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Effects of Outward Foreign Direct Investment on Home Country Performance Evidence from Korea

Seungjin Kim

10.1 Introduction

Most studies of outward foreign direct investment (OFDI) have been conducted for advanced countries such as the United States, Sweden, and Japan. The reason is simple. These countries have invested much abroad and thus issues related to their OFDI have merited a wide range of studies. By contrast, research on the OFDI of developing countries is almost nonexistent because such nations have been mostly recipients rather than exporters of direct investment. Since the mid-1980s, however, some East Asian developing countries have been experiencing a surge in OFDI, which makes it worthwhile to launch a study of the OFDI of developing countries. Excluding Singapore, the Asian newly industrialized countries (NICs) have already transformed themselves into net exporters of direct investment despite starting as net importers. Korea was a net importer of direct investment through the 1980s, but since 1990, it has recorded more OFDI than inward foreign direct investment (IFDI) on a flow basis. Over that time span, its OFDI has increased at a rapid pace, making OFDI a topic of discussion in Korea.

The two main questions to be tackled in this paper are the following: What role did Korean OFDI play in its economic performance? What are the characteristics of Korean OFDI? In contrast to developed countries, sufficient data are lacking for Korea, making a rigorous study difficult. Given this shortcoming, to be expatiated on later, this paper tries to approach the questions stated above in a persuasive manner.

The remainder of the paper is organized as follows. Section 10.2 outlines

the trends, structures, and motives of Korean OFDI. Section 10.3 examines evidence of the effects that Korean OFDI has on home investment and exports. Section 10.4 points out key characteristics supporting the evidence and compares the situation with those in developed countries such as Sweden and the United States. Section 10.5 provides a summary and conclusion.

10.2 Korean Outward Foreign Direct Investment: Trends, Structures, and Motives

Korea started directly investing abroad in 1968, but its annual outflow was very insignificant (less than \$200 million) until the mid-1980s because of governmental controls on foreign exchange outflows and incapability on the part of firms. Korean OFDI began to expand in 1986 when the relevant restrictions were lifted. Over the next decade, OFDI increased exponentially, amounting to \$4.2 billion of investment outflow in 1996 (fig. 10.1).

This surge was due to the rising cost of production, the need for better market access, and the enhanced capabilities of firms, as well as the relaxation of regulatory measures. The share of Korean OFDI stock in the total OFDI stock of developing countries increased from 2.0 percent in 1985, to 3.1 percent in 1990, and then to 4.9 percent in 1996.

Despite the increase, however, Korea's ratio of OFDI stock to GDP in 1995 was around 2.2 percent, far below those of other NICs, as well as those of developed countries, including Sweden, the United States, and Japan (table 10.1).

Why did Korea invest less abroad than developed countries and other NICs in terms of the size of its economy? First, Korean firms have weak capabilities, so-called small bases of ownership advantage. In general, de-

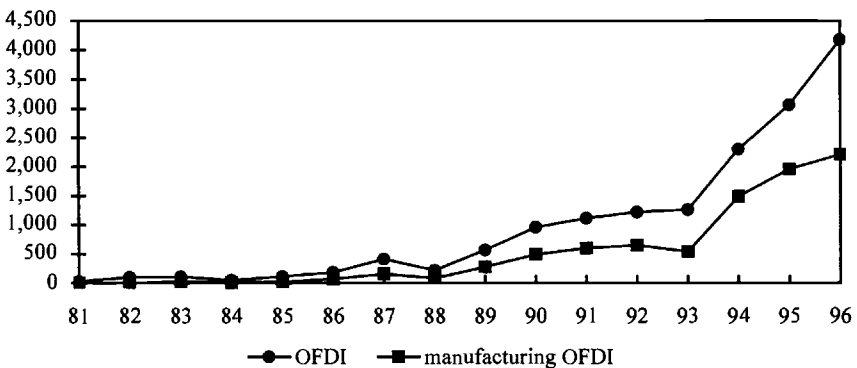


Fig. 10.1 Trend of Korean OFDI, 1981–96 (million U.S. dollars)

Source: Bank of Korea (1997).

Table 10.1 Outward FDI Stock as a Percentage of GDP, 1990–95

Country	1990	1995
World	8.10	9.90
Developed countries	9.80	11.50
Germany	10.10	10.80
Sweden	21.50	31.20
United Kingdom	23.60	27.40
United States	7.90	9.80
Japan	7.00	6.00
Developing countries	1.80	4.50
Hong Kong	18.50	88.80
Korea	0.90	2.20
Singapore	25.80	38.40
Taiwan	8.20	11.20

Source: United Nations (1997).

veloped country firms with superior knowledge or technology to invest more abroad to exploit such advantages. The ownership advantages of Korean multinationals have long been in technologies forgotten by developed countries but not yet adopted by latecomers. However, some large conglomerates in the electronics and automobile sectors have recently developed knowledge-intensive technologies, thus strengthening their technological bases. Second, Korean OFDI, most of which is undertaken by large conglomerates with much use of capital-intensive technologies, has been less sensitive to rising wages than that of other NICs whose multinational firms have employed labor-intensive technologies. Although a number of small and medium-size enterprises in Korea are in labor-intensive industries that face pressures from rising wages and have responded like their counterparts in the other NICs, they account for only a small proportion of the country's total OFDI. OFDI by Korean conglomerates is intended more to establish market share in host countries (i.e., in Southeast Asia and developed countries), or to gain access to new technologies and skills, and less to acquire cheaper labor. Third, the small amount of IFDI has placed little pressure on Korean firms to go multinational. The government has protected domestic markets by restricting IFDI and imports, providing an uncompetitive market environment in which domestic firms can make sufficient profits without going multinational.

The motives of foreign production have changed over time. Korean multinationals have typically established foreign affiliates to avoid trade barriers and reduce transportation costs at an early stage of foreign production. After the mid-1980s, they started setting up foreign affiliates to exploit wage differences. Simultaneously, they also moved production to foreign sites to get closer to their customers, which became necessary in order to adapt to local tastes or production standards. Moreover, some multina-

tionals have acquired developed country firms to obtain advanced technologies that otherwise would take too much time and money to develop. These motives are sometimes pursued simultaneously and are thus hard to separate in explaining the foreign production behavior of some multinationals. In particular, a few conglomerates have started to adopt regional strategies seeking lower costs and better market access, blurring the distinction between the two motives.

Korean OFDI has been most concentrated in the manufacturing sector, followed by wholesale trade. The sectoral distribution of the outward investment of Korean manufacturing firms in 1990 and 1996 is presented in table 10.2.

Mechanical equipment was the most important sector in both years, and its percentage increased significantly during the period. Metals was the second largest sector in 1990, but its share dropped by a lot during the period. The share of textiles and clothing fell slightly but occupied the second position in 1996.

Table 10.3 presents data on the geographical distribution of Korean OFDI in 1990 and 1996. OFDI to Asia jumped rapidly during that period, and as a result, Asia has become the most important OFDI region. In particular, China has become the prime destination for Korean manufacturing OFDI and the second most popular OFDI region in all industries. The percentage of OFDI to Europe also increased during the period examined. In particular, Eastern Europe has become a strategic investment region, reflecting a recent trend of investing in emerging markets. North America's attractiveness to Korean OFDI has declined, leaving it the second most important region. Among countries, the U.S. share of Korean manufacturing OFDI has dropped to the second, but the United States remains the prime target for total OFDI.

Table 10.2 Sectoral Distribution of OFDI by Korean Manufacturing Firms, 1990–96 (percent)

Sector	1990	1996
Food and beverages	6.6	4.5
Textiles and clothing	13.7	12.3
Shoes and leather	4.8	4.2
Wood and furniture	2.5	2.1
Paper and printing	1.6	1.6
Petrochemicals	13.3	8.5
Nonmetals	3.8	5.2
Metals	23.3	9.1
Mechanical equipment	27.2	44.9
Others	3.2	7.6
Manufacturing	100	100

Source: Bank of Korea (1991, 1997).

Table 10.3 Geographical Distribution of Korean OFDI, 1990–96 (percent)

Region	All Industries		Manufacturing	
	1990	1996	1990	1996
North America	47.3	31.5	49.8	20.7
United States	34.6	29.5	28.7	18.8
Canada	12.8	2.0	21.0	1.9
Europe	6.5	15.3	6.3	14.6
European Community	4.3	9.5	5.5	6.1
Eastern Europe	0.1	2.8	0.1	4.8
Asia	30.6	44.0	35.3	58.5
Japan	2.2	2.2	0.3	1.1
China	1.0	19.4	2.0	29.0
ASEAN	23.4	13.1	28.0	17.5
Indonesia	18.2	7.8	16.9	8.8
Malaysia	2.1	2.2	4.5	3.7
Philippines	1.6	1.9	3.5	2.9
Thailand	1.4	1.3	3.1	2.1
Latin America	5.2	4.0	5.0	4.3
Mexico	0.0	0.7	0.0	1.1
Africa	1.9	2.0	1.1	1.1
Oceania	6.1	2.3	1.0	0.5
Middle East	2.4	0.9	1.6	0.3
Total	100.0	100.0	100.0	100.0

Source: Bank of Korea (1991, 1997).

10.3 Effects of Korean Outward Foreign Direct Investment on Home Country Performance

In this section, we examine the evidence of the effects of Korean OFDI on home investment and exports, reflecting its financial-side effects and real-side effects.

10.3.1 Domestic Investment

OFDI may detract from a home country's capital stock. Whether OFDI takes place at the expense of domestic investment depends on how that investment is financed. However, indirect effects, including investment financed through repatriation of profits or brought about by increased foreign demand for exports, also have to be taken into account. The evidence regarding the effects of OFDI on domestic investment is mixed. Stevens and Lipsey (1992) demonstrated a strong positive correlation between fixed investment at home and abroad by U.S. multinationals. However, the positive relation between domestic and foreign investment likely results from the positive relation between both types of investment and a parent firm's internally generated funds. This evidence, at least, suggests that OFDI does not necessarily have negative effects on domestic investment.

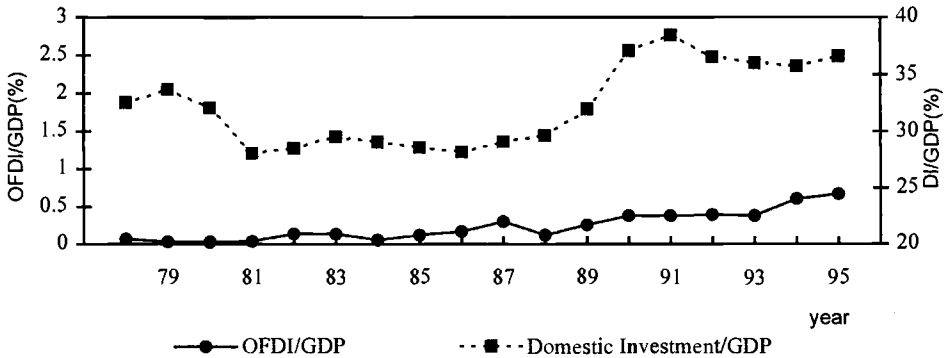


Fig. 10.2 Foreign investment and domestic investment, 1978–95

Sources: Bank of Korea, *National Accounts* (Seoul, various years); Bank of Korea (1997).

Note: Domestic investment refers to total fixed investment.

In contrast, Feldstein (1995) showed that outward investment and domestic investment are at least partial substitutes. Svensson (1993) also showed that in the 1980s, OFDI by Swedish multinationals had a negative effect on the size of Sweden's capital stock.

Unfortunately, in Korea, no firm-level data are available for a rigorous analysis of the relation between outward and domestic investment by Korean firms. Looking at the trends of outward and domestic investment over 1978–95 in figure 10.2, we can see that outward and domestic investment did not go in opposite directions. Domestic investment increased by a large margin over the 1986–90 period, during which outward investment increased steadily due to the relaxation of capital outflow restrictions. Both types of investment also show similar growth patterns after 1990. This, of course, does not tell much about the relation between outward and domestic investment. Nevertheless, outward investment does not seem to have had a large negative impact on domestic investment for the following reasons. First, an increasing part of outward investment by Korean firms tends to be financed from external resources. In 1995, the share of home sources in total financing of OFDI amounted to less than 40 percent, and in particular, the share was less than 20 percent for the large conglomerates that account for most Korean OFDI.¹ In the case of U.S. multinationals, about 20 percent of the value of foreign-affiliate assets is financed through cross-border capital outflows from the United States (Feldstein 1995). Although Korea had a larger share of cross-border financing than the United States and Japan, it increasingly financed its OFDI from

1. In 1995, the five largest conglomerates accounted for approximately 60 percent of Korea's total OFDI stock.

foreign sources.² Second, the size of outward investment has been very small relative to that of domestic investment, and export creation effects of outward investment also exist.

10.3.2 Exports

Foreign production can replace exports of a single product. But it usually generates demand for other products, such as capital goods or intermediate goods and services. These products may be provided by other parts of the parent company, its suppliers, or independent firms at home. So foreign production can be either export replacing or export supporting. Most analytical evidence relates to developed countries, including the United States and Sweden. The majority of studies showed that OFDI had an overall positive effect on home exports, suggesting that the export-creating effect of OFDI outweighed the export-replacing effect (Lipsey and Weiss 1981; Swedenborg 1979; Blomström, Lipsey, and Kulchicky 1988). In contrast to the numerous studies for developed countries, very few studies have addressed the case of developing countries. Questions about the effects of OFDI on home exports and employment in Korea have received much attention since OFDI by Korean firms surged in the early 1990s. Nevertheless, there is a dearth of detailed studies due to lack of data.³ While data on the amount of foreign investment exist, no information is available on foreign affiliate activities, such as production, exports, and sales. No firm-level data are available either. Such deficiencies have made it difficult to undertake rigorous studies of the home country effects of OFDI by Korean firms. However, given the available data, we will try to estimate the empirical relation between OFDI and exports. Investigating the graphical relation between OFDI and exports will precede the regression analysis of their relation.

Figure 10.3 tells us how OFDI and exports in particular industries as ratios to the production size of the industry, have evolved between 1990 and 1994. There appears to be no substitution between OFDI and exports, represented as ratios to production size, of the total manufacturing industry. However, this graph shows only a simple trend of two variables, not

2. As the portion of large-scale outward investments of some conglomerates financed abroad increased, the Korean government implemented controls on foreign financing in late 1995. It introduced self-financing obligations and controls on foreign financing through payment guarantees by parent firms out of concern that firms might undertake excessive OFDI and so weaken the home base of production or that the failure of a foreign business might lead to the failure of the parent providing a payment guarantee. Ironically, the government had no superior knowledge with which to judge whether a firm had made an overinvestment, and moreover, restrictions on foreign financing could have substituted for domestic investment resources. Self-financing obligations were lifted in 1997, but some controls on foreign financing through payment guarantees by parents remain.

3. Kim and Kang (1997) found no significant relationship between OFDI and exports.

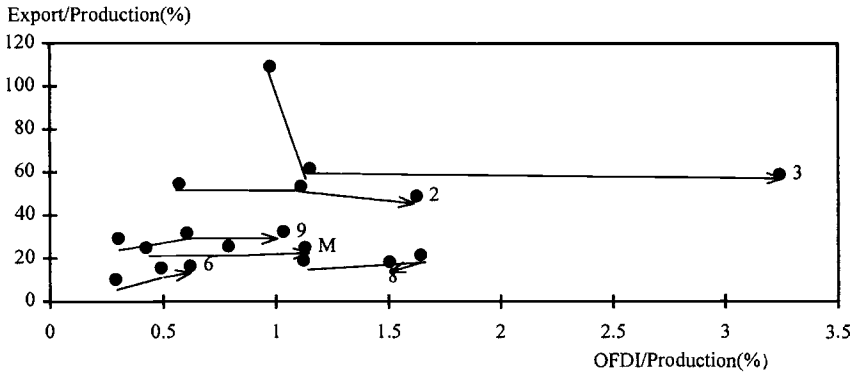


Fig. 10.3 Exports and OFDI of major industries, 1990, 1992, and 1994

Sources: Bank of Korea (1997) and information from Korean Bureau of Tariffs and Bureau of Statistics.

Note: 2, Textiles and clothing; 3, shoes and leather; 6, petrochemicals; 8, metals; 9, mechanical equipment; and M, manufactures.

suggesting that OFDI has not decreased home exports. Major industries show varying trends. During 1990–92, in textiles and clothing and shoes and leather, OFDI increased while exports decreased. In contrast, both OFDI and exports increased in petrochemicals, metals, and mechanical equipment during the same period. We can observe a similar sectoral pattern during 1992–94, except that OFDI and exports for metals both decreased. We need to be cautious in interpreting sectoral trends. In the case of textiles and clothing and shoes and leather, we cannot say that OFDI decreased exports. Rather, it seems more probable that OFDI increased but exports decreased as these sectors lost their comparative advantages. OFDI may have increased exports, instead. In the case of mechanical equipment, we cannot say that OFDI increased exports. Both OFDI and exports may have increased as the sector gained competitive advantages. Consequently, movements of OFDI and exports tend to be influenced by common factors. The cross-sectional correlation between OFDI and exports, represented as ratios to production size, turned out to be positive (.78) in 1994.

Figure 10.4 shows how OFDI and exports to particular countries, represented as ratios to the GDP of the destination were correlated in 1994. The correlation between OFDI and exports turned out to be positive (.38), meaning that Korea exported more to countries in which it invested more. This does not imply that OFDI had a positive effect on exports. Variables affecting OFDI and exports in the same direction may have produced the positive correlation.

An econometric study will help us to understand the systematic relation

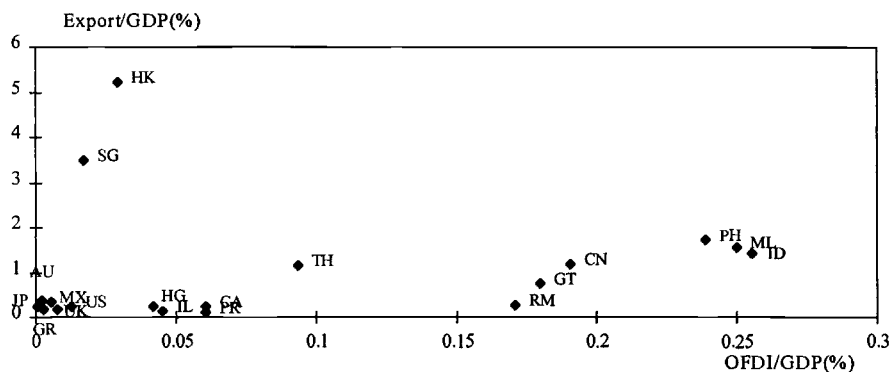


Fig. 10.4 Exports and OFDI to major countries, 1994

Sources: Bank of Korea (1997); World Bank, *World Development Report* (Washington, D.C., 1997); information from Korean Bureau of Tariffs.

Note: JP, Japan; AU, Australia; GR, Germany; MX, Mexico; UK, United Kingdom; US, United States; SG, Singapore; HK, Hong Kong; HG, Hungary; IL, Ireland; CA, Canada; PR, Portugal; TH, Thailand; RM, Romania; GT, Guatemala; CN, China; PH, Philippines; ML, Malaysia; and ID, Indonesia.

between OFDI and exports. As mentioned earlier, lack of data prevents us from doing more in-depth analysis. A systematic relation will be sought using the amount of outward investment and exports.

The export equation to be estimated takes GDP of a destination, GDP per capita of a destination, and a dummy representing EC membership as independent variables.⁴ GDP and GDP per capita are the country characteristic variables that seem to significantly affect OFDI as well as exports. The EC dummy reflects Korean firms' tariff-jumping OFDI in EC countries. Besides these variables, distance, relative wages, tariffs and nontariff barriers could affect exports, but they will not be included in the estimation because relevant data are lacking. So the export equation takes the following form:⁵

$$(1) \quad EX_{ij} = f(\text{GDP}_j, \text{GDPC}_j, \text{OFDI}_{ij}, \text{EC}_j),$$

4. ASEAN could be a dummy variable but it is inferior to an EC dummy for the purpose of my study. I included the EC dummy to reflect tariff-jumping OFDI by Korean firms and to keep the effects of a trading bloc from being transferred to the effects of OFDI. ASEAN, in 1992, agreed to form a free trade area and has been taking steps to complete the AFTA (ASEAN Free Trade Area). So it seems inappropriate to regard ASEAN as a complete trading bloc in 1994, the year for which values were taken for all variables in the estimation. Furthermore, Korean OFDI to the ASEAN region was not in general motivated by tariff jumping but by wage differences, while its OFDI to the EC region was largely motivated by tariff jumping.

5. This specification helps us to examine how exports to country j are affected by OFDI to country j . So the results of the regressions have nothing to do with the story of *chaebols* (large conglomerates) expanding exports and OFDI through favorable loans or cash flows.

where EX_{ij} is exports of industry i to country j ; GDP_j and $GDPC_j$ are, respectively, GDP and GDP per capita of country j ; $OFDI_{ij}$ is outward foreign direct investment of industry i to country j ; and EC_j is the dummy variable representing EC membership.⁶ The variables EX_{ij} , $OFDI_{ij}$, GDP_j , and $GDPC_j$ take 1994 values for fifty-seven destinations and nine industries. The coefficient of GDP is expected to be positive because GDP reflects market size. Exports will increase as market size increases. The coefficient of GDPC may be positive or negative, depending on the income elasticity of demand. The coefficient of EC is expected to be negative because the European Community, as a trading bloc, discourages exports to the region. Finally, the coefficient of OFDI may be positive or negative, which is to be confirmed in this econometric study.

The results of the regressions are as follows (see the appendix). OFDI turns out to have a positive relation with exports in the regression using all destinations or all destinations and industries. The coefficients of GDP and EC are, respectively, positive and negative as expected. The positive effect of OFDI on exports appears to be far greater for developing countries than for developed countries. The coefficient of OFDI is strongly positive in the regression using a group of developing countries as destinations, while it is insignificantly positive in the case of developed countries. The impact of OFDI is prominent in such industries as shoes and leather, textiles and clothing, petrochemicals, and mechanical equipment. The effects are, however, insignificantly negative in metals and food. If we take the textiles and clothing and shoes and leather industries and call them labor intensive, we can see that the impact of OFDI on exports is greater for labor-intensive industries than for industries overall. The effect of OFDI in labor-intensive industries toward developing countries is strongly positive, but the effect of OFDI in labor-intensive industries toward developed countries is insignificantly positive. In contrast to the conventional wisdom that OFDI in labor-intensive industries toward developing countries reflects an exodus of such industries and the subsequent weakening of their export bases, the effect of OFDI on exports turned out to be positive. This implies that OFDI created new exports of intermediate goods in the same industries, an effect that seems to exceed its replacement effect.

In spite of the results, all regressions described above have limitations because of omitted variables that could affect both OFDI and exports. Although we included GDP and GDP per capita to stop their effects from being transferred to the effect of OFDI, we cannot exclude the possibility that omitted variables may have affected exports in the name of OFDI. In order to reduce such a possibility, we regress export variation between

6. The European Community includes France, Italy, Germany, Belgium, the United Kingdom, Portugal, the Netherlands, Ireland, and Spain.

1992 and 1994 on OFDI variation, GDP variation, and exports in 1992. That is, the new export equation we estimate is

$$(2) \quad \Delta EX_{ij} = f(\Delta GDP_j, EX92, \Delta OFDI_{ij}),$$

where ΔEX_{ij} , $\Delta OFDI_{ij}$, and ΔGDP_j represent the variations of exports, OFDI, and GDP between 1992 and 1994. $EX92$ is the 1992 (initial) value of exports and plays the role of absorbing the effects of omitted variables.

The results of the new regression, in table 10.4, show similarities to those of the former regressions. Consequently, we found no evidence that Korean OFDI substituted for exports. If the coefficients for the variables other than OFDI were eccentric or even if they had negligible influence where we expected them to be important, some doubt would be cast on the coefficients for OFDI, because it would be likely that some effects of country characteristics entering the trade equation were being absorbed by the OFDI variable. Coefficients that looked reasonable would add to our confidence in the measures of the effect of OFDI. However, the effect of OFDI on exports may have to be compared to what would have happened to exports without OFDI. The econometric study may infer what would have happened to exports without OFDI from exports to countries where no OFDI took place. But the econometric study gives limited information on the counterfactual situation without OFDI due to omitted variables. The positive coefficients of OFDI may result from the omission of variables that could have increased both OFDI and exports. Differencing equations between two points in time can reduce the influence of omitted variables, but it is not likely to exclude their effect completely.

However, the econometric study combined with figure 10.4 hints that the effect of OFDI is likely to be positive. The regression for all destinations tells us that OFDI to country j had a positive effect on exports to country j . If omitted variables that could have increased both OFDI and exports produced the positive coefficient, the omitted variables are probably policy variables of host countries representing their openness to trade and investment. In figure 10.4, the ratio of OFDI and exports to GDP

Table 10.4 Coefficients of OFDI and OFDI Variation

	OFDI	Δ OFDI
All countries	0.32 (5.58)	0.13 (2.21)
All countries and industries ^a	0.24 (4.60)	0.25 (3.73)
Developed countries ^a	0.04 (0.58)	-0.02 (0.21)
Developing countries ^a	0.38 (5.51)	0.26 (3.08)
Labor-intensive industries ^b	0.53 (4.69)	0.35 (2.56)

Note: Numbers in parentheses are t -values.

^aIndustry dummies were used.

^bTextiles and clothing; shoes and leather.

tends to be higher in developing countries, such as Indonesia, Malaysia, the Philippines, and China, than in developed countries, such as the United States, the United Kingdom, and Germany. Since it is hard to say that these developing countries are ahead of the developed countries in their openness to trade and investment, the open policy of a host country is unlikely to have had a large impact.

10.4 Characteristics of Korean Outward Foreign Direct Investment That Support Home Country Effects

In this section, we examine what characteristics of Korean OFDI contributed to its home country effects. We propose four characteristics: the low ratio of OFDI to GDP, the high share of developing countries, the increasing importance of overseas financing, and simple integration strategies.

10.4.1 Low Ratio of Outward Foreign Direct Investment to GDP

There has been much concern about the “hollowing out” of manufacturing industries as OFDI flows have surpassed IFDI flows since 1990. Korean OFDI has grown faster than world OFDI overall and than OFDI from developed countries. The annual average growth rate of Korean OFDI for 1991–96 was 27.4 percent; the corresponding figures were 12.5 percent for the world overall and 10.2 percent for the developed countries. However, Korean OFDI has not grown faster than OFDI from other developing countries. The annual growth for such countries during the same period was 52.4 percent. Moreover, OFDI from Korean firms has been small in terms of the size of the country’s economy. The ratio of OFDI stock to GDP in Korea is lower than in the other NICs, not to mention developed countries. Therefore, the economic effects of OFDI do not seem to be greater in Korea than in other nations.

10.4.2 High Share of Developing Countries

The developing country share of Korean manufacturing OFDI was 71.5 percent in 1996, much higher than the developing country share of manufacturing OFDI from developed countries. In textiles and clothing and shoes and leather, the developing country shares were over 90 percent. In mechanical equipment and petrochemicals, the developing country shares were 66.6 percent and 83.0 percent, respectively. Why is a big part of Korean OFDI directed toward developing countries? Most Korean multinational firms have smaller bases of ownership advantage, and their advantages derive from adaptation and experience rather than proprietary technology and brand names. Korean multinationals lacking proprietary assets exploit the weak ownership advantages in developing countries. Most OFDI toward developed countries is made by a few conglomerates

with proprietary assets or brand names. What do high developing country shares imply about the role of OFDI in home country performance? First, OFDI has contributed to an increase in exports from Korea. More specifically, OFDI to developing countries tends to induce more exports of intermediate goods from the home country because local firms are unable to supply these goods. Moreover, the degree to which OFDI substitutes for exports may be lower because the low-cost advantages of developing countries would give a narrower chance to home exports even without OFDI to the region. Second, OFDI has been upgrading the composition the workforce between “blue collar” and “white collar” jobs—between the unskilled and the skilled. Exports of blue-collar or unskilled jobs are inevitable as Korea loses its comparative advantages in activities that make intensive use of blue-collar or unskilled labor, while demand for skilled labor or white-collar workers to manage foreign subsidiaries tends to increase.

10.4.3 Increasing Importance of Overseas Financing

We see, in table 10.5, that overseas financing as a share of total investment financing was approximately 55 percent in 1994, which is low compared to the U.S. and Japanese figures. This seems to be related to the

Table 10.5 OFDI Financing by U.S. and Japanese Transnational Corporations, 1994 and 1992 (million U.S. dollars)

	United States, 1994	Japan, 1992	Korea, 1994
Transnational corporations	51,007 (24.9)	16,925 (25.2)	376 (16.1)
Equity outflows	12,666 (6.2)	17,166 (25.5)	—
Reinvested earnings	31,730 (15.5)	—	—
Intrafirm loans	6,611 (3.2)	−238 (−0.4)	—
Other home sources	−22,808 (−11.1)	4,088 (6.1)	689 (29.5)
Overseas sources	177,041 (86.2)	46,263 (68.7)	1,270 (54.4)
Host country sources	59,394 (28.9)	3,041 (4.5)	—
Sources in other countries	117,647 (57.3)	43,222 (64.2)	—
Total	205,240 (100.0)	67,276 (100.0)	2,335 (100.0)

Sources: United Nations (1997) and information from Korean Ministry of Finance and Economy.

Note: Numbers in parentheses are percentages of total OFDI financing.

high share going to developing countries as well as restrictions on foreign financing. The underdevelopment of capital markets in developing countries makes it difficult to finance operations locally. Recently, Korean multinationals, especially large conglomerates, have increased their use of foreign funds, which contributed to an increase in overseas investment at less expense to domestic investment.

10.4.4 Simple Integration Strategies

Most Korean multinational firms are currently at the stage of simply connecting parent firms and foreign subsidiaries and having parent firms export a considerable amount of intermediate goods to their foreign subsidiaries. Some Korean conglomerates, however, have started to adopt advanced, complex strategies through which they efficiently allocate a variety of value-added activities within and across regions to increase their market shares. Foreign subsidiaries are becoming more localized to increase local sourcing and, in addition, exporting more to third countries. Export-creating effects through exports from parents to foreign subsidiaries are expected to decrease. Moreover, parents' exports to third countries are also expected to be replaced by exports from foreign subsidiaries.

10.5 Summary and Conclusion

We could not find any evidence that OFDI by Korean multinational firms had a detrimental effect on home country performance. Even though Korean multinational firms depend less on foreign funds than do developed country firms, overseas investment does not seem to have significantly crowded out domestic investment because the amount of OFDI was small relative to domestic investment and the demand for domestic investment increased as a result of increased exports. Moreover, these firms are financing an increasingly large part of overseas investment from abroad. The OFDI of Korean multinational firms was also discovered to have a positive effect on exports. The high share in OFDI of developing countries and close associations between parents and foreign subsidiaries seem to have contributed to the positive effect on exports through increased exports from parents to foreign subsidiaries.

As pointed out above, the lack of evidence that OFDI has harmful effects on home country performance can be attributed to the fact that Korean OFDI has been in its infant stage: OFDI is not big enough to significantly affect the domestic economy, and the strategies associated with OFDI are not complex enough to substitute for exports on the net balance. The question arising from this context is naturally, Can this situation continue to hold as Korean OFDI increases and its strategies become more complex? The answer depends on how large a portion of OFDI will be involved in complex strategies in which foreign subsidiaries become

more independent and play stronger roles as export bases within their multinational firms. A few business conglomerates have already initiated complex strategies on a regional scale in which both local sourcing and foreign subsidiaries' exports have increased. It is not clear at this stage how far and how fast the strategies will go and how many firms will be able to pursue these strategies.

Appendix

Table 10A.1 OLS Estimation of Export Equation I

	Intercept	Coefficients				\bar{R}^2	<i>N</i>
		GDP	GDPC	EC	FDI		
All countries	-1.65 (-2.35)	0.71 (7.67)	0.09 (0.82)	-0.56 (-3.41)	0.32 (5.58)	0.82	57
All countries and industries	-1.62 (-2.30)	0.77 (9.83)	-0.01 (-0.14)	-0.58 (-3.74)	0.24 (4.60)	0.71	167

Note: Numbers in parentheses are *t*-values.

Table 10A.2 OLS Estimation of Export Equation II

	Intercept	Coefficients				\bar{R}^2	<i>N</i>
		GDP	GDPC	EC	FDI		
Developed countries	-4.57 (-2.14)	0.88 (6.51)	0.66 (1.02)	-0.34 (-2.93)	0.04 (0.58)	0.89	50
Developing countries	-3.57 (-3.30)	0.81 (7.53)	0.21 (1.82)		0.38 (5.51)	0.71	117

Note: Numbers in parentheses are *t*-values.

Table 10A.3 OLS Estimation of Export Equation III

	Coefficients					\bar{R}^2	<i>N</i>
	Intercept	GDP	GDPC	EC	FDI		
Food and beverages	-6.73 (-3.32)	1.41 (5.49)	-0.50 (-1.74)	-0.53 (-1.36)	-0.11 (-0.61)	0.74	16
Textiles and clothing	-1.66 (-1.53)	0.58 (5.66)	0.27 (1.77)	-0.45 (-1.36)	0.39 (4.57)	0.75	28
Shoes and leather	-6.10 (-2.27)	0.73 (2.54)	0.44 (1.30)	0.001 (0.002)	0.60 (2.72)	0.57	19
Furniture and wood	-5.09 (-2.70)	1.60 (6.42)	-0.82 (-3.95)		-0.57 (-2.61)	.087	8
Paper and printing	-0.10 (-0.04)	0.92 (4.20)	-0.82 (-3.57)	-0.48 (-1.35)	-0.02 (-0.12)	0.67	9
Petrochemicals	-1.86 (-0.79)	0.71 (3.11)	-0.15 (-0.67)	-0.49 (-1.22)	0.38 (2.43)	0.48	21
Nonmetals	-3.44 (-1.12)	-0.11 (-0.26)	0.51 (1.26)	-0.59 (-0.56)	1.42 (2.85)	0.59	13
Metals	-6.21 (-1.89)	1.52 (3.60)	-0.71 (-1.61)	-1.27 (-1.97)	-0.13 (-0.52)	0.56	15
Mechanical equipment	-0.58 (-0.64)	0.67 (5.77)	0.15 (1.27)	-0.48 (-3.20)	0.16 (2.71)	0.80	38
Labor-intensive ^a industries	-2.91 (-2.00)	0.57 (4.10)	0.29 (1.49)	-0.13 (-0.34)	0.53 (4.69)	0.54	47
Capital-intensive ^b industries	-0.78 (-0.63)	0.65 (4.48)	-0.01 (-0.08)	-0.52 (-2.34)	0.27 (3.22)	0.48	74

Note: Numbers in parentheses are *t*-values.

^aTextiles and clothing; shoes and leather.

^bPetrochemicals; metals; mechanical equipment.

Table 10A.4 OLS Estimation of Export Equation IV

	Coefficients					\bar{R}^2	<i>N</i>
	Intercept	GDP	GDPC	EC	FDI		
Labor-intensive/ developed countries	-11.53 (-1.62)	1.02 (2.62)	1.52 (0.66)	-0.11 (-0.29)	0.15 (-0.88)	0.81	11
Labor-intensive/ developing countries	-4.05 (-2.24)	0.51 (3.23)	0.52 (2.32)		0.70 (5.44)	0.58	36
Capital-intensive/ developed countries	-7.72 (-1.65)	0.22 (0.66)	2.67 (1.99)	-0.12 (0.41)	0.29 (1.69)	0.43	24
Capital-intensive/ developing countries	-3.37 (-1.98)	0.84 (4.68)	0.11 (0.68)		0.31 (3.31)	0.54	50

Note: Numbers in parentheses are *t*-values.

Table 10A.5 OLS Estimation of Export Variation Equation I

	Intercept	Coefficients			\bar{R}^2	<i>N</i>
		Δ GDP	EX92	Δ FDI		
All countries	0.52 (2.37)	1.08 (3.64)	-0.06 (-2.26)	0.13 (2.21)	0.25	50
All countries and industries	0.22 (0.80)	1.65 (3.70)	-0.03 (-0.08)	0.25 (3.73)	0.20	130

Note: Numbers in parentheses are *t*-values.

Table 10A.6 OLS Estimation of Export Variation Equation II

	Intercept	Coefficients			\bar{R}^2	<i>N</i>
		Δ GDP	EX92	Δ FDI		
Developed countries	-0.43 (-1.53)	1.66 (3.06)	0.05 (1.60)	-0.02 (-0.21)	0.59	39
Developing countries	0.12 (0.31)	1.09 (1.65)	-0.003 (-0.07)	0.26 (3.08)	0.11	91

Note: Numbers in parentheses are *t*-values.

Table 10A.7 OLS Estimation of Export Variation Equation III

	Intercept	Coefficients			\bar{R}^2	<i>N</i>
		Δ GDP	EX92	Δ FDI		
Textiles and clothing	0.94 (2.57)	0.07 (0.10)	-0.10 (-2.25)	0.23 (2.54)	0.26	22
Shoes and leather	0.19 (0.30)	-0.28 (-0.21)	-0.04 (-0.50)	0.94 (2.57)	0.33	14
Mechanical equipment	0.82 (1.70)	1.31 (1.97)	-0.09 (-1.63)	0.17 (2.60)	0.27	30
Labor-intensive industries	0.66 (1.79)	0.46 (0.62)	-0.08 (-1.82)	0.35 (2.96)	0.21	36
Capital-intensive industries	-0.19 (-0.57)	1.16 (2.20)	0.02 (0.46)	0.21 (3.33)	0.19	57

Note: Numbers in parentheses are *t*-values.

Table 10A.8 OLS Estimation of Export Variation Equation IV

	Intercept	Coefficients			\bar{R}^2	N
		Δ GDP	EX92	Δ FDI		
Labor-intensive/ developed countries	-1.76 (-3.40)	1.15 (0.54)	0.17 (2.89)	0.86 (3.12)	0.66	7
Labor-intensive/ developing countries	0.68 (2.06)	-0.78 (-1.14)	-0.06 (-1.41)	0.27 (2.74)	0.24	29
Capital-intensive/ developed countries	-0.75 (-1.61)	-1.80 (2.05)	0.09 (1.50)	-0.03 (-0.34)	0.23	22
Capital-intensive/ developing countries	-0.25 (-0.55)	0.10 (0.12)	0.04 (0.73)	0.27 (3.37)	0.28	35

Note: Numbers in parentheses are *t*-values.

References

- Bank of Korea. Various years. *Overseas direct investment statistics yearbook*. Seoul: Bank of Korea.
- Blomström, M., R. Lipsey, and K. Kulchicky. 1988. U.S. and Swedish direct investment and exports. In *Trade policy issues and empirical analysis*, ed. R. Baldwin. Chicago: University of Chicago Press.
- Feldstein, M. 1995. The effects of outbound foreign direct investment on the domestic capital stock. In *The effects of taxation on multinational corporations*, ed. M. Feldstein, J. R. Hines, Jr., and R. G. Hubbard. Chicago: University of Chicago Press.
- Kim, J., and I. Kang. 1997. Outward FDI and exports: The case of South Korea and Japan. *Journal of Asian Economics* 8.
- Lipsey, R., and M. Weiss. 1981. Foreign production and exports in manufacturing industries. *Review of Economics and Statistics* 63:488-94.
- Stevens, G., and R. Lipsey. 1992. Interactions between domestic and foreign investment. *Journal of International Money and Finance* 11.
- Svensson, R. 1993. Domestic and foreign investment by Swedish multinationals. Working Paper no. 391. Stockholm: Industrial Institute for Economic and Social Research.
- Swedenborg, B. 1979. *The multinational operations of Swedish firms*. Stockholm: Almqvist and Wicksell International.
- United Nations. 1997. *World investment report*. New York: United Nations.

Comment Mariko Sakakibara

Kim poses two major research questions: What role did Korean OFDI play in the country's economic performance? What are the characteristics of Korean OFDI? Performance is measured in this paper by exports and domestic investment. The author is especially concerned about the possibility that OFDI might decrease exports. These are important research issues.

Kim concludes that "we could not find any evidence that OFDI by Korean multinational firms had a detrimental effect on home country performance." He finds no evidence that Korean OFDI substituted for exports. Nor does he find any evidence that OFDI decreased domestic investment. I am sympathetic to this author, who made great efforts given limited data availability.

I would like, however, to raise some issues. The first issue concerns the data. Kim uses FDI data collected by the Bank of Korea (Korea's central bank). OFDI reporting to the Bank of Korea is mandatory for investments that exceed approximately \$10 million, though this cutoff changes over time. Once OFDI is reported, companies have an obligation to report the profitability of their investments. There is a strong incentive, therefore, for Korean firms to avoid reporting OFDI. In fact, many investments are made in groups of amounts below the cutoff at one time. The most pessimistic estimation suggests that half of all Korean OFDI might not be covered by these data.¹ This sample is likely to have a bias toward large companies, namely, *chaebols*, or Korean conglomerates. The paper even states that five *chaebols* account for 60 percent of Korea's OFDI stock, indicating the possibility of sample selection bias.

The basic setup is

$$EX_{ij} = f(\text{GDP}_j, \text{GDPC}_j, \text{OFDI}_{ij}, \text{EC}_j),$$

where i represents an industry and j represents a host country. The sign on EC is expected to be negative because it is assumed here that Korean firms are motivated to conduct tariff-jumping OFDI. This is a crude assumption because the effects of tariff jumping should be industry specific. Kim worries about the possibility of omitted variables, so he runs

$$\Delta EX_{ij} = f(\Delta \text{GDP}_j, \text{EX92}, \Delta \text{OFDI}_{ij}).$$

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1. E.g., though the official record shows that there were approximately 750 cases of OFDI by Korean firms in the Qingtau area of China as of the end of 1995, keen observers in the Chinese market estimate that there were at least 2,000 investment cases by Korean firms in that area (Cho 1997).

He finds the coefficients on OFDI and Δ OFDI to be positive and statistically significant.

The problem here is that taking the first difference does not solve an omitted-variables problem, nor does the inclusion of exports in 1992. It is possible that an omitted variable drives both OFDI and exports by Korean firms simultaneously.² Given the limited coverage of the data, the prime candidate for an omitted variable is an indicator of a *chaebol's* growth maximization orientation. Some evidence supports this possibility. For example, favorable bank loans are given to large firms for domestic and foreign investment, and for export financing. This is because of the very limited disclosure requirements imposed on Korea firms, which results in profitability data not being available for lenders. The primary criterion for banks in their loan approval is the size of the borrower's revenue. In addition, *chaebol* leaders seek social recognition from overseeing the largest conglomerates. The rivalry between the chairmen of Samsung and Hyundai is well documented. Both of these examples suggest growth maximization not profit maximization by *chaebols*.

A possible scenario here is that when *chaebols'* profits, cash flow, or borrowing capacity increases, we would observe increases in both exports and OFDI. This scenario also fits with Knickerbocker's (1973) oligopolistic reaction in FDI. A *chaebol* is likely to seek all investment opportunities, domestic or overseas, to maximize its size. In addition, we should note the high domestic exit costs. Up until the 1997 Korean economic crisis, firing by Korean firms was illegal. Korean firms could not fire workers unless they declared bankruptcy. The only way a Korean firm could fire a worker was to sign an "honorable retirement" contract and make severance payments equal to the sum of the employee's three-year salary plus one month's salary times the number of years served. This prohibitively high exit cost suggests the possibility that firms could not decrease domestic production even if they increased OFDI. As a result, an increase in both exports and OFDI can be observed. If any of the variables suggested above are not available, domestic sales as a proxy for those variables should be used as a control, as suggested by Lipsey and Weiss (1984).

The major contribution of this paper is to identify the characteristics of Korean OFDI. Given the data, OFDI is driven by *chaebols*, concentrated in China, the ASEAN countries, and to some extent the United States, and focused on mechanical equipment (perhaps consumer electronics and semiconductors) and textiles and clothing. This kind of OFDI tends to be

2. Though Kim claims that this specification is to be used to examine how exports to country j are affected by OFDI to country j , the omitted-variables bias remains if country j is a favorable (or unfavorable) destination for both exports and OFDI for industry i , which appears to be the case here. In addition to the possibility explained in the text, the omitted variables might be the ones that reflect the increasing comparative advantages of an industry, and policy variables of host countries are only one kind of many possible omitted variables.

associated with the export of intermediate goods. For example, when Korean wage levels increased, the Korean garment industry shifted its domestic garment production to China or the ASEAN countries and shipped Korean textiles to these countries for final sewing.

This paper does not explain the causes of OFDI and exports by Korean firms, however. It is not clear whether the current structure of Korean OFDI and its positive association with exports will continue in the future. In the long run, Korean firms might relocate their production of intermediate goods to China or the ASEAN countries. If the final products produced by Korean subsidiaries are exported to third countries or to Korea, that will directly reduce Korean exports. As Korean firms begin to invest in developed countries, the current structure of FDI undertaken to seek cheap labor may not be sustainable. In addition, I would be concerned about growth maximization and overinvestment by the *chaebols*. What is happening now is that as of the end of May 1998, \$40 billion of outstanding debt is held by Korean firms, and as of the end of 1997, the average debt-to-equity ratio of the thirty major *chaebols* was 518.90 percent, far beyond a sustainable level. A pessimistic view might be that Korean OFDI has a detrimental effect on home country performance for reasons different from those explained in this paper.

References

- Cho, D. S. 1997. Empirical studies on the formation of firm-specific competitive advantages in Korean corporations (in Korean). *International Business Journal* 8:127-49.
- Knickerbocker, F. T. 1973. *Oligopolistic reaction and multinational enterprise*. Boston: Harvard University, Graduate School of Management, Division of Research.
- Lipsey, R. E., and M. Y. Weiss. 1984. Foreign production and exports of individual firms. *Review of Economics and Statistics* 66:304-8.

Comment Chong-Hyun Nam

I think Kim's paper is interesting in two major respects. One is that it deals with outward foreign direct investment from a supposedly capital-scarce developing country, Korea; the other is that it attempts to investigate the effects of outward foreign direct investment on home country rather than host country performance.

I have only a few comments about the paper. First of all, I think that the paper's theme and analysis need to be more focused. As I understand

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it, foreign direct investment in Korea, both inward and outward, has been quantitatively too minor to have any significant impact on macroeconomic variables. So it may not be too rewarding to explore its macroeconomic effects on such variables as domestic investment and employment at an aggregate level. If one wants to analyze its impact, however, I think the issue can best be addressed in the context of a general equilibrium framework, accounting for direct as well as indirect effects. But I do think it is quite worthwhile and interesting to investigate the impact of foreign direct investment on trade at a disaggregated industrial level.

My second comment is that the paper would gain much if it could explain why the accumulated stock value of foreign direct investment in Korea, both inward and outward, has been kept at such an exceptionally low level compared to not only developed countries but also developing countries. As can be seen in table 10.1, for instance, despite its recent surge, the stock value of outward foreign direct investment from Korea for 1990–95 stands at only 2.2 percent of GDP, about one-half of that for developing countries on average.

Obviously, a number of factors, both formal and informal, must have worked against Korea's inward and outward foreign direct investment. I suspect, however, that Korea's rather restrictive regulatory policies toward foreign direct investment have much to do with its poor performance in such investment. I think it is very important to unveil these policies and to discuss some of the potential economic costs borne by Korea due to such policy failures. I should also point out that the relatively small amounts of Korean inward and outward foreign direct investment by no means imply that capital flows, both inward and outward, were also small in Korea. In fact, Korea has relied heavily on foreign capital throughout its development over the past several decades; this dependence was a major cause of the recent financial crisis in Korea. Capital outflows have also grown substantially in recent years in Korea. Both capital inflows and outflows, however, often took the form of loans or portfolio investment than of foreign direct investment. Again, it would be interesting to explain why.

Another point I want to make is that Kim's paper presents interesting empirical evidence that Korea's outward direct investment did not hamper but rather promoted its exports, particularly in such labor-intensive industries as textiles and clothing and shoes and leather, contrary to the common expectation. Kim argues that outward foreign direct investment in Korea might have created new exports of intermediate goods that belong to the same industry classifications. I wonder whether this finding holds true for data periods other than 1994. I also think it would be interesting to examine the effects of outward foreign direct investment on Korea's imports as well, at a disaggregated industrial level and on a bilateral basis. I suspect that the motivation behind some of Korea's outward foreign

direct investments is to produce parts and components or other resource-based intermediate goods more cheaply abroad and to ship them back to parent firms in Korea.

Finally, I think it would be interesting to examine how investment motives and environments faced by Korean firms have been changing over time and how Korean firms have been responding to such changes. For instance, in recent years, *chaebols* in Korea have made bold and aggressive outward foreign direct investments in high-tech industries in the United States and elsewhere, mainly for the purpose of acquiring advanced technologies and increasing access to larger overseas markets. According to Kim's paper, the five largest *chaebols* made up more than 60 percent of Korea's total outward foreign direct investment in 1995 alone, and more than 80 percent of this outward foreign direct investment was financed by foreign resources. I wonder whether these outward foreign direct investments have served their intended objectives and whether they have been cost-effective.