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Foreign Direct Investment In Korea: Trends, Implications, Obstacles

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Korea's economic development is now at the stage in which increasing productivity rather than investment is the key to future growth. Making the transition requires a shift in emphasis from capacity expansion to productivity enhancement, which demands not only a change in economic approach, but also a rethinking of political and psychological attitudes.

Korea already has a well-developed transportation and telecommunications infrastructure, an education system that produces large numbers of highly trained individuals, and many companies with world-class technology. The weight of the economic evidence indicates that productivity growth in an economy like Korea's, which has achieved middle income status, requires increased competition, more deregulation, greater mobility of capital and labor, higher levels of scientific and technological competence, and greater openness to trade and foreign investment. This report focuses on the last item, foreign direct investment (FDI).

Foreign investment is not required to enlarge the nation's stock of capital. Investment, in general, is adequate. Rather, more foreign involvement in Korean business would promote several of the attributes that lead to higher productivity: competition, technology, skills, capital and labor mobility, and trade. At the same time, improvements to these other areas would increase the rate of foreign investment. Therefore, FDI is both an indicator of how well Korea is performing in general as well as a stimulant in its own right.

Despite rapid increases in foreign investment since the early 1990s, Korea remains notable for its relatively low receptivity to foreign firms. Therefore, increasing such activities would likely have a disproportionately positive effect on the Korean economy.

KOREA'S LONG-TERM ECONOMIC PERSPECTIVE

Before considering the role of FDI in Korea, it might be useful to place that country in a broader perspective. Korea's position as a middle-income country is shown in Figure 1, which charts the growth experience of 115 non-oil dependent economies with populations greater than 1 million and GDP per capita greater than $1,000 in 2005 purchasing power parity dollars.

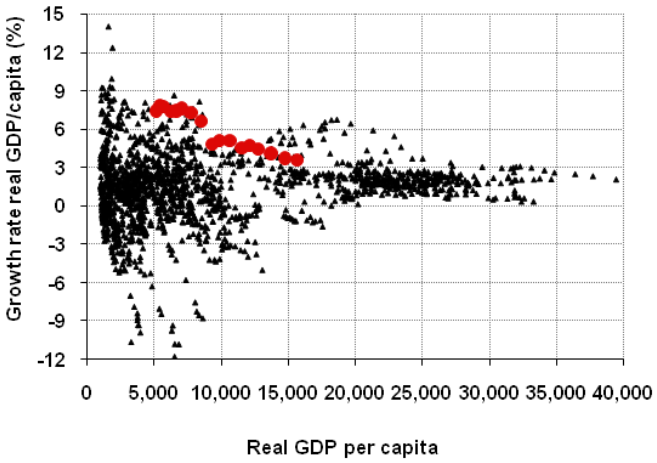
The figure plots annualized 10-year growth rates from 1980 to 2006 on the vertical axis and real, per capita GDP at the beginning of the 10-year period on the horizontal axis. These 1,675 observations from the World Bank include countries and periods for which there are at least 10 years of consecutive observations. The circles to the upper left (in red) show Korea's experience. Korea is seen to be leaving the ranks of developing economies. Its growth rate has been impressive, but is decelerating; national income per person tripled in just the past 15 years, but it is still less than half the level of the group of richest countries.

The economies represented toward the left of the chart include the very fast growing ones. Relative backwardness and competent policies have the potential to generate truly outstanding growth. However, being poor is no guarantee of growth; that part of the chart also includes many collapsing economies with negative growth over extended periods. Policies matter, as do harder-to-measure ingredients such as institutions and habits.

One important point to draw from this chart is that growth rates converge toward 0-2.5 percent as we move to the right. The American data are near the upper bound of this range while Switzerland includes the points near zero. The country at the upper end of the envelope at $30-40,000 income is Norway, which benefited from North Sea oil production. Ireland is the high flyer at $20,000 GDP per capita.

To illustrate how hard it is to exceed 2-percent per-capita growth for more than a few years, the United States barely managed to bump through the 2-percent ceiling during the 10 years that spanned the late 1990s, which included an Internet and telecommunications investment bubble, a booming stock market, and historically low unemployment rates.

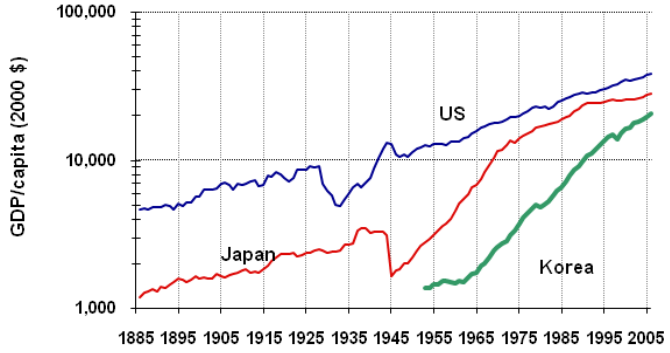
Figure 1: Annualized 10-Year Growth Rate of Real GDP/Capita and Real GDP/Capita (1980-2006, 2005 dollars at purchasing power parity)



Source: World Bank

If Korea pursues good economic policies, it can expect to mature along the lines of the rich economies and find its growth rate decelerating to the 0-2 percent range. However, it is not at that stage yet. As is evident in Figure 1 and emphasized in Figure 2, Korea is still likely to experience fast growth for several years.

Figure 2: GDP per Capita (2000 dollars)

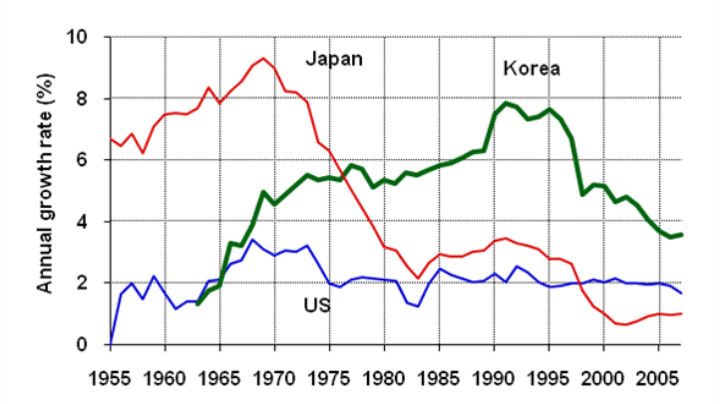


Source: World Bank (Korea), Historical Statistics (U.S., Japan)

In 1886, Japan's productivity only enabled it to produce one-quarter of the U.S. output per person, a rate reached by Korea 70 years later. The bonanza of compound growth brought about rapid convergence and Japan reached 80 percent of U.S. output per person by 1990; its subsequent slowdown ended the race toward the top, which many observers had predicted for Japan when extrapolating 1980s trends. Korea's rate of expansion since 1960 averaged a bit less than Japan's miracle years during its postwar reconstruction, but lasted longer. As is typical now with successful developers, growth is occurring faster than in the past; it took Korea only 50 years to achieve what Japan did in a little under 100 years and the U.S. in 150 (according to estimates by Angus Maddison). One implication of such fast growth is that institutional adaptations and changes that evolved slowly among the early developers must be accomplished deliberately and willfully in countries like Korea, placing strains on the political system.

As Korea manages the task of completing its passage from developing economy to rich nation, its growth inevitably will slow. The economy already has been decelerating since its high-growth sprint ended in the 1990s. Figure 3 shows the growth rates implicit in Figure 2, averaged over 10-year periods to reduce short-term volatility.

Figure 3: Annual 10-Year Growth Rate of Real GDP per Capita: Japan, United States, and Korea, 1955-2007

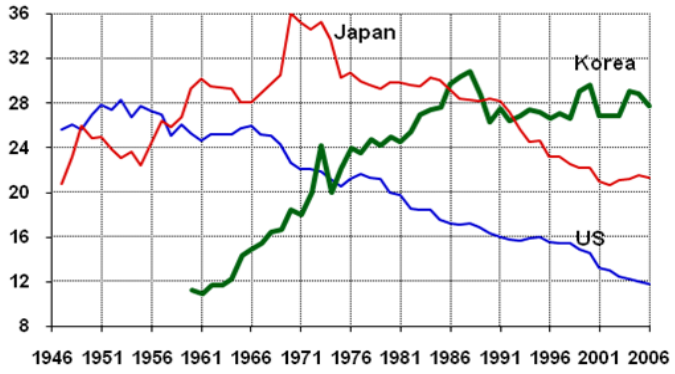


By 2005, Korea's growth rate of real GDP per capita over the preceding 10 years was 3.6 percent. When Japan hit that rate in 1979, it slowed to 2 percent only 10 years later, although Japan was heading downward at a faster pace than Korea is now. One could project that Korea's growth will approach the 2-percent range of rich economies within 10 years, possibly less. Given that outlook, pressures to change the structure of the economy arising from deceleration should be evident. Without adaptation, stagnation, or worse, is possible.

One example of pending structural change will be in manufacturing. Figure 4 shows the share of manufacturing in Japan, the U.S., and Korea. American manufacturing peaked as a share of total output in the 1950s and since has shrunk to 12 percent of GDP. Japan's manufacturing decline lags the U.S. by about 30 years. Korea's manufacturing sector should soon begin falling as a share of the economy.

Far from being a disaster, deceleration and structural change would represent an outstanding achievement. However, reaching vigorous maturity is not automatic. Economies, their policy-makers, and politicians must confront the pressures arising from these shifts. Foreign direct investment will be one force pushing Korea to face these challenges.

Figure 4: Share of Manufacturing Output in GDP (%)



FDI INTO KOREA

Substantial barriers to foreign investment were removed during the 1990s as the country embarked on a policy of increased economic integration with the rest of the world. Multinational companies were allowed to invest in all but a few manufacturing industries. Restrictions on services also loosened. Notification rather than approval was made

the norm for FDI.

Prior to the East Asian financial crisis of 1997-98, Korea imposed restrictions on foreign ownership of domestic company shares. Subsequently, those restrictions were relaxed and then eliminated entirely. The Foreign Investment Promotion Act (FIPA), in effect from November 1998, provided the revamped legal basis for FDI. The law aimed to create a more open and transparent investment regime and to abolish many regulatory restrictions of the previous system, the Foreign Investment and Foreign Capital Inducement Act.

Under the FIPA, a promotional agency, Invest Korea, was established to stimulate FDI. Invest Korea provides one-stop services for foreign investors through the entire investment process. The law also requires the Ministry of Commerce, Industry and Energy to publish an annual list of provisions that restrict foreign investment in order to make the foreign investment climate more transparent. Restrictions on foreign investment in telecommunications and media, for example, are subject to annual review under the requirement.

Several restrictions, though, still apply to foreign investment. Foreign entities may not cultivate rice and barley; beef and dairy farming and coastal fishing firms are limited to 50 percent foreign ownership. Foreigners may not own more than 30 percent of newspapers and 50 percent of magazines; radio and television remain closed to foreign investment with additional restrictions in other media. Foreigners may not exceed half ownership in most telecommunication or transport ventures, including airlines.

Foreign institutions of higher education and medical clinics may not function except in designated free economic zones. In the services sector, foreigners can and do own their own consultancies in finance, marketing, procurement, and public relations. But foreign lawyers may not operate except in advisory or consultative roles. Professional engineers, architects, accountants, and management consultants may work only on a contractual basis for a local firm.

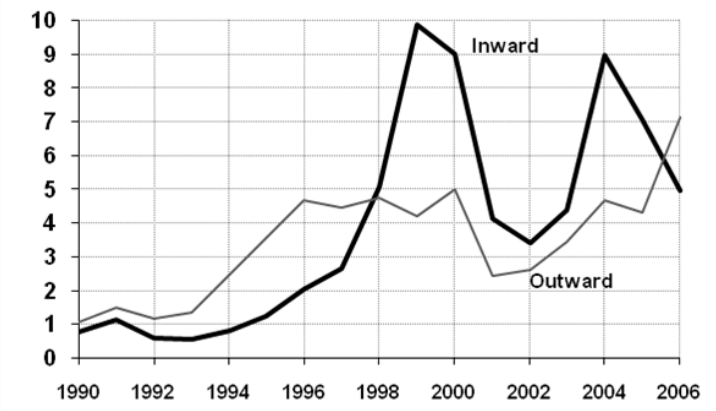
Liberalization of the services sector has been forced by the need to conform to the requirements of the World Trade Organization, the recommendations of the OECD, and free-trade agreements. A large boost to liberalizing services would come from the free trade agreement with the United States, which was awaiting ratification in both countries in mid-2008. U.S. lawyers and accountants, for example, would be able to practice under a five-year transition period.

The OECD has noted the great improvements made to the FDI environment since 1998. The foreign investment law has been amended three times to further promote FDI in light of the experience gained since first passage. Under the rationale of creating an environment friendly to foreign investors, 99.8 percent of all business lines (out of a total of more than 1,100) were open to foreigners; limitations on foreign participation remain in 26 sectors, as noted above. Another 1998 law removed restrictions on foreign ownership of real estate. Public relations campaigns to improve attitudes toward foreign ownership, plus the creation of a foreign investment ombudsman to centralize and deal with complaints, have further improved the climate. (OECD 2004: 139-40)

Following share ownership reforms, foreign ownership rose from 15 percent of all shares listed on the Korea Stock Exchange in 1997 to 42 percent in 2004, then declined to a one-third stake in 2007. The declining foreign share occurred as the flow of outside money into the market continued its upward trend, with $300 billion invested in 2007. (Korea Exchange 2007: 38-9) Foreigners now hold more than half the shares of many leading companies, including eight banks. Most of the foreign ownership is in portfolio investment rather than FDI. Portfolio investors are presumed not to seek an active management role in a company, but hold their shares as financial investments.

Korea's inward FDI increased at a rapid rate after 1997 as many foreign participants in joint ventures consolidated their holdings by buying out their Korean partners. Foreign companies also participated in the many corporate restructurings occurring in the wake of the Asian financial crisis. However, after this initial surge, the flow of foreign money slowed. As shown in Figure 5, FDI rose from under $1 billion in the early 1990s to $10 billion in 1999. Three years later, the inward flow had slowed to just over $3 billion. One explanation given for the slowdown was concern over a presumed *de facto* government policy to discourage FDI. (Graham 2003: 111) Another reason was the general global collapse of FDI following the end of the information technology investment boom that ended in 2000.

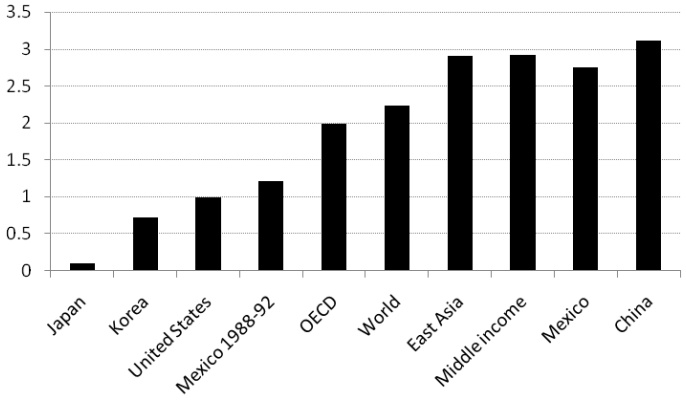
Figure 5: Inward and Outward FDI Flows (billion $)



Source: UNCTAD

FDI value relative to the size of the economy remains small. Figure 6 shows flows into selected countries and regions over the past five years as a percent of GDP. For comparison, Mexico is shown for the five years preceding discussions about its trade treaty with the United States and Canada. Clearly, Korea's experience, like its neighbor Japan, has been well below typical performance and more like Mexico's before NAFTA.

Figure 6: Inward FDI/GDP, 2002-06 Average (%)



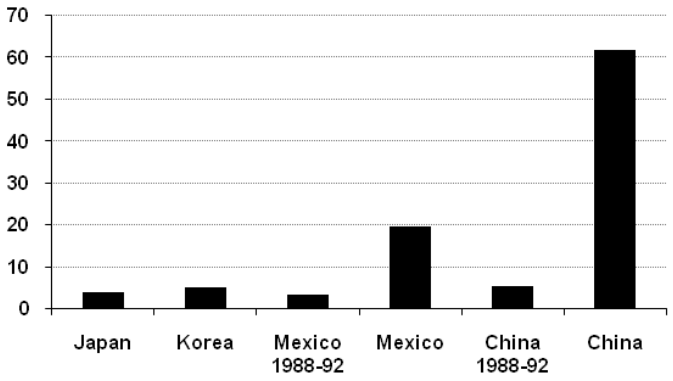
Source: World Bank

A somewhat different comparison considers the absolute scale of foreign investments, not adjusting for the size of the economy. As shown in Figure 7, Korea's inward FDI was about the same size as Mexico's and China's before economic reform in those countries. Economic changes that encouraged more FDI also contributed to faster growth of both economies. Korea remains, with Japan, notable for low levels of foreign participation, despite dramatic openings over the past decade.

A retardant to foreign investment was the lack of transparency into Korean companies' financial affairs. Of special concern were possible commitments and obligations within the industrial conglomerates (*chaebol*) that were not apparent in the published accounts. Improvements to accounting standards since the financial crisis, together with the prosecution of prominent business leaders for outright fraud, have made accurate information about Korea's businesses more accessible and believable.

An additional concern has been public sector corruption, with local businesses attempting to influence official

Figure 7: Inward FDI, 2002-06 Average (billion $)



Source: World Bank

actions through outright bribes or other questionable practices. In 1998, Transparency International ranked Korea number 42 out of 84 countries on its corruption perception index (ranked from least to most corrupt); Korea shared its position with Zimbabwe and Malawi. Surveys by Transparency International showed virtually no change in Korea's performance between 1995 and 2004. Since then, however, the country's reputation has improved greatly; the country moved up from the 50th percentile level of countries to the upper one-quarter of the less corrupt. (Transparency International 2007: 4-5) Surveys of business executives indicate that the level of corruption is associated with the confidence of investing in a country. According to one study, if Korea could achieve the average transparency level and freedom from corruption of the top group of countries, it would triple its FDI inflow. (Noland 2002: 4)

The Paris-based Organization for Economic Cooperation and Development points to another hindrance to FDI: contentious industrial relations, which impact negatively on business confidence and investment. Citing a 2003 poll of Korean and foreign CEOs, about half were reluctant to invest in Korea because of labor-management problems. Labor problems account for almost a third of the complaints made to the investment ombudsman by foreign firms operating in Korea, with a negative impact on prospective foreign investors. (OECD 2004: 84) In the recommendations of its 2004 Korea survey, the OECD highlighted the importance of improved labor relations as a key factor toward removing impediments to inward FDI. (OECD 2004: 21)

An OECD study on FDI restrictions among member countries found Korea, on average, in 22nd place out of 28 countries. Its best performance was in construction and manufacturing, but even in these sectors it was below the median OECD member. In finance, Korea came next to last. (Golub 2003: 96-7) Restrictions on foreign ownership had the highest weight among Korea's barriers. The problem with these scores, however, is that they refer to the period 1998-2000, a time when Korea was opening. Since then, substantial liberalization has occurred. Nevertheless, the results are not inconsistent with the actual flows of FDI into Korea or with measures of competitiveness that will be described below.

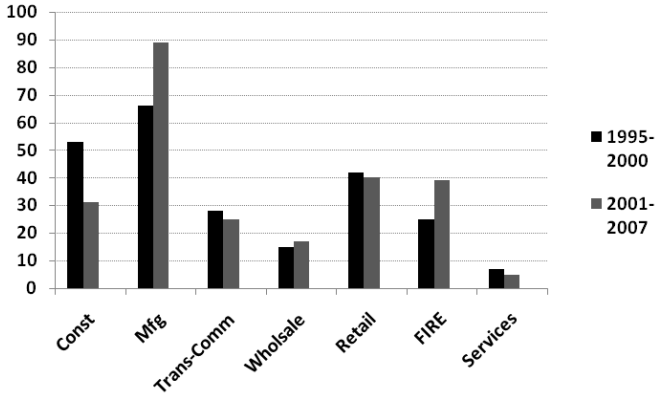
PATTERNS OF FDI IN KOREA

When Korea opened its internal market for the acquisition of companies in the late 1990s, an ongoing financial crisis offered targets in the distressed financial sector. In addition, many nonfinancial companies were in trouble because of operational deficiencies, loss of profitability, and excess borrowing. After the first rush of outsiders into the country, the economy improved, many of the sources of problems had been eliminated or ameliorated, and the volume of investments declined.

A shift in the types of target companies might be expected to accompany the changing incentives for investment. The financial information company, Thomson Reuters, produces data on global mergers and acquisitions. We

obtained the information for Korea. Figure 8 shows the number of mergers and acquisitions (M&A) transactions by broad industry groups in the years spanning the financial crisis (1995-2000) and the period after the initial FDI surge (2001-2007). There were 240 transactions in the first period and 250 in the second. In the second period, manufacturing and financial services saw an increase in the number of transactions, and fewer in construction. Otherwise, the overall pattern did not shift markedly.

Figure 8: Mergers and Acquisitions Target Industries by Period (number of transactions)



Source: Thomson Reuters
Note: Const: Construction; Mfg: Manufacturing; Trans-Comm: Transportation and Communications; FIRE: Finance, insurance, real estate. Industries are defined at the "1-digit" level in the Standard Industrial Classification (SIC).

The industries pictured in Figure 8 are classified at the so-called 1-digit sectoral level based on the 4-digit Standard Industrial Classification. The M&A transactions data include the full four digits of information of the target companies. Table 1 shows a breakdown at the finer 2-digit level.

Table 1: Twenty Most Active M&A Target Industries by Period (number of transactions)

2-Digit Industrial Classification	1995-2000	2001-2007	Change
Business services	21	36	15
Electronics, electrical equipment, components, except computer equipment	20	35	15
Chemicals and allied products	30	18	-12
Transportation equipment	12	18	6
Industrial, commercial machinery and computer equipment	14	14	0
Communications services	8	17	9
Security and commodity brokers, dealers, exchanges, services	10	13	3
Depository institutions	8	9	1
Holding and other investment offices	10	7	-3
Electric, gas, sanitary services	12	4	-8
Stone, clay, glass, and concrete products	7	7	0
Food and kindred products	8	5	-3
Wholesale trade, durable goods	3	10	7
Primary metal industries	6	5	-1
Engineering, accounting, research, management, and related services	5	5	0
Non-depository credit institutions	5	5	0
Paper and allied products	8	0	-8
Measuring, analyzing, controlling instruments; optical goods; watches and clocks	3	5	2
Real estate	4	4	0
Textile mill products	5	2	-3

Source: Thomson Reuters

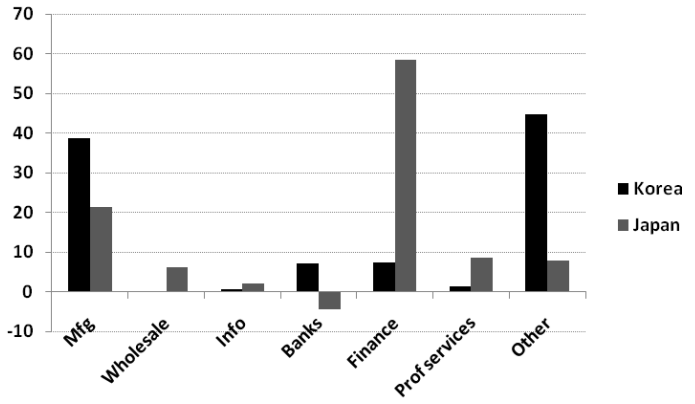
The 20 industries shown in the table accounted for 85 percent of all M&A transactions over the designated years. Business services had the largest number of transactions after 2000, and also one of the largest increases. Electronics

was a close second on both dimensions. Chemicals had the most acquisitions in the 1995-2000 period, and also the largest decline. Four different financial industries are represented among the most active, with little difference in the number of transactions over the two periods. It appears from these breakdowns that materials industries are less attractive to foreign investors than in the past, electronics and communications are more attractive, and that the service sector is bringing in outside interests, specifically business services and wholesale trade. Communications services was another hot area, mainly in cellular telecommunications and cable television.

Multinational companies contemplating their investment opportunities, especially in manufacturing, see Korea as just one of many places to seek their attention. Investment in the manufacturing of high-end products such as mobile handsets and flat-panel TVs faces vigorous competition from China, Japan, and Singapore. The Korean government has been actively positioning its free economic zones—Incheon, Busan-Jinhae, and Gwangyang—as business hubs of Asia. Incheon, for example, has attracted companies such as GM Daewoo, DHL, and New York-Presbyterian Hospital. Planners expect the World City Expo 2009 in Incheon to showcase Korea's innovations, including robots, high-speed trains, multimedia networks, and biomedical technologies, in the hope of drawing more global investment.

Foreign investment into Japan might provide another clue about the direction in which Korea might be heading. Japan is a nearby Asian economy, sharing regional features that would operate also in Korea such as transportation costs to and from other areas, demand and supply from regional neighbors, and likely participation in regional trade and investment pacts. Additionally, since Japan's financial sector and other markets arguably are somewhat more liberalized than Korea's and possess greater experience in sophisticated products, they could represent Korea's capabilities a few years hence. Figure 9 shows the share of American FDI by broad industry group in Japan and Korea.

Figure 9: U.S. FDI by Industry, Japan and Korea, Average 2002-6 (% of total capital flows to each country)



Source: Department of Commerce, Bureau of Economic Analysis

Despite the fact that financial services as a whole has been a top M&A target in Korea, American FDI when measured in dollars has been relatively more concentrated in manufacturing and less in nonbank financial companies than in Japan. However, there was more U.S. investment in Korean banks, largely the result of a few large transactions. American FDI in wholesale trade and professional services also was relatively larger in Japan than in Korea, despite their popularity as shown by the M&A data in Table 1.

Since the services-based American economy has developed high levels of skills and productivity, it should not be a surprise that its investments are in these same sectors, especially in Japan and Korea, which are notable for service sectors exhibiting inferior productivity and product development compared to the U.S. The fact that business services was the industry in Korea with the greatest number of foreign M&A transactions is consistent with this emphasis.

Inspection of annual American FDI capital flows suggests that Korea is moving in the expected direction. Table 2 shows the share of annual capital outflows from the U.S. to Korea by major industry group. The manufacturing trend is downward, though volatile; nonbank finance has grown from almost nothing to assume a major share in some years. Even more changes can be expected as a result of the possible implementation of the free trade agreement negotiated between the United States and Korea, which prominently features business services and financial regulatory reform.

Table 2: U.S. Direct Investment Capital Outflows to Korea, 1999-2006 (% of total U.S. FDI to Korea)

	1999	2000	2001	2002	2003	2004	2005	2006
Manufacturing total	71	66	56	44	54	19	32	63
Of which: computers and electronics	23	43	13	-13	11	5	-12	16
Banks	-14	7	8	1	-3	52	19	19
Other finance and insurance	4	3	8	53	37	16	23	20
Other	39	24	29	2	12	13	26	-1

Source: Department of Commerce, Bureau of Economic Analysis

In addition to changes in the industry mix of FDI, foreign investors are altering their approach to new ventures. One approach is for a foreign company to build a new venture from the ground up, so-called greenfield investments. Another is for the foreigner to gain control of an existing domestic company through merger or acquisition. The local emotional impact of a greenfield investment is more muted than it is for M&A, in which a local company comes under foreign control. According to UNCTAD data, 80-90 percent of FDI in the developed world is via M&A. In contrast, until 1998, only one-third of the inflows into Korea were by that method. However, the situation changed after 1998 when Korea's share of FDI through M&A reached the levels seen elsewhere, largely because of changes noted above that made it easier for anyone, especially foreigners, to acquire shares in a company. The preference of firms to invest via acquisitions is likely to persist.

UNCTAD's *World Investment Report* for 2000 surveyed the research on whether there are differences between greenfield investment and cross-border M&A in their impact on host country development. The study concluded that it is difficult to discern explicit differences between the modes of entry. "Most of the shortcomings of FDI through M&As in comparison with greenfield FDI relate to effects at entry or soon after entry. Over the longer term, when direct as well as indirect effects are taken into account, many differences between the impacts of the two modes diminish or disappear." (UNCTAD 2000: 197) The study suggests that it is more important to examine the motivation of the investing multinational and whether the economic development of the host country is sufficiently developed to be able to absorb the various benefits accruing to different types of mode of entry.

Many investments are mixes of the two types. For example, in 1999 LG Electronics, a Korean firm, and Royal Philips Electronics of the Netherlands agreed that Philips would pay $1.6 billion for a 50-percent share of a newly established venture, LG Philips LCD. Of this amount, $1 billion went directly to LG Electronics, and the rest flowed into the joint venture in the form of acquiring new shares valued at $600 million. Phillips' investment was a mixed form of cross-border M&A and greenfield investment. The amount paid directly to LG Electronics had the characteristics of M&A, while the remainder can be classified as a greenfield investment. The Korean government classified the entire project as a greenfield investment, which allowed 10-year tax incentives to the joint venture. The M&A part of the deal did not enter into the government's FDI statistics. (Lee and Yun 2006: 27)

A study on the possibly different effects of greenfield investment and M&A in Korea found no significant differences in terms of corporate performance (measured by various profitability measures) and subsequent investment behavior (measured by changes in total assets). The main reason behind this result is that the multinationals and target domestic companies employ complex deals, mixing various modes within a single investment case, as in the LG Electronics-Philips deal described above. (Lee and Yun 2006: 38) One of the authors' principal conclusions was that Korea's policy of providing incentives based on mode of entry has no basis in empirical evidence.

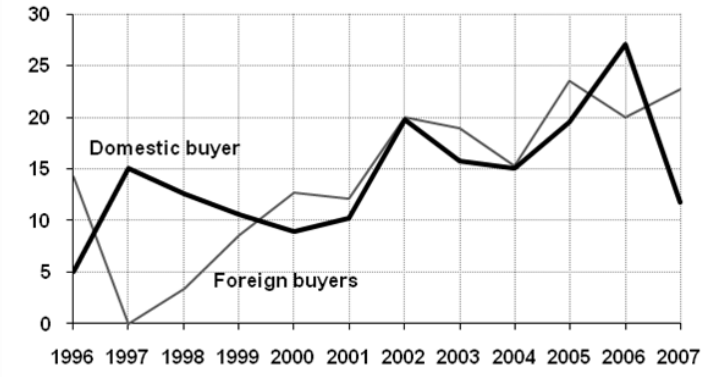
A customary pattern of M&A has been for an industrial company to buy a foreign firm that had production capacity, technology, a customer base, or other things valued by the acquirer. In the past decade or so, financial companies, including private equity firms, entered the market. These entities collect funds from investors and use them to buy companies around the world with the prospect of improving their performance, raising profitability, boosting value, and selling them at a profit. Illustrative of this phenomenon, nonbank holding companies now account for 40-50 percent of the FDI outflow from the United States. Many private equity firms are now active in Korea.

Private equity companies often are called vulture funds, or worse, by local commentators. Like middlemen in many societies, they are not believed to add value through their activities, but rather are alleged to live by sucking the value produced by others. Although this view is incorrect, it conditions emotions and policies. An ongoing example is the Lone Star Funds' purchase of the distressed Korea Exchange Bank in 2003; the purchase price of $1.2 billion and attempted sale in 2006 at a price of $6.6 billion generated estimated profits for the fund's investors of $4.5 billion. Public outrage sparked several government investigations of the transaction.

The number of financial companies acquiring nonfinancial Korean firms has been growing steadily. However, this phenomenon is as much a domestic affair as it is a foreign one. Figure 10 shows the percentage of annual transactions accounted for by financial companies' acquisitions of nonfinancials firms. From barely a handful in the 1990s, they represented more than 20 percent of all M&A transactions after 2004. Domestic financial firms are as active in local transactions as are foreigners in cross-border deals. The reason for the drop in the percentage of domestic financial buyers in 2007 was the large increase in the number of total transactions; the actual number of financial buyouts rose to 35 in 2007 from 10 the year earlier, but the total number of transactions increased from 37 to 300.

The rise of domestic financial actors parallels the increasing number of actors in Korea's financial sector. Members of the Asset Management Association of Korea had less than 100 trillion won under management at the end of 1997 ($100 billion). There now are 49 firms in the industry association with almost $400 billion under management. Regulations that had discouraged the formation of domestic private equity firms before 2004 were revised by the Indirect Investment Asset Management Business Act in October 2004, which permitted the launch of domestic private equity funds with a view toward countering unsolicited takeovers by foreign capital. As of the end of 2006, 16 such firms were operating with more than 3 trillion won in hand. Though small by American or British standards, this development illustrates how fundamentally the Korean financial market has changed since the 1997-98 crisis. (Lee 2007: 26)

Figure 10: M&A Transactions with Buyer a Financial Company and Target Not Financial (% of annual transactions of each type)



Source: Thomson Reuters
Note: Financial companies identified as 2-digit SIC codes 60-64, 67

The shifting nature of foreign investors has meant that oversight has moved to financial regulators and agencies dealing with services rather than manufacturing. New kinds of actors, foreign and domestic, will create new challenges for government agencies and the entire regulatory regime.

THEORETICAL EFFECTS OF FDI

The economic literature on FDI tries to explain why firms establish foreign ventures rather than export or license their products and technology. The accepted explanations are those that emphasize proprietary knowledge of some form plus inability to protect that knowledge. By working though an organization that it controls, the investor is able to protect its proprietary assets. In particular, there is often some kind of firm-specific asset: technological, marketing, or operational that is difficult or unwise to transfer to others. Note that technology is a broad concept that includes any kind of method, process, or know-how.

Foreign business investments may have several possible effects on a host country. Since it is generally assumed that the foreign investor has an advantage in technology, management, or other capabilities compared to domestic companies, there should be a combination of higher output, higher quality goods and services, or lower costs from the foreign investment. These outcomes are likely to increase the welfare of local consumers and workers directly. Another possibility is that inward investment adds to the stock of domestic capital beyond what it might otherwise have been. This effect is particularly important in capital-starved, low-income countries, but does not usually apply to Korea. A third avenue for domestic gains is the possibility of indirect transfers through spillovers; the foreign investor may increase the productivity, wages, export capabilities, or other dimensions of performance of local companies if some form of knowledge transfer occurs.

Scholars often list four channels through which the host might benefit from spillovers: imitation, skills acquisition, competition, and exports. Imitation is the typical mechanism discussed in descriptions of technology transfer between advanced and poorer economies; it often proceeds through the reverse engineering of products and processes or by simple copying management and organization through a kind of demonstration effect. Investors are well aware of these possibilities and often refrain from transferring their latest technology to their foreign ventures.

Adoption of new technology can also occur through acquisition of human capital. Companies typically invest in training, especially on-the-job-training. The movement of employees from foreign to domestic firms or to new firms can generate productivity improvement in the domestic companies. Some scholars argue that this is the most important channel for spillovers.

Many models of spillovers emphasize the role of competition. The foreign entrant can place competitive pressure on local firms to use their existing technology more efficiently, yielding productivity gains. Greater competition leading to a reduction in so-called X-inefficiency is frequently identified as one of the major sources of gain. Competition also may increase the speed of adoption of new technology or the speed with which it is imitated.

Export spillovers may arise when domestic firms learn how to export from their new foreign neighbors. Exporting involves costs in the form of establishing distribution networks, creating transport infrastructure, learning about consumers' tastes, and mastering regulatory arrangements. Foreign investors typically are larger and more experienced than the average local firm, frequently exporting from the host country. Consequently, they arrive with detailed export experience and knowledge of trade procedures, a form of management technology. Through collaboration or imitation, domestic firms can learn the techniques mastered by the multinational firms. A growing literature links exporting and productivity; therefore, if domestic firms become better traders through the example of the foreign investor, aggregate productivity is likely to improve.

As research on FDI progressed, scholars became sensitive to differences in host country receptivity to possible spillovers. One of the first characteristics to be examined was relative backwardness, or how similar the economies of investor and host were in development terms. At first, it was thought that the further apart the economies, the greater the possibility of spillover because of the large backlog of exploitable opportunities. However, it quickly became apparent that too great a difference imposed barriers to the host country's ability to imitate and learn from the foreign firm. More recently, the relationship is thought to reflect the absorptive capacity of the host country; the more similar the economies, the more likely the host has the human capital, infrastructure, and business networks to support spillovers.

Other host country characteristics that appear to be important are labor markets that can adapt to new and shifting demands as firms alter their internal operations, and markets that respond to foreign pressures and opportunities.

WHAT IS THE EVIDENCE ON FDI?

A recent review of the research on FDI began: "A substantial body of literature has grown around the question of how inward foreign direct investment affects host countries. On almost every aspect of this question there is a wide range of empirical results in academic literature with little sign of convergence." (Lipsey and Sjöholm 2005: 23) Early research on the effects of FDI tended to be based on the experiences of the advanced economies, especially the United States and Great Britain. For the past 30 years, these two countries accounted for one-third of all FDI inflows and 40 percent of outflows. Not only were they the largest targets and investors, but also their statistical agencies and private sources provided good data for analysis from aggregated macroeconomic statistics as well as individual firm data.

In the 1970s, much of this research reported positive spillover effects, particularly from the competition introduced by the new arrivals. However, as the range of countries expanded, the results became more mixed. Several problems became apparent as the variety of experiences multiplied. Labor markets in the U.S. and U.K. were free and flexible; developing countries had more heterogeneous employment regimes that often included restrictions on the movement and transfer of workers. Similar differences were seen in product markets where the level of regulation, protection, and competition varied enormously across countries and products. Another dimension of difference was the technological capabilities of each economy, including its education and scientific levels.

In addition to the variability across the economic and business dimensions that made interpretation difficult, a methodological issue introduced its own complications, namely, the difficulty of disentangling cause and effect. Does investment follow productivity growth in a country, does investment cause growth, or is there a mutually reinforcing effect? Although this problem was well known, not many studies convinced skeptics that they had addressed the issue adequately. Other methodological concerns questioned whether cross sectional data covering many observations at a single time period could account for changes occurring over time. Some scholars argued that panel data on many firms over time were necessary to reveal FDI's effects, especially since it was at the level of the firm that the results were presumed to occur. As panel data sets on firms tracked over time became available in several countries, the richer information permitted some of the earlier concerns to be addressed. However, mixed results continued to emanate from the studies.

As the contrary results multiplied, survey articles tried to make sense of the accumulating evidence. A 2001 meta-analysis of 21 studies covered research published from 1974 to 2001. (Görg and Strobl 2001) It sought to answer the question of why some studies find positive, while others find negative or no spillover effects. The principle technique was to relate the studies' results to such characteristics as sample size, aggregation level, variable definitions, and cross-section or panel analysis. The strongest conclusion was that cross-sectional studies reported higher impacts from foreign presence than panel studies. They warn, however, that these results may overstate the spillover effects because they cannot allow for firm or sector-specific effects that may influence the relationship between FDI and productivity. The authors cite a common refrain: foreign companies may invest in high-productivity firms or industries rather than create the higher productivity through their investments. Only adding a time dimension to the sample can deal with this problem. (Görg and Strobl 2001: 738)

On wage spillovers specifically, a similar survey reported that panel data showed negative spillovers, while cross-sectional data reported positive spillovers. Turning to productivity spillovers from foreign-owned to domestically owned firms, the authors found "only limited evidence in support of positive spillovers. … Most work fails to find positive spillovers, with some even reporting negative spillovers." (Görg and Greenaway 2001: 23).

Research by Carkovic and Levine comes closest to dealing with the problems of cause and effect. (Carkovic and Levine 2005: 197) Using a combination of cross-country and time series panel data, these authors test explicitly for the effect of FDI on subsequent economic growth, holding other things constant. They conclude, based on as

rigorous a method as to be found in the literature, that there is no independent effect of FDI on economic growth. "This study finds that the exogenous component of FDI does not exert a robust, positive influence on economic growth. … Specifically, there is no reliable cross-country empirical evidence supporting the claim that FDI per se accelerates economic growth." (Carkovic and Levine 2005: 197)

An important point is made by Lipsey and Sjöholm in their 2005 review of the literature, offering support to the main conclusion of Carkovic and Levine: "none of the variables found in other studies *consistently* determine the effect of FDI on growth, although some are significant in some combination of conditioning variables." As one of the authors put it in an earlier article: "It is safe to conclude that there is no universal relationship between the ratio of inward FDI flows to GDP and the rate of growth of a country." (Lipsey and Sjöholm 2005: 25)

As definitive as these results appear, the issue does not rest without further examination. Carkovic and Levine note, for example, that anything that generates economic growth will also stimulate FDI; therefore, foreign investment would be an indicator, at a minimum, of favorable economic circumstances. "While sound economic policies may spur both growth and FDI, the results are inconsistent with the view that FDI exerts a positive impact on growth that is independent of other growth determinants." (Carkovic and Levine 2005: 219)

It is possible, however, to disagree with this assessment on the basis of the study's own findings. In particular, it notes that FDI has no effect when trade is "held constant." However, when both trade and FDI are allowed to vary (that is, when trade variables are not included in regression equations), FDI has a robust effect on growth. (Carkovic and Levine 2005: equations 1-3, 207) Since trade growth is a typical accompaniment to FDI, positive effects from FDI can be presumed to occur.

Other studies using similar econometric techniques to those used by Carkovic and Levine show a robust relationship between growth and financial openness (which includes portfolio as well as direct investment) in a sample of developing countries. In particular, having the right combination of policies in place appears to enhance the positive effects of openness. "Financial openness has a negative impact on economic growth in countries with weak institutions. … The impact of increased financial openness becomes positive for higher levels of institutional quality. The highest impact occurs for Italy, Singapore, Chile, and South Korea, whose institutional quality lies in the seventieth percentile of the world distribution." (Calderon and Fuentes 2006: 60-61)

Lipsey and Sjöholm perform a unique experiment in their survey article by testing many of the results from other studies using the evidence from a 25-year panel of Indonesian manufacturing establishments data. Their tests include varying the scale of aggregation from establishment to product to industry, varying the geographic scope of influence, and testing the persistence of the cross-section versus panel results found in other surveys. While recognizing that their results from one country may not hold up everywhere, nevertheless, they are able to make explicit comparisons across various analytical methods. For example, many empirical studies provide strong evidence of a wage premium in foreign-owned firms. A Korea Ministry of Commerce, Industry and Energy survey, for example, found that labor productivity was 25 percent higher in foreign-controlled companies than in domestic firms. (Cited in OECD 2005: 171) The analytical problem is that high employee wages or productivity in foreign-owned firms may be caused, or at least influenced, by foreign takeovers of domestic firms already paying higher wages. Making use of the Indonesia data, Lipsey and Sjöholm find that foreign-owned firms did tend to acquire domestic plants with higher-than-average blue-collar wages, but the difference was too small to account for the wage differential between domestically-owned and foreign-owned plants. (Lipsey and Sjöholm 2005: 26)

According to Lipsey and Sjöholm, new research seems to have reversed the earlier findings that positive effects from FDI appear mainly in cross-section data. The mix of results must come from something else. Positive spillovers have been found most frequently in developed countries. Even in the U.K., though, they note that large technology gaps between foreign-owned and domestically-owned firms reduced or eliminated spillovers. In many developing countries, the gap between foreign-owned and domestically-owned firms is too large for foreign firms to influence local businesses. (Lipsey and Sjöholm 2005: 28) Several other studies have found that productivity spillovers are greater when local firms are technologically comparable to the foreign firms.

Another source of mixed results in the studies is that labor markets in some developing countries are too segmented or restricted for wages in one group to influence the other. For example, Venezuela and Mexico typically show negative wage spillovers, whereas the U.K. and U.S. report positive spillovers; labor market conditions are very different in these two groups of countries. On the basis of an "employment laws index," Mexico and Venezuela were ranked among the most restrictive countries, while the U.K. and U.S. were among the least. (Lipsey and Sjöholm 2005: 28)

After reviewing the Indonesia studies, Lipsey and Sjöholm conclude that most of the variability reported in studies on FDI does not lie in the design of the econometric studies. Therefore, it probably resides in the individual countries or firms. Among those differences, as already noted, are the openness of labor markets and the technological absorptiveness of host country firms. The strength of local competition and the existence of local entrepreneurs also seem to make a difference across countries.

Negative effects are likely if the domestically owned sector is too small or unable to learn from foreign-owned firms. A heavily protected sector might be inefficient and lacking in entrepreneurship. Foreign investors with superior technology could damage local companies as the least efficient are forced out of the industry. Such a result would be positive for the economy as a whole, but certainly negative for the inefficient firms. Lipsey and Sjöholm end their survey by suggesting, "the main lesson might be that the search for universal relationships is futile." (Lipsey and Sjöholm 2005: 40)

IMPLICATIONS OF FDI RESEARCH FOR KOREA

FDI has the potential to stimulate productivity, introduce technology, increase wages, and promote competition. However, none of these benefits are automatic. The research on the effects of FDI on the host country emphasizes several attributes that promote positive spillovers.

First, the domestic economy must provide incentives to absorb what there is to learn and to respond to competitive pressures introduced by a foreign company. Second, the host country and its firms must be able to absorb the technology and imitate the successful operations of the foreign company. Third, the local economy has to adapt to the changes introduced by the foreign company; adaptation requires flexibility in labor and product markets.

Korea has a decidedly mixed set of qualities for benefiting from FDI. These qualities have been enumerated in several international comparisons of economic performance across the world's nations. Table 3 reproduces an updated comparative tabulation produced by a Heritage Foundation analysis of the Korean economy. It shows how Korea ranks in global evaluations, especially compared to other Asian economic powers.

Table 3: Competitive Rankings (rank of selected countries in global comparisons)

	South Korea	Singapore	Taiwan	Japan	China	Hong Kong
Index of Economic Freedom	41	2	25	18	126	1
Global Competitiveness Index	11	7	14	8	34	12
Doing Business	30	1	50	12	83	4
IMD World Competitiveness Yearbook	31	2	13	22	17	3
Globalization Index	35	1	37	28	66	2
Corruption Perception Index	43	4	34	17	72	14
Economic Freedom of the World	32	2	38	22	86	1

Sources: Holmes et al 2008; Porter et al 2007; World Bank and IFC 2007; IMD 2007; *Foreign Policy* 2007; Transparency International 2007; Gwartney and Lawson 2007.

The overall rankings shown in the table place Korea below the most competitive economies in Asia, but above others according to some evaluations. Singapore and Hong Kong come out near the top of most economic evaluations, Japan lower down, and Taiwan, Korea, and China trade places in the various compilations.

Such gross evaluations, though, provide no clues to improve matters. However, most of these rankings are compiled from many narrower individual attributes. *The Economic Freedom of the World* index, for example, uses 42 separate indicators aggregated into a single index number and ranking. In order to probe more deeply into Korea's situation, I obtained the individual items from the surveys, except for the *IMD World Competitiveness Yearbook*.

All together, there were 195 separate qualities or attributes included in the seven studies. Since each survey included a different number of countries, rankings vary from one to the other simply because the lists are longer or shorter. Therefore, I converted the rankings into a percentile that shows how close Korea is to the top of the list (the top entry is equal to 100 percent). The lowest and highest ranking attributes are shown in Table 4. (The full list is shown in the Appendix table.) Note that some items appear similar because they come from different studies.

Among the low ranking items on the left side of the table, five concern labor market issues, including restrictions on employee hiring and firing as well as labor costs. Another five deal with problems of trade and international capital flows, including FDI.

Equally revealing are the items on the positive side of the table. Education, science, and information technology put Korea well above the 90th percentile of nations; a dozen items refer to these fields. Another handful mention qualities related to the rule of law. Business competence figures strongly in several items. The full list in the appendix cites Korea's transportation infrastructure and other supporting facilities.

Clearly, Korea possesses the basic foundation to benefit richly from FDI. Equally, the negative features act as a

Table 4: Korea's Lowest and Highest Ranking Attributes in International Comparisons

Low Ranking			High Ranking		
Source	Attributes	Percentile	Source	Attributes	Percentile
EFW	Use of conscripts	4	DB	Ease of trading across borders	93
EFW	Tariff variability	4	GCI	Pay and productivity	93
GI	FDI in and out as % of GDP	15	DB	Ease of closing a business	94
EFW	Mandated dismissal costs	16	GCI	Utility patents	94
EFW	Price controls	16	GCI	Burden of government regulation	94
GCI	Firing costs	18	DB	Ability to enforce contracts	94
IEF	Labor hiring, firing restrictions	21	GCI	Laws relating to information technology	95
EFW	International capital flow restrictions	21	GCI	Capacity for innovation	95
GCI	Business impact of malaria	24	GCI	Local supplier quantity	95
GI	Peacekeepers % of population	25	GCI	Internet users	95
GI	Government transfers/GDP'	26	GCI	Company R&D spending	95
DB	Ease of employing workers	26	GI	Number of Internet hosts	96
GCI	Procedures to start business	27	GCI	Extent of staff training	96
IEF	Tariff and nontariff barriers	28	GCI	University-industry research alliance	96
IEF	Individual income tax rate	29	EFW	Licensing restrictions	97
EFW	Top marginal income tax rate	32	GCI	Primary school enrollment	97
IEF	Top tax rates; taxes/GDP	33	GCI	Internet access in schools	97
GCI	Business impact of tuberculosis	34	GCI	Burden of customs procedures	97
GCI	Tuberculosis incidence	35	GCI	Control of international distribution	97
EFW	Capital controls	36	GCI	Degree of customer orientation	97
DB	Ease of starting business	38	GCI	Interest rate spread	97
EFW	Transfers and subsidies % of GDP	39	GCI	State of cluster development	98
GCI	Female participation rate	40	GCI	Broadband Internet subscribers	98
DB	Ease of paying taxes	40	GCI	Buyer sophistication	98
GCI	Business costs of terrorism	40	GCI	Government technology procurement	98
GCI	Trade-weighted tariff	40	EFW	Legal enforcement of contracts	99
EFW	Government consumption	41	GCI	Tertiary school enrollment	99
GI	Membership in international orgs.	42	GCI	HIV prevalence	99

Sources: DB: Doing Business; EFW: Economic Freedom of the World; GCI: Global Competitiveness Index; GI: *Foreign Policy* Global Index; IEF: Index of Economic Freedom. (See Bibliography for full references.)
Note: Items edited for conciseness and clarity.

retardant, both to investment itself and to the transfer of its benefits through the economy.

The interlinked nature of the positive and negative attributes in the Korean economy are reflected in the nation's R&D. Analysis of Korea's science sector suggests that the country's linkages to the global scientific community are weak; foreign investment in domestic R&D is tied with Japan as the lowest in the OECD despite underlying domestic scientific strengths. One reason given for poor international collaboration is the low level of FDI. "International isolation may limit the scope for technological progress, as foreign sources of knowledge are increasingly important for innovation, leading to growing cooperation across national borders." (OECD 2005: 106) A positive development, however, is that the number of foreign R&D centers located in Korea doubled from 1997 to 2005.

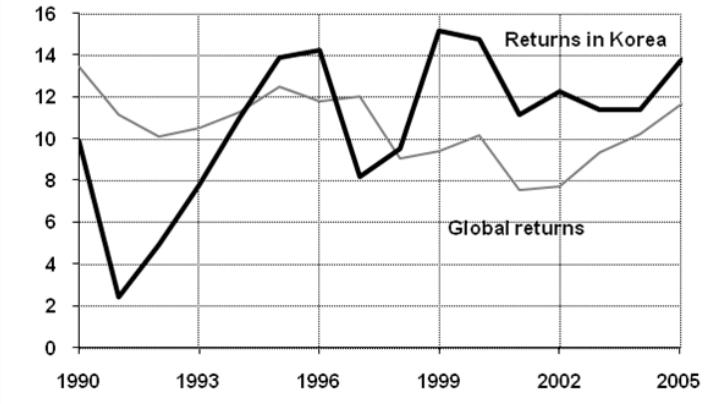
For a maturing economy such as Korea, R&D becomes a key source of productivity improvement and a nation the size of Korea cannot depend only on its own scientific resources. The links of R&D to FDI consequently become doubly important. A solid science base enhances Korea's attractiveness to foreign investors and helps to disseminate the benefits from FDI. On the other hand, the barriers to FDI limit the engagement of Korean scientists with others around the world, reduce the domestic acquisition of foreign science and technology, and slow productivity growth.

CONCLUSIONS

Korea is approaching economic maturity. Its future growth will depend more on productivity improvements than on additions to the capital stock. Foreign investment will be a stimulant to productivity improvement. Structural impediments that reduce the ability of firms to adapt to new conditions will retard productivity growth. Labor market restrictions that hinder the movement of people from firm to firm or across industries, likewise, will slow growth. The trade agreement negotiated with the United States could create the potential for direct investment by American firms as well as companies from other countries, which could cause dislocations, especially since much of that investment will be in areas that differ from past patterns. However, even if the trade agreement does not come into force, economic incentives are creating opportunities for direct investment into Korea.

The growing incentives to invest in the country are evident in the returns that can be realized by foreigners. American investment in Korea has been profitable. The returns earned on American FDI have averaged more in Korea than in the rest of the world, as shown in Figure 11. (America's global returns are less volatile than those from Korea because worldwide returns are diversified and averaged across many economies). Since the end of the Asian crisis, returns in Korea have been consistently above those earned elsewhere.

Figure 11: American Rate of Return on FDI, Global and Korea, 1990-2006 (%)

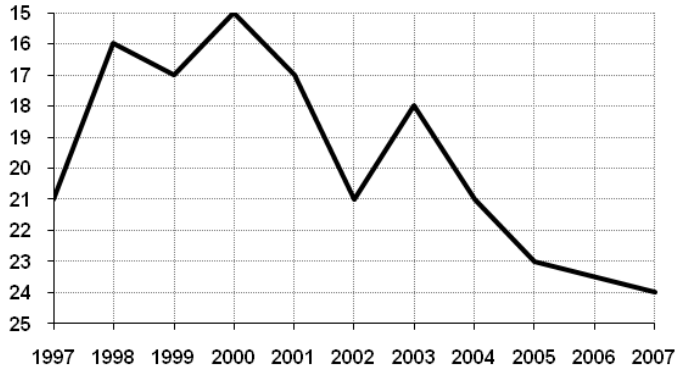


Source: Department of Commerce, Bureau of Economic Analysis
Note: Returns are calculated as the ratio: (direct investment income without current-cost adjustment, net of withholding taxes)/(U.S. direct investment position abroad on a historical-cost basis).

Despite the many benefits from FDI, Koreans harbor a negative public perception towards imports, foreign firms, and foreign investment. It should be noted that Koreans are not alone in their suspicion and anxieties toward outsiders. The 2008 American presidential campaign elicited similar reactions from American citizens.

Despite the many attempts by Korean political leaders to promote their country as an attractive place in which to invest, including the competitive returns that are available, the global investment community has a wide menu of alternative locations from which to choose. Korea is not among the first places that business leaders think of when contemplating FDI. The management consultancy A.T. Kearney conducts an annual survey administered to senior executives of the world's leading corporations. (A.T. Kearney 2007) The analysts there calculate an FDI confidence index based on the likelihood of direct investment in a market over the next three years. Korea's ranking in that survey is shown in Figure 12. The number one spot, going to either the United States of China over the past decade, designates the most attractive investment target. Although placed in the top 25 since 1997, Korea's rank has declined since reaching a peak in 2000. This comparison indicates that despite the real changes occurring in Korea's openness to global business, others are changing even faster and residual issues diminish Korea's relative charms.

Figure 12: Korea's Ranking in A.T. Kearney FDI Confidence Survey of 25 Countries: 1997-2007



Source: A.T. Kearney 2007

Korea's political leaders have made efforts to change the underlying bases of these perceptions, especially among central government officials. Schemes to address these issues include rewarding public servants who promote FDI and creating an investment ombudsman. However, local governments, the news media, and the general public still harbor suspicions about the wisdom of further opening. An OECD review of regulatory reforms in Korea notes that strengthening efforts to alleviate foreign perception of *de facto* discrimination against foreign investment remains a major challenge and will take time. Such suspicions are found in many of the most advanced countries and a combination of specific policy and regulatory changes are necessary to deal with the problem as well as better public relations on the importance to the nation of greater openness. (OECD 2007: 12) The newly elected president, Lee Myung-bak, was sensitive to the disconnect between official policy and lower level implementation in a speech to the American Chamber of Commerce in Korea, in which he acknowledged: "The lack of predictability of economic policies, with high-level policymakers saying one thing, and working-level bureaucrats doing another, may be one source of frustration." (Lee 2008)

A report on Korea's FDI by the Economist Intelligence Unit reflects the views of others on the apparent *de facto* negative attitudes toward foreign involvement held by government bureaucrats, even when the political leaders and official policy states otherwise. "The government's attitude towards foreign trade emphasizes exports and slow liberalization of imports. This attitude remains deeply ingrained in the outlook of the government and the country despite continuing globalization and liberalization." (Economist Intelligence Unit 2007: 82)

FDI in the future will employ different techniques than in the past, occur in different industries, involve a changed cast of government agencies, and use different financing methods. Koreans will be challenged to adapt to these

changes. However, given the enormous transformations that have occurred over the past 50 years, Korean companies, citizens, and their government have revealed an ability to cope, demonstrated by an economy approaching the level of the rich nations. There is little reason to believe that these coping skills have vanished.

Other reports in this series:

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APPENDIX TABLE: KOREA'S ATTRIBUTES IN INTERNATIONAL COMPARISONS

Low Ranking			High Ranking		
Source	Attributes	Percentile	Source	Attributes	Percentile
EFW	Use of conscripts	4	GI	Trade % of GDP	57
EFW	Tariff variability	4	IEF	Government spending/GDP	57
GI	FDI in and out as % of GDP	15	EFW	Irregular payments	58
EFW	Mandated dismissal costs	16	GEF	Cooperation in labor-employer relations	58
EFW	Price controls	16	GEF	Business impact of rules on FDI	60
GEF	Firing costs	18	EFW	Judiciary independence	60
IEF	Labor hiring, firing restrictions	21	EFW	Administrative conditions on new business	60
EFW	International capital flow restrictions	21	EFW	Restrictions on sale of real property	61
GEF	Business impact of malaria	24	DB	Registering property	62
GI	Peacekeepers % of population	25	GEF	Organized crime	62
GI	Government transfers/GDP'	26	GEF	Rigidity of employment	62
DB	Ease of employing workers	26	EFW	Actual vs. expected size of trade sector	62
GEF	Procedures to start business	27	EFW	Impact of minimum wage	62
IEF	Tariff and nontariff barriers	28	EFW	Competition in domestic banking	63
IEF	Individual income tax rate	29	EFW	Top marginal income tax	63
EFW	Top marginal income tax rate	32	EFW	Inflation variability	63
IEF	Top tax rates; taxes/GDP	33	GEF	Secondary school enrollment	63
GEF	Business impact of tuberculosis	34	EFW	Official - black-market exchange rates	64
GEF	Tuberculosis incidence	35	DB	Investor protections	64
EFW	Capital controls	36	EFW	Trade tax revenues	65
DB	Ease of starting business	38	GEF	Strength of investor protection	66
EFW	Transfers and subsidies % of GDP	39	EFW	Impartial courts	66
GEF	Female participation rate	40	EFW	Govt enterprise investment % of total	66
DB	Ease of paying taxes	40	EFW	Inflation	67
GEF	Business costs of terrorism	40	GEF	Mobile telephone subscribers	68
GEF	Trade-weighted tariff	40	GEF	Business costs of crime and violence	69
EFW	Government consumption	41	GEF	FDI and technology transfer	70
GI	Membership in international orgs.	42	GI	Peacekeeping contributions % of GDP	71
IEF	Minimum/average wage	42	GEF	Time required to start a business	72
GEF	Education expenditure	42	EFW	Intellectual property protection	73
EFW	Ownership of banks	43	IEF	Restrictive bank regulation	73
GEF	Malaria incidence	44	GEF	Judicial independence	73
GI	Treaties ratified	44	GEF	Restriction on capital flows	73
EFW	Mean tariff rate	45	GEF	Strength of auditing standards	73
IMD	World competitiveness index	46	IEF	Days to open a business	73
EFW	Mandated cost of hiring	46	IEF	Freedom from corruption	74
GEF	Non-wage labor costs	46	GEF	Government deficit	74
GEF	Business impact of HIV/AIDS	47	GEF	Transparency of policymaking	74
EFW	Tax compliance	47	IEF	Tariff rate	74
GEF	Soundness of banks	47	EFW	Law and order	75
EFW	Hiring and firing practices	48	GEF	Government debt	75
GI	Remittances/ GDP	49	GEF	Reliance on professional management	75
EFW	Military in politics	49	IEF	Inflation, price controls	75
GI	Per capita international phone traffic	50	GEF	Financial market sophistication	76
EFW	Starting a new business	51	GEF	Prevalence of trade barriers	76
IEF	Corporate tax rate	53	GEF	Life expectancy	76
GI	Secure servers per capita	53	GEF	Protection of shareholders' interests	76
GEF	Prevalence of foreign ownership	53	EFW	Restrictions on foreign currency accounts	77
GI	International tourists	56	GEF	Efficacy of corporate boards	77
EFW	Hidden import barriers	57	GEF	Taxation extent, effect	77

Sources: DB: Doing Business; EFW: Economic Freedom of the World; GCI: Global Competitiveness Index; GI: *Foreign Policy* Global Index; IEF: Index of Economic Freedom.
Note: Items edited for conciseness and clarity.

APPENDIX TABLE (CONT.): KOREA'S ATTRIBUTES IN INTERNATIONAL COMPARISONS

Low Ranking			High Ranking		
Source	Attributes	Percentile	Source	Attributes	Percentile
GEF	National savings rate	78	EFW	Costs of importing	88
EFW	Wages set by centralized bargaining	78	GEF	Agricultural policy costs	88
GEF	Ease of access to loans	79	EFW	Interest rate regulations	88
GEF	Legal framework efficiency	79	GEF	Favoritism government decisions	89
GEF	Financing through local equity market	79	GEF	Specialized research and training services	89
IEF	Inflation	79	GEF	Production process sophistication	89
GEF	Extent of market dominance	79	GEF	Availability of scientists and engineers	90
GEF	Legal rights	79	GEF	Firm-level technology absorption	90
GEF	Reliability of police services	79	GEF	Domestic market size index	90
IEF	Property rights	80	GEF	Extent of marketing	90
DB	Ease getting credit	80	GEF	Nature of competitive advantage	90
GEF	Diversion of public funds	80	GEF	Quality of railroad infrastructure	91
GEF	Air transport infrastructure	80	GEF	Foreign market size index	92
GEF	Quality of management schools	80	GEF	Quality of scientific research institutions	92
EFW	Extension of credit	81	GEF	Regulation of securities exchanges	92
GEF	Ethical behavior of firms	81	GEF	Value chain breadth	92
GEF	Wage determination flexibility	81	GI	Number of Internet users	92
GEF	Property rights	82	GEF	Corporate sophistication	92
GEF	Hiring and firing practices	82	GEF	Quality of math and science education	92
GEF	Intellectual property protection	82	DB	Ease of trading across borders	93
GEF	Intensity of local competition	82	GEF	Pay and productivity	93
GEF	Quality of primary education	82	DB	Ease of closing a business	94
GEF	Infant mortality	83	GEF	Utility patents	94
GEF	Public trust of politicians	83	GEF	Burden of government regulation	94
GEF	Wastefulness of government spending	83	DB	Ability to enforce contracts	94
GEF	Inflation	84	GEF	Laws relating to information technology	95
GEF	Willingness to delegate authority	84	GEF	Capacity for innovation	95
GI	GDP	85	GEF	Local supplier quantity	95
GEF	Availability of latest technologies	85	GEF	Internet users	95
GEF	Brain drain	85	GEF	Company R&D spending	95
GEF	Quality of port infrastructure	85	GI	Number of Internet hosts	96
GEF	Quality of roads	85	GEF	Extent of staff training	96
EFW	Experience of government officials	85	GEF	University-industry research alliance	96
GEF	Quality of business environment	85	EFW	Licensing restrictions	97
GEF	Airlines' available seat kilometers	85	GEF	Primary school enrollment	97
GEF	Effectiveness of anti-monopoly policy	85	GEF	Internet access in schools	97
GEF	Personal computers	85	GEF	Burden of customs procedures	97
GEF	Quality of electricity supply	85	GEF	Control of international distribution	97
GEF	Quality of overall infrastructure	85	GEF	Degree of customer orientation	97
GEF	Quality of the educational system	85	GEF	Interest rate spread	97
GEF	Telephone lines	85	GEF	State of cluster development	98
IEF	Ease of opening, closing business	86	GEF	Broadband Internet subscribers	98
GEF	Total tax rate	86	GEF	Buyer sophistication	98
EFW	Monetary growth	86	GEF	Government technology procurement	98
GEF	Local supplier quality	87	EFW	Legal enforcement of contracts	99
GEF	Venture capital availability	87	GEF	Tertiary school enrollment	99
IEF	Restrictions on FDI	87	GEF	HIV prevalence	99
DB	Dealing with licenses	88			

Sources: DB: Doing Business; EFW: Economic Freedom of the World; GCI: Global Competitiveness Index; GI: *Foreign Policy* Global Index; IEF: Index of Economic Freedom.
Note: Items edited for conciseness and clarity.