Local Effects of Foreign Ownership in an Emerging Financial Market:
Evidence from Qualified Foreign Institutional Investors in Taiwan

Roger D. Huang*
Department of Finance
Mendoza College of Business
University of Notre Dame
Notre Dame, Indiana 46556
Phone: 574-631-6370
Email: roger.huang.31@nd.edu

Cheng-Yi Shiu
Department of Finance
College of Management
National Central University
Taoyuan, Taiwan 320
Phone: 886-3-4227151 ext. 66268
Email: cshiu@ncu.edu.tw

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Abstract

We examine the local effects of equity ownership by investors who are classified as qualified foreign institutional investors in Taiwan. Our empirical analyses reveal that foreign institutional ownership has pronounced valuation effects. We find a startling foreign ownership effect whereby stocks with high foreign ownership outperform stocks with low foreign ownership. The foreign ownership effect is present even after controlling for firm exports, size, or transparency levels. We pursue a performance-based explanation for this effect and find that foreign ownership is strongly and positively associated with contemporaneous and subsequent firm performance. Our evidence documents the profound effects foreign ownership of local stocks has in an emerging financial market.

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1. Introduction

Research into cross-border equity ownership has examined the characteristics of local stocks owned by foreigners. These studies are often concerned with the home bias phenomenon, the observation that investors exhibit a greater preference for home securities than is predicted by theoretical models based on frictionless markets.[1] Kang and Stulz (1997) (KS) use firm-level foreign ownership data from Japan to examine investor preferences. They find that foreigners prefer to invest in large, very liquid Japanese firms instead of investing in the entire Japanese market. This evidence suggests that foreigners attempt to mitigate their information disadvantage in local stocks by concentrating their investments in well-known firms. Their results are supported by Dahlquist and Robertsson (2001) (DR), who obtain comparable evidence for Sweden.[2]

The purpose of our paper is to examine the local effects of equity ownership by investors who are classified as Qualified Foreign Institutional Investors (QFIIs) in Taiwan. We follow KS and DR in examining foreign equity ownership in a non-U.S. market. However, we differ in two important regards. First, we focus on the local effects of foreign equity ownership as opposed to the preferences of foreign owners. In particular, we are concerned with the valuation effects of foreign institutional investments and the relation between the foreign investments and firm performance. Second, whereas KS and DR examine developed markets, we study Taiwan, an emerging financial market.

We are motivated by the intense local focus on foreign equity ownership in Taiwan. Data on QFIIs are widely and closely scrutinized by the local investors, other market participants, and the press in Taiwan. Local media regularly reports news that associates the level of foreign equity ownership with stock price performance.[3] Local firms try to attract foreign portfolio

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[1] See, for example, French and Poterba (1991) and a review of the home bias literature by Lewis (1999).

[2] Coval and Moskowitz (1999) and others show that the home bias is present even in U.S. domestic portfolios with investment managers who exhibit a preference for locally headquartered firms. They also attribute this behavior to the presence of information asymmetry.

[3] For example, the weekly Business Today (July 4, 2005) reports that in June 2005, the top two stocks with the highest net foreign buy are United Microelectronics (UMC) and Taiwan Semiconductor Company. It also reports that these stocks experience hefty price appreciation, with UMC gaining 14% during June.

investors through many ways, including road shows to places outside Taiwan. There have even been accusations of fake foreigner investments in the market place.[4]

Taiwan is an important market. Like many emerging Asian markets, it has experienced rapid economic development and its economy is now comparable to a developed market according to many measures. Its GDP in 2000 was US $309 billion and its GDP per capita was US $13,985.[5] The Taiwan stock market at the end of 2000 ranked sixteenth globally by market value, with a capitalization of US $248 billion. In short, Taiwan may well prove to be too important to exclude from internationally diversified investment portfolios.

Taiwan also has typical characteristics of an emerging financial market. It has weak corporate governance, inadequate shareholder protection, poor legal enforcements, and heightened stock market volatility.[6] Additionally, the Taiwan stock market is dominated by uninformed individual investors who trade frequently. Barber, Lee, Liu, and Odean (2005) (BLLO) report that Taiwan individual traders account for 90% of the trading volume during the second half of the 1990s and incur trading losses of 3.8% annually, amounting to 2.2% of Taiwan's GDP. They also estimate that the annual turnover for individual investors ranges between 308% and 630% from 1995 to 1999.[7]

For our study, we have access to firm-specific foreign equity ownership data. An advantage of the Taiwan data is that, despite its status as an emerging equity market, it is endowed with highly reliable financial records. Our study also differs from the BLLO study which uses transactions data to study trading profits in Taiwan. In contrast, changes in foreign ownership are more apparent over longer time horizons, and we analyze monthly, quarterly, and annual foreign ownership effects.

Our analyses of foreign institutional equity ownership uncover a dramatic foreign ownership premium. Firms with high foreign ownership realize huge, economically and statistically significant, positive excess returns. Firms with low foreign ownership realize huge, economically and statistically significant, negative excess returns. The market rewards foreign ownership. Further analyses show that the foreign ownership effect is not an export firm effect. It

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[4] See, for example, the monthly Wealth Magazine (July 2004).
[5] The GDP and other statistics for economic development are from the Financial Statistics Monthly, Taiwan District.
[6] See, for example, the survey by Bekaert and Harvey (2003) and the JFQA (2003) special issue on international corporate governance.
[7] For the entire stock market, data from the Taiwan Economic Journal show that the average Taiwan turnover rate is 250% annually. It ranked seventh globally in value of equity traded in 2000 while it ranked sixteenth globally in terms of market value.

is still present even after accounting for firm export levels. It is not a size effect. The foreign ownership effect is evident even after controlling for size. It is not a transparent-firm effect. Its effect is still significant even after holding firm transparency level constant. Additionally, we find similar foreign ownership preferences to those found by KS and DR but for an emerging financial market. However, QFIIs' preferences are not exclusively for export-oriented, big, or transparent firms. Our evidence shows that the foreign ownership effect is distinct from export-oriented firm effect, size effect, or a transparent firm effect.

Finally, we pursue a performance-based explanation for the strong foreign ownership valuation effects. There is a large body of literature devoted to alternative governance mechanisms that can alleviate agency problems associated with the separation of ownership and control (Jensen and Meckling (1976)). For example, managerial ownership as a governance mechanism has been studied extensively.[8] These studies investigate whether the moral hazard problem faced by shareholders is mitigated by management ownership of the firm. They interpret a positive ownership-performance relation as providing evidence of monitoring. Our analysis of foreign holdings in Taiwan differs in that our focus is not on managerial ownership but on foreign institutional ownership. We find that foreign institutional equity ownership is significantly associated with improved firm performance in Taiwan. This suggests that foreign institutions may possess superior stock selection ability or are able to positively influence firm management.

An earlier study by Dahlquist, Pinkowitz, Stulz, and Williamson (2003) has examined the effect of corporate governance on foreigner investment choices. They find that foreign ownership is affected by the fraction of outstanding shares that are owned by controlling shareholders. We examine whether foreign institutional investment choices in Taiwan are associated with contemporaneous and subsequent firm performance even after controlling for the fraction of shares that can be freely traded. We consider controlling shareholders to be firm management or insiders and define insiders to be firm officers and members of the board of directors. This insider definition effectively includes all block holders in Taiwan firms.

Our results document the important role played by foreign institutional investments in Taiwan. They suggest that in an environment dominated by individual investors with extreme

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[8] See, for example, Demsetz and Lehn (1985), Himmelberg, Hubbard, and Palia (1999), Holderness, Kroszner, and Sheehan (1999), and Morck, Shleifer, and Vishny (1988).

agency problems and a dearth of alternative governance mechanisms, local individual investors may rely on information about foreign institutional ownership. Firm management has information advantage over both foreign institutional owners and local individual investors. However, unlike local individual investors, foreign institutions may possess stock selection ability or have the expertise and the resources to influence firm management.

Our analysis of foreign institutional investment has important policy implications. Making cross-border investments is a major factor in business today and there is a growing concern by emerging market governments that investments from abroad may destabilize local markets. This concern is reinforced by periodic episodes such as the 1997 Asian Crisis, which led to the adoption of capital controls and other market restrictions by Asian countries. An understanding of the role of foreign investments in emerging markets is a prerequisite to understanding these events and policy decisions. Our results for Taiwan indicate that foreign institutional ownership has the potential to promote economic development since it is related to improved firm performance, and is highly prized by local investors.

The remainder of the paper proceeds as follows. Section 2 depicts the Taiwan financial environment. Section 3 contains a description of the data set and some preliminary statistics. Section 4 presents empirical analyses on the pricing effect of foreign ownership. Section 5 provides empirical analyses of the relation between foreign ownership and firm performance. Section 6 concludes the paper.

2.   Taiwan Financial Environment

Before proceeding to the formal analysis, we characterize the Taiwan financial environment in this section. Taiwan is officially classified as an emerging market, and its financial sector has many similarities with other emerging financial markets.[9] Taiwan firms often exhibit weak corporate governance and inadequate shareholder protection.[10] Their equity market returns are characterized by a high average return, high volatility, a low correlation with developed markets returns, and more predictable market returns than developed markets.[11]

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[9] See, for example, the list of emerging markets by Morgan Stanley Capital International and Standard and Poor's Emerging Markets Database.

[10] The emerging market characteristics are described in Bekaert and Harvey (2003). See, also the JFQA (2003) special issue on international corporate governance.

[11] See, for example, Harvey (1995) and Bekaert and Harvey (1997).

Contributing to the severe agency problems in Taiwan firms is a lack of effective governance mechanisms. Domestic individual investors are the largest category of stockholders in the stock market.[12] They tend to be frequent traders who do not have the resources to undertake fundamental firm research.[13] In the Taiwan market, the average turnover rate is 250% annually, and the market ranked seventh globally in value of equity traded in 2000, with a total of US $925 billion.[14]

After individual domestic investors, domestic institutions are the most important investors in Taiwan stocks. They consist mainly of dealers and securities investment trust companies. Domestic institutional investors lack credibility, rarely engage in firm research, and are periodically embroiled in scandals.[15] They are not the preferred source of investment advice for local investors. In short, uninformed local individual investors and discredited domestic institutions cannot be relied upon to restrain managers' self-interest.

Additional standard governance mechanisms have been ineffective in controlling agency problems. One important internal governance mechanism is the use of boards of directors to represent shareholders' interest. During our sample period, the existing regulations in Taiwan did not call for independent directors, which fact compromised the effectiveness of boards.

The takeover market provides another external governance mechanism for monitoring and controlling insiders. However, the market for corporate control in Taiwan is very inactive. Existing rules make it difficult to acquire proxies for takeovers. The few takeovers that occurred during our sample period did not lead to increased firm value; rather, they led to an expropriation of minority shareholders' rights.

Banks often provide an alternative external device for monitoring firms that have bank loans and may even attempt to gain control of these firms. This is not the case in Taiwan. Taiwan banks are not even passively involved in firm management, let alone in the monitoring of activities. They cannot own more than 5% of a firm and lending policies are very stringent. Loans to firms are often collaterized by tangible assets. Further, the bank debt ratio of listed firms is relatively low. For example, using Worldscope data, the ratio of total liabilities to book

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[12] The ownership data are from the Taiwan Economic Journal.
[13] See our statistics below and Barber, Lee, Liu, and Odean (2005).
[14] Barber, Lee, Liu, and Odean (2005) report much higher turnover rates for Taiwan individual investors.
[15] In a recent scandal, mutual fund managers colluded with managers of listed companies to manipulate stock prices. They used relatives' accounts to trade stocks before mutual fund trades and then pocketed the refunds, which are a portion of trading fees that are returned by securities brokers to investors who trade heavily (Common Wealth Magazine (2004)).

value of total assets in 2001 was 42.33% for Taiwan, 60.68% for the U.S., and 59.56% for Japan.[16] In short, Taiwan has weak standard monitoring mechanisms for controlling its severe agency problems.

A conspicuous characteristic of the Taiwan market is its focus on foreigner investment. This is evident in news about changes in the level of foreigner investment that captures the investing public's attention. Data on foreigner investment activities are widely available and are closely followed by journalists, investors, and the general public. At 3:00 pm on each trading day, data on total purchases and sales of major institutional investors are publicly released.[17] Also, foreign investors' purchases and sales are made public for each firm. These data become the day's business press headlines and television news highlights.

Taiwanese domestic investors focus on investments by foreign institutional portfolio investors known as QFIIs.[18] These foreign investors include banks, insurance companies, securities firms, mutual funds, and other investment institutions.[19] The investment quota for QFIIs has increased over time, standing at US $2 billion at the end of 2000.[20] There are also ceilings for each foreign investor's holdings in individual firms as well as on total foreign holdings in individual firms during most of our sample period. However, the ownership restrictions have declined steadily over time, and by the end of 2000, foreigners were permitted to own 100% of local firms with few exceptions.[21] More importantly, the limits on foreign ownership were never breached during our sample period.

The focus on foreigner investment also manifests itself in other ways. Firms actively court foreign portfolio investors. The press routinely associates increased foreigner investment with an increase in stock price. Journalists and reporters often report changes in firm behavior

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[16] The differences between Taiwan and the U.S. or Japan are similar in 1998.

[17] The Taiwan Stock Exchange trading hours are 9 am to 1:30 pm. Two major sources of this data are the Yahoo Taiwan website and the Taiwan Stock Exchange.

[18] Other foreigners also invest in Taiwan but their ownership percentage has remained fairly constant over time. These investments include those by non-QFII foreign institutional investors who are subject to a maximum of $5 million in investments, individual foreign investors, ADR investors, overseas Chinese investors, and founding investors of joint ventures.

[19] Examples of other investment institutions are government funds, pension funds, trust funds, and non-profit organizations.

[20] There is no minimum investment amount.

[21] The exceptions are noted in the data section.

that are attributable to foreign investors. The local media has even alluded to overseas monitoring as a device for controlling firms' insiders.[22]

The local press contains examples of how foreign investors influence local firms. For example, in 2002, foreign investors' criticism of one of Taiwan's biggest firms—Taiwan Semiconductor Company—led to a change in its compensation program, an event that attracted the attention of local academicians and practitioners. Local firms began converting from paying stock dividends to cash dividends in 2001, and foreign investors have also been regarded as being responsible for initiating the conversion. These observations indicate that foreign investors provide a service that the local market place is unable to supply adequately. The press has even attributed the preference for foreign owners to the ability of foreigners to monitor corporate strategy, capital usage, and personnel.[23]

We next consider the behavior of foreign investors in Taiwan. They tend to be long-term investors. The avowed aim of the Taiwan Securities and Futures Commission in opening Taiwan to global investors is to attract long-term investors. They appear to have succeeded in that the turnover rate is much lower than that for domestic individual investors.[24]

With little firm information available, foreign institutions that find Taiwan too important to ignore may have little choice but to engage in basic research themselves. They have the resources to invest in information acquisition. They are also prohibited from short selling in Taiwan. This prohibition restricts foreign investors' potential to profit by identifying losers and may bias them toward strategies of ownership, oversight, and intervention. Big- and medium-sized foreign institutional investors—such as Fidelity and First Boston—have branch offices in Taiwan. These offices analyze global economic growth, industrial competition, and both firms' and their competitors' performances. Small foreign investors can purchase foreign analyst reports from global brokerage services.

How do foreign institutions influence the firms whose stocks they own? They do so through periodic guidance on corporate governance and other firm business operations. Either their home management or their financial analysts communicate their concerns directly to managers of the companies. This is a very efficient communication process. Foreign investors

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[22] See, for example, the series of articles in Business Weekly (April 25, 2004).
[23] See, for example, the series of articles in Business Weekly (April 25, 2004).
[24] For example, turnover for foreign investors during the first quarter of 2005 is about 10% using data from Taiwan Stock Exchange website, http://www.tse.com.tw/en/. Our results in the paper also document the long-term impact of foreign ownership.

may express such things as their displeasure with decisions that are harmful to small investors, their opposition to an expansion of non-core businesses, or to excessive perquisites. This direct communication process is often encouraged by the managements of those listed firms that actively seek foreigner investment.[25]

If their concerns are unheeded by firm management, foreign investors can sell their stock holdings. They may also sell for a variety of other reasons: they may sell when there is bad news; when they no longer have confidence in the firm's or the industry's future operating performance; or when the level of the firm's information asymmetry has increased. Our results below document the considerable negative stock price effect of low foreign ownership levels. This reflects the considerable leverage foreign institutional owners have over firm management.

Finally, the differential taxation between domestic and foreign investors in Taiwan is worth noting. For example, although dividend incomes are taxed as ordinary income for local investors, foreign investors are required to pay a withholding tax. However, Taiwan has tax treaties with the localities of its major foreign investors, including the United States, European countries, Hong Kong, Japan, and Singapore. Under these treaties, foreign owners are able to avoid double taxation by obtaining credit for taxes paid in Taiwan.

3.   Data

We have daily firm-level foreign investment flow and equity ownership data of foreign institutions that are classified as QFIIs. These data are widely disseminated and closely followed by the press, shareholders, and the public. The importance of the data and its widespread availability ensure its high quality — an important feature that is often lacking in emerging markets.

The sources for our data are the databases (DB) maintained by the Taiwan Economic Journal (TEJ). They are the TEJ Equity DB, TEJ Finance DB, TEJ Company DB, and TEJ Macro DB. Our sample period is the period from the beginning of the third quarter of 1994 to the end of 2001.

We use the following sample selection criteria to restrict our sample:
- Firms must be listed for more than six months[26];

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[25] See, for example, the series of articles in Business Weekly (April 25, 2004).
[26] This is to give foreign institutional investors time to analyze and to make investment decisions.

- Transaction and financial data must be available for the firms;
- Foreign investment in the firms must be permitted. This filter excludes five onshore transportation firms (firm codes 2607, 2608, 2611, 2612, 2616) and one TV firm (firm code 9928).

The application of the filters produces a sample size of 523 firms for our analyses of foreign equity flows and ownership performance. The sample size declines to 468 firms for our analyses of foreign equity ownership and firm characteristics. The smaller sample excludes 52 financial firms and three non-financial firms that lack adequate firm characteristic data.

In addition to the daily foreign investment flow and equity ownership data, we have annual data on non-QFII investor groups. Table 1, Panel A presents the annual ownership percentages by investor type. On average, over 90% of the shares are owned by domestic individual investors and domestic institutional investors. Foreign investors (QFII) account for a paltry 2.2% of market capitalization ownership on average, and there is little or no foreign ownership in half of the stocks. It may appear as though foreigner investment in Taiwan is unimportant. However, as we will discuss below, this interpretation is misleading. It is interesting to note that Kang and Stulz (1997) (KS) also report small foreign ownership figures for Japan. From 1975 to 1991, their equal-weighted foreign ownership average is 3.76%.

For Japan, KS show that the foreigner holdings are disproportionate across industries, with a concentration in large, liquid, export-oriented firms. Foreigners reveal a similar preference for certain industries in Taiwan. We document foreigner preferences for equal-weighted and value-weighted local firms using Gini coefficients. Figure 1 provides an illustration by plotting Lorenz curves for foreign ownership in 1995. A perfectly equal foreign ownership distribution is represented by the 45 degree straight line. The area between the 45 degree line and the convex Lorenz curve is a measure of the inequality or the concentration in foreigner investment in equally weighted local firms. The Gini coefficient computes this area as a percentage of the total area under the 45 degree line. The coefficient shows an increase throughout our sample period, standing at 79.1% in 2001. We also compute the Gini coefficients for value-weighted local firms. They are lower than the equal-weighted firms and average about 47% during our sample period. This evidence is inconsistent with a passive investment strategy whereby foreigners allocate their funds to local stocks in the same proportion as that dictated by popular indices for the Taiwan market.

Panel B presents the descriptive statistics for our sample firms' characteristics. All the firm characteristic variables and the characteristics used to construct the variables used in the paper are listed here. Return volatility is the standard deviation of daily returns. For all other financial variables, we take the average of the annual data for each firm and then average them across all firms.

An issue related to firm ownership is the degree of ownership concentration. In markets with poor shareholder protection, firms are often controlled by a few large shareholders who are too powerful for other shareholders to monitor. Dahlquist, Pinkowitz, Stulz, and Williamson (2003) (DPSW) find that ownership concentration is related to the home bias. They show that the fraction of shares that can be traded freely helps to explain the extent of the home bias. In our analysis, we include a proxy for ownership concentration, inside ownership, which we measure as the fraction of shares owned by corporate insiders, defined as officers and members of the board of directors. This measure represents ownership by controlling shareholders and we also refer to it as firm management. Panel B shows that inside ownership in our sample averages 26.53% with a median of 24.84%. By way of comparison, DPSW report that for the few firms for which Worldscope has closely held share data, Taiwan's ratio of world float portfolio to world market portfolio was 99.29% in 1997.

Panel C provides the correlation matrix of all the variables used in our analyses. In general, they are consistent with the results reported below. For example, the positive correlations between foreign ownership and the measures of firm size (capitalization, total assets, total sales) hint at foreign investors' preference for large firms. Likewise, the positive correlation between foreign ownership and export ratio suggests foreign investors' preference for export-oriented firms. Additionally, the high correlations between Tobin's Q and both foreign ownership and return on assets, respectively, anticipate our subsequent finding that foreign ownership is associated with superior firm performance.

Our analysis using foreign equity ownership data is based on five portfolios that are sorted by foreign ownership percentage, with P1 being the highest foreign ownership portfolio. Panel D presents the descriptive statistics of the firm characteristics for these five portfolios. They show that foreign institutions prefer large, export-oriented firms. These results are similar to those found by KS for Japan. Panel D also shows that foreign ownership firms have higher accounting returns on assets and firm valuations as measured by Tobin's Q. Finally, Panel D

confirms that foreigner investment is important in Taiwan, occurring in over 70% of market capitalization in P1 and P2.

Panel E presents percentage foreign ownership summary statistics for the five foreign ownership portfolios over the eight-year period from 1994 to 2001. Whereas the foreign institutional ownership appears to be low in the previous panels, Panel E shows an increase over time. P1 has the largest increase. This trend suggests that tests of the foreign ownership hypotheses may be more apparent in recent years, during which time there has been greater foreign ownership. However, our analyses use the entire sample period.

4.   Foreign Ownership Valuation Effects

We begin with a description of the underlying empirical asset pricing model used in our analyses in Section 4.1. Section 4.2 investigates the foreign ownership effect. Sections 4.3, 4.4, and 4.5 test to determine whether the foreign ownership effect is an export firm effect, a size effect, or a transparency effect, respectively. Section 4.6 provides a discussion of the valuation results.

4.1   Construction of the Four-Factor Model

This section describes the construction of the asset pricing model used in our analyses. We adopt the Fama-French (1993, 1996) three-factor model, and we complement their three factors with a momentum factor. Evidence supporting the relevance of a momentum factor is provided by Jegadeesh and Titman (1993) and Carhart (1997). Only firms with ordinary common stocks that have been listed for at least two years on the Taiwan Stock Exchange (TSE) or the Taiwan OTC market are included in our portfolios. This excludes Taiwan Depositary Receipts, Convertible Bonds, units of beneficial interest, and newly listed securities.

The first factor is the excess market portfolio return, RMRF, which is computed as the monthly return on a value-weighted portfolio of all TSE and OTC stocks, minus the one-month time deposit rate offered by the Bank of Taiwan.[27] To obtain the size factor SMB and value factor HML, portfolios are formed on the basis of size and book-to-market. All TSE stocks are ranked by size as of the end of June of each year t from 1993 to 2001. Size, or market equity

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[27] Because there is not an actively traded T-bond market in Taiwan, we use the one-month time deposit rate offered by the Bank of Taiwan as a proxy for the risk-free rate.

(ME), is calculated as share price multiplied by shares outstanding. The stocks are divided into two groups, small (S) and big (B), using the TSE median size to divide the observations. Book-to-market equity (BE/ME) is book common equity (BE) for the fiscal year ending in calendar year t-1, divided by market equity (ME) at the end of December of year t-1. BE is the book value of stockholder's equity, plus balance-sheet deferred taxes and investment tax credit, minus the book value of preferred stock. The fiscal year ends in December for most Taiwanese firms. The groups are formed by categorizing each of the two size-ranked groups (S and L) into three book-to-market-ranked groups: the bottom 30% (L for low); middle 40% (M for medium); and top 30% (H for high). This gives us a total of six size/book-to-market portfolios: S/L; S/M; S/H; B/L; B/M; and B/H. Finally, monthly value-weighted returns on the six portfolios are calculated from the beginning of July of year t to the end of June of year t+1, and the portfolios are reformed at the end of June of year t+1.

The size factor SMB and the value factor HML are computed for the six portfolios. The factor SMB is the difference between the simple average of monthly returns on the three small-stock portfolios and on the matching big-stock portfolios: S/L - B/L; S/M - B/M; and S/H - B/H. The factor HML is the difference between the simple average of monthly returns on the two high BE/ME portfolios (S/H and B/H) and on the matching low BE/ME portfolios (S/L and B/L): S/H - S/L and B/H - B/L.

The fourth factor is the momentum factor, PR1YR. It is the difference between the equal-weighted average of firms with the highest 30% 11-month returns, lagged one month, minus the equally weighted average of firms with the lowest 30% 11-month returns, lagged one month. The portfolios include all TSE and OTC stocks and are reformed monthly.

In addition to the Taiwan version of the Fama-French three-factor model, we experimented with the global and the U.S. three-factor versions. However, the global and U.S. versions produced very poor fits and were discarded in favor of the Taiwan version. The poor results for the global version may reflect the lack of global market integration that is responsible for the home bias in the first place. Finally, although we present the results for a four-factor model, similar results are obtained using the Fama-French three-factor model.[28]

4.2   Foreign Ownership Effect

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[28] The three-factor results are available upon request.

Table 2 presents the market impact results of foreign institutional ownership. The sample includes all 468 firms for which we have complete data. The five portfolios used in the table are based on the foreign ownership ranking, with P1 having the highest foreign ownership percentage. Panel A provides some statistics for the full sample. Panel B presents the monthly estimation results for equal- and value-weighted portfolios. It also reports the results of going long P1 and short P5 (P1–P5).

For both equal- and value-weighted portfolios, the high foreign ownership portfolio outperforms the low foreign ownership portfolio. Equal- and value-weighted portfolios formed by going long P1 and short P5 (P1–P5) earn significant positive alphas. The magnitudes of the alphas are huge. For example, the value-weighted P1–P5 portfolio has a monthly alpha of 175 basis points! The signs and magnitudes of the alphas generally decrease monotonically from high-to-low ownership portfolios. In short, Table 2 shows a striking foreign ownership effect.

Unavoidably, the observed foreign ownership effect is conditional on an assumed asset pricing model. Hence, an alternative interpretation of the evidence is that a conventional asset pricing model is inadequate in accounting for the systematic component of Taiwan stocks. In particular, the evidence calls for an additional risk factor, which is related to foreign ownership. This foreign ownership factor, for example, may capture risks such as those associated with foreign exchange rates. Nonetheless, irrespective of the interpretation, the evidence shows that foreign ownership level has important pricing effects.

4.3   Is the Foreign Ownership Effect an Export Firm Effect?

In this section, we explore whether the foreign ownership effect is merely an export firm effect. It is not an export firm effect if the market rewards non-export-oriented firms with high foreign ownership levels. Kang and Stulz (1997) (KS) find that foreign ownership in Japan is concentrated in large export-oriented firms. They attribute this behavior to foreigners' attempt to mitigate their disadvantage of knowledge of local firms. This may be because it is more cost efficient for foreigners to track firms that have global operations. They may have easier access to information about the local firms' customers, suppliers, and competitors. They may even have expertise or access to information in foreign markets that are unavailable to local investors.

We first examine whether selective foreign investment behavior first observed by KS holds for Taiwan. In Table 3, we sort stocks into three portfolios based on their export-to-sales

ratios: high exports (ratios > 40%); low exports (1% < ratios < 40%); and zero exports (primarily financial firms). Each export portfolio is then sorted into three ownership portfolios based on the foreign ownership at the end of the previous quarter in the nine export-ownership portfolios.

Panel A of Table 3 presents the number of firms, the foreign ownership percentages, and the export ratios of the nine portfolios. There are more than twice as many firms in high export portfolios than zero export portfolios and three times as many firms in low export portfolios than in the zero export categories. More interestingly, as shown by KS for Japan, foreign ownership is concentrated in export-oriented firms. Also consistent with KS, foreign ownership is not concentrated exclusively in export-oriented firms. Controlling for export level does not control the dispersion in ownership percentage and export ratio across foreign ownership categories. The last column reports significant differences between high and low foreign ownership categories. Similarly, controlling for foreign ownership level does not control the dispersion in ownership percentage and export ratio across export categories. The high minus low export differences are all statistically significant. In short, the panel shows that foreign ownership is not synonymous with export ratios.

Next, we examine foreign ownership and export firm effects jointly. Panel B presents the monthly Jensen alphas for both equal- and value- weighted versions of the nine export-ownership portfolios. The last rows of the equal- and value-weighted portfolio alphas show the differences between high and low export portfolios, holding foreign ownership constant. High export firms significantly outperform low and zero export firms in both equal- and value-weighted portfolios. This is especially apparent for high and low foreign ownership groups—and less so for the medium group. The results suggest that even after controlling for foreign ownership, high export firms experience higher alphas than low or zero export firms.

The last column shows the differences between high and low foreign ownership portfolios, holding export ratio constant. For the high and low export firms, the high foreign ownership portfolios perform significantly better than the low foreign ownership firms, and the differences are highly economically significant. For the zero export firms, the differences are positive but insignificant. These results show that the foreign ownership effect is still present even after accounting for firm export ratios. Therefore, foreign ownership effect is not an export firm effect. Apparently, investors acknowledge foreign ownership even in non-export-oriented Taiwan firms. These are firms that are least likely to reflect any exchange rate effects.

4.4 Is the Foreign Ownership Effect a Size Effect?

This section investigates whether the foreign ownership effect is a size effect. As in the case of export-oriented firms, foreign owners may minimize their information disadvantage by investing in large firms. To investigate the size effect, we sort stocks into three size portfolios and then further sort each size portfolio into three ownership percentage portfolios, for a total of nine portfolios. The test results for these portfolios are reported in Table 4.

Panel A presents the foreign ownership percentage and the market capitalization of the nine portfolios. The statistics in the nine cells confirm that foreigner investment is concentrated in large stocks. Looking at the ownership statistics, the *t*-statistics for the high minus low foreign ownership tests show that each size category includes firms that have significantly different levels of foreign ownership. This shows that controlling for size does not control for foreign ownership. The significant *t*-statistics for the large minus small firms for each foreign ownership category show that the reverse is the case as well: controlling for foreign ownership does not control for foreign ownership across firm size.

Looking at the capitalization statistics, the *t*-statistics for high minus low foreign ownership portfolios show that among large firms, the firms in high foreign ownership portfolios are significantly larger than those in low foreign ownership portfolios. The significance of the difference in firm size between high and low foreign ownership firms declines as we move to medium and small firms, where it is insignificant. The insignificant statistics show that size is controlled for in our foreign ownership portfolios. The significant *t*-statistics for the large minus small firms for each foreign ownership category in the last row show that controlling for foreign ownership does not control for firm size.

Panel B presents the Jensen alphas for both equal- and value-weighted versions of the nine size-ownership portfolios. The last rows of the equal- and value-weighted portfolio alphas show the differences between large- and small-sized portfolios, holding foreign ownership constant. They are all insignificantly different from zero. The results suggest that after controlling for foreign ownership, small firms' alphas are insignificantly different from their large firms' counterparts.

The last column in Panel B shows the differences between high and low foreign ownership portfolios, holding size constant. For the large- and medium-sized firms, the high

foreign ownership portfolios perform significantly better than the low foreign ownership firms, and the differences are highly economically significant. For the small firms, the differences are positive but insignificant. Overall, these results show that the foreign ownership effect is not a size effect. Additionally, the test results can be interpreted as providing evidence on passive foreign institutional investments. A passive investment strategy for foreigners is to hold stocks in their Taiwan portfolio in the same proportion as that in an index.[29] The popular Taiwan indices are value-weighted and are dominated by large firms. As such, our results may be viewed as being incompatible with a passive index fund strategy.

4.5   Is the Foreign Ownership Effect a Transparency Effect?

In addition to export-oriented or big local firms, foreign institutions may minimize their information disadvantage by focusing their investments in transparent firms. Transparent firms release prompt and accurate disclosures and thereby reduce information asymmetry in the market. Since information is readily available about transparent firms, such firms should be attractive to investors who want to minimize their information asymmetry. Therefore, we ask whether the foreign ownership effect is a transparent firm effect.

We measure firm transparency by using the information transparency and disclosure ranking compiled by the Taiwan Securities and Futures Institute (2003). Companies are ranked on five criteria: compliance with mandatory disclosures, timeliness of reporting, disclosure of the annual report, disclosure of a financial forecast, and corporate website disclosure. Their 2003 ranking identifies firms that are considered to be "More Transparent" companies. Again, we do a double sort with this data. We first sort stocks into five foreign ownership portfolios as in our analysis of the foreign ownership effect (Table 2). We then classify each foreign ownership portfolio into a firm that is either "More Transparent" or "Less Transparent." This process of classification produces a total of ten portfolios.

The empirical results are presented in Table 5. Panel A presents the number of firms, the foreign ownership percentages, and the export ratios of the ten portfolios. The number of "Less Transparent" firms is greater than that of "More Transparent" firms. The number of "More Transparent" firms increases with higher foreign ownership level. The number of "Less Transparent" firms decreases with higher foreign ownership level. Perhaps, more interestingly,

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[29] Such a passive strategy is also incompatible with the presence of a home bias as noted earlier.

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foreigners own a greater amount of "Less Transparent" firms than "More Transparent" firms even in portfolios with the most foreign ownership percentage. The foreign ownership percentages are most interesting. The percentages are insignificantly different between more and less transparent categories holding foreign ownership constant. This is observed for all five foreign ownership portfolios. Additionally, even after controlling for transparency level, ownership percentage declines monotonically P1 to P5, and the difference between P1 and P5 is highly economically and statistically significant. Foreign institutions do not appear to distinguish between "More Transparent" and "Less Transparent" firms in determining the percentage of ownership. The last set of statistics in Panel A presents the market capitalization for the ten portfolios. They show that high foreign ownership portfolios own significantly larger "More Transparent" firms than "Low Transparent" firms. Firm size also decreases monotonically with decreasing foreign ownership level. These statistics are consistent with foreigners' tendency to own larger firms that also happen to be more transparent.

Panel B presents the monthly Jensen alphas for both equal- and value-weighted versions of the ten transparency ownership portfolios. The last rows of the equal- and value-weighted portfolio alphas show the differences between "More Transparent" and "Less Transparent" portfolios, holding foreign ownership constant. In general, there appears to be a premium attached to "More Transparent" firms.

The last column shows the differences between high and low foreign ownership portfolios, holding firm transparency constant. In all cases, P1 performs significantly better than P2. These results show that the foreign ownership effect is still present even after controlling for firm transparency level. Foreign ownership effect is not equivalent to a transparency effect. The results indicate that foreign institutions do not minimize their information disadvantage by exclusively investing in transparent firms.

4.6. Discussion

Our results show that foreign ownership levels are associated with pronounced local valuation effects. Stocks with high foreign ownership outperform stocks with low foreign ownership. The market rewards stocks that foreigners choose to own. Moreover, this reward is not simply because it is an export-oriented firm, a big firm, or a transparent firm.

The results provide evidence on the importance of foreign ownership in Taiwan and are compatible with casual empiricism. Individual investors in Taiwan are at a huge information disadvantage relative to firm management in an environment with extreme agency problems. Individual investors also do not have the resources to engage in stock research. Given a dearth of alternative mechanisms available for minimizing their information disadvantage, these investors have focused on foreign ownership data. In response the enthusiasm for foreign ownership, local firms have encouraged increased foreign ownership of their firms. The media has even reported fake foreigner investments.

We also observe similar foreign investor preferences first reported by KS for developed markets. Foreign investors may attempt to mitigate their information disadvantage by selecting firms that are export-oriented, big, or transparent. However, our results are for an emerging financial market. More importantly, our results show that the foreign ownership effect extends to non-export-oriented, small, or non-transparent firms that are chosen by foreigners. This suggests that foreign ownership goes beyond export-oriented, big, or transparent firms.

A natural follow-up question is the reasons why the local market rewards foreign ownership of Taiwan stocks? What is the basis for investors' focus on foreign ownership of local stocks? In the following section, we pursue a performance-based explanation.

5.   Foreign Ownership and Firm Performance

Firm management has information advantage over both foreign investors and local individual investors who are not insiders. Therefore, if investors reward stocks that foreigners choose to own, foreigners must have a comparative advantage that cannot be easily replicated in the local environment. Unlike local individual investors, foreign institutions have the resources to conduct firm research, to invest for the long term, and have more credibility than local market participants. In this section, we examine a performance-based explanation of the foreign ownership effect. Specifically, we investigate whether the basis for investors' confidence in foreign ownership is rooted in what foreign owners can do for firm performance?

Our performance-based explanation is related to the literature on managerial ownership and firm performance. The existing literature is motivated by the moral hazard problem that arises between shareholders when their interests diverge, resulting in excessive management perquisites. Jensen and Meckling (1976) have proposed increasing managerial ownership to

harmonize managers' and owners' objectives. For example, agency problems between managers and shareholders are reduced by institutional monitoring (Hartzell and Starks (2003)) and by external monitoring of founding-family owners (Anderson and Reeb (2003)). We depart from this literature by focusing on the effect of foreign owners as opposed to domestic owners. In Taiwan, the principal-agent conflicts are potentially much more severe than those in developed markets, which observation makes it even more important to mitigate the disadvantages of being less informed than management.

Our choice of the performance-based explanation is also motivated by casual empiricism, which shows that foreign institutional owners have periodically provided guidance on firm business operations that may lead to better integration of local firms with the global market or to better adherence to best practices. The local media has attributed overseas monitoring as the reason for the market's focus and fascination with foreign institutional investments. A positive link between foreign ownership and firm performance may also explain why firms seek to expose themselves to the scrutiny of foreign owners. By pursuing foreign investors, local firms indicate that they welcome overseas advice and guidance in order to benefit from foreign ownership.

For our analysis, we follow the empirical research that examines the role of various owners in monitoring firms. Firm improvement is measured for both market-value performance and accounting performance. The former is proxied by Tobin's Q and the latter by two types of return on asset. Tobin's Q is the sum of market value of equity, market value of preferred stock, and book value of liabilities, which sum is scaled by book value of total assets. We also use book value of preferred stock in estimating Tobin's Q, which yields the same results. The accounting returns are net income and earnings before interest, taxes, and depreciation.

We also needed to control for other effects that may impact the ownership-performance relation. We control for these effects by incorporating variables recommended in the literature: standard deviation of returns; debt ratio; R&D expenses; and sales.[30] These firm characteristics are chosen to control for firm risk, including moral hazard risk.

It is important to account for concentration of ownership in our analysis as shown by Dahlquist, Pinkowitz, Stulz, and Williamson (2003). Accordingly, we include in our control variables a proxy for ownership concentration as measured by the percentage of shares held by

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[30] See, for example, Anderson and Reeb (2003) and Smith and Watts (1992).

insiders. We define insiders as officers of the firm and members of the board of directors. Following the earlier literature, we present results that include the inside ownership proxy for the Tobin's Q regressions but not for the accounting performance measures.[31] Also following the earlier literature, for the Tobin's Q regressions, we permit a nonlinear impact of controlling shareholders by including both the proxy and its squared value.[32]

To estimate the ownership-performance relation, we regress firm performance on foreign ownership and firm characteristics. Himmelberg, Hubbard, and Palia (1999) (HHP) observe that this approach may result in biased estimates and spurious relations if the ownership variable is endogenous. Endogeneity arises when both ownership and performance are determined by common omitted variables, which may be unmeasurable. HHP recommend correcting for this problem with longitudinal data by using a fixed-effects estimator under the assumption that omitted variables are fairly time invariant. Foreign ownership may also be endogenous when performance affects ownership. In such situations, an instrumental variable can be used to estimate the relation. We use both the fixed effects and the instrumental variable estimators.

Table 6 presents the fixed-effect results using annual panel data that take into account both heterogeneity across firms (as represented by industry indicator variables) and variation over time (as represented by year dummy variables).[33] The Tobin's Q results are shown in Panel A and the accounting results are shown in Panel B. The regressions are conducted separately for contemporaneous and one-period lagged explanatory variables. We further examine each case both with and without the domestic institutional ownership variable. In all cases, foreign ownership variables are highly significantly associated with firm performance. In the Tobin's Q regressions, the debt ratio coefficients are significantly negative and R&D coefficients are significantly positive. Debt appears to be penalized but R&D valued by the market. The controlling ownership variable is positively and significantly related to foreign institutional ownership. Its association is also nonlinear in that its squared variable is negatively and significantly related to foreign ownership. In the accounting performance regressions, the debt

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[31] Although unreported, we did estimate with the inside ownership variable included for the accounting performance regressions. Our inferences are unaffected.

[32] See, for example, Himmelberg, Hubbard, and Palia (1999), McConnell and Servaes (1990), and Morck, Shleifer and Vishny (1988).

[33] We classify firms into 12 industries: cement (two-digit TSE codes 11, 18); food (12); chemicals (13, 17, 21); textiles (14); electric machinery (15, 16); paper pulp (19); steel, iron, and automobiles (20, 22); construction (25); electronics (23, 24, 30); department stores (29, 98); tourism and transportation (26, 27); and other (99). We also include year dummies in all regressions.

ratio coefficients remain significantly negative, but contemporaneous R&D coefficients lose their significance. In addition, return standard deviation and sales coefficients are significantly negative and positive, respectively.

Table 7 presents the instrumental variable results. In the first-stage regression, foreign ownership is regressed on market capitalization, the export ratio, and the one-period lagged firm performance measure. Size and export ratio are suggested by our earlier analyses that show foreign investors' preference for large export-oriented firms. The last instrument exploits the autocorrelation in performance measures. In both the Tobin's Q and the accounting regressions, the coefficients on all three instruments are highly significantly positive. In the second-stage regressions, firm performance is regressed on the foreign ownership level predicted by the first-stage regression coefficients and other contemporaneous firm characteristics. The second-stage regressions are also run both with and without the domestic institutional ownership variable. Again, all foreign ownership variables are highly significant in association with firm performance. The domestic institutional coefficients are insignificant. There are differences between the coefficients on the firm characteristic variables in Table 6 and Table 7. In Table 7, these coefficients are generally significant except for R&D, and the sales estimates differ in the market and accounting performance regressions. However, the inside ownership coefficients maintain their significance and sign in both tables.

We checked the robustness of our results by investigating many additional specifications. For example, we repeated the tests with firm fixed effects and alternative instruments. The additional analyses also strongly support the positive foreign ownership-performance relation. The evidence suggests the presence of foreign owners who are able to influence management to make value-enhancing decisions.

5.1. Discussion

The results of this section show that foreign ownership is associated with improvement in firm performance. These results further document the local effects of foreign ownership in Taiwan. The positive association between foreign ownership and firm performance may be due to foreign institutions' stock screening ability or its ability to influence management. The former may arise from their ability to choose stocks that better diversify their global portfolios. For example, they may select local firms that are more likely to benefit from risk sharing between

foreign and domestic investors. The ability of foreign institutions to influence local firms may simply reflect an attempt to own stocks that they can influence to mitigate their information disadvantage. Local investors may view foreign ownership levels as a proxy for the extent to which foreign institutions are committed to influencing firm management. Local investors may do so because QFIIs have the knowledge and capability to help firm management.

Ownership of local firms by QFIIs may provide an alternative governance mechanism that could well be effective and important in emerging markets. Foreign institutional investors may promote international standards of accountability and expertise to reduce firm cost of capital or increase stock price. In the process, they may better integrate local firms with the global market through better adherence to best practices.

5.2   Fake Foreign Ownership and Firm Performance

A characteristic of the Taiwan financial market is the presence of local firms who make a substantial effort to court foreign portfolio investors in various ways, including road shows outside Taiwan. They may do so for several reasons. Foreign institutional owners tend to have longer investment horizons than Taiwan individual investors, which decreases stock turnover. Foreign investors may engage in information acquisition or provide guidance. The presence of foreign owners in the firm is highly valued by the market.

The positive association between stock price and foreign ownership also raises the possibility of a disturbing outcome. Some local firms have been alleged to generate their own pseudo foreigner investments.[34] The domestic press contains numerous accounts of just such bogus foreigner investments aimed at misleading individual investors. There are claims that local investors have established overseas companies, registered them with the Taiwan Securities and Futures Commission as foreign investment companies, and then used them to invest in the Taiwan stock market.

This section provides some evidence on whether our results are biased by the presence of bogus foreigner investments. We hypothesize that this problem is more severe for small firms than for big firms, since small firms are more illiquid and attract reduced public scrutiny. These characteristics make it easier for bogus foreign investors to manipulate the stock price of small firms. If the small firms are affected by false foreigner investment, they will not show a positive

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[34] See, for example, the monthly Wealth Magazine (July 2004).

association between foreign ownership and firm performance, since the locals lack the foreigners' know-how and resources.

To examine whether the foreign ownership-performance relation is weaker in small firms, we divide our sample into big and small firms. Big firms are those with market equity bigger than the median sized. Small firms are those with market equity smaller than the median sized. Table 8 reports the estimation results for both the market (Panel A) and accounting performance (Panel B) measures. We also control for the endogeneity between performance and foreign ownership by using a two-stage least squares estimation.

The first-stage estimation results are used to obtain the predicted foreign ownership variable included in the second-stage. In the second stage, we regress the performance measures on the predicted foreign ownership—the predicted foreign ownership multiplied by an indicator variable that is one for big firms and zero otherwise—and the control variables used earlier. The results for Tobin's Q show that foreign ownership effects are significantly positive for both big and small firms. Additionally, the effects are stronger for bigger firms. The net income results for ROA and EBITD also show significant positive associations between foreign ownership and firm performance. For the accounting results, the outcomes for small and big firms are insignificantly different from one another. In short, the evidence supports a positive foreign ownership-performance relation for both small and big firms.

6.　　　Conclusion

We have analyzed the local effects of equity ownership by Qualified Foreign Institutional Investors (QFIIs) in an emerging financial market, Taiwan. The analyses yield two major results. First, foreign institutional ownership of Taiwan stocks has huge local stock market effects. We discover a dramatic foreign ownership effect whereby stocks with high foreign ownership outperform stocks with low foreign ownership. As in Kang and Stulz (1997) study for a developed market, we also find that foreign institutional owners in Taiwan also prefer well-known firms. However, their preferences are not exclusively in these firms; foreign ownership effect is present even after controlling for firm exports, size, or transparency levels. Second, foreign institutional ownership is associated with improved firm performance. This result holds for firm performance as measured by Tobin's Q as well as accounting measures. The analyses control for firm characteristics, including differences in risk and firm insiders.

Our evidence documents the profound effects of foreign ownership on local stocks in an emerging financial market. It is consistent with the local attitude towards foreign institutional investors that may have been fostered by the prevailing market environment. As is typical of emerging financial markets, there are frequent accounts of excessive managerial perquisites, abuses of shareholder rights, and market manipulations in Taiwan. The standard corporate governance mechanisms are undeveloped or ineffective. The stock market is highly volatile and is dominated by individual investors who are uninformed and trade frequently. In such a setting, local individual investors may have turned to information about foreign ownership of Taiwan stocks. The QFII data are closely and widely scrutinized by the media, regulators, market participants, and the general public. Foreign investors are actively courted by local firms. There are even allegations of fake foreigner investments.

Our analyses also provide a performance-based explanation for the importance of foreign ownership. The results show that foreign ownership is associated with improved contemporaneous and subsequent firm performance. This may come about because of foreign institutions' ability to select superior investments or in their ability to influence firm management. Both foreign institutional investors and local individual investors are at an information disadvantage to firm management. However, unlike the local individual investors, foreign institutional investors have the resources to conduct fundamental research, can invest for the long term, and are more credible, advantages that foreign owners can parlay into positively affecting firm performance.

Our evidence has implications for emerging capital markets that are transitioning to more open, transparent, and efficient markets. We provide evidence of the case where foreign institutional ownership is highly valued by local individual investors and where foreign institutional ownership is associated with improved firm performance. By providing valuable information and expertise that are unavailable to local individual investors, they may contribute to the economic growth of the domestic economy.

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Figure 1

Inequality Measure for Foreign Ownership-1995
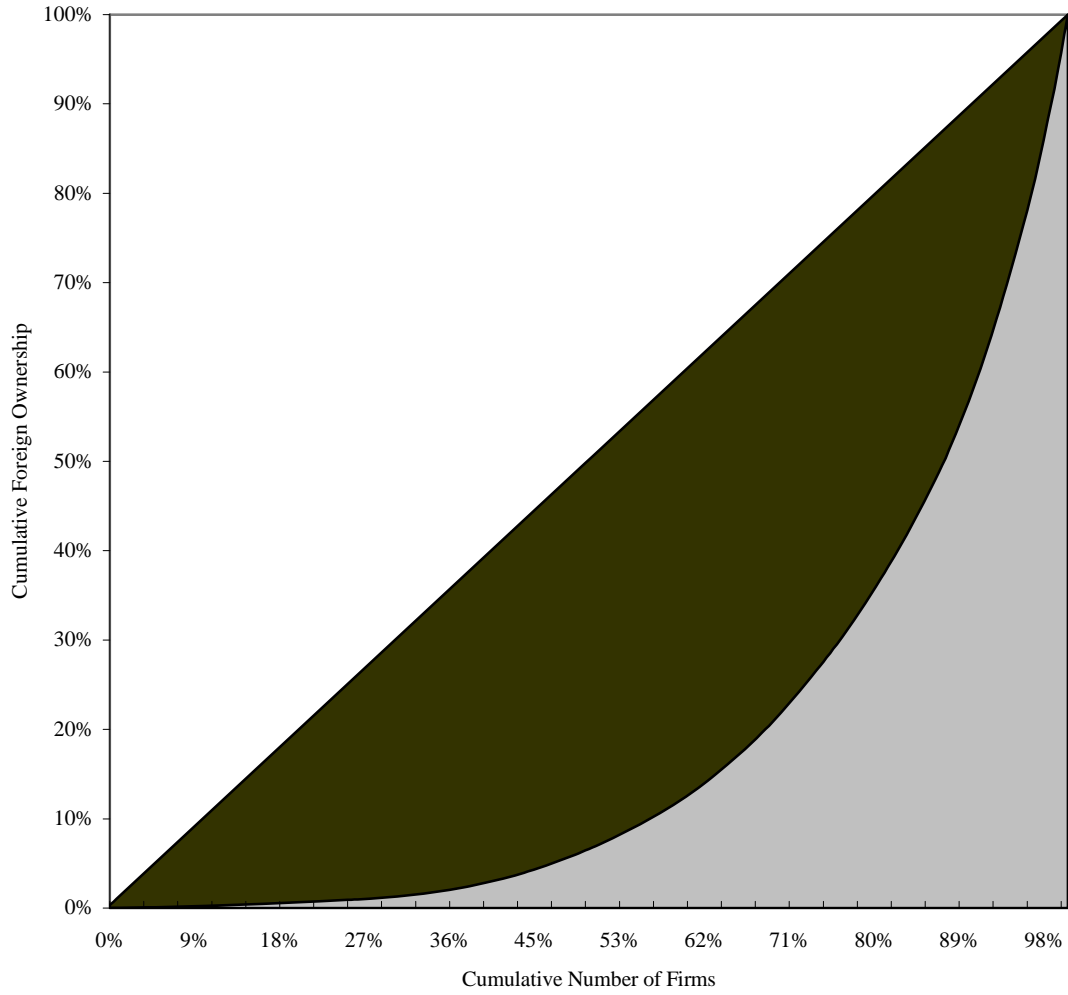
Table 1
Descriptive Statistics

Taiwan currency is denoted as NT$ for New Taiwan dollar. The average exchange rate during the sample period from Q3, 1994 to Q4, 2001 is 30 NT$ for 1 US$. Foreign Investors are qualified foreign institutional investors (QFIIs), which include foreign banks, insurance companies, security firms, mutual funds, government funds, pension funds, trust funds, academic units, non-profit organizations, and other professional investment institutions. Other Foreigners refers to foreign individual investors, overseas Chinese, non-QFII institutions, and foreign founding members. Capitalization is market value of equity. Tobin's Q is market value of equity and preferred stocks plus book value of liabilities, divided by book value of total assets. LT debt is long-term debt. Return volatility is standard deviation of daily return. Return on assets is calculated as net income divided by total assets and EBITD divided by total assets. Ln(Sales) is logarithm of net sales. Inside ownership is the fraction of shares owned by corporate insiders, who are officers and members of the board of directors. Ownership data and firm characteristics are annual data. In Panels B, C, and D, the sample includes only 468 non-financial firms because the financial ratios are quite different for financials. Panel E presents the statistics for foreign ownership for the total sample of 523 firms. The statistics are quantitatively similar for the sample of 468 non-financial firms.

Panel A: Ownership Percentage

Investor Type	Mean	Std. Dev.	Max.	Q3	Median	Q1	Min.
			All Firms (N= 523)				
Foreign Investors	2.20	3.58	27.22	2.60	0.96	0.09	0.00
Other Foreigners	2.96	6.54	54.11	2.26	0.46	0.01	0.00
State-Owned	2.11	9.17	97.13	0.43	0.00	0.00	0.00
Domestic Institutions	27.25	18.02	89.40	38.80	22.05	12.93	0.79
Individual investors	63.96	20.29	99.14	80.83	66.03	50.17	1.61
			Non-Financials (N=468)				
Foreign Investors	2.31	3.65	27.22	2.77	1.04	0.13	0.00
Other Foreigners	3.27	6.82	54.11	2.51	0.60	0.06	0.00
State-Owned	1.28	6.84	97.13	0.31	0.00	0.00	0.00
Domestic Institutions	26.52	17.50	89.40	38.10	21.90	12.78	0.79
Individual investors	65.66	19.63	99.14	81.84	67.75	52.66	1.61

Panel B: Firm Characteristics

	Mean	Median	Std. Dev.	Max.	Min.
Foreign Ownership (%)	2.31	1.04	3.65	27.22	0.00
Capitalization (NT$ millions)	16301	5213	49040	690033	288
Total Assets (NT$ millions)	13224	5439	29439	455746	672
Net sales (NT$ millions)	7737	3286	14507	182155	191
LT debt/total assets (%)	8.22	6.60	7.67	40.19	0.00
Exports/sales (%)	34.92	26.87	32.99	99.85	0.00
R&D/sales (%)	1.51	0.51	2.45	19.43	0.00
Return volatility (%)	2.89	2.84	0.65	5.30	0.42
Return on assets (net income) (%)	2.91	2.76	6.27	27.52	-22.53
Return on assets (EBITD) (%)	7.75	7.81	6.71	35.16	-19.46
Inside Ownership (%)	26.53	24.84	13.55	95.33	4.00
Tobin's Q	1.55	1.34	0.74	6.06	0.50

Panel C: Correlation Matrix

	Foreign Owner-ship	Capitali-zation	Total Assets	Net sales	LT debt/total assets	Exports/ sales	R&D/ sales	Return volatility	Return on assets (net income)	Return on assets (EBITD)	Inside Owner-ship
Foreign Ownership (%)	1.000										
Capitalization (NT$ millions)	0.350	1.000									
Total Assets (NT$ millions)	0.205	0.812	1.000								
Net sales (NT$ millions)	0.304	0.770	0.860	1.000							
LT debt/total assets (%)	0.125	0.134	0.264	0.161	1.000						
Exports/sales (%)	0.167	0.092	-0.034	0.072	-0.024	1.000					
R&D/sales (%)	0.158	0.180	0.091	0.046	0.076	0.320	1.000				
Return volatility (%)	-0.031	-0.049	-0.099	-0.095	0.020	0.322	0.360	1.000			
Return on assets (net income) (%)	0.373	0.276	0.110	0.246	-0.170	0.242	0.217	-0.118	1.000		
Return on assets (EBITD) (%)	0.341	0.308	0.158	0.274	-0.043	0.255	0.223	-0.127	0.937	1.000	
Inside ownership (%)	0.008	0.150	0.194	0.219	-0.046	-0.007	-0.004	-0.069	0.197	0.234	1.000
Tobin's Q	0.528	0.375	0.102	0.260	-0.139	0.310	0.357	0.120	0.628	0.598	0.092

Panel D: Firm Characteristics of Portfolios Ranked by Percentage Foreign Ownership

	Portfolio					Test of all equal mean
	P1	P2	P3	P4	P5	χ^2 (p-value)
Foreign Ownership (%)	8.69	2.36	0.75	0.15	0.03	199.18 (<0.001)
Capitalization (NT$ millions)	46321	12032	9569	11119	2594	12.57 (<0.001)
Capitalization (%)	56.74%	14.74%	11.72%	13.62%	3.18%	
Total Assets (NT$ millions)	26694	12392	11703	11852	3519	7.98 (<0.001)
Total Assets (%)	40.35%	18.73%	17.69%	17.91%	5.32%	
Net sales (NT$ millions)	15998	7310	6721	6150	2540	11.97 (<0.001)
Net sales (%)	41.32%	18.88%	17.36%	15.88%	6.56%	
LT debt/total assets (%)	10.92	9.28	7.89	6.14	6.88	6.06 (<0.001)
Exports/sales (%)	42.14	40.42	31.05	27.24	33.84	3.46 (0.008)
R&D/sales (%)	2.24	1.88	1.22	0.83	1.39	4.94 (<0.001)
Return volatility (%)	2.78	2.89	2.88	2.78	3.12	4.32 (0.002)
Return on assets (net income) (%)	6.61	3.49	2.04	0.84	1.61	13.63 (<0.001)
Return on assets (EBITD) (%)	11.43	8.17	6.60	5.70	6.90	11.21 (<0.001)
Inside ownership (%)	27.51	23.71	26.64	25.04	29.74	2.67 (0.032)
Tobin's Q	2.11	1.62	1.50	1.31	1.22	25.32 (<0.001)

Panel E: Summary Statistics of Portfolios Ranked by Percentage Foreign Ownership

		Portfolio				
		P1	P2	P3	P4	P5
1994	Mean	4.245	1.006	0.224	0.080	0.048
	Median	3.688	0.990	0.194	0.079	0.058
	Max	9.155	1.831	0.484	0.093	0.071
	Min	1.876	0.488	0.093	0.072	0.000
1995	Mean	7.853	2.881	1.133	0.283	0.080
	Median	7.032	2.892	1.125	0.211	0.085
	Max	14.913	4.145	1.702	0.598	0.117
	Min	4.246	1.708	0.638	0.118	0.000
1996	Mean	8.793	3.896	1.662	0.414	0.085
	Median	7.599	3.776	1.572	0.325	0.104
	Max	20.805	5.422	2.626	0.912	0.142
	Min	5.502	2.680	0.924	0.144	0.000
1997	Mean	8.331	2.944	0.970	0.241	0.033
	Median	6.957	2.788	0.927	0.196	0.039
	Max	18.583	4.608	1.508	0.567	0.059
	Min	4.608	1.526	0.568	0.059	0.000
1998	Mean	7.472	1.918	0.559	0.086	0.017
	Median	5.361	1.841	0.554	0.057	0.017
	Max	26.926	3.112	0.982	0.217	0.040
	Min	3.120	1.017	0.218	0.040	0.000
1999	Mean	9.554	2.174	0.651	0.083	0.011
	Median	6.921	1.982	0.607	0.042	0.010
	Max	29.802	4.000	1.133	0.234	0.025
	Min	4.052	1.178	0.235	0.025	0.000
2000	Mean	11.129	1.940	0.422	0.011	0.000
	Median	8.118	1.823	0.343	0.004	0.000
	Max	38.120	3.727	0.963	0.062	0.001
	Min	3.799	0.971	0.062	0.001	0.000
2001	Mean	12.147	2.108	0.366	0.016	0.000
	Median	8.386	1.991	0.295	0.010	0.000
	Max	40.686	3.876	0.999	0.057	0.001
	Min	3.959	1.015	0.059	0.001	0.000

Table 2

Foreign Ownership Performance

For each quarter, from Q3 1994 to Q4 2001 (30 quarters), stocks are sorted into five portfolios based on their foreign ownership at the end of the previous quarter. Foreign ownership is the percentage equity ownership of foreign investors. Portfolio P1 consists of stocks with the highest foreign ownership and portfolio p5 consists of those with the lowest.

Panel A: Quarterly Statistics

Portfolio	1	2	3	4	5
Foreign Ownership (%)					
Mean	8.123	2.319	0.775	0.165	0.035
Median	8.466	2.139	0.647	0.100	0.030
H_0: $P_1=P_5$	t-statistic = 21.06 (p<0.001)				
H_0: $P_1=P_2=\ldots=P_5$	F = 319.21 (p<0.001)				
Capitalization (NT$ millions)					
Mean	46,792	28,356	22,205	9,501	5,177
Median	37,512	27,191	21,556	7,686	5,460
H_0: $P_1=P_5$	t-statistic = 10.24 (p<0.001)				
H_0: $P_1=P_2=\ldots=P_5$	F= 57.96 (p<0.001)				

Panel B: Monthly Estimation Results of Four-Factor Model

	Alpha	RMRF	SMB	HML	PR1YR	Adj. R-Sq
Equal-weighted						
Portfolio P1	0.919	0.949	0.153	0.104	0.395	0.913
	(3.02)	(30.37)	(5.46)	(2.93)	(3.71)	
P2	0.305	0.957	0.177	0.196	0.113	0.951
	(1.32)	(40.19)	(8.30)	(7.24)	(1.39)	
P3	-0.027	0.988	0.147	0.276	-0.066	0.965
	(-0.13)	(46.65)	(7.75)	(11.43)	(-0.90)	
P4	-0.364	0.963	0.207	0.237	-0.089	0.967
	(-1.83)	(47.23)	(11.34)	(10.21)	(-1.29)	
Portfolio P5	-0.301	0.891	0.231	0.280	-0.148	0.952
	(-1.29)	(37.32)	(10.81)	(10.31)	(-1.81)	
Portfolio 1– Portfolio 5	1.219	0.058	-0.079	-0.176	0.543	0.602
	(3.19)	(1.48)	(-2.24)	(-3.94)	(4.06)	
Value-weighted						
Portfolio P1	0.931	0.986	-0.011	-0.015	0.420	0.909
	(2.76)	(28.50)	(-0.34)	(-0.39)	(3.56)	
P2	0.055	0.972	-0.011	0.081	0.148	0.928
	(0.19)	(33.53)	(-0.44)	(2.45)	(1.50)	
P3	-0.588	0.921	-0.005	0.147	-0.109	0.875
	(-1.61)	(24.61)	(-0.14)	(3.45)	(-0.85)	
P4	-0.622	0.926	0.080	0.221	-0.026	0.930
	(-2.31)	(33.48)	(3.24)	(7.03)	(-0.28)	
Portfolio P5	-0.818	0.847	0.220	0.194	0.106	0.923
	(-3.06)	(30.86)	(8.96)	(6.19)	(1.13)	
Portfolio 1– Portfolio 5	1.749	0.139	-0.231	-0.209	0.315	0.649
	(3.84)	(2.97)	(-5.50)	(-3.92)	(1.97)	

Table 3
Foreign Ownership and Exports

Stocks are sorted into three portfolios based on their export ratios (exports/sales) in the previous year. Stocks with an export ratio greater than 40% are classified as "High Export"; those without exports are "Zero Export"; and those with an export ratio from 1% to 40% are "Low Export." For each export ratio portfolio, stocks are then sorted into three ownership portfolios based on their foreign ownership at the end of the previous quarter. The sample period is Q3 1994 to Q4 2001.

Panel A: Quarterly Statistics			
	High Foreign Ownership	Medium Foreign Ownership	Low Foreign Ownership	Diff: High-Low (t-statistic)
Quarterly Mean [Median] Number of Firms			
High Export	36.4 [34.0]	36.0 [34.5]	36.4 [34.0]	
Low Export	53.5 [53.5]	53.4 [53.5]	53.5 [53.5]	
Zero Export	17.8 [19.0]	16.9 [18.0]	17.8 [19.0]	
Quarterly Mean [Median] Foreign Ownership (%)			
High Export	7.802 [7.883]	1.374 [1.286]	0.096 [0.071]	7.706 (19.23)
Low Export	4.605 [4.754]	0.657 [0.557]	0.053 [0.042]	4.552 (23.01)
Zero Export	6.093 [5.889]	0.785 [0.671]	0.052 [0.038]	6.041 (15.08)
Diff: High-Low (t-statistic)	3.197 (7.16)	0.717 (5.38)	0.044 (2.46)	
Diff: High-Zero (t-statistic)	1.710 (3.02)	0.590 (3.72)	0.044 (2.50)	
Quarterly Mean [Median] Export Ratio			
High Export	73.85 [74.15]	70.47 [70.56]	69.06 [69.16]	4.79 (9.00)
Low Export	16.72 [16.93]	14.68 [14.82]	12.53 [12.52]	4.19 (15.92)
Zero Export	0.00 [0.00]	0.00 [0.00]	0.00 [0.00]	0.00 (N/A)
Diff: High-Low (t-statistic)	57.13 (149.63)	55.79 (133.85)	56.53 (124.28)	

Panel B: Monthly Estimation Results of Four-Factor Model

	High Foreign Ownership	Medium Foreign Ownership	Low Foreign Ownership	Diff: High-Low (t-statistic)
	Jensen Alpha for Equal-Weighted Portfolios (%)			
High Export	1.775	0.745	0.393	1.382
(t-statistic)	(3.39)	(1.95)	(1.19)	(2.77)
Low Export	0.281	-0.162	-0.405	0.686
(t-statistic)	(1.01)	(-0.73)	(-1.50)	(2.00)
Zero Export	-0.099	-0.266	-0.794	0.694
(t-statistic)	(-0.26)	(-0.67)	(-1.93)	(1.53)
Diff: High-Low	1.494	0.908	0.798	
(t-statistic)	(3.01)	(1.93)	(1.79)	
Diff: High-Zero	1.875	1.011	1.187	
(t-statistic)	(2.77)	(1.67)	(2.10)	
	Jensen Alpha for Value-Weighted Portfolios (%)			
High Export	2.152	0.625	0.341	1.181
(t-statistic)	(3.37)	(1.11)	(0.76)	(2.65)
Low Export	0.332	-0.209	-0.822	1.154
(t-statistic)	(0.97)	(-0.82)	(-2.77)	(2.45)
Zero Export	-0.098	-0.132	-0.763	0.666
(t-statistic)	(-0.20)	(-0.28)	(-1.76)	(1.18)
Diff: High-Low	1.820	0.834	1.163	
(t-statistic)	(2.54)	(1.25)	(1.96)	
Diff: High-Zero	2.250	0.757	1.104	
(t-statistic)	(2.66)	(0.92)	(1.60)	

Table 4
Foreign Ownership and Firm Size

Stocks are sorted into three size portfolios based on their firm size (market value of equity in NT$ millions) at the end of the previous quarter. For each size portfolio, stocks are then sorted into three ownership portfolios based on their foreign ownership at the end of the previous quarter. The sample period is Q3 1994 to Q4 2001.

	Panel A: Quarterly Statistics			
	High Foreign Ownership	Medium Foreign Ownership	Low Foreign Ownership	Diff: High-Low (t-statistic)
	Quarterly Mean [Median] Foreign Ownership (%)			
Large Firm	8.808	2.363	0.489	8.318
	[8.209]	[2.348]	[0.392]	(15.18)
Medium Firm	4.836	0.732	0.072	4.763
	[4.323]	[0.549]	[0.046]	(15.06)
Small Firm	2.976	0.147	0.033	2.94
	[2.661]	[0.094]	[0.027]	(13.97)
Diff: Large-Small	5.831	2.216	0.456	
(t-statistic)	(9.97)	(17.39)	(8.93)	
	Quarterly Mean [Median] Capitalization (NT$ millions)			
Large Firm	75,645	53,170	40,183	35,462
	[62,786]	[49,915]	[40,732]	(5.32)
Medium Firm	8,216	7,954	7,165	1050
	[8,578]	[8,350]	[7,003]	(1.63)
Small Firm	3,253	2,948	2,891	362
	[3,325]	[2,973]	[3,009]	(1.11)
Diff: Large-Small	72,392	50,223	37,292	
(t-statistic)	(11.66)	(15.99)	(15.22)	

Panel B: Monthly Estimation Results of Four-Factor Model

	High Foreign Ownership	Medium Foreign Ownership	Low Foreign Ownership	Diff: High-Low (t-statistic)
Jensen Alpha for Equal-Weighted Portfolios (%)				
Large Firm	1.090	0.012	-0.603	1.693
(t-statistic)	(2.99)	(0.05)	(-2.30)	(3.25)
Medium Firm	0.322	0.447	-0.924	1.246
(t-statistic)	(1.01)	(2.11)	(-3.90)	(3.38)
Small Firm	0.551	-0.001	0.062	0.489
(t-statistic)	(1.99)	(-0.00)	(0.20)	(1.44)
Diff: Large-Small	0.539	0.014	-0.665	
(t-statistic)	(1.42)	(0.04)	(-1.70)	
Jensen Alpha for Value-Weighted Portfolios (%)				
Large Firm	0.986	-0.113	-0.813	1.799
(t-statistic)	(2.81)	(-0.42)	(-2.05)	(2.71)
Medium Firm	0.366	0.322	-0.873	1.239
(t-statistic)	(1.14)	(1.55)	(-3.61)	(3.29)
Small Firm	0.507	-0.276	-0.039	0.546
(t-statistic)	(1.88)	(-1.07)	(-0.15)	(1.62)
Diff: Large-Small	0.479	0.164	-0.773	
(t-statistic)	(1.19)	(0.45)	(-1.72)	

Table 5

Foreign Ownership and Transparency

Stocks are sorted into five portfolios based on their foreign ownership at the end of the previous quarter. For each foreign ownership portfolio, stocks are then classified as "More Transparent" firms and "Less Transparent" firms using the Securities and Futures Institute's transparency ranking. The sample period is Q3 1994 to Q4 2001.

	P1	P2	P3	P4	P5	Diff:P1-P5 (t-statistic)
Panel A: Quarterly Statistics						
Quarterly Mean [Median] Number of Firms						
More Transparent	32.2 [30.5]	23.2 [23.0]	17.8 [17.0]	14.7 [15.5]	11.2 [11.0]	
Less Transparent	39.8 [40.5]	48.1 [45.0]	53.8 [53.0]	56.8 [54.0]	59.1 [57.5]	
Quarterly Mean [Median] Foreign Ownership (%)						
More Transparent	8.602 [8.675]	2.391 [2.189]	0.784 [0.653]	0.185 [0.107]	0.032 [0.022]	8.571 (20.06)
Less Transparent	7.757 [8.186]	2.281 [2.021]	0.771 [0.647]	0.160 [0.100]	0.036 [0.030]	7.721 (20.62)
Diff: M-L (t-statistic)	0.845 (1.49)	0.110 (0.50)	0.012 (0.10)	0.024 (0.63)	-0.004 (-0.55)	
Quarterly Capitalization Mean [Median] (NT$ millions)						
More Transparent	62224 [46361]	33947 [33544]	21641 [19306]	11143 [9823]	5957 [6316]	56266 (8.84)
Less Transparent	34164 [30850]	25494 [24766]	22345 [22905]	9092 [7068]	5022 [5367]	29143 (11.53)
Diff: M-L (t-statistic)	28059 (4.11)	8453 (2.56)	-704 (-0.27)	2051 (1.35)	935 (1.81)	

Panel B: Monthly Estimation Results of Four-Factor Model

	P1	P2	P3	P4	P5	Diff:P1-P5 (t-statistic)
Jensen Alpha for Equal-Weighted Portfolios (%)						
More Transparent	1.575 (3.56)	0.850 (2.36)	0.548 (1.63)	0.242 (0.66)	0.256 (0.73)	1.319 (2.46)
Less Transparent	0.451 (1.57)	0.028 (0.12)	-0.225 (-1.02)	-0.536 (-2.36)	-0.390 (-1.54)	0.841 (2.16)
Diff: M-L (t-statistic)	1.124 (2.88)	0.823 (2.35)	0.773 (2.24)	0.779 (1.82)	0.646 (1.66)	
Jensen Alpha for Value-Weighted Portfolios (%)						
More Transparent	1.317 (2.81)	0.921 (1.81)	0.479 (1.02)	0.220 (0.53)	0.028 (0.06)	1.289 (1.88)
Less Transparent	0.610 (1.60)	-0.573 (-1.86)	-0.833 (-1.91)	-0.945 (-2.93)	-0.956 (-3.50)	1.566 (3.28)
Diff: M-L (t-statistic)	0.706 (1.35)	1.494 (2.49)	1.312 (1.84)	1.166 (2.22)	0.983 (2.03)	

Table 6: Multivariate Analysis: Fixed Effects Results

Tobin's Q is market value of assets divided by book value of total assets, where market value of assets is the sum of market values of equity and preferred stock plus book values of short- and long-term liabilities. ROA (Net income) is net income divided by book value of total assets, and ROA (EBITD) is income before interest, tax, and depreciation, divided by total assets. Foreign Ownership$_t$ is shares held by foreign investors at the end of year t scaled by total shares outstanding. Domes. Institutions$_t$ is shares held by domestic institutional investors at the end of year t divided by total shares outstanding. InOwn$_t$ is the inside ownership in year t, and InOwn$_t^2$ is the inside ownership squared (divided by 100). Std. Dev$_t$ is standard deviation of daily return in year t. Debt Ratio is the long-term book-debt ratio, calculated as long-term debt divided by book value of total assets. R&D is R&D expense scaled by total sales. Ln_sales is the logarithm of sales. The numbers in parentheses are White (1980) heteroskedasticity adjusted t-statistics. The sample period is 1994 to 2001.

Panel A: Market Value Performance (Tobin's Q)

Dependent Variable	Tobin's Q$_t$			
Intercept	1.596 (6.26)	1.589 (6.24)	0.947 (3.60)	0.947 (3.60)
Foreign Ownership$_t$	0.058 (10.34)	0.059 (10.37)		
Foreign Ownership$_{t-1}$			0.049 (8.84)	0.049 (8.83)
Domes. Institutions$_t$		0.001 (1.25)		
Domes. Institutions$_{t-1}$				-0.000 (-0.11)
InOwn$_t$	0.020 (7.88)	0.020 (7.87)	0.018 (6.28)	0.018 (6.28)
InOwn$_t^2$	-0.020 (-5.52)	-0.021 (-5.58)	-0.017 (-4.07)	-0.017 (-4.07)
Std. Dev.$_t$	0.001 (0.02)	0.003 (0.09)		
Std. Dev.$_{t-1}$			-0.004 (-0.12)	-0.004 (-0.12)
Debt Ratio$_t$	-0.017 (-11.08)	-0.017 (-11.13)		
Debt Ratio$_{t-1}$			-0.013 (-7.90)	-0.013 (-7.89)
R&D$_t$	0.035 (3.63)	0.036 (3.62)		
R&D$_{t-1}$			0.050 (4.18)	0.050 (4.12)
Ln_sales$_t$	0.022 (1.43)	0.021 (1.34)		
Ln_sales$_{t-1}$			0.017 (1.11)	0.018 (1.11)
Year Dummies	Yes (7)	Yes (7)	Yes (6)	Yes (6)
Indus. Dummies	Yes (11)	Yes (11)	Yes (11)	Yes (11)
Adj-R^2	.48	.48	.43	.43
N	2487	2487	2039	2039

Panel B: Accounting Performance

Dependent Variable	ROA (Net income)				ROA (EBITD)			
Intercept	-7.885 (-3.47)	-8.003 (-3.53)	-7.884 (-3.97)	-7.910 (-2.82)	-6.248 (-2.69)	-6.315 (-2.72)	-5.899 (-2.12)	-5.902 (-2.12)
Foreign Ownership $_t$	0.334 (10.33)	0.336 (10.37)			0.324 (9.58)	0.325 (9.61)		
Foreign Ownership $_{t-1}$			0.416 (13.44)	0.415 (9.49)			0.405 (8.95)	0.405 (8.95)
Domes. Institutions $_t$		0.016 (2.00)				0.009 (1.07)		
Domes. Institutions $_{t-1}$				0.014 (1.47)				0.002 (0.19)
Std. Dev. $_t$	-3.753 (-11.24)	-3.697 (-10.99)			-3.515 (-10.99)	-3.483 (-10.78)		
Std. Dev. $_{t-1}$			-2.811 (-8.79)	-2.776 (-6.12)			-2.624 (-6.10)	-2.619 (-6.06)
Debt Ratio $_t$	-0.163 (-9.56)	-0.164 (-9.58)			-0.126 (-7.24)	-0.126 (-7.24)		
Debt Ratio $_{t-1}$			-0.117 (-9.24)	-0.118 (-6.60)			-0.066 (-3.70)	-0.066 (-3.70)
R&D $_t$	-0.037 (-0.24)	-0.027 (-0.17)			0.104 (0.72)	0.110 (0.75)		
R&D $_{t-1}$			0.169 (1.74)	0.181 (1.32)			0.333 (2.78)	0.335 (2.78)
Ln_sales $_t$	1.470 (10.31)	1.439 (10.19)			1.641 (11.48)	1.624 (11.39)		
Ln_sales $_{t-1}$			1.225 (10.22)	1.196 (7.15)			1.307 (7.83)	1.303 (7.87)
Year Dummies (7)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Indus. Dummies (11)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj-R^2	.29	.30	.22	.22	.30	.30	.23	.23
N	2607	2607	2143	2143	2607	2607	2143	2143

Table 7: Multivariate Analysis: Two-Stage Least Squares Results

Tobin's Q is market value of assets divided by book value of total assets, where market value of assets is the sum of market values of equity and preferred stock plus book values of short- and long-term liabilities. ROA (Net income) is net income divided by book value of total assets, and ROA (EBITD) is income before interest, tax, and depreciation, divided by total assets. Foreign Ownership $_t$ is shares held by foreign investors at the end of year t scaled by total shares outstanding. Domes. Institutions is shares held by domestic institutional investors divided by total shares outstanding. InOwn$_t$ is the inside ownership in year t, and InOwn$_t^2$ is the inside ownership squared (divided by 100). Std. Dev is standard deviation of daily return. Debt Ratio is the long-term book-debt ratio, calculated as long-term debt divided by book value of total assets. R&D is R&D expense scaled by total sales. Ln_sales is the logarithm of sales. Ln_cap is the logarithm of capitalization, which is calculated as closing price of common shares multiplied by total shares outstanding. Export is export sales scaled by net sales. The numbers in parentheses are White (1980) heteroskedasticity adjusted t-statistics. The sample period is 1994 to 2001.

Panel A: Market Value Performance (Tobin's Q)

Dependent Variable	First-Stage	Second Stage	
	Foreign Ownership$_t$	Tobin's Q$_t$	Tobin's Q$_t$
Intercept	-9.404 (-13.54)	3.906 (16.63)	3.908 (16.50)
Predicted Foreign. Ownership$_t$		0.336 (21.62)	0.336 (21.48)
Domes. Institutions$_t$			-0.000 (-0.16)
InOwn$_t$		0.012 (4.51)	0.012 (4.49)
InOwn$_t^2$		-0.011 (-2.69)	-0.011 (-2.65)
Std. Dev.$_t$		0.096 (4.39)	0.096 (4.37)
Debt Ratio$_t$		-0.010 (-8.68)	-0.010 (-8.65)
R&D$_t$		-0.001 (-0.12)	-0.001 (-0.13)
Ln_sales$_t$		-0.261 (-15.02)	-0.261 (-15.11)
Ln_cap$_t$	1.192 (13.37)		
Export$_t$	0.013 (4.56)		
Q$_{t-1}$	0.803 (5.25)		
Year Dummies (6)		Yes	Yes
Indus. Dummies (11)		Yes	Yes
Adj-R^2	.23	.63	.63
N	2281	2175	2175

Panel B: Accounting performance

Dependent Variable	First stage Foreign Ownership	Second stage ROA (Net income)		First stage Foreign Ownership	Second stage ROA (EBITD)	
Intercept	-9.521 (-12.31)	18.363 (5.54)	18.254 (5.48)	-9.650 (-12.91)	17.981 (5.24)	17.959 (5.21)
Predicted Foreign. Ownership $_t$		2.631 (16.91)	2.628 (16.87)		2.503 (15.73)	2.502 (15.70)
Domes. Institutions $_t$			0.007 (0.89)			0.002 (0.17)
Std. Dev. $_t$		-2.703 (-7.99)	-2.678 (-7.87)		-2.551 (-7.74)	-2.545 (-7.67)
Debt Ratio $_t$		-0.145 (-8.64)	-0.145 (-8.64)		-0.109 (-6.39)	-0.109 (-6.36)
R&D $_t$		-0.324 (-2.54)	-0.319 (-2.47)		-0.164 (-1.39)	-0.163 (-1.37)
Ln_sales $_t$		-1.075 (-4.52)	-1.085 (-4.60)		-0.800 (-3.24)	-0.798 (-3.26)
Ln_cap $_t$	1.337 (14.26)			1.332 (14.41)		
Export $_t$	0.015 (5.41)			0.015 (5.25)		
ROA (Net income) $_{t-1}$	3.590 (2.66)					
ROA (EBITD) $_{t-1}$				3.727 (2.89)		
Year Dummies (6)		Yes	Yes		Yes	Yes
Indus. Dummies (11)		Yes	Yes		Yes	Yes
Adj-R^2	.21	.39	.39	.22	.38	.37
N	2281	2281	2281	2281	2281	2281

Table 8: Multivariate Analysis: Two-Stage Least Squares Results

Tobin's Q is market value of assets divided by book value of total assets, where market value of assets is the sum of market values of equity and preferred stock plus book values of short- and long-term liabilities. ROA (Net income) is net income divided by book value of total assets, and ROA (EBITD) is income before interest, tax, and depreciation, divided by total assets. Foreign Ownership$_t$ is shares held by foreign investors at the end of year t scaled by total shares outstanding. Domes. Institutions is shares held by domestic institutional investors divided by total shares outstanding. B is a dummy variable that equals one for a big firm (size greater than the median). Std. Dev is standard deviation of daily return. Debt Ratio is the long-term book-debt ratio, calculated as long-term debt divided by book value of total assets. R&D is R&D expense scaled by total sales. Ln_sales is the logarithm of sales. Ln_cap is the logarithm of capitalization, which is calculated as closing price of common shares multiplied by total shares outstanding. Export is export sales scaled by net sales. The numbers in parentheses are White (1980) heteroskedasticity adjusted t-statistics. The sample period is 1994 to 2001.

Panel A: Market Value Performance (Tobin's Q)

Dependent Variable	First-Stage Foreign Ownership$_t$	Second Stage Tobin's Q$_t$	Second Stage Tobin's Q$_t$
Intercept	-9.404 (-13.54)	4.249 (18.38)	4.143 (17.66)
Predicted Foreign. Ownership$_t$		0.248 (13.16)	0.238 (13.29)
Predicted Foreign. Ownership*B		0.086 (7.69)	0.117 (8.55)
Domes. Institutions$_t$			0.002 (3.44)
Domes. Institutions*B			-0.005 (-4.62)
InOwn$_t$		0.012 (4.66)	0.013 (4.83)
InOwn$_t^2$		-0.011 (-2.79)	-0.012 (-2.93)
Std. Dev.$_t$		0.082 (3.84)	0.085 (4.01)
Debt Ratio$_t$		-0.011 (-9.30)	-0.011 (-8.99)
R&D$_t$		-0.001 (-0.13)	-0.002 (-0.34)
Ln_sales$_t$		-0.277 (-16.24)	-0.270 (-15.94)
Ln_cap$_t$	1.192 (13.37)		
Export$_t$	0.013 (4.56)		
Q$_{t-1}$	0.803 (5.25)		
Year Dummies (6)		Yes	Yes
Indus. Dummies (11)		Yes	Yes
Adj-R^2	.23	.64	.64
N	2281	2175	2175

Panel B: Accounting performance

Dependent Variable	First stage For. Ownership	Second stage ROA (Net income)		First stage For. Ownership	Second stage ROA (EBITD)	
Intercept	-9.521 (-12.31)	18.483 (5.43)	18.423 (5.38)	-9.650 (-12.91)	18.539 (5.31)	18.562 (5.25)
Predicted Foreign. Ownership $_t$		2.599 (11.58)	2.623 (11.55)		2.352 (10.51)	2.359 (10.42)
Predicted Foreign. Ownership*B		0.032 (0.20)	-0.052 (-0.28)		0.151 (0.97)	0.121 (0.66)
Domes. Institutions $_t$			0.000 (0.04)			-0.002 (-0.19)
Domes. Institutions*B			0.013 (0.97)			0.005 (0.38)
Std. Dev. $_t$		-2.712 (-7.96)	-2.692 (-7.81)		-2.592 (-7.79)	-2.593 (-7.70)
Debt Ratio $_t$		-0.145 (-8.65)	-0.146 (-8.71)		-0.110 (-6.43)	-0.110 (-6.43)
R&D $_t$		-0.324 (-2.54)	-0.315 (-2.43)		-0.166 (-1.41)	-0.164 (-1.38)
Ln_sales $_t$		-1.080 (-4.52)	-1.091 (-4.58)		-0.821 (-3.32)	-0.823 (-3.34)
Ln_cap $_t$	1.337 (14.26)			1.332 (14.41)		
Export $_t$	0.015 (5.41)			0.015 (5.25)		
ROA (Net income) $_{t-1}$	3.590 (2.66)					
ROA (EBITD) $_{t-1}$				3.727 (2.89)		
Year Dummies (6)		Yes	Yes		Yes	Yes
Indus. Dummies (11)		Yes	Yes		Yes	Yes
Adj-R^2	.21	.39	.39	.22	.38	.37
N	2281	2281	2281	2281	2281	2281