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External Factors Inducing Korean Overseas Direct Investment

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This study examines globalization motives and behaviors of Korean manufacturing industries by analyzing the influences and patterns of overseas direct investment of Korean manufacturing firms. While there have been many studies on the U.S., European, or Japanese ODI, Korea being a new player in ODI, few studies have been done on Korean ODI.

In the following sections, an overview of Korean ODI by region and sector is presented, and then we describes patterns of Korean ODI into advanced countries and less advanced countries and examines the factors inducing Korean ODI to a host country. The last section evaluates the overall performance of Korean ODI and draws some lessons from Korean experience.

JEL Classification: C22

Keywords: International business, FDI(foreign direct investment), globalization, Korean ODI, host country

1. INTRODUCTION

This paper studies globalization motives and behaviors of Korean manufacturing industries by analyzing the influences and patterns of overseas direct investment (hereafter ODI) of Korean manufacturing firms. There have been numerous studies on the U.S. (Woodward and Rolf, 1993, and Loree and Guisinger, 1995 to name a few), European, and Japanese ODI (Heitger and

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Stehn, 1990; Mann, 1993; Thomsen, 1993; Park, 1997). However, with Korea being a relatively new player in this field, few studies have been done on Korean ODI.

ODI here is defined as the flow of capital from a foreign country to a host country to establish production or service facilities and to conduct business activities.¹⁾ Therefore, ODI is different from a portfolio investment whose main purpose is to earn dividends and capital gains with no significant control over ownership. ODI is also distinguished from the reinvestment activities, out of their earned profits, of firms.

In the next section, an overview of Korean ODI by region and sector is presented. Section 3 describes patterns of Korean ODI into both advanced and less advanced countries and examines the factors inducing Korean ODI to a host country. The last section evaluates the overall performance of Korean ODI and draws some lessons from Korea's experiences.

2. TREND IN KOREAN ODI

The Korean ODI of \$4.2 billion in 1996 amounted to only 1.3% of the total world ODI of \$332 billion in the same year. However, Korean ODI draws our attention because of the rate at which it has expanded; it increased approximately 4.4 times, from \$.96 billion in 1990 to \$4.2 billion in 1996, while total world ODI increased only about 1.4 times, from \$234 billion to \$332 billion, during the same period.

Table 1 shows the historical trend of Korean ODI from 1968 to 1997.²⁾

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1) More recent forms of ODI in industrialized countries have been mergers and acquisitions. In most of ODI statistics, these figures are included even though there are not many such incidences in the case of Korean ODI.

2) Korean ODI has been drastically affected since 1998 because of the Asian financial crisis. This study does not include the period after the Asian financial crisis in order to be able to analyze the typical investment behaviors of Korean firms during normal periods.

Even though there was a slow-down in Korean ODI in the early 1990s, Korean ODI has increased substantially since 1993. This was mainly due to Korean government's deregulation policies and liberalization of investment

Table 1 Korean Net FDI Outflow by Year (US\$1,000)

Year	Total investment		Net investment		Outstanding	
	Amount	ratio	amount	ratio	amount	ratio
1968-1980	145196	0.8%	127000	0.8%	127000	0.8%
1981	28212	0.1%	21925	0.1%	148925	0.9%
1982	100837	0.5%	97578	0.6%	246502	1.5%
1983	108917	0.6%	102591	0.6%	349093	2.1%
1984	50186	0.3%	48184	0.3%	397278	2.4%
1985	112774	0.6%	63752	0.4%	461029	2.8%
1986	182649	1.0%	158286	1.0%	619315	3.8%
1987	409708	2.2%	320096	1.9%	939412	5.7%
1988	215861	1.1%	156194	1.0%	1095605	6.7%
1989	569589	3.0%	392384	2.4%	1487990	9.1%
1990	958935	5.1%	812713	4.9%	2300703	14.0%
1991	1115413	5.9%	1026902	6.2%	3327605	20.2%
1992	1219430	6.4%	1097709	6.7%	4425314	26.9%
1993	1262019	6.6%	1016485	6.2%	5441798	33.1%
1994	2298593	12.1%	2029062	12.3%	7470860	45.5%
1995	3066924	16.2%	2756405	16.8%	10227265	62.2%
1996	4219850	22.2%	3567596	21.7%	13794861	83.9%
1997	2917847	15.4%	2642098	16.1%	16436959	100.0%
Total	18982940	100.0%	16436959	100.0%	16436959	100.0%

Source: Overseas Investment Information System, The Export-Import Bank of Korea.

abroad. Korean ODI, which began with the forest development investment in Indonesia of the Korea South Development Co. in 1968, can be classified into four stages, or periods, according to the characteristics of and motives for investment.

During the first period —1968 through 1981—Korean ODI amounted to about \$173 million, with the trade sector as leader, followed by forestry, construction, and manufacturing. In this period the average size per project was very small, about \$550,000 and \$455,000, on the basis of total and net investment, respectively.

The second stage, from 1982 to 1987, was mainly one of natural resource seeking. Thanks to the policy of the Korean government, which had

recognized the importance of securing resources after the second oil crisis in 1979, Korean ODI has increased rapidly since 1982. The level of average annual investment surpassed \$100 million for the six years from 1982 to 1987, and the total investment, of \$965 million, during the second stage was 5.6 times as much as the total investment, of \$173 million, in the first stage. The average amount per project reached \$2.9 million in this second stage. Particularly, the amount per project in 1987 amounted to \$4.5 million, which was mainly attributable to the heavy investment of the mining sector, whose share in ODI for that year was 52%.

The third stage, from 1988 to 1993, can be called the "growth stage," which was an important period in Korean ODI. Korean companies, encouraged by the Korean government, began to accelerate their overseas investment because, since the middle of the 1980s, the Korean currency, the Won, had been appreciating, labor costs in Korea had jumped, and trade pressures and frictions in the world had been on the rise. In this period, labor-intensive companies, which lost their competitiveness in the domestic and world markets, could not avoid moving their production bases to foreign countries which had low wages or rents. At the same time, the large conglomerate companies, which led Korean exports, pushed direct overseas investment in order to secure markets in the advanced countries. This period is characterized by a combination of cost-reducing investment and market-penetrating investment.

During the 1988-1993 period, there were 2,400 projects totaling \$5.3 billion in investment. This was an increase of more than 4 times the ODI of the second period. Since the latter half of the 1980s, Korean ODI in the manufacturing sector has risen most significantly, and it has amounted to more than \$1 billion every year since 1991. Investment in this period shot up approximately 600 percent from 1988 to 1993. However, the average investment per project declined steadily from \$2.84 million in 1990 to \$1.56 million in 1994 in spite of the continuous increase in the number of projects and the total ODI amount. This was because small investments to Southeast Asia

and China increased drastically, from 302 projects in 1990 to 1627 projects in 1994.

1994 was a turning point in Korean ODI history because the Korean government changed its ODI policy from a system requiring government approval for most ODI to a system allowing free investment abroad except for a few listed sectors. This change was made in response to the changing world environment, that is, the increasing globalization of the world and the proliferation of regional blocs. Thus, the fourth period began in 1994. Following the change in the Korean government's ODI policy, Korean ODI increased rapidly, reaching \$3.58 billion in 1994 and \$8.49 billion in the two-

Table 2 Korean Net FDI Outflow by Year/Region(US\$1,000)

Year	Southeast Asia		Middle East		North America		Latin America	
	amount	ratio	amount	ratio	amount	ratio	amount	ratio
1968-1980	40043	31.5	21068	16.6	31043	24.4	4411	3.5
81	4739	21.6	-1151	-5.2	4182	19.1	568	2.6
82	6419	6.6	6104	6.3	41838	42.9	1061	1.1
83	24697	24.1	545	0.5	48334	47.1	312	0.3
84	9851	20.4	6691	13.9	18836	39.1	739	1.5
85	16920	26.5	6292	9.9	4100	6.4	2799	4.4
86	-1596	-1.0	75381	47.6	77309	48.8	2645	1.7
87	128735	40.2	68370	21.4	164827	51.5	3677	1.1
88	40115	25.7	-7563	-4.8	90477	57.9	14016	9.0
89	127788	32.6	-47240	-12.	202359	51.6	55347	14.1
90	292735	36.0	-72412	-8.9	416800	51.3	66455	8.2
91	423000	41.2	1558	0.2	442764	43.1	39759	3.9
92	502164	45.7	12237	1.1	364626	33.2	30025	2.7
93	452228	44.5	19176	1.9	278441	27.4	26518	2.6
94	999785	49.3	-15626	-0.8	508904	25.1	20206	1.0
95	1516733	55.0	29300	1.1	449414	16.3	64970	2.4
96	1490436	41.8	24041	0.7	1188673	33.3	232590	6.5
97	1360811	51.5	68616	2.6	422929	16.0	254034	9.6
Total	7435603	45.2	195387	1.2	4755856	28.9	820132	5.0
Year	Europe		Africa		Oceania		Total	
	amount	ratio	amount	ratio	amount	ratio	amount	ratio
1968-1980	4891	3.9	23988	18.9	1556	1.2	127000	100.0
81	1438	6.6	901	4.1	11248	51.3	21925	100.0
82	1442	1.5	-907	-0.9	41621	42.7	97578	100.0
83	12558	12.2	416	0.4	15729	15.3	102591	100.0
84	944	2.0	546	1.1	10578	22.0	48184	100.0
85	38643	60.6	-4769	-7.5	-234	-0.4	63752	100.0
86	5451	3.4	-279	-0.2	-626	-0.4	158286	100.0
87	-42206	-13.2	-8315	-2.6	5008	1.6	320096	100.0
88	15200	9.7	1152	0.7	2796	1.8	156194	100.0
89	18362	4.7	8292	2.1	27477	7.0	392384	100.0

90	59347	7.3	24142	3.0	25645	3.2	812713	100.0
91	88605	8.6	15933	1.6	15283	1.5	1026902	100.0
92	143356	13.1	27667	2.5	17634	1.6	1097709	100.0
93	181189	17.8	28659	2.8	30274	3.0	1016485	100.0
94	388610	19.2	111103	5.5	16079	0.8	2029062	100.0
95	629123	22.8	37618	1.4	29246	1.1	2756405	100.0
96	561354	15.7	7563	0.2	62938	1.8	3567596	100.0
97	373333	14.1	87612	3.3	74762	2.8	2642098	100.0
Total	2481640	15.1	361322	2.2	387014	2.4	1643695 9	100.0

Source: Overseas Investment Information System, The Export-Import Bank of Korea.

year period of 1994-1995. ODI in this two-year period, on its own, almost matched the total ODI up to 1993. Korean ODI from 1994 to 1996 accounted for 60 percent of the total investment up to the end of 1996.

Table 2 shows Korean ODI from 1968 to 1997 by region. Up to and including 1980, Southeast Asia, North America, and Africa had been the primary regions invested in, however, since 1981 the importance of Africa as either a resource site or production site has diminished. On the other hand, Oceania emerged as a new region of investment interest up to 1984.

Geographically, Korean ODI in Southeast Asia was usually the highest in the 1990s which is exemplified by its 51.5% share of Korea's total ODI in 1997. Investment in this region has shown a particularly explosive rise since 1994 due to heavy investment to China. In the 1980s North America had been the region most invested in. However, North America yielded the lead to Southeast Asia in 1992.

Europe has remained the third highest recipient of Korean ODI with a continuous rise in received investment since 1988. For just one year, in 1994, Korean ODI in Europe surpassed that in North America. Korean ODI in the Middle East, which peaked at \$75.4 million and a 47.6% share of the total in 1986, reached a considerable amount in the middle of the 1980s thanks to the resource-seeking investment in mining and crude oil, but since the late 1980s it has decreased rapidly.

Table 3 shows Korean ODI from 1968 to 1997 by industry. Up to 1980, trade, manufacturing, construction and forestry, with a share of 20% or so

respectively, dominated Korean ODI outflows. Investment in mining rose explosively from 1982 to 1987 and once again in 1996 and 1997 in order to secure domestically scarce resources from Canada, Australia, and others. Korean ODI in the manufacturing sector has increased continuously over time, from 20 percent of total ODI in 1983 to 48 percent in 1996. The manufacturing sector has maintained the top position since 1986. Korean ODI in trade has ranked second with a continuous rise since 1988. Korean ODI in forestry was active up to 1980 and has been inactive since then. The majority of the investment in fisheries was made for during five-year period from 1988 through 1992 and has declined since then.

Even though Korean firms have invested in more than 100 countries, ODI exceeding \$100 million has gone to only 28 countries and investment in these 28 countries accounts for 90 percent of Korea's total ODI. Furthermore, the share of just two countries, the U.S. and China, amounts to approximately 50 percent of the total ODI, with a peak of 60.3% in 1996. During the 1990s, investment to most of the advanced countries 28 countries accounts for 90 percent of Korea's total ODI. Furthermore, the share of just two countries,

Table 3 Korean Net FDI Outflow by Year/Industry (US\$1,000)

Year	Mining		Forestry		Fishery		Manufacturing		Construction	
	Amount	ratio	amount	ratio	amount	ratio	amount	ratio	amount	ratio
1968-1980	1454	1.1	22386	17.6	9033	7.1	24151	19.0	24611	19.4
81	173	0.8	9750	44.5	179	0.8	4161	19.0	-183	-0.8
82	69136	70.9	6885	7.1	10	0.0	6123	6.3	5929	6.1
83	45246	44.1	16229	15.8	24	0.0	20916	20.4	1436	1.4
84	15089	31.3	4493	9.3	76	0.2	12855	26.7	4378	9.1
85	40064	62.8	3161	5.0	-3118	-4.9	19933	31.3	-218	-0.3
86	71172	45.0	-5413	-3.4	3756	2.4	74968	47.4	-1066	-0.7
87	154964	48.4	-2821	-0.9	2256	0.7	152219	47.6	-3584	-1.1
88	13765	8.8	-2160	-1.4	13324	8.5	82812	53.0	6110	3.9
89	-3737	-1.0	21150	5.4	39026	9.9	198033	50.5	12914	3.3
90	39393	4.8	3910	0.5	23186	2.9	460118	56.6	1595	0.2
91	63022	6.1	-1745	-0.2	12700	1.2	591007	57.6	11261	1.1
92	70589	6.4	1511	0.1	23486	2.1	626905	57.1	-1815	-0.2
93	54532	5.4	3769	0.4	-2225	-0.2	488288	48.0	19340	1.9
94	41375	2.0	-1885	-0.1	-16530	-0.8	1404437	69.2	57231	2.8
95	24714	0.9	-1118	0.0	-15358	-0.6	1855282	67.3	76347	2.8
96	204520	5.7	6825	0.2	342	0.0	1720840	48.2	83834	2.3

97	200770	7.6	9331	0.4	1297	0.0	976486	37.0	68697	2.6
Total	1106241	6.7	94258	0.6	91464	0.6	8719534	53.0	366817	2.2
	Trans. & Storage		Trade		Others		Total			
Year	Amount	ratio	amount	Ratio	amount	ratio	amount	ratio		
1968-	2344	1.8	27552	21.7	15470	12.2	127000	100.0		
1980										
81	137	0.6	7344	33.5	364	1.7	21925	100.0		
82	312	0.3	7603	7.8	1580	1.6	97578	100.0		
83	-180	-0.2	16162	15.8	2758	2.7	102591	100.0		
84	-30	-0.1	7544	15.7	3779	7.8	48184	100.0		
85	-129	-0.2	10282	16.1	-6223	-9.8	63752	100.0		
86	-26	0.0	10156	6.4	4740	3.0	158286	100.0		
87	252	0.1	8844	2.8	7966	2.5	320096	100.0		
88	516	0.3	36747	23.5	5079	3.3	156194	100.0		
89	1814	0.5	57723	14.7	65461	16.7	392384	100.0		
90	1717	0.2	228299	28.1	54496	6.7	812713	100.0		
91	8524	0.8	224671	21.9	117463	11.4	1026902	100.0		
92	8618	0.8	297654	27.1	70761	6.4	1097709	100.0		
93	5863	0.6	379806	37.4	67110	6.6	1016485	100.0		
94	11169	0.6	430076	21.2	103191	5.1	2029062	100.0		
95	35809	1.3	232405	8.4	548323	19.9	2756405	100.0		
96	14200	0.4	836858	23.5	700177	19.6	3567596	100.0		
97	73705	2.8	403773	15.3	908039	34.4	2642098	100.0		
Total	164615	1.0	3223499	19.6	2670534	16.2	16436959	100.0		

Source: Overseas Investment Information System, The Export-Import Bank of Korea.

Table 4 Regression Equations on Determinants of Korean FDI

Variable	World <i>n</i> =72	Advanced <i>n</i> =25	Less Advanced <i>n</i> =47
Intercept	433.889 (0.62)	-1148.856 (-0.56)	538.543 (0.96)
<i>PPG</i>	0.901 (6.65)	0.556 (9.64)	1.832 (5.76)
<i>W</i>	-0.065 (-2.12)	0.043 (1.22)	-0.128 (-3.21)
<i>EX</i>	-0.017 (-1.71)	-202.993 (-1.56)	-0.106 (-1.49)
<i>T</i>	3.940 (1.86)	5.171 (3.42)	-15.699 (-1.42)
<i>R</i>	-15.205 (-0.88)	-31.803 (-0.74)	-6.580 (-0.47)
<i>ED</i>	4.879 (1.18)	-2.919 (-0.45)	1.069 (1.78)
<i>D1</i>	-167.889 (-0.29)		

<i>D2</i>	-97.118 (-0.16)		
<i>LAN</i>	-77.706 (-0.20)		
Adj <i>R</i> ²	0.685	0.772	0.852

Note: *t*-values in parentheses.

the U.S. and China, amounts to approximately —the U.S., U.K., Hong Kong, Japan, Canada—had increased until 1996, and then decreased in 1997, while that to many developing and less developed countries showed the opposite. Korean ODI to Indonesia amounted to about 30% of the total in the mining and forestry sectors, and that to China reached more than 30.2% and 35%, respectively, of the total in manufacturing and construction.

The share of ODI, to those 28 countries, out of total ODI amounts to 90 percent on the whole, but varies very much with industries. For example, the shares for mining, forestry, and fisheries are much less (74.9%, 40.2%, and 45.4% respectively) than the overall average of 90% while those for trade, transportation & storage, and manufacturing are a little higher (95.4%, 92.2%, and 91.3% respectively) than the average. This indicates that the investment for resource-seeking has been more diversified than that for market-seeking or cost-reducing.

Early Korean ODI had typically involved small investments while more recent investments have tended to be on a larger scale. These larger investments (over \$10 million) have been made in Europe, the Middle East, Latin America and Africa, while investments of all sizes have been relatively equally dispersed among Southeast Asia, North America and Oceania. 81.5 (72.5) percent of Korean ODI is in the form of majority ownership. The equity participation ratio of 100% accounts for 55.6 (52.4) percent of Korean ODI, and ratios between 50% and 99% account for 25.8 (20.1) percent of Korean ODI.

3. DETERMINANTS OF KOREAN ODI

A country's ODI is influenced by internal driving forces (the question of "Why invest abroad?") and external inducing factors (the question of "Where to invest?"). This paper will briefly describe the internal driving forces and then focus on external inducing factors.

Korean ODI to the U.S. and Europe has tended to be in technology-intensive sectors where Korean firms attempt to internalize transaction and information costs by globalizing their production. Therefore, the main motives for Korean investment in advanced countries is to seek technology as well as to seek markets for their products. On the other hand, Korean ODI to Southeast Asia (including China) tends to be in labor-intensive sectors where Korean firms are losing their comparative advantages at home. The main motive for Korean ODI in this region is to seek low-cost resources, mainly cheaper labor. A similar finding was reported by Lee (1994).

Our study will be limited to Korean ODI in the manufacturing sectors because decisions on ODI in manufacturing sectors are mainly made on the merit of ODI itself while decisions on ODI in the non-manufacturing sectors, particularly in trade, can be influenced by other considerations such as complementarity to Korean exports.

To analyze the question of "where to invest," i.e., the attractiveness of a host country for international production, a model used by Park (1997) is presented below. The ODI function can be derived from the profit maximization theory of a firm. Following Nickell (1979) and Mann (1993), the following equation can represent a typical firm's profit maximizing behavior in which the firm chooses the optimal price and quantity.

$$\text{profit} = P(Q) Q(K, L) - c(r, w) Q(K, L), \quad (1)$$

where r (capital rental) and w (wage rate) are unit costs of K and L respectively. This function also determines the optimal capital stock and labor

input. By assuming that ODI reflects the change from an initial capital stock (K_0) to the optimal capital stock, the profit maximizing investment function (ODI in this case) can be derived from the differentiation of this profit function as follows.

$$DFI = g \{ m + (1-f) (1/e) K_0 w + (f/e) K_0 r \} , \quad (2)$$

where m is exogenous changes in demand, $f = (dQ/dK)(K/Q)$ indicates the economies of scale, and $e = (dQ/dP)(P/Q)$ is the price elasticity of demand. Exchange rate fluctuations can affect ODI through their influence on the price elasticity of demand and economies of scale. This simplified ODI function can be expanded to include other effects such as tax effect and market integration effect to reflect the more complex reality.

The following regression model, which is expanded from equation (2), is constructed for empirical analysis.

$$ODI = f (PPP\text{GNP}, W, R, EX, ED, T, D1, D2, LAN) , \quad (3)$$

where ODI is the dollar values of direct investment flows in the manufacturing sectors of each country (in \$ million), $PPP\text{GNP}$ (\$ billion), which is GNP expressed in purchasing power parity, measures the market size or economies of scale, W is the average wage rate, R is the real rate of interest, obtained by the nominal lending rate minus the inflation rate, EX measures the changes in the exchange rate, T is the weighted mean tariff rate on manufactured products. To accurately measure real market size, $PPP\text{GNP}$ instead of GNP is used for this study. W is measured by a proxy variable, per capita GNP(\$), expressed in PPP.³⁾ ED is the gross enrollment ratio in secondary education.

3) Per capita GNP expressed in PPP is a poor proxy variable for the average wage of the manufacturing sector. We searched many international data sources to obtain the actual average wage rates of the manufacturing sector without success. In the absence of the wage rate, we had to come up with the closest alternative variable. Per capita GNP has been used as a proxy variable in several previous studies.

D1 is a dummy variable representing the *EC* market, *D2* is a dummy variable representing the *NAFTA* market, and *LAN* is a dummy variable representing English-speaking countries including former English-speaking colonies.

PPPGNP is included in the model to represent the size of the host country's market. This variable is an important variable in making market-seeking ODI. *W* reflects the labor cost of the host country whereas *ED* indicates the quality of labor. Cost-reducing ODI is considerably affected by these variables. *R* represents the opportunity cost of financing ODI in the host country, whereas *EX* represents of the level of foreign exchange risk. *T* can be a critical variable in determining whether Korean firms export or make ODI. *D1* and *D2* are included in the model to measure the effect of the formation of trade blocs while *LAN* is included to see whether English-speaking makes any differences in the advance of Korean firms.

Korean ODI figures are available for more than 100 countries from the Export-Import Bank of Korea. However, our sample size was limited to 72 due to missing values for some of the independent variables. Data on GNP, *EX*, *R* and *W* were obtained from World Development Indicators 1998 CD-ROM.

This study utilized Korean ODI data over the period of 1994-1997, the period of the most active Korean ODI. Since ODI flows into individual countries have varied drastically from year to year, the cumulative ODI flows for the period of 1994-1997 are used in this study. For the independent variables, either their averages or mid-point year (1996) figures are used.

Some studies have used a conditional logit model to determine the location selection. However, by limiting the variance of ODI to that of a dichotomous variable, this approach does not explain how large the ODI flows are to each country. Therefore, we apply the OLS regression with the dollar values of ODI for the dependent variable.

An underlying assumption of this study and its model is that there exists some optimal level of ODI in each host country. This study tries to identify not

only the choice of location but also the optimal level of ODI in each host country. This aspect differentiates this study from other locational choice models.⁴⁾

The regression equations explaining the variation in Korean ODI across countries are presented in Table 4 for three different sets of data, —world, advanced countries, and less advanced countries. For the world data set, two variables, *PPPGNP* and *W* (measured by PPP per capita GNP), are statistically significant at the one percent or five percent levels, while the other two variables, *EX* and *T*, are significant at the 10 percent level. The remaining variables —*D1*, *D2*, *ED*, *LAN* and *R*—turn out to be statistically insignificant. All significant variables have expected signs; Larger market size and a higher tariff rate have positive effects on Korean ODI to the host country, while a higher wage rate and more volatile exchange rate discourage Korean ODI flows into the host country.

The insignificance of *R* is expected with the globalization of the financial markets and the high degree of mobility of financial capital in recent years. The negative sign and the insignificance of *D1*, and *D2* indicate that Korean ODI has not necessarily aimed at breaking through the two major economic blocs. This finding is in contrast to Japanese ODI (See Park, 1997). The variable *ED*, though insignificant, has an expected positive sign; the higher the level of education of the host country, the more Korean ODI. Since a lower coefficient of determination (R^2) is expected because of the nature of cross-sectional data, an adjusted R^2 of .685 is indicative of a good fit of the model.

Three variables, *D1*, *D2* and *LAN*, were deleted for the regressions on the two subsets of the data because of their disappointing results from the regression on the whole data set. For the data set of advanced countries, the variable *W* is no longer significant, while the variable *T* (tariff) changes from having significance at the 10 percent level to significance at the one percent level. This finding implies that Korean ODI in the advanced countries is mainly

4) This differentiating aspect of our paper was pointed out by one of our anonymous reviewers. We appreciate the reviewer's suggestions.

market-seeking and technology-seeking ODI so that the tariff rate matters, but the wage rate does not. The significance of *PPP* indicates that Korean firms consider the size of market an important factor in determining their investment abroad in advanced countries. Loree and Guisinger (1995) also obtained no significance of the wage rate for the U.S. overall ODI.

For the data set of less advanced countries, the variable *W* stands out as a significant variable, and the significance of variable *T* diminishes. The variable *ED* changes from an insignificant coefficient to a significant one. Korean ODI into less advanced countries is mainly to take advantage of lower labor costs, not to secure local markets. Since the motive for such ODI is not for local market creation and expansion, tariff rates do not play an important role in determining Korean ODI into less advanced countries. Two distinctive patterns of Korean ODI can be derived from the regression results; low-cost resource-seeking ODI flows into less advanced countries and market-seeking and technology-seeking ODI flows into advanced countries, including the U.S. and Europe. Therefore, it may not be desirable to use the pooled data of both advanced countries and less advanced countries in explaining Korean ODI behaviors.

4. SUMMARY

Korean ODI behavior has gone through four different stages; from the learning stage with small investments in the 1970s, to natural resource-seeking investment in the early and mid 1980s, to the growth stage in the late 1980s and the early 1990s, to the maturity stage of the mid and late 1990s. The last two stages were characterized by a combination of cost-reducing investment and market-seeking investment. During the 1970s, Korean ODI was very limited in its size and scope due to Korea's relatively weak economy and its trade deficit problem. As the Korean economy grew stronger and gained

international competitiveness in the 1980s, its trade balance changed from deficits to surpluses, thereby promoting ODI outflows.

The U.S., Southeast Asia and Europe have been the major investment regions for both Japanese ODI and Korean ODI. However, the geographical focus and investment behavior of the two countries have been somewhat different. Japanese ODI in the U.S. has always been the highest while that in Europe remained the second highest until 1994 when Japanese ODI in Southeast Asia surpassed that in Europe. On the other hand, Southeast Asia has ranked the first for Korean ODI since 1992, followed by the U.S. and Europe. Japanese firms' main focus in ODI has been on market-seeking to deal with the resurgence of regional economic integration such as the EU and NAFTA while Korean ODI was made mainly for resource-seeking to offset higher domestic production costs which resulted from the appreciation of Korean Won. More recently, Korean firms have increased their investments in Mexico and Western and Eastern Europe in order to penetrate large economic blocs. Another interesting observation can be made. Korean firms are more aggressive in expanding into new and untested markets than are their counterparts in Japan. Evidence of this can be seen in the scarcity of Japanese ODI and the abundance of Korean ODI in Eastern Europe.

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