

## **Foreign Ownership, Domestic Ownership, and Payout Policy**

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# Foreign Ownership, Domestic Ownership, and Payout Policy

## Abstract

This study extends the U.S literature on the interaction between institutional ownership and payout policy by using the unique features of foreign ownership in Korea. We offer evidence that foreign investors play a prominent role on firm's financial policy in emerging markets. We find that foreign investors, most of whom are institutional investors, are more attracted to dividend-paying firms. Among dividend-paying firms, however, foreign investors prefer low dividend-paying firms. We also find that foreign investors prefer firms that repurchase shares. In contrast, domestic institutional investors do not prefer positive payouts. Consistent with the agency theory, higher foreign ownership is associated with a greater dividend payout, while domestic institutional investors play a far less prominent role in corporate payout policy. This evidence provides predictions that foreign investors are more active monitors of corporate by reducing free cash flow problems in emerging markets. Our evidence remains consistent after controlling for endogeneity concerns. In addition, we find some evidence in support of the hypothesis that information asymmetries between foreign investors and domestic investors exist.

## **1. Introduction**

The finance profession recognizes a relationship between a firm's ownership structure and its payout policy. In the U.S. institutional investors are very influential; thus, there is considerable interest on the relationship between a firm's institutional ownership and its payout policy (e.g., Grinstein and Michaely (2005)). However, in emerging markets, domestic institutional investors may not be the most influential ownership class. In Korea, for example, the ownership of foreign investors has been growing dramatically since the complete removal of foreign ownership impediments in the middle of 1998. In 2004, foreign investors, most of whom are institutional investors from North America and Europe, hold more than 40% of the market capitalization of Korean firms while domestic institutional investors hold only about 18%.

In this paper, we investigate the determinants of foreign ownership and a firm's payout policy and focus on Korea due to its unfettered entry policy. We find that foreign investors are more attracted to dividend-paying firms but prefer low to high dividend payers. Consistent with Jensen (1986), higher foreign ownership is associated with a greater dividend payout while domestic institutional investors do not play a key role in a firm's payout policy. For their part, investors tend to prefer large and highly profitable firms. Our evidence also supports the notion that there are information asymmetries between foreign investors and domestic institutional and individual investors.

In Section 2, we review the literature that explains dividend payouts and foreign ownership. Section 3 we briefly introduce the dividend policy and procedure of Korean firms. Section 3 describes our sample and data. Section 4 analyzes the determinants of

foreign ownership and the determinants of a firm's dividend payout. Section 5 controls for endogeneity between these two issues. Section 6 concludes.

## **2. Literature on dividends and institutional or foreign ownership**

There are several reasons why institutional ownership and payout policy may be related. Asymmetric information theories suggest that managers can use dividends to convey inside information to the market (Bhattacharya (1979); Miller and Rock (1985)). Allen, Bernardo and Welch (2000) propose that firms can signal performance to institutional shareholders by paying dividends. Relatively less taxed (relative to individual investors) institutional investors are attracted to high dividend firms and, in turn, provide monitoring services. Thus, asymmetric information theory implies that firms with higher dividend payouts may have greater institutional ownership.

Agency theory suggests that managers may be reluctant to pay dividends, preferring instead to maintain control of the firm's cash and that dividend payments discipline managers to return cash to shareholders rather than over-investing and wasting firm resources (Easterbrook (1984); Jensen (1986)). Institutional investors may play an important monitoring role with their significant stakes and superior information and reduce the agency problem between managers and shareholders. Therefore, agency theory implies that higher institutional ownership may induce firms to increase payout.

There is some empirical evidence on the relationship between institutional ownership and payout policy. Grinstein and Michaely (2005) empirically examine the

relationship between payout policy and institutional ownership in U.S public firms. They find that institutions prefer dividend-paying firms to non-dividend-paying firms, but within dividend paying firms, institutions prefer lower rather than higher dividends.

Using surveys and field interviews, Brav, Graham, Harvey, and Michaely (2005) find no evidence that firms pay dividends to attract institutions or that firms pay dividends so that institutions will monitor them. In addition, they find that repurchases are equally as attractive as dividends to most institutional investors.

### **3. Empirical issues**

#### **3.1. Why use Korean data?**

As foreign ownership in emerging markets increases, the effect of foreign investors on payout policy becomes an interesting study. LaPorta, Silances and Shleifer (1999) examine different ownership patterns within 27 international countries and suggest that large domestic shareholders prefer policies which benefit them at the direct expense of minority shareholders. Thus, as foreign investors emerge as a major investor group, they could play a key role in sponsoring a firm's financial policies.

There are three advantages from using Korean data to investigate the relationship between foreign ownership and payout policy. First, since foreign ownership in the Korean market has experienced a dramatic increase, we can analyze the joint relationship between the change in foreign ownership and the change in financial policies. The increase in foreign ownership stems from mid-1998 when Korea abolished the ownership

limit for foreign investors. Since then, foreign investors have increased their investment every year, capturing 41.97% of investment in 2004 (See Figure 1). As of the end of 2003, foreign investment in Korea was fourth in the world (behind Hungary (72.6%), Finland (55.7%), and Mexico (46.4%) ) and first among Asian countries.<sup>1</sup>

However, the characteristics of foreign investors are different in Korea than in Hungary, Finland and Mexico. For example, the roughly 90% foreign ownership stake in Nokia, which accounts for about two-thirds of the market capitalization on the Helsinki Stock Exchange, is the major contributor to the high level of foreign ownership in Finland. Without Nokia, foreign investors would have a 32% ownership stake in Finnish stocks. Following Hungary's transitioning to a market economy, foreign direct investment (FDI); e.g. the presence of 45 of the world's top 50 multinational companies, has provided the major portion of foreign ownership in Hungary. Similarly, foreign-owned assembly plants, referred to as "Maquiladore industry", are major portions of the high level of foreign holdings in Mexico. In contrast, foreign ownership in Korea mostly involves institutional investors from North America and Europe<sup>2</sup>. Thus, while FDI is very rare, 99% of foreign ownership occurs via indirect investment. On the other hand, since foreign investors in Korea are not via FDI or assembly plants but via institutions such as mutual funds and pension funds, their characteristics are very similar to those of institutional investors. This makes it more interesting to examine the characteristics of

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<sup>1</sup> See the Korean times (June 21, 2004)

<sup>2</sup> The Korea Financial Supervisory Service (FSS) reports that at the end of 2004, 99.8% of foreign investors in the Korea Stock Exchange are institutions such as investment companies (50.9%), investment banks (20.9%) and pension funds (10.4%). FSS also reports that 50.8% of foreign investors in KSE are from the U.S., 11.2% from the U.K., 5.9% from Singapore, 5.7% from Luxemburg, and 2.0% from Ireland. (FSS's Annual report, "The stock transaction trend of foreign investors during 2004" )

foreign investors and to compare the behavior of foreign investors to that of domestic investors in emerging market.

Second, ownership structures of Korean firms are well established, allowing for comparisons. Since there are two major domestic investors in Korean markets; financial institutions and individual investors, we can compare the effect of foreign investors to that of large domestic shareholders. We can also analyze the impact of the Chaebols. Similar to Keiretsu in Japan, Chaebols are family owned and diversified business groups that dominate the Korean market.

Third, there are potential policy implications to foreign investment. The Korea Times (June 21, 2004) expressed a concern about the high levels of dividends paid by Korean companies to foreign investors.

“...According to global investment bank Merrill Lynch, the foreign ownership of Korean stocks of above 40 percent is the fourth largest in the world, behind Hungary, Finland and Mexico. ...The increasing foreign stake of domestic equities has also triggered another area of concern, namely “excessive” dividend payouts to international investors. The Korea Securities Trade Union (KSTU) recently criticized some of the controlling foreign shareholders for receiving too much in dividends, a move seen as only trying to recoup their investment through dividends...”

In this context, in Section 2 we briefly introduce the dividend policy and procedure of Korean firms. Section 3 describes our sample and data. Section 4 analyzes the determinants of foreign ownership and the determinants of a firm’s dividend payout. Section 5 controls for endogeneity between these two issues. Section 6 concludes.

### 3.2. Dividends and Open-market Repurchases in Korea

Firms' policy and procedure regarding setting the amount, and determining the form and time periods for dividends in Korea are generally similar to those in the U.S. There are, however, two major differences. First, in the U.S., dividends are customarily paid quarterly, whereas, most Korean firms pay dividends annually. Corresponding to the quarterly dividends for U.S. firms, there are four "ex-dividend dates" per year, the days upon which the stockholders of record are entitled to the upcoming dividend payment. The Ex-dividend date is usually 2 business days prior to record date. If one buys a dividend paying stock before the ex-dividend date, he or she will get the dividend. If one, however, buys on the ex dividend date, he or she will not get the dividend. On the contrary, most Korean firms pay dividends annually<sup>3</sup> and the ex-dividend date is three days before the last trading day of each year.<sup>4</sup> Shareholders included on the shareholder list as of this ex-dividend date are entitled to receive any dividends that company pays out to shareholders. Thus, we use end-of-year data of total equity owned by foreign investors, domestic institutional investors, and individual investors to examine the relationship between the ownership structure and dividend policy.

Second, while dividends are declared and approved by the board of directors in the U.S, the decision to declare annual dividends in Korea is determined by a simple majority

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<sup>3</sup> Korean firms can pay interim dividends once a year by decision of a board of directors. However, paying interim dividends is unusual. For example, according to the Korean exchange (KRX), only 7 firms in 2000 and 10 firms in 2001 paid interim dividends.

<sup>4</sup> While the ex-dividend date of most Korean firms is three days before year-end, that of Korean financial firms is generally the end of March. Note that we exclude financial firms from our sample.

vote of shareholder participation in the general shareholder's meeting (GSM). Practically, the board of directors makes a proposal regarding the appropriation (disposition) of profits (losses). Any investor who does not agree with the proposal can make a different proposal and require a proxy fight at the GSM. Therefore, foreign investors in Korea can affect the dividend decision either by being on the board of directors or by demanding a proxy fight at the GSM. A foreign fund which does not want to be involved in corporate management can use the latter method to influence dividend policy. For instance, KDMW, a hedge fund from Hong-kong, used a proxy fight to increase dividends at the GSM of Taegwang inc. in 2001. Although the KDMW lost the proxy fight vote, Taegwang inc. was forced to increase 2002 dividends under pressure from KDMW and other stockholders persuaded by KDMW.

The general procedure of stock repurchases in Korea is similar to that in U.S. We point out, however, the strict disclosure environment in Korea. Repurchasing firms in Korea must report their Repurchase Plan and Completion Report to the Korea Financial Supervisory Service (FSS) and to the Korea Exchange (KRX). The Sections 100-111 of the Korean Securities Issuance and Disclosure Act specify the details of this requirement. According the Act, repurchasing firms should report details of the plan in the Repurchase Plan Report. These include the reasons for the repurchases, the intended amount of shares and price, the execution period, and so on. Also, after they complete repurchases, they should report transaction details in the Repurchase Completion Report. The Repurchase Plan is valid for only 3 months. This means that firms reporting their repurchase plan should complete their repurchases within 3 months. Otherwise, they must report new plans for further transaction. This strict disclosure environment is similar to that of Hong

Kong. Brockman and Chung (2001) use the repurchase data from Hong Kong where repurchasing firms should disclose their transaction detail on the day following their trades, and find that bid-ask spreads are wider and depths are narrower during repurchase transaction. On the contrary, neither the stock exchange nor the SEC required firms to report their actual repurchased until 2003 in U.S. In 2003, the SEC promulgated regulations requiring after-the-fact disclosure of repurchase activity. U.S. firms are now required to disclose the details of their transaction such as the number of shares repurchased and the average price in their quarterly public filings.<sup>5</sup>

### **3.3. Sample**

We base our empirical study on a sample of 507 firms out of the 683 firms listed on the Korea Exchange (KRX) for the period 1999 to 2004. Korea had a strict limit for foreign shareholdings before the economic crisis in the year 1998. We assume that before 1998, foreign investors who had a strict shareholding limit could rarely affect the dividend policy of Korean firms. For all firms, our data set contains annual information on firm's dividend payout, ownership structure, and other firm specific characteristics. We exclude firms in the financial sector because they are subject to different accounting rules and exclude public utilities because they are subject to a foreign ownership limit and have financial policies that are highly influenced by social obligation. Our final sample contains 3,042 observations.

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<sup>5</sup> See the "Purchases of Certain Equity Securities by the Issuer and Others.", SEC Final Rules 2003, at <http://www.sec.gov/rules/final/33-8335.htm>

We obtain our ownership and financial data in this empirical study from Kis-Value, database provided by Korea Investor Service (KIS). We obtain stock repurchase data by searching every Repurchase Completion Report on the Data Analysis, Retrieval, and Transfer System (DART) maintained by the Korea Financial Supervisory Service (FSS) during the period 2000-2004. As a cross check, we compare our data from the FSS to the repurchasing lists on the electronic disclosure system of the Korea Exchange (KRX).

The key variables of this study are a firm's dividend payout ratio, repurchase to book ratio, foreign investor shareholdings, and domestic shareholdings. Measures of firm's payouts vary across studies. In this paper, we define the dividend payout ratio as the total amount of cash dividends divided by the net income after taxes and the repurchase to book ratio as the total amount to repurchase shares divided by the book value of total asset. Foreign ownership is the ratio of total equity owned by foreign investors to the total equity. Similarly, we define institutional ownership as total equity owned by domestic financial institutions divided by total equity. The signaling hypothesis suggests that institutional investors are more attracted by higher dividends (Allen, Bernardo and Welch (2000)). Thus, we expect that the coefficients of dividend payout on foreign ownership and institutional ownership are positive. The agency model suggests that with monitoring by well-informed institutional investors with a large stake, firms are more likely to increase payouts. Thus, we expect that the coefficients of foreign ownership and institutional ownership on payouts are positive.

We employ individual ownership as the total equity owned by domestic individual investors divided by total equity. Note that in Korea, probably in most of

emerging markets, indirect investment via mutual funds is less popular than in advanced markets. Thus, shareholding of direct investment by individuals is high. The mean market capitalization of individual ownership is about 30% in 2004. Graham and Kumar (2006) find evidence of dividend clienteles that high-age, low-income individuals prefer high-yield stocks with high dividends. However, there is every evidence that Korean individual investors generally prefer short-term investment, resulting in high turnover ratio (Choe, Kho, Stultz (1998), etc.). Thus, we expect there is no relationship between individual ownership and payouts.

Another important variable to study Korean firms is whether a firm is affiliated with a large business group, called Chaebol. Chaebol is a dummy variable which equals to 1 if a firm in the sample is a member of the 30 largest Chaebols, Korean conglomerate business groups, defined by the Korea Fair Trade Commission (KFTC) or 0 if it is not. KFTC announces the list of top 30 Chaebol groups in terms of total assets each year. Korean Chaebols maintain their member firms via a pyramidal structure and elaborate cross-ownership to separate cash-flow rights from control rights. In this respect, corporate governance and shareholder rights of Chaebol firms are not as strong as those of non-Chaebol firms. According to LLSV(2000), we expect that Chaebol firms with relatively weak corporate governance and shareholder rights are less likely to pay out their excess cash flow.

We also use the following control variables : Beta, market-to-book ratio, the natural logarithm of sales, R&D, free cash flow, leverage, adjusted stock returns, return on asset, Tobin's Q, and industry dummies. . Beta represents the systematic risk. It is calculated using daily returns with the benchmark market portfolio, Korea Composite

Stock Price Index (KOSPI). Market-to-book ratio is calculated by dividing the market value of equity by the book value of equity. Free cash flow is the amount of cash that a firm left over after it has paid all of its expenses, including investments divided by total assets. Adjusted stock returns represent historic growth and future growth possibility. It is the one-year stock return adjusted by the return of Korea Composite Stock Price Index (KOSPI). Return on assets (ROA) represents firm profitability and is calculated by using net profits (before interest, tax, and exceptional items) divided by the book value of assets. Research and Development (R&D) expenses as a percent of assets are proxy for a firm's future growth potential. Tobin's Q is measured by the proxy Q, defined as the sum of market value of common equity, the market value of preferred stock, and the book value of total debt, divided by the book value of total assets.

Empirical studies have observed some systematic patterns in the preferences of foreign investors. For example, Kang and Stulz (1997) find that foreign investors in Japan prefer large firms and firms with high export sales to smaller and high leveraged firms. Also, Dahlquist and Robertsson (2001) provide evidence that foreign investors in Sweden tend to invest in large firms and firms with large cash positions. Thus, we expect that there is the positive relationship between foreign ownership and size (the natural logarithm of sales) and high free cash flow and the negative relationship between foreign ownership and leverage. Further, we expect that foreign investors, most of whom are mutual funds and other institutional investors, prefer high growth opportunities (e.g, high Market to Book ratio, High Tobin's Q) and firms with high volatility (e.g, high Beta) as in findings of Grinstein and Michaely (2005).

Empirical studies on determinants of corporate payout policies find that the level of payouts is highly related to corporate individual characteristics. For example, Fama and French (2001) find that the decline of proportion of firms paying dividends is partly due to firms' characteristics such as small size, low earnings and high growth. In this study, we expect that there is the positive relationship between firms' payouts, size (the natural logarithm of sales) and profitability (ROA and adjusted stock return) but the negative relationship between payouts and high growth (Market to Book ratio and Tobin's Q). Also, according to the agency theory that high payout will result in reduction of free cash flow available to managers, we expect that payout is negative associated with free cash flow. If firms increase payouts, then less money will be available for reinvestment, and consequently may not have enough money to go ahead with their expenditure program. This in turn results in a greater reliance on external financing. In this regard, firms with high volatility (Beta), high level of R&D expense (R&D) and high leverage would not increase their payouts.

## **4. Results**

### **4.1. Ownership and financial data**

We present summary statistics for the overall period, 1999-2004, in Table 1. The simple mean of foreign ownership in the full sample is 7.2% while the mean in market capitalization is 36.2%. The distribution is highly skewed to the right, because foreign investors are likely to hold the shares of larger firms. On the contrary, the simple mean of individual ownership is surprisingly 62.3% while the mean in market capitalization is

29.1%. So, the distribution of individual ownership is skewed to the left. Table 1 shows that foreign ownership and payout policy in Korea have increasing patterns since 1998, the year when Korea eliminated foreign investing constraints. The mean foreign ownership of our 507 firms increases over this time period from 5.4% at the end of 1999 to 10.5% at the end of 2004. The mean dividend payout ratio also increases from 20.2% to 23.6%. However, the two domestic ownership variables, institutional and individual ownership, have remained relatively stable during this same period. Overall, the means of foreign ownership, domestic institutional, individual ownership are 7.2%, 8.5%, and 62.3%, respectively. Accordingly, the weighted averages of these ownership structures in terms of market capitalization are 31.36%, 15.65%, and 25.23%, respectively.

Table 2 detail the dollar volume and mean dollar volume of dividends and stock repurchases over the sample period. The number of firms paying dividends does not change much but the total amount of cash dividends has dramatically increased up to 8,499 million dollars in 2004 which is as four times as that in 1999. The total amount of stock repurchases has also increased but has more volatility.<sup>6</sup> 41 to 57 firms which is about 10% of the total number of sample firms have repurchased their share each year. If we count based on the number of the Completion Reports on the disclosure system of FSS, they are 72, 89, 130, 151 and 197 from the year 2000 to 2004, respectively.

Table 3 compares foreign ownership across the classes of dividend payout and stock repurchases. There are three classes of dividend payouts. Firms with payout ratios

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<sup>6</sup> Note that a number of financial firms and utility firms which are excluded from our sample also have repurchased their shares over the sample period. Since utility firms are generally large and their stock prices are high, their amount of repurchases are significantly large but are not considered in this study.

between 0% and 20% belong to the Low group. Firms with a payout ratio higher than 20% belong to the High group. Then, we calculate mean and median foreign ownerships over the sample period.<sup>7</sup> Similarly, we divide repurchasing firms into three classes. Among repurchasing firms, firms with the repurchasing to book ratio below to average belong to Low group, and High group, otherwise.

Panel A compares each ownership types for the whole period across dividend payout classes. This panel has some interesting results evident from Panel A. First, over the entire period, foreign investors prefer some dividends to no dividends. Second, foreign ownership in Low group is significantly higher than that in High group. In other words, foreign investors prefer firms in Low group to firms in High group and thus the foreign investors' preference to dividends is not monotonic. These results are consistent with Grinstein and Michaely (2005) who found that institutions do not have higher holdings in high dividend paying firms. Also, These can be partial evidence that does not support Allen et al (2000) that institutional investors (or foreign investors) are not attracted by higher dividends. Instead, these support the "prudent man rule" that institutional investors as fiduciaries view dividends as a "safe haven" indicator of investment prudence. (Del Guerciao, 1996). On the other hand, Panel A also provides evidence that domestic institutions prefer lower paying firms to higher paying firms but the results are mixed for no dividends versus high dividends. Domestic individual investors are indifferent between High group and No group in terms of mean holdings or, in fact, prefer No group to High group in terms of median holdings. However, they actually prefer High group than Low group once firms pay dividends.

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<sup>7</sup> For the whole period, firms are relatively equally distributed using the criteria of 0% and 20%

Panel B compares each ownership types across repurchase classes for the whole period. Unlike the results of Panel A, foreign ownership in High group, 12.91%, is higher than that both in No group, 7.24%, and in Low group, 9.09%. Their preference to stock repurchases is monotonic. Domestic institutions are indifferent among each group. Individual investors do not prefer stock repurchases. Their ownership is higher in No group, 62.02%, than High group, 56.67%, and in Low group, 64.72%, than High group.

## 4.1 Multivariate Results

### 4.1.1 Do foreign investors prefer payouts?

Before we specify our regression model, we examine possible correlations across relevant variables and the results show that most of the correlation coefficients between regressors are relatively low except the coefficients between Chaebol dummy and Log of Sale, 47%. (Not reported in the table) We include all variables in our analysis with little concerns of multicollinearity.

We consider the distribution of the dependent variable, foreign ownership. Since 784 observations have 0% of foreign ownership and the remaining observations are proportional; e.g. from 0% to 100%, we estimate the following logit quasi-maximum likelihood estimator(QMLE) suggested by Papke and Wooldridge(1996)<sup>8</sup>.

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<sup>8</sup> The log likelihood function of the logit QMLE is,

$L_i = y_i \log G(x_i\beta) + (1-y_i)[1 - \log G(x_i\beta)]$  where  $y_i$  are fractional values and  $G(\bullet)$  is the logistic function. This model insures that  $y_i$  is proportional from 0 to 1. When  $y_i=0$ , it estimates, similar to the Tobit model, the point probability of 0,  $[1 - \log G(x_i\beta)]$ .

For example, Arugaslan, Cook, and Kieschnick (2004) suggest to use this quasi-likelihood model for proportional dependent variable such as institutional shareholdings.

$$E(\text{foreign ownership}_{t+1}|x) = G(\beta_1 \text{Dividends or Re purchases}_t + \sum_i \beta_i \text{control variable}_{it}),$$

where  $G(\bullet)$  is the logistic function.

The regression results reported in Table 4 imply some interesting inferences. First, Dividend Payout at year  $t$  is positively related to Foreign Ownership in year  $t+1$ . However, the negative and significant coefficients of  $(\text{Dividend Payout})^2$  mean that the positive relationship between foreign ownership and payout ratios is not monotonic; that is, foreign investors prefer dividend-paying firms to non dividend-paying firms but, among dividend-paying firms, they prefer lower dividend-paying firms to higher dividend-paying firms. These results are consistent with the results of Grinstein and Michaely(2005) and do not support the signaling hypothesis that higher dividends can attract institutional investors (Allen et al (2000)). The possible implication is that such preference can be driven by the “prudent man” rule and that foreign investors may favor dividend-paying firms to satisfy such obligations.

Second, Repurchase to book at year  $t$  is positively related but the coefficient of  $(\text{Repurchase to book})^2$  is not significant. These results imply that the preference of foreign investors to stock repurchasing firm is monotonic. This evidence supports the adverse selection argument that adverse selection costs induce uninformed investors to prefer dividends over open-market repurchases as the means of receiving cash from firms (Barclay and Smith(1988)). Large and well-informed foreign investors do not face this problem, so they prefer firms that repurchase more shares.

Third, interestingly, the coefficients of two large domestic groups, institutional investor and individual investor, are negatively correlated with foreign ownership. This

implies that there may be information asymmetries between domestic and foreign institutional investors. Choe, Kho, and Stulz (2005) and Dvorak (2005) investigate these information asymmetries in Korea and in Indonesia and the question of whether foreign investors are more informed than domestic investors.

Controlling firm size and leverage, we find that the relation between foreign ownership and Chaebol dummy is not significant. The possible implication is that Chaebols are larger firms with relatively sound capital structure, e.g. low leverage, which may attract foreign investors.<sup>9</sup> On the other hand, since the financial policies of these firms are highly affected by group decisions, foreign investors may not migrate to firms with higher group ownership.

With regard to the control variables, the coefficients on variables Log of Sale (size), Leverage, Tobin's Q (firm performance), R&D/Asset (growth potential), Market to Book (growth opportunity) are correctly signed and significant. Foreign investors have higher holdings in larger firms with higher performance and higher growth potential, but with lower leverage.

To analyze the time trend in the relation between foreign ownership and dividend payout, we perform the logit QMLE regressions by year. Table 5 shows the results. In the years 1999-2001, dividends are not significantly correlated with foreign ownership. In 2000, the coefficient of dividend payout is significant, but relatively small. Note that the Korean market was entirely opened to foreign investor in the middle of 1998. It appears that when foreign investors first came to the Korean market, they did not regard

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<sup>9</sup> Note that the coefficient of correlation between Cheabol dummy and size (Log of Sale) is 0.47.

the dividends as much important. Instead, they concentrated their investment on the large (Ln of sale), high-growth potential (R&D/asset), profitable (ROA), and low leverage firms. However, in the year 2002-2003, dividend payouts became important determinants of foreign ownership.

The coefficients of domestic institutional and individual ownership are negative and significant over the entire year under consideration. These are consistent with the evidence of information asymmetries discussed above. Also, the coefficients of Cheabol(dummy) are not significant over the year. We do not examine the time trend in the relation between foreign ownership and stock repurchases since the observation of repurchasing firms is not enough for regression analysis.

#### **4.1.2 Do foreign investors increase firms' payouts?**

According to the agency theory and the free-cash flow argument, management has an incentive to divert resources from outside shareholder. institutional investors who are well-informed and hold a substantial equity will monitor the management and reduce the agency problem. (Esterbrook (1984), Jensen (1986), LLSV (2000), etc). Thus, higher foreign ownership should be associated with a higher payout level. To test this, we use dividend payout at year  $t+1$  as the dependent variable and foreign ownership at  $t$  as the independent variable.

Since 974 observations have zero dividends, it is obvious that the point probability at zero is not 0. Moreover, 574 observations have a dividend payout ratio

greater than 100%, meaning that these firms pay dividends out of retained earnings. These results suggest the use of the Tobit model.

Table 6 reports the results of the Tobit regressions. Not surprisingly, foreign ownership has positive and significant effects on dividends. This result supports the agency model and free-cash flow argument although Grinstein and Michaely (2005) and Brav et al. (2005) do not find the evidence in the U.S. market. LLSV (2000) find international evidence that firms in countries with poor corporate governance and low shareholder rights may pay less dividends. Thus, these results suggest that in emerging markets where corporate governance and shareholder protections are relatively poor, foreign investors who could bring international standards and practices cause firms pay more dividends.

The effects of domestic institutional ownership on dividends, however, are negative. This implies that domestic institutional investors have little impact on corporate governance and are not as effective monitors of corporate as foreign investors. Further, there is some evidence that institutional investors in Korea are more likely to side with management in corporate decision. For example, numerous financial institutions in Korea are Chaebol-affiliated, reason for they are primarily concerned with controlling families' interest. Another example is the "Shadow voting". Korean institutional investors were not permitted to participate in corporate governance until 1997 and the "Shadow voting" was required. Even though this requirement was abolished in 1997, some institutions are still using the "Shadow voting" system. The last example is related to the pension fund. Gillan and Starks (2000) report that due to their characteristics of large size, independence and low turnover, public pension funds are the most active monitors of corporate. However,

the “National pension fund”, the largest pension fund in Korea, and some of other large pension funds were not permitted to invest in stocks until 2004. For these reasons, it is not surprising that domestic institutional ownership is negatively correlated with dividend payout.

The effects of individual ownership are positive, but insignificant. Also, Chaebol (dummy) has not significant effects on dividend payout, after we control the size and profitability which are main characteristics of Chaebols.

With regards to control variables, the coefficients on variables Log of Sale (size) and ROA (profitability) are positive and significant, but those on variables Leverage and Tobin’s Q (firm performance) are negative and significant which seems to be correctly signed. Larger and more profitable firms may pay more dividends, while firms with higher debt and higher performance may pay less dividends.

The results of examining the effect of foreign ownership on share repurchases are also reported in Table 8. It turns out that the coefficients of foreign ownership are positive but they are not statistically significant. Thus, we do not support the agency theory that foreign investors may reduce the agency problem by causing firms to increase in the level of repurchases. Another possible reason for the insignificant effect of foreign ownership on share repurchases is that firms in Korea often use stock repurchases to prevent the hostile takeover. Dittmar (2000) argue that the decision of stock repurchases is not only affected by the firm’s distribution, but also affected by investment, capital structure, corporate control, and compensation policies. They also argue that repurchases can be used as takeover defense by increasing the acquisition price. Moreover, Korea

Times (June 12, 2006) reports that Korean firms have increased their buyback due to concerns of companies over a hostile takeover bid by foreign investors. According to this evidence, foreign investors who increase firm's dividends may not lead firms' to buy back more shares.

The other possible reason for the lack of significance in coefficients may be due to small observations of repurchasing firms. Since we exclude the financial firms and utility firm, many of whom repurchase large amount of shares,, omitting the data of those firms may make it difficult to capture the interaction between foreign ownership and repurchases.

To analyze the time trend in the effects of foreign ownership on dividend payout, we perform the Tobit regressions by year. Table 7 shows the results. The coefficients of foreign ownership are positive and significant over the entire sample period except the year 2000. On the other hands, institutional holdings have negative effects on dividends in the years 1999 and 2000, but have no effects in the years 2001~2003. The coefficients of Individual ownership and Chaebol dummy are insignificant over the year.

## **5. Endogeneity Issue**

Even though most of the previous studies concerning the relevance of ownership structure and dividend policy assume that these variables are exogenous, Demsetz(1983) and Demsetz and Lehn(1985) point out that the ownership structure is possibly an endogenous result of a profit-maximizing process. Elston, Hofler, and Lee (2005) treat their banking ownership variable as endogenous. Grinstein and Michaely (2005) argue

that since the investment decision of institutions and firm's payout policy are determined simultaneously, it is integral to examine not only the correlation, but also the causal relation between these two endogenous variables.

In our study, two main variables, foreign ownership and dividend payout, are endogenous if the decision of foreign investors to invest on the Korean market is correlated with unobserved variables that affect a firm's dividend payout policy. This is particularly appropriate in Korea, in that both the level of firms' payouts and foreign ownership have dramatically increased since 1998, the economic crisis. In 1990's, the average of foreign ownership is about 12 % of total market capitalization, which has jumped to more than 30% during the years 1999~2004 because Korea abolished the ownership limit for foreign investors to attract foreign investment after experiencing the outbreak of the economic crisis at the end of 1997. Also, the Korean government has been undergoing major reforms in corporate governance, finance and investment behavior. Since one of major goals of this corporate reform is to enhance shareholder monitoring, it caused Korean firms which used to pay the very low level of dividend for the managerial incentive to maximize free cash flow, to pay more dividends.

In this regard, these two variables may be affected by common factors and possibly endogenous. In addition, the literature suggests that the investment decision of institutions and firm's payout policy are determined simultaneously (Jensen, Solberg, and Zorn (1992), Grinstein and Michaely (2005), etc). Therefore, to control for endogeneity seems to be an integral part of this study.

## **Propensity Score Matching (PSM) method**

To control for endogeneity, the Heckman's 2-step treatment effect model has been commonly used in the empirical studies. However, Elston, Hofler and Lee (2005) argue that the treatment effect model must satisfy an over-identifying restriction. That is, to specify the treatment effect model, we must have at least one instrument variable which is not used in the main equation. However, the identification requirement sometimes is serious problem since to find such instrument variables is difficult or often impossible. For this reason, they suggest to use the propensity score matching (PSM). The PSM method does not require this identification requirement and estimates the treatment effect in a non-parametric process. In this study, we define the choice on dividends as treatments and anticipate the difference in the level of foreign ownership across the each matched pair will be due to only the effect if the dividend choice.

The brief process to examine the effect of dividend payout on foreign ownership is as followings. First, we estimate the choice model, logit or probit, of the probability of treatment, dividend payout, as a function of observed control variables. Then, we use the resulting estimates to create a predicted probability of treatment, paying dividends, for each firm, which is the propensity score. According to this propensity score, we divide the firm sample into groups with a similar probability of paying dividends, regardless of whether they actually did. Randomly ordering the dividend-paying firms, we use the propensity score to match the first dividend-paying firm to all non dividend-paying firms. Then, we put this matched sample into the new dataset and repeat this process for all other dividend-paying firms. Finally, using this matched sample, we compare the means of the output, foreign ownership, in the dividend -paying firms and non dividend-paying

firms. We use the t-test with the null hypothesis that the difference of means is zero. In addition, we use two matching methods in this paper, the nearest neighbour method and the kernel method. Briefly, the nearest neighbour is based on finding that the units for which the propensity score is the closest. The kernel method allows us to smoothen the split into several intervals in taking weighted average conversely proportional to the distance between the propensity score of the two groups.

Table 8 shows the results of the PSM analysis. Panel (a) estimates the probit model of probability of paying dividends. Similar to our earlier results, higher domestic institutional ownership and individual ownership leads firms to decrease the dividends. We create the propensity score based on results of this probit model and then, apply the PSM method. Panel (b) represents the results. The average treatment effect (ATT) on foreign ownership of the treated, dividend-paying firm, is higher than the ATT of the control across the 5% and 1% margin. For instance, the mean outcome of foreign ownership in the treated, i.e., ATT, is 10.7%, whereas that of the control is 3.7% at the 5% margin. The t-statistics show that the differences are statistically significant. We find the same story by using the kernel matching. These results are consistent with the signaling hypothesis suggested by Allen, Bernardo and Welch (2000).

Next, we employ the PSM method to examine the effect of foreign ownership on dividend payout. To do this, we set the choice variable, foreign ownership, which equals to one if a firm has higher than 5% of foreign ownership of its total equity, and zero, otherwise. Then, we estimate the probit model of the probability that foreign ownership is higher than 5% of a total share.

Table 9 shows the results. Using the estimates from the probit model shown in Panel (a), we apply the PSM of which the results are shown in Panel (b). In Panel (b), The ATT of the treated, firms with higher than 5% of foreign ownership, on dividends payout is higher than the ATT of the control, firms with lower than 5% of foreign ownership. Although the sign is consistent with our earlier findings; that is, higher foreign ownership leads firms to increase dividends, the difference is not statistically significant from the t-test. Now, we re-set the choice variable, foreign ownership, such that it equals one if a firm has higher than 10% of foreign ownership of its total equity, and zero, otherwise. In Panel (c), the results show that the ATT of the treated is bigger than that of the control and the difference is statistically significant. Firms with higher than 10% of foreign ownership pay more dividends than firms with lower than 10% of foreign ownership. This result favors the agency hypothesis suggested by Jensen (1986).

### **3-stage least squares (3SLS) method**

Jensen, Solberg, and Zorn (1992) point out that not only firms differ in terms of their characteristics, but also these firm characteristics are also related to the ownership structure and financial policy. They employ 3SLS to distinguish these simultaneous effects. Grinstein and Michaely (2005) use the vector autoregression methodology to disentangle the possible causality effect between institutional ownership and dividend payout.

To control for simultaneity, we use the 3-state least squares (3SLS) method to estimate the following system of simultaneous equations:

$$\text{foreign ownership}_{i,t+1} = \beta_{i,t} \text{dividend payout}_{i,t} + \gamma_{it} \theta_{it} + \alpha_i + v_{it}$$

$$\text{Dividend payout}_{i,t+1} = \tau_{i,t} \text{foreign ownership}_{i,t} + \mu_{it} \varphi_{it} + \alpha_i + v_{it}$$

Where,  $\theta$  and  $\varphi$  are control variables assumed to be exogenous and  $\alpha$ s are the year dummies and industry dummies.

The results of 3SLS estimation are shown in Table 10, which are nearly identical to our early findings. Panel (a) shows that dividend-paying firms attract foreign investors. However, the relation is not monotonic; foreign investors prefer lower dividend-paying firms to higher dividend-paying firms. The holdings of domestic institutions and individual investors have negative effects on foreign ownership. In panel (b), consistent with the agency model, higher foreign ownership causes a firm to increase dividends. The effects of domestic institutions and individual investors on dividend payout are insignificant.

In this section, we employ the PSM methodology and 3SLS estimation to control for the endogenous and simultaneous problems that we may have. Since the foreign ownership and firm dividends in Korea have dramatically increased since the late of 1990's, the period of Korean economic crisis, these two variables are possibly affected by common factors. In addition, previous literature argues that the investment decision of institutions and firm's payout policy are determined simultaneously. We find that after control for endogeneity, the results are identical to our earlier findings in the section 4.

## 6. Conclusion

In this paper, we extend the U.S literature between institutional ownership and payout policy by using the unique features of foreign ownership in Korea. We investigate Korean firms in order to provide new evidence on the relationship between the ownership structure and payout policy in an emerging market.

We find that foreign investors are more attracted to dividend-paying firms. Among dividend-paying firms, however, foreign investors prefer low dividend-paying firms. We also find that a higher level of stock repurchases attract more foreign investors. These results are consistent with Grinstein and Michaely (2005) using U.S public firms. In support of the agency model, higher foreign ownership is associated with a greater dividend payout. Domestic institutional investors, however, do not play a prominent role in a firm's payout policy. Thus, we conclude that foreign investors are more active monitors of corporate by reducing agency problems and leading firms to increase the level of payouts. In general, foreign investors prefer larger and highly profitable firms.

Further, we consider the possibility that the ownership structure and firm's dividend policy in Korea are affected by common factors and are simultaneously determined, an endogeneity argument. Our evidence remains consistent after controlling for these endogeneity concerns. Finally, our results are consistent with information asymmetries between foreign investors and domestic institutional investors noted by Choe, Kho, and Stulz (2005) and Dvorak (2000).

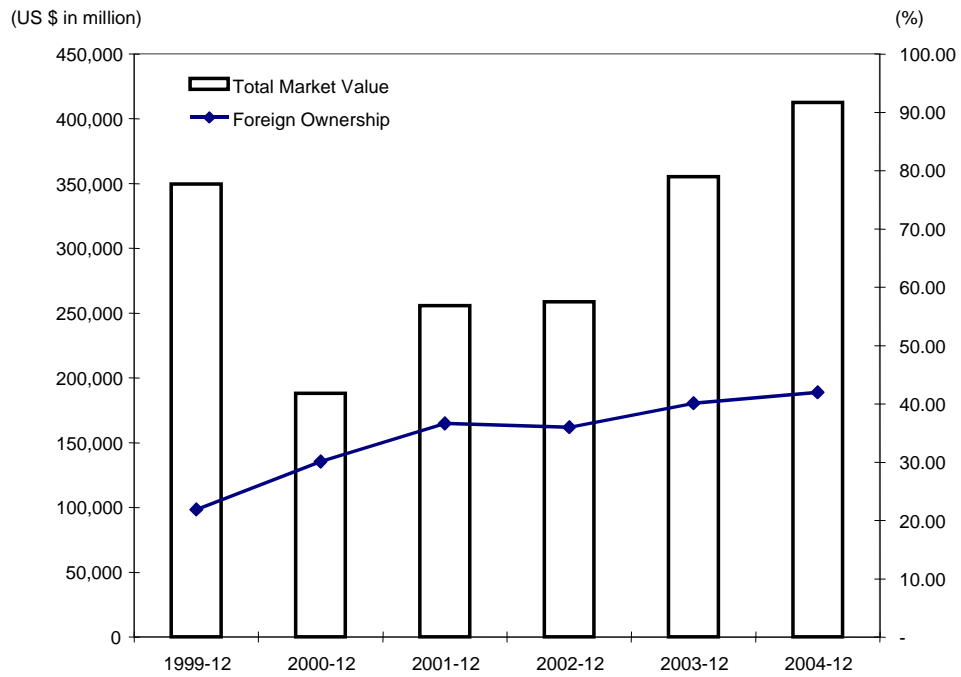
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**Figure 1**

**Foreign Ownership and Market capitalization of Korean stocks from 1999 to 2004**



\*Data : The Korean Financial Supervisory Service (FSS) (2005.5)

**Table 1**  
**Descriptive Statistics by Year**

The sample includes 507 firms listed on the Korea Exchange(KRX) which contains 3,042 observations. We obtain ownership data and financial data from the Kis-value, database provide by Korea Investor Service(KIS).

Stock		1999		2000		2001	
		Simple	Market Cap	Simple	Market Cap	Simple	Market Cap
Foreign Ownership	Mean	0.054	0.185	0.057	0.270	0.062	0.322
	Median	0.005	0.005	0.003	0.003	0.003	0.002
Institutional Ownership	Mean	0.095	0.143	0.082	0.164	0.054	0.154
	Median	0.044	0.042	0.024	0.027	0.012	0.014
Individual Owership	Mean	0.638	0.317	0.641	0.235	0.621	0.264
	Median	0.678	0.781	0.684	0.460	0.660	0.588
Divident Payout	Mean	0.201	0.186	0.215	0.289	0.228	0.282
	Median	0.136	0.132	0.125	0.108	0.104	0.092

Stock		2002		2003		2004	
		Simple	Market Cap	Simple	Market Cap	Simple	Market Cap
Foreign Ownership	Mean	0.068	0.328	0.088	0.377	0.105	0.401
	Median	0.004	0.004	0.005	0.005	0.013	0.014
Institutional Ownership	Mean	0.105	0.153	0.091	0.156	Not available	
	Median	0.061	0.061	0.048	0.048		
Individual Owership	Mean	0.617	0.256	0.598	0.234	Not available	
	Median	0.654	0.789	0.628	0.516		
Divident Payout	Mean	0.197	0.182	0.243	0.261	0.236	0.177
	Median	0.000	0.113	0.144	0.141	0.137	0.137

Stock		Full sample	
		Simple	Market Cap
Foreign Ownership	Mean	0.072	0.362
	Median	0.005	0.005
Institutional Ownership	Mean	0.085	0.168
	Median	0.034	0.035
Individual Owership	Mean	0.623	0.291
	Median	0.662	0.616
Divident Payout	Mean	0.218	0.222
	Median	0.129	0.123

**Table 2**

**The Distributions of Dividends and Stock Repurchases over the year 1999-2004**

This table provides summary statistics of dividends and repurchasing activity of the sample firms. We obtain dividend data from the Kis-value, database provide by Korea Investor Service(KIS) and stock repurchase data by searching every Repurchase Completion Report on the Data Analysis, Retrieval, and Transfer System (DART) maintained by the Korea Financial Supervisory Service (FSS) during the period 2000-2004.

Year	# of Firms Paying dividends	Total \$* Dividends	# of Firms Repurchasing stock	# of the reports of repurchasing results	Total \$* Repurchases
1999	328	2,271	Not available		
2000	299	4,588	54	72	1,340
2001	281	4,426	41	89	552
2002	316	4,578	45	130	2,361
2003	326	7,427	47	151	1,887
2004	339	8,499	57	197	2,666

\* All \$ amounts are in millions of dollars. 1 US \$ = 1,000 Korean Won.

**Table 3****Univariate Tests**

This table reports results from univariate tests. Panel A compares means and medians of three types of ownership across dividend payout classes. Low dividend payout is between 0% and 20%. High dividend payout is greater than 20%. Panel B compares means and medians of three types of ownership across repurchase classes. Firms with the Repurchase to Book ratio below to average belong to Low group and High group, otherwise.

Panel A : Dividend and ownership structure (%)

	Dividends	N	Mean	Median	t-statistics	Rank test
Foreign Ownership	No	1153	2.68 ***	0.09 ***	-12.58 <sup>1</sup>	-14.53 <sup>1</sup>
	Low	745	11.76 ***	3.40 ***	3.84 <sup>2</sup>	4.01 <sup>2</sup>
	High	1144	8.90	1.34		
Domestic institutional Ownership	No	985	9.03 **	1.70 ***	2.15	-5.98
	Low	595	9.08 ***	5.30 ***	2.51	3.22
	High	955	7.68	4.30		
Individual Ownership	No	985	64.29	70.60 ***	1.51	3.52
	Low	595	58.64 ***	61.32 ***	-3.02	-2.93
	High	955	62.46	65.01		

Panel B : Stock repurchases and ownership structure (%)

	Repurchase	N	Mean	Median	t-statistics	Rank test
Foreign Ownership	No	2291	7.24 ***	0.40 ***	-4.33	-5.33
	Low	120	9.09 **	1.54 *	-1.94	-1.81
	High	124	12.91	4.61		
Domestic institutional Ownership	No	1841	8.31	3.10	-0.08	-0.06
	Low	92	7.09	4.10	-0.88	0.89
	High	95	2.90	0.00		
Individual Ownership	No	1841	62.02 **	65.94 **	1.90	2.33
	Low	92	64.72 **	64.63 **	2.56	1.96
	High	95	56.67	61.51		

<sup>1</sup>Mean and median difference test between No group and High group

<sup>2</sup>Mean and median difference test between Low group and High group

\*\*\*, \*\*, \* represent statistical significance at the 1%, 5% and 10% level, respectively.

**Table 4**  
**Effects of Payout on Foreign Ownership**

This table reports regressions that test the determinants of foreign ownership. The estimated models are the fixed effect models and the logit quasi-maximum likelihood models developed by Papke and Wooldridge(1996). The dependent variable is foreign ownership. Standard errors for these tests are fully robust standard errors. The z statistics are within parentheses below the estimated coefficients. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively.

	Foreign Ownership t+1							
	1)		2)		3)		4)	
Dividend Payout	0.263	***	0.255	***				
	(3.78)		(3.86)					
Dividend Payout <sup>2</sup>	-0.019	***	-0.019	***				
	-(2.91)		-(2.99)					
Repurchase to book					1.573	**	1.201	**
					(2.56)		(1.98)	
(Repurchase to book) <sup>2</sup>					-3.588		-0.834	
					-(0.54)		-(0.13)	
Institutional Ownership	-1.684	***	-1.636	***	-0.196	***	-0.191	***
	-(7.72)		-(7.75)		-(8.2)		-(8.09)	
Individual Ownership	-2.080	***	-2.148	***	-0.214	***	-0.210	***
	-(18.57)		-(19.84)		-(17.32)		-(17.07)	
Cheabol (Dummy)	-0.106		-0.104		0.001		0.003	
	-(1.63)		-(1.59)		(0.16)		(0.37)	
Beta	0.199	***	0.066		0.019	***	0.017	***
	(2.59)		(0.93)		(3.09)		(2.88)	
Log of sale	0.396	***	0.382	***	0.027	***	0.026	***
	(19.28)		(18.55)		(12.97)		(12.65)	
Return on Asset	1.273	***	-0.046		0.007		0.014	**
	(8.74)		-(0.79)		(1.56)		(2.13)	
Leverage	-0.346	***	-0.393	***	-0.001	***	-0.001	***
	-(6.9)		-(8.32)		-(3.07)		-(4.3)	
Tonbin's Q	0.233	***	0.088	*	0.019	***	0.018	***
	(10.09)		(1.85)		(6.17)		(5.79)	

R & D/Asset			7.523 **			2.878 ***
			(2.25)			(6.75)
Adjusted Stock Return			-0.001			-0.002
			-(0.06)			-(1.05)
Market to Book			0.220 ***			0.001 ***
			(9.79)			(3.11)
Free Cash Flow			0.148			0.019
			(0.11)			(1.54)
Intercepts	-10.590 ***	-10.151 ***		-0.291 ***		-0.322 ***
	-(3.98)	-(3.87)		-(6.94)		-(7.7)
Industry Dummy	Included	Included		Included		Included
Year dummy	Included	Included		Included		Included
F - test						
Log likelihood	1965.13	2059.26		-422.24		-421.73

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**Table 5**  
**Effects of Dividend Payout Foreign Ownership by Year**

This table reports regressions that test the determinants of foreign ownership by year. The sample consists of 507 firms for each year. The estimated models are the logit quasi-maximum likelihood models suggested by Papke and Wooldridge(1996). The dependent variable is foreign ownership. Standard errors for these tests are fully robust standard errors. The z statistics are within parentheses below the estimated coefficients. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively.

Independent variable	Foreign Ownership(t+1)					
	1999	2000	2001	2002	2003	
Dividend Payout	-0.243 (-0.87)	0.017 (2.08)	** 0.019 (0.32)	0.476 (2.42)	** 0.345 (2.98)	***
Institutional Ownership	-1.866 (-3.05)	*** -0.148 (-3.46)	*** -1.762 (-3.14)	*** -2.120 (-3.51)	*** -2.547 (-4.06)	***
Individual Ownership	-2.310 (-5.97)	*** -0.142 (-7.56)	*** -2.212 (-7.24)	*** -2.685 (-6.32)	*** -2.357 (-6.89)	***
Cheabol (dummy)	0.300 (1.23)	0.016 (1.04)	-0.227 (-1.1)	-0.217 (-1.13)	-0.185 (-1.15)	
Beta	0.228 (0.94)	0.033 (1.71)	* 0.219 (0.8)	0.353 (1.73)	* -0.016 (-0.07)	
Log of Sale	0.323 (5.9)	*** 0.015 (4.37)	*** 0.422 (7.8)	*** 0.391 (5.79)	*** 0.479 (7.81)	***
Return on Asset	2.067 (3.53)	*** 0.057 (1.89)	* 1.562 (-2.67)	*** -0.015 (-0.2)	0.066 (0.49)	
Leverage	-0.178 (-2.2)	** -0.006 (-2.71)	*** 0.164 (-2.13)	** -0.149 (-1.78)	* -0.149 (-1.63)	
Tobin's Q	0.301 (3.99)	*** 0.011 (2.51)	** 0.164 (1.03)	0.040 (0.16)	0.448 (2.04)	**
R & D/Asset	-7.903 (-7.37)	*** -8.620 (-1.88)	** 27.114 (2.67)	*** 30.595 (3.11)	*** 6.900 (1.04)	
Market to Book	-7.903 (-7.37)	*** -0.131 (-1.88)	** 0.245 (2.63)	*** 0.103 (1.92)	** 0.146 (0.95)	
Intercept	-7.903 (-7.37)	*** -0.131 (-1.88)	** -9.800 (-8.89)	*** -8.611 (-6.21)	*** -10.330 (-8.27)	***
Log likelihood	-82.09	-83.26	-84.02	-98.03	-106.95	

**Table 6**  
**Effects of Foreign Ownership on Payout**

This table reports regressions that test the effects of foreign ownership on dividends payout and repurchases. The estimated models are Tobit regressions. The z statistics are within parentheses below the estimated coefficients. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively.

	Dividend Payout t+1		Repurchase to Book t+1	
	1)	2)	3)	4)
Foreign Ownership	0.809 *** (4.6)	0.694 *** (3.91)	0.200 (1.51)	0.145 (1.07)
Institutional Ownership	-0.396 ** (-2.11)	-0.390 ** (-2.08)	0.128 (0.96)	0.134 (0.99)
Individual Ownership	0.075 (0.77)	0.058 (0.59)	0.124 (1.56)	0.127 (1.57)
Cheabol (Dummy)	-0.043 (-0.75)	-0.041 (-0.71)	-0.105 ** (-2.31)	-0.103 ** (-2.26)
Beta	-0.121 ** (-2.37)	-0.136 *** (-2.68)	0.078 (1.62)	0.065 (1.34)
Log of sale	0.088 *** (5.3)	0.095 *** (5.62)	0.038 *** (2.82)	0.041 *** (2.91)
Return on Asset	0.103 ** (2.49)	0.057 (0.97)	0.033 (1.36)	0.047 (1.08)
Leverage	-0.133 *** (-9.01)	-0.146 *** (-9.64)	-0.065 *** (-4.02)	-0.070 *** (-4.21)
Tobin's Q	-0.359 *** (-6.97)	-0.450 *** (-8.33)	-0.022 (-0.65)	-0.051 (-1.28)
R & D/Asset		4.409 (1.33)		1.088 (0.5)
Adjusted Stock Return		-0.037 ** (-2.05)		-0.007 (-0.53)
Market to Book		0.103 *** (7.9)		0.037 ** (2.16)
Free Cash Flow		0.158 (1.52)		0.149 ** (1.99)
Intercepts	-1.257 * (-1.82)	-0.935 * (-1.76)	-1.355 *** (-4.94)	-1.388 *** (-4.96)
Industry Dummy	Included	Included	Included	Included
Year dummy	Included	Included	Included	Included
Pseudo R <sup>2</sup>	0.064	0.070	0.052	0.061

**Table 7**  
**Effects of Foreign Ownership on Dividend Payout by Year**

This table reports regressions that test the determinants of dividend payout policy. The estimated models are the tobit regressions. The dependent variable is dividend payout ratios. The z statistics are within parentheses below the estimated coefficients. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively.

Independent variable	Dividend Payout (t+1)				
	1999	2000	2001	2002	2003
Foreign Ownership	1.610 *** (3.66)	0.288 (0.64)	0.480 ** (2.28)	0.580 ** (2.21)	1.167 ** (2.38)
Institutional Ownership	-1.216 *** (-3.01)	-1.126 ** (-2.33)	-0.347 (-1.34)	0.234 (0.86)	0.115 (0.19)
Individual Ownership	-0.086 (-0.41)	-0.083 (-0.31)	0.173 (1.53)	0.057 (0.38)	0.472 (1.54)
Cheabol (dummy)	-0.009 (-0.07)	-0.213 (-1.4)	0.019 (0.28)	0.030 (0.36)	0.089 (0.54)
Beta	0.012 (0.08)	-0.395 ** (-2.01)	-0.168 ** (-2.05)	0.020 * (0.36)	-0.497 *** (-2.59)
Log of Sale	0.080 ** (2.21)	0.137 *** (2.97)	0.042 ** (2.04)	0.053 * (1.8)	0.106 ** (2.39)
Return on Asset	1.623 *** (3.96)	1.191 *** (3.09)	0.718 *** (3.46)	-0.008 (-0.1)	0.213 (0.78)
Leverage	-0.119 *** (-2.94)	-0.218 *** (-4.19)	-0.066 *** (-4.49)	-0.106 *** (-4.47)	-0.134 *** (3.26)
Tobin's Q	-0.188 ** (-2.4)	-0.455 ** (-2.44)	-0.254 *** (-4.01)	-0.400 *** (-3.94)	-0.280 (-1.48)
Adjusted Stock Return	-0.030 ** (-0.59)	-0.044 (-0.76)	-0.013 (-0.55)	-0.061 ** (-2.25)	-0.001 * (-0.03)
Free Cash Flow	0.167 (0.77)	0.474 * (1.67)	0.044 (0.32)	-0.216 (-1.35)	0.438 (1.12)
Intercept	-1.209 ** (-1.75)	-1.701 * (-1.86)	-0.450 (-1.13)	-0.550 (-0.96)	-1.855 ** (-2.12)
Log likelihood	-473.08	-489.39	-301.47	-391.36	-637.23
Left censored obs.	208	226	191	181	168

**Table 8****Differences in Means of Foreign ownership based on the Propensity Scores**

This table reports the effect of dividend payout on foreign ownership based on the propensity scores. Panel(a) estimates the probit model of which the dependent variables is a dividend dummy which equals to 1 if a firm pays dividends, and 0, otherwise. Note, the regression includes control variables such as beta, log of sale, ROA, leverage, Tobin's Q, R&D, and market to book market ratio, though not reported below. . The z statistics are within parentheses below the estimated coefficients. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively. Panel (b) examines the difference in the means of foreign ownership across each matched pair. The methods used in this table are the nearest neighbor and the Kernel

## Panel (a) : Probit regressions

Independent variable	Dividend dummy	
Institutional Ownership	-0.799	***
	(-3.19)	
Individual Ownership	-0.279	**
	(-2.19)	
Cheabol (Dummy)	-0.071	
	(-0.84)	
Log likelihood	-1353.71	
LR $\chi^2$ (P-value)	655.26	(0.000)

## Panel (b) : Differences in means of foreign ownership

Types	Unmatched	ATT			
		Nearest neighbor		Kernel	
		5% margin	1% margin	5% margin	1% margin
Treated	0.107	0.107	0.106	0.107	0.107
Control	0.027	0.037	0.037	0.039	0.039
Difference	0.080	0.070	0.069	0.068	0.068
T-test	14.28	11.23	11.19	12.51	12.51

**Table 9**

**Differences in Means of Dividend Payout based on the Propensity Scores**

This table reports the effect of foreign ownership on dividend payout based on the propensity scores. Panel(a) estimates the probit model of which the dependent variables is a foreign ownership dummy which equals to 1 if foreign ownership is higher than 5% of the total share, and 0, otherwise. Note, the regression includes control variables such as beta, log of sale, ROA, leverage, Tobin's Q, free cash flow and adjusted stock return, though not reported below. The z statistics are within parentheses below the estimated coefficients. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively. Panel (b) examines the difference in means of dividend payout across each matched pair. The methods used in this table are the nearest neighbor and the Kernel. In Panel (c), we reset the choice variable, foreign ownership, such that it equals 1 if foreign ownership is higher than 10% of the total share, and 0, otherwise. Then, the difference in means of dividend payout is examined.

Panel (a) : Probit regressions

Independent variable	Foreign ownership dummy
N	2520
Institutional Ownership	-1.219 *** (-4.6)
Individual Ownership	-1.771 *** (-12.57)
Cheabol (Dummy)	-0.096 (-1.08)
Log likelihood	-1075.84
LR $\chi^2$ (P-value)	797.04 (0.000)

Panel (b) : Differences in means of dividend payout

When foreign ownership = 1 if foreign investors hold more than 5%, 0, otherwise

Types	Unmatched		ATT		
		Nearest neighbor		Kernel	
		5% margin	1% margin	5% margin	1% margin
Treated	0.263	0.263	0.263	0.263	0.263
Control	0.207	0.192	0.199	0.202	0.202
Difference	0.057	0.071	0.064	0.061	0.061
T-stat	1.96	1.27	1.23	1.34	1.34

Panel (c) : Differences in means of dividend payout

When foreign ownership = 1 if foreign investors hold more than 10%, 0, otherwise

Types	Unmatched		ATT		
		Nearest neighbor		Kernel	
		5% margin	1% margin	5% margin	1% margin
Treated	0.290	0.290	0.268	0.290	0.290
Control	0.206	0.169	0.178	0.194	0.194
Difference	0.084	0.121	0.090	0.097	0.097
T-stat	2.60	2.97	3.04	1.78	1.78

**Table 10**

**Simultaneous Equation Analysis of Foreign Ownership and Dividend Payout**

This table reports estimation results for simultaneous equation analysis using the 3-stage least squares (3SLS) regression to estimate the following system of simultaneous equations:

$$foreignownership_{i,t+1} = \beta_{i,t} dividend\ payout_{i,t} + \gamma_{it} \theta_{it} + \alpha_i + v_{it}$$

$$Dividend\ payout_{i,t+1} = \tau_{i,t} foreignownership_{i,t} + \mu_{it} \phi_{it} + \alpha_i + v_{it}$$

Where,  $\theta$  and  $\phi$  are control variables assumed to be exogenous and  $\alpha$ s are the year dummies and industry dummies. The z statistics are within parentheses below the estimated coefficients. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively.

Dependent variables	Panel (a) Structural equation 1 Foreign ownership t+1	Panel (b) Structural equation 2 Dividend payout t+1
Dividend payout	0.027 *** (3.2)	
(Dividend payout) <sup>2</sup>	-0.002 ** (-1.96)	
Foreign Ownership		0.323 ** (2.68)
Institutional Ownership	-0.156 *** (-7.8)	-0.129 (-1.14)
Individual Ownership	-0.197 *** (-18.56)	0.026 (0.41)
Cheabol (dummy)	0.005 (0.74)	-0.015 (-0.38)
Beta	0.014 ** (2.55)	-0.045 (-1.45)
Log of Sale	0.025 *** (14.21)	0.020 ** (1.98)
Return on Asset	0.007 (1.51)	0.011 (0.34)

Leverage	-0.001 *** (-2.93)	-0.001 (-1.12)
Tobin's Q	0.016 *** (6.17)	-0.022 (-1.46)
R & D/Asset	2.902 *** (7.49)	
Market to Book	0.001 *** (2.68)	
Adjusted Stock Return		-0.018 (-1.58)
Free Cash Flow		0.004 (0.07)
Intercept	-0.352 *** (-5.53)	-0.089 (-0.27)
Industry Dummy	Included	Included
Year dummy	Included	Included
Adjusted R-square	0.347	0.125

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