

A Transition Economy and Outward Direct Foreign Investment: The Case of South Korea*

Chung H. Lee

University of Hawaii and East-West Center

Keun Lee

Aberdeen University

This paper aims at explaining outward direct foreign investment (DFI) from a country in transition from the developing to the developed status. Such a country is losing a comparative advantage in labor-intensive industries but gaining it in capital- and knowledge-intensive industries, and its pattern of outward DFI is related to this change in comparative advantage. Empirical support for the relationship is provided with data from Korea, a prime example of an economy in transition.

I. Introduction

In recent years Asia's newly industrializing economies (NIEs)—Hong Kong, Singapore, South Korea, and Taiwan—have emerged as exporters of direct foreign investment (DFI). These economies have been importers of DFI for the past thirty-some years but, now having reached the point of transition to the developed status, they have begun exporting DFI to developing as well developed countries of the world.

This change in the investment position of the NIEs from importers to exporter-cum-importers of DFI has become an object of inquiry not only because some of their outward investment is related to structural changes taking place in these economies but also because it may serve as a catalyst for economic development in

*The authors wish to thank Dr. Yongwook Jun for his valuable comments on an earlier version of the paper. The authors also express their gratitude to Seok-Keun Lee and Soo-Yong Shin of the Bank of Korea for their assistance in collecting the data and Mark Schumacher for research assistance.

developing host countries.¹ Furthermore, as the NIEs are now in the transitional phase from the developing to the developed status the question of how their outward DFI may affect the process of transition has various policy implication.

The transformation of an economy from an importer to an exporter-cum-importer of DFI was first analyzed by Dunning (1981, 1988) in a dynamic extension of his "eclectic theory of international production." In this dynamic version Dunning proposes a relationship between a country's position in the development cycle and its investment pattern. When a country is very poor there is little inward or outward investment. Then, as it begins the development process the country enters the second stage when its inward DFI begins to increase. In the third stage of development the country experiences increasing outward investment and/or decreasing inward investment, and then finally in the fourth stage it becomes a net exporter of DFI.

The key to Dunning's eclectic theory consists of three necessary conditions for international production — "ownership advantages," "internalization advantages," and "locational advantages." For successful operation in a foreign country the firm must possess some ownership advantages in order to compete with indigenous firms which have home-town advantages. These ownership advantages stem, according to Dunning (1988, p.25), from a firm's "exclusive possession and use of certain kinds of income-generating assets," its ability to "coordinate separate value-added activities across national boundaries," and its capacity to "reduce environmental and foreign exchange risks."

Internalization advantages arise from cost saving in carrying out transactions internally within the firm instead of across a market, and obviously without these advantages the firm would prefer selling the right to its ownership advantages through, for instance, a licensing arrangement to utilizing them itself. A foreign location must, of course, offer locational advantages to the firm as otherwise there is no point in investing there.

It is clear that for the eclectic theory to become a dynamic theory these advantages, or at least some of them, must change with economic development. In other words, to each of the four stages of the investment development cycle there must correspond a set of advan-

¹Jun (1987), Kumar and McLeod (1981), Lall (1983, 1991), Lee (1990a, 1990b), Ogawa and Lee (1991), Ramstetter (1991), Taniguchi (1990), and Wells (1983).

tages which is unique to each state. Otherwise, what Dunning calls the dynamic version of the eclectic theory is really a taxonomy of investment patterns.

Among the three advantages, ownership and locational advantages are most likely to change with economic development. Ownership advantages may change as firms would acquire, through experience and learning-by-doing, certain income-generating intangible assets and the capability of handling business across national boundaries. Locational advantages may also change as the domestic wage rate increases relative to that in a foreign country or as certain natural resources in a foreign country become economically valuable to domestic firms as they learn how to exploit the resources. In either case some of the firms would now find locational advantages in a foreign country which they had not found in the past. It should be noted, however, that without some ownership advantage they would not be able to utilize the locational advantages now found in that country.

There is no apparent reason why internalization advantages should be related to the economic development of the investing country. They stem from cost differences between internal and market transactions, which would depend on the available technologies of communication and transportation (Chandler 1977). Developments in these take place by and large outside the countries which are now developing.

Government policies can, however, affect internalization advantages by making market transactions more costly. For example, if its export goes down due to an increase in tariff or nontariff barriers in a foreign country a firm may choose to invest there in order to get around the barriers. This so-called defensive investment can be regarded a consequence of internalization advantages increasing relative to market transactions, which the higher trade barrier has brought about. A rise in trade barriers in an importing country can be caused by a variety of reasons regardless the stage of development in which the investing country may be. But, to the extent that new protectionism which has been observed recently in many of the industrialized countries of the world is related to rising exports from the NIEs ups and downs in protectionism may not be entirely independent of economic development.

The key to explaining the relationship between economic development and the investment position of a country thus lies in the relationship between economic development on the one hand and own-

ership, locational, and internalization advantages on the other. This paper aims at developing this relationship by combining Dunning's eclectic theory of international production with Kojima's macroeconomic theory of DFI (1978), later modified by Lee (1990a, 1990b). Specifically, it aims at explaining outward DFI from a transition country — a country about to reach the ranks of the developed countries. Such a country is losing a comparative advantage in low-skill, labor-intensive industries but gaining it in capital- and knowledge-intensive industries, and its outward DFI are related to this change in comparative advantage.

In whichever stage of development a country may be its DFI cannot be independent of events taking place abroad. Especially for an economy that has successfully developed on the basis of an export-oriented policy, rising protectionism in the industrialized countries has threatened the sustainability of its growth. Many of its firms have made defensive investment in these countries in order to circumvent existing or potential trade barriers. Thus, in investigating the actual pattern of outward DFI we need to look at the external factors facing the country as well as its internal dynamics.

The following section presents a theoretical framework for analyzing the outward DFI of a transition country. Empirical support for the framework is then provided in section III with data from Korea, a prime example of the transition country. Section IV discusses the effects of outward DFI on the transition economy and section V concludes the paper.

II. A Theoretical Framework

A. *Comparative Advantage and Profits*

Kojima's macroeconomic theory of direct foreign investment states that the comparative profit rate — the ratio of profit rates in two industries — is low, relative to the same in another country, in an industry in which the country has a comparative disadvantage and outward DFI is consequently from this industry. As pointed by Lee, however, investment decisions of a firm are guided by the absolute profit rate and not the comparative profit rate as the latter can be low even though the absolute profit rate is higher in all industries in one country than in another. In Lee's revision of Kojima's theory, a country's outward DFI is from the industries in which the country is "losing" its comparative advantage as the firms in these indus-

tries have low or falling profit rates and thus have an incentive to invest abroad. The country's inward DFI is into the industries in which it is "gaining" a comparative advantage as the profit rate there is high or rising and foreign firms thus have an incentive to invest in these industries.

For our analytical purpose we posit a three-country world — a developed country, a developing country, and a transition country — but focus on the last. If this country's comparative advantage is shifting from low-skill, labor-intensive manufacturing industries to capital- and knowledge-intensive industries, the profit rate will be low or falling in the former but will be high or rising in the latter. The country's outward DFI will be then from labor-intensive industries to the labor-abundant developing country, which now offers locational advantages to the firms from the transition country. Its inward DFI will be from the developed country to its capital- and knowledge-intensive industries. This investment pattern of the transition country thus corresponds to the third stage in the investment cycle proposed by Dunning. The fourth and final stage will be reached when this country becomes a fully developed economy. The developing country which now receives DFI in its labor-intensive industries is in the second stage of the investment cycle.

B. Ownership Advantages and Profits

As noted above, in the eclectic theory of international production it is the ownership advantages along with the other two advantages, not profits, that explains the pattern of DFI. But, clearly, what motivates a firm to invest abroad is the profits that it can earn with its ownership advantages. Since these profits are in fact a rent on ownership advantages the determinants of their size are the usual determinants of rent. That is, it is large because the firm has unique ownership advantages that no other firm has and as a result its products can be sold at higher prices or produced at lower costs. The rent will decrease if whatever gives the firm the ownership advantages is diffused to other firms competing in the same market or if the cost of production goes up, for instance, because of an increase in the wage rate.

The above point can be more clearly demonstrated in the following equation for gross profit, PR :

$$PR = Y - wL - C.$$

where Y is net output or value added, w the wage rate, L labor input, and C the sum of rents on land, taxes, and other miscellaneous costs. Gross profit is the residual return after wages and other costs are paid and can be thus regarded as a rent on capital and ownership advantages. The profit rate defined as profit per unit of capital, K , is then

$$\begin{aligned} PR/K &= (Y/K)(PR/Y) \\ &= (u)(1 - m), \end{aligned}$$

where $u = Y/K$, the average productivity of capital, and $(1 - m) = PR/Y$, the unit profit rate. The latter is one minus the unit wage and other costs, $m = (wL + C)/Y$. It is clear that the profit rate is related positively to the average productivity of capital and negatively to unit wage and other costs. The profit rate will decrease with a loss in ownership advantages as it adversely affects the average productivity of capital. In other words, in this formula of the profit rate u can be regarded as a proxy for ownership advantages.

In the transition country the profit rate in labor-intensive manufacturing industries will decrease as wages go up and as firms in the developing country learn to produce the same products, diminishing the ownership advantages of the firms in the transition country. This decrease in profit can be prevented somewhat by making DFI in the developing country where labor is still relatively cheap. In other words, DFI carried out by the firms in the labor-intensive industries is a way of preserving the rent on their ownership advantages which would otherwise decrease.

The DFI differs from the kind made by multinational enterprises based in the developed country. For them, DFI is a way of extending spatially the use of ownership advantages and thus capturing an additional rent on them. There is, of course, no reason why these firms would not react to changes in the rent from ownership advantages in the same manner as the firms in the labor-intensive industries of the transition country do. A major difference between the two is, however, that the former are continually engaged in research and development, acquiring ownership advantages in new products and processes and the demand for their products is not as price elastic as that for labor-intensive manufactured products.

C. Ownership Advantages and the Direction of Investment

In the eclectic theory of international production a firm must possess ownership advantages in order for it to be engaged in international production, and it is taken for granted that this firm is the one that makes direct foreign investment. In this theory the direction of investment is then from the country in which the firm is located to a country where it finds locational advantages. The actual pattern of DFI that we observe is by and large consistent with the direction of investment hypothesized in the eclectic theory of international production. Multinational enterprises are based mostly in advanced industrialized countries and they seem to be the ones with ownership advantages.

To utilize its ownership advantages for profit maximization a firm must transfer them to a country where it finds locational advantages. This spatial transfer of ownership advantages must be, however, preceded by a financial transaction, i.e., DFI, which then allows the firm to realize internalization advantages. There is, however, no a priori reason why the two transactions — the transfer of ownership advantages and the transfer of financial resources — should be in the same direction. In principle a firm lacking certain ownership advantages can take over a firm in another country that already has those advantages. In such a case the direction of transfer of ownership advantages will be the opposite to that of financial flow, and DFI is then a way of acquiring ownership advantages and not simply extending their use spatially.

The reason why the opposite flows of finance and ownership advantages are not a logical possibility in the eclectic theory is that the theory makes no distinction between the actual locus of ownership advantages, which is the firm, and the legal ownership of the advantages. Once this distinction is made it is obvious that the shareholders, who hold the legal ownership, have always the option of selling the ownership advantages to another firm from a foreign country instead of extending spatially the use of the advantages. In the first case, DFI is then from a foreign country to the country of the shareholders whereas in the second case it is in the opposite direction. It should be noted here that taking over an entire firm possessing ownership advantages is different from buying a particular ownership advantage through a licensing arrangement.

If an ownership advantage of a firm can be codified, licensing may

be a preferred mode of transfer than internalization. But this particular advantage may not be separable from other ownership advantages of the firm and, therefore, not transferable separately through licensing. In such a case the entire firm may be taken over as a way of transferring the particular ownership advantage. The reason why we see very few takeovers of this kind is that most firms in the countries with locational advantages do not have the financial resources necessary for such a transnational takeover. In fact, it is hard to imagine a firm in developing countries which has enough financial resources to take over, for example, IBM. There are, however, firms in these countries which have enough resources to take over small ones such as those specializing high-tech research in the Silicon valley, and in fact such transnational acquisitions have taken place.

One of the problems faced by a transition economy is that of restructuring the economy toward a more technologically advanced one. One of the ways of accomplishing the restructuring is to facilitate the inflow of advanced technology from developed industrialized countries. The point of our argument is that a transition economy, which is in need of more advanced technology, can obtain it through outward DFI as well as inward DFI.

D. Government Policy and Internalization Advantages

As mentioned above, there is no obvious reason why the process of economic development itself would change internalization advantages. But if protectionism rises in the developed country in response to increasing imports from the transition country, firms in the latter may find it advantageous to establish plants in the former as a way of defending their export markets (Jun 1987). These firms have developed ownership advantages by exporting their products to these markets but have not yet invested there because there are no locational advantages for them to exploit. But, now an increase in trade barriers may raise internalization advantages sufficiently to more than compensate for locational disadvantages or lack of locational advantages and thus induce the firms to invest in the developed country.

In sum, there are potentially three different kinds of outward DFI from the transition country. The first is outward DFI from the low-skill, labor-intensive industries in which the country is losing a comparative advantage and it goes to the developing country where

labor is relatively inexpensive. This investment facilitates structural adjustment in the transition country as it transfers abroad industry-specific tangible and intangible capital and thus reduces the cost of structural adjustment. The second is outward DFI from capital- and knowledge-intensive industries in which the country is gaining a comparative advantage, and it goes to the developed country. It facilitates the transfer of technology and knowhow and thus helps the country gain a comparative advantage in its emerging industries. The third kind of outward DFI from the transition country goes to the developed country for a strategic defensive purpose. It may be from labor-intensive or capital-intensive industries, but whatever its source may be it is made to protect their market-share in the developed country.

III. Korea's Outward DFI

The cumulative outward DFI from Korea increased from a little over \$126 million for the 1970s to about \$1,318 million for the 1980s, a more than tenfold increase in ten years (Table 1). The increase was most noticeable in the manufacturing sector, which by the end of 1989 accounted for 37 percent of Korea's total outstanding DFI. The number of cases of investment also tells the same story; the cumulative total increased from 269 for the 1970s to 630 for the 1980s with approximately 33 percent of cases being in manufacturing.

In order to identify the different types of DFI discussed in the preceding section we divided Korea's outward DFI into three groups by destination — Asia, OECD and the rest of the world. Asia, representing the developing country, includes all Asian countries except Japan, China, and the Middle East. OECD, representing the developed country, includes Canada, the United States, Japan, and Western Europe. Thus, OECD here includes certain Western European countries that are not members of the actual OECD. Our analysis here deals only with outward DFI to Asia and OECD.

The total outward DFI outstanding as of the end of 1989 is distributed as follows: out of the total of 899 cases 249 (28%) were in Asia, 465 (52%) in OECD, and 185 (20%) in Asia, \$736 million (51%) in OECD, and \$345 million (24%) in the rest of the world (Table 2).

Among the major sectors, "foreign trade" accounted for the

TABLE 1
KOREA'S OUTWARD INVESTMENT FLOWS, 1968-90
(Unit: thousand dollars)

Year	Amount	Case
1968-1971	13,364	19
1972	4,767	13
1973	3,717	10
1974	18,045	17
1975	9,701	11
1976	6,943	30
1977	12,331	46
1978	38,761	74
1979	18,820	49
Subtotal	126,449	269
1980	15,456	18
1981	31,697	34
1982	115,962	31
1983	103,819	49
1984	51,313	31
1985	31,492	11
1986	157,153	32
1987	332,715	59
1988	153,106	134
1989	324,982	231
Subtotal	1,317,695	630
1990 (January-June)	408,587	172
Total	1,852,731	1,071

Source: Bank of Korea, *The Status of Outward Foreign Investment*, June 1990.

Note: Outward flows are based on realized investment (authorized investment less cancellations).

largest number of outward-DFI cases although in terms of the dollar amount it ranked the third. Outward DFI in foreign trade is related to trading activities of the investing firms and its large share in total outward DFI thus indicates the importance of external trade to the Korean economy and the fact that Korea, which has been a major player in international trade for some time, is still a new comer in DFI. However, as the Korean economy develops further, its outward DFI will become increasingly concentrated in manufacturing and it is this sector which changes most in a transition

TABLE 2
 AREA AND SECTORAL COMPOSITION OF OUTWARD DFI FROM KOREA
 (outstanding as of the end of 1989)

	World	Asia ¹	% share	OECD	% share
<i>A. Number of cases</i>					
Manufacturing subtotal	295	132	100.0	82	100.0
Food & beverage	12	1	0.8	5	7.7
Textiles & clothing, toys, footwear & leather	114	62	47.0	13	20.0
Textiles & clothing	34		25.8	10	15.4
Toys	12		9.1	1	1.5
Footwear & leather	16		12.1	1	1.5
Wood & wood products	9	7	5.3	1	1.5
Paper & paper products	7	0	0.0	7	10.8
Chemicals & petroleum products	33	16	12.1	9	13.8
Nonmetal mineral products	13	6	4.5	4	6.2
Basic metals	8	2	1.5	2	3.1
Machinery & equipment	62	23	17.4	35	53.8
Other manufacturing	37	14	10.6	6	9.2
Mining	15	2		6	
Forestry	10	6		1	
Fishing	34	5		8	
Construction	56	15		17	
Transportation & storage	28	5		20	
Foreign trade	377	68		284	
Others	68	7		36	
Real estate	16	3		11	
Total	899	249		465	

TABLE 2
(CONTINUED)

	World	Asia ¹	% share	OECD	% share
<i>B. Amount (US\$, 000)</i>					
Manufacturing subtotal	530,955	125,113	100.0	330,307	100.0
Food & beverage	14,601	3,185	2.5	7,068	2.1
Textiles & clothing, toys, footwear & leather	90,264	44,093	35.2	14,317	4.3
Textiles & clothing	17,264		13.8	13,551	4.1
Toys	6,326		5.1	255	0.1
Footwear & leather	20,503		16.4	511	0.2
Wood & wood products	9,344	7,844	6.3	1,000	0.3
Paper & paper products	15,303	0	0.0	15,303	4.6
Chemical & petroleum products	53,143	17,185	13.7	12,616	3.8
Nonmetal mineral products	25,488	30,795	24.6	1,850	0.6
Basic metals	155,624	1,379	1.1	151,844	46.0
Machinery & equipment	138,870	13,069	10.4	123,397	37.4
Other manufacturing	18,318	7,563	6.0	2,912	0.9
Mining	400,974	171,927		92,751	
Forestry	68,859	31,545		1,050	
Fishing	64,717	2,253		18,074	
Construction	49,128	5,315		21,053	
Transportation & storage	5,010	513		3,940	
Foreign trade	191,137	15,328		167,546	
Others	99,302	5,095		73,880	
Real estate	34,062	5,371		28,075	
Total	1,444,144	362,460		736,676	

Source: Calculation based on data reported in Bank of Korea (1990).

Note: 1. Asia includes all Asian countries except Japan, China, and the Middle East. Here, OECD includes Canada, the United States, Western Europe, and Japan. Thus, it includes some Western European countries who are not actually OECD members.

economy such as Korea at the present time.

As discussed in the preceding section, it is expected that Korea's outward DFI to the developing countries is likely to be in labor-intensive industries whereas that to the developed countries is likely to be in capital- and knowledge-intensive industries. In order to test this hypothesis we divided the manufacturing industries into four groups: industries using labor-intensive, low-technologies (the L-L group); those using labor-intensive, high-technologies (the L-H group); those using capital-intensive, low-technologies (the K-L group); and those using capital-intensive, high-technologies (the K-H group).² To the L-L group belong food & beverage; textiles & clothing, toys, and footwear & leather goods; wood & wood products; and other manufacturing. The L-H group includes paper & paper products and machinery & equipment, and the K-L group includes nonmetal mineral products and basic metals. The K-H group includes chemicals & petroleum products.

Table 3 shows that in terms of both the number of cases and the amount of dollars Korea's DFI in Asia is concentrated in the L-L group whereas its investment in OECD is concentrated in the L-H group in terms of the number of cases but is about equally distributed between the L-H and K-L groups in terms of the amount invested. This pattern is clearly consistent with the hypotheses discussed above: Korea's DFI in Asia is from those industries in which the country is losing its comparative advantage whereas its DFI in OECD is made for a defensive purpose in the industries in which the developed countries are trying to protect employment from foreign competition and also for acquiring ownership advantages.

More than a half of Korean DFI cases in OECD is in machinery and equipment and many in the electrical and electronic industry are for the production of intermediate goods designed to meet the requirements for local contents in the host countries. Some of the notable examples are Samsung's color TV manufacturing plants in

²Hufbauer (1970) estimates of factor- and skill-intensities of U.S. traded goods are used for classifying the industries. Factor-intensity is thus measured as capital per person in U.S. industries in 1963, and skill-intensity as the percentage of professional, technical and scientific personnel employed in an industry in 1960. Then, the respective median values of these estimates are used as the criteria for classification. Thus, for example, an industry with an above-median value for capital per person and an above-median value for the percentage of professional, technical and scientific personnel in the total labor force of the industry is included in the K-H group. Obviously, the use of Hufbauer's estimates requires that there is no reversal in factor- and skill-intensities and between countries.

TABLE 3
PATTERN OF OUTWARD DFI IN MANUFACTURING FROM KOREA
(outstanding as of 1989)

	Low-tech	High-tech
<i>A. Pattern in terms of number of cases</i>		
In Asia		
Labor-intensive	63.6%	17.4%
Capital-intensive	6.8%	12.1%
In OECD		
Labor-intensive	30.5%	51.2%
Capital-intensive	7.3%	11.0%
<i>B. Pattern in terms of amount</i>		
In Asia		
Labor-intensive	50.0%	10.4%
Capital-intensive	25.7%	13.7%
In OECD		
Labor-intensive	7.6%	42.0%
Capital-intensive	46.6%	3.8%

Source: Calculation based on data reported in Bank of Korea (1990).

Note: Asia includes all Asian countries except Japan, China, and the Middle East; and OECD includes Canada, the United States, Western Europe, and Japan.

Portugal and New Jersey, Lucky-Goldstar's color TV manufacturing plant in Alabama, and Hyundai's automobile plant in Canada. Samsung's investment in a semiconductor research laboratory in the Silicon valley is clearly a case of acquiring ownership advantages by taking over a firm in a developed country.

In terms of the number of cases, manufacturing investment is larger in Asia than in OECD, but in terms of the amount of dollars invested it is larger in OECD. This indicates a dual pattern in Korea's outward DFI — small-scale DFI by small and medium-sized enterprises in labor-intensive industries relative to the size of DFI by large corporations in more technologically advanced industries. This pattern can be clearly seen on Table 4, which reports Korea's outward DFI to ASEAN-4 and North America divided into investment by top 48 *Chaebol* groups, i.e., large conglomerates, and investment by non-*Chaebol* firms. Of the total amount invested by *Chaebol* in 1989 more than 56 percent was in basic metals and machinery & equipment whereas more than 45 percent of the investment by non-*Chaebol* firms was in textile & clothing, toys, and

TABLE 4
CHAEBOLS AND OUTWARD DFI FROM KOREA, 1989

	(1) Non-Chaebol				(2) Chaebol*			
	ASEAN-4	North America	Sum	% of sum	ASEAN-4	North America	Sum	% of sum
A. Number of cases								
Manufacturing subtotal	65	24	89	100.0	25	6	31	100.0
Food & beverage	1	4	5	5.6	2	0	2	6.5
Textiles & clothing, footwear & leather	34	9	43	48.3	11	00	11	35.5
Textiles & clothing								
Toys								
Footwear & leather								
Wood and wood products	3	1	4	4.5	1	0	1	3.2
Paper & paper products	1	1	2	2.2	0	0	0	0.0
Chemicals & petroleum products	11	3	14	15.7	7	1	8	25.8
Nonmetal mineral products	0	1	1	1.1	0	0	0	0.0
Basic metals	1	0	1	1.1	1	1	2	6.5
Machinery, equipment & metal products	6	5	11	12.4	3	4	7	22.6
Other manufacturing	8	0	8	9.0	0	0	0	0.0
Mining	0	0	0		0	0	0	
Forestry	0	0	0		0	0	0	
Fishing	3	1	4		0	1	1	
Construction	0	0	0		0	0	0	
Transportation & storage	0	1	1		0	0	0	

TABLE 4
(CONTINUED)

	(1) Non-Chaebol			(2) Chaebol*			% of sum
	ASEAN-4	North America	Sum	ASEAN-4	North America	Sum	
Foreign trade	0	30	30	0	4	4	
Real estate	1	2	3	0	1	1	
Others	2	5	7	0	2	2	
Total	69	58	127	25	12	37	
<i>B. Amount of investment (US\$1,000)</i>							
Manufacturing subtotal	39,113	22,985	62,098	79,976	97,814	177,790	100.0
Food & beverage	300	1,018	1,318	47,000	0	47,000	26.4
Textiles & clothing, footwear & leather	20,565	7,591	28,156	19,425	0	19,425	10.9
Textiles & clothing							
Toys							
Footwear & leather							
Wood and wood products	1,534	1,973	3,327	739	0	739	0.4
Paper and paper products	370	10,000	10,370	0	0	0	0.0
Chemicals & petroleum products	8,147	853	9,000	9,867	500	10,367	5.8
Nonmetal mineral products	0	850	850	0	0	0	0.0
Basic metals	2,500	0	2,500	1,195	10,000	11,195	6.3
Machinery, equipment & metal products	3,595	700	4,295	1,750	87,314	89,064	50.1
Other manufacturing	2,282	0	2,282	0	0	0	0.0

TABLE 4
(CONTINUED)

	(1) Non-Chaebol				(2) Chaebol*			
	ASEAN-4	North America	Sum	% of sum	ASEAN-4	North America	Sum	% of sum
Mining	0	0	0	0	0	0	0	0
Forestry	0	0	0	0	0	0	0	0
Fishing	340	900	1,240		0	2,500	2,500	
Construction	0	0	0	0	0	0	0	0
Transportation & storage	0	130	130	0	0	0	0	0
Foreign trade	0	20,730	20,730	0	3,900	3,900	3,900	
Real estate	3,500	3,785	7,285		0	1,000	1,000	
Others	0	1,186	1,186		0	3,500	3,500	
Total	42,952.9	49,716.0	92,668.9		79,976.0	180,714.0	188,690.0	
Average investment per case	622.5	857.2	729.7		3,199.0	9,059.5	5,099.7	

Source: Calculation using the East-West Center data base on Korean outward DFI. The data base was constructed from raw data provided by the Bank of Korea.

Note: 1. North America refers to the United States and Canada, and ASEAN-4, to Thailand, Malaysia, Indonesia, and the Philippines.

2. Figures are with regard to Korean DFI approved in 1989 and invested by the end of 1989.

3. *: Top 48 chaebol groups.

footwear & leather. Furthermore, the *Chaebol* groups accounted for two thirds (\$189 million) of the total amount invested in ASEAN-4 and North American in 1989 although their share in terms of cases was less than one fourth (37 cases). This pattern of 1989 is likely to be a harbinger of the pattern that will follow as the Korean economy passes the transition phase. There will be less and less outward DFI by small and medium-sized firms in low-skill, labor-intensive industries. Increasingly, Korea's outward DFI will come, as predicted by Lall (1991), from *Chaebol* groups, reflecting their growing strength in research and development.

IV. Effects of Outward DFI

Outward DFI to the developing countries and that to the developed countries have different effects on the transition country as the former is from labor-intensive industries whereas the latter is from capital- and knowledge-intensive industries.

A. DFI to Developing Countries

In the transition country that is losing a comparative advantage in low-skill, labor-intensive industries its outward DFI from these industries will facilitate the process of structural adjustment as it transfers abroad industry-specific capital. In the absence of this DFI structural adjustment can be made only by transferring industry-specific capital in the declining industries to another industry, and in the short or intermediate run such transfer cannot be made without a cost to the owners of the capital. They will suffer a loss in income as it either becomes scrapped or less productive if used in another industry. In other words, DFI can facilitate structural adjustment by bringing about an inter-country, intra-industry transfer of industry-specific capital. This transfer is less costly to the country than an intra-country, inter-industry transfer or scrapping, which are the only feasible alternatives in the absence of DFI.

Structural adjustments do not have to be made by transferring an industry and thus an entire production process. They may be also carried out through the internationalization of production processes. That is, a firm may divide its entire production process into various segments and transfer through DFI only some of the segments to a foreign country. To minimize the cost of production the firm may send labor-intensive segments of the production process to a coun-

try where labor is cheap and keep at home those segments which require skilled workers. In fact, this internationalization of production processes has been observed among U.S. and Japanese multinational enterprises, and there is no reason why the same path would not be taken Korean firms as labor costs keep rising and as the technology for internationalization becomes available to them.

Implications of outward DFI, whether it transfers an entire production process or only some segments of it, for employment in the transition country would depend on the causes for DFI. If the cause is a shortage of labor in low-skill, labor-intensive industries, DFI is simply a response to this shortage and would have little effect on employment. This seems to have been the case for Japan in the late 1960s and early 1970s when there was clearly a shortage of labor in low-skill, labor-intensive industries. In fact, it is not difficult to see that in such a case DFI will increase the GNP of the transition country as it will increase the rent on ownership advantages and industry-specific capital belonging to the firms in the declining industries (Lee 1990a).

If it is prompted by wages increases in excess of productivity gains when there are many unskilled workers, DFI will only lead to their unemployment. The fact is that because of capital mobility and the internationalization of production processes unskilled labor in the transition country now faces direct competition from cheap labor in the developing countries. As a result, the wage rate of the unskilled and undereducated workers in the former cannot exceed, in real terms, the wage rate of unskilled workers in the latter. Even a higher rate of capital accumulation in the transition country does not benefit its unskilled labor because the capital-labor ratio in the industries or processes using unskilled labor in that country cannot deviate much from that in the poor countries. Capital will move to the latter before such a deviation can be established.

It is thus possible that the transition country may experience premature outward DFI. In terms of the existing factor endowments the country may still have a comparative advantage in labor-intensive industries, but because of too rapidly rising real wages it may be losing it in these industries. Clearly, in this case outward DFI does not facilitate structural adjustment but creates unnecessary unemployment among those whose skills are not much better than those of cheap labor in poor developing countries.

It is obvious that preventing outward DFI, which is induced by excessive wage increases, will not solve the unemployment problem

among unskilled workers as firms will eventually find themselves unable to compete in the world market. Solutions to the problem lie in training the unskilled to acquire skills or in developing industries such as service industries from which outward DFI is difficult. As the economy develops the latter will happen as a matter of course but there is no guarantee that service jobs will be all for skilled labor or all pay wages high enough for local labor. Those that do not pay high enough wages to attract local labor will be filled with illegal immigrants.

B. DFI to Developed Countries

The transition country needs to develop a comparative advantage in capital- and technology-intensive industries, and in order to accomplish this it must acquire technology and knowhow. As now widely accepted, inward DFI can transfer the necessary technology and knowhow from more industrialized countries.

Outward DFI for acquiring a firm in the developed country is another way of gaining technology and knowhow in capital- and technology-intensive industries and it will thus help the transition country gain a comparative advantage in these industries.

Outward DFI for securing a market in the developed country is made in anticipation of or in response to trade barriers. As such it is a "premature strategic move" that would not be made in the absence of trade barriers and will have the effect of displacing employment at home. Such investment in fact creates employment in the developed host country at the expense of employment in the transition country although the extent of this substitution would depend on the factor intensity at the foreign affiliate, the local content of intermediate products, etc..

A case study of the Korean consumer electronics firms in the United States shows that the production cost of color television sets at the Korean plants is higher than that in Korea by about 7 percent (Jun 1987). Material and factory overhead costs are higher in the U.S. as some of the intermediate products have to be brought over from Korea and as the newer factories are depreciated at a higher rate than those in Korea. In addition, the labor cost at the U.S. plants is higher due to higher wages and lower productivity of U.S. workers. It seems obvious that the Korean electronics firms would not have invested in the United States if restrictions had not been imposed on the import of color television sets from Korea.

This premature defensive investment may have created employment in the U.S. but clearly at the cost of employment in Korea.

For the transition country, outward DFI to the developed country and the consequent loss of employment are a second-best way of coping with rising protectionism in the developed country. Unable to stop the rising protectionism it must either lose part of the export market or invest abroad to secure the market. Either way there will be some loss of employment at home but the loss would be less with the second option than the first.

Having been forced prematurely abroad the firms from the transition country may learn from their experience of operating in the developed country. This is a benefit that the transition country would gain with outward DFI but would not if it simply loses its export markets due to rising protectionism in the developed country. However, forced learning, however useful it may be, is costly — costlier than lessons that would be willingly taken in the absence of protectionism in the developed country.

V. Conclusion

Outward DFI from labor-intensive industries in which the transition country is losing its comparative advantage can preserve the value of the ownership advantages possessed by its firms. Although it will decrease GDP such DFI will nonetheless increase the country's GNP as its ownership advantages and industry-specific capital are utilized more profitably abroad. In this case the policy implication is clear: DFI from these industries should be encouraged.

Outward DFI from the same industries can, however, take place prematurely if wages rise faster than productivity increases. Its effect will be then unemployment especially among those whose labor can be readily substituted with that in poor developing countries. Policies preventing the outflow will not be, however, effective in maintaining employment as higher wages will adversely affect the country's exports of labor-intensive manufactures and will thus have a negative effect on employment. Obviously, the solution to the problem lies in moderating wage increases but it is not an easy solution for the transition country. Having only recently passed the turning point in the labor market the country is now burdened with an excessive frequency of industrial disputes while lacking experiences and institutions to handle the disputes (Lee and Park 1991).

The sooner the country finds the ways to handle industrial disputes the smoother will be its path of development.

Outward DFI which goes to the developed countries for the purpose of acquiring ownership advantages will help the country gain a comparative advantage in capital- and knowledge-intensive industries. Such acquisition should be encouraged as it will lead to further diffusion of imported technology within the country. Combined with active programs of domestic R&D, such outward DFI will help the country make successful transition to the developed status.

If outward DFI is prompted, however, by an increase in tariff or nontariff barriers in the developed countries, there is likely to be an adverse employment effect in the transition country. For this country, outward DFI is only a second-best response to rising protectionism in the developed countries. Its first-best policy is in preventing rising protectionism and this is the goal for which both the developed and transition countries should strive for.

References

- Balassa, Bella. "Trade Liberalization and Revealed Comparative Advantages." *Manchester School of Economic and Social Studies* (No. 2 1965): 99-124.
- Bank of Korea. *Yearly Statistics of Overseas Investment 1990*, Seoul: Bank of Korea, 1990. (in Korean)
- Chandler, Jr., A. D. *The Visible Hand*, Cambridge: Harvard University Press, 1977.
- Chen, Chun-Shun. "Economic Development and Foreign Direct Investment of Taiwan." In K. Taniguchi (ed.), *Taiwan, Kankoku no Kaigai Tosi no Tenkai*, 1990. (in Japanese)
- Dunning, John H. *International Production and the Multinational Enterprise*, London: Allen & Unwin., 1981.
- . *Explaining International Production*, London: Unwin Hyman, 1988.
- Hufbauer, G. C. "The Impact of National Characteristics and Technology on the Commodity Composition of Trade in Manufactured Goods." In Raymond Vernon (ed.), *The Technology Factor in International Trade*, New York: Universities-National Bureau Conference Series 22, 1970.
- Kojima, Kiyoshi. *Direct Foreign Investment: A Japanese Model of Multinational Business*, New York: Praeger Publisher, 1978.
- Kumar, Krishna, and McLeod, Maxwell. *Multinationals from Developing Countries*, Lexington: Lexington Books, 1981.
- Lall, Sanjaya. *The New Multinationals: The Spread of Third World Enterprises*, New York: John Wiley & Sons, 1983.

- _____. "Emerging Sources of DFI in Asia and the Pacific." Paper presented at the Roundtable on Foreign Direct Investment in Asia and the Pacific in the 1990s, Honolulu: The East-West Center, 1990.
- Lee, Chung H. "Outward Direct Foreign Investment and Structural Adjustment in a Small Open Economy." *Kobe Economic & Business Review* 36 (1990): 1-15. (a)
- _____. "Direct Foreign Investment, Structural Adjustment, and International Division of Labor: A Dynamic Macroeconomic Theory of Direct Foreign Investment." *Hitotsubashi Journal of Economics* 31 (December 1990): 61-72. (b)
- Lee, Chung H. and Park, Funkoo (eds.). *Emerging Issues of Industrial Labor Markets in Developing Asia*, Korea Development Institute, 1992 (forthcoming).
- Ogawa, Kazuo and Lee, Chung H. "Profitability of Industry and Outward Direct Foreign Investment." mimeo, Institute for Economic Development & Policy, East-West Center, 1991.
- Ramstetter, Eric D. "Foreign Direct Investment in the Asia and the Pacific in the 1990s: Potential, Policies, and Issues," mimeo, Kansai University, 1991.
- Taniguchi, Koji (ed.). *Taiwan, Kankoku no Kaigai Tosi no Tenkai* (Development of Taiwanese and Korean Overseas Investment). Tokyo: Institute of Developing Economies, 1990.
- Wells, Jr. Louis. *Third World Multinationals, The Rise of Foreign Investment from Developing Countries*, Cambridge: The MIT Press, 1983.