### Japan-South Korea Economic Relations Grow Stronger in a Globalized Environment

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#### **Summary**

- 1. South Korea has made considerable progress toward economic globalization since the start of the 21st century. Companies have accelerated their global business expansion through exporting and overseas production activities, while the government has provided additional impetus for this trend by actively expanding its network of free trade agreements (FTAs). This process has brought changes in Japan's positioning from the viewpoint of South Korea, and South Korea's positioning from the viewpoint of Japan.
- 2. South Korea's growing reliance on exports to emerging countries, including China, has been accompanied by a decline in its reliance on exports to Japan, which fell from 11.9% in 2000 to 6.0% in 2010. South Korea's reliance on imports from Japan has also declined, although it was still above 15% in 2009 and 2010, indicating that Japan is still an important counterparty for imports.
- 3. South Korea has become an increasingly significant export market for Japan, as evidenced by the fact that Japan's reliance on exports to South Korea rose from 6.4% in 2000 to 8.1% in 2010. In addition to increased exports of consumer goods, there has also been conspicuous growth in exports of production goods. In contrast, South Korean manufactured goods have not made significant inroads into Japanese markets until recently, with the result that Japan's reliance on imports from South Korea fell from 4.9% to 4.1% over the same period.
- 4. South Korea's trade deficit with Japan expanded during the 2000s. This deficit is an old and a new problem. It is a new problem because of its role in the suspension of inter-governmental negotiations over a Japan-South Korea economic partnership agreement. In the past, South Korea has sought to reduce the deficit by restricting imports from Japan. More recently it has shifted to strategies designed to achieve an expanding balance, including ① support for the development of technology for domestic manufacturing of parts and raw materials, ② the promotion of exporting to Japan by South Korean companies, and ③ efforts to attract Japanese companies.
- 5. Business sector initiatives and government support brought growth in domestic production of parts and raw materials during the 2000s. However, items that cannot be manufactured in South Korea, such as high-performance raw materials and precision equipment, are still imported from Japan. This is the main reason for the trade deficit with Japan. In recent years, the South Korean government has responded to this problem by establishing industrial parks for the manufacture of parts and raw materials in an effort to attract manufacturers of these products.
- 6. There have been unprecedented developments in this situation recently. First, South Korean products, notably smartphones, have started to penetrate Japanese markets. Second, as the South Korean government hoped, there has been an increase in investment in the raw materials sector (including planned investment) by Japanese companies, and there are plans for investments relating to carbon fiber and organic EL panels.
- 7. This growth in investment in South Korea is explained by the growing importance of South Korean companies as recipients of shipments. The establishment of local production operations brings a number of benefits. First, information can be obtained from recipients of shipments, and it becomes easier to communicate with them. Second, there are increased opportunities for joint development. Third, cost increases resulting from the rising value of the yen can be avoided, and the FTA is also expected to bring benefits.
- 8. The economic relationship between Japan and South Korea is expected to become even closer with the signing of the EPA. It is hoped that the Japanese government will make positive proposals concerning the improvement of access to agricultural and fisheries markets, which has become a barrier to the resumption of negotiations.

Despite the steady expansion of economic links between Japan and South Korea, the relationship has attracted little interest until the past few years. With interest in China intensifying in step with the rapid expansion of the economic relationship, interest in South Korea has tended to wane. This is explained in part by the suspension of negotiations between the Japanese and South Korean government toward the establishment of an EPA since November 2004.

However, interest in the South Korean economy and the relationship between South Korea and Japan has grown in recent years. One reason for this is the fact that Japan has come under pressure to keep pace with accelerating globalization efforts by South Korean businesses and the South Korean government. This is symbolized in the perception that South Korea has taken the lead in globalization. Here we can discover hints of the view that Japan must move as quickly as possible to catch up with South Korea. The advances made in global markets by South Korea companies, and the impetus provided for this process by the determined efforts of the South Korean government to sign more free trade agreements (FTAs) have created a sense of alarm in the Japanese business world, and business leaders have urged the government to enter into negotiations over the Trans-Pacific Partnership (TPP) and resume inter-governmental EPA negotiations with South Korea. On November 11, 2011, Prime Minister Noda announced that Japan would enter into negotiations with the countries concerned in preparation for participation in the TPP.

Another reason is the business opportunities that are being created for Japanese and South Korean companies by market dynamism. Evidence of these opportunities can be found in various trends, including expanding sales of South Korean smartphones in Japan, and aggressive investment in the South Korean raw material sector by Japanese companies.

In this article we will analyze these changes in the economic relationship between Japan and South Korea. Part 1 identifies the changes that have occurred in the positioning of Japan and South Korea in the context of economic globalization. Part 2 analyzes the factors that have caused South Korea's trade deficit with Japan to expand since the 2000s. Part 3 examines new and unprecedented trends that have emerged in the Japanese and South Korean economies in recent times. Part 4 looks at the challenges that must be overcome in order to achieve an expanding balance between the Japanese and South Korea economies.

### 1. Change in the Positioning of Japan and South Korea

The following analysis examines changes in the positioning of Japan for South Korea and South Korea for Japan in the context of economic globalization.

### (1) Increasing Reliance on Emerging Countries

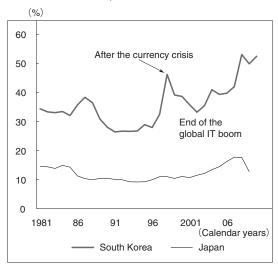
South Korean companies have accelerated their global business expansion through exporting and overseas production. In particular, they have stepped up their efforts in emerging markets, which offer the potential for demand growth<sup>(1)</sup>. Globalization has been driven by a combination of factors, including a small domestic market based on a GDP equivalent to about one-fifth of Japan's, a rapid slump in domestic demand after the currency crisis, and the prospect of further market shrinkage in the future because of a rapidly falling birthrate and demographic aging. In addition to the reduced value of the yen, the advances made by South Korean companies have also been aided by factors that include quality and design improvements, the development of products that match needs in overseas markets, and the systematic development of global human resources<sup>(2)</sup>.

One indicator of globalization is the level of exports as a percentage of GDP. South Korea's ratio rose sharply after the 1997 currency crisis and then declined for a period with the end of the global IT boom. However, it has been rising again since 2002 (Fig. 1). By 2010, the ratio was 20 percentage points above the 2002 level at 52.4%. The ratio for Japan rose moderately in the early 2000s, but still remains at just above 10%. Clearly South

Korea has moved ahead of Japan in terms of internationalization.

In recent years, the South Korean government has also sought to provide additional impetus for global expansion by South Korean companies by actively expanding its network of free trade agreements (FTAs). The South Korean economy is heavily reliant on exports, and export expansion is therefore the most important priority. By devel-

Fig. 1 Ratio of Exports (Goods and Services) to GDP



Source: World Bank, World Development Indicators

oping an FTA network ahead of other countries, South Korea can be expected to gain a number of benefits, including (1) trade advantages, (2) increased impetus for global expansion by South Korea companies, and (3) the development of international logistics and financial systems as a consequences of the first two benefits. On July 1, 2011, an FTA with the European Union (EU) took effect provisionally. When the FTA with the United States comes into effect, South Korea will have entered the FTA era in earnest.

Progress toward globalization has brought major changes in South Korea's export mix, as well as an increase in its reliance on emerging countries, including China, and a decline in its reliance on advanced countries. Fig. 2 traces changes in the regional export mix since the 1990s. The shares of North America (basically the United States), Europe and Japan have followed a downward trend (except for a temporary rise in 1997 and 1998 under the impact of the 1997 Asian currency crisis), while those of other markets, including Asia, have risen. The serious decline in economic performance in Europe and North America since the Lehman effect has had a particularly significant impact, with the export shares of Europe and North America falling to 26.5% in 2010 and 24.6% in 2011 (up to November).

(Year) (%) 100 1991 93 95 97 2001 05 09 Middle East Europe China Other Asia ☐ Central/South America ☐ Africa ☒ Oceania Others

Fig. 2 Regional and National Shares of South Korea's Exports

Notes: Up to November for 2011 Source: CEIC data base

The drop in the percentage of exports destined for the United States has been particularly conspicuous with a decline from 25.8% in 1991 to 10.0% in 2011. This is attributable to trade friction and the revaluation of the won in the second half of the 1980s, and to an accelerated shift to local production in the U.S. and Asia by South Korean companies in response to the establishment of the North American Free Trade Agreement (NAFTA), which took effect in 1994, and other factors. The shift of production to Asia began with the establishment of production operations by ASEAN countries, mainly by companies in labor-intensive industries, but gradually the focus turned toward China. The shift of production of final goods induced exports of production goods, such as raw materials, parts and machinery. As income levels in China rose, there was also a gradual increase in exports of consumer goods. Exports to China increased by over 30% year on year between 2002 and 2004, and in 2003 China overtook the United States to become South Korea's biggest export market.

South Korea's reliance on exports to China increased further after the Lehman shock. This is because exports to China recovered ahead of those to other markets after China implemented measures to boost domestic demand. China's exports began to plummet in the fall of 2008, and in the January-March quarter of 2009 the real GDP growth rate dropped to 6.1%. Outbreaks of corporate bankruptcies and layoffs occurred in coastal regions, and unemployment rose among migrant workers from rural areas. Concerned that this situation would lead to social unrest, the Chinese government changed its macro-level policy target for the prevention of economic overheating to the maintenance of stable but relatively fast economic development. Exports to China gradually recovered after China took steps to secure growth, including increased infrastructure investment and measures to stimulate consumer spending. The Jiadian Xiaxiang (home appliances to the countryside) project led to increased production of LCD televisions in China. This in turn resulted in increased exports of LCD panels, semiconductors, electronic parts and other items from South Korea. As a result, South Korea's reliance on exports to China set a new record of 25.1% in 2010.

This rapid recovery has been followed by a reactionary slowdown in exports to China. Exports to other emerging countries, including Brazil, Russia and India, have meanwhile continued to show high growth, with the result that South Korea's reliance on exports to China in 2011 is expected to be lower year on year.

#### (2) Japan's Shrinking Presence

As described later, the structure of trade between Japan and South Korea is characterized by a chronic deficit on the South Korean side. Despite this, the relationship has continued to expand steadily. According to South Korean statistics, South Korea's exports to Japan in 2010 were 2.2 times higher than the 1990 figure, while imports from Japan were 3.5 times higher (Fig. 3).

Yet we also need to be aware that Japan's importance as a trading partner for South Korea has waned over the past 10 years because of the growing Chinese presence, accelerating growth in emerging countries, and other factors. Evidence of a significant decline in Japan's presence as an export market can be found first of all in the fact that South Korea's reliance on exports to Japan fell from 11.9% in 2000 to 6.0% in 2010 (Table 1). This is one of the reasons why South Korea was not especially eager to sign an EPA with Japan.

Looking at trends in South Korea's exports to Japan since 2001, we find that exports to Japan have grown at a slower pace than total exports in every year except 2010 and 2011 (Fig. 4). In addition to economic stagnation in Japan, this pattern also reflects the inability of South Korean companies to increase their market shares in Japan. Even Samsung Electronics and LG Electronics, which have become dominant in the world's electrical appliance markets, have repeatedly advanced and retreated in the Japanese market. Hyundai Motor entered the Japanese market in 2001, but sales failed to measure up to expectations, and in November 2009 it announced its withdrawal from the passenger car market.

There are several reasons for the failure of

Fig. 3 South Korea's Exports to and Imports from Japan

Source: Bank of Korea, Economic Statistics System

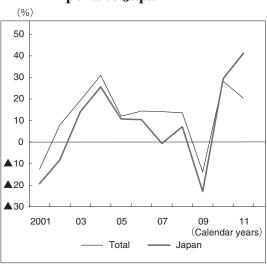
Table 1 Shares of Key Countries in South Korea's Exports and Imports (%)

Vaar	Exports			Imports		
Year	U.S.A.	Japan	China	U.S.A.	Japan	China
1991	25.8	17.2	1.4	23.2	25.9	4.2
96	16.7	12.2	8.8	22.2	20.9	5.7
2000	21.8	11.9	10.7	18.2	19.8	8.0
01	20.7	11.0	12.1	15.9	18.9	9.4
02	20.2	9.3	14.6	15.1	19.6	11.4
03	17.7	8.9	18.1	13.9	20.3	12.3
04	16.9	8.5	19.6	12.8	20.6	13.2
05	14.5	8.4	21.8	11.7	18.5	14.8
06	13.3	8.2	21.3	10.9	16.8	15.7
07	12.3	7.1	22.1	10.4	15.8	17.7
08	11.0	6.7	21.7	8.8	14.0	17.7
09	10.4	6.0	23.9	9.0	15.3	16.8
10	10.7	6.0	25.1	9.5	15.1	16.8
11	10.0	7.0	24.1	8.6	13.1	16.5

Notes: Up to November for 2011 Source: Bank of Korea, *Economic Statistics System* 

South Korean products to gain larger shares of Japanese markets. First, products bearing powerful European and American brands have a competitive advantage in high-end markets, while competitively priced Chinese products have the edge in markets for low- and medium-priced goods. Second, many products manufactured by Japanese companies in Asia are imported into Japan, and these tend to beat South Korean products in terms of both price and quality. Third, South Korean products are still affected by a "cheap and nasty"

Fig. 4 Growth Rate of South Korean Exports to Japan



Notes: Up to November for 2011 Source: Bank of Korea, *Economic Statistics System* 

image, which remains prevalent among Japanese above a certain age<sup>(3)</sup>. In addition, because Japanese markets are so difficult to penetrate, South Korean companies have concentrated more of their management resources on the development of markets in Europe, North America and the emerging countries.

This decline in Japan's importance to South Korea is also apparent from import statistics. Until 2006, Japan was South Korea's biggest source of imports, but in 2007 this position was taken by

China (Table 1). This reflects growth in imports of both consumer goods and production goods, especially general-purpose items. According to Kim [2010], trends in production inducement coefficients in the inter-industry relations table for Asia show that in the 1990s South Korea's main source of production goods has shifted from Japan and the United States to China. (However, imports from China include goods produced by foreignowned companies, including Korean- and Japanese-owned companies.)

After falling from 19.8% in 2000 to 14.0% in 2008, South Korea's reliance on imports from Japan recovered moderately to 15.3% in 2009 and remained above the 15% level in 2010. (The ratio fell in 2011 due to the effects of Great East Japan Earthquake.) This is attributable to the fact that South Korea imports large quantities of the sophisticated raw materials, key parts and production equipment needed for export production from Japan. (This aspect will be examined in Part 2.)

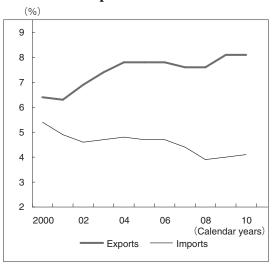
If Japan can maintain its role as a supplier of production goods, South Korea's reliance on imports from Japan is unlikely to decline significantly. However, there are other factors that could lead to a decline in the future. First, South Korea is strengthening its parts and raw material industries. Second, South Korea companies have diversified their sources since the Great East Japan Earthquake. Third, the establishment of an FTA with the EU could result in a shift to the use of product from Europe, especially Germany.

# (3) South Korea's Growing Attractiveness as an Export Market for Japan

How have South Korea's presence and positioning changed from the Japanese perspective? One extremely interesting change is an increase in Japan's reliance on exports to South Korea, from 6.4% in 2000 to 8.1% in 2010 (Fig. 5). This contrasts with Japan's waning presence as an export market for South Korea.

One reason for this is an increase in exports of production goods to South Korea. Production growth driven by the accelerating global expansion of South Korean companies has dramatically

Fig. 5 Japan's Reliance on Exports to and Imports from South Korea

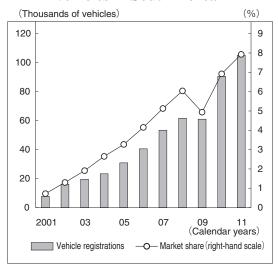


Source: Ministry of Finance, Trade Statistics of Japan

increased the dependence of Japanese companies on deliveries to South Korean companies. This is especially true of such items as chemical products, production equipment and inspection systems. According to an article in the *Asahi Shinbun*, South Korea accounts for around onehalf of the semiconductor- and LCD panel-related sales of the chemical manufacturer JSR Corporation. (*Asahi Shinbun*, August 10, 2010 edition, *Kankoku seicho, uruou Nippon Buhin/Sozai/Sochi Sangyo* [Growth in South Korea Brings Profits for Japanese Manufacturers of Parts, Raw Materials and Equipment.])

Another factor is South Korea's increasing attractiveness as a market for consumer goods, as evidenced by the growth of motor vehicle exports to South Korea. Reasons for this trend include the removal of the de facto restrictions imposed on Japanese imports until the late 1990s, and the reduction of tariffs. For example, while many people assume that access to the South Korean motor vehicle market is still difficult, in fact there has been a steady rise in the market share of imported vehicles, which reached 8% in 2011 (Fig. 6). Vehicles from Germany, Japan and elsewhere have gained large market shares. Nor is this trend limited to luxury cars. Recently compact vehicles, such as the Nissan Cube, have also become popular.

Fig. 6 New Registrations and Market Share of Imported Motor Vehicles in South Korea



Source: Korea Automobile Importers and Distributors Association

Reliance on imports from South Korea has meanwhile declined, from 4.9% in 2001 to 4.1% in 2010. Reasons for this include a decline in procurement from South Korea because of a shift to overseas production by Japanese companies, and a slump in imports of consumer goods. While the growth of Japanese exports to South Korea accelerated in the 2000s, imports from South Korea slowed, causing South Korea's trade deficit with Japan to expand. This problem will be analyzed in the next part of this article.

# 2. Expansion of Trade Deficit with Japan in the 2000s

A chronic deficit on the South Korean side has been a feature of the trading relationship between Japan and South Korea. The following analysis focuses on the reasons why this deficit expanded further in the 2000s.

#### (1) Expanding Trade Deficit with Japan

South Korea's trade deficit with Japan is both an old and new problem. It is old in the sense that the deficit has been a major point of contention between the two countries for many years, and new in the sense that the deficit played a role in the suspension of inter-governmental negotiations in preparation for the signing of an economic partnership between Japan and South Korea.

In the past, South Korea has sought to reduce the deficit by imposing restrictions on imports from Japan. In 1978 it introduced the Import Diversification Program, which limited imports of specified items from countries with which South Korea had the biggest trade deficits. There can be no doubt that this system effectively imposed restrictions on imports from Japan. It became virtually impossible to import specified items, for which it was necessary to apply for a permit from the Ministry of Commerce Industry and Energy through an association of trade agencies made up of South Korean trading companies and other organizations. Designated imports from Japan included motor vehicles, color televisions, home video cameras and machine tools (machining centers and NC lathes).

By the 1990s, steps were being taken to reduce the trade deficit between Japan and South Korea. At a summit meeting in June 1992, the leaders of Japan and South Korea agreed on a "concrete plan to correct the trade imbalance," and each country established an Industrial Technology Cooperation Foundation<sup>(4)</sup>.

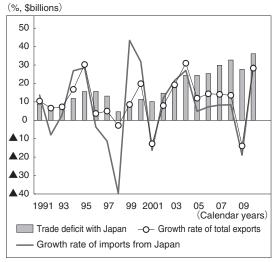
In the 1990s, South Korea had to ease its restrictions in preparation for OECD membership, which it achieved in 1996. The number of items specified under the Import Diversification Program was gradually reduced, and the program was fully abolished at the end of June 1999. This was followed by growth in imports of Japanese products, including video cameras with LCD monitors, large-screen televisions, motor vehicles and machine tools.

South Korea has since changed the direction of its efforts to reduce its deficit in trade with Japan. Instead of import restrictions, it is now working to achieve an expanding balance through strategies that include ① support for the development of technology for parts and raw materials industries in South Korea, ② the promotion of exports to Japan by South Korean companies, and ③ measures to attract Japanese companies and encourage them

to form partnerships with South Korean companies. South Korea stepped up its efforts to develop companies specializing in fields in which it imports substantial quantities of goods from Japan, such as parts and raw materials, under a 2001 law providing for special measures for this purpose. In 2005, it designated 10 major strategic parts, including LCDs and organic EL devices. Under the administration of President Lee Myung-bak, South Korea has worked particularly hard to attract Japanese companies in parts and raw material industries in which South Korea imports substantial quantities of goods from Japan, and several industrial parks have been established for manufacturers in these areas.

The development of LCD panel manufacturing in South Korea has benefited from these initiatives. Despite this, the overall deficit in trade with Japan has not shrunk. In the 1990s, whenever the growth of South Korea's exports slowed, imports from Japan also slowed conspicuously. In the 2000s, however, the deficit has expanded almost consistently, in part because of sustained export growth (expect in 2009 in the wake of Lehman shock). In 2010 it reached an all-time high of \$36.1 billion (Fig. 7).

Fig. 7 South Korea's Trade Deficit with Japan



Source: Bank of Korea. Economic Statistics System

# (2) Expansion of Japanese Raw Material Exports

We have already looked briefly at the reasons for the expansion of South Korea's trade deficit with Japan in the 2000s. The deficit results from the fact that South Korea imports large quantities of production goods, which it needs for export production, from Japan.

The evolution of manufacturing in such areas as LCD televisions, semiconductors and electronic equipment has repeatedly followed the same pattern. First, new products are developed and mass-produced in Japan. Second, South Korea introduces the technology and begins to catch up with Japan. Third, South Korea becomes the world's mass-production base through large-scale investment. Fourth, Japanese companies shift their production operations to Asia or source products from South Korea or Taiwan.

Because South Korea basically manufactures the same products as Japan, it inevitably relies on Japan for imports of parts and equipment during the phase immediately following the start of mass-production. As production expands and the level of technology improves, some of the production goods that were previously imported from Japan begin to be produced locally. At this stage, production equipment, advanced raw materials and key parts are imported from Japan.

For example, South Korea once imported LCD panels from Japan but now ranks alongside Taiwan as one of the world's leading production centers and exports panels to Japan, China and other markets. As production expanded, many of the parts and raw materials used, especially color filters, glass substrates and polarizers, began to be produced in South Korea (Table 2). In some cases, these products are manufactured by South Korean companies. For example, Samsung manufactures glass for LCDs through Samsung Corning Precision Glass, a joint venture established in 1995 by Samsung and Corning, which is one of the world's leading glass manufacturers, while LG produces polarizers. However, production has often started after a foreign-owned company with advanced technology moved into South Korea. The presence of Japanese companies has been especially important (Table 2). There has also been an increase in the percentage of production equipment manufactured in South Korea (Shintaku [2008]).

Characteristics of Japanese exports to South Korea in recent years can be identified from a comparison of the items exported in 2005 and 2010. As shown in Fig. 8, the contribution from electrical machinery declined while the percentages of chemical products (organic compounds, plastics, etc.) and manufactured raw materials (iron and steel, non-ferrous metals, etc.) increased significantly.

This decline in the percentage of electrical ma-

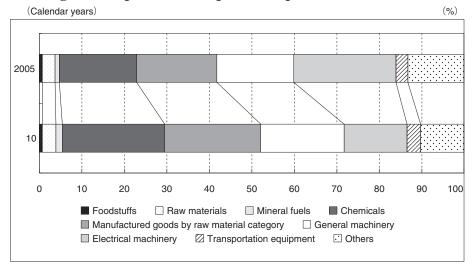
chinery exports resulted largely from reduced exports of semiconductors and other electronic parts and scientific and optical equipment, including LCD panels. There was also a decline in exports of audio equipment, though in value terms this is a small category. Exports appear to have declined either because of an increase in local production, or because manufacturers shifted from production in Japan to production in South Korea. Until recently, core components for mobile telephones made in South Korea were exported from Japan. Ultra-miniaturized laminated ceramic capacitors are now manufactured within the Samsung Group by Samsung Electronics, which is expanding its

**Table 2 LCD Panel-Related Investment by Foreign Companies** 

Foreign Company	Year of Entry, Location	Field	Products	
Merck	2002, Pyeongtaek City, Gyeonggi-do		LCD compounds	
Chisso	2005, Pyeongtaek City, Gyeonggi-do		Over-coatings, alignment films	
Sumitomo Chemical	1998/2002, Pyeongtaek City, Gyeonggi-do	LCD	Color resists, color filters	
NHT	2005, Pyeongtaek City, Gyeonggi-do		Glass substrates	
HOYA	2005, Pyeongtaek City, Gyeonggi-do		Photo masks	
Nitto Denko	1999/2004, Pyeongtaek City, Gyeonggi-do		Polarization films	
Nippon Electric Glass	2005, Paju City Gyeonggi-do		Glass substrates	
Photronics (PKL)	1993, Cheonan City, Chungcheongnam-do		Photo masks	
JSR	2003, Ochang, Chungcheongnam-do		Color resists	
Central Glass	2005, Ochang, Chungcheongnam-do	PDP	Glass substrates	
Toshiba (PCs)	2003, Ochang, Chungcheongnam-do	LCD	CCFL	
Asahi Glass	2004, Gumi City, Gyeongsangbuk-do	LCD	Glass substrates	
ЗМ	1996/2005, Hwaseong City, Gyeonggi-do	LDC, PDP	Optical films, thermal control films	

Notes: Shading indicates Japanese companies. Source: Korea Display Industry Association

Fig. 8 Composition of Japanese Exports to South Korea



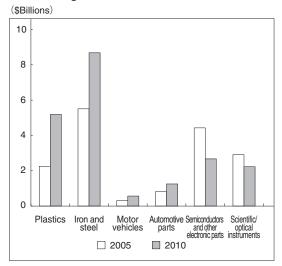
Source: Ministry of Finance, Trade Statistics of Japan

share of the world market.

Among the individual product categories in which exports increased substantially were raw materials, including plastics and iron and steel (Fig. 9). The leading export markets for Japanese iron and steel are (1) South Korea (9.59 million tons), ② China (6.34 million tons), ③ Thailand (4.83 million tons), (4) Taiwan (3.69 million tons) and (5) the United States (1.49 million tons). For example, South Korea imports engines and screws for large vessels from Japan, and even screws produced in South Korea are made from raw materials imported from Japan. In addition to high-grade and sophisticated materials, South Korea also imports large quantities of hot-rolled sheet steel for use in motor vehicles, shipbuilding and electronic goods. This situation also reflects in-process imbalances within the South Korean iron and steel industry<sup>(5)</sup>.

The top ten items exported to South Korea from Japan in 2010 were (1) cellulose acetate boards and sheets, etc., (2) manufacturing equipment for semiconductor devices and integrated circuits, ③ manufacturing equipment for flat panel devices, 4 other chemical industry residues, 5 Other sheet glass (drawn, blown), (6) hot rolled and other sheet steel with thicknesses over 10mm, (7) hot rolled and other coiled steel with thicknesses un-

Fig. 9 Exports of Key Item from Japan to South Korea



Source: Ministry of Finance, Trade Statistics of Japan

der 3mm, (8) Other ICs and LSIs, (9) other scrap iron and steel (excluding machining scrap and cutting scrap), and (10) gearboxes and gearbox parts. Other items include sheets and boards of polarizing materials, semi-finished ferrous products, and parts and accessories for semiconductor manufacturing equipment.

Electrical machinery accounted for approximately one-quarter of imports from South Korea in 2005 and 2010. This percentage remains largely unchanged. The percentages for raw materials, chemicals and manufactured raw materials all increased, while that for general machinery declined (Fig. 10). It is significant that the categories in which increases occurred include not only iron and steel, but also communications equipment (including mobile telephones). As discussed later in this article, imports of communications equipment have risen dramatically since the start of 2011, reflecting strong sales of South Korean smartphones in Japan.

#### **(3) Low Self-Sufficiency Ratio for Precision Equipment**

In the previous section we observed that South Korea imports a large share of its production goods from Japan. We will next use an analysis of the industry input-output tables to highlight the slow development of the precision equipment sector, including inspection equipment, in South Ko-

First, an analysis of production trends in machinery industries shows that production of some items, such as electronic parts, computers, televisions, has increased extremely rapidly, while growth has been more gradual in other categories, such as medical equipment, precision equipment and optical equipment. (Fig. 11)

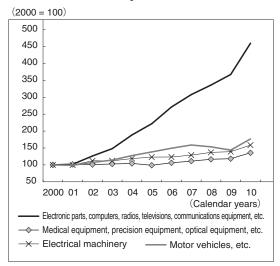
A skyline map was compiled using nine machinery industry categories selected from the industry input-output tables (77 categories in 2000, 78 in 2008). The value of domestic production consists of (1) production to meet domestic demand, 2 production to meet export demand, and (3) the reduction of domestic production due to importing. The self-sufficiency ratio is calculated

(Calendar years) 2005 10 20 30 40 50 60 70 100 ■ Foodstuffs Chemicals Raw materials Mineral fuels ■ Manufactured goods by raw material category ☐ General machinery ☑ Transportation equipment · Others ■ Electrical machinery

Fig. 10 Composition of Japanese Imports from South Korea

Source: Ministry of Finance, Trade Statistics of Japan

Fig. 11 Production Indices for Key Machinery Industries



Source: Bank of Korea, Economic Statistics System

as (1+2-3)/1. The width of each industry on the horizontal axis of the bar graph reflects that industry's production contribution, while the height of each bar indicates the sum of the self-sufficiency ratio and the import ratio.

We can identify the following points from the graphs for 2000 and 2008 (Fig. 12 and 13). First, there was an overall increase in self-sufficiency ratios. In 2008, the self-sufficiency ratios for some

industries, including electronic parts, motor vehicles, radios, televisions and communications equipment, were over 200%. As noted earlier, this shows that domestic production is more dependent on overseas demand than previously because of the efforts made by South Korean companies to increase their exports in the 2000s. The import ratio for the motor vehicle sector, which was heavily reliant on domestic demand until the end of the 1990s, has risen because of overseas procurement of parts and increased imports of built-up vehicles.

Second, while the import ratio for special industrial machinery is high, the self-sufficiency ratio is over 100%. This is because the development of domestic production (including local production by Japanese-owned companies) has been accompanied by an increase in production for exporting. In fact, the value of production in this category showed the biggest increase in the machinery sector, expanding by a factor of 2.5 between 2000 and 2008.

Third, the self-sufficiency ratios for computers and office equipment and precision machinery were below 100% in 2008. In the case of computers and office equipment, this reflects increased imports of both finished products and parts. It is also significant that while the self-sufficiency ratio for precision equipment was below 100% as in

(%) 250 200 Electronic parts 150 Household appliances Radios, televisions, communications equipr Motor vehicles 100 Electrical/ — office General machir industri Precision equ 50 0 20 80 (%) 40 ■ Import ratio ☐ Self-sufficiency ratio

Fig. 12 Skyline Map for Machinery Industries in 2000

Source: Bank of Korea, 2000 Input-Output Tables

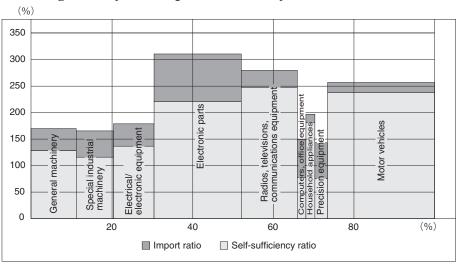


Fig. 13 Skyline Map for Machinery Industries in 2008

Source: Bank of Korea, 2008 Input-Output Tables

2000, it had improved compared with the level in 2000.

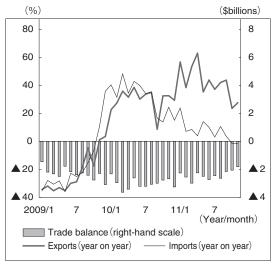
## 3. New Trends in Japan's Relationship with South Korea

There have been unprecedented developments in recent years, including not only the expansion of South Korea's exports to Japan, but also signs of growth in investment in South Korea by Japanese companies.

### (1) Downward Trend in South Korea's Trade Deficit with Japan

First, South Korea's exports to Japan (dollar-denominated, customs clearance basis) have remained on a steep growth trend (Fig. 14). Much of the increase in 2010 was attributable to the turnaround that followed the slump caused by the global economic downturn in the previous year. However, it is possible to identify a number of growth factors in recent trends.

Fig. 14 South Korea's Trade with Japan



Source: Bank of Korea, Economic Statistics System

One growth factor was increased procurement from South Korea by Japanese companies following the Great East Japan Earthquake (March 11, 2011). Among the items sourced from South Korea because of shortages in Japan were energy resources, including petroleum products and LNG, mineral water, instant noodles and dry-cell batteries. According to Ministry of Finance statistics, imports from South Korea increased by 39.8% in January-November 2011, compared with the same period in 2010, while imports of petroleum products, which accounted for about 20% of total imports, were 126.9% higher. Damage to factories, supply chain disruptions and other factors also led to increased procurement of parts, machinery and raw materials. In some cases, these transactions have evolved into ongoing business relationships because of advantages that include low prices and good quality.

Another factor driving growth in South Korean exports to Japan has been increased purchasing of South Korean goods, notably smartphones, by Japanese consumers. The expansion of exports of communications equipment to Japan was referred to earlier in this article. This trend accelerated in 2011, and the value of imports between January and November was 86.0% higher than in the same period in 2010. Reasons for the increased attractiveness of South Korean products appear

to include enhanced image quality resulting from the introduction of organic electroluminescent screens, improved ease of operation, and the recent popularity of Korean popular music (K-Pop).

There has also been a dramatic increase in imports of *makgeolli*, a Korean rice wine, recently, although unit prices for this item are low. According to South Korea's Agricultural and Fisheries Marketing Corporation (AFMC), import volumes in 2010 were almost 20 times higher than in 2001, and imports in 2011 are more than double the 2010 level. In addition to the boom in Korean popular culture, this growth is also explained by the development of sweet, low-alcohol products that match the preferences of Japanese consumers, the development of distribution networks, and effective advertising. Lotte Chilsung Beverage, which began to export liquor to Japan a year later than Jinro, has developed Seoul Makgeolli in collaboration with Seoul Makgeolli, South Korea's biggest makgeolli manufacturer, and Suntory, which is handling distribution. A popular actor, Jang Keun-suk, appeared in commercials for the product. There have also been media reports about increased purchasing of South Korean fashion goods and accessories through on-line shopping malls.

Encouraged by the growing popularity of South Korean goods, LG Electronics moved back into the Japanese home appliance market in the fall of 2010. More recently, a report in the January 3, 2012 edition of Nihon Keizai Shinbun indicated that Samsung Electronics had made a decision to return to the Japanese flat-panel TV market by 2013. There is particular interest in the launch of organic EL televisions. South Korea is ahead of Japan in the mass-production of organic EL products, and there are plans to produce large screens for use in televisions. Until now LCD panels have been the main type of display devices used in electronic products. However, organic EL technology has important advantages, including higher resolutions and lower power consumption. Organic EL displays are currently used in smartphones and tablets, but Samsung Electronics and LG Electronics both plan to introduce organic EL televisions in mid-2012.

In contrast with this sustained rapid growth in South Korea's exports to Japan, imports from Japan have slowed markedly in value terms under the impact of the Great East Japan Earthquake. In January-November 2011, exports of organic compounds, which account for 7.1% of total exports to South Korea, increased by 27.0%, which is substantially higher than the 6.8% increase in total exports. However, exports of iron and steel, which make up 13.6% of total exports, rose by just 3.6%, and there was a 1.4% decline in exports of plastics, which account for 7.7% overall.

These trends have had the effect of reducing South Korea's trade deficit with Japan (Fig. 14). For a number of reasons, it is possible that the reduction of the trade deficit will not be a temporary phenomenon. First, South Korean companies have changed their procurement sources following the disruption of supply chains from Japan. Second, procurement from Europe is expected to increase under the FTA with the EU, which provisionally took effect in July 2011. Third, investment from Japan is expanding.

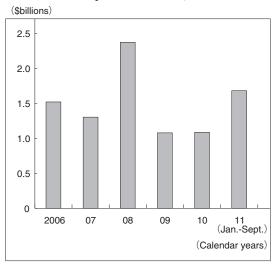
# (2) Expanding Investment in Raw Material Sector

Second, there are indications that direct Japanese investment in South Korea is expanding. According to Ministry of Finance Statistics (international balance of payments basis, net), Japanese direct investment in South Korea in January-September 2011 (advanced estimate basis) was 218.7% higher than the same period in 2010 (Fig. 15). Statistics compiled by the South Korean Ministry of Knowledge Economy (declaration basis) also show a growth trend, with an increase of 37.6% over the same period.

According to the results of an annual survey of the overseas business operations of Japanese manufacturers conducted by the Japan Bank for International Cooperation (JBIC), South Korea's ranking as a promising target for medium-term (approximately three years) business development fell from ninth to eleventh, but its share of votes rose from 5.8% to 6.1%.

Many companies are planning or considering

Fig. 15 Japanese Investment in South Korea (International Balance of Payments Basis, Net)



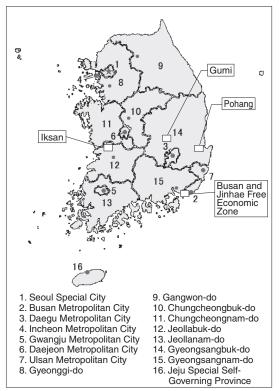
Source: Ministry of Finance

investment in South Korea, and it seems likely that Japanese direct investment in that country will continue to increase for some time to come. This growth in investment can be attributed to the determined efforts of the South Korean government (including local governments) to attract Japanese companies, especially manufacturers of parts and raw materials. As mentioned earlier, a number of industrial parks specializing in parts and raw materials have been established in recent years (6). Locations designated for this purpose include Gumi in Gyeongsangnam-do, Pohang in Gyeongsangbuk-do, Iksan in Jeollabuk-do, and the Busan and Jinhae Free Economic Zone (Fig. 16). These locations have clusters of manufacturing facilities established by leading South Korean companies.

South Korea has long sought to attract Japanese companies as a way of reducing its trade deficit with Japan. Despite determined efforts by the South Korean government, Japanese companies showed little interest because investment did not offer sufficient benefits. However, companies have now started to perceive significant benefits because of recent dramatic changes in the economic environment surrounding Japan and South Korea.

One of those changes is the increased importance of South Korean companies as customers for Japanese companies. Since the 2000s, South Ko-

Fig. 16 Industrial Parks Specializing in Parts and Raw Materials

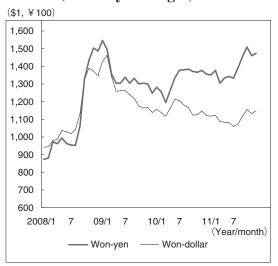


Source: Compiled by JRI using map obtained from Wikipedia

rean companies have accelerated their global business expansion through exporting, local production and other activities. Japanese companies supply these South Korean companies with the key parts, advanced materials and production facilities that they need for their production activities. As the quantities supplied expand, it has become possible to make a profit even when manufacturing locally. Local production offers advantages that include improved access to customer information and better communication with customers, the facilitation of joint development, and the avoidance of cost increases resulting from the rising value of the yen. With global competition intensifying, suppliers are under greater pressure than ever before to shorten delivery times and reduce production costs.

For some time after April 2011, the won-dollar exchange rate hovered in the high end of the 1,000 won range. However, the exchange rate subsequently dropped sharply, falling through the 1,200

Fig. 17 Won-Dollar and Won-Yen Exchange Rates (Monthly Averages)



Source: Bank of Korea, Economic Statistics System

won level in mid-September, and to below 1,300 won for a time in early October. Because the yen rose in value during this period, the won fell to its lowest level against the yen since the Lehman shock (Fig. 17). Other factors that encouraged Japanese companies to shift to local production in South Korea include the improvement of transportation and telecommunications infrastructure, high levels of technology, the availability of excellent human resources, and low corporate income tax rates.

Some Japanese companies have responded to the rapid progress made by Samsung Electronic, LG Electronics, Hyundai Motor and others by seeking to establish new supply relationships with South Korean companies. Opportunities for market participation have also been increased by the fact that South Korean companies choose their suppliers from a global perspective.

These trends indicate that market dynamism has the potential to transform the relationship between Japan and South Korea.

Also significant are the determined efforts of the South Korean government to establish free trade agreements (FTAs). An FTA with the EU provisionally took effect on July 1, 2011, and an FTA with the United States is expected to come into effect in January 2012. This means that in the

**Table 3 Target Sectors for Major Investments (Including Planned Investments) in South Korea by Japanese Companies** 

Company	Description of project		
Toray	Carbon fiber production		
	(operational in 2013)		
Ube Kosan	Production of resin materials for organic EL products		
Sumitomo Chemical	Production of items for organic EL touch panels (operational in the spring of 2012)		
Idemitsu Kosan	Production of organic EL materials (construction to begin in 2012)		
Tokyo Electron	Semiconductor R&D		
ULVAC	Organic EL R&D		

Source: Media reports

future Japanese companies will be able to enjoy tariff advantages when accessing EU and American markets by producing in South Korea and exporting their goods as "made in South Korea" (provided that they meet local content requirements), instead of exporting from Japan. This is another advantage of investment in South Korea<sup>(7)</sup>.

A significant feature of recent Japanese business investment in South Korea has been a flow of investment into parts and raw materials industries and R&D, in line with the wishes of the South Korean government (Table 3).

We will look at a few examples. One project that has attracted considerable interest recently is the establishment of a carbon fiber manufacturing facility by Toray. The new facility is scheduled to become operational in 2013. Japanese companies account for around 70% of the world market for carbon fiber. Toray has hitherto produced carbon fiber in Japan but decided to build a factory in South Korea not only because of lower production costs, but also because of the growth of the motor vehicle and shipbuilding industries, which use carbon fiber.

There have also been several investment projects relating to organic EL panels, which are expected to follow LCD panels as the next new growth category. This is because both Samsung Electronic and LG Electronic have started to establish mass-production operations ahead of their Japanese counterparts, in the expectation that organic EL panels will supersede LCD panels as

display devices for electronic equipment. On October 27, 2011, Idemitsu Kosan announced the establishment of a company to manufacture organic EL materials in South Korea. ULVAC, which manufacture production systems, plans to establish a research and development facility, while Ube Industries plans to produce resin materials.

Increased investment by Japanese companies in the South Korean parts and raw materials industries has the potential to raise the level of industry in South Korea while also reducing South Korea's trade deficit with Japan.

There has also been an increase investment by Japanese companies hoping to capture local consumer demand in South Korea. Japanese companies have stepped up their efforts to capture demand in emerging markets, and a similar pattern is evident in South Korea. Fast Retailing has aggressively expanded its chain of Uniqlo stores over the past few years, and in 2011 it opened its biggest flagship store in Asia in Myeongdong. Japanese companies are clearly reassessing South Korea as an investment target.

### Toward an Expanding Balance

The preceding analysis can be summed up in the following points.

- (1) While Japan's export weighting for South Korea has declined, it remains a key import partner.
- 2) South Korea's export weighting for Japan has risen, reflecting its role as a supplier of raw materials and other production goods to South Korea's increasingly globalized companies.
- 3 South Korea's trade deficit with Japan was expanding until recently, in part because of a slowdown in South Korean imports into Japan.
- (4) The South Korean government is actively seeking to attract Japanese companies by establishing industrial parks specializing in parts and raw materials.
- (5) Total new trends have emerged recently, including signs of increased Japanese investment (plans) in the parts and raw material industries, and the penetration of Japanese markets by South Korea products.

Of particular significance is the second of these trends. As we have already seen, South Korean companies have accelerated their global business expansion since the 2000s, especially through exporting and overseas production. As a result, they have become increasingly important to Japanese companies as customers for parts, raw materials, manufacturing equipment and other items. The rapid progress made by Samsung Electronic, LG Electronics, Hyundai Motor and others has prompted some Japanese companies to seek new supply relationships with South Korean companies. Another factor that is helping to create opportunities for market participation is the tendency of South Korean companies to choose their suppliers from a global perspective. Market dynamism is dramatically transforming the relationship between Japan and South Korea.

Japan and South Korea have formed increasingly strong links at the economic level, and that relationship would obviously grow even closer with the establishment of an EPA between the two countries, and it is to be hoped that the Japanese and South Korean governments will resume their

EPA negotiations. The negotiations began in December 2003 but have been suspended since November 2004. This resulted in part from strained relations between the two governments after then Prime Minister Koizumi visited Yasukuni Shrine. However, the main reason appears to have been the Japanese government's refusal to open up agricultural and fisheries markets.

As noted several times in this article, South Korea's trade with Japan has been chronically in deficit. South Korea has higher tariff rates than Japan, and the reduction of those rates would inevitably cause its trade deficit with Japan to expand in the short-term perspective. The South Korean government has urged the Japanese government to open up Japan's agricultural and fisheries markets as a way of achieving a balance of interests. South Korea's basic position is that the signing of an agreement must result in a win-win situation. The emphasis on agricultural and fisheries markets reflects the potential for the expansion of exports to Japan. The percentage of food items in South Korea's exports to Japan increased from 5.5% in 2005 to 6.1% in 2010.

# Sidebar: South Korean Agricultural Policy

A key priority in relation to free trade agreements (FTAs) is the development of measures to offset the negative impact on agriculture. What measures has South Korea introduced for this purpose?

South Korean agriculture is characterized first of all by the small average area of cultivated land per farming household, which at 1.45 hectares (2009) is slightly smaller even than the Japanese average. As indicated by South Korea's high urbanization ratio, which reached 80.8% in 2005 compared with Japan's 66.0% ratio, there has been a shift of population, especially in younger age groups, into urban areas, with the result that the average size of a rural household is now lower than the Japanese average at 2.61 persons. Because there are few non-agricultural earning opportunities, the percentage of farmers working

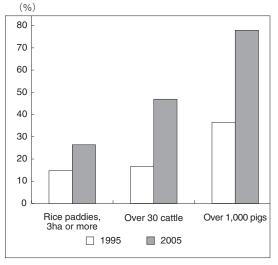
solely in agriculture is high at 58.0%.

An analysis of past agricultural policies highlights the following three characteristics.

First, South Korea has been working since the 1980s to expand the size of farms in preparation for future liberalization measures. In 1997, the government reduced taxes on income from asset transfers to facilitate the sale and leasing of farmland, and introduced a system to encourage aging rice farmers to retire by providing fixed-sum subsidies from the date of retirement until the age of 70 under a system known as the "ownership transfer direct payment scheme." When the government began to negotiate FTAs in the 2000s, it expanded these schemes to include dry-field farming and orcharding as well as rice farming, and extended the subsidy period to the age of 75.

In part as a result of these policies, farmers who had become unable to work their farms because of advancing age have increasingly been driven

Fig. 18 Consolidation into Larger-Scale Farms (Cultivated Area, **Number of Livestock)** 



Source: Korea Rural Economic Institute, Agriculture in Korea 2010

by need to contract out their farm work or lease out their farmland. While there are still many very small farms, there is now a trend toward the consolidation of production into large-scale farms with large amounts of agricultural machinery (Fig. 18).

In January 2011 a new system of pensions secured by farmland was introduced. Under this system, farmers aged 65 or older are paid a monthly pension secured by the farmland that they own, which is sold after they die. The purpose of this system is to stabilize the livelihood of farmers, and improve the liquidity of land.

Second, as farm sizes began to expand in the 1990s, South Korea also began to focus on the improvement of the quality of agricultural products and the expansion of exports. The aim of this strategy is to expand domestic and overseas sales channels by developing environment-friendly farming and cultivating high-quality agricultural products. Exports of cucumbers, eggplants, paprika and other vegetables, as well as fruit, such as pears, apples, watermelons and strawberries, and flowers, including roses and chrysanthemums, have all expanded. Funds for the modernization of equipment were provided by the government in the form of low-interest loans.

South Korea's Agricultural and Fisheries Mar-

keting Corporation (aT Centers) is responsible for the expansion of exports. Its main activities are the development of exporting organizations to provide leadership at all stages from production through to exporting, and the development and promotion of the Whimori common-use export brand, as well as quality control, human resource development, safety management, the discovery of promising export products, and the development of export networks through overseas offices. An office has been opened in Japan, and a variety of information is available from a website, including information about South Korea foods.

Third, while working to establish FTAs since the 2000s, the South Korean government has sought to minimize the impact on domestic agriculture. The main elements of the government's stance toward the agricultural sector during the FTA negotiations has been (1) to obtain exemptions for agricultural products where possible, ② to delay the removal of tariffs if agricultural products cannot be exempted, and (3) to minimize the impact by stepping up efforts to expand the scale of farms and modernize their equipment while also providing income compensation for farmers who have been disadvantaged.

So far rice has been excluded from the scope of concessions provided under FTAs signed by South Korea. The deadline for the removal of tariffs was set at 10 years for tomatoes, cucumbers, pork and other items under the FTA with Chile, which came into force in 2004, 15 years for beef under the FTA with the United States, and 10 years for pork under the FTA with the EU. Strong opposition from farmers delayed the passage of a bill ratifying the FTA with Chile by the South Korean National Assembly, but eventually the bill was passed after the government increased support payments.

While exports of some items, such as vegetables and fruit, are likely to expand, there will inevitably be growth in imports of other items, notably livestock and grains. While the deadline for the removal of tariffs on pork under the FTA with the EU is still 10 years away, little time remains under the FTAs with the United States and Chile, which will require the removal of tariffs in 2016 and 2013 respectively. Progress toward agricultural restructuring and expanding exports of agricultural goods have not eliminated the concerns

of farmers, as is clear from the fact that there is still strong opposition to the FTA with the United State.

In recent years, the South Korean government has worked actively to establish free trade agreements (FTAs). An FTA with the European Union (EU) took effect on July 1, 2011. Once an agreement with the United States comes into effect, South Korea will have entered the FTA era in earnest.

These moves by South Korea have been viewed with alarm in the Japanese business community, and Japanese business leaders have urged the government to participate in negotiations over the Trans-Pacific Partnership (TPP), and to resume inter-governmental talks about an EPA with South Korea without delay. On November 11, Prime Minister Noda announced that Japan would commence talks with the countries concerned with a view to joining the TPP negotiations.

There has been wide-ranging debate over Japan's participation in the TPP, and the writer does not propose to analyze this subject here. However, we can conclude that while the level of liberalization that would be needed in the agriculture and fisheries sector during the TPP negotiations would be extremely difficult to achieve, EPA negotiations with South Korea would not require concessions over rice, and it should be possible to adopt a more flexible approach that would take domestic conditions into account. The stance of the South Korean government toward the agricultural sector during FTA negotiations has been (1) that agricultural products should be exempted if possible, ② that if that is not possible, the removal of tariffs should be delayed, and 3 that steps should be taken to minimize the impact, including increased efforts to expand the size of farms and modernize facilities, and the compensation of farmers for lost income (See sidebar).

Given this situation, Japan's wisest course would probably be to open the way for the resumption of inter-governmental negotiations by offering constructive proposals to improve South Korean access to agricultural and fisheries markets. The development of closer ties between Japan and South Korea is also essential to the economic integration and regional stability in Asia.

The joint statement issued at the 43rd Japan-Korea Business Conference on September 29, 2011 included the following clause.

"Business people in Japan and South Korea believe that the formation of a single economic zone within which people, goods and money can move freely is essential to the economic prosperity of Japan and South Korea and the evolution of their relationship as partners, and that for East Asia to function as an axis of stability for the world economy, it will be necessary to build a predictable integrated economic zone with stable systems based on market mechanisms that will not be disrupted by external factors, such as financial crises. We further believe that the establishment of an EPA and FTA between Japan and South Korea would contribute to the development of this infrastructure, and we therefore strongly urge the Japanese and South Korean governments to bring this about without delay."

This article has described unprecedented developments in the economic relationship between Japan and South Korea. These developments are being driven by the emergence of South Korean companies that have pursued globalization strategies, and by changes in the environment surrounding Japan and South Korea. It is to be hoped that the economic relationship between Japan and South Korea will be further strengthened through the return of South Korean companies to the Japanese market, and through investment in South Korea by Japanese companies.

South Korea will hold a general election in April 2012, followed by a presidential election in December. It is also possible that the situation in the People's Democratic Republic of Korea (North Korea) will remain fluid for a considerable period.

For these reasons, 2012 will be a year in which we need to consider the roles and positions of Japan and South Korea in a global context.

#### **End Notes**

- 1. See Mukoyama [2010] for a discussion of this point.
- 2. The strength of the South Korean economy is analyzed in Mukoyama [2011].
- 3. The dramatic rise in the value of the yen after the Plaza Accord of September 1985 resulted in large inflows of "cheap" South Korean goods into the Japanese market. Because these goods failed to earn consumer satisfaction in terms of quality and functionality, South Korean products came to be regarded as "cheap and nasty." Strong sales of South Korean products in Japan in recent years are explained by a range of factors, including the increased strength of the Samsung brand, the "Korean boom" in Japanese pop culture, the dominance of consumer spending by younger age groups who are not influenced by preconceived notions, and acceptance of South Korean products by people who have experience of living overseas or are employed in overseas business.
- The main activities of these foundations are (1) support and cooperation for human resource development in the field of industrial technology, ② support and cooperation for the improvement of productivity and quality improvement, 3 the promotion of exchanges of industrial technology and personnel, and 4 seminars, research and public information activities. Initiatives relating to human resource development in the field of industrial technology include the invitation of engineers from SMEs and postgraduate students to Japan for training and research in specific fields, which are provided under contract by Japanese companies and government research institutes. In addition, experts are sent from Japan to disseminate the results of productivity enhancement initiatives.
- 5. The Hyundai Motor Group has expanded into the iron and steel (cold rolled sheet) field with the aim of achieving self-sufficiency in steel within the group. Because POSCO's supply capacity was limited, Hyundai became reliant on raw materials supplied by Japanese companies. The Hyundai Group commenced blast furnace production in 2010 and has since increased its capacity. Imports from Japan are therefore likely to decrease in the future.
- 6. This strategy was developed as part of measures announced at a Japan-South Korea summit in April 2008 with the aim of expanding economic exchange between the two countries.

Japanese motor vehicle manufacturers are preparing for the time when the FTA between South Korea and the United States takes effect by making plans to export vehicles made at their U.S. plants to the South Korea as "made in the U.S.A." in addition to exports from Japan.

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