

Which Firms Do Foreigners Buy?

Evidence from the Republic of Korea

Caroline Freund

Simeon Djankov

Growth induces foreign investment, which tends to focus on high-value-added sectors, on larger and more profitable firms, on firms with low debt, and on firms that export a large share of output.



Summary findings

Using data on mergers and acquisitions involving Korean firms, Freund and Djankov identify which sectors and firms attracted foreign investment after the liberalization of investment activity at the end of 1997.

They find that domestic acquisitions are similar to foreign acquisitions by sector (of both the target and the acquiring firm), but that international transactions are larger than Korean transactions.

This suggests that consolidation is a two-stage process: Firms consolidate first domestically, then internationally.

The authors also find that foreign investment is focused on high-value-added sectors, on larger and more profitable firms, on firms with low debt, and on firms that export a large share of output. Their results suggest that growth induces foreign investment.

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Which Firms Do Foreigners Buy? Evidence from Korea

Caroline Freund Simeon Djankov*

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1. Introduction

Foreign ownership has been found to be correlated with industry productivity in many developing and emerging markets.¹ This correlation has been interpreted as implying that openness to foreign investment is an important growth-promoting policy. It is unclear, however, whether foreign ownership leads to improved performance or whether high-growth industries and better firms simply attract more foreign investment. If foreign ownership promotes growth then the optimal policy is to subsidize foreign investment. In contrast, if foreign ownership is a result of growth then there is no role for tax incentives or subsidies to foreign investors.

Foreign ownership might improve performance if foreigners transfer better business practices or technology to the local firm. If these spill over to other local firms then foreign ownership might enhance sectoral growth as well. Alternatively, increased foreign ownership might be a result of industry or firm growth. Some sectors may naturally become multinational as they grow, in order to take advantage of international markets and synergies. In addition, if domestic access to capital is constrained then firms with high growth potential will attract relatively more foreign capital. In these cases, while investment facilitates growth, the nationality of ownership is unimportant. This does not imply that openness to foreign investment is irrelevant to growth, only that there is no role for subsidies and tax holidays targeting foreign investors.

In this paper we study the pattern of foreign acquisitions in an emerging economy, Korea, to examine what type of firms and industries attract foreign investment. If foreign investors have different technology from local investors then we expect foreign investment to originate from and to target industries where foreign firms have a comparative advantage. We examine all acquisitions of

¹Blomstrom (1989) summarizes the literature on positive spillovers from FDI.

Korean firms in 1998 and 1999 to determine whether international transactions were concentrated in different industries from domestic transactions. Surprisingly, we find that domestic acquisitions in this period are very similar to foreign acquisitions by sector of both the target and the acquiring firm. This suggests that the incentives that drive international acquisitions are similar to those that drive domestic acquisitions. The main difference between domestic and foreign acquisitions is the size of the transactions. The median reported foreign transaction value was over 65 percent larger than the median reported domestic transaction. We also find that the industrial distribution of foreign acquisitions in Korea mirrors the industrial distribution of multinational operations, suggesting that certain industries may naturally be multinational. Overall, these results suggest that internationalization is a form of consolidation, which is not very different from domestic consolidation, but which occurs on a larger scale.

Second, using data on foreign ownership from 1998 and 1999 and firm characteristics from the *preceding* year on nearly all firms listed on the Korea stock exchange (KSE), we examine which sectors and firms have attracted foreign investment. Any correlation we observe between firm characteristics and foreign ownership must be a result of foreign preferences because Korea only opened to foreign investment at the end of 1997. We find that foreign investment in Korea is focused on larger and more profitable firms, and on firms with relatively low debt ratios. Foreign investment is also more likely when a greater share of firm output is exported. The evidence suggests that foreign ownership gravitates towards the better firms.

While our analysis does not directly answer the question of how foreign ownership affects growth, it does imply that foreigners invest in and acquire the better firms in high growth industries in Korea. This means that internationalization in ownership is at least partly a result of firm and industry growth. In addition, it implies that studies which attempt to measure the affect of foreign

ownership on industry and firm productivity suffer from identification problem because the high growth industries and the better firms attract more foreign ownership.²

The paper is organized as follows. Section 2 examines the literature on foreign ownership and growth, and discusses foreign direct investment in Korea in recent years. Section 3 presents a theoretical framework explaining foreign acquisitions. Section 4 describes the data. Section 5 examines the theory empirically. Section 6 concludes.

2. Foreign Direct Investment and Growth

Theory suggests that technology diffusion through multinational companies might be an important source of growth for developing countries.³ There is some empirical evidence that is consistent with the technology transfer argument. Using industry data, Caves (1974) and Globerman (1979) test whether the foreign share of employment contributes to labor productivity in a production function framework. They find evidence of positive spillovers from foreign direct investment (FDI) in Australia and Canada, respectively. Using industry data from Mexico, Blomstrom and Persson (1983) and Blomstrom (1986) find evidence of higher productivity and higher productivity growth in sectors with more FDI. Borensztein et. al. (1998) find evidence of positive spillovers from FDI in a cross section of countries, provided countries have a minimum level of human capital.

These results, however, may be generated by reverse causality because FDI may be determined by the level of growth of a sector or a country. Indeed, using firm level data, Haddad and Harrison (1993) and Aitken and Harrison (1999) find no evidence of positive spillovers in Morocco and

² Aitken and Harrison (1999) argue a similar point. Using plant level data on productivity in Venezuela, they find that foreign ownership is positively correlated with own-firm productivity, but not with productivity growth. They interpret this as evidence that foreigners invest in more productive plants, though they cannot rule out that there are own-firm positive level effects.

³ Findlay (1978), Jovanovic and Rob (1989), Grossman and Helpman (1991).

Venezuela, respectively. This suggests that the earlier findings may be a result of high-growth industries and countries attracting more foreign investment.

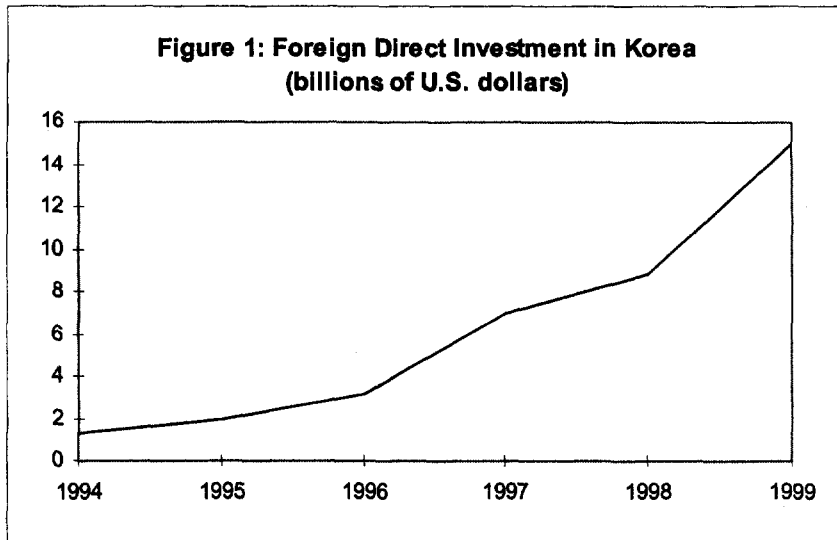
Rather than examining spillovers, we look at what type of firms and industries foreigners invest in. Our data set provides a unique opportunity to evaluate what type of firm foreigners acquire because Korea greatly limited foreign ownership until 1998. This means that any correlation we find between foreign ownership in 1998 and 1999 and firm characteristics in 1997 is not a result of foreign ownership. We examine whether foreign investment results from firm- and sector-specific growth.

2.1. Foreign Direct Investment in Korea

Until the financial crisis started in October 1997, the Korean corporate sector was virtually closed to foreign investment. Individual foreigners could obtain only 5 percent of the outstanding shares of a company, and overall, foreigners could hold a maximum of 20 percent. In December 1997, the limit was raised to 50 percent for an individual investor, and 55 percent for foreigners collectively. In May 1998, the limits on foreign ownership in most of the corporate sector were eliminated. In addition, foreign investors can now buy up to a third of the company without approval from the Board of Directors, i.e. hostile takeovers are permitted.

The new foreign investment regime led to a boom in FDI. Figure 1 plots the aggregates for 1994 to 1999, which show a large jump in the last three years.⁴ The three industries experiencing the largest gains were paper, chemicals, and electronics (Table 1).

⁴In Korean won, FDI shows an even more rapid expansion in 1997 and 1998, as a result of the won's large depreciation.



The changes in the legal limits to foreign ownership, combined with the large supply of company shares following the financial crisis, makes the Korean sample an excellent choice to study the investment patterns of foreigners. Within a very short period of time a number of companies changed hands. This natural experiment allows us to test several hypotheses that we derive in the next section.

3. Theoretical Framework

Existing theories of foreign direct investment highlight the importance of intangible firm-specific assets and location in making the decision to choose FDI over other means of servicing a foreign market.⁵ In general, two conditions should be satisfied if a firm is better off investing in the country than exporting. (i) There is a locational advantage to operating abroad, perhaps because of transport costs or tariffs. (ii) The investing firm has an advantage over host country firms, for example, in technology, managerial skills, or brand name and marketing. FDI theory has traditionally focused on greenfield investment, where the intangible asset is assumed to be the

⁵Markusen (1995) surveys the literature.

property of the parent.

In this paper we focus on a specific type of direct investment, foreign acquisitions, which are likely to be undertaken for similar reasons to greenfield investment. In addition to location and technology, foreign acquisitions may also be undertaken in order to gain access to assets held by a host-country firm. We therefore incorporate the possibility of firm-specific assets that local firms have and that foreign firms need in order to market their products effectively.

We model the decision to invest in a local firm, taking into consideration the effects on parent sales as a result of firm-specific assets of the host country target firm, and the effect of parent-specific assets. In evaluating the return on the investment, a firm will incorporate the expected effect on own company and subsidiary profits when purchasing a company. A foreign firm will acquire a large share of a domestic firm if the value of the acquisition is greater than its value to a domestic company. We assume the investment can change the value of each firm (target and parent) because of synergies resulting from the use of intangible assets. The net value of the investment is the gain from acquisition above the cost of acquiring the firm at the market price. The net value is the change in value of the host-country firm plus the change in the value of the home country firm as a result of the investment. Acquiring a foreign firm is optimal if the following condition holds:

$$x\Delta V_{FI}^* + \Delta V_F \geq x\Delta V_{DI}^* + \Delta V_D. \quad (3.1)$$

where x is ownership share, ΔV_{FI}^* is the change in the value of the acquired firm given foreign investment, ΔV_F is the change in the value of the foreign parent firm, ΔV_{DI}^* is the change in the value of the acquired firm given domestic investment, and ΔV_D is the change in the value of the domestic parent firm given the investment. The left-hand side is the value of the acquisition to the foreigner and the right-hand side is the value of the same acquisition to a domestic bidder.

Hence, for the foreign investor to succeed in acquiring the firm, she must offer at least as much

as the domestic investor. Equation (3.1) yields two hypotheses regarding foreign acquisitions. First, foreign direct investment (FDI) is more likely if foreign acquisition boosts the local firm's profits by more than a domestic acquisition would ($\Delta V_{FI}^* - \Delta V_{DI}^* > 0$). For example, the value of the target firm will increase if the foreign investor transfers technology or managerial skills to the domestic firm. This suggests that foreign investors will target firms in industries where foreigners have better technology or skills. Hence, the industrial distribution of foreign acquisition targets should be different from the industrial distribution of domestic acquisition targets.

Similarly, if acquisition helps the foreign firm's sales in the local market by more than it would boost another domestic firm's sales, then foreign direct investment is more likely ($\Delta V_F - \Delta V_D > 0$). That is, FDI in a host country firm may help the foreign parent's profits by improving access to the market. In this case, the acquiring firm is likely to be from an industry that wants greater access to the Korean market. This implies that foreign acquirers are likely to come from different industries than their domestic counterparts.

Whether technology transfer or access to the Korean market is the purpose of investment is difficult to distinguish empirically because parents and affiliates tend to be in the same industry. Hence the first hypothesis is that if an intangible asset, be it technology transfer or access to the Korean market, is the main reason for investment then foreign acquisitions and domestic acquisitions are likely to be in different industries.

Second, if domestic access to capital is constrained or domestic firms tend to be small then foreign acquisition will be more likely in larger companies. If domestic firms are capital constrained then the right hand side of equation (3.1) will be small when the transaction size is large, i.e. there will be no domestic bidder. Similarly, if domestic firms are smaller than foreign firms, then there will be fewer domestic bidders when the target firm is large. The second hypothesis therefore

stipulates that transaction size will be a key determinant of foreign investment.

4. Data

We first examine mergers and acquisitions in Korea (December 1997 to July 1999) to look for consistency with the hypotheses derived above. Since the ownership limit to foreign investors was raised to 50% in December 1997, the ownership data for 1998 and 1999 is particularly appropriate for hypotheses testing. Data on mergers and acquisitions in Korea are from Securities Data Corporation (2000). The data include the 4 digit SIC code of the target and the acquiring firm and detailed information about the transaction. We supplement these data with data on 631 firms that were listed on the Korea Stock Exchange in 1998.⁶

The firm-level financial data for 1997 are primarily from the Worldscope database. The Worldscope database covers publicly traded companies in 51 countries. Foreign investment is from the Handbook of Listed Companies, Daewoo Securities (1998 and 1999). In cases where the Worldscope data were missing or incomplete, we collected additional company information from Wisenet Korea.⁷ This internet server provides detailed financial information, including income statements and balance sheets, for listed companies in Korea. We use 1997 financial data because this is what investors observed at the time they made their investment. In addition, this means there is very little possibility of an effect of foreign ownership on firm characteristics.

We also collect data on business group affiliation, as this is recognized in previous studies to be an important feature of the Korean corporate sector (Claessens, Djankov, and Lang, 2000).

⁶In January 1998 760 firms were listed on the Korean Stock Exchange. Financial data for 28 firms which filed for bankruptcy in 1998 were unavailable. Another 101 firms reported incomplete ownership or unconsolidated financial data.

⁷The data were downloaded from their website: www.wsn.co.kr.

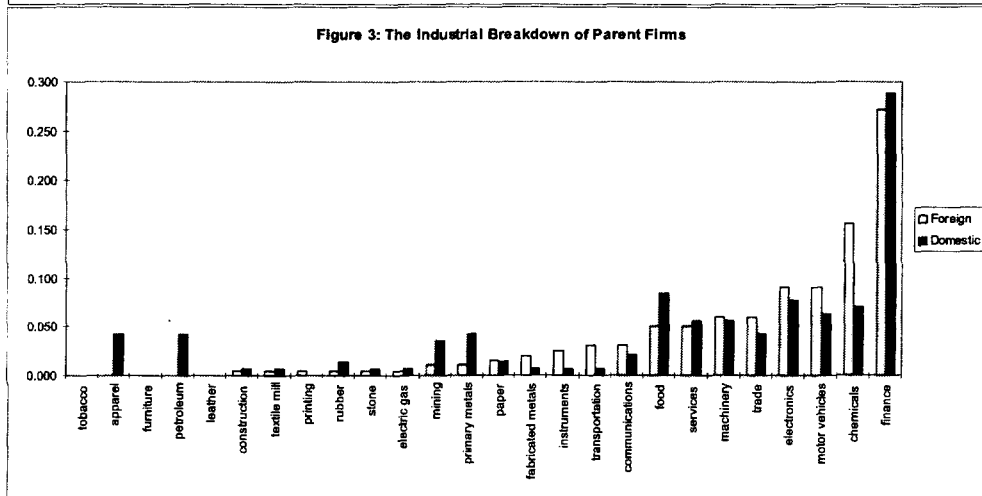
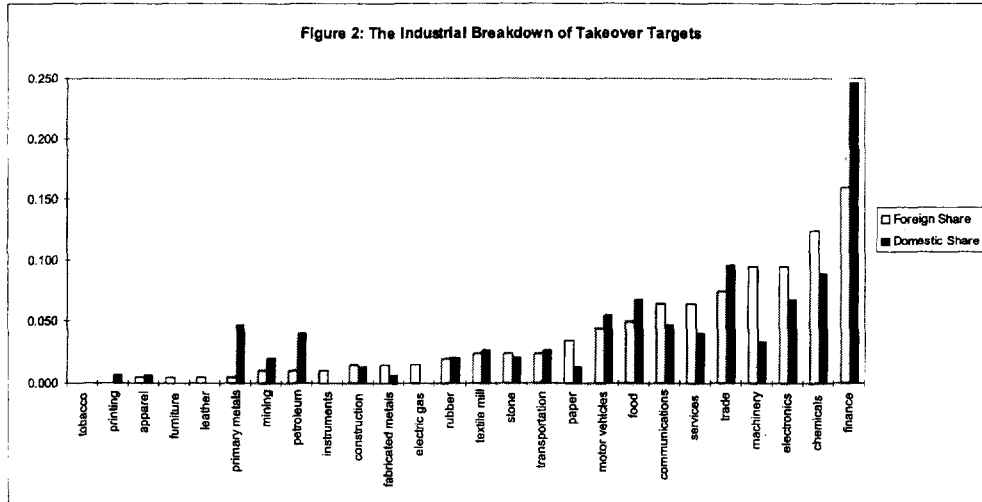
Information on company affiliation with the top 30 chaebol is provided by the Korean Fair Trade Commission on an annual basis. We use group-affiliation data from the 1994-1997 lists of business groups. This is because the 1998 list contained a number of ownership changes, which would have biased our results. Several debt-ridden business groups were forced to sell bankrupt firms in 1997 and 1998, which were in some cases subsumed into larger business groups and/or taken over by foreigners. A firm's openness to foreign investment is thus related to its membership at the time of divestiture. The list of chaebol is fairly robust from 1994 to 1997, with the same chaebol occupying the top 25 spots throughout the period. There was some variation among the bottom five chaebol, with three chaebol leaving the list by 1996 or 1997. In the interest of comprehensiveness, we follow all companies affiliated with the 33 chaebol that appear on the Korean Fair Trade Commission lists in 1994-1997.

5. The Pattern of FDI

5.1. Mergers and Acquisitions

The theoretical framework suggests that if technology transfer or access to local distribution networks were important, then the industries of targets of foreign investment and the industries of foreign acquiring firms and domestic acquiring firms should be different. Figures 2 and 3 show the percentage of foreign and domestic transactions by target industry and parent industry, respectively. In general foreign investors target firms in similar industries to Korean firms. The simple correlation among 2-digit SIC industries is 0.84 and the rank correlation is 0.88. The industries of the acquiring firms are also very similar, with a simple correlation of 0.91 and a rank correlation of 0.82. This suggests that to the extent that international synergies exist, they are broadly similar to domestic synergies. Still, it is worth noting that some industries tend to attract somewhat more

foreign direct investment, such as chemicals and machinery; while others, such as primary metals and petroleum tend to attract more domestic investors.



One major difference between international transactions and domestic transactions is their size. Of the 73 domestic transactions for which information was available, the median transaction value was \$35 million. Of the 109 foreign acquisitions for which transaction data was available the median value was \$58 million. Foreigners behave similarly to domestic investors, except that they operate on a larger scale. This is consistent with the predictions of the model if domestic firms are capital constrained or are in general smaller than international investors. In these circumstances, large transactions are more likely to be uncontested domestically.

While foreign takeovers look roughly similar to domestic takeovers by industry, they also mirror world industry. Table 2 shows the industrial distribution of the top 100 multinational companies (MNCs) and of Korean acquisitions. Of the 10 main industries where multinationals are prevalent, 7 were in the top 10 industries for international takeovers of Korean firms. This suggests that certain industries, especially electronics and chemicals, are more likely to have foreign ownership. Moreover, as shown in the bottom panel of Table 3, electronics and chemicals are also the top two value-added industries in Korea in 1995, implying that these are important growth industries where Korean technology is not lacking.

In sum, the industrial distribution of foreign acquisitions in Korea is similar to that of Korean domestic acquisitions and to the industrial distribution of multinational companies worldwide. Thus, the same industries that benefit from national economies of scale also benefit from international economies of scale. One difference between domestic and international acquisitions is size, as international transactions are larger. This suggests that there is a two-stage process of consolidation, first firms consolidate nationally, then they consolidate internationally. In addition, some high-growth industries such as chemical and electronics are more prone to international consolidation. Next, we evaluate firm level data on ownership to get a better understanding of what foreigners bought in Korea following the 1997 financial crisis and the subsequent removal of barriers to foreign ownership.

5.2. Explaining foreign ownership

In this section, we examine how firm- as opposed to industry-level characteristics affect foreign ownership. Our focus is on ownership by large foreign investors, but the available ownership data give total foreign holdings of each firm. In order to identify firms that have a single major foreign holder we make several adjustments. First, we assume foreign direct investment is present if

foreign ownership exceeds 10 percent. Should foreign ownership be below 10 percent we assume it is portfolio investment. Second, we consider only firms that are also in the merger and acquisition data from Securities Data Corporation (2000) or have a foreign ownership share exceeding 25 percent. 67 of the 103 firms with FDI in 1999 fall into this category.

Table 3 presents summary statistics of the ownership data on publicly-traded firms in Korea in 1998 and 1999. The 1999 sample is smaller because several dozen firms went bankrupt or were delisted from the Korea Stock Exchange in 1999. In the 1998 sample, 156 firms (25 percent of the sample) had foreign ownership exceeding 10 percent. The summary statistics suggest that firms that attracted significant foreign investment were larger and more profitable than the average firm in the sample in both 1998 and 1999. In contrast, the characteristics of firms that attracted only foreign portfolio investment ($0 < FI < 10$) were similar to the sample averages in both 1998 and 1999.

To evaluate how these variables affect the decision to make a large investment, we estimate the likelihood of receiving foreign investment in excess of 10 percent. Specifically, the dependent variable, FI , is a binomial variable and equals one if foreign ownership exceeds 10 percent and zero otherwise. The estimating equation is

$$\begin{aligned} \Pr(FI = 1) &= F(X^*) \\ \Pr(FI = 0) &= 1 - F(X^*), \end{aligned}$$

where X^* is a vector of characteristics of the firms in the sample, including firm size, firm profitability, firm debt, and access to distribution. We measure size by log of assets and log of sales ($ASSET$, $SALE$), profitability by the ratio of earnings before interest and taxes ($EBIT$) to total sales, and we proxy for access to distribution channels and government preference with a dummy for membership in a top 33 chaebol ($CHAEBOL$). We use debt-asset ratios instead of debt-equity ratios ($FDEBT$) because several firms report negative book value of equity. We expect the coefficients on

ASSET, SALE, EBIT, and CHAEBOL to be positive, as they should increase the probability of foreign investment. If foreigners buy only the better firms then the coefficient on FDEBT should be negative. Alternatively, over-indebted firms may be more likely to be vulnerable to takeover, suggesting the coefficient might be positive. We also include (2-digit SIC) industry fixed effects in all regressions.

The first three columns of Table 4A report the coefficient estimates from this regression equation. They were estimated using both Logit and Probit. The results are very similar in both cases so we report only the Logit estimates. All three variables—size, profitability, and chaebol membership—increase the likelihood of foreign investment. EBIT and DEBT are negatively correlated (the simple correlation coefficient is -0.37). When debt is not included the coefficient on profitability is positive and highly significant. Firms with greater debt are significantly less likely to receive substantial foreign investment, suggesting that highly indebted firms, although perhaps in greater need of foreign capital, do not attract foreign ownership.⁸

Next, we look for evidence on capital shortages using data on chaebol affiliation. We include business group data since domestic investment in Korea often comes via the firm's group affiliation, as most chaebol have affiliated banks and non-bank financial companies. If groups have limited access to capital, then we expect the group debt variable to positively impact foreign ownership of their affiliates. We include the log of group assets (GASSET) and group debt-asset ratios (GDEBT). We expect group assets to negatively impact foreign ownership since these groups can subsidize firms more easily.

⁸Kang and Stulz (1997) evaluate the effect of firm characteristics on foreign ownership in Japan and find similar results for firm size and leverage. They interpret this as evidence that foreign investors do not hold the market portfolio. Our results suggest that some of the relation that they are picking up is because ownership data also contains merger and acquisition activity, which should not be expected to mirror the market portfolio.

The results are reported in the fourth column of Table 4A. The group variables have the expected signs. Firms acquired by foreigners are more likely to belong to debt-ridden groups and less likely to belong to groups with large assets. This suggests that firms belonging to capital constrained groups are more likely to have foreign ownership.

In the final column of Table 4A, we include the export share of the firm's output in the regression equation. There are two reasons why export share might positively impact foreign ownership. First, firms with a large export share may benefit more from foreign ownership if foreigners have greater access to global markets. This follows the case in the theoretical section where the foreign parent adds more value to the target than a domestic parent would add. Second, foreigners may have better information about firms which also serve their home market. This is akin to a lower transaction cost because less information about the target needs to be acquired by the foreign parent, which implies that a Korean exporting firm is more likely to be acquired than an otherwise similar Korean firm. We find that firms that export a large share of output are more likely to attract foreign investment.

Next we use the 1999 data to test the robustness of these findings and further distinguish portfolio investors from merger and acquisition activity. First, we examine how firm characteristics affect the likelihood of receiving positive foreign investment, i.e., the dependent variable is 1 if foreign ownership is greater than 0. Second, we estimate the likelihood of receiving foreign portfolio investment, defined as foreign investment between 0 and 10 percent. Third, we use the same binomial variable defined above (foreign investment greater than 10 percent) on the 1999 ownership data. And finally, we evaluate a more restrictive binomial variable, which is 1 only if the firm is known to have been a target of foreign acquisition in the past or has foreign ownership share exceeding 25 percent.

The results are reported in Table 4B. The first column reports the results for the likelihood of

receiving positive foreign investment. It suggests that smaller and more leveraged firms are less likely to receive foreign investment. The second column reports the results when the dependent variable is foreign portfolio ownership. It suggests that firms which receive foreign portfolio investment are not very different from the average firm. To the extent that this represents the average foreign portfolio investor, it suggests that foreign portfolio investors choose the average market portfolio, as theory predicts.

The third column in Table 4B examines the likelihood of receiving foreign investment above 10 percent. The signs and significance of all of the variables, except for the variable indicating membership in a chaebol, are robust to the 1999 data. The group debt and asset variables were never significant, suggesting that the surviving indebted groups were not capital constrained in 1999. This may also be simply because the most indebted groups drop out of the 1999 sample.

The last column reports the results when the subset that contains firms acquired by foreigners is used. Size and debt again appear to be the main determinants of attracting large foreign ownership. Comparing columns 3 and 4 with columns 1 and 2, exporting is only positive and significant when the dependent variable is extensive foreign ownership. This suggests that informational asymmetries, which should be present for both portfolio and direct investment, are not the reason that foreign investors choose firms that export. Rather, the parent firm provides an intangible asset to the target, perhaps in international distribution and marketing, that another domestic firm would not.

6. Conclusion

In this paper, we examine how firm and industry characteristics affect foreign ownership. We find that foreign acquisitions are larger than domestic acquisitions but are similar to domestic

acquisitions by industry. We also find that foreign takeovers of Korean firms are in the same industries where the world's largest multinational corporations operate, implying that there is a higher equilibrium level of internationalization, as characterized by sales and ownership, for these industries. Together, these results suggest that internationalization is a form of consolidation, which is not very different from domestic consolidation, but which occurs on a larger scale.

Using data on nearly all firms listed on the Korean Stock Exchange, we find that foreign investors disproportionately target larger and more profitable firms, exporting firms, and firms with low debt ratios. We interpret this as evidence that the correlation between foreign ownership and growth found in earlier work may be the result of foreigners investing in better and bigger firms, and not a result of technology transfer from foreign investment.

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Table 1: Foreign Direct Investment in Manufacturing

(Accepted Cases, in mn. U.S. dollars)

	1997	1998	Growth Rate
Food	851	718	-15.6
Textile and Clothing	85	18	-79.2
Paper and Lumber	196	1,644	788.9
Chemicals	235	755	222.0
Petrochemicals	3	0.8	-70.5
Fertilizer	-	0.2	-
Medicine	44	134	207.2
Ceramics	54	279	419.6
Metals	14	7	-50.1
Machinery	166	587	253.7
Electricity and Electronics	291	1,377	373.2
Transport Equipment	395	180	-54.4
Other Manufacturing	16	33	108.6
Total	2,348	5,734	144.2

Source: Ministry of Finance and Economics.

Table 2: Industrial Distribution of Foreign Acquisitions

A: Top 10 Industries* of 100 largest Multinational Corporations

Industry	Top 100 MNCs	Percent of Total
Electronics	17	0.213
Chemicals	16	0.200
Automotive	14	0.175
Food and Beverages	12	0.150
Diversified	4	0.050
Telecommunications	5	0.063
Trading	4	0.050
Machinery and Engineering	2	0.025
Metals	3	0.038
Construction	3	0.038
Total	80	1.000

B: Top Ten Industries Involving Foreign Acquisitions in Korea

	Acquisitions in Korea	Percent of Total
Chemicals	25	0.185
Electronics	19	0.141
Machinery	19	0.141
Trading	15	0.111
Telecommunications	13	0.096
Services	13	0.096
Food and beverages	10	0.074
Automotive	9	0.067
Paper and Allied products	7	0.052
Textile mill products	5	0.037
Total	135	1.000

Source: United Nations 1998, SDC, and Korea Statistical Yearbook 1997.

* Excludes petroleum. Table continues on the next page

Table 2 continued

C: Value Added in Korea

	Korean Value Added
Electronics	24.99
Chemical and allied products	14.85
Motor vehicles and equipment	13.08
Industrial machinery	12.89
Primary metals	10.92
Textile mill products	8.82
Mining	7.71
Fabricated metals	7.45
Rubber and misc	6.28
Apparel and other	5.25

Source: Korea Statistical Yearbook 1997.

Table 3: Summary Statistics, 1998 and 1999 ownership data**(1997 sales and assets data in mn. \$US)**

	1998			1999		
	0<FI<10	FI>10	Total	10>FI>0	FI>10	Total
Number of observations	254	156	631	306	103	525
Average Foreign Share	3.09	22.69	6.96	2.37	26.33	6.54
Average firm assets	976	4971	1850	1687	5006	2006
Minimum firm assets	17.1	31.1	16.0	17.1	32.3	16.0
Average firm sales	827	1943	893	882	1813	897
Minimum firm sales	13.0	23.9	6.5	6.5	15.8	6.5
Average firm debt/assets	0.72	0.75	0.74	0.71	0.70	0.70
Average firm EBIT*/Sales	0.02	0.06	0.01	0.03	0.19	0.03

* Earnings before interest and taxes

Table 4: Explaining foreign investment

A: Regressions on 1998 Ownership Data

	(1)	(2)	(3)	(4)	(5)
ASSET	0.78*** (0.10)		0.66*** (0.10)	0.71*** (0.10)	0.71*** (0.10)
SALES		0.80*** (0.10)			
EBIT	1.11 (0.92)	1.40 (0.97)	1.15 (0.99)	1.18 (1.0)	1.22 (1.01)
CHAEBOL			1.34*** (0.25)	1.56*** (0.44)	1.66*** (0.45)
FDEBT	-2.16*** (0.73)	-1.96*** (0.71)	-3.02*** (0.77)	-3.23*** (0.78)	-3.32*** (0.79)
GDEBT				2.92* (1.53)	3.03* (1.55)
GASSET				-0.28** (0.13)	-0.31** (0.13)
EXPORT					0.01*** (0.004)
Fraction Correct	0.79	0.78	0.80	0.81	0.81
Number of Obs.	631	631	631	631	
R-Square	0.22	0.22	0.27	0.27	0.24

Table 4 continued

B: Regressions on 1999 Ownership Data

	(FI>0)	(0<FI<10)	(FI>10)	(FI>25 MA)
ASSET	1.14*** (0.16)	0.07 (0.08)	0.77*** (0.11)	0.93*** (0.14)
EBIT	-0.83 (0.99)	-0.73 (0.69)	2.29** (1.13)	2.11 (1.41)
CHAEBOL	0.81* (0.42)	0.18 (0.75)	0.30 (0.31)	0.12 (0.32)
FDEBT	-2.89*** 0.89	0.19 (0.28)	-3.61*** (0.97)	-4.13*** (1.21)
EXPORT	-0.004 0.004	-0.009*** (0.003)	0.01*** (0.004)	0.01*** (0.006)
Fraction Correct	0.83	0.62	0.82	0.89
Number of Obs.	525	525	525	525
R-Square	0.27	0.06	0.21	0.20

Significant at the ***1% level, ** 5% level, and *10% level.

Standard errors in parentheses.

All regressions run with industry dummies (not reported).

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