

China's Industrial Rise and the Challenges Facing Korea

Nam Young-sook

INTRODUCTION

China's rapid integration into the world economy and its continued high growth are having a major impact on other East Asian economies, including Korea. The nation has seen a rapidly expanding economic relationship with China through trade and investment linkages over the past two decades. Korea's exports to China have grown from less than \$1 billion in 1989 to \$35.7 billion in 2003, making China the largest export destination for Korea for that year. Korea's trade surplus with China, amounting to \$13.2 billion in 2003, represented about 80 percent of its total trade surplus. China has thus emerged as an important source of growth for Korea, whose direct investment in China has also been surging rapidly in recent years. By 2002, China had become the largest recipient of Korea's outward direct investment. Korea has now surpassed the U.S. and Taiwan as China's third-largest source of foreign direct investment (FDI) after Hong Kong and Japan.

Koreans have had mixed feelings about the economic rise of China. After the normalization of diplomatic relations in 1992, they

lost no time in searching for business opportunities in China, lured by the low-wages of its labor force and its potential as a base for export operations. There was, however, a general fear that the industrial awakening of its gigantic neighbor with its vast economic potential would one day pose a serious threat to Korea. For example, there was concern that China was increasingly encroaching on areas in which Korean industry had already been established, thus was putting Korea in a competitive “nutcracker” between technologically advanced countries such as Japan and low-cost competitors like China.¹⁾ The pressure on Korea is expected to increase as Chinese corporations become formidable competitors and globalized Japanese corporations exploit low labor costs and advanced knowledge with increasing facility. In more recent years, with its continued high growth and its accession to the World Trade Organization (WTO), perception of China has become more optimistic, with the growing and potentially huge Chinese market next door again perceived as providing unprecedented opportunities for Korean businesses. As a sign of this change, an increasingly large number of Korean students have gone to China to study the language to prepare themselves for business opportunities related to the country.

Amid the fascination with China, however, there has also been concern about its potential threat. It is feared that China is creating a “black hole” by sucking in Korea’s outward direct investment, and leaving the economy of Korea itself a hollow shell. Indeed, the investment exodus to China in 2003 coincided with the sharp downturn in the Korean economy accompanied by sluggish business investment and rising unemployment. The surge in outward direct investment to China, which created an estimated one million jobs, has often been blamed for domestic woes in Korea, or at least for worsening economic conditions. The fears of hollowing-out have been amplified by the move by large conglomerates that have shifted their production bases to high-

1) Booz, Allen & Hamilton, *Revitalizing The Korean Economy Toward The 21st Century* (Seoul, 1997).

end manufacturing and set up R&D centers in China. The concern is that the current vacuum in Korea's low-end manufacturing may soon extend to higher-end manufacturing including complex production, design, development and related services.

Against this background, this paper examines the challenges for Korea posed by the industrial rise of China. The paper first reviews the economic relations between China and Korea, mainly in terms of trade and investment linkages. It then identifies some of the major challenges facing Korea in the context of its giant neighbor's industrial rise. The last section concludes with a summary and policy implications.

GROWING ECONOMIC INTEGRATION THROUGH TRADE AND INVESTMENT LINKAGES

China's growth and opening up has led to significant changes in economic relations between it and Korea. Those impacts on Korea can be examined in terms of China's three roles. The first role is that of China as a manufacturer and exporter. The country is rapidly expanding its manufacturing capacity, which poses a growing competitive threat to other exporters like Korea. Second, in line with global competition with other economies, it is rapidly raising the volume of its imports, which could offset any export loss for competitors in third markets. Third, it is emerging as a competitor for FDI. China holds a virtual monopoly over foreign capital inflow into Asia, now surpassing even the United States as a recipient of FDI. Depending on the economic relationship with China and position in the world market, every economy in Asia has been affected to varying degrees by these aspects of its soaring economy.

Exports of China and Korea in World Markets: China as a Manufacturer

China's emergence as a global production base and the restructuring of its domestic economy have significantly improved its manufacturing

Table 1. Technology Structure of Manufactured Exports

(Unit: Percent)

| | China | | Korea | | Taiwan | | Singapore | |
|--|-------|------|-------|------|--------|------|-----------|------|
| | 1990 | 2000 | 1990 | 2000 | 1990 | 2000 | 1990 | 2000 |
| Technology structure of exports | | | | | | | | |
| Resource Based | 14.3 | 9.5 | 7.1 | 11.7 | 6.9 | 4.4 | 27.8 | 14.9 |
| Low Technology | 51.9 | 44.9 | 40 | 17.1 | 41.3 | 23.8 | 9.6 | 6.5 |
| Medium Technology | 26.9 | 21.2 | 31.3 | 34 | 26.1 | 25.5 | 23.4 | 17.4 |
| High Technology | 6.9 | 24.4 | 21.6 | 37.1 | 25.7 | 46.3 | 39.1 | 61.2 |
| All manufacture | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| World market shares by technology | | | | | | | | |
| Resource Based | 1.3 | 2.5 | 0.8 | 2.3 | 0.8 | 0.7 | 2.6 | 1.3 |
| Low Technology | 4.9 | 12 | 4.9 | 3.3 | 5.2 | 4 | 0.9 | 1 |
| Medium Technology | 1.2 | 2.7 | 1.8 | 3.2 | 1.6 | 2.1 | 1.1 | 0.9 |
| High Technology | 0.7 | 4.1 | 2.8 | 4.5 | 3.4 | 4.9 | 4 | 5.9 |
| All manufacture | 1.9 | 4.7 | 2.1 | 3.4 | 1.6 | 3 | 1.9 | 2.7 |

Source: Sanjaya Lall and Manuel Albaladejo, "China's Competitive Performance: A Threat to East Asian Manufactured Exports?" *QEH Working Paper Series*, Issue 110 (October 2003).

capacity, and as a result, its export structure has undergone dramatic changes. Table 1 shows the technology structure of manufactured exports of China and its neighbors. In 1990, it started with a high proportion of low technology (LT) products, but rapidly moved into more complex products, in particular high technology (HT) products during the 1990s. The share of HT products in China's exports expanded more than three-fold, from 6.9 percent to 24.4 percent during a 10-year period. Nonetheless, its export structure remained heavily dependent on LT products in 2000. In a sense, the structure of Chinese exports resembled those of Korea and Taiwan in 1990.

Looking at market share changes in technology in the world market, China's market shares increased across all categories, but it achieved the largest gain in LT products. Thus, by 2000, it dominated the region's LT exports, in which Korea, together with Taiwan, lost market shares during the same period. This suggests that Korea lost market shares in products like textiles, clothing, footwear and toys to

China, which, given the low wage costs, has a comparative advantage in labor-intensive products. In MT products, China is also the largest gainer in market shares, with its export values just behind Korea and ahead of Taiwan, thus reflecting China's advance in capital-intensive heavy industries.

The general picture that emerges is one of broad-based export expansion by China spanning the entire technological spectrum but with a dominant presence in LT products. For countries like Korea, market share losses have been experienced so far mainly in LT products. In terms of total world market share, China's share was behind that of Korea in 1990 but increased rapidly from 1.9 percent to 4.7 percent, becoming the largest exporter among the group. However, its emergence as a major exporter of manufactured products has not been at the expense of other East Asian economies, which have also seen similar increases to their market shares.

In order to examine the trend in export competition between China and Korea, one of the trade indices, labeled as the revealed comparative advantage (RCA), is calculated for Korea, China and Japan, in Table 2. The RCA indicates the comparative advantage of a product within a country's export structure, with the value of RCA greater than 1 indicating a comparative advantage. Table 2 shows that China possesses a large comparative advantage in textiles and clothing, although the magnitude of this advantage has declined somewhat over the monitored period. On the other hand, China achieved an impressive gain in its comparative advantage in electronics. Furthermore, for IT products and electrical parts, China moved from a comparative disadvantage to a comparative advantage over the given period. It is thus a remarkable achievement that it not only maintained a very large comparative advantage in labor-intensive products, but has also been rapidly gaining a comparative advantage in more technologically advanced products at the same time.

In the same period, Korea was quickly shedding its comparative advantage in textile and clothing while gaining a comparative advantage in petrochemicals and coal products. Korea maintained a

Table 2. Revealed Comparative Advantage Index

(Unit: RCA Index)

| | Korea | | China | | Japan | |
|------------------------------|--------|--------|--------|--------|--------|--------|
| | 1992 | 2000 | 1992 | 2000 | 1992 | 2000 |
| Food, beverages | 0.3150 | 0.2366 | 1.0395 | 0.7293 | 0.0701 | 0.0760 |
| Textile and clothing | 2.8113 | 1.5760 | 4.5034 | 3.7361 | 0.2624 | 0.2244 |
| Paper and printing materials | 0.2352 | 0.4301 | 0.1999 | 0.2615 | 0.2369 | 0.2290 |
| Chemicals | 0.7265 | 0.7760 | 0.5925 | 0.5848 | 0.6686 | 0.7883 |
| Petrochemicals and coals | 1.1130 | 3.1555 | 0.7362 | 0.8271 | 0.2353 | 0.1767 |
| Non-metallic metals | 0.4812 | 0.4301 | 1.2834 | 1.3117 | 0.6939 | 0.8254 |
| Non-ferrous metals | 1.2035 | 1.0508 | 0.4877 | 0.6716 | 0.8636 | 0.9164 |
| Metals | 0.9896 | 0.7538 | 1.0991 | 1.3609 | 0.6664 | 0.5973 |
| Machinery | 0.3419 | 0.4701 | 0.2519 | 0.3774 | 1.2412 | 1.4296 |
| Semiconductors | 4.2107 | 2.3451 | 0.1319 | 0.3550 | 1.9159 | 1.5920 |
| Electronic parts | 0.8144 | 0.8248 | 0.8818 | 1.2384 | 1.5682 | 1.5647 |
| IT products | 1.4752 | 1.5847 | 0.7615 | 1.2658 | 2.1326 | 1.1302 |
| Electronics | 1.7621 | 1.8265 | 1.1735 | 2.2533 | 0.5350 | 0.2322 |
| Automobiles | 0.4927 | 0.8371 | 0.0683 | 0.1603 | 1.9005 | 1.6573 |
| Other transport equipment | 1.3773 | 1.5821 | 0.4291 | 0.5928 | 0.9558 | 1.1959 |
| Precision instruments | 0.3704 | 0.2879 | 0.8257 | 0.7586 | 1.3535 | 1.5887 |
| Other manufacturing | 0.7196 | 0.3580 | 2.1468 | 2.2412 | 0.3758 | 0.3710 |

Source: Korea Development Institute, "A Study on the Competitiveness of the Korean Industries" (in Korean), *Research Report*, 2003-07 (Seoul: KDI, 2003).

large comparative advantage in semiconductors, but its RCA was declining. The products for which Korea has a comparative disadvantage include: precision instruments and general machinery, automobiles and electrical parts. In the case of Japan, there was a rapid decline in its comparative advantage in IT products as well as in semiconductors while its comparative advantage in precision instruments and general machinery was gaining strength. The former likely reflects the shift of production facilities from Japan to China for this group of products.

It is however important to note a caveat in interpreting these results. Because the product categories are very broad, each is likely to include non-competitive products. Thus, even in the same category of product, countries may complement each other by performing different functions

within an integrated production system. Kwan's more detailed study²⁾ shows that there are diverse IT products (from high-value-added to low-value-added) and the IT exports in which China has rapidly expanded have been concentrated in low-value-added products. However, his analysis also shows that while there is very little competition between Japanese and Chinese products, there is relatively high competition between Korean and Chinese products. This result suggests that China's exports are moving up the value chain and are thus rapidly catching up with the exports of Korea. It is also supported by the finding that while a large part of China's IT products are simple assembly, there is evidence of considerable sophistication of local content and even design and development activity.³⁾

China's Trade with Korea: China as an Emerging Importer

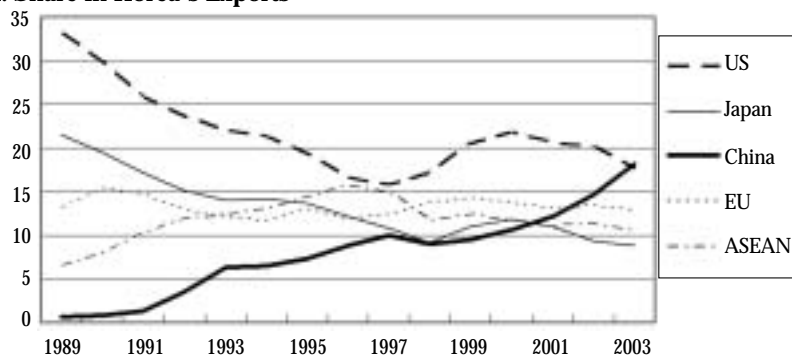
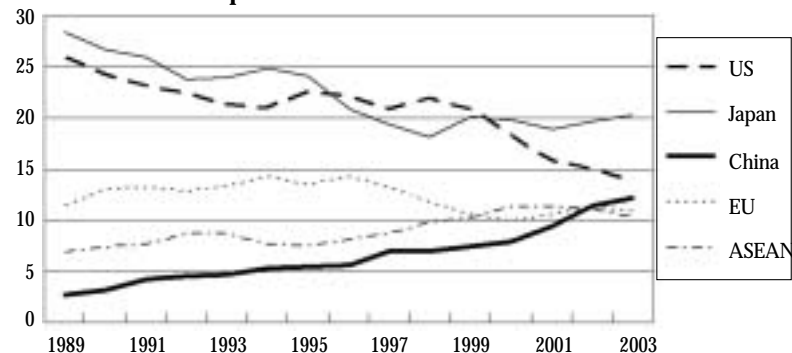
While China has been emerging as a strong export competitor in third markets, it has also risen as a prominent importer at the same time. Figure 1 shows the share of China and other countries in Korean exports and imports. The share of exports to China in Korea's total exports grew from less than one percent in 1989 to over 18 percent in 2003, with the exports to China surging in particular after 2000. Thus, by 2003, China had become the most important export destination for Korea, surpassing the United States. In that year, Korea ranked third in the Chinese import market after Japan and Taiwan, raising its market share to 10.5 percent from 9.7 percent in the previous year. This suggests that Koreans did remarkably well in taking advantage of its neighbor's growing import market, which had expanded to \$413

2) C. H. Kwan, "The Rise of China and Asia's Flying-Geese Pattern of Economics Development: An Empirical Analysis Based on US Import Statistics," *RIETI Discussion Paper Series*, 02-E-009 (July 2002).

3) F. Lemoine and D. Ünal-Kesenci, "China in the International Segmentation of Production Processes," Centre d'Etudes Prospectives et d'Informations Internationales, *CEPII Working Paper*, 2002-02 (2002).

Figure 1. Share in Korea's Trade, 1989-2003

(Unit: Percent)

A. Share in Korea's Exports**B. Share in Korea's Imports**

Source: Korea International Trade Association [www.kotis.net].

billion in 2003, up 39.9 percent from 2002.

Looking at Korea's imports, the share of imports from China has also been growing rapidly, from 2.8 percent in 1989 to 12.3 percent in 2003, although the U.S. and the rest of Asia still remain much more important sources of its imports. The share of imports from the U.S. showed a relatively sizeable drop from 22 percent in 1998 to 14 percent in 2003. Nonetheless, the reliance on imports from Japan remains substantial, with Japan as the source of around 20 percent of its imports.

Underlying the expanding bilateral trade between China and Korea have been the growing trade linkages and supply networks in Asia. In the context of the globalization process that has enhanced the reorganization of production on a worldwide basis, the emergence of China and its trade policy in favor of processing trade has stimulated production sharing and the reorganization of industrial activities within Asia. Motivated by cost considerations, firms from China's relatively advanced neighboring Asian economies have transferred the downstream, labor-intensive stages of production to China, aimed at world markets. Thus, China's exceptional trade performance has been directly linked to its involvement in the international segmentation of production processes.⁴⁾ The migration of assembly operations to the country has thus led to its exceptional trade performance, and has strengthened regional economic integration.

The rise in China's production-sharing with its Asian neighbors has led to a rapid growth in the trade in intermediate goods. China's participation in the international division of production takes place in technologically advanced sectors in which it specializes in the processing and assembly of semi-finished products and components. China's specialization in the downstream stages of production processes has thus given rise to large deficits in the upstream stages (semi-finished products and components). Table 3 shows China's net trade with its Asian neighbors. Over the 1990s, China turned a significant trade surplus with the region into a large deficit. It now records a large structural surplus in consumption goods and a large structural deficit in intermediate goods (semi-finished products, parts and components). By the end of the nineties, almost two-thirds of China's total imports were estimated to be dominated by intermediate products. In the case of Korea, about 70 percent of Korea's exports to China are intermediate goods that are mainly used for processing exports.

4) *Ibid.*; David Roland-Holst, "Global Supply Networks and Multilateral Trade Linkages: A Structural Analysis of East Asia," *ADB Institute Discussion Paper Series* (2003).

Table 3. China's Net Trade With Asia

(Unit: Million dollars)

| | Japan | | Korea | | Taiwan | |
|-------------------|-----------|----------|-----------|----------|-------------------|----------|
| | 1990 | 2000 | 1990 | 2000 | 1990 | 2000 |
| Total | -2874.6 | -3531.6 | -21.5 | -13483.2 | -1884.6 | -18995.2 |
| Resource Based | 702.3 | 1858.0 | 191.7 | -2848.8 | -178.5 | -950.2 |
| Low Technology | 827.0 | 12665.4 | -23.2 | -1797.3 | -623.8 | -3611.5 |
| Medium Technology | -3097.9 | -11414.2 | -82.3 | -5589.8 | -931.1 | -8945.5 |
| High Technology | -1306.1 | -6640.8 | -107.7 | -3247.3 | -151.3 | -5488.0 |
| | Singapore | | New NIEs* | | Total East Asia** | |
| | 1990 | 2000 | 1990 | 2000 | 1990 | 2000 |
| Total | 554.3 | 486.6 | 270.3 | -4215.5 | -3956.1 | -39738.9 |
| Resource Based | 53 | -200.1 | -259.2 | -5517.8 | 509.3 | -4358.9 |
| Low Technology | 380.3 | 862.8 | 327.6 | 981.7 | 887.9 | 9101.1 |
| Medium Technology | 96.2 | -301 | 125.9 | 72.9 | -3889.2 | -26177.6 |
| High Technology | 24.8 | 124.8 | 76.2 | -3052.2 | -1464.1 | -18303.5 |

* Includes Malaysia, Thailand, the Philippines and Indonesia.

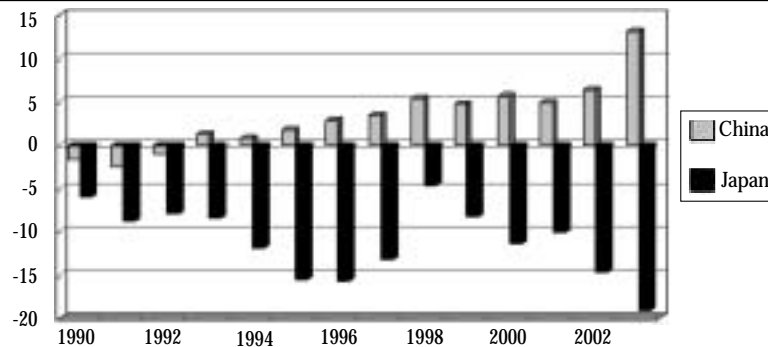
** Excludes Hong Kong.

Source: Lall and Albaladejo, *op. cit.*

Figure 2 shows Korea's trade balance with China and Japan. Since the early 1990s, Korea has recorded a trade surplus vis-à-vis China, and in 2003, this surplus showed a rapid rise to a level of \$ 13.2 billion. The trade surplus took up about 80 percent of Korea's total trade surplus in 2003 when net exports are estimated to have contributed more than 100 percent to growth in that year. Thus, China has emerged as an engine of economic growth for Korea in recent years. Meanwhile, Korea's trade deficit vis-à-vis Japan has grown even larger in recent years, more than offsetting Korea's trade surplus with China. This is due to Korea's continued dependence on the import of capital goods from Japan, and is a reflection of the gap in the technological capabilities of the two countries. A trade pattern of the countries in Northeast Asia has been emerging: Korea exports intermediate goods and parts to China while importing capital goods from Japan, and Japan exports capital and intermediate goods to China while importing low-end consumer goods from it.⁵⁾

Figure 2. Korea's Trade Balance With China and Japan

(Unit: Billion dollars)



Source: Korea International Trade Association [www.kotis.net].

Korea's outward investment in China: China as a competitor for investment

China has emerged as a magnet for foreign direct investment through its role as a global manufacturing hub. In 2002, China attracted \$53 billion, which amounted to nearly 60 percent of the total FDI that flowed into all the countries of East, South and Southeast Asia in the same year. Given the dynamism of the activities of foreign affiliates in China, some concerns have been expressed within the region regarding the possibility that China is hollowing out the economies of neighboring countries. This has been expressed in terms of concerns for the diversion of FDI from their own countries to China, in particular, from ASEAN countries, or through the penetration of Chinese exports to their domestic markets (as in Japan). In Korea, the concern has revolved more around outward direct investment, with fears that domestic manufacturing firms are shifting their production

5) Hong Bae Lee and Nobuhiro Okamoto, *Analysis of Industrial Interdependency among Japan, China and Korea: Application of International Input-Output Table* (in Korean), (Seoul: Korea Institute for International Economic Policy, 2002).

bases from Korea to China and are thus creating a void in domestic manufacturing.

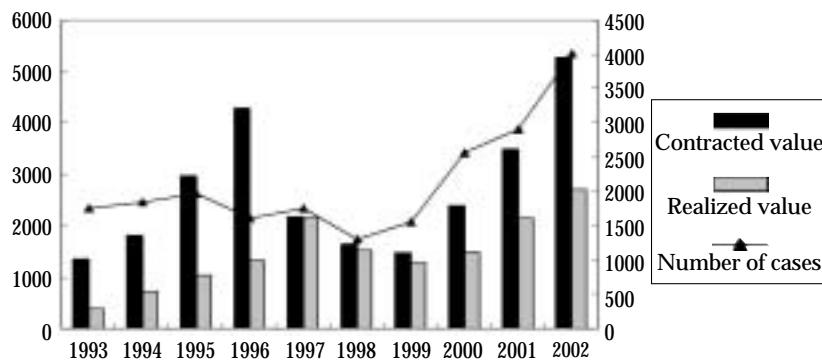
Korea's direct investments in China have been on the rise since the establishment of diplomatic relations in 1992, except during the financial crisis (see Figure 3). Korea's outward investment fell sharply after the financial crisis, but started to rise again after 1999. China has become the largest destination country for Korea's FDI since 2002. The number of contracts surged from around 1,500 in the 1990s to around 2,500 in 2000, which increased further to 4,000 in 2002. In the early 1990s, Korean firms moved to there mainly to take advantage of its low labor costs. These initial entrants were largely small- and medium-sized enterprises (SMEs) in export-oriented, labor-intensive industries. However, in the latter half of the 1990s, large conglomerates such as Hyundai, LG and Samsung started to move their production bases to China.⁶⁾ One notable feature of this new stage of investment was that the large conglomerates were drawing their SME partners to China. These SMEs, producing parts and components for large conglomerates, are more technologically advanced, compared to those SMEs that moved to China in the early 1990s. More recently, large conglomerates and IT firms have been shifting more technologically advanced segments of production and have been setting up R&D centers in China, in an effort to develop products more geared to end consumers, and also to take advantage of the availability of low-cost, well-educated researchers and technicians.

As discussed above, there is evidence that a large part of the bilateral trade expansion has resulted from the activities of Korean affiliates in China—a feature shared with Taiwan and Japan. The key channel has been the pattern of procurement and sales structures of intermediate goods of the affiliates. Korean affiliates there import a large share of their intermediate goods and materials from Korea. According to surveys of Korean firms invested in China, some 40

6) Chang-hee Choi, "The China Strategies of Korea's Winning Companies," *NRI Papers*, Issue 67 (2003).

Figure 3. Korean Investment in China, 1993-2002

(Unit: Million dollars)



Source: Ministry of Commerce, PRC [www.mofcom.gov.cn].

percent of the total procurement of intermediate goods and materials by Korean affiliates came from Korea (Table 4). On the other hand, these affiliates exported only about 20 percent of their sales to Korea. This implies that increased FDI in China has led to an increased trade surplus for Korea. Based on this structure, Korea's estimated trade surplus vis-à-vis China (induced by the investment-trade nexus) amounted to an estimated \$3.46 billion or 54.5 percent of total trade surplus of Korea in 2003.⁷⁾ Thus, Korea's outward investment in the country has so far had a beneficial effect on Korea's trade and growth.

HOLLOWING OUT OF KOREAN MANUFACTURING?

The discussion so far suggests that Korea's outward investment has contributed significantly to the expansion of trade with China, which in turn, has played a significantly positive role in Korea's economic growth. However, concern has risen that this success itself

7) Trade Research Institute, "Survey of the Management of Korean Affiliates in China" (in Korean), *Korea International Trade Association* (December 10, 2003).

Table 4. Procurement and Sales Structure of Korean Affiliates in China
(Unit: Percent)

| | Survey 1 | Survey 2 | Survey 3 | | |
|------------------------------|----------|-------------|----------|-------------|------|
| | All | Large firms | All | Large firms | SMEs |
| Source of procurement | | | | | |
| China | 44.3 | 39.2 | 42.4 | 48.6 | 41.6 |
| Korea | 38.5 | 44.7 | 43.9 | 43.7 | 43.9 |
| Third countries | 17.2 | 16.1 | 13.7 | 7.7 | 14.5 |
| Sales destination | | | | | |
| China (local sales) | 40.6 | 46.7 | - | - | - |
| Korea | 15.8 | 24.5 | - | - | - |
| Third countries | 43.6 | 28.8 | - | - | - |

Source: Trade Research Institute, *supra note 7*; Joon-kyung Kim and Chung H. Lee, "Korea's Direct Investment in China and Its Implications for Economic Integration in Northeast Asia," *KDI Journal of Economic Policy*, Vol. 25, No. 2 (2003); Chang-Soo Lee, "The Linkage between the FDI and Trade of China, Japan and Korea: The Korean Perspective," Paper presented at the symposium on "Strengthening Economic Cooperation in Northeast Asia: Facilitating Investment between China, Japan and Korea," Beijing, September 29, 2002.

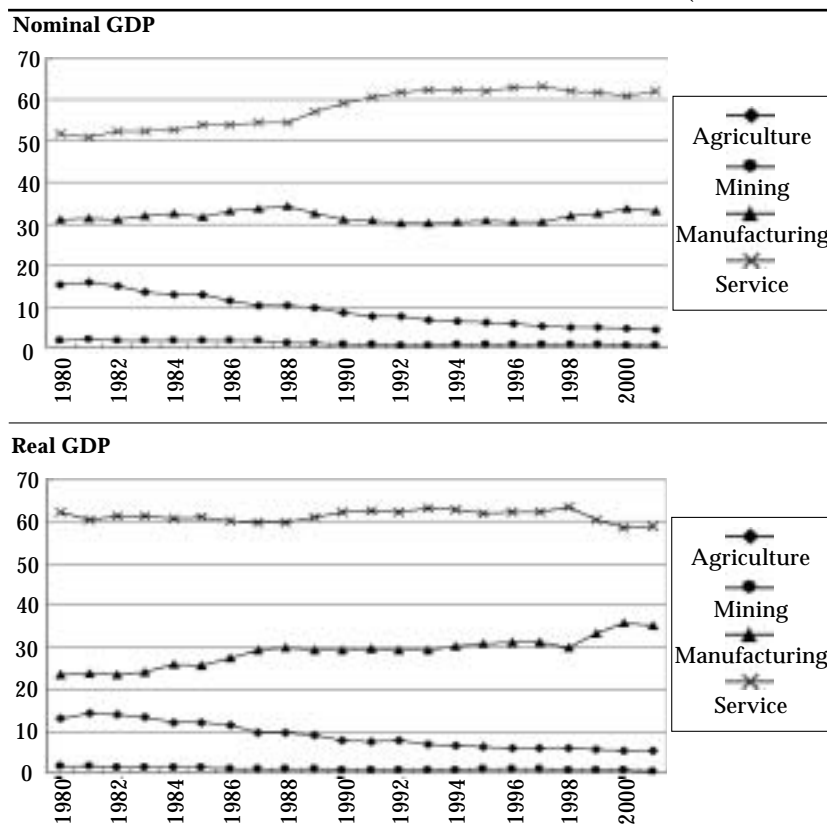
has contributed to the hollowing out of the Korean manufacturing industry. Has Korea entered into a phase of industrial hollowing?

Figure 4 shows the share of manufacturing industry in nominal GDP and in real GDP over the 1980s and the 1990s. The share of manufacturing measured in nominal GDP remained relatively stable, rising slightly after 1997. When measured in real GDP, the rise in the share of manufacturing is more pronounced: from 26 percent in 1985 to 35 percent in 2001. At the aggregate level, there is thus very little evidence of hollowing out of the manufacturing industry in terms of its share in GDP. This also shows that the dynamism of the manufacturing industry continues to underpin Korea's economic growth.

A different picture emerges, however, if the share of employment in manufacturing is used as an indicator of hollowing out. As shown in Figure 5, there was a pronounced decline in the share of

Figure 4. Share of Manufacturing in GDP

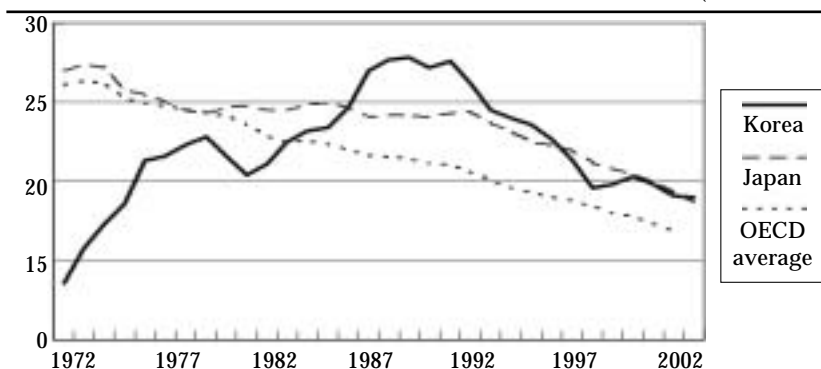
(Unit: Percent)

Source: KDI, *op. cit.*

manufacturing employment over the 1990s. This suggests that the manufacturing sector's ability to create jobs has declined over time, despite its ability to create added value. This imbalance between the share in GDP and in employment illustrates the characteristics of the industrial restructuring experienced by the Korean economy. During the 1990s, there was a rapid process of industrial upgrading, with a sharp decline in labor-intensive manufacturing such as textiles, and a concurrent rise of more capital-intensive, technology-intensive

Figure 5. Deindustrialization: Share of Manufacturing Employment

(Unit: Percent)



Source: OECD.

manufacturing such as semiconductors and electronics. In the case of the textile and clothing sector, which faced the fiercest competition from China, employment fell from 813 thousand in 1990 to 407 thousand in 2001. Furthermore, within each industry, technological advancement led to rapid gain in labor productivity, which also allowed downsizing. The transformation to capital-intensive production and improved labor productivity through technological advancements thus significantly reduced the scope for job creation in the Korean manufacturing sector.

The decline in the share of employment in manufacturing might be a natural course in the process of deindustrialization. In other countries such as the United Kingdom, this has been accompanied by a rapid increase in the development of the high value-added industries in the service sector.⁸⁾ However, Korea faces two problems that make it all the more challenging. First, manufacturing

8) Robert Rowthorn, "Growth and Structural Change in the United Kingdom and Other Advanced Economies," a paper presented at the international conference on "Deindustrialization and Industrial Restructuring," Seoul, December 4, 2003.

Table 5. Indicators of Domestic Investment*

| | (Unit: Percent) | | | | | |
|--|-----------------|---------|---------|---------|---------|-----------|
| | 1971-80 | 1981-90 | 1991-97 | 1998-00 | 2001-02 | 2003, 1/4 |
| Consumption of fixed capital/ Gross fixed capital formation | 25.5 | 32.2 | 29.2 | 43.6 | 42.7 | 43.5 |
| Increase in manufacturing production capacity | 15.6 | 8.2 | 5.7 | 7.9 | 3.6 | 2.5 |

* Year-on-year basis.

Source: Bank of Korea [www.bok.or.kr]; Korea National Statistical Office, Monthly Statistics of Korea, December 2003.

employment has declined in Korea at a much quicker pace than other countries as shown in Figure 5. Second, the service sector in Korea has been relatively underdeveloped and, compared to manufacturing, labor productivity in services is relatively low. Thus, development of the service sector is needed to create a cushion for any large shocks from manufacturing hollowing out.

Another main concern is prolonged sluggish business investment in the domestic economy. The ratio of investment to GDP fell from 30 percent in the 1980s to around 20 percent in the 1990s. Continued weak investment seems to have deteriorated production capacity, which could weaken the competitiveness of the manufacturing industry. As shown in Table 5, the ratio of consumption of fixed capital to gross fixed capital formation has increased since 1998 while manufacturing production capacity has been rapidly declining.

Furthermore, inward FDI into Korea has remained very low compared to other countries. Korea ranked 127th out of 140 countries in the 1999-2001 Inward FDI Performance Index from UNCTAD.⁹⁾ There is a general consensus that the lack of inward direct investment is due in large part to the unfavorable investment environment in

9) The Inward FDI Performance Index ranks countries by the FDI they receive related to its GDP size. It is the ratio of a country's share in global FDI inflows to its share in global GDP. UNCTAD, *World Investment Report 2003* (Geneva: UNCTAD, 2003).

Korea. The low level of domestic facilities investment, together with the low level of FDI inflows, poses the risk that Korean manufacturing may switch to a pattern of low growth, and lose its competitiveness in the near future.

CHALLENGES FACING KOREA

The Korean economy is at a crucial crossroads, with the emerging threat of hollowing out amid sluggish domestic investment. Korea must determine how to revitalize its economy and face the challenges of China's industrial rise. China's emergence as a global production base and as a large, lucrative market for goods and services presents Korea with difficult challenges as well as intriguing opportunities.

Industrial Upgrading and Developing Niche Markets

First, Korea faces the challenge of recovering its competitive edge in industry by stimulating industrial upgrades and developing niche markets in line with the changing economic landscape in Asia.

Given the current trend, its outward investment in China is likely to increase further. Moving production facilities overseas is a general phenomenon in the industrial restructuring process. The shift of more labor-intensive industries to China where wages are far lower than in Korea is thus an inevitable process. However, rapid transplantation of production facilities without developing new dynamic sectors in Korea could incur serious social and economic costs associated with the hollowing out of the manufacturing sector. Thus, Korea needs to nurture and develop new, higher value-added industries to replace the traditional ones. This will require structural reforms, including the elimination of unnecessary and burdensome regulations, that aim at making the economy more market-oriented and truly global. It also needs to develop niche markets in the newly changing regional and world markets.

In this regard, the Korean government has put forward a strategy to develop the nation into a business hub of Northeast Asia. This strategy accords Korea the role of a logistics hub, an R&D hub and a financial hub, capitalizing first, on its geographical advantage between an advanced Japan and an emerging China, and second, on its advanced IT infrastructure and quality human resources.

If Korea develops its capabilities in such areas as logistics, R&D, and financial and business services, the shift of downstream assembly process to China could be a means to stimulate industrial restructuring for enhanced competitiveness.

Maintaining Export Competitiveness while Maximizing Gains in the Chinese Market

The second challenge, related to the first one, is to move into more advanced export activities or functions rapidly enough to permit continued export expansion. Korea should also aim to use the dynamism of the Chinese market as a source of economic growth, which will require the continued upgrade of its Korea's export structure and re-orientation of production in accordance with the development of China's industrial structure.

Since the early 1990s, Korea has moved quickly to participate in the new international production system in East Asia, achieving large gains in its trade performance. However, as discussed, the current large trade surplus with China arises mainly from the procurement structure of Korean affiliates that purchase large shares of their intermediate inputs from Korea. Apart from this factor, its advance into the domestic Chinese market has been very limited.

In this context, there is reason to believe that the current trade surplus will not necessarily last long. First, FDI-induced exports could decline as a result of localization. There has been a trend among Korean affiliates to localize, that is, increasing the local content of processed exports by switching from imported parts and materials towards procuring from other foreign affiliates located in China or

from Chinese companies. The Chinese government is also pushing for an import substitution policy concerning such products as semiconductors, steel and petrochemicals. Second, Korea's imports from China could also rise continuously as China's competitiveness across a broader spectrum of goods improves, in particular in electronics and electrical machinery. Third, there is a possibility that a greater number of the components and parts factories will shift to China. Since the late 1990s, a number of partner firms and subcontracting firms have already moved there, following large conglomerates. If this trend gains momentum, Korea's exports of intermediate goods to China could plummet, accompanied by a fall in the trade surplus. According to one projection, Korea's trade surplus with China is likely to decline over the medium and longer term, and will eventually turn into a deficit starting from around 2011.¹⁰⁾

At the same time, Korean exports are also likely to face tougher competition in world markets. As discussed above, China has been making great strides in diversifying its export structure and in improving its comparative advantage in more advanced products. Significant restructuring is underway in Chinese manufacturing and many companies are becoming very competitive. Although it is hard to predict, a number of Korean experts believe that China's technological lag behind Korea, which is three to five years for many products, is shrinking. China is also challenging Korea in heavy industries, and thus Korea stands to suffer more losses in its heavy industries.

As a result, unless Korea accelerates technological upgrades and moves up the value chain quickly, it could soon lose export competitiveness in a number of products.

Deepening Economic Integration and Cooperation while Addressing Risks

The third challenge is to deepen economic integration and

10) Trade Research Institute, *Medium- and Long-term Projection of Korea-China Trade* (in Korean), (Seoul: Korea International Trade Association, February 3, 2004).

cooperation while addressing risks. Deepening economic integration among the three Northeast Asian countries has led to a synergy effect on trade expansion among them. Korea should embrace the opportunities provided by the rise of China by deepening intra-regional, intra-industry production sharing and cooperation. But unbridled competition in some industries could lead to overcapacity and deflation problems for the economies in the region. While there have been growing efforts for industrial cooperation, there still is room for enhancing cooperation.

At the same time, Korea needs to be aware of the risk factors arising from its growing dependence on the Chinese economy. While China is undergoing structural reforms that should strengthen its economic fundamentals, there is a fear that the economy might run into problems because of emerging internal economic and political difficulties. With increased dependence on its neighbor, Korea will become vulnerable to external shocks emanating from China. Therefore, it will be important to monitor developments in the Chinese economy carefully so as to address the risks.

SUMMARY AND POLICY IMPLICATIONS

China's emergence as a global economic powerhouse has created a number of significant impacts on its neighbors. Its continued growth and opening up have stimulated production sharing and the reorganization of industrial activities within Asia, which has led to exceptional trade performance and strengthened regional economic integration.

China's rise in the context of globalization and technological revolution is creating valuable opportunities as well as posing significant challenges to Korea. Korea-China economic relations have been rapidly evolving, in particular, through trade and investment linkages. The rapid expansion of bilateral trade and investment is a sign of growing interdependence, and it clearly shows that China has

become an increasingly important source for Korea's growth. While its rise has been a boon to the Korean economy so far, there is a growing concern that the current trade dynamics may not last very long and that the continued relocation of industries to China could lead to a hollowing out of the Korean manufacturing industry.

Korea is already under a great deal of pressure from the rising competitiveness of Chinese products across a broad technological spectrum. At the same time, however, Korea could use the dynamism of the Chinese economy to revitalize its own economy by building complementarity with China. This will require adopting a strategy to upgrade Korea's industries and develop niche markets. In this sense, the perceived threat of China could be a catalyst for Korea's industrial upgrading and domestic economic reforms aimed at enhancing competitiveness.

In order for Korea to upgrade its industry and to revitalize its growth potential, a number of well-coordinated policy actions will be needed. In the medium term, measures are needed to improve the business environment so as to stimulate investment in the domestic industries and eliminate the factors that hamper productivity growth. New dynamic industries must be fostered, while restructuring the less competitive ones. Over the longer term, Korea also needs to develop its services sector so as to create better jobs and improve the productivity of manufacturing. Moreover, much can be done to improve R&D policy to increase the effectiveness of the role of the government in generating innovation. Improving education should also be a permanent part of Korea's growth agenda, acknowledging the important role of education as a means of increasing workforce skills and generating knowledge for innovation. China's rise will also inevitably impose adjustment costs in terms of rising unemployment or hollowing out of industries in certain sectors or regions. Efforts will thus be needed to minimize the social costs of adjustment by strengthening the social safety net.