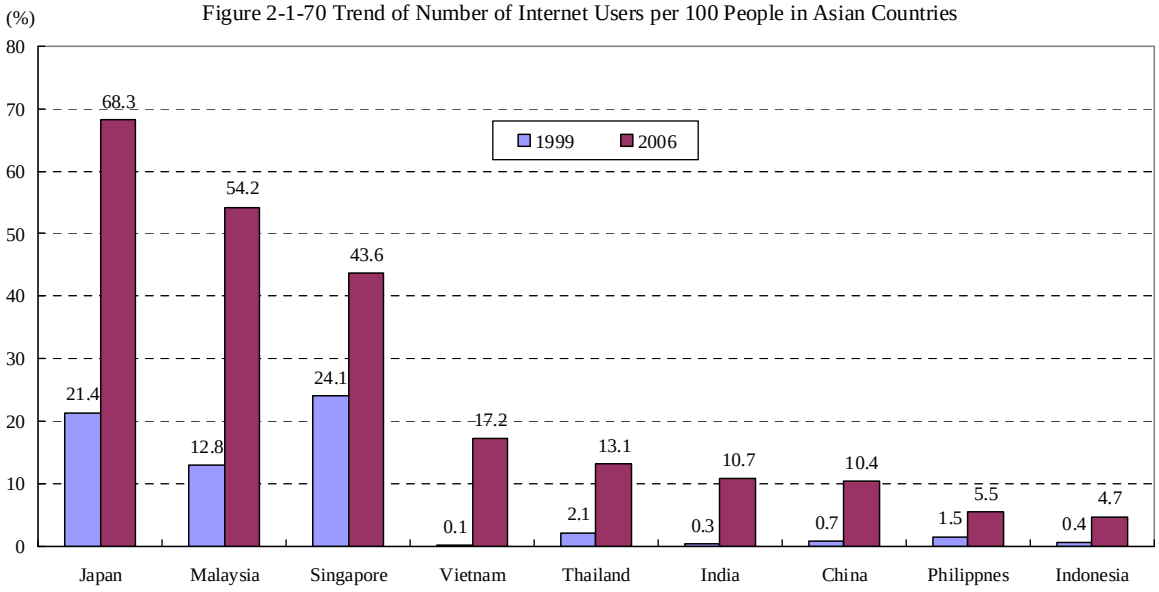
[212] We will introduce Asia's electronic distribution market in Section 3 of this chapter.

Figure 2-1-69 Trend of ASEAN4's Consumption Expenditure Structure



Source: Euro Monitor "World Consumer Spending 2007/2008"

Figure 2-1-70 Trend of Number of Internet Users per 100 People in Asian Countries



Source: ITU website.

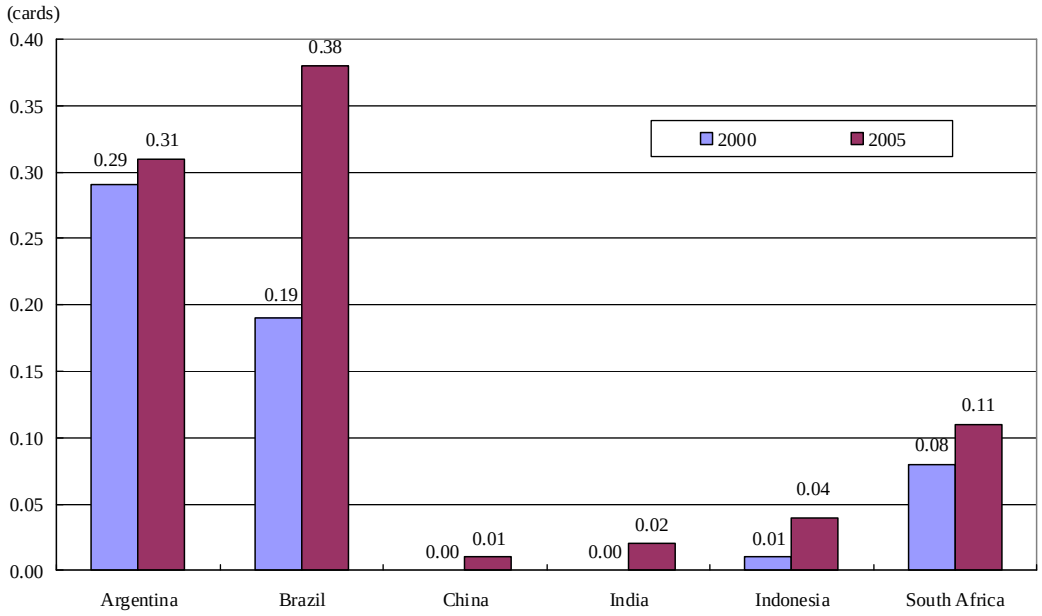
(d) Growing popularity of credit cards

In recent years, foreign capital and other financial institutions have been actively expanding local retail business to accommodate the Asian consumption class, and the number of issued credit cards and consumer loan grants have rapidly increased (see Figure 2-1-71). Such retail financial services

have enabled consumers to spend in excess of their disposable income, enhancing their local purchasing power[213].

As discussed in Chapter 1, improvements to the financial system greatly affect big-ticket spending in households, including housing investments. Actually, since the Asian currency/financial crisis, car sales, which have depended on the provision of car loans, have been greatly affected[214]. In the meantime, the know-how of Japanese financial institutions in structuring a financial system that leads to an increase in income—from high economic growth to the expansion of consumer spending—is expected to be exploited for the improvement of retail finance in Asia[215].

Figure 2-1-71 Trend of Number of Credit Cards in Distribution Over Total Population



Source:JETRO (2008), *JETRO Censor* , January 2008.
Original source: Euromonitor International

(Accelerated effort toward modernization and unification of the Asian consumer market)

As for signs of the modernization and unification of the Asian consumer market, their realization is expected to accelerate for Asia's independent development, and Japan is also expected to contribute, putting its experience to use.

First of all, it is hoped that demands will be satisfied through the provision of goods and services that meet local needs, and that a system for facilitating the consumption thereof will be improved, including the improvement of retail finance. To begin with, the expansion of the Asian consumer market will be realized through rapid changes to the living environment, while improvements to income will accompany rapid economic growth. It is possible that the know-how based on the

[213] According to research by GRIS In fact, the use of car loans has reached over 80% in India. As we can see from this example, if there were no credit or loans, we can assume that the consumption of luxury goods in emerging countries would be significantly lower.
[214] Morisawa, K. "ASEAN KAKKOKU KEIZAI TO JIDOUSHA SANGYOU SHIJOU NO HATTEN" (JAMAGAZINE, March 2007 edition).
[215] Ohgaki, H. "SUBPRIME MONDAI -KOUZU TO DAKAISAKU-GE" ("KEIZAI KYOUSHITSU," January 22, 2008, *Nihon Keizai Shimbun*).

experience of responding to the rapid increase of the post-war “one-hundred-million population” market of Japan’s retail and consumer goods industry can be utilized; active development is expected to offer both “grounds” and “opportunities” for the Japanese market, which has been shrinking due to its falling birthrate and aging population.

Furthermore, there are a few reasons as to why income improvement have not led to consumption in China and other Asian countries, including disparities or lack of development in the social security system, including medical expenses and pensions. It would be effective to learn from the experience of the Japanese social system.

Under such circumstances, it is anticipated that Asia will become one large consumer market possessing a certain common intention: becoming a new mother market for the Japanese industry. There, like the commitment to quality of Japanese customers fostered the strength of the Japanese industry, it is expected that Asia’s intentions *vis-à-vis* both quality and price as one large consumer market will cultivate strengths in terms of developing an emerging market for the Japanese industry.

(Realization of the pan-Asian market)

Such sophistication within the demand structure (due to the modernization and unification of the consumer market within the Asian region) will, together with the sophistication of the supply side (due to the promotion of the previously mentioned “Asian innovation”), promote further development of the Asian economic bloc, or the realization of the “pan-Asian market.”

As previously discussed, to realize the “pan-Asian market,” it will be necessary to deepen the back-flow of “goods” within the Asian production network, focus on intermediate goods and capital goods, and promote the back-flow of management resources across Asia, including people, money, knowledge and skills. It is also expected that by deepening the global value chain that has formed across Asia and been led by Japanese industry, a system will be created by which economies be structured, thereby leading to the expansion of new spending or the realization of intellectual creation.