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The Valuation Effects of Corporate Investment Decisions: Evidence From Domestic and Foreign Plant Announcements

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THE VALUATION EFFECTS OF CORPORATION INVESTMENT DECISIONS: EVIDENCE FROM DOMESTIC AND FOREIGN PLANT ANNOUNCEMENTS

by

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ABSTRACT

THE VALUATION EFFECTS OF CORPORATE INVESTMENT DECISIONS: EVIDENCE FROM DOMESTIC AND FOREIGN PLANT ANNOUNCEMENTS.

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This study examines the effects of corporate investment decisions - announcements of plants - on the value of the firm, using event-study methodology. This paper consists of two parts. Essay I discusses the valuation effects of domestic investments, while Essay II analyses the valuation effects of foreign investments undertaken by U.S. firms and compares the valuation effects between the two investments. Specifically, this study examines the validity of the overinvestment hypothesis and whether focus-increasing investments enhance the value of the firm.

First, the evidence shows that the valuation effects of the investment decision depend on the firm's investment opportunities, proxied by Tobin's q. That is, the domestic and foreign plant announcements of value-maximizing firms (i.e., $q > 1$) earn significant positive abnormal returns, while those of overinvesting firms (i.e., $q < 1$) realize significant negative abnormal returns. Also, for value-maximizing firms, the abnormal returns are positively but insignificantly related to the level of cash flows, while, for overinvesting firms, the abnormal returns are negatively related to the level of cash flows. These results suggest that managers of overinvesting firms are more likely to waste cash

flows in sub-optimal or negative net present value projects than managers of value-maximizing firms. The evidence is consistent with the predictions of the overinvestment hypothesis [Jensen (1986), Lang and Liztenberger (1989), Doukas (1995)].

Second, for both domestic and foreign investments, focus-increasing investments are found to gain positive abnormal returns, whereas diversifying domestic and foreign investments experience significant negative abnormal returns. Further, post-investment performance tests show that firms with focus-increasing investments tend to improve their profitability, while firms with diversifying investments do not. This evidence appear to support the view [Lang and Stulz (1994)] that increases in corporate focus are consistent with shareholder wealth maximization.

Overall, the results suggest that the valuation effects of corporate investment decisions depend on the firm's investment opportunities and the type of investment decisions pursued by the managers.

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Essay I

ABSTRACT

This study examines the stock market reaction to announcements of corporate investment decisions by U.S. firms, using a sample of 194 domestic plant announcements during the period of 1980-1992. The results show that value-maximizing firms gain significant positive abnormal returns, while overinvesting firms experience significant negative abnormal returns. Also, for overinvesting firms, there are significant agency costs associated with managers' discretion of free cash flows. The evidence supports overinvestment hypothesis. This paper also finds that diversifying investments decrease the value of the firm, while focus-increasing investments do not, implying that an increase in corporate focus is consistent with shareholder wealth maximization.

I. Introduction

Corporate managers are involved in acquisitions, R&D, and capital budgeting investment decisions. Several researchers have studied the effects of acquisitions and R&D expenditures on the market value of the firm.[1] Even though firms have long invested in plants, the effects of plant investment decisions on shareholder wealth have received little attention relative to other investment decisions (i.e., acquisitions and R&D).

Shareholder wealth maximization hypothesis suggests that managers seek to maximize shareholder wealth in corporate investment decisions. Thus, investment decision rule states that managers should undertake only positive net present value (NPV) projects. In contrast, Jensen's (1986) overinvestment hypothesis suggests that, even though firms have poor investment opportunities, managers with free cash flows[2] tend to undertake sub-optimal or negative NPV projects instead of distributing them to shareholders, resulting in overinvestment and a reduction in firm value. This is because managers may feel that their compensation, power, and job security are enhanced as firm size increases. However, firms with profitable investment opportunities are more likely to use their internally generated funds productively. Hence, the overinvestment hypothesis implies that the

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[1] See Travlos (1987), Bradley, Desai, and Kim (1988), Jarrell, Brickley, and Netter (1988) for evidence on acquisitions, Chan, Martin, and Kensinger (1990), Doukas and Switzer (1992) for evidence on valuation effects of R&D expenditures, and McConnell and Muscarella (1985) for evidence on capital budgeting decisions.

[2] Jensen (1986) defines free cash flows as discretionary cash flows available to managers in excess of that required to fund all positive projects.

valuation effects of corporate investment decisions may depend on firm's investment opportunities. In addition, Jensen (1986) argues that corporate diversifying strategy (i.e., acquisition programs) is one way in which managers waste free cash flows, implying that diversifying investments are likely to be value-decreasing activities.

McConnell and Muscarella (1985) find that announcements of unexpected increase in company-wide capital expenditures are associated with positive market returns,[3] while announcements of unexpected decrease are associated with negative market returns. Their findings are consistent with the market value maximization hypothesis. However, the positive stock price reactions may stem from the fact that a sample of capital expenditure increases is associated with either firms with good investment opportunities or focus-increasing investments. On the other hand, the negative stock price reactions may be caused by the fact that a sample of capital expenditure decreases is associated with either firms with poor investment opportunities or diversifying investments. However, McConnell and Muscarella (1985) do not account for the effects of firm's investment opportunities and type of investment on the value of the firm. Moreover, since their sample consists of company-wide capital expenditures, it is difficult to draw parallel conclusions on the valuation effects of specific investment decisions such as plants.

Corporate investment decisions associated with acquisitions report that bidder returns are often negative [Roll (1986), Dodd (1980), Malatesta (1983)].[4] This evidence shows that corporate investment decisions are not consistently associated with shareholder wealth

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[3] McConnell and Muscarella (1985) exclude specific investment announcements (i.e., plant).

[4] See Jensen and Ruback (1983) for review of the literature on domestic acquisitions.

maximization. Morck, Shliefer, and Vishny (1989) attribute the losses from acquisitions to divergence of interests between managers and shareholders with respect to corporate investment decisions. Servaes (1991) and Lang, Stulz, and Walkling (1991) examine whether firm's investment opportunities, measured by Tobin's q, are important determinants of gains from acquisitions. Servaes (1991) find that benefits of mergers are larger when bidders are well-managed (i.e., $q > 1$). Lang, Stulz, and Walkling (1991) document that bidders with high free cash flows and poor investment opportunities (i.e., $q < 1$) suffer significant negative returns for tender offers. This evidence appears to be consistent with prediction of Jensen's (1986) overinvestment hypothesis.

Several papers [Statman and Sepe (1989), Blackwell, Marr, and Spivey (1990), Gombola and Tsetsekos (1992)] have examined the valuation effects of discontinuation of investments and documented mixed market reactions. Statman and Sepe (1989) find that, under the assumption of investors' knowledge of losses from projects, capital markets respond positively to such announcements. On the other hand, Blackwell, Marr, and Spivey (1990), Gombola and Tsetsekos (1992) argue that negative abnormal returns associated with plant closing announcements are caused by negative information about firm's investment opportunities.

Previous evidence on valuation effects of acquisitions [Jensen and Ruback (1983)] and plant closings [Statman and Sepe (1989), Blackwell, Marr and Spivey (1990), Gombola and Tsetsekos (1992)] have provided mixed results. A possible explanation is that the valuation effects of corporate investments depend on (1) firm's investment opportunities and (2) type of investment (i.e., focus-increasing and diversifying).

However, these two factors have not been considered in the previous studies.

This paper attempts to provide new evidence on the valuation effects of corporate investment decisions, using a sample of domestic plant announcements during the period of 1980-1992. Specifically, two issues are addressed: (1) free cash flow/overinvestment hypothesis and (2) type of investment (i.e., focus-increasing and diversifying).

First, this paper examines whether the valuation effects of corporate investment decisions depend on firm's investment opportunities.[5] The sample is classified into firms with profitable investment opportunities (i.e., value-maximizing) and firms with poor investment opportunities (i.e., overinvesting). The overinvestment hypothesis predicts that, for overinvesting firms, managers are likely to waste cash flows by undertaking negative NPV projects, resulting in overinvestment and, hence, a reduction in the value of the firm. Thus, plant investment announcements by overinvesting firms are expected to produce negative abnormal returns. On the other hand, for value-maximizing firms, managers are likely to spend cash flows on positive NPV projects, resulting in an increase of shareholder wealth. Thus, plant investment announcements are not expected to cause uniform valuation effects across firms.

The overinvestment hypothesis also implies that agency costs associated with the discretion of free cash flows are expected to be greater for firms with poor investment opportunities. Since investments by value-maximizing firms are expected to be positive NPV projects, the stock price reactions are not likely to be related to free cash flows. That is, agency costs associated with the discretion of free cash flows are expected to be

[5] Lang and Litzenberger (1989) derive overinvestment hypothesis from free cash flow hypothesis to test the valuation effects of dividend changes.

insignificant. However, since investments by overinvesting firms are expected to be negative NPV projects, the stock market returns are likely to be negatively related to free cash flows. This study provides cross-sectional evidence on relation between the firm's level of free cash flows and its stock price returns.

Second, this paper examines whether there are any differences in stock market returns between focus-increasing and diversifying investments. Since the 1980s, empirical results have been unfavorable to corporate diversification. Wernerfelt and Montgomery (1988) document that firm performance, proxied by Tobin's q, is positively related to an increase in corporate focus. Morck, Shliefer, and Vishny (1990) show that unrelated acquisitions in the 1980s did elicit negative effects on stock prices, while related acquisitions did not. Kaplan and Weisbach (1992) report that unrelated acquisitions are more likely to be value-decreasing activities than related acquisitions since the divestitures rate is higher for unrelated acquisitions than related acquisitions. Lang and Stulz (1994) report that Tobin'q, proxy for firm value, and the degree of business diversification are negatively related through the late 1970s and 1980s.[6] John and Ofek (1995) find that an improvement in corporate performance is associated with divestitures that increase firm's business focus.[7] Their study reports a positive relation between increase in corporate focus and change in profitability of firms around investment announcements.

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[6] Lang and Stulz (1994) use Tobin's q as the measure of performance instead of the measurement problem of accounting performance measures since the use of Tobin's q does not require a risk adjustment or normalization to compare Tobin's q across firms, in contrast to comparison of stock return or accounting performance measures.

[7] John, Lang, and Netter (1992) report that one of the reasons for firm's negative earnings is overinvestment. In their study, increasing focus is common strategy of firms coping with performance declines.

Even though evidence on the valuation effects of corporate diversification are provided in the context of corporate acquisitions or divestitures, there is little evidence on the impact of focus-increasing and diversifying plant investments on the value of the firm. To examine whether focus-increasing investments are more highly valued than diversifying investments, the sample is divided into focus-increasing and diversifying corporate investments. If diversifying investments are one way in which managers waste cash flows for their own benefit at the expense of shareholders [Jensen (1986)], or if an increase in corporate focus enhances managerial efficiency [John and Ofek (1995)], it is expected that focus-increasing (diversifying) investments realize positive (negative) stock returns. Further, whether the extent of abnormal returns associated with the type of investment depends on firm's investment opportunities is analyzed. This study also compares pre- and post-performance between focus-increasing and diversifying investments. Finally, the relation between changes in performance and changes in corporate focus is reported.

In general, the results are consistent with the predictions of the overinvestment hypothesis. Value-maximizing firms gain significant positive stock market returns for plant investments, while overinvesting firms experience significant negative abnormal returns. Also, the stock market returns are negatively related to the free cash flows of overinvesting firms and unrelated to the free cash flows of value-maximizing firms. The evidence also shows that focus-increasing investments earn positive abnormal returns, while diversifying investments suffer significant negative abnormal returns, implying that increase in corporate focus is associated with market value maximization [Lang and Stulz

(1994), John and Ofek (1995)]. Firms with focus-increasing investments improve their performance after investments, whereas firms with diversifying investments do not. Also, the changes in performance are positively related to increase in corporate focus. Overall evidence shows that firm's investment opportunities and the type of investment are important determinants of corporate investment gains.

This paper is organized as follows: Section II reviews the previous literature on capital expenditures decisions and the relation between the market value of the firm and corporate diversification. The two main issues - overinvestment hypothesis and valuation effects of type of investment - are discussed in section III. Section IV describes data and methodology. In section V, empirical evidence is presented. Section VI has concluding remarks.

II. Literature Review

A. The Domestic Capital Investment Decision

Empirical research into corporate investment decisions has been based on the assumption that managers undertake only positive net present value (NPV) projects to maximize shareholder wealth [McConnell and Muscarella (1985)]. Accordingly, all corporate investments are expected to increase the market value of the firm. However, empirical evidence is not consistent with market value maximization hypothesis [Dodd (1980), Malatesta (1983), Jensen and Ruback (1983)].

Jensen (1986) argues that managers with substantial free cash flows have a tendency to overinvest by undertaking negative NPV projects. It implies that there are agency costs between managers and shareholders with respect to the use of free cash flows. That is, managers may spend cash flows for their own benefit at the expense of shareholders. According to the overinvestment hypothesis, firms with poor investment opportunities (i.e., overinvesting firms) are likely to waste cash flows by undertaking negative NPV projects. On the other hand, firms with profitable investment opportunities (i.e., value-maximizing firms) are likely to spend cash flows on positive NPV projects. Thus, the valuation effects of corporate investment decisions may depend on firm's investment opportunities. The overinvestment hypothesis predicts that investment increases by value-maximizing (overinvesting) firms would enhance (reduce) the value of the firm.

In contrast to Jensen (1986), McConnell and Muscarella (1985) assume no agency costs concerning corporate capital expenditure decisions. In a sample of 658 capital expenditure announcements during the period of 1975-1981, they find that announcements of unexpected increases (decreases) in planned capital expenditure are associated with significant positive (negative) abnormal stock returns.[8] However, the positive (negative) stock market returns may be driven by the fact that in their sample value-maximizing firms were overrepresented. McConnell and Muscarella (1985) do not account for the valuation effects of firm's investment opportunities. In addition, since their sample consists of only company-wide capital expenditure announcements, their study does not provide evidence on specific investment decisions such as plants. Thus, it is difficult to

[8] The exception is that, for a sample of exploration and development, an increase in budgets exhibits negative stock returns, while a decrease in budgets realizes negative stock returns.

draw parallel conclusions for the valuation effects of plant investments.

Empirical evidence on acquisitions shows that bidding firms, on average, do not gain positive abnormal returns [Dodd (1980), Malatesta (1983), Jensen and Ruback (1983)]. Meanwhile, using firm's investment opportunities measured by Tobin's q, Servaes (1991) and Lang, Stulz, and Walkling (1991) present evidence on valuation effects of acquisitions. Servaes (1991) reports, in a sample of 704 mergers and tender offers over the period of 1972-1987, that well-managed firms (i.e., $q > 1$) have larger gains than poorly-managed firms (i.e., $q < 1$). Lang, Stulz, and Walkling (1991) examine a sample of 101 tender offers over the 1980-1986 period. The their results show that acquiring firms with low q (i.e., $q < 1$) and high free cash flows gain the lowest abnormal returns, while those with high q (i.e., $q > 1$) and low free cash flows experience the largest abnormal returns. This evidence seems to support the overinvestment hypothesis.

The valuation effects of discontinuation of investments have provided mixed results. In a sample of 111 project termination announcements over the 1969-1983 period, Statman and Sepe (1989) find positive stock market reactions to project termination announcements. Given investor's knowledge of losses, firm's willingness to reduce value-decreasing activities is associated with positive impacts on the value of the firm. On the other hand, Blackwell, Marr, and Spivey (1990) and Gombola and Tsetsekos (1992) find negative stock returns to the announcements of plant closing decisions.[9] The authors suggest that, under information asymmetry of profitability of plants between managers and

[9] Blackwell, Marr, and Spivey (1990) use a sample of 286 plant closing announcements from 1980 through 1984. In Gombola and Tsetsekos (1992), a sample of 283 plant closing announcements during the period of 1980-1986 is examined.

investors, negative abnormal returns may be caused by negative information about firm's investment opportunities.

Previous empirical tests of corporate investments [Jensen and Ruback (1983), Statman and Sepe (1989), Blackwell, Marr, and Spivey (1990)] have yielded inconclusive results. In the previous studies, firm's investment opportunities have not been considered as a determinant of the valuation effects of corporate investment decisions. This study examines whether the firm's investment opportunities are associated with the valuation effects of corporate investment decisions.

B. Types of Investment Decisions

The valuation effects associated with the type of investment (i.e., focus-increasing and diversifying) have been only examined in the context of divestitures and acquisitions.

Porter (1987) reports that, in a sample of thirty-three U.S. companies during the period of 1950-1986, acquisitions have an average divestment rate of 60%.[10] However, since firms may divest for reasons other than performance declines, divestiture rates may not be interpreted as unambiguous measures of failure [Weston (1989)].[11]

Wernerfelt and Montgomery (1988) find that firm performance, proxied by Tobin's

[10] Porter (1986) tracks acquisitions made over 1950-1986. The success ratio of diversification as the number of units retained after the acquisition by the firm is measured.

[11] Warding-off takeover, changing strategies, and government requirements are suggested as motives for divestiture activities [Weston (1989)].

q, is positively related to an increase in corporate focus.[12] They interpret this evidence as less focused firms are less efficient to transfer their competitive edges to different markets than more focused firms. However, since their study is based on only one-year period (i.e., 1976), it may be difficult to draw general conclusions.

Studies about acquisitions have produced evidence in favor of focus-increasing investments. Morck, Shleifer, and Vishny (1990) find that, in a sample of 326 U.S. acquisitions between 1975 and 1987, bidders realize positive abnormal returns for related acquisitions, whereas bidders experience negative abnormal returns for unrelated acquisitions. In a sample of 282 acquisitions over 1971-1982, Kaplan and Weisbach (1992) document that about 60% of diversifying acquisitions are divested. In contrast, fewer than 20% of related acquisitions are divested. The authors interpret this evidence in support of the view that corporate diversification is a value-decreasing investment.

Lang and Stulz (1994) find a negative relation between Tobin's q, proxy for firm performance, and the degree of diversification.[13] In their study, Tobin's q is negatively correlated with the number of business segments and positively correlated with the mean and median of Herfindahl index. The evidence also shows that mean and median Tobin's q of diversifying firms are lower for focus-increasing firms, implying that capital markets value focus-increasing firms more highly than diversifying firms. However, their

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[12] Wernerfelt and Montgomery (1988), in their model, regress Tobin's q on focus, industry, and market share variables. They do not report estimates of regression coefficients but contribution of these variables to the adjusted R^2 of a regression.

[13] Lang and Stulz (1994) discuss the problem of comparing the average returns of diversified firms with that of specialized firms. They use chop-shop approach [Lebaron and Speidell (1987)] in which the q's of diversified firms is the q these firms would have if stand-alone q of each segment were the average q of the single-segment firm in its industry.

classification scheme is different from that used in this study.[14]

Using a sample of 321 divestitures by U.S. firms during the period of 1986-1988, John and Ofek (1995) test whether an increase in corporate focus is consistent with shareholder wealth maximization.[15] Using several accounting measures of performance, their study documents that firms that increase focus by divestitures improve their performance after divestitures, while firms that increase diversification do not.[16] They argue that it may occur because sales of assets unrelated to core-business increase the efficient use of corporate resources. In addition, cross-sectional analysis shows a significant positive relationship between increases in corporate focus[17] and a corporate post-divestiture performance.

Using several focus measures,[18] Comment and Jarrell (1995) show a trend toward increase in corporate focus across exchange-listed firms during the period of 1978-1989. In their study, changes in number of business segments and Herfindahl index over the sample period are estimated as a measure of change in degree of diversification. In addition, they document that focus-increasing firms have larger abnormal returns than

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[14] In Lang and Stulz (1994), firms that change the number of business segments from one to two or more in the sample period of 1978-1990 are classified as diversifying firms and firms that reduce segments from five or more to four or less are classified as focus-increasing firms.

[15] They restrict their sample only to the divestiture of operating units, excluding the partial divestitures or sell-offs of non-operating assets such as real estate.

[16] Three measures of profitability are (1) earnings before interest, taxes, and depreciation (EBITD) to sales, (2) EBITD to book value of assets, and (3) EBITD to market value of equity.

[17] Dummy variable equals zero if the divested segment's main 4-digit SIC code is the same as the seller's main 4-digit SIC code, and one otherwise.

[18] Comment and Jarrell (1995) calculate focus measures such as the number of four-digit SIC codes assigned by COMPUSTAT and a revenue-based Herfindahl index.

diversifying firms.[19] Instead of using an event study, authors estimate the cumulative abnormal returns over the year of the changes in focus and the preceding year. However, this approach could not identify the market reactions to investment announcements.

Using business segment-based data, Berger and Ofek (1995) develop the industrial multiplier approach and compare the sum of the imputed stand-alone values of the segments of diversified firms to the actual values of those firms.[20] Values of diversified firms are estimated to be 13% to 15% below the sum of the imputed values of their segments, implying that corporate diversification decreases the firm value. The focus in Berger and Ofek (1995) is on the relation between the level of degree of diversification and firm value, whereas focus in this study is on the effects of the changes in the degree of diversification on the value of the firm.

Previous studies on the effects of corporate diversification, generally, support the view that diversification hurts shareholder wealth. However, there is no evidence, to our knowledge, that examines directly the valuation effects of focus-increasing and diversifying investment decisions.

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[19] Comment and Jarrell (1995) classify a sample of firms according to the direction of the change in focus as measured by the revenue-based Herfindahl index - 1) focus increase, 2) no change, and 3) focus decrease.

[20] Berger and Ofek (1995) use the industrial multiplier approach in which they measure the percentage difference between a firm's total value and the sum of imputed values for its segments as stand-alone entities. They compare the sum of the imputed stand-alone values of the segments of diversified companies to the actual values of those companies. The natural log of the ratio of firm's actual value to its imputed value is a measure of the gain or loss in value from diversification. Positive excess returns indicate that diversification increases the value of segments beyond that of their stand-alone counterparts. Negative excess returns indicate that diversification reduces value.

III. Valuation Effects of Corporate Investment Decisions

A. Overinvestment Hypothesis

A traditional investment decision rule states that managers should undertake only positive NPV projects. That is, if the discounted value of expected cash flows from plant investment is positive, the decision to undertake such an investment would increase the value of the firm. Thus, announcements of an increase (decrease) in investments are expected to have positive (negative) stock market returns [McConnell and Muscarella (1985)].

Agency costs between managers and shareholders are discussed by Jensen and Meckling (1976). Unless managers are constrained by monitoring or bonding, they would make corporate decisions that increase their own utility. Jensen (1986) argues that there are agency costs associated with the distribution of free cash flows. That is, managers with high free cash flows have a tendency to overinvest by undertaking negative NPV projects instead of distributing free cash flows to shareholders.[21] Jensen's (1986) overinvestment hypothesis predicts that firms with poor investment opportunities are more likely to waste cash flows by engaging in sub-optimal or negative NPV projects, resulting in overinvestment and a reduction of the value of the firm. On the other hand, firms with profitable investment opportunities are more likely to use cash flows in positive NPV

[21] Evidence in favor of free cash flows/overinvestment hypothesis is presented by Pilotte (1992) for security offering announcement, Lang, Stulz, and Walkling (1991) for tender offers, and Lehn and Poulsen (1989) for going private transactions.

projects, leading to shareholder wealth maximization. Thus, the overinvestment hypothesis implies that the valuation effects of corporate investment decisions depend on firm's investment opportunities.

This paper tests the overinvestment hypothesis by analyzing the impact of corporate investment decisions on the value of the firm. Testing the overinvestment hypothesis requires knowledge of firm's investment opportunities. This paper uses Tobin's q to distinguish value-maximizing (i.e., $q > 1$) from overinvesting (i.e., $q < 1$) firms.[22] According to the overinvestment hypothesis, investment announcements by value-maximizing firms are expected to generate positive market returns, while investment announcements by overinvesting firms are expected to produce negative market returns.

The overinvestment hypothesis also implies that the free cash flow available to managements is an important determinant to explain the abnormal returns for investments. That is, since overinvesting firms are expected to waste free cash flows in sub-optimal or negative NPV projects, free cash flows might increase agency costs between managers and shareholders, implying a negative relation between the level of cash flows and abnormal market returns. On the other hand, since value-maximizing firms are likely to spend free cash flows on value-increasing investments, no relation between the level of free cash flows and abnormal market returns is expected. To examine this implication, this study analyzes the cross-sectional relation between stock market returns and free cash flows for value-maximizing and overinvesting firms, respectively.

To further examine the extent of abnormal returns associated with free cash flows and

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[22] See Lang and Litzenberger (1989) for the use of Tobin's q as an indicator of overinvestment.

firm's investment opportunities, the sample is divided into four subsamples according to firm's investment opportunities and level of free cash flows: (1) value-maximizing firms with high free cash flows, (2) value-maximizing firms with low free cash flows, (3) overinvesting firms with high free cash flows, and (4) overinvesting firms with low free cash flows. According to the overinvestment hypothesis, investment announcements by overinvesting firms with high free cash flows are expected to yield the lowest abnormal returns since these firms are more likely to have the highest agency costs and undertake negative NPV projects. Value-maximizing firms are expected to earn positive abnormal returns regardless of the level of free cash flows since these firms are expected to use cash flows in positive NPV investments.

B. Type of Investment Decisions

This section examines whether the type of investment (i.e., focus-increasing and diversifying) has any differential effects on the value of the firm. The potential benefits associated with corporate diversification include: (1) greater operating efficiency,[23] (2) less incentive to pass up positive NPV projects,[24] and (3) greater debt capacity and lower taxes.[25] The potential costs include: (1) the use of increased discretionary resources to

[23] Chandler (1977) argues that, diversified firms are more efficient and profitable than their line of business would be separately since diversified firms have better coordination than focused firms.

[24] Weston (1989) states that diversified firms have large internal capital markets so that they make more positive NPV investments than focused firms.

[25] Lewellen (1971), Majd and Myers (1987) argue that diversified firms are predicted to have more tax advantage than focused firms since diversified firms have greater debt capacity.

undertake value-decreasing investments, (2) information asymmetry costs between central and divisional managers,[26] (3) cross-subsidies that allow poor segments to drain resources from better performing segments, and (4) misalignments of incentives between core business and non-core business.[27] However, the overall valuation effects of corporate diversification are not clear.

Some studies about corporate diversification through acquisitions have explained the valuation effects in the context of agency problems [Jensen (1986), Morck, Shleifer, and Vishny (1988), Shleifer and Vishny (1989)]. Agency theory of acquisitions states that diversification is undertaken for reasons other than market value maximization. Managers' incentives to invest in unrelated business to the firm's core business may be motivated by managers' objectives to reduce employment risk.[28] Jensen (1986) argues that managers with free cash flows are more likely to undertake value-decreasing investments (i.e., diversification programs[29]) instead of paying them out to shareholders. Morck, Shleifer, and Vishny (1988) suggest that managers tend to overinvest beyond the value-maximizing level and pursue value-decreasing diversifying investments for their own benefits at the expense of shareholders. Shleifer and Vishny (1989), Morck, Shleifer, and

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[26] Harris, Kriebel, and Raviv (1982) suggest that information asymmetry costs are higher in diversified firms than in focused firms, resulting in a reduction of value of the firm than their lines of business would be separately.

[27] Myer, Milgrom, and Roberts (1992) argue that unprofitable lines of business create greater value losses in conglomerates than they would as stand-alone firms.

[28] Amihud and Lev (1981) argue that managers have incentive to reduce their employment risk.

[29] The increase in oil price generated large cash flows in the oil industry in the late 1970s and early 1980s. However, oil industry managers did not pay out the free cash flow to shareholders. Instead, they launched diversification programs to invest funds outside the industry (e.g. Montgomery Ward by Mobil Corp., Reliance Electric by Exxon). These acquisitions turned out to be unsuccessful.

Morck (1990) argue that managers can entrench themselves by making manager-specific investments, implying that corporate diversification activities are not consistent with shareholder wealth maximization. That is, managers may attempt to diversify due to firm's poor financial performance relative to other firms in the same industry. Such diversified investments may make it costly for shareholders to replace existing management.

The issue of diversification effects has been also studied by examining the relation between change in degree of diversification and the change in firm value, using a sample of divestitures of non-core-business assets. The rationale of divestitures is that firms could be better managed and achieve greater profits if firms concentrate on their core-businesses. In the 1960s and 1970s, there were trends toward diversification into unrelated business. However, since 1980s, this trend has been reversed [Comment and Jarrell (1995)]. This phenomenon is interpreted as evidence supporting the view that diversification is not consistent with shareholder wealth maximization [Berger and Ofek (1995), Comment and Jarrell (1995)]. John and Ofek (1995) find that sales of assets unrelated to the core-business lead to an improvement in the operating performance of the seller's remaining assets due to an increase in operational efficiency. Stock returns for asset-sale announcements are also greater for focus-increasing divestitures than focus-decreasing divestitures, supporting the view that firms could increase shareholder wealth by focusing on its primary business.

Lang and Stulz (1994) find a negative relation between Tobin's q and the degree of diversification, suggesting that the capital markets value focus-increasing firms more than

diversifying firms. It may be because focus-increasing firms might have a competitive advantage in core-business activities, while diversifying firms might not have such an advantage.

The previous studies about divestitures [Porter (1987), Comment and Jarrell (1995), John and Ofek (1995)] and acquisitions [Morck, Shliefer, and Vishny (1989)] provide evidence against diversification. Porter (1987), Kaplan and Weisbach (1992) use divestitures rates as an evidence of the failure of diversifying investments. However, divestiture ratios may be subject to measurement problems [Weston (1989)]. In Comment and Jarrell (1995) and Berger and Ofek (1995) study, changes in either the number of segments or Herfindahl index are estimated to measure the degree of corporate diversification, instead of comparing the SIC digit code of new investment with that of firm's primary business. Lang and Stulz (1994) and Wernerfelt and Montgomery (1988) examine the cross-sectional relation between the degree of diversification and firm value. Furthermore, divestitures announcements may realize positive market reactions since the capital markets interpret that firms correct previous bad investment decisions. However, it is unclear whether diversifying investments become value-decreasing even though the investments have once been profitable[30] or whether managers undertake diversifying investments for the reasons other than shareholder wealth maximization even though they are value-decreasing. Given these previous studies, it is difficult to draw parallel conclusions concerning the valuation effects of specific corporate investments.

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[30] Weston (1989) argues that firms may sell a business it has improved or a business that once had synergies with the firm's core business but no longer does. In this case, original investments could have been increased shareholder value.

This paper provides direct evidence on the valuation effects of focus-increasing and diversifying investments, using a sample of plant investment announcements. The sample is classified into focus-increasing and diversifying investments. If diversifying investment is one way in which managers waste cash flows for their own benefit at the expense of shareholders [Jensen (1986), Morck, Shleifer, and Vishny (1989)], or if an increase in corporate focus enhances managerial efficiency, it is expected that focus-increasing investments gain positive stock returns, while diversifying investments exhibit negative abnormal returns.

To further examine whether the extent of the abnormal returns associated with type of investment may differ significantly for value-maximizing and overinvesting firms, the sample is classified into four subsamples according to firm's managerial characteristics and type of investment: (1) value-maximizing firms with focus-increasing investments, (2) value-maximizing firms with diversifying investments, (3) overinvesting firms with focus-increasing investments, and (4) overinvesting firms with diversifying investments. Focus-increasing investment announcements by value-maximizing firms are expected to gain the largest abnormal returns, since these investments are likely to be more value-increasing activities. On the other hand, diversifying investment announcements by overinvesting firms are expected to experience the lowest abnormal returns, since these investments are likely to be more value-decreasing activities.

Furthermore, Lang and Stulz (1994) argue that firms which have limited investment opportunities in their core-business are likely to engage in diversifying investment transactions. However, such firms may lack the required competitive edge in non-core

business and thus lose from diversification. Consistent with Lang and Stulz (1994), John and Ofek (1995) report that focus-increasing asset-sales are associated with an improvement in firm performance, while diversifying asset-sales are not.

IV. Data & Methodology

A. Data

The sample of this essay I c>nsists of domestic plant announcements during the period of 1980-1992.[31] The sample is collected from the annual edition of the Wall Street Journal Index. Once the announcement dates are identified, other relevant information is obtained from the articles reported in the Wall Street Journal.

The sample is collected based on the following criteria: (1) firms should be U.S. manufacturing companies, (2) firms should be listed on NYSE or AMEX, and (3) CRSP and COMPUSTAT tapes are available for the firms. Firms announcing purchase of equipment or machinery, capital budgeting, and purchase of plant from other companies are excluded. Also excluded are firms with other corporate announcements around 15 days of plant announcement. This screening procedure produces a sample of 194

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[31] For example,

Eastman Kodak plans to build a $50 million plant in suburban Gates, N.Y. to manufacture Ektaprint copier-duplicator and parts (WSJ Jan. 07, 1981).

Union Camp will build a $600 million bleached pulp and paper mill near Eastover, S.C. (WSJ May 20, 1981).

Armco will build a $50 million steel-coating facility at its Middleton, Ohio (WSJ Oct. 03, 1984).

investment announcements.

The sample is divided into value-maximizing and overinvesting firms, using Tobin's q. If a firm has $q > 1$ (sample size = 61), it is classified as value-maximizing. Otherwise, firms with $q < 1$ are classified as overinvesting (sample size = 133). The sample is also classified into high and low free cash flow firms. Lehn and Poulsen (1989) define free cash flows as operating income before depreciation minus interest expense, taxes, preferred dividends, and common dividends. In this study, the value of normalized free cash flows is used as in Lang, Stulz, and Walkling (1991). Lang and Litzenberger (1991) normalize free cash flows by dividing them by the book value of the total assets since large firms are more likely to have higher cash flows. If free cash flows of a firm are larger (smaller) than the sample median, it is classified as high (low) free cash flow firm.

The sample is also divided into firms with focus-increasing investments (sample size = 129) and firms with diversifying investments (sample size = 59). An investment is classified as a focus-increasing investment if the 2-digit SIC code of the investment is the same as the firm's main 2-digit code (i.e., firm's core-business). Otherwise, it is classified as a diversifying investment.[32]

The frequency distribution of the sample of domestic investment announcements by year during the period of 1980-1992 is presented in Table I-1. The 194 announcements are made by 152 different U.S. firms.

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[32] The Herfindahl index, defined as the sum of segments'sales squared divided by total sales squared, has been used as alternative measure to classify investments into focus-increasing and diversifying investment.

[Insert Table I-1 about here]

Table I-2 shows the frequency distribution of domestic investment announcements, classified by the 2-digit SIC industrial code.

[Insert Table I-2 about here]

Most domestic investment announcements occurred in the following industries: paper and allied products, chemical and allied products; primary metals; industrial machinery and equipment; motor vehicles and car bodies or transportation equipments. However, domestic investment activity represents a relatively broad spectrum of industries.

Table I-3 reports summary statistics of the sample of firms with domestic investments,[33] including Tobin's q, free cash flow, ratio of debt to total assets, ratio of R&D to sales, ratio of advertising expenditure to sales, insider ownership (i.e., proportion of outstanding shares held by insiders), ratio of foreign sales to total sales, size of investment, and firm size. Panel A shows the summary statistics for the entire sample. Panel B provides the summary statistics for the sample of the value-maximizing firms (i.e., $q > 1$) and panel C reports the summary statistics for overinvesting firms (i.e., $q < 1$).

[33] The data for estimation of Tobin's q and firm size are collected from Compustat. Insider ownership, ratio of foreign sales to total sales are obtained from Value Line Investment Survey. Sizes of investment are obtained from the article reported in the Wall Street Journal.

Table I-1

Frequency Distribution of the Domestic Investment Announcements by U.S. Firms: 1980-1992

Year	Frequency
1980	30
1981	23
1982	22
1983	14
1984	19
1985	10
1986	5
1987	12
1988	12
1989	12
1990	10
1991	9
1992	16
Total	194

Table I-2

Frequency Distribution of the Domestic Investment Announcements by U.S. Firms, Classified by Industry (2-digit SIC code): 1980-1992

2-digit SIC Code	Industry Group	Frequency
13	Oil and gas exploration	1
20	Food and kindred products	10
22	Textile mill products	1
23	Apparel and other finished goods	2
24	Lumber and wood products	5
26	Paper and allied products	19
27	Printing and publishing	1
28	Chemicals and allied products	50
29	Petroleum refining	11
30	Rubber and plastic products	9
32	Stone, clay, and glass products	7
33	Primary metals	21
34	Fabricated metal products	3
35	Indust. machinery & computer equip.	16
36	Electronic equipment	4
37	Transportation equipment	22
38	Measuring instr., photography, watches	9
48	Communication	1
59	Miscellaneous retail	1
78	Motion pictures	1
		194

[Insert Table I-3 about here]

It is evident that value-maximizing firms have a higher mean ratio of R&D to sales than overinvesting firms, suggesting that value-maximizing firms have more growth opportunities than overinvesting firms. Value-maximizing firms, on average, have a lower proportion of shares held by insiders than overinvesting firms, implying that value-maximizing firms are widely owned than overinvesting firms. Value-maximizing firms appear to have a higher mean ratio of foreign sales to total sales than overinvesting firms. The average size of the plant investment is larger for overinvesting firms ($152 million) than for value-maximizing firms ($88 million). In terms of market capitalization, value-maximizing firms are, on average, larger than overinvesting firms.

B. Methodology

a. Estimation of Tobin's q

Tobin's q, defined as the ratio of the market value of the firm to the replacement cost of its assets, has been used to explain cross-sectional differences in investment opportunities and management performance across firms.[34] For example, Tobin's q is used as measure of management performance [Lang, Stulz, and Walkling (1989),

[34] For example, the relationship between managerial equity ownership and firm value [Morck, Shleifer, and Vishny (1988), McConnell and Servaes (1990)], the relationship between managerial performance and tender offer gains [Lang, Stulz, and Walkling (1989)].

Table I-3

Summary Statistics For Firms with the Domestic Investment Announcements by U.S. Firms: 1980-1992

	N	Mean	Std. dev	Minimum	Maximum
Panel A: Entire sample					
Tobin's q	194	0.8562	0.5253	0.2430	4.1250
Free cash flow/total assets[1]	194	0.1419	0.0962	-0.0329	1.1320
Debt/total assets	194	0.2275	0.1561	0.0037	1.5379
R&D/sales	159	0.0341	0.0529	0.0010	0.6050
Advertising/sales	101	0.0301	0.0338	0.0002	0.2232
Insider ownership[2]	156	0.0678	0.1086	0.0500	0.5000
Foreign sales/total sales	142	0.3035	0.1551	0.0000	0.7500
Size of investment ($ million)	121	130.4900	217.4000	5.0000	1500.0000
Firm Size ($ million)	194	5687.6800	9583.9700	108.9400	57981.9800
B. High q firms[3]					
Tobin's q	61	1.4264	0.5737	1.0000	4.1250
Free cash flow/total assets	61	0.1644	0.1422	0.0149	1.1320
Debt/total assets	61	0.2208	0.2123	0.0037	1.5379
R&D/sales	47	0.0603	0.0881	0.0033	0.6050
Advertising/sales	41	0.0473	0.0448	0.0046	0.2232
Insider ownership	48	4.8604	7.8135	0.0500	0.4000
Foreign sales/total sales	45	34.9330	13.8480	0.0600	0.6000
Size of investment ($ million)	41	88.1720	104.8700	7.3000	600.0000
Firm Size ($ million)	61	6660.5200	9863.4200	227.9200	57981.5800
C. Low q firms					
Tobin's q	133	0.5948	0.1867	0.2430	0.9750
Free cash flow/total sales	133	0.1315	0.0632	-0.0329	0.3624
Debt/total assets	133	0.2306	0.1230	0.0125	0.6598
R&D/sales	112	0.0231	0.0189	0.0010	0.1066
Advertising/sales	60	0.1849	0.0154	0.0002	0.0753
Insider ownership	108	7.6472	11.9080	0.0500	0.5000
Foreign sales/total sales	97	28.2260	15.8500	0.0000	0.7500
Size of investment ($ million)	80	152.1700	254.5900	5.0000	1500.0000
Firm size ($ million)	133	5241.4900	9457.2800	108.9400	56703.4600

[1] The free cash flow is defined as in Lehn and Poulsen (1989) (i.e. operating income before depreciation minus interest expense, taxes, preferred dividends, and common dividends).

[2] It is defined as the percent of outstanding shares held by insiders. The data are collected from several issues of the Value Line Investment Survey.

[3] High (low) q indicates value-maximizing (overinvesting) firms.

McConnell and Servaes (1990), Servaes (1991)], or firm's investment opportunities [Lang, Stulz, and Walkling (1991)], firm value [Morck, Shliefer, and Vishny (1988)].

Lang and Litzenberger (1989) use Tobin's q to distinguish value-maximizing from overinvesting firms. In their study, Tobin's q is defined as the marginal return on firm's existing assets plus the marginal return on future investment opportunities.[35] It is also assumed that marginal returns of capital are diminishing, implying that the marginal return on existing assets is larger than marginal return on new investment. According to Lang and Litzenberger (1989), for value-maximizing firms, marginal returns on new investment are equal to (or larger than) the cost of capital. Under conditions of decreasing marginal efficiency of capital, the marginal return on existing assets is also larger than the cost of capital. Thus, Tobin's q is larger than unity. On the other hand, for overinvesting firms (i.e., firms with poor investment opportunities), the marginal return on existing assets is less than the cost of capital.[36] Under conditions of decreasing marginal efficiency of capital, the marginal return on new investment is also less than cost

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[35] average Tobin's q = (X/C)/K + [(I/C)/K] (P - K) T
= average returns on existing assets
+ average returns on future investment

where
X: expected earnings from existing assets
C: current capital stock
K: cost of capital
I: future investment
P: average returns for firm
T: time period

P > K = X/C > K = q > 1 value-maximizing
X/C = P < K = q < 1 overinvesting

[36] In reality, it is difficult to observe the marginal Tobin's q so that it is common to use average Tobin's q.

of capital. Thus, Tobin's q is less than unity.

In this study, Tobin's q is used to distinguish value-maximizing (i.e., $q > 1$) from overinvesting firms (i.e., $q < 1$) to test the implications of overinvestment hypothesis. Consistent with Jensen's (1986) overinvestment hypothesis, for value-maximizing firms, marginal return on investments would be positive and thus increase the value of the firm. On the other hand, for overinvesting firms, the marginal return on investments would be negative and thus decrease shareholders wealth.

The procedure used by Lindenberg and Ross (L-R) (1981) to estimate Tobin's q is very complicated in terms of computational efforts and data requirements. That is, replacement costs are complex to estimate.[37] The information about replacement costs of plant and inventory is available only for large firms over the period of 1974-1984.[38] In addition, some databases are available only for manufacturing firms.[39] Chung and Pruitt (1994) developed a simple formula to approximate L-R's Tobin's q.[40] The advantages of the approximate q are that (1) all data needed to calculate the Tobin's q can be obtained from the Compustat Industrial files and (2) it is simple to calculate q values.

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[37] The replacement costs are calculated by approximating the plant's age and life and then adjusting its book value for inflation. The replacement value of inventory is determined by assuming that the book value of inventory equals its market value when firm uses first-in first-out (FIFO) accounting.

[38] During the period of 1974-1984, only firms with net plant and equipment values in excess of $120 million were required to report replacement costs of plant and inventory to the FASB.

[39] For instance, Manufacturing Master File complied by the National Bureau of Economic Research.

[40] approximate q = (MVE + PS + DEBT)/TA
where
MVE : product of a firm's share price and the number of common stock shares outstanding, given by COMPUSTAT (#24 x #25)
PS : the liquidating value of the firm's outstanding preferred stock (#10)
DEBT: short-term (less than 1 year) liabilities net of short-term assets (#5 - #4)
TA : book value of the total assets (#6)

To show how the value of approximate q are close to the L-R Tobin's q, Chung and Pruitt (1994) run yearly OLS regression between q values from both the L-R and approximate q formulas from 1978 to 1987. Their approximation of q can explain 96.6% of the variability of the L-R Tobin's q. They also show the comparison of L-R's Tobin's q with approximate q for forty randomly selected firms, in which the two methods give very close value with deviation less than 18%. The high degree of observed consistency between the L-R and the approximate q formulas over the 1978-1987 time period strongly suggests that researchers can employ approximate q values with considerable confidence. The approximate q is used here to distinguish between value-maximizing (i.e., $q > 1$) and overinvesting firms (i.e., $q < 1$).

b. Estimation of Abnormal Stock Returns

To measure the announcement effects of investments, the event study methodology [Brown and Warner (1985)] is used to obtain the abnormal returns. The initial announcement date is designated as day 0 in event time and is verified by the Wall Street Journal Index. The market model is used to estimate normal or expected common stock returns. In the ordinary least squares model, returns on a given security are regressed against the concurrent returns of the market. The CRSP equally weighted index is used as a proxy for the market portfolio.

The market model is specified as:

$$R_{jt} = a_j + b_j R_{mt} + e_{jt}$$

where

R_{jt} : the rate of return on security j for event fay t

a_j : estimation period intercept of firm j

b_j : OLS estimates of firm j's market model parameters

R_{mt} : the rate of return on the CRSP equally valued index on event day t

e_{jt} : the error term of security j on the event day t

The potential for bias of the OLS b_j, due to nonsynchronous trading and infrequent trading, has been recognized [Eades, Hess, and Kim (1984)]. To correct this bias, the method developed by Scholes and Williams (1977) is used to estimate the OLS b_j.[41] The abnormal returns for an announcing firm are the differential between the actual returns on its common stock and the contemporaneous expected return generated by the market model. The abnormal returns for the common stock of firm j on day t are obtained as follows:

$$AR_{jt} = R_{jt} - (a_j - b_j R_{mt})$$

where

AR_{jt} : abnormal return for firm j on event day t

R_{jt} : daily return of firm j common stock on event day t

R_{mt} : daily return on the CRSP equally-weighted index for all common stocks on

[41] Scholes and Williams (1977) develop a method of estimating parameters using daily returns in case of nonsynchronous or infrequent tradings.

NYSE and AMEX (used as a proxy of the market portfolio of risky assets) on event day t

a_j : estimation period intercept of firm j

b_j : OLS estimates of firm j's market model parameters

The estimation period is from t = -120 to -30 relative to the first date of announcement in the Wall Street Journal Index, day t = 0 for the domestic plant announcements. Daily abnormal returns are calculated for each firm in the sample over the time interval t = -15 to t = +15.

For a sample of N firms, the daily average abnormal return for each day t is estimated by

$$AR_t = \frac{1}{N}\sum_{j=1}^{N} AR_{jt}$$

In the case of no abnormal returns, AR_t has an expected value of zero.

Analysis of statistical significance requires the standardization of abnormal returns to reflect statistical errors in the determination of expected returns. To determine whether the average daily abnormal return is statistically significantly different from zero, the average standardized abnormal return ($ASAR_t$) is calculated.

$$ASAR_t = \frac{1}{N} \sum_{j=1}^{N} \left(\frac{AR_{jt}}{S_{jt}} \right)$$

where

$$S_{jt} = \left(S_j^2 \left(1 + \frac{1}{T} + \frac{(R_{mt} - \overline{R_m})^2}{\sum_{i=1}^{T} (R_{mi} - \overline{R_m})^2} \right) \right)^{1/2}$$

and

S^2_j : the residual variance for security j from the market model regression

N : the number of observations during the estimation period

R_{mt} : the returns on the market portfolio for the event day t

R_m : the average return of the market portfolio for the estimation period

R_{mi} : the average return of the market portfolio for day i during the estimation period

T : the number of days in the estimation period

It is assumed that each of the abnormal returns is normally and independently distributed across securities.

For each day, the following t-statistic is computed:

$$t = \sqrt{N}(ASAR_t)$$

To examine whether the cumulative average daily abnormal returns are significantly

different from zero, the cumulative abnormal returns (CARs) for each security j, CAR_j, are calculated by summing average abnormal returns over event time as follows:

$$CAR_{j,K,L}=\sum_{t=K}^{L} AR_{jt}$$

where the $CAR_{j,K,L}$ is for the period from t = day K until t = day L.

The cumulative average abnormal returns over the event time from day K until day L are calculated by

$$CAAR_{K,L}=\frac{1}{N}\sum_{j=1}^{N} CAR_{j,K,L}$$

The average standardized cumulative abnormal returns over the interval K to L are obtained as follows:

$$ASCAR_{K,L}=\sum_{K}^{L} ASAR_{K,L}$$

The cumulative abnormal returns (CARs) for several interval windows around the announcement day are calculated.

Finally, t-statistics are calculated for $CAR_{K,L}$ by

$$t=\sqrt{N}(ASCAR_{K,L}) / \sqrt{K-L+1}$$

V. Empirical Results

A. Overinvestment Hypothesis Tests

Panel A of Table I-4 presents the daily average abnormal returns during the period of -5 to +5 days around the announcement day for the entire sample of domestic investment (plant) announcements from 1980 to 1992.

[Insert Table I-4 about here]

One day before announcement (day = -1), firms experience significant negative abnormal returns of -0.37% (t-statistic = -2.330). However, the average abnormal returns at the announcement day (day = 0) are insignificant negative (-0.23%). Panel B of Table I-4 shows that the cumulative average abnormal returns for several window intervals are significantly negative. This evidence suggests that capital markets' response to corporate investment announcements is negative. Similar negative returns for corporate investments are also reported in the study of acquisitions [Dodd (1980), Malatesta (1983)]. However, the evidence reported in Table I-4 is not consistent with McConnell and Muscarella's (1985) findings in which an increase in capital expenditures enhances firm value by

Table I-4

A. Daily Average Abnormal Returns (AARS), t-statistics, % of Positive AARs for the Entire Sample of Domestic Investment Announcements by U.S. Firms for Event Period of -5 to +5 Trading Days: 1980-1992 (Sample Size = 194). ***,**,* denote the significance at the 1%, 5%, 10% level.

Day	Average Abnormal Returns, AAR	t-statistics(*p*-value)	Positive AAR(%)
-5	-0.0025	-2.313(0.021)**	43.8
-4	0.0009	0.453(0.650)	49.5
-3	-0.0003	-0.160(0.872)	48.4
-2	0.0010	0.755(0.450)	49.5
-1	-0.0037	-2.330(0.020)**	37.6
0	-0.0023	-0.868(0.386)	42.8
+1	-0.0023	-1.377(0.169)	49.5
+2	-0.0000	0.277(0.781)	51.5
+3	0.0008	1.057(0.291)	48.4
+4	0.0022	2.134(0.034)**	54.1
+5	-0.0020	-1.095(0.274)	44.8

B. Cumulative Average Abnormal Returns (CAARs), t-statistics for the Entire Sample of Domestic Investment Announcements by U.S. Firms for Several Window Intervals: 1980-1992 (Sample Size = 194) ***,**,* denote the significance at the 1%, 5%, 10% level.

Trading Interval	Cumulative Average Abnormal Returns	t-statistics(*p*-value)
[-5 to +5]	-0.0080	-1.050(0.294)
[-5 to +1]	-0.0091	-2.219(0.027)**
[-2 to +1]	-0.0073	-1.920(0.056)**
[-1 to +1]	-0.0083	-2.656(0.008)***
[-1 to 0]	-0.0060	-2.273(0.024)**
[0 to +1]	0.0046	1.596(0.111)

Note: Day 0 is the first announcement date associated with domestic investments by U.S. firms as reported in the Wall Street Journal.

1.21%.

Although the results in Table I-4 appear to be consistent with Jensen's (1986) overinvestment hypothesis, the sample may include different types of firms with respect to investment opportunities or level of free cash flows. The overinvestment hypothesis implies that the valuation effects of corporate investment decisions depend on firm's investment opportunities. Using Tobin's q as the measure of firm's investment opportunities, the sample is divided into two subsamples - value-maximizing and overinvesting firms. Value-maximizing (i.e., $q > 1$) firms are expected to be better managed and have positive NPV projects, whereas overinvesting (i.e., $q < 1$) firms are likely to have no positive NPV projects. Hence, the overinvestment hypothesis predicts that investment announcements by value-maximizing firms gain positive market returns, while investment announcements by overinvesting firms suffer negative market returns.

Panel A of Table I-5 provides the daily average abnormal returns for value-maximizing and overinvesting firms.

[Insert Table I-5 about here]

One day before the investment announcement (day = -1), value-maximizing firms experience significant positive abnormal returns of 0.45% (t-statistic = 2.297). At the announcement day (day = 0), these firms gain significant positive abnormal returns of 0.38% (t-statistic = 1.987). On the other hand, at day -1, overinvesting firms realize significant negative abnormal returns of -0.74% (t-statistic = 4.499). At the announcement

Table I-5

A. Daily Average Abnormal Returns (AARS), % of the Positive AARs for the Domestic Investment Announcements by U.S. Firms with q > 1 and q < 1, the t-statistics for the Daily Mean Differences of AARs Between Two Samples for the Event Period -5 to +5 Trading Days: 1980-1992 (t-statistics are in parentheses). ***,**,* denote the significance at the 1%, 5%, 10% level.

Day	Average Abnormal Returns, AAR,(%) Tobin's q		Positive AAR(%)		t-difference
	q > 1 (N=61)	q < 1 (N=133)	q > 1	q < 1	$AAR_{q>1}$ - $AAR_{q<1}$
-5	-0.0033(-1.884)*	-0.0020(-1.466)	42.6	44.4	-0.463
-4	0.0017(0.650)	0.0006(0.417)	50.8	48.9	0.319
-3	-0.0009(-0.279)	0.0001(0.126)	50.8	47.4	-0.293
-2	0.0027(0.450)	0.0002(0.848)	54.1	47.4	0.678
-1	0.0045(2.297)***	-0.0074(-4.499)***	54.1	30.1	4.263***
0	0.0038(1.937)**	-0.0051(-2.521)***	52.5	38.3	3.514***
+1	-0.0025(-0.493)	-0.0022(-1.224)	52.5	48.1	-0.076
+2	-0.0027(-0.983)	0.0012(0.988)	47.5	53.3	-1.139
+3	0.0007(0.409)	0.0010(0.929)	45.9	49.6	-0.111
+4	0.0057(2.964)***	0.0005(0.393)	59.0	51.8	1.611*
+5	0.0009(0.498)	-0.0033(-1.682)*	47.5	43.6	1.171

B. Cumulative Average Abnormal Returns (CAARs) for the Domestic Investment Announcements by Firms with q > 1 and q < 1, the t-statistics for the Mean Difference of CAARs Between Two Samples for Several Window Intervals: 1980-1992 (t-statistics are in parentheses). ***,**,* denote the significance at the 1%, 5%, 10% level.

Trading Interval	Cumulative Average Abnormal Returns, CAAR (%) q > 1 (N=61)	q < 1 (N=133)	t-Difference $CAAR_{q>1}$ - $CAAR_{q<1}$
[-5 to +5]	0.0107(1.482)	-0.0166(-2.260)**	2.814***
[-5 to +1]	0.0060(0.692)	-0.0159(-3.130)***	2.832***
[-2 to +1]	0.0086(2.036)**	-0.0146(-3.677)***	4.233***
[-1 to +1]	0.0059(2.273)**	-0.0148(-4.719)***	5.118***
[-1 to 0]	0.0083(3.160)***	-0.0126(-4.859)***	6.257***
[0 to +1]	0.0013(1.109)	-0.0070(-2.663)**	2.751***

Notes: (1) Day 0 is the first announcement date associated with domestic investments as reported in the Wall Street Journal.
(2) if the value of the Tobin's q is greater (less) than 1, the firm is classified into value-maximizing (overinvesting) firm.

day, these firms also suffer significant negative abnormal returns of -0.51% (t-statistic = -2.521). The mean differences between value-maximizing and overinvesting firms are statistically significant at the 1% level for both days (-1, 0). This evidence implies that the capital markets expect more value to be created when firms with profitable investment opportunities announce their investment plans compared to firms with poor investment opportunities (i.e., overinvesting firms).

Panel B of Table I-5 presents cumulative average abnormal returns for value-maximizing (i.e., $q > 1$) and overinvesting (i.e., $q < 1$) firms for several interval windows around the announcement day. The results show that value-maximizing firms have significant positive two-day abnormal returns of 0.83% (t-statistic = 3.160), while overinvesting firms experience significant negative two-day abnormal returns of -1.26% (t-statistic = -4.859). The mean difference for the two-day abnormal returns between the two subsamples is statistically significant at the 1% level. This evidence indicates that investment announcements by value-maximizing firms exhibit positive valuation effects because the capital market believes that these firms are likely to undertake positive NPV projects. On the other hand, investment announcements by overinvesting firms have negative valuation effects because these firms are more likely to waste cash flows by engaging in negative NPV projects. This is consistent with the prediction of the overinvestment hypothesis. Although not in the context of plant investments, Servaes (1991) finds that bidder abnormal returns are higher for high q firms (i.e., $q > 1$).

Jensen's (1986) argument implies that stock market returns associated with firm's investment opportunities depend on free cash flows. That is, since value-maximizing firms

are likely to use cash flows productively, no significant relation between the level of cash flows and investment-related abnormal returns is expected. On the other hand, since overinvesting firms are more likely to waste cash flows in negative NPV investments, the level of free cash flows may have an adverse impact on the value of the firm. Thus, the overinvestment hypothesis implies that, cross-sectionally, the abnormal returns must be negatively related to the cash flows of overinvesting firms and unrelated to the cash flows of value-maximizing firms.

To explore this implication of the overinvestment hypothesis, this study examines the cross-sectional relation between the level of free cash flows and the stock market returns for a sample of value-maximizing and overinvesting firms, respectively. Panel A of Table I-6 reports the results from ordinary least squares (OLS) regressions of the two-day cumulative abnormal returns for the announcements of domestic investments (plants) on the free cash flows.

[Insert Table I-6 about here]

For value-maximizing firms, the relation between the two-day abnormal returns and free cash flows is insignificantly positive (2.42%) (t-statistic = 1.303). For overinvesting firms, the two-day abnormal returns are negative related to cash flows (-0.67%) (t-statistic = 2.208). This evidence indicates that firms with profitable investment opportunities use cash flows productively, while firms with poor investment opportunities are likely to overinvest corporate free cash flows. These findings are consistent with the prediction of

Table I-6

A. OLS Estimates of Coefficients in Cross-Sectional Regressions of the Two-day (-1,0) Cumulative Abnormal Returns ($CAR_{-1,0}$) for the Domestic Investment Announcements by U.S. Firms: 1980-1992 (t-statistics are in parentheses). ***,**,* denote the significance at the 1%, 5%, 10% level.

$$CAR_{(-1,0),q>1} = a_0 + a_1 \text{ FCF}$$

$$CAR_{(-1,0),q<1} = a_0 + a_1 \text{ FCF}$$

Tobin's q	sample size	Intercept	Free cash flow[1]	R^2 (%)
q > 1	61	0.0436 (1.050)	0.0242 (1.303)	3.62
q < 1	133	-0.0038 (-0.849)	-0.0067 (-2.208)**	3.59

B. OLS Estimates of Coefficients in Cross-Sectional Regressions of the Two-day (-1,0) Cumulative Abnormal Returns ($CAR_{-1,0}$) for the Domestic Investment Announcements by U.S. Firms: 1980-1992 (t-statistics are in parentheses). ***,**,* denote the significance at the 1%, 5%, 10% level.

$$CAR_{-1,0} = a_0 + a_1 \text{ Tobin's q} + a_2 \text{ FCF}$$

	reg1	reg2	reg3
intercept	-0.0129 (-3.979)***	-0.0003 (-0.129)	-0.0074 (-2.069)**
Tobin's q	0.0081 (2.510)***		0.0086 (2.728)***
Free cash flow		-0.0357 (-3.007)***	-0.0373 (-3.191)***
R^2 (%)	3.18	4.50	8.08

[1] The free cash flow is defined as operating income before depreciation minus interest expenses, taxes, preferred dividends, and common dividends, all of which is divided by total assets for the fiscal year before the investments [Lang, Stulz and Walkling (1991)].

overinvestment hypothesis and the empirical evidence reported by Lang, Stulz, and Walkling (1991) on the relationship between abnormal returns and cash flows from domestic acquisitions.

Panel B of Table I-6 presents estimates of regressions of two-day abnormal returns from the investment announcements on Tobin's q and free cash flows for the entire sample over the entire period. The first regression shows that the Tobin's q coefficient is positively related to the stock market returns, implying that domestic investments by value-maximizing firms increase shareholder wealth. In the second regression, the relation between abnormal returns and the level of free cash flows is negative and significant. It implies that, as Jensen (1986) argues, the role of free cash flows available to managers is an important factor in explaining the negative relationship between investment abnormal returns and cash flows. The negative relationship between abnormal returns and the cash flows is retained even in the presence of the Tobin's q variable. This result is reported in the last column of the same Table.

Further, whether the abnormal returns associated with free cash flows differ for value-maximizing and overinvesting firms is examined. Table I-7 presents a 2 x 2 matrix in which the sample of firms is classified according to Tobin's q and free cash flows.

[Insert Table I-7 about here]

The results show that value-maximizing firms (i.e., $q > 1$) with high free cash flows appear to earn most significant positive returns of 1.02% (t-statistic = 2.869), implying

Table I-7

Two-Day (-1,0) Cumulative Average Abnormal Stock Returns ($CAR_{-1,0}$), Classified by Tobin's q[1] and Free Cash Flow[2]: Domestic Investments by U.S. Firms: 1980-1992. All data are obtained from COMPUSTAT. (t-statistics are in parentheses) *, **, * denote the significance at the 1%, 5%, 10% level.**

Tobin's q	High FCF Firms	Low FCF Firms	Mean Difference
q > 1	0.0102 (2.869)*** N=36	0.0072 (1.483) N=25	0.0030 (0.8540)
q < 1	-0.0155 (-4.296)*** N=67	-0.0094 (-2.575)** N=66	-0.0061 (-1.587)
Mean Difference	0.0257 (5.5650)***	0.0166 (3.1330)***	

[1] Tobin's q is calculated using the formula provided by Chung and Pruitt (1994). q > 1 (q < 1) indicates value-maximizing (overivesting) firms.

[2] Free cash flows are estimated using the definition given by Lehn and Poulsen (1989) and Lang, Stulz, Walkling (1991). Specifically, free cash flows are defined as operating income before depreciation minus interest expense, taxes, preferred and common dividends, all of which are divided by the book value of total assets for the fiscal year before the investment. The sample median (0.1339) of free cash flows is used to classify firms into the high and low free cash flow categories.

that these firms create more wealth with cash flows. Also, regardless of the level of free cash flows, capital markets respond positively to the investment announcements by value-maximizing firms. On the other hand, overinvesting firms (i.e., $q < 1$) with high free cash flows incur significant negative returns of -1.55% (t-statistic = -4.296). This evidence suggests that these firms have the greatest agency problems over the distribution of free cash flows. In addition, capital markets seem to respond more vigorously to the investment announcements of overinvesting firms with high cash flows.

B. Type of Investment Tests

B1. Comparison of Valuation Effects Between Focus-Increasing and Diversifying Investments

Although not in the context of plant investments, previous studies [Morck, Shliefer, and Vishny (1990), Lang and Stulz (1994), John and Ofek (1995)] have presented evidence in favor of the view that an increase in corporate focus is associated with shareholder wealth maximization.

This section examines the valuation effects of two different types of plant investments; that is, (1) focus-increasing and (2) diversifying investments. An investment is classified as a focus-increasing investment if the 2-digit SIC code of the investment is the same as the firm's main COMPUSTAT 2-digit code. Otherwise, it is classified as a

diversifying investment.[42]

Panel A of Table I-8 presents the daily average returns for focus-increasing and diversifying investments for the eleven trading days around the investment announcements over the 1980-1992 period.

[Insert Table I-8 about here]

At the announcement day, the abnormal returns for both samples appear to be insignificant. On the other hand, on the day before (day = -1), diversifying investments are associated with significant negative stock returns of -0.89% (t-statistic = -2.452), whereas focus-increasing investments are associated with insignificant positive returns. The results also show that mean differences between two samples are significantly different at the 1% level.

Panel B of Table I-8 shows the cumulative abnormal returns for focus-increasing and diversifying investments for several window intervals around the two-day announcement period. Focus-increasing investments earn positive two-day abnormal returns of 0.09%, implying that an increase in corporate focus are associated with value-increasing activities. On the other hand, diversifying investments experience significant negative two-day abnormal returns of -1.14% (t-statistic = -1.662), implying that corporate diversifying investments are value-decreasing. Further, the mean differences between focus-increasing and diversifying investments for the two-day abnormal returns are significant at the 5%

[42] This measure is also used in Morck, Shleifer, and Vishny (1990), Kaplan and Weisbach (1992), John and Ofek (1995).

Table I-8

A. Comparison of Daily Average Abnormal Returns (AARs), % of Positive AARs for the Focus-Increasing and Diversifying Domestic Investment Announcements by U.S. Firms, t-statistics for the Daily Mean Differences of AARs Between Two Samples for the Event Period -5 to +5 Trading Days: 1980-1992. (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

	Average Abnormal Returns, AAR,(%)		Positive AAR(%)		
Day	Focus-increasing investments (N=129)	Diversifying investments (N=59)	Focus-increasing investments	Diversifying investments	t-difference AAR_{focus} - AAR_{div}
-5	-0.0027(-0.857)	-0.0051(-2.031)**	41.4	46.6	0.7906
-4	-0.0003(0.074)	0.0032(0.831)	48.3	51.2	-1.2566
-3	-0.0021(0.624)	-0.0017(-0.352)	43.8	46.1	-1.3032
-2	-0.0002(0.082)	0.0026(0.428)	49.1	53.9	-0.8949
-1	0.0005(0.095)	-0.0089(-2.452)***	50.4	38.5	3.2665***
0	0.0004(0.086)	-0.0025(-0.419)	51.6	47.7	0.7259
+1	-0.0020(-0.723)	-0.0047(-1.435)	43.2	45.8	0.8684
+2	0.0004(-0.179)	-0.0022(-0.177)	55.9	48.1	0.7921
+3	-0.0011(-0.543)	0.0029(0.467)	42.5	53.3	-1.5164
+4	0.0018(0.428)	0.0045(1.132)	52.5	52.0	-0.8014
+5	-0.0007(-0.149)	-0.0042(-1.110)	45.7	47.4	1.2469

B. Comparison of Cumulative Average Abnormal Returns (CAARs) for the Focus-Increasing and Diversifying Domestic Investment Announcements, t-statistics the Mean Difference of CAARs Between Tow Samples for Several Window Intervals: 1980-1992. (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

	Cumulative Average Abnormal Returns, CAAR (%)		
Trading Intervals	Focus-Increasing investments (N=129)	Diversifying investments (N=59)	t-Difference $CAAR_{focus}$ - $CAAR_{div}$
[-5 to +5]	-0.0060(0.803)	-0.0127(-0.982)	0.5074
[-5 to +1]	-0.0064(0.824)	-0.0137(-1.143)	0.7721
[-2 to +1]	-0.0013(0.378)	-0.0136(-0.945)	1.8271**
[-1 to +1]	-0.0011(0.548)	-0.0162(-2.110)**	2.7180***
[-1 to 0]	0.0009(0.335)	-0.0114(-1.662)*	2.7234**
[0 to +1]	-0.0016(-0.251)	-0.0073(-0.632)	1.3030

Notes: (1) Day 0 is the first announcement date associated with domestic investments as reported in the Wall Street Journal.

(2) The investment is classified as focus-increasing if the 2-digit SIC code of the investment is the same as the firm's main 2-digit SIC code (i.e. firm's core business). Otherwise, it is classified as diversifying.

level.

The findings in Table I-8 appear to support the view that an increase in corporate focus is consistent with the market value maximization hypothesis [John and Ofek (1995), Comment and Jarrell (1995)], whereas corporate diversifying investments tend to decrease shareholder wealth. The negative stock reactions associated with diversifying investment announcements may be because diversifying investments are one way in which managers waste cash flows at the expense of shareholder wealth [Jensen (1986)]. Another possible explanation is that firms with poor investment opportunities in their core business are likely to engage in diversifying investments [Lang and Stulz (1994)]. The results in Table I-8 seems to be consistent as well with Morck, Shleifer, and Vishny's (1990) findings of higher bidder returns from related acquisitions (2.38%), than bidder returns from unrelated acquisitions (-1.89%).

Further, this study examines the relation between the two-day abnormal returns and type of investment for value-maximizing and overinvesting firms. Panel A of Table I-9 presents the two-day abnormal returns for investments, classified by Tobin's q and the type of investment.

[Insert Table I-9 about here]

Focus-increasing investments by value-maximizing firms (i.e., $q > 1$) gain the highest two-day abnormal returns of 1.03% (t-statistic = 3.107), implying that focus-increasing investments by firms with profitable investment opportunities create more wealth. On the

Table I-9

Comparision of Cumulative Average Abnormal Stock Returns ($CARs_{-1,0}$, $CAR_{-1,+1}$) for Domestic Investment Announcements by U.S. Firms, Classified by Tobin's q[1] and type of Investment (focus-increasing vs diversifying)[2] Classified by 2-Digit SIC Industry Code: 1980-1992. (t-statistics are in parentheses) *,**,* denote the significance at the 1%, 5%, 10% level.**

A. CAR (-1,0)

	Focus-increasing	Diversifying	Mean Difference
q > 1	0.0103 (3.107)*** N=47	0.0075 (1.372) N=14	0.0028 (0.436)
q < 1	-0.0064 (-2.209)** N=82	-0.0174 (-3.736)*** N=45	0.0110 (2.348)**
Mean Difference	0.0167 (4.236)***	0.0249 (3.689)***	

B. CAR(-1,+1)

	Focus-increasing	Diversifying	Mean Difference
q > 1	0.0077 (2.616)** N=47	0.0058 (0.812) N=14	0.0019 (0.177)
q < 1	-0.0078 (-1.947)* N=82	-0.0231 (-4.360)*** N=45	0.0153 (2.537)**
Mean Difference	0.0155 (3.367)***	0.0289 (3.535)***	

[1] q > 1 (q < 1) indicates value-maximizing (overinvesting) firms.

[2] The investment is classified as focus-increasing if the 2-digit SIC code of the investment is the same as the firm's main 2-digit SIC code (i.e. firm's core business), otherwise, it is classified as diversifying.

other hand, diversifying investments by overinvesting firms (i.e., q < 1) experience the lowest two-day abnormal returns of -1.74% (t-statistic = -3.736), suggesting that diversifying investments by firms with poor investment opportunities substantially decrease the value of the firm. This evidence may also suggest that firms that decreasing investment opportunities in their core-business engage in diversifying investments for survival reasons. However, capital markets appear to penalize these firms for such investments. Panel B of Table I-9 provides evidence for the three-day abnormal returns. The findings are similar to those of panel A of Table I-9.[43]

B2. Pre- and Post-Investment Profitability Performance

In a recent study by John and Ofek (1995), it is reported that firms with focus-increasing asset-sales improve performance, while firms with diversifying asset-sales do not. Using a sample of domestic investments, this study examines changes in pre- and post-performance of focus-increasing and diversifying firms.

To compare the mean and median change in profitability of firms with focus-increasing and firms with diversifying investments around the investment announcements, three measures of profitability are used: (1) earnings before interest, taxes, and depreciation (EBITD) to sales, (2) EBITD to book value of assets, and (3) EBITD to market value of equity. These ratios represent firm's efficiency in operations [John and Ofek (1995)]. To account for industry changes on the firm's performance, industry-

[43] The results remain essentially the same even when an eleven-day abnormal return window (i.e., -5 to +5) is used.

adjusted profitability measures are used. The industry-adjusted measures are estimated by subtracting from the firm's change the median changes over the same period for all firms in COMPUSTAT file with the same 2-digit SIC code.

Table I-10 presents the changes in pre- and post investment profitability of focus-increasing firms and diversifying firms.

[Insert Table I-10 about here]

In the first two columns of Table I-10, the mean and median of operating margins for focus-increasing firms are positive around investment announcements. The results show that the mean changes in EBITD to sales ratio are 0.79%, 3.53%, and 6.85% from year zero to year one, two, and three. This evidence indicates that firms with an increase in focus improve their performance after investments. On the other hand, the third and fourth columns of Table I-10 which report performance of firms with diversifying investments show that the mean changes in EBITD to sales ratio are -4.08%, -5.62%, and 7.80% from year zero to year one, two, and three. This result suggests that performance for firms with diversifying investments appear to be deteriorating. The other two profitability measures - changes in EBITD to assets (ROA) and change in EBITD to market value of equity - show similar results. These results are consistent with John and Ofek's (1995) findings that, for firms with focus-increasing divestitures, the mean changes in EBITD to sales ratios are 0.7%, 1.3%, and 2.3% from year zero to year one, two, and three, respectively. For diversifying divestitures, the mean changes in EBITD to sales ratios are -1.7%, -2.9%,

Table I-10

Industry-adjusted Profitability Changes of Firms Around the Focus-Increasing and Diversifying Domestic Investment Announcements by U.S. Firms: 1980-1992. *,**,*** denote significance at the 10%, 5%, 1% level.

Industry-Adjusted Performance Measures	Focus-Increasing Investments		Diversifying Investments		Difference between Samples	
	Mean	Median[1]	Mean	Median	Mean	Median
A. Change in operating margin(EBITD/Sales)[2]						
year -2 to -1	0.0755*	0.0079	0.0083	0.0019	0.0672*	0.0060
year -1 to 0	0.0934*	0.0768*	-0.0114	-0.0138	0.1048*	0.0966*
year 0 to +1	0.0079	0.0001	-0.0408	-0.0057	0.0487	0.0057
year 0 to +2	0.0353	0.0018	-0.0562	-0.0470	0.0915**	0.0650
year 0 to +3	0.0685	0.0273	-0.0780*	-0.0598	0.1455**	0.0871*
B. Change in returns on assets (ROA)[3]						
year -2 to -1	0.0969*	0.0413	0.0333	0.0368	0.1670*	0.0045
year -1 to 0	0.1052*	0.0823*	-0.0225	-0.0198	0.1277**	0.1021**
year 0 to +1	0.0015	0.0084	-0.0159	-0.0107	0.0174	0.0191
year 0 to +2	0.0461	0.0127	-0.0631	-0.0816*	0.1092**	0.0943*
year 0 to +3	0.0960*	0.0251	-0.1135**	-0.0952*	0.2097**	0.1203**
C. Change in EBITD/market value of euqity[4]						
year -2 to -1	0.0118	0.0021	-0.0251	-0.0357	0.0369	0.0378
year -1 to 0	0.0637	0.0793**	-0.0291	-0.0229	0.0928**	0.1022**
year 0 to +1	0.0310	0.0112	-0.0948*	-0.0409	0.1258**	0.0528**
year 0 to +2	0.0620	0.0634	-0.0446	-0.0508	0.1066**	0.1142**
year 0 to +3	0.0750	0.0518	-0.0779*	-0.0551	0.1529**	0.1069*

[1] Median singificance tests are based on the Wilcoxon signed rank test.

[2] The difference between the change in operating margin from year to year and the median change in industry. The operating margin is defined as the ratio of EBITD (earnings before interest, taxes, and depreciation) to sales.

[3] The difference between the change in return on assets fron year to year and the median change in industry. The return on assets is the ratio of EBITD/book value of total assets.

[4] The difference between the change in EBITD/market value of equity from year to year and the median change in the industry.

and -3.0% from year zero to year one, two, and three, respectively. The evidence in Table I-10 supports the argument that, even though firms attempt to invest outside their core-business in an effort to enhance their investment opportunities, firm performance is not likely to improve [Lang and Stulz (1994)].

B3. The Relation Between Change in Post-Performance and Change in Focus

This section examines the relation between the change in post-performance of investing firms and change in corporate focus. In this study, three focus measures are used.[44] The first measure of focus is to examine whether or not the investment is related to the firm's primary business. If the 2-digit SIC code of new investment is the same as the firm's main 2-digit business, the investment is classified as a focus-increasing investment. Otherwise, investment is classified as a diversifying investment. The second focus measure used is the number of lines of business segments in which firms engage. The increase in the number of business segments indicates that the firm's degree of diversification increases. The third focus measure used is the sales-based Herfindahl index which is defined as the sum of the squared values of sales per business segment as a proportion of total firm sales. A sales-based Herfindahl index reflects the degree of which sales are concentrated in a few of a company's business segments.[45] Hence, the

[44] See John and Ofek (1995), Comment and Jarrell (1995) for discussion of alternative business focus measures.

[45] See Lang and Stulz (1994) for a detailed description of the Herfindahl index as a measure of corporate focus.

Herfindahl index falls as the degree of corporate diversification increases.[46]

Table I-11 reports the relation between the changes in profitability from year zero to year two and the change in corporate focus measures.

[Insert Table I-11 about here]

The first regression shows that firm's profit margin is positively related to the focus dummy (16.93%), implying that focus-increasing investments raise firm's profit margin. Similar results are obtained when the two alternative focus measures - changes in the number of business segments and Herfindahl index - are used. The results also show that when the number of business segments increases, the performance of the firms deteriorates. Similarly, an increase in the Herfindahl index tends to improve corporate profitability performance. The other two profitability measures - EBITD to assets and EBITD to market value of equity - also yield similar results.[47] This evidence implies that investments that increase firm's focus tend to improve its performance two years after the investment decision, whereas investments that do not increase the firm's focus appear to worsen its performance. Although in context of divestitures, John and Ofek (1995) provide similar evidence which shows that changes in firm's profitability are positively related to increase in corporate focus.

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[46] The data are obtained from Compustat Industry Business Segment file and the Directory of Multinationals.

[47] The post-profitability results for a broader window interval (i.e., from year zero to year three) remain essentially similar to those presented in Table I-11. When indicator variables are used to capture the change in the number of business segments and the Herfindahl index, the results remained unchanged.

Table I-11

The Relation Between the Change in Post-Performance of the Investing Firms and the Change 'n Focus Around the Domestic Investment Announcements by U.S. Firms: 1980-1992. (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

Dependent variable: Industry-adjusted change in EBITD/sales from year 0 to year 2[1]

	reg1	reg2	reg3
intercept	-0.0827(-0.962)	0.2110(1.100)	-0.1312(-1.387)
focus dummy[2]	0.1693(1.656)*		
change in the number of segments[3]		-0.0500(-1.858)**	
change in the Herfindahl index[4]			0.2782(1.899)**
R^2 (%)	1.63	2.15	2.33

Dependent variable: Industry-adjusted change in EBITD/assets from year 0 to year 2[5]

	reg1	reg2	reg3
intercept	-0.0976(-1.166)	0.0952(1.353)	-0.1280(-1.708)
focus dummy	0.1937(1.932)**		
change in the number of segments		-0.0327(-1.728)*	
change in the Herfindahl index			0.2026(1.759)*
R^2 (%)	2.19	1.84	1.91

Dependent variable: Industry-adjusted change in EBITD/market value of equity from year 0 to year 2[6]

	reg1	reg2	reg3
intercept	-0.0504(-0.930)	0.1291(1.008)	-0.0993(-1.458)
focus dummy	0.1137(1.764)*		
change in the number of segments		-0.0296(-1.718)*	
change in the Herfindahl index			0.2293(2.194)**
R^2 (%)	1.84	1.83	2.92

[1] The difference between the change in the investing firm's EBITD/sales from year 0 to year 2 and the median change in the industry.

[2] Focus dummy is 1 if the 2-digit SIC code of investment is the same as the firm's main 2-digit SIC code (i.e. firm's core business), and 0 otherwise.

[3] The change in the number of segments from year -1 to 0

[4] Change in the Herfindahl index from years -1 to 0. The Herfindahl index is calculated as the sum of segments' sales squared, divided by total sales squared.

[5] The difference between the change in the investing firm's EBITD/assets from year 0 to year 2 and the median change in the industry.

[6] The difference between the change in the investing firm's EBITD/market value of equity from year 0 to year 2 and the median change in the industry.

B4. The Relation Between Two-Day Stock Market Returns and Change in Focus

While Table I-11 examines the relation between firm's performance and the changes in corporate focus, Table I-12 analyzes the relation between the two-day cumulative abnormal returns and the changes in focus. The two-day cumulative abnormal returns are used as market's immediate assessment of the firm's profitability in response to its investment announcements.

[Insert Table I-12 about here]

The first regression shows that the focus dummy is positively related to the two-day abnormal returns (0.59%) (t-statistic = 1.621), suggesting that focus-increasing investments have 0.59% higher returns than diversifying investments. In the second regression, the change in the number of business segment variable is inversely related to the two-day abnormal returns (-0.32%) (t-statistic = -3.456) as expected. It implies that focus-increasing (i.e., when the number of segments decreases) investments are value-increasing, while diversifying investments tend to destroy shareholder value. The third regression reports a positive relation between the two-day abnormal returns and the change in Herfindahl index. This evidence indicates that investment abnormal returns are higher when firm's Herfindahl index increases.[48]

[48] The results remain similar in Table I-12, even when indicator variables are used to capture the changes in the number of business segments and the Herfindahl index from year -1 to zero.

Table I-12

The Relation Between the Investing Firm's Two-Day Cumulative Abnormal Returns ($CARs_{-1,0}$) and the Change in Focus around the Domestic Investment Announcements by U.S. Firms: 1980-1992 (t-statistics are in parentheses) *,**,* denote the significance at the 1%, 5%, 10% level.**

Dependent variable: Two-day Cumulative Abnormal Returns

	reg1	reg2	reg3
observation	191	184	178
intercept	-0.0094(-3.086)***	0.0056(1.611)	-0.0082(-2.025)**
focus dummy[1]	0.0059(1.621)*		
change in the number of segments[2]		-0.0032(-3.456)***	
change in the Herfindahl index[3]			0.0065(1.945)**
R^2 (%)	1.37	6.16	6.20

[1] Focus dummy is 1 if the 2-digit SIC code of investment is the same as the firm's main 2-digit SIC code (i.e. firm's core business), and 0 otherwise.

[2] The change in the number of segments from year -1 to 0.

[3] Change in the Herfindahl index from years -1 to 0. The Herfindahl index is calculated as the sum of segments' sales squared, divided by total sales squared.

C. Cross-Sectional Analysis

Table I-13 provides cross-sectional regression analysis results accounting for other potential factors such as firm's characteristics, size of investment, and taxes.

[Insert Table 13 about here]

The first regression shows the relation between the two-day abnormal returns and a set of dummy variables for the type of investment and the firm's investment opportunities. Value-maximizing firms (i.e., high q) with focus-increasing investments realize significant positive abnormal returns (t-statistic = 5.196), whereas overinvesting firms (i.e., low q) engaging in diversifying investments experience significant negative abnormal returns (t-statistic = -4.261). Thus, focus-increasing investments increase shareholder wealth , while diversifying investments decrease it.

In the second regression, the negative relation between the level of free cash flows and the two-day abnormal stock returns indicates that agency costs between managers and shareholders rise as high free cash flows increase, supporting the prediction of the overinvestment hypothesis.

The impact of the Tax Reform Act of 1986 on the value of the firm is also examined in the third regression. The change in interest allocation rules introduced by the Tax

Table I-13

Cross-sectional Regressions of the Two-day Announcement Period Abnormal Returns ($CAR_{-1,0}$) on the Firm and Investment Characteristics for Domestic Investments by U.S. Firms: 1980-1992 (t-statistics are in parentheses) *,**,* denote the significance at 1%, 5%, 10% level.**

variable	reg 1 (N=191)	reg 2 (N=194)	reg 3 (N=194)	reg4 (N=70)
intercept	-0.0024 (-0.618)	-0.0003 (-0.129)	-0.0077 (-3.420)***	-0.0076 (-0.490)
high q/focus[1]	0.0226 (5.195)***			0.0128 (1.609)*
high q/div[2]	0.0077 (1.391)			0.0070 (0.737)
low q/div[3]	-0.0115 (-4.261)***			-0.0087 (-1.631)*
free cash flow		-0.0357 (-3.007)***		-0.0202 (1.528)*
Tax[4]			0.0040 (1.147)	0.0009 (0.097)
size of investment				0.0000 (1.219)
log(asset)				-0.0027 (-0.535)
debt/assets				0.0162 (0.842)
ownership[5]				0.0001 (0.620)
foreign sales/ total sales				0.0002 (1.546)
log(firm size)				0.0025 (0.416)
R^2 (%)	16.10	4.50	0.69	34.76

[1] The high q/focus is 1 if value-maximizing firms with focus-increasing investments , and 0 otherwise.

[2] high q/div is 1 if value-maximizing firms with diversifyign investment, and 0 otherwise.

[3] low q/div is 1 if overinvesting firms with diversifying investments, and 0 otherwise.

[4] Tax is 1 if investments are made after 1986 Tax Reform, and 0 otherwise.

[5] It is defined as percent of outstanding shares held by insiders.

Reform Act of 1986 reduced tax deductibility of the U.S. interest expenses.[49] Thus, it is argued that the Tax Reform Act might have increased the firm's cost of capital and thus decrease its investment activities. The evidence in the third regression shows that changes in the Tax Reform Act in 1986 do not have any influence on the value of the firm around the two-day investment announcement period.

The fourth regression examines whether the two-day abnormal returns for corporate investments are related to several other firm characteristics. It is predicted that, as firm's debt increases, managers are more closely monitored by creditors and have less cash flows to undertake sub-optimal or value-decreasing investments [Jensen (1986)]. This argument implies a positive relation between the stock market returns and firm's debt ratios. Also, if managers have a large stake in the firm, they are less likely to invest in negative NPV projects, predicting a positive relation between the two-day abnormal returns and the proportion of shares held by managers [Lewellen, Loderer, and Rosenfeld (1985)].[50] In addition, there is the argument that, since large firms have more resources, larger internal capital markets, and economies of scale, firm size may be relevant in explaining the abnormal returns associated with new domestic investments. Thus, the coefficient of the firm size variable is expected to be positive. Even though the firm's debt ratio, the fraction of ownership held by managers, and the firm size variables have

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[49] In the Tax Reform Act of 1986, the U.S. government sought to limit how much interest expense multinational firms can deduct from their U.S. income. The loss of tax deductibility of interest expense might lead multinational firms to borrow and invest less, scaling back the scope of their foreign and total operations.

[50] Lewellen, Loderer, and Rosenfeld (1985) show that bidder returns increase with the faction of bidder equity held by managers.

coefficients estimates of the same sign as predicted, none of the coefficients appear to be significant at any conventional level.

The evidence in Table I-13 also indicates that size of investment, firm's asset size, and ratios of foreign sales to total sales appear to have little power to explain the stock market returns for investments. Overall, the evidence shows that firm's investment opportunities (i.e. value-maximizing and overinvesting) and type of investment (focus-increasing and diversifying) are important determinants of gains from domestic investments.

VI. Concluding Remarks

This paper examines the effects of corporate investment decisions on the value of the firm, using a sample of domestic plant announcements by U.S. firms during the period of 1980-1992. In this paper, two possible explanations associated with the valuation effects of investments are considered: (1) firm's investment opportunities and (2) type of investment (focus-increasing and diversifying). The overinvestment hypothesis [Jensen (1986)] implies that the impact of corporate investments on the value of the firm depends on the firm's investment opportunities [Lang, Stulz, and Walkling (1991), Servaes (1991)] and the agency costs associated with the managerial discretion of corporate free cash flows. In addition, following Lang and Stulz (1994), it is expected that focus-increasing investments are value-increasing activities, while diversifying investments are value-destroying activities.

In this study, the evidence is consistent with predictions of overinvestment hypothesis. That is, value-maximizing firms realize positive stock returns for domestic investment announcements, whereas overinvesting firms suffer losses. In addition, for overinvesting firms, the relation between the two-day abnormal returns and the level of free cash flows is significantly negative, indicating that agency costs increase with the level of free cash flows as predicted by the overinvestment hypothesis.

The evidence on the effects of the type of investment on the value of the firm shows that focus-increasing investments increase shareholder wealth, while diversifying investments do not. That is, an increase in corporate focus is consistent with shareholder wealth maximization [Kaplan and Weisbach (1992), Comment and Jarrell (1995), John and Ofek (1995)]. In addition, pre- and post-performance tests provide evidence which shows that focus-increasing investments tend to improve corporate performance, while diversifying investments do not. This evidence appears to support the view [Lang and Stulz (1994)] that diversifying investments are not value-increasing.

The cross-sectional analysis confirms these results. That is, the firm's investment opportunities and type of investment are important determinants of the valuation effects of corporate investment decisions. However, other control variables such size of investment, taxes, ratio of foreign sales to total sales, fraction of shares held by managers, and firm size are found to have little explanatory power.

Unlike previous studies which do not consider the firm's investment opportunities and the type of investments [Jensen and Ruback (1983), McConnell and Muscarella (1985), Blackwell, Marr, and Spivey (1990)], this study provides evidence which shows that

firm's investment opportunities and the type of investment pursued by corporate managers can explain why investment decisions may not always increase shareholder wealth .

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The Valuation Effects of Corporate Investment Decisions: Evidence From Foreign Plant Announcements

Essay II

Abstract

This paper examines the valuation effects of corporate investment decisions for a sample of foreign plant announcements by U.S. firms during the period 1980-1992. It is found that value-maximizing firms (i.e., $q > 1$) earn significant positive abnormal returns, while overinvesting firms (i.e., $q < 1$) experience significant negative abnormal returns. Especially, for overinvesting firms, there are significant agency costs associated with managers' discretion of free cash flows. This evidence appears to support overinvestment hypothesis. This study shows that diversifying investments decrease the value of the firm, while focus-increasing investments do not, implying that increase in corporate focus is consistent with shareholder wealth maximization. Further, it is found no difference in abnormal returns between domestic and foreign investments. Accordingly, firm's investment opportunities and the type of investments are important determinants of gains from corporate investments.

I. Introduction

Essay I provided evidence on the valuation effects of domestic plant investment on the value of the firm. In Essay II, the valuation effects of foreign plant investment are examined. Foreign direct investments include mergers and acquisitions, joint ventures, and wholly-owned plants. Even though U.S. firms have long been building plants abroad, the effects of the foreign plants on shareholder wealth have received little attention relative to acquisitions and joint-ventures.[1]

Several theories have attempted to explain why firms invest abroad. The internalization hypothesis suggests that foreign investment occurs when a firm is able to increase its value by internalizing markets for its intangible firm-specific assets such as management expertise, patent, and marketing skills.[2] The imperfect capital market hypothesis states that since there are barriers for international capital flows and information asymmetry, multinational firms offer shareholders international diversification opportunities.[3] The tax avoidance or low-cost hypotheses imply that foreign expansion increase firm value because it provides firm opportunities for tax arbitrage and access to cheap labor costs.[4] The multinational network hypothesis argues that a branching-tree

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[1] See Fatemi (1984), Doukas and Travlos (1988), Morck and Yeung (1991), Doukas (1995) for valuation effects of international acquisitions and Finnerty, Owers, and Rogers (1986), Lee and Wyatt (1990), Crutchley, Guo, and Hansen (1991) for the effects of international joint ventures on the value of the firm.

[2] See Caves (1971), Hymer (1976), Morck and Yeung (1991), Lang and Ofek (1995).

[3] See Agmon and Lessard (1977), Froot and Stein (1989).

[4] See Scholes and Wolfson (1990), Doukas (1995).

expansion that takes an expanding firm into a new geographic market leads to increases in shareholder wealth [Kogut (1983)]. All these theories imply that foreign direct investments are likely to increase shareholder wealth.

Doukas and Travlos (1988) document that firms initially not operating in a target firm's country earn significant positive abnormal returns, while firms already operating in a target firm's country realize insignificant negative abnormal returns, which appear to be consistent with the multinational network hypothesis.[5] Consistent with the internalization hypothesis, Morck and Yeung (1991) find, in a cross-section study, that the value of the firm is positively related to its multinationality, and its relationship is explained by intangible firm-specific assets proxied by R&D and advertising spending.[6]

The valuation effects of foreign expansion through international joint-ventures have been examined. Chen, Hu, and Shieh (1991) show that U.S. firms experience positive abnormal returns for U.S.-China joint ventures. They attribute the positive wealth gains to expansion of firm's global network into a new geographic market. Crutchley, Guo, and Hansen (1991) also report that announcements of U.S.-Japan joint ventures are associated with positive abnormal returns which is explained by relative currency rate changes between two countries, which support Froot and Stein's (1989) model.[7]

In a study of U.S. foreign investments in Eastern Europe, Lang and Ofek (1995)

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[5] The multinational network hypothesis suggests that multinational firms benefit from establishing a globally maximizing network, which allow firms to arbitrage institutional restriction, capture information externalities, and improve production efficiency.

[6] The multinationality is measured by number of subsidiary and number of country firms invest.

[7] Crutchley, Guo, and Hansen (1991) study shows that shareholder gains is high for U.S. partners when the Yen/$ is low.

document that firm's growth opportunities and low labor costs are positively related to the gains from foreign expansion. Recently, Doukas (1995) reports that the abnormal returns for foreign acquisitions are higher for firms with profitable investment opportunities than firms with poor investment opportunities.[8]

Although previous studies [Chen, Hu, and Shieh (1991), Morck and Yeung (1991), Crutchley, Guo, and Hansen (1991), Lang and Ofek (1995)] have reported wealth gains from international expansion, Finnerty, Owers, and Rogers (1986), Lee and Wyatt (1990) report negative abnormal returns for international joint-ventures, implying that foreign expansion may not be a value-increasing transaction. This latter evidence is not consistent with market value maximization hypothesis.

A possible explanation is that foreign investments may be driven by managers' self-interests at the expense of shareholder wealth. Jensen (1986) suggests that managers with free cash flows have a tendency to undertake negative NPV investments instead of distributing them to shareholders. In this context, foreign direct investment may be one way in which managers spend cash flows for their own benefit. The overinvestment hypothesis [Jensen (1986)] implies that firms with poor investment opportunities are likely to waste cash flows by engaging in negative NPV foreign projects, resulting in overinvestment and, thus, a reduction in firm value. On the other hand, firms with profitable investment opportunities are likely to use cash flows in positive NPV foreign investments, resulting in an increase in firm value. Accordingly, the valuation effects of foreign investment decisions may depend on firm's investment opportunities.

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[8] Lang, Stulz, and Walkling find similar results in the case of domestic acquisitions.

Another possible explanation is that the valuation effects of foreign investments may depend on the type of investment (i.e., focus-increasing and diversifying). Jensen (1986) implies that corporate diversification may be the outcome of investment decisions in which managers waste cash flows for personal satisfaction. Although in the context of domestic investments, the empirical evidence is in favor of an increase in corporate focus, Morck, Shliefer, and Vishny (1990) document that, in the 1980s, unrelated domestic acquisitions are value-decreasing transactions, while related domestic acquisitions are not. Markides and Ittner (1994) also report that related foreign acquisitions are positively associated with wealth creation. Lang and Stulz (1994) find, in a cross-sectional analysis, that Tobin's q, as proxy for firm value, and the degree of business diversification of firms are negatively related throughout the late 1970s and 1980s. Their evidence suggests that focus-increasing firms are valued more than diversifying firms. John and Ofek (1995) show that firms that sell their domestic assets to increase corporate focus tend to improve their performance after asset-sales.

This study provides direct evidence on the valuation effects of foreign investments, using a sample of foreign plant announcements by U.S. firms during the period of 1980-1992. In this paper, two alternative explanations for valuation effects of foreign investments are discussed: (1) the overinvestment hypothesis and (2) the type of investment (i.e., focus-increasing and diversifying).

First, to explore whether the valuation effects of foreign direct investments are associated with firm's investment opportunities, the sample is classified into value-maximizing and overinvesting firms, using Tobin's q, as proxy for firm's investment

opportunities. The overinvestment hypothesis predicts that, for value-maximizing firms, managers are likely to undertake value-increasing investments. Thus, foreign investments by value-maximizing firms are expected to earn positive abnormal returns. On the other hand, for overinvesting firms, managers are likely to waste cash flows by engaging in negative NPV projects. Hence, foreign investments by overinvesting firms are expected to exhibit negative abnormal returns.

The overinvestment hypothesis also implies that, since investments by overinvesting firms are likely to be sub-optimal or negative NPV projects, the stock market returns are likely to be negatively related to free cash flows. That is, agency costs associated with the distribution of free cash flows are expected to be greater for overinvesting firms. On the other hand, since investments by value-maximizing firms are expected to be positive NPV projects, the stock price reactions are not likely to be related to the firm's level of free cash flows. Accordingly, stock market returns and the level of free cash flows are expected to be negatively related for overinvesting firms and unrelated for value-maximizing firms. This study provides cross-sectional evidence on the relation between the firm's level of free cash flows and its stock market returns.

Second, to test whether the valuation effects of foreign investments depend on the type of investment, the sample is divided into focus-increasing and diversifying investments. If diversifying investments are one way in which managers waste cash flows for their own benefit at the expense of shareholders' wealth [Jensen (1986)], or if an increase in corporate focus enhances managerial efficiency, it is expected that focus-increasing investments realize positive abnormal returns, whereas diversifying investments

experience negative abnormal returns. Furthermore, whether the abnormal returns associated with the type of investment depend on firm's investment opportunities is analyzed. This study also presents comparison of pre- and post-performance between focus-increasing and diversifying investments.

In general, like in Essay I, the results appear to be consistent with the predictions of the overinvestment hypothesis. Value-maximizing firms earn significant positive abnormal returns for foreign plant investments, while overinvesting firms realize significant negative abnormal returns. Furthermore, the relation between stock market returns and the level of free cash flows is significantly negative for overinvesting firms and unrelated for value-maximizing firms. The evidence regarding the type of investment shows that focus-increasing investments gain positive abnormal returns, while diversifying investments experience significant negative abnormal returns. This evidence suggests that an increase in corporate focus is consistent with shareholder wealth maximization [John and Ofek (1995)]. In addition, firms that undertake focus-increasing investments improve their performance after foreign investments, while firms that engage in diversifying investments do not.

The valuation effects between domestic and foreign investments are also compared. The results show no significant differences in abnormal returns between the two samples. This evidence implies that the valuation effects of corporate investments seem to depend on firm's investment opportunities and the type of investment rather than the location of the investment.

The paper is organized as follows: section II discusses the foreign investment

decision. Relevant literature is reviewed in section III. Section IV presents the valuation effects of corporate foreign investment decisions. Section V describes the data and methodology. Empirical results are presented in section VI. Section VII provides concluding remarks.

II. Foreign Plant Investments

U.S. firms have long been investing in wholly-owned plants overseas. The potential benefits associated with wholly-owned plants include: (1) protection of parent company's brand name or technology, (2) efficient use of resources by integrating cross-national operations, and (3) greater ability of the parent company to control operations. On the other hand, the potential costs include: (1) political risks, (2) social and cultural strains, (3) problems of repatriating cash flows and assets, (4) difficulties in financing operations and expansion, and (5) host country antagonism toward possible divestment.

Foreign plants are important in establishing the competitive position of firms in the international markets.[9] By manufacturing abroad, firms can enhance their long-term business relations outside the U.S. and work closely with customers in order to better design customers' products.[10] Firms could also gain access to local, immobile factors of

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[9] AT&T decides to manufacture residential telephones abroad in order to be price competitive (WSJ Jul. 8, 1985).

[10] Motorola will begin to construct a $50 million assembly plant in Japan to produce semiconductors for its customers in Asia. Responding to increasing demand from customers in Japan and elsewhere in the Far East, the new plant will focus on the assembly of both high-capacity memory devices, and mid-range and high-end microcontroller chips (WSJ Apr. 30, 1990).

production by locating their high-volume, labor-intensive operations in areas with low labor costs[11] and reduce transportation costs significantly by locating production facilities close to customers.[12] In addition, firms could avoid trade restrictions (i.e., tariffs and quotas),[13] or take advantage of special concessions granted by local governments in foreign countries.[14] Production abroad in several countries also enables firms to hedge against a number of location-specific risks.

Basic methods used to evaluate foreign direct investment can be the same as those applied to domestic investment. In both cases, it is necessary to estimate an appropriate cost of capital and then, evaluate the expected cash flows from foreign investments. However, due to foreign exchange risks, political risks, and government regulations, there may be differences in the valuation effects between foreign and domestic investment decisions. Foreign investment could be often longer, more costly, and more complex to evaluate than domestic investment.[15] Accordingly, it is argued that foreign operations

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[11] Wall Street Journal (Jan. 11, 1984) reports that Ford plans to build a $500 million plant in Mexico reflects a move by auto makers to cut costs by going abroad.

[12] Chrysler Corp. plans to move assembly of its Dodge Ramcharger utility vehicles to its truck plant in Mexico City this fall from the current production site in Warren, Michigan. Chrysler plans to make about 20,000 Ramchargers a year in Mexico and import them to the United States (WSJ Feb. 20, 1985).

[13] The National Semiconductor Corp. plans to invest about $150 million to expand its operation in Scotland, intensifying a push into Britain by U.S. and Japanese chip producers. The orders are surging in Europe, reflecting demand from computer companies and auto makers. The Common Market's 17.5% tariff on imported semiconductors is also spurring major non-European producers to increase manufacturing in the European Community (WSJ Mar. 6, 1984).

[14] Motorola agreed to build a $22 million factory in Sri Lanka. The factory will assemble and test semiconductor electronic devices. The plant will be built in a free trade zone, where special concessions are granted to manufacturers to foster employment (WSJ Oct. 29, 1980).

[15] Also see Harris and Ravenscraft (1991) for a discussion of the valuation effects between domestic and cross-border acquisitions.

must be more profitable than comparable domestic operations [Fatemi (1984)]. To explore whether there are any gain differences between foreign and domestic investments, the valuation effects between foreign and domestic plant investments are compared.

III. Literature Review

A. The Foreign Investment Decision

Doukas and Travlos (1988) find that the valuation effects of international acquisitions depend on the degree of foreign exposure of U.S. bidding firms in the target firm's country. The evidence shows that firms not operating in a target firm's country, earn significant positive stock market returns from foreign investing through acquisitions. They attribute the positive stock market returns to firm's multinational network structure and its ability to exploit international distortions in capital markets or production. In constrast, firms already operating in a target firm's country experience insignificant negative abnormal returns upon foreign expansion. Although they attribute the negative stock reaction to no change in the firm's multinational network, this might be also explained by its overinvestment behavior.

Morck and Yeung (1991) report evidence supporting the internalization hypothesis in the sense that foreign investment gains are attributed to the firm's intangible assets rather than its multinationality per se.[16] However, their study does not provide evidence

[16] Intangible assets (i.e. management skills, patent, marketing expertise, R&D, and advertising expenditures) are proxy for growth opportunities.

on the market response to foreign expansion announcements by U.S. firms. Later, Morck and Yeung (1992), in an event study using a sample of 322 foreign acquisitions by U.S. firms between 1978 and 1988, document that foreign acquisitions appear to increase the value of the firm only for firms possessing intangible assets (i.e., firms with growth opportunities).

The effects of international joint ventures on the value of the firm are mixed. In a sample of 118 international joint ventures over the period of 1976-1979, Finnerty, Owers, and Rogers (1986) find insignificant negative stock market returns for international joint ventures. Lee and Wyatt (1990) also report, in a sample of 211 international joint ventures over 1974-1986, that international joint ventures are, on average, associated with significantly negative stock price reactions.[17] However, these negative stock market returns [Finnerty, Owers, and Rogers (1986), Lee and Wyatt (1991)] may driven by the fact that their samples consist of firms with poor investment opportunities.

In contrast, Lummar and McConnell (1990) document that U.S. partners of international joint ventures earn positive abnormal announcement returns, suggesting that joint-ventures are value-increasing activities. Chen, Hu, and Shieh (1991) examine the valuation effects of U.S. international joint ventures with a single country - China. They show that U.S. firms gain significant positive abnormal returns of 0.52%. Crutchley, Guo, and Hansen (1991) also show that, in a sample of 146 joint ventures between Japanese and U.S. firms over the 1979-1987 period, U.S. shareholders gain positive abnormal returns. However, their study reports weekly abnormal returns. This approach could not

[17] Lee and Wyatt (1990) suggest that Jensen's (1986) free cash flow hypothesis might explain negative abnormal returns for international joint ventures. However, they do not provide empirical test.

identify the market reaction to foreign expansion announcements. The results reported in Chen, Hu, and Shieh (1991) and Crutchley, Guo, and Hansen (1991) are limited in that their investigations are country-specific. Also, the positive stock market returns may be attributed to the fact that their samples include firms with profitable investment opportunities.

Lang and Ofek (1995) document that stock markets react positively to U.S. firms' investment announcements in Eastern Europe.[18] Their cross-sectional analysis shows that gains from foreign investments depend on the magnitude of U.S. firm's intangible assets and low labor cost in the host country. However, since 74% of their sample include joint-ventures, their results may be driven by characteristics associated with joint-ventures. Thus, it is difficult to draw parallel conclusions on the valuation effects of foreign direct investments.

Doukas (1995), in a sample of 463 international acquisitions over the 1975-1989 period, reports that firms with high q (i.e., $q > 1$) realize significant positive returns, whereas firms with low q (i.e., $q < 1$) exhibit insignificant negative abnormal returns. This evidence indicates that Tobin's q, proxy for management performance, explains the differential gains associated with foreign acquisitions.

Although the empirical works on corporate international expansion [Doukas and Travlos (1988), Chen, Hu, and Shieh (1991), Morck and Yeung (1991)] have attributed the wealth gains from foreign investments to several factors, no study with the exception of Doukas (1995), has been able to investigate the foreign investment decisions from an

[18] In the sample of sixty-one foreign investments in Eastern Europe, there are forty-seven joint ventures, seven acquisitions, and nine company-owned start-ups.

agency theoretic perspective. This paper attempts to explain the valuation effects of foreign plant investments in the context of Jensen's (1986) overinvestment hypothesis.

B. Types of Investment Decisions

Although Hisey and Caves (1985) have addressed the issue of what explains the choice between related and unrelated foreign investments, little evidence on the effects of the type of investment on the value of the firm has been provided. Doukas and Travlos (1988) report that the stock market returns for foreign acquisitions are insignificant with regards to the type of acquisition undertaken (i.e, related and unrelated). In their study, the gains from foreign acquisitions appear to be driven mainly by geographical diversification rather than product diversification.

In a sample of 159 foreign acquisitions in the U.S. during the period of 1970-1987, Harris and Ravenscraft (1991) find that the relatedness of business units of target and bidder are not significantly related to the stock market returns for U.S. targets. However, their classification is based on product description given in the Wall Street Journal announcements of the cross-border takeovers.[19]

Black and Rose (1991) examine a sample of 132 U.S. industrial firms over the period 1980-1986. They conclude that Tobin's q is not significantly related to firm's degree of diversification, measured by the Herfindahl index. As discussed in Morck and Yeung (1992), this approach does not allow any inference of causality between the type of

[19] Dummy variable takes on the value of one if foreign buyer already has operations in the target's line of business, and otherwise zero.

investment and its valuation effects. Thus, an event study could be appropriate for testing the causal linkage between the type of investment and stock market returns [Lang and Ofek (1995)].

Pettway, Sicherman, and Spiess (1993), in a sample of fifty-three Japanese acquisitions of U.S. firms between 1981 and 1991, also document that the wealth gains of Japanese firms are not significantly related to the type of investment (i.e., related and unrelated). In their study, since there are no industry SIC codes available for Japanese firms, only the industry names are compared. However, this matching process may not be precise.

Markides and Ittner (1994) provide evidence in favor of an increase in corporate focus in context of U.S. foreign acquisitions. Their cross-sectional analysis shows that the industry relatedness variable is positively related to the two-day abnormal returns, implying that related foreign investments are associated with higher benefits than unrelated investments.

In previous studies regarding the valuation effects of the type of investment, classification scheme may have been ambiguous and less precise [Harris and Ravenscraft (1991), Pettway, Sicherman, and Spiess (1993)]. Also, the relation between the level of Herfindahl index and firm value has been examined [Black and Rose (1991)]. In additon, cross-sectional evidence on the relation between stock market returns and the type of investment (i.e., related and unrelated) has been provided [Doukas and Travlos (1988), Black and Rose (1991), Harris and Ravenscraft (1991), Pettway, Sicherman, and Spiess (1993), Markides and Ittner (1994)]. Accordingly, previous studies on the effects of the

type of foreign investment on firm value is inconclusive. Further, there is no direct evidence, to our knowledge, on the effects of focus-increasing and diversifying foreign plant decisions on the value of the firm.

VI. Valuation Effects of Corporate Investment Decisions

A. Overinvestment Hypothesis

A traditional investment decision rule states that managers should undertake only positive NPV projects. That is, if the discounted value of expected cash flows from foreign investment is positive, the decision to undertake such an investment would increase the value of the firm. Thus, announcements of an increase (decrease) in foreign investments are expected to have positive (negative) stock market returns.

Agency costs between managers and shareholders are discussed by Jensen and Meckling (1976). Unless managers are constrained by monitoring or bonding, they would make corporate decisions that maximize their own utility. Jensen (1986) argues that there are agency costs associated with the distribution of free cash flows. That is, managers with high cash flows have a tendency to overinvest by undertaking negative NPV projects instead of distributing cash flows to shareholders. Jensen's (1986) overinvestment hypothesis predicts that firms with poor investment opportunities tend to waste cash flows by engaging in sub-optimal or negative foreign investments, resulting in overinvestment and a reduction of the value of the firm. On the other hand, firms with profitable

investment opportunities use cash flows in positive NPV foreign projects, resulting in shareholder wealth maximization. Thus, the overinvestment hypothesis indicates that the valuation effects of foreign investment decisions may depend on firm's investment opportunities.

This paper tests the overinvestment hypothesis by analyzing the effects of foreign investment decisions on the value of the firm. Foreign investments may be one way in which managers spend cash flows for their own benefit at the expense of shareholder wealth. Testing for the overinvestment hypothesis requires knowledge of firm's investment opportunities. This paper uses Tobin's q to distinguish value-maximizing (i.e., $q > 1$) from overinvesting (i.e., $q < 1$) firms.[20] According to the overinvestment hypothesis, foreign investment announcements by value-maximizing firms are expected to realize into positive abnormal returns, while foreign investment announcements by overinvesting firms are expected to produce negative abnormal returns.

The overinvestment hypothesis also suggests that the free cash flows available to managers are important in explaining market reaction to the foreign investment announcements. Because overinvesting firms are likely to waste cash flows in sub-optimal or negative NPV investments, free cash flows might increase agency costs between managers and shareholders, implying a negative relation between the level of cash flows and stock market returns. On the other hand, because value-maximizing firms are likely to spend free cash flows on value-increasing investments, no relation between the level of cash flows and stock market returns is expected. To test this implication, this study

[20] See Lang and Litzenberger (1989) for the use of Tobin's q as an indicator of overinvestment.

analyzes the cross-sectional relation between stock market returns and cash flows for value-maximizing and overinvesting firms, respectively.

Further, to examine the extent of abnormal returns associated with free cash flows and firm's investment opportunities, the sample is divided into four subsamples according to firm's investment opportunities and level of free cash flows: (1) value-maximizing firms with high free cash flows, (2) value-maximizing firms with low free cash flows, (3) overinvesting firms with high free cash flows, and (4) overinvesting firms with low free cash flows. Foreign investment announcements by overinvesting firms with high free cash flows are expected to yield the lowest abnormal returns since these firms are likely to have the highest agency costs and undertake negative NPV projects. On the other hand, value-maximizing firms are expected to earn positive abnormal returns regardless of the level of free cash flows since these firms are expected to use cash flows in positive NPV investments.

B. Type of Investment Decisions

This section examines whether the type of foreign investment (i.e., focus-increasing and diversifying) decision has any differential effects on the value of the firm. Benefits and costs associated with diversification strategy are well-known. As discussed in Essay I, diversification benefits include: (1) greater operating efficiency,[21] (2) less incentive

[21] Chandler (1977) argues that, diversified firms are more efficient and profitable than their line of business would be separately since diversified firms have better coordination than focused firms.

to pass up positive NPV projects,[22] and (3) greater debt capacity, and lower taxes.[23] Diversification costs include: (1) the use of increased discretionary resources to undertake value-decreasing investments, (2) information asymmetry costs between central and divisional managers[24], (3) cross-subsidies that allow poor segments to drain resources from better performing segments, and (4) misalignments of incentives between core and non-core business.[25] However, the overall valuation effects of foreign diversification have not been thoroughly examined.

Some studies have explained the valuation effects of corporate diversification through acquisitions in the context of agency theory [Jensen (1986), Morck, Shliefer, and Vishny (1989)]. Agency theory states that diversification is undertaken for reasons other than market value maximization. Managers' incentives to invest abroad in unrelated business (i.e., relative to the firm's core business) may be motivated by managers' objectives such as compensation, power, and job satisfaction including reduction of their employment risk.[26] Jensen (1986) argues that managers with high cash flows are more likely to

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[22] Weston (1989) states that diversified firms have large internal capital markets so that they make more positive NPV investments than focused firms.

[23] Lewellen (1971), Majd and Myers (1987) argue that diversified firms are predicted to have more tax advantage than focused firms since diversified firms have greater debt capacity.

[24] Harris, Kribel, and Raviv (1982) suggest that information asymmetry costs are higher in diversified firm than in focused firms, resulting in reduction of the value of the firm than their lines of business would be separately.

[25] Myer, Milgrom, and Roberts (1992) argue that unprofitable lines of business create greater value losses in conglomerates than they would as stand-alone firms.

[26] Amihud and Lev (1981) argue that managers have incentive to reduce their employment risk.

undertake diversifying investments (i.e., in pursuit of a diversification program[27]) instead of distributing cash flows out to shareholders. Hisey and Caves (1985) propose that international diversification may occur to reduce managers' job risk even though shareholders could achieve international diversification themselves. Morck, Shliefer, and Vishny (1988) suggest that managers often overinvest beyond the value-maximizing level and pursue value-decreasing diversifying strategies for their own benefits at the expense of shareholders. Shleifer and Vishny (1989) and Morck, Shleifer, and Vishny (1990) argue that managers can entrench themselves by making manager-specific investments, implying that diversification is not consistent with shareholder wealth maximization. That is, managers may attempt to diversify due to firm's poor financial performance relative to other firms in the same industry. Such diversified investments may make it costly for shareholders to replace existing management.

Harris and Ravenscraft (1991) suggest that bidding firm's experience in the target's industry is an important determinant of gains from cross-border takeovers. Markides and Ittner (1994) also argue that related foreign investments are associated with higher benefits and lower integration costs than unrelated acquisitions, implying a positive relation between the stock market returns and focus-increasing investments.

Balck and Rose (1991) and Lang and Stulz (1994) find a negative relation between Tobin's q and the degree of corporate diversification, suggesting that the capital markets value focus-increasing investments more than diversifying investments. It may be because

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[27] The increase in oil price generated large cash flows in the oil industry in the late 1970s and early 1980s. However, oil industry managers did not pay out the cash flows to shareholders. Instead, they launched diversification programs to invest funds outside the industry (i.e., Montgomery by Mobil, Reliance Electric by Exxon). These acquisitions turned out to be unsuccessful.

focus-increasing firms might have a competitive advantage in core-business, while diversifying firms might have not such an advantage. However, in Black and Rose (1991) and Lang and Stulz (1994), changes in either the number of business segments or the Herfindahl index are estimated to measure the degree of corporate diversification, instead of comparing the SIC digit code of new investment with that of firm's primary business.

This paper provides direct evidence on the valuation effects of focus-increasing and diversifying investments, using a sample of foreign plant announcements. The sample is classified into focus-increasing and diversifying foreign investments. If diversifying foreign investment is one way in which managers waste cash flows for their own benefit at the expense of shareholders [Jensen (1986)], Morck, Shleifer, and Vishny (1989)], or if an increase in corporate focus enhances managerial efficiency, it is expected that focus-increasing foreign investments gain positive stock market returns, while diversifying foreign investments exhibit negative abnormal returns.

To examine whether the abnormal returns associated with firm's type of investment differ between value-maximizing and overinvesting firms, the sample is classified into four subsamples according to firm's managerial characteristics and type of investment: (1) value-maximizing firms (i.e., $q > 1$) with focus-increasing investments, (2) value-maximizing firms with diversifying investments, (3) overinvesting firms (i.e., $q < 1$) with focus-increasing investments, and (4) overinvesting firms with diversifying investments. Focus-increasing investment announcements by value-maximizing firms are expected to generate the largest abnormal returns, since these investments are likely to be more value-increasing. On the other hand, diversifying investments by overinvesting firms are

expected to produce the lowest abnormal returns, since these firms are known to engaging in value-decreasing transactions and their new investments will signal to the capital market that the managers are not in the pursuit of strengthening the firm's core-business.

Furthermore, Lang and Stulz (1994) argue that firms which have limited growth opportunities in their core-business are likely to engage in diversifying investments. However, such firms may lack the required competitive edge in non-core business and thus should not be expected to benefit from diversification activities. Consistent with Lang and Stulz (1994), John and Ofek (1995) report that focus-increasing asset-sales are associated with an improvement in firm performance, while diversifying asset-sales are not. This study examines the cross-sectional relation between corporate focus and post-investment performance.

V. Data and Methodology

A. Data

The sample of this essay consists of foreign plant announcements by U.S. firms during the period of 1980-1992.[28] The sample is collected from the annual edition of the

[28] For example,

Baxter International plans to build a $19 million plant in Singapore for the production of kidney dialysis equipment (WSJ Jun.26, 1980).

Analog Device is spending a $44 million to build a wafer-fabrication plant, Limborick, Ireland (WSJ Nov. 06, 1984).

Digital Equipment Corp. plans to build a $105 million semiconductor plant near Edinburgh, Scotland: the plant will supply semiconductors mostly for Digital computers sold in Europe (WSJ Aug. 01, 1985).

Wall Street Journal Index. Once the announcement dates are identified, other relevant information is obtained from the articles reported in the Wall Street Journal.

The sample is collected based on the following criteria: (1) firms should be U.S. manufacturing companies, (2) firms should be listed on NYSE or AMEX, and (3) CRSP and COMPUSTAT tapes are available for the firms. Firms announcing purchase of equipment or machinery or capital budgeting, and purchase of plant from other companies are excluded. Also, excluded are firms with other corporate announcements around fifteen days of foreign plant announcements. This screening procedure produces a sample of 156 foreign investment announcements.

The sample is divided into value-maximizing and overinvesting firms, using Tobin's q. If a firm has $q > 1$ (sample size = 42), it is classified as a value-maximizing firm. Otherwise, a firm with $q < 1$ (sample size = 114) is classified as an overinvesting firm. The sample is also classified into high and low free cash flow firms. Lehn and Poulsen (1989) define the free cash flow as operating income before depreciation minus interest expenses, taxes, preferred dividends, and common dividends. In this study, the value of normalized free cash flows is used as in Lang, Stulz, and Walkling (1991). Lang, Stulz, and Walkling (1991) normalize free cash flows by dividing them by the book value of the total assets since large firms are more likely to have higher cash flows. If the free cash flows of a firm is larger (smaller) than the sample median, it is classified as high (low) free cash flow firm.

The sample is also divided into firms with focus-increasing investments (sample size = 105) and diversifying (sample size = 41) investments. An investment is classified as

focus-increasing if the 2-digit SIC code of the investment is the same as firm's main 2-digit code (i.e., firm's core business). Otherwise, it is classified as a diversifying investment.

Table II-1 shows the frequency distribution of the sample of foreign investment announcements by year during the period of 1980-1992. The 156 announcements are made by 76 U.S. firms.

[Insert Table II-1 about here]

Table II-2 presents the frequency distribution of foreign investment announcements, classified by the 2-digit SIC industrial codes.

[Insert Table II-2 about here]

Most foreign investment announcements occurred in the following industries: transportation and equipment, chemicals, electronic equipment, machinery industries, and food products. However, foreign investment activity represents a relatively broad spectrum of industries.

The frequency distribution of foreign investment announcements by region is reported in Table II-3.

[Insert Table II-3 about here]

Table II-1

Frequency Distribution of the Foreign Investment Announcements by U.S. Firms: 1980-1992.

Year	Frequency
1980	18
1981	12
1982	10
1983	7
1984	16
1985	11
1986	10
1987	10
1988	11
1989	8
1990	16
1991	11
1992	16
Total	156

Table II-2

Frequency Distribution of the Foreign Investment Announcements by U.S. Firms, Classified by Industry (2-digit SIC code): 1980-1992

2-Digit SIC code	Industry Group	Frequency
20	Food and kindred products	12
21	Tobacco products	2
22	Textile mill products	1
26	Paper and allied products	3
28	Chemicals and allied products	39
29	Petroleum refining	7
30	Rubber and plastic products	5
32	Stone, clay, and glass products	1
33	Primary metals	5
34	Fabricated metal products	1
35	Indust. machinery & computer equip.	17
36	Electronic equipment	20
37	Transportation equipment	33
38	Measuring instr., photography, watches	6
39	Misc. manufacturing industries	1
48	Communication	2
78	Motion pictures	1
		156

Table II-3

Frequency Distribution of the Foreign Investment Announcements by U.S. Firms by Region: 1980-1992

Region[1]	Frquency
South East Asia	23
China	5
Japan	7
Western Europe	69
Eastern Europe	7
Middle East	1
Canada	23
Mexico	14
South America	7
Total	156

[1] South East Asia: Thailand, Malaysia, Indonesia, South Korea, Singapore, Taiwan, Sri Lanka.
Western Europe: U.K. Ireland, Holland, Belgium, Spain, Germnay, France, Italy, Austria, Portugal, Luxemburg.
Middle East: United Arab Emirate
South America: Argentina, Brazil, Chile, Guyana
Eastern Europe: Poland, Czech, Russia

Southeast Asia has a sample size of twenty-three. China has a relatively small sample size of five. Western European countries appear to be the target countries of U.S. foreign investments (sample size = 67). Eastern European countries have a sample size of five. Canada and Mexico appear as regions in which U.S. firms prefer to invest (sample size = 37). It may be due to geographical proximity.

Table II-4 presents summary statistics of the sample of firms with foreign investments, including Tobin's q, free cash flow, ratio of debt to total assets, ratio of R&D to sales, ratio of advertising expenditure to sales, insider ownership (i.e, proportion of outstanding shares held by insiders), ratio of foreign sales to total sales, size of investment, and firm size.[29]

[Insert Table II-4 about here]

Panel A shows summary statistics for the entire sample. Panel B provides the summary statistics for the sample of value-maximizing firms (i.e., $q > 1$) and Panel C reports summary statistics for overinvesting firms (i.e., $q < 1$). It is evident that value-maximizing firms have higher mean R&D to sales ratio than overinvesting firms, suggesting that value-maximizing firms have more growth opportunities than overinvesting firms. Insiders appear to control a smaller fraction of shares in value-maximizing firms than in overinvesting firms, implying that value-maximizing firms are

[29] The data of Tobin's q and firm size are obtained from COMPUSTAT. The insider ownership (i.e., the proportion of shares held by insiders), ratio of foreign sales/total sales are provided from the Value Line Investment Survey. The size of investment is from the Wall Street Journal.

Table II-4

Summary Statistics for Firms with the Foreign Investment Announcements by U.S. Firms: 1980-1992

	N	Mean	Std. dev	Minimum	Maximum
Panel A: Entire sample					
Tobin's q	156	0.9105	0.8937	0.0160	5.7660
Free cash flow/total assets[1]	156	0.1357	0.0567	-0.0064	0.3378
Total debt/total assets	155	0.2154	0.1333	0.0101	0.6232
R&D/sales	142	0.0433	0.0343	0.0035	0.2501
Advertising/sales	92	0.0274	0.0265	0.0057	0.1259
Insider ownership[2]	129	0.0821	0.1051	0.0500	0.6370
Foreign sales/total sales	141	0.3118	0.1561	0.0000	0.7200
Size of investment ($ million)	109	199.0100	384.8600	3.0000	2400.0000
Firm Size ($ million)	156	11261.2900	14700.7900	126.6700	75346.9600
Panel B: High q firms[3]					
Tobin's q	42	1.8620	1.2770	1.0000	5.7660
Free cash flow/total assets	42	0.1502	0.0556	0.0534	0.3378
Total debt/total assets	41	0.1886	0.1202	0.0249	0.5762
R&D/sales	34	0.0622	0.0425	0.0056	0.1763
Advertising/sales	35	0.0456	0.0343	0.0090	0.1259
Insider ownership	34	0.0504	0.5306	0.0600	0.1800
Foreign sales/total sales	37	0.3821	0.1253	0.1500	0.6400
Size of investment ($ million)	38	142.4700	229.2000	5.0000	1000.0000
Firm Size ($ million)	42	18508.7900	23321.5800	686.2300	75346.9600
Panel C: Low q firms					
Tobin's q	114	0.5599	0.2076	0.0160	0.9580
Free cash flow/total assets	114	0.1304	0.0564	-0.0064	0.3000
Total debt/total assets	114	0.2250	0.1370	0.0101	0.6232
R&D/sales	112	0.0374	0.0291	0.0035	0.2501
Advertising/sales	57	0.0163	0.0098	0.0057	0.0567
Insider ownership	95	0.0935	0.1165	0.0500	0.6370
Foreign sales/total sales	104	0.2868	0.1589	0.0000	0.7200
Size of investment ($ million)	81	218.5100	425.1200	3.0000	2400.0000
Firm Size ($ million)	114	8657.7500	8723.5300	126.6700	34836.5300

[1] The free cash flow is defined as in Lehn and Poulsen (1989) (i.e., operating income before depreciation minus interest expense, taxes, preferred dividends, and common dividends).

[2] It is defined as percent of outstanding shares held by insiders. The data are collected from several issues of the Value Line Investment Survey.

[3] High (low) q indicates value-maximizing (overinvesting) firms.

more widely owned than overinvesting firms. In addition, ratios of foreign sales to total sales appear to be higher for value-maximizing firms than for overinvesting firms, suggesting that value-maximizing firms have more international involvement than overinvesting firms. In terms of market capitalization, value-maximizing firms are, on average, larger than overinvesting firms.

B. Methodology

1. Estimation of Tobin's q

Tobin's q, defined as the ratio of the market value of the firm to the replacement cost of its assets, is used to explain cross-sectional differences in investment opportunities and management performance.[30] For example, Tobin's q is used as measure of management performance across firms [Lang, Stulz, and Walkling (1989), McConnell and Servaes (1990), Servaes (1991), Doukas (1995)], or firm's investment opportunities [Lang, Stulz, and Walkling (1991), Doukas (1995)], firm value [Morck, Shleifer, and Vishny (1988)].

Lang and Litzenberger (1989), among others, use Tobin's q to distinguish value-maximizing from overinvesting firms. They defined Tobin's q as the marginal return on

[30] For example, the relationship between managerial equity ownership and firm value [Morck, Shliefer, and Vishny (1988) McConnell and Servaes (1990)], the relationship between managerial performance and tender offer gains [Lang, Stulz, and Walkling (1989)].

firm's existing assets plus the marginal return on future investment opportunities.[31] It is assumed that marginal returns of capital are diminishing, implying that the marginal return on existing assets are larger than marginal returns on new investment. According to Lang and Liztenberger (1989), for value-maximizing firms, the marginal return on new investment is equal to (or larger than) the cost of capital. Under conditions of decreasing marginal efficiency of capital, the marginal return on existing assets is also larger than the cost of capital. Thus, Tobin's q is larger than unity. On the other hand, for overinvesting firms, the marginal return on existing assets is less than the cost of capital. Under conditions of decreasing marginal efficiency of capital, the marginal return on new investment is also less than the cost of capital. Thus, Tobin's q is less than unity.

In this study, Tobin's q is used to distinguish value-maximizing (i.e., $q > 1$) from overinvesting firms (i.e., $q < 1$) to test the implications of overinvestment hypothesis. Consistent with Jensen's (1986) overinvestment hypothesis, for value-maximizing firms, the marginal return on foreign investments is expected to be positive and thus increase the value of the firm. On the other hand, for overinvesting firms, the marginal return on foreign investments is expected to be negative and therefore reduce shareholder wealth.

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[31] Average Tobin's $q = (X/C)/K + [(I/C)/K] (P - K) T$
= average returns on existing assets
+ average returns on future investment

where
X: expected earnings from existing assets
C: current capital stock
K: cost of capital
I: future investment
P: average returns for firm
T: time period

$P > K = (X/C) > K : q > 1$ value-maximizing
$(X/C) < K = P < K : q < 1$ overinvesting

The procedure used by Lindenberg and Ross (L-R) (1981) to obtain Tobin's q is very complicated in terms of computational effort and data requirements.[32] That is, replacement costs are complex to estimate.[33] The information about replacement costs of plant and inventory is available only for large firms over the period of 1974-1984.[34] Chung and Pruitt (1994) developed a simple formula to approximate the Tobin's q.[35] The advantages of the approximate q are that (1) all data needed to calculate the Tobin's q can be obtained from the COMPUSTAT industrial files and (2) it is simple to calculate q values. To show how the approximate q values are related to the values of L-R Tobin's q, Chung and Pruitt (1994) run yearly OLS regressions between q values from both he L-R and approximate q formulas for 10 years from 1978 to 1987. The approximate q can explain 96.6% of the variability of the Tobin's q. They show the comparison of Lindenberg-Ross's Tobin's q with approximate q for 40 randomly selected firms, in which the two methods give close value with the deviation less than 18%. The very high degree of observed consistency between the L-R and the approximate q formulas, over the 1978-

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[32] Manufacturing Master File compiled by the National Bureau of Economic Research has information only for manufacturing firms.

[33] The replacement costs are calculated by approximating the plant's age and life and then adjusting its book value for inflation. The replacement value of inventory is determined by assuming that the book value of inventory equals its market value when firm uses first-in first-out (FIFO) accounting.

[34] During the period of 1974-1984, only firms with net plant and equipment values in excess of $120 million were required to report replacement costs of plant and inventory to the FASB.

[35] Approximate q = (MVE + PS + DEBT)/TA
where
MVE: product of a firm's share price and the number of common stock shares outstanding, given by COMPUSTAT (#24 x #25)
PS : liquidating value of the firm's outstanding preferred stock (#10)
DEBT: short-term (less than 1 year) liabilities net of short-term assets (#5 - #4)
TA : book value of the total assets (#6)

1987 period, strongly suggests that researchers can employ approximate q values with considerable confidence. In this paper, the approximate q is used to distinguish value-maximizing (i.e., $q > 1$) from overinvesting (i.e., $q < 1$) firms.

2. Estimation of Abnormal Returns

To measure the announcement effects of foreign investments (plants), the event study methodology [Brown and Warner (1985)] is used. The initial announcement date is designated as day 0 in event time and is verified in the Wall Street Journal Index. The market model is used to estimate normal or expected common stock returns. In the ordinary least squares model, returns on a given security are regressed against the concurrent returns of the market. The CRSP equally weighted index is used as a proxy for the market portfolio.

The market model is specified as:

$$R_{jt} = a_j + b_j R_{mt} + e_{jt}$$

where

R_{jt} : the rate of return on security j for event day t

a_j : estimation period intercept of security j

b_j : OLS estimate of security j's market model parameters

R_{mt} : the rate of return on the CRSP equally valued index on event day t

e_{jt} : the error term of security j on event day t

The potential for bias of the OLS b_j, due to nonsynchronous trading and infrequent trading, has been recognized [Eades, Hess, and Kim (1983)]. To correct the bias, the method developed by Scholes and Williams (1977) is used to estimate the OLS b_j.[36]

The abnormal returns for an announcing firm are the differential between the actual returns on its common stock and the contemporaneous expected returns generated by the market model. The abnormal returns for common stock of firm j on the day t are obtained as follows:

$$AR_{jt} = R_{jt} - (a_j - b_j R_{mt})$$

where

AR_{jt} : abnormal returns for firm j on event day t

R_{jt} : daily return of firm j common stock on day t

R_{mt} : daily return on the CRSP equally-weighted index for all common stock on the NYSE and the AMEX (used as a proxy of the market portfolio of risky assets) on event day t

a_j : estimation period intercept of firm j

b_j : OLS estimate of firm j's market model parameters

The estimation period is from t = 120 to t = -30 relative to the first date of announcement in the Wall Street Journal Index. Day zero (t = 0) represents the foreign

[36] Scholes and Williams (1977) develop a method of estimating parameters using daily returns in case of infrequently traded securities.

plant announcement event day. The abnormal returns are calculated for each day in the event period which starts 25 trading days before the plant opening announcement and stops 30 trading days after the announcement. Daily abnormal returns are calculated for each firm in the sample over the time interval t = -15 to t = +15.

For a sample of N firms, a daily average abnormal return for each day t is estimated by

$$AR_t = \frac{1}{N}\sum_{j=1}^{N} AR_{jt}$$

In the case of no abnormal performance, AR_t has an expected value of zero. Analysis of statistical significance requires the standardized abnormal returns to reflect statistical error in the determination of expected return. To determine whether the average daily abnormal return is statistically significantly different from zero, the average standardized abnormal return ($ASAR_t$) is calculated.

$$ASAR_t = \frac{1}{N}\sum_{j=1}^{N} \frac{AR_{jt}}{S_{jt}}$$

where

and

$$S_{jt} = \left[S_j^2 \left(1 + \frac{1}{T} + \frac{(R_{mt} - \overline{R_m})^2}{\sum_{j=1}^{N} (R_{mj} - \overline{R_m})} \right) \right]^{1/2}$$

S_j : the residual variance for security j from the market model regression

N : the number of observations during the estimation period

R_{mt} : the return on the market portfolio for the day t

R_{mi} : the average return of the market portfolio for day i during the estimation period

R_m : the average return of the market portfolio for the estimation period

T : number of days in the estimation period

It is assumed that each of the abnormal return terms is normal and independent across securities. For each day, the following t-statistic is calculated as:

$$t = \sqrt{N}(ASAR_t)$$

To examine whether the cumulative average abnormal returns (CAR) are significantly different from zero, the cumulative abnormal returns for each security i, CAR_i, are calculated by summing average abnormal returns over event time as follows:

$$CAR_{j,K,L}=\sum_{t=K}^{L} AR_{jt}$$

where the $CAR_{j,K,L}$ is for the period from t = day K to t = day L. The cumulative average abnormal returns over the event time for day K until day L are calculated by

$$CAAR_{K,L}=\frac{1}{N}\sum_{j=1}^{N} CAR_{j,K,L}$$

The average standardized cumulative abnormal returns over the interval from day K to day L are obtained as follows:

$$ASCAR_{K,L}=\sum_{K}^{L} ASAR_{K,L}$$

The cumulative abnormal returns for several interval windows around the announcement day are calculated.

Finally, t-statistics are calculated for $CAR_{K,L}$ by

$$t=\sqrt{N}(ASCAR_{K,L}) / \sqrt{K-L+1}$$

VI. Empirical Results

A. Overinvestment Hypothesis Tests

Panel A of Table II-5 shows the daily abnormal returns for the event period of -5 to +5 days around the announcement day (t = 0) for the entire sample of foreign investment announcements during the period of 1980-1992.

[Insert Table II-5 about here]

One day before the announcement (day = -1), firms experience significant negative abnormal returns of -0.23%. However, at the announcement day, the abnormal returns are negative and insignificant at any conventional level. Panel B of Table II-5 presents the cumulative average abnormal returns for several window intervals. The results show that foreign plant investments exhibit significant negative two-day stock returns of -0.42%, implying that foreign investments have an adverse effects on the value of the firm. This evidence is consistent with findings reported in Lee and Wyatt (1986) that, at the announcement day, firms engaging in international joint ventures experience negative abnormal returns of -0.46%. However, these results reported in Table II-5 are in contrast with Lang and Ofek's (1995) findings which show that firms investing in the Eastern European countries earn a two-day significant positive abnormal return of 1%. However, the results of these two studies are not directly comparable with those reported here since

Table II-5

A. Daily Average Abnormal Returns (AARs), t-statistics, % of Positive AARs for the Entire Sample of the Foreign Investment Announcements by U.S. Firms for the Event Period -5 to +5 Trading Days: 1980-1992 (Sample size = 156). ***,**,* denote the significance at the 1%, 5%, 10% level.

Day	Average Abnormal Returns	t-statistics(*p*-value)	Positive AAR(%)
-5	0.0009	0.643(0.521)	51.3
-4	0.0011	0.762(0.446)	52.6
-3	0.0018	0.891(0.401)	50.6
-2	0.0009	1.104(0.271)	53.8
-1	-0.0023	-1.749(0.082)*	44.2
0	-0.0018	-0.798(0.425)	46.2
+1	0.0013	0.655(0.513)	50.0
+2	-0.0009	-0.549(0.583)	50.0
+3	0.0008	0.237(0.812)	45.5
+4	0.0014	0.689(0.491)	45.5
+5	0.0007	0.232(0.816)	55.1

B. Cumulative Average Abnormal Returns (CAARs), t-statistics for the Entire Sample of Foreign Investment Announcements by U.S. Firms for Several Window Intervals: 1980-1992. ***,**,* denote the significance at the 1%, 5%, 10% level.

Trading Interval	Cumulative Average Abnormal Returns, CAAR	t-statistics(*p*-value)
[-5 to +5]	0.0038	0.623(0.533)
[-5 to +1]	0.0018	0.551(0.582)
[-2 to +1]	-0.0020	-0.394(0.693)
[-1 to +1]	-0.0029	-1.092(0.276)
[-1 to 0]	-0.0042	-1.810(0.073)*
[0 to +1]	-0.0005	-0.101(0.919)

Notes: Day 0 is the first announcement date associated with foreign investments by U.S. firms as reported in the Wall Street Journal.

their inferences are primarily drawn from foreign joint venture rather than direct investment transactions.

Although the results in Table II-5 appear to be consistent with Jensen's (1986) overinvestment hypothesis, the sample of foreign investments analyzed in this study may contain different types of firms with respect to investment opportunities or level of free cash flows. Since the overinvestment hypothesis implies that the valuation effects of corporate investment decisions depend on firm's investment opportunities, this issue is examined next using Tobin's q as the measure of firm's investment opportunities. The sample is divided into two subsamples - value-maximizing (i.e., $q > 1$) and overinvesting (i.e., $q < 1$) firms.[37] Value-maximizing firms are expected to be better managed and have positive NPV foreign investments, whereas overinvesting firms are likely to have no positive NPV foreign investments. Accordingly, investment announcements by value-maximizing firms should cause positive market returns, while investment announcements by overinvesting firms should produce negative market returns.

Panel A of Table II-6 presents the daily average abnormal returns for value-maximizing and overinvesting firms.

[Insert Table II-6 about here]

One day before the foreign investment announcement ($t = -1$), value-maximizing firms

[37] Lee and Wyatt (1991) divide their sample of international joint ventures into three groups according to the economic status of the foreign partner's home country. However, they find negative abnormal returns for all these three groups.

Table II-6

A. Daily Average Abnormal Returns (AARS), % of Positive AARs for the Foreign Investment Announcements by U.S. Firms with q > 1 and q < 1, t-statistics for the Daily Mean Differences of AARs Between Two Samples for the Event Period -5 to +5 Trading Days: 1980-1992.(t-stastistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

	Average Abnormal Returns, AAR,(%) Tobin's q		Positive AAR(%)		
Day	q > 1 (N=42)	q < 1 (N=114)	q > 1	q < 1	t-difference $AAR_{q>1}$ - $AAR_{q<1}$
-5	-0.0007(0.133)	0.0016(0.672)	47.6	53.5	-0.668
-4	0.0020(0.897)	0.0007(0.347)	50.0	52.6	0.480
-3	0.0042(0.977)	0.0010(0.391)	59.5	48.2	0.742
-2	0.0003(0.047)	0.0012(1.262)	52.4	55.2	-0.258
-1	0.0069(2.287)**	-0.0058(-3.436)***	69.0	35.1	3.637***
0	0.0059(2.744)***	-0.0049(-2.599)***	59.5	41.2	2.737***
+1	0.0009(0.073)	0.0015(0.722)	54.8	49.1	-0.147
+2	0.0029(0.972)	-0.0021(-1.234)	52.4	50.0	1.447
+3	0.0030(0.721)	0.0001(-0.159)	47.6	45.6	0.841
+4	0.0012(0.275)	0.0013(0.972)	45.2	44.7	-0.016
+5	0.0016(0.518)	0.0004(-0.043)	52.4	56.1	0.318

B. Cumulative Average Abnormal Returns (CAARs) for the Foregin Investment Announcements by U.S. Firms with q > 1 and q < 1, t-statistics for the Mean Difference of CAARs Between Two Samples for Several Window Intervals: 1980-1992. ***,**,* denote the significance at 1%, 5%, 10% level.

	Cumulative Average Abnormal Returns, CAAR (%) Tobin's q		
Trading Interval	q > 1 (N=42)	q < 1 (N=114)	t-Difference $CAAR_{q>1}$ - $CAAR_{q<1}$
[-5 to +5]	0.0284(2.793)**	-0.0049(-0.935)	3.301***
[-5 to +1]	0.0196(2.707)**	-0.0045(-0.998)	2.914***
[-2 to +1]	0.0140(2.576)**	-0.0078(-2.025)**	3.247***
[-1 to +1]	0.0138(2.947)***	-0.0091(-3.067)***	3.935***
[-1 to 0]	0.0128(3.558)***	-0.0106(-4.267)***	4.548***
[0 to +1]	0.0068(1.992)**	-0.0033(-1.327)	2.035**

Notes: (1) Day 0 is the first announcement date associated with foreign investments as reported in the Wall Street Journal.

(2) If the value of Tobin's q is greater (less) than 1, the firms is classified into value-maximizing (overinvesting) firm.

(i.e., q > 1) gain significant positive abnormal returns of 0.69% (t-statistic = 2.287). At the announcement day (t = 0), there are also significant positive abnormal returns of 0.59% (t-statistic = 2.744). On the other hand, at day -1, overinvesting firms (i.e., q < 1) realize significant negative abnormal returns of -0.58% (t-statistic = -3.436). At the announcement day, significant negative abnormal returns of -0.49% (t-statistic = -2.599) are observed as well. The mean differences between value-maximizing and overinvesting firms are significant at the 1% level for both day -1 and day 0. Panel B provides the cumulative average abnormal returns (CARs) for foreign investments for several interval of windows. The results show that value-maximizing firms earn significant positive two-day abnormal returns of 1.28% (t-statistic = 3.558), whereas overinvesting firms realize significant negative returns of -1.06% (t-statistic = -4.267). The difference between the two samples are significant at the 1% level.

These results imply that the capital markets expect more value to be created when firms with profitable investment opportunities announce foreign investments. On the other hand, foreign investment announcements by overinvesting firms cause negative valuation effects because these firms are more perceived to waste cash flows by engaging in sub-optimal or negative NPV investments. This is consistent with the predictions of the overinvestment hypothesis. This evidence also appears to be consistent with the results reported in Doukas (1995) where he shows that U.S. acquiring firms with high q values (i.e., q > 1) gain significant positive two-day abnormal returns of 0.41% from foreign acqusitions, while U.S. acquiring firms with low q values (i.e., q < 1) experience insignificant negative returns of -0.18%.

Jensen's (1986) argument implies that stock market returns associated with firm's investment opportunities depend on the agency costs over the firm's discretion of free cash flows. That is, since value-maximizing firms are likely to use cash flows in value-increasing investments, no significant relation between the level of cash flows and investment-related abnormal returns is expected. On the other hand, since overinvesting firms are more likely to waste cash flows by engaging in sub-optimal or negative NPV investments, the level of free cash flows may have an adverse impact on the value of the firm. Thus, the overinvestment hypothesis implies that, cross-sectionally, the abnormal returns for investments must be negatively related to the cash flows of overinvesting firms and r ırelated to the cash flows of value-maximizing firms.[38]

To explore this implication of the overinvestment hypothesis, this study examines the cross-sectional relation between the level of free cash flows and the stock market returns for both value-maximizing and overinvesting firms, respectively. Panel A of Table II-7 reports the results from ordinary least squares (OLS) regressions of the two-day cumulative abnormal returns for foreign announcements on level of free cash flows.

[Insert Table II-7 about here]

For value-maximizing firms (i.e, $q > 1$), as predicted, the relation between the two-day abnormal returns and the level of free cash flows is insignificantly positive. For overinvesting firms (i.e, $q < 1$), the two-day abnormal returns are negatively related to the

[38] Lang, Stulz, and Walkling (1991) discuss the empirical implication of free cash flow hypothesis.

Table II-7

A. OLS Estimates of Coefficients in Cross-Sectional Regressions of Two-day (-1,0) Cumulative Abnormal Returns ($CAR_{-1,0}$) for the Foreign Investment Announcements by U.S. Firms: 1980-1992 (t-statistics are in parentheses). ***,**,* denote the significance at the 1%, 5%, 10% level.

$$CAR_{(-1,0),q>1} = a_0 + a_1 \text{ FCF}$$

$$CAR_{(-1,0),q<1} = a_0 + a_1 \text{ FCF}$$

Tobin's q	sample size	Intercept	Free cash flow[1]	R^2 (%)
q > 1	42	0.1111 (0.835)	0.1110 (0.134)	4.000
q < 1	114	-0.0001 (-0.020)	-0.0820 (-1.866)**	3.200

B. OLS Estimates of Coefficients in Cross-Sectional Regressions of Two-day (-1,0) Cumulative Abnormal Returns ($CAR_{-1,0}$) for the Foreign Investment Announcements by U.S. Firms: 1980-1992 (t-statistics are in parentheses). ***,**,* denote the significance at the 1%, 5%, 10% level.

$$CAR_{-1,0} = a_0 + a_1 \text{ Tobin's q} + a_2 \text{ FCF}$$

	reg1	reg2	reg3
intercept	-0.0099 (-3.020)***	0.0048 (0.812)	0.0007 (0.122)
Tobin's q	0.0061 (2.372)***		0.0069 (2.682)***
Free cash flow		-0.0671 (-1.671)*	-0.0830 (-2.086)**
R^2 (%)	3.520	1.780	6.190

[1] The free cash flow is defined as operating income before depreciation minus interest expenses, taxes, preferred dividends, and common dividends, all of which is divided by total assets for the fiscal year before the investments [Lang, Stulz, and Walkling (1991)].

level of free cash flows (t-statistic = -1.86). These results indicate that firms with profitable investment opportunities use cash flows productively, while firms with poor investment opportunities are likely to overinvest free cash flows. This evidence is consistent with the predictions of the overinvestment hypothesis and Doukas's (1995) evidence, based on a sample of foreign acquisitions, which reports that bidder returns are a decreasing function of cash flows for low q firms (i.e., $q < 1$) and unrelated to cash flows for high q firms (i.e. $q > 1$). Lang, Stulz, and Walkling (1991) report similar results for domestic acquisition transactions.

Panel B shows estimates of regressions of the two-day abnormal returns from the foreign investment announcements on Tobin's q and free cash flows for the entire sample. The first regression shows Tobin's q coefficient being positively related to the abnormal returns, implying that foreign investments by value-maximizing firms increase the value of the firm. In the second regression, the relation between the level of free cash flows and abnormal returns is inverse, as expected, and significant. This result implies that, as Jensen (1986) argues, the role of free cash flows available to managers is an important determinant in explaining the market reaction to foreign investment announcements. The negative relationship between abnormal returns and the cash flow variable is retained even in the presence of the Tobin's q variable. This result is reported in the last column of Table II-7.

[Insert Table II-8 about here]

Table II- 8

Two-Day (-1,0) Cumulative Average Abnormal Stock Returns ($CAR_{-1,0}$), by Tobin's q[1] and Free Cash Flow[2]: Foreign Investments by U.S. Firms: 1980-1992. All data are obtained from COMPUSTAT (t-statistics are in parentheses). *,**,* denote the significance at the 1%, 5%, 10% level.**

Tobin's q	High FCF Firms	Low FCF Firms	Mean Difference
q > 1	0.0173 (2.978)*** N=24	0.0066 (1.079) N=18	0.0107 (1.18)
q < 1	-0.0133 (-1.570)** N=57	-0.008 (-1.440)* N=57	-0.0053 (-1.085)
Mean Difference	0.0306 (4.502)***	0.0146 (1.892)**	

[1] Tobin's q is calculated using the formula provided by Chung and Pruitt (1994). q > 1 (q < 1) indicates value-maximizing (overinvesting) firms.

[2] Free Cash Flows are estimated using the definition given by Lehn and Poulsen (1989) and Lang, Stulz, and Walkling (1991). Specifically, free cash flows are defined as the operating income before depreciation minus interest expenses, taxes, preferred dividends for the fiscal year before the announcement divided by the book value of total assets. The sample median (0.1244) of free cash flows is used to classify firms into the high and low free cash flow categories.

Further analysis, reported in Table II-8, shows that value-maximizing firms (i.e., q > 1) with high free cash flows appear to gain substantial significant positive abnormal returns of 1.73% (t-statistic = 2.869), implying that these firms create more shareholder wealth with free cash flows. That is, regardless of the level of free cash flows, capital markets respond positively to the foreign investment announcements of value-maximizing firms. On the other hand, overinvesting firms (i.e., q < 1) with high free cash flows realize the lowest abnormal returns of -1.33% (t-statistic = -1.570). This evidence suggests that these firms have the greatest agency costs over the distribution of free cash flows. In addition, capital markets seem to respond negatively and vigorously to foreign investment announcements of overinvesting firms with high cash flows. Consistent with the evidence reported in Essay I, the valuation effects of foreign investments depend on firm's investment opportunities and the agency cost associated with the distribution of cash flows.

B. Type of Investment Tests

B1. Comparison of Valuation Effects Between Focus-Increasing and Diversifying Investments

Essay I provided evidence in favor of the view that increases in corporate focus, based on domestic investment decisions, are associated with shareholder wealth maximization. This section examines the valuation effects of focus-increasing and

diversifying foreign investments. An investment is classified as a focus-increasing if the 2-digit SIC code of the investment is the same as the firm's main 2-digit business (i.e., core business) reported in COMPUSTAT. Otherwise, it is classified as a diversifying investment.[39]

Panel A of Table II-9 presents the daily average abnormal returns for focus-increasing and diversifying investments for the eleven trading days around the foreign investment announcements over the period of 1980-1992.

[Insert Table II-9 about here]

At the announcement day, the abnormal returns for both samples appear to be insignificant. On the other hand, one day before (day = -1), diversifying investments are associated with significant negative returns of -0.94% (t-statistic = 2.452), whereas focus-increasing investments are associated with insignificant positive returns. The results also show that mean differences between two samples are significant at the 5% level. Panel B of Table II-9 reports the cumulative abnormal returns for focus-increasing and diversifying investments for several trading intervals. Focus-increasing investments appear to earn positive tow-day abnormal returns of 0.10%, while diversifying investments experience significant negative abnormal returns of -1.25% (t-statistic = -1.662). The mean difference test, for the two-day abnormal returns, between focus-increasing and diversifying investments is significant at the 5% level.

[39] This measure is used in several papers [Kaplan and Weisbach (1992), John and Ofek (1995)].

Table II-9

A. Comparison of Daily Average Abnormal Returns (AARs), % of Positive AARs for the Focus-Increasing and Diversifying Foreign Investment Announcements by U.S. Firms, t-statistics for the Daily Mean Differences of AARs Between Two Samples for the Event Period -5 to +5 Trading Days: 1980-1992. (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

Day	Average Abnormal Returns, AAR,(%) Focus-increasing investments (N=105)	Diversifying investments (N=41)	Positive AAR(%) Focus-increasing investments	Diversifying investments	t-difference AAR_{focus} - AAR_{div}
-5	0.0011(0.732)	-0.0029(-1.126)	52.3	43.9	1.2700
-4	0.0009(0.609)	-0.0006(-0.134)	52.3	46.3	0.5455
-3	0.0018(0.484)	0.0023(0.979)	51.4	51.2	-0.1355
-2	0.0010(1.194)	0.0006(0.465)	54.2	53.6	0.1202
-1	0.0000(0.171)	-0.0094(-3.324)***	50.4	26.8	2.7352***
0	0.0010(0.757)	-0.0030(-0.751)	48.5	43.9	1.1532
+1	0.0015(0.720)	0.0047(1.314)	52.3	51.2	-0.8030
+2	-0.0009(-0.622)	0.0012(0.377)	50.4	53.6	-0.6730
+3	0.0011(0.306)	-0.0002(-0.185)	47.6	43.9	0.4261
+4	0.0010(0.809)	-0.0024(-0.940)	51.4	31.7	0.7206
+5	0.0015(0.794)	-0.0008(-0.482)	54.2	56.0	0.6115

B. Comparison of cumulative Average Abnormal Returns (CAARs) for the Focus-Increasing and Diversifying Foregin Investment Announcements by U.S. Firms, t-statistics for the Mean Difference of CAARs Between Two Samples for Several Window Intervals: 1980-1992 (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

Trading Interval	Cumulative Average Abnormal Returns, CAAR (%) Focus-increasing investments (N=105)	Diversifying investments (N=41)	t-Difference $CAAR_{focus}$ - $CAAR_{div}$
[-5 to +5]	0.0105(1.649)*	-0.0106(-1.135)	2.3166**
[-5 to +1]	0.0076(1.637)*	-0.0084(-0.974)	2.1679**
[-2 to +1]	0.0037(1.253)	-0.0071(-1.148)	1.6041*
[-1 to +1]	0.0026(0.754)	-0.0034(-1.595)*	1.6901*
[-1 to 0]	0.0010(0.416)	-0.0125(-2.882)***	2.7345**
[0 to +1]	0.0025(1.045)	0.0016(0.397)	0.1840

Notes: (1) Day 0 is the first announcement date associated with foreign investment as reported in the Wall Street Journal.

(2) The investment is classified as focus-increasing if the 2-digit SIC code of investment is the same as firm's main 2-digit SIC code (i.e. firm's core business). Otherwise, diversifying investments.

This evidence appears to support the view that an increase in corporate focus is consistent with the market value maximization hypothesis [Comment and Jarrell (1995), John and Ofek (1995)], whereas diversifying investments tend to decrease the value of the firm. The negative stock reactions associated with diversifying investment announcements may be because diversifying investments are one way in which managers waste cash flows at the expense of shareholders' wealth [Jensen (1986)]. Another possible explanation is that firms with poor investment opportunities in their core-business seem to engage in diversifying foreign investments [Lang and Stulz (1994)].

This result is in contrast with the internalization theory of foreign direct investment which implies that foreign direct investments is a positive function of firms' intangible assets. These results suggest that firms engaging in foreign direct investment either for the benefits associated with reverse-internalization or for survival reasons. The relation between the two-day abnormal returns and the type of investment for value-maximizing and overinvesting firms is examined below. Table II-10 provides the two-day cumulative abnormal returns for foreign investments, classified by Tobin's q and the type of investment.

[Insert Table II-10 about here]

Panel A of Table II-10 shows that Focus-increasing investments by value-maximizing firms realize the highest two-day abnormal of 1.52% (t-statistic = 3.739), implying that focus-increasing investments by firms with profitable investment opportunities create more

Table II-10

Comparison of Cumulative Average Abnormal Stock Returns ($CARs_{-1,0}$, $CARs_{-1,+1}$) for the Foreign Investment Announcements by U.S. Firms, Classified by Tobin's q[1] and type of investment (focus-increasing vs diversifying),[2] Classified by 2-Digit SIC Industry Code: 1980-1992 (t-statistics are in parentheses) *,**,* denote the significance at the 1%, 5%, 10% level.**

A. CAR(-1,0)

	Focus-increasing	Diversifying	Mean Difference
q > 1	0.0152 (3.739)*** N=32	0.0044 (0.570) N=9	0.0108 (1.307)
q < 1	-0.0048 (-1.926)* N=73	-0.0180 (-3.639)*** N=32	0.0132 (2.513)**
Mean Difference	0.0200 (3.384)***	0.0224 (2.312)**	

B. CAR(-1,+1)

	Focus-increasing	Diversifying	Mean Difference
q > 1	0.0163 (3.089)*** N=32	0.0073 (0.616) N=9	0.0090 (0.679)
q < 1	-0.0062 (-1.100) N=73	-0.0127 (-2.184)** N=32	0.0096 (1.413)
Mean Difference	0.0194 (3.084)***	0.0200 (1.499)	

[1] q > 1 (q < 1) indicates value-maximizing (overinvesting) firms.

[2] The investment is classified as focus-increasing investment if the 2-digit SIC code of the investment is the same as the firm's main 2-digit SIC code (i.e. firm's core business), otherwise, it is classified as diversifying investment.

shareholder wealth. On the other hand, diversifying investments by overinvesting firms experience the lowest two-day abnormal returns of -1.80% (t-statistic = -3.639), suggesting that diversifying investments by firms with poor investment opportunities substantially decrease the value of the firm. This evidence may also indicate that firms with decreasing investment opportunities in their core-business engage in diversifying investments for survival reasons. However, capital markets appear to penalize these firms for such investments. Panel B provides evidence based on a broader (-1, +1) window interval. The findings are consistent with those reported in Panel A.

B2. Pre- and Post-Investment Profitability Performance

In a recent study by John and Ofek (1995), it is reported that firms with focus-increasing asset-sales improve performance, while firms with diversifying asset-sales do not. Using this sample of foreign investments, this essay investigates the changes in pre- and post-performance of firms pursuing focus-increasing and diversifying investments. To compare the mean and median change in profitability of firms with focus-increasing and firms with diversifying investments around foreign investment announcements, as in Essay I, three measures of profitability are used: (1) earnings before interest, taxes, and depreciation (EBITD) to sales, (2) EBITD to book value of assets, and (3) EBITD to market value of equity. These ratios represent firm's efficiency in operations [John and Ofek (1995)]. To account for industry changes on the firm's performance, industry-adjusted profitability measures are used. The industry-adjusted measures are estimated by

subtracting from the firm's change the median changes, over the same period, of all firms in COMPUSTAT file with the same 2-digit SIC code.

Table II-11 presents the changes in pre- and post-investment profitability of firms undertaking focus-increasing and diversifying foreign investments.

[Insert Table II-11 about here]

In the first two columns of Table II-11, the mean and median of operating margins for focus-increasing investments around several window intervals are reported. The results show that the mean changes in EBITD to sales ratio are 4.80%, 8.81%, and 9.92% from year zero to year one, two, and three, respectively. This evidence indicates that firms with an increase in focus improve their performance after investment year. On the other hand, the third column which reports performance of firms with diversifying investments shows that the mean changes in EBITD to sales ratio are -2.37%, -5.29%, and -7.33% from year zero to year one, two, and three, respectively. This result suggests that performance for firms with diversifying investments appears to be deteriorating. The other two profitability measures - changes in EBITD to assets (ROA) and changes in EBITD to market value of equity - show similar results.

This evidence is consistent with the findings reported in Essay I for domestic investments. These results are also consistent with John Ofek's (1995) findings, for firms with focus-increasing divestitures, which show that the mean changes in EBITD to sales ratio are 0.7%, 1.3%, and 2.3% from year zero to year one, two, and three, respectively.

Table II-11

Industry-Adjusted Profitability Changes Around the Focus-increasing and Diversifying Foreign Investment Announcements by U.S. Firms: 1980-1992. ***, **, * denote significance at the 10%, 5%, 1% level.

	Focus-Increasing Investments		Diversifying Investments		Difference between Samples	
	Mean	Median[1]	Mean	Median	Mean	Median
A. Change in operating margin (EBITD/Sales)[2]						
year -2 to -1	0.0180	0.0049	-0.0142	-0.0042	0.0322	0.0051
year -1 to 0	0.0024	0.0000	-0.0020	0.0098	0.0044	-0.0098
year 0 to +1	0.0480	0.0120	-0.0237	-0.0023	0.0717*	0.0143
year 0 to +2	0.0881*	0.0240	-0.0529	-0.0251	0.1410**	0.0943*
year 0 to +3	0.0992*	0.0267	-0.0733*	-0.0752*	0.1725**	0.1019**
B. Change in returns on assets (ROA)[3]						
year -2 to -1	0.0110	0.0107	-0.0247	-0.0081	0.0357	0.0188
year -1 to 0	0.0117	0.0000	-0.0112	-0.0350	0.0229	0.0350
year 0 to +1	0.0192	0.0042	-0.0551	-0.0410	0.0743	0.0452
year 0 to +2	0.0914*	0.0104	-0.0746	-0.0288	0.1660**	0.0392
year 0 to +3	0.0950*	0.0308	-0.0935*	-0.0177	0.1885**	0.0485
C. Change in EBITD/market value of euqity[4]						
year -2 to -1	0.0363	0.0184	0.0187	0.0001	0.0309	0.0184
year -1 to 0	0.0313	0.0309	0.0284	0.0258	0.0029	0.0051
year 0 to +1	0.0327	0.0208	-0.0544	-0.0007	0.0871*	0.0215
year 0 to +2	0.1154**	0.0256	-0.0697	-0.0230	0.1851**	0.0486
year 0 to +3	0.1514**	0.1112**	-0.0817*	-0.0206	0.2310***	0.1318**

[1] Median singificance tests are based on the Wilcoxon signed rank test.

[2] The difference between the change in operating margin from year to year and the median change in the industry. The operating margins is defined as the ratio of EBITD (earnings before interest, taxes, and depreciation) to sales.

[3] The difference between the change in return on assets from year to year and the median change in the industry. The return on assets is defined as the ratio of EBITD/book value of total assets.

[4] The difference between the change in EBITD/market value of equity from year to year and the median change in industry.

For firms with diversifying divestitures, the mean changes in EBITD to sales ratios are -1.7%, 2.9%, and -3.0% from year zero to year one, two, and three, respectively. The evidence in Table II-11 supports the view that, when firms attempt to invest outside their core-business in an effort to enhance their investment opportunities, their performance is not likely to improve as suggested by Lang and Stulz (1994).

B3. The Relation Between Change in Performance and Change in Focus

This section examines the cross-sectional relation between change in performance of investing firms and change in corporate focus. As in Essay I, the same three focus measures are used. The first focus measure is used to examine whether or not the investment is related to the firm's primary business. If the 2-digit SIC code of the new investment is the same as the firm's main 2-digit business, the investment is classified as a focus-increasing investment. Otherwise, it is classified as diversifying investment.[40] The second measure of focus employed is the number of lines of business segments in which the firms engage. The increase in the number of business segments indicates that firms increase the degree of corporate diversification. The third measure of focus is the sales-based Herfindahl index which is calculated as the sum of the squares of each segment's sales as a proportion of total sales. The closer the Herfindahl index is to 1, the more concentrated are the firm's sales within a few of its business segments and, hence, the more focused its operations.

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[40] See Lang and Stulz (1994) and Comment and Jarrell (1995) for detailed description of focus measures.

Table II-12 reports the relation between in changes in profitability from year zero to year two and the change in corporate focus measures.

[Insert Table II-12 about here]

The first regression shows that the firm's profit margin is positively related to the focus dummy, implying that focus-increasing investments enhance firm's profit margin. Similar results are obtained when the other two alternative focus measures - number of segments and Herfindahl index - are used. The results also indicate that, when the number of business segments increases, the performance of the firm deteriorates. Similarly, increases in the Herfindahl index tend to improve corporate profitability performance. The two other profitability measures (i.e., EBITD to assets and EBITD to market value of equity) yield similar results.[41] This evidence implies that foreign investments which increase firm's corporate focus tend to improve its performance two years after the investment, whereas investments which do not increase the firm's focus appear to worsen its performance. Although in the context of domestic divestitures, John and Ofek (1995) provide a positive relation between changes in firm's profitability and increase in corporate focus. This clearly suggests that corporate focus improves corporate performance regardless of how is achieved.

[41] The post-profitability results for a broader window interval (i.e., from year zero to year three) remain essentially similar to those presented in Table II-12. When indicator variables are used to capture the change in the number of business segments and the Herfindahl index, the results remain unchanged.

Table II-12

The Relation Between the Change in Post-Performance of Investing Firms and the Change in Focus around the Foreign Investment Announcements by U.S. Firms: 1980-1992. (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

Dependent variable: Industry-adjusted change in EBITD/sales from year 0 to year 2[1]

	reg1	reg2	reg3
intercept	-0.1658(-2.300)**	0.1542(2.938)**	-0.1098(-1.986)**
focus dummy[2]	0.2129(2.499)**		
change in the number of segments[3]		-0.0404(-3.098)***	
change in the Herfindahl index[4]			0.2477(2.470)**
R^2 (%)	4.65	7.83	2.33

Dependent variable: Industry-adjusted change in EBITD/assets from year 0 to year 2[5]

	reg1	reg2	reg3
intercept	-0.2370(-2.423)**	0.2284(1.399)	-0.2059(-1.568)
focus dummy	0.2496(2.158)**		
change in the number of segments		-0.0571(-2.016)**	
change in the Herfindahl index			0.4312(2.371)**
R^2 (%)	3.51	3.15	4.34

Dependent variable: Industry-adjusted change in EBITD/market value of equity from year 0 to year 2[6]

	reg1	reg2	reg3
intercept	-0.1113(-1.450)	0.1979(1.004)	-0.1437(-1.548)
focus dummy	0.1796(1.978)**		
change in the number of segments		-0.0496(-2.236)**	
change in the Herfindahl index			0.2914(1.974)**
R^2 (%)	2.96	3.85	3.05

[1] The difference between the change in the investing firm's EBITD/sales from year 0 to year 2 and the median change in the industry.

[2] Focus dummy is 1 if the 2-digit SIC code of investment is the same as the firm's main 2-digit SIC code (i.e. firm's core business), and 0 otherwise.

[3] The change in the number of segments from year -1 to 0.

[4] Change in the Herfindahl index from years -1 to 0. The Herfindahl index is calculated as the sum of segments' sales squared, divided by total sales squared.

[5] The difference between the change in the investing firm's EBITD/assets from year 0 to year 2 and the median change in the industry.

[6] The difference between the change in the investing firm's EBITD/market value of equity from year 0 to year 2 and the median change in the industry.

B4. The Relation Between Two-Day Stock Market Returns and Change in Focus

While Table II-12 examines the relation between firm's performance, using accounting profitability measures, and the changes in corporate focus, Table II-13 analyzes the relation between the two-day abnormal returns and the changes in corporate focus. The two-day abnormal returns are used as market's immediate assessment of the firm's profitability in response to its foreign investment announcements.

[Insert Table II-13 about here]

The first regression shows that the two-day abnormal returns are positively related to the focus dummy, implying that focus-increasing investments produce 1.32% higher returns than diversifying investments. In the second regression, the change in the number of business segments variable is inversely related to the two-day abnormal returns. It implies that focus-increasing investments are value-increasing while diversifying investments tend to destroy shareholder value. The third regression reports a positive relation between the change in Herfindahl index and the two-day abnormal returns. This evidence indicates that the abnormal returns for foreign investments are higher when firm's Herfindahl index increases.[42]

[42] Using dummy variables for change in the number of business segment and the change in Herfindahl index, the relation between two-day abnormal returns and dummy variables for focus measures is examined. It yields similar results as Table II-13.

Table II-13

The Relation Between the Investing Firm's Two-Day Cumulative Abnormal Returns ($CAR_{-1,0}$) and the Change in Focus around the Foreign Investment Announcements by U.S. Firms: 1980-1992. (t-statistics are in parentheses) *,**,* denote the significance at the 1%, 5%, 10% level.**

Dependent variable: 2-day Cumulative Abnormal Returns

	reg1	reg2	reg3
observation	145	143	142
intercept	-0.0120 (-2.948)***	0.0052 (1.068)	-0.0055 (-1.026)
focus dummy[1]	0.0132 (2.759)***		
change in the number of segments[2]		-0.0024 (-1.872)*	
change in the Herfindahl index[3]			0.0042 (1.974)**
R^2 (%)	4.96	2.42	0.18

[1] Focus dummy is 1 if the 2-digit SIC code of investment is the same as the firm's main 2-digit SIC code (i.e. firm's core business), and 0 otherwise.

[2] The change in the number of segments from year -1 to 0.

[3] Change in the Herfindahl index from years -1 to 0. The Herfindahl index is calculated as the sum of segments' sales squared, divided by total sales squared.

C. Comparison of the Valuation Effects Between Domestic and Foreign Investments

Expansion into foreign markets involves a set of risks and costs that firms do not incur with domestic expansion, including risks of changes in exchange rates and exchange controls and the complications of both foreign taxation and domestic taxation of foreign income. To evaluate foreign investments, firms may compare anticipated rates of return on a foreign investment with those on a comparable domestic investment. It is argued that firms are likely to invest abroad only when the anticipated rate of returns on the foreign investments exceed that on domestic investments [Fatemi (1984)].

Panel A of Table II-14 presents the daily abnormal returns for both samples of domestic and foreign investment announcements.

[Insert Table II-14 about here]

The results show that differences between domestic and foreign investments around the announcement day and several broader window intervals are not significant at any level of significance with the exception of -5 to + 5 and -5 to +1 trading intervals. These results seem to suggest small differences in abnormal returns between domestic and foreign investments in favor of the latter. This may be attributed to the fact that low q firms represent 73% of the entire sample of firms investing abroad while a smaller fraction of firms (68%) investing at home. This evidence is consistent with findings reported by Finnerty, Owers, and Rogers (1986) which point out that there is little

Table II-14

A. Daily Average Abnormal Returns (AARs), % of Positive AARs for the Entire Samples of Both Domestic and Foreign Investment Announcements by U.S. Firms, t-statistics for the Daily Mean Differences of AARs Between Two Samples for the Event Period -5 to +5 Trading Days: 1980-1992 (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

Day	Average Abnormal Returns, AAR,(%) Domestic (N=194)	Foreign (N=156)	Positive AAR(%) Domestic	Foreign	t-difference AAR_{dom} - AAR_{for}
-5	-0.0025(-2.313)**	0.0009(0.643)	43.8	51.3	-1.725*
-4	0.0009(0.453)	0.0011(0.762)	49.5	52.6	-0.049
-3	-0.0003(-0.160)	0.0018 (0.891)	48.4	50.6	-0.990
-2	0.0010(0.755)	0.0010(1.104)	49.5	53.8	0.024
-1	-0.0037(-2.330)**	-0.0023(-1.749)*	37.6	44.2	-0.636
0	-0.0023(-0.868)	-0.0020(-0.798)	42.8	46.2	-0.148
+1	-0.0023(-1.377)*	0.0014(0.655)	49.5	50.0	-1.607*
+2	-0.0000(0.277)	-0.0007(-0.549)	51.5	50.0	0.344
+3	0.0008(1.057)	0.0010(0.237)	48.4	45.5	-0.012
+4	0.0022(2.134)**	0.0013(0.689)	54.1	45.5	0.354
+5	-0.0020(-1.095)	0.0007(0.232)	44.8	55.1	-1.274

B. Cumulative Average Abnormal Returns (CAARs) for the Entire Sample of Both Domestic and Foreign Investment Announcements by U.S. Firms, t-statistics for the Mean Difference of CAARs Between Two Samples for Several Window Intervals: 1980-1992 (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

Trading Interval	Cumulative Average Abnormal Returns, CAAR (%) Domestic (N=194)	Foreign (N=156)	t-Difference $CAAR_{dom}$ - $CAAR_{for}$
[-5 to +5]	-0.0080(-1.050)	0.0038(0.623)	-1.915**
[-5 to +1]	-0.0091(-2.219)**	0.0018(0.551)	-2.112**
[-2 to +1]	-0.0073(-1.920)**	-0.0020(-0.394)	-1.261
[-1 to +1]	-0.0083(-2.656)***	-0.0029(-1.092)	-1.482
[-1 to 0]	-0.0060(-2.273)**	-0.0042(-1.810)*	-0.565
[0 to +1]	0.0046(1.596)	-0.0005(-0.101)	-1.303

Notes: Day 0 is the first announcement date associated with investments as reported in the Wall Street Journal.

difference in abnormal returns between domestic and international joint ventures. One possible explanation is that, as Shapiro (1986) suggests, foreign investment may be undertaken for reasons of survival rather than for abnormal returns. Saturated domestic markets may force firms to expand abroad just to maintain growth rather than to earn higher abnormal returns than domestic investments.

To examine whether differences in abnormal returns between domestic and foreign investments are due to the overrepresentation of value-maximizing firms in the domestic sample, abnormal returns are estimated for value-maximizing and overinvesting firms. Panel A of Table II-15 presents the cumulative abnormal returns for several trading intervals for domestic and foreign investments based on the q characteristics of the firms in the two samples.

[Insert Table II-15 about here]

During the trading period of -5 to +5, both domestic and foreign investments realize positive abnormal returns. However, the gain differences between the two samples are not significant at any level of significance. Panel B of Table 15 provides cumulative abnormal returns between domestic and foreign investments by overinvesting firms. Even though domestic investments experience more negative abnormal returns than foreign investments, the loss differences between the two samples are not significant at any conventional level of significance with the exception of -5 to +5 and -5 and +1 trading intervals.

Table II-15

Cumulative Average Abnormal Returns (CAARs), Classified by Tobin's q, for Both Domestic and Foreign Investment Announcements by U.S. Firms, t-statistics for the Mean Difference of CAARs Between Two Samples for Several Window Intervals: 1980-1992. (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

A. q > 1

Trading Interval	Cumulative Average Abnormal Returns, CAAR (%) Domestic (N=61)	Foreign (N=42)	t-Difference $CAAR_{dom}$ - $CAAR_{for}$
[-5 to +5]	0.0107(1.482)	0.0284(2.793)**	-1.452
[-5 to +1]	0.0060(0.692)	0.0196(2.707)**	-1.414
[-2 to +1]	0.0086(2.036)**	0.0140(2.576)**	-0.747
[-1 to +1]	0.0059(2.273)**	0.0138(2.947)***	-1.402
[-1 to 0]	0.0083(3.160)***	0.0128(3.558)***	-0.843
[0 to +1]	0.0013(1.109)	0.0068(1.992)**	-1.228

B. q < 1

Trading Interval	Cumulative Average Abnormal Returns, CAAR (%) Domestic (N=133)	Foreign (N=114)	t-Difference $CAAR_{dom}$ - $CAAR_{for}$
[-5 to +5]	-0.0166(-2.260)**	-0.0049(-0.935)	-1.698*
[-5 to +1]	-0.0159(-3.130)***	-0.0045(-0.998)	-1.898**
[-2 to +1]	-0.0146(-3.677)***	-0.0078(-2.025)**	-1.361
[-1 to +1]	-0.0148(-4.719)***	-0.0091(-3.067)***	-1.324
[-1 to 0]	-0.0126(-4.859)***	-0.0106(-4.267)***	-0.603
[0 to +1]	-0.0074(-2.663)**	-0.0033(-1.327)	-1.040

Notes: (1) Day 0 is the first announcement date associated with investments as reported in the Wall Street Journal.

(2) If the value of Tobin's q is greater (less) than 1, firm is classified into value-maximizing (overinvesting) firm.

The results seem to suggest that domestic and foreign investments by value-maximizing firms enhance shareholder wealth, whereas investments by overinvesting firms tend to reduce the value of the firm.[43]

In addition, the cross-sectional relation between the two-day abnormal returns and the location of investments (i.e., domestic and foreign) by value-maximizing and overinvesting firms, and the type of investment (i.e, focus-increasing and diversifying) by value-maximizing and overinvesting firms is analyzed. In the first regression, the foreign/high q dummy variable is equal to one when a foreign investment is made by value-maximizing firm, and zero otherwise. Also, the foreign/low q dummy variable is equal to one when a foreign investment is made by an overinvesting firm, and zero otherwise. The U.S./high q dummy variable is equal to one if an investment is domestic investment by a value-maximizing firm, and zero otherwise. In the second regression, the foreign/focus dummy is equal to one if a focus-increasing foreign investment is undertaken, and zero otherwise. The foreign/div dummy is equal to one if a diversifying foreign investment is undertaken, and zero otherwise. The U.S./focus dummy is equal to one if a focus-increasing domestic investment is undertaken, and zero otherwise.

Table II-16 reports the cross-sectional regression results between the two-day abnormal returns on Tobin's q ans the set of dummy variables described earlier for the entire samples of domestic and foreign investment announcements.

[Insert Table II-16 about here]

[43] This study also conduct the same tests, using control sample in which firms have both domestic and foreign plant announcements. The results are similar to findings reported in Table II-14.

Table II-16

Cross-sectional Regressions of the Two-Day Announcement Period Abnormal Returns on the Tobin's q, Domestic/Foreign Investment, and Focus dummy for the Entire Domestic and Foreign Investment Announcements During the Period of 1980-1992. (t-statistics are in parentheses) *,**,* denote the significance at the 1%, 5%, 10% level.**

variables	reg1 (N=350)	reg2 (N=333)
intercept	-0.0125(-6.052)***	-0.0083(-3.323)***
foreign/high q dummy[1]	0.0281(6.882)***	
foreign/low q dummy	-0.0001(-0.045)	
U.S/high q dummy	0.0208(5.646)***	
foreign/focus dummy[2]		0.0113(2.892)***
foreign/div dummy		-0.0008(-0.212)
U.S./focus dummy		0.0049(1.336)
R^2	18.33	3.27

[1] foreign/high q = 1 if firm has foreign investment and high q.
0 otherwise.
foreign/low q = if firm has foreign investment and low q.
0 otherwise.
U.S./high q = 1 if firm has domestic investment and high q.
0 otherwise.
Thus, intercept indicates domestic investment/low q firm.

[2] foreign/focus is 1 if firm has foreign and focus-increasing investment.
0 otherwise.
foreign/div is 1 if firm has foreign and diversifying investment.
0 otherwise.
U.S./focus is 1 if firm has domestic and focus-increasing investment.
Thus, intercept indicates domestic/diversifying investment.

The first regression shows that, the two-day abnormal returns are positively related to both foreign/high q and U.S./high q dummy variables at the 1% level. On the other hand, the two-day abnormal returns are negatively related to both foreign/low q and U.S./low q dummy variables. These results show clearly that shareholders' wealth is positively related to the firm's investment opportunities.

The second regression provides results on the relationship between the two-day abnormal returns and the focus dummy variables. This relationship appears to be positive and consistent with previously reported results which established the importance of focus-increasing investments as a necessity for raising the market value of the firm.

D. Valuation Effects of Corporate Multinationalism

The multinational network hypothesis argues that firms create shareholder wealth by entering into a new geographic market rather existing markets. Previous studies regarding foreign investments provide evidence that the valuation effects of foreign expansion depend on firm's international exposure in a target firm's country [Doukas and Travlos (1988), Chen, Hu, and Shieh (1991)].[44] In this study, the impact of corporate multinationalism on the value of the firm is examined using the sample of foreign plant investments.

Panel A of Table II-17 shows the daily abnormal returns for firms already operating

[44] Doukas and Travlos (1988) classified firms into three groups. a) operating in target firm's country, b) not operating in target firm's country, c) going abroad for the first time. But in this paper, the first two (a and b) cases are examined since their third sample size was to small to draw inferences.

in a target country, and firms not operating in a target country.

[Insert Table II-17 about here]

At the announcement day (day 0), firms already operating in a target country produce significant negative abnormal returns of -0.64% (t-statistic = -3.399), while firms entering into new geographic areas earn significant positive returns of 0.59% (t-statistic = 3.051). The mean differences between two subsamples are significant at the 1% level, indicating that firms investing abroad for the first time benefit the most. In Panel B of Table II-17, firms already having operations in a target country experience significant negative two-day abnormal returns of -1.17% (t-statistic = -1.808), while firms with no previous operations gain significant positive two-day abnormal returns of 1.05% (t-statistic = 1.801). The mean differences between two samples are significant at the 1% level.

The results reported in Table II-17 appear to be consistent with the predictions of the multinational network hypothesis in the sense that firm value increases when its existing multinational network expands through foreign investments. On the other hand, foreign investments which do not expand the multinational network of the firm fail to raise the market value of the firm. This evidence is consistent with Doukas and Travlos's (1988) findings which show that U.S. firms not operating in the target firm's country gain positive abnormal returns of 0.31%, while U.S. firms already operating in the target firm's country produce negative abnormal returns of -0.08% around the foreign acquisition announcements.

Table II-17

A. Daily Average Abnormal Returns (AARs), % of Positive AARs for the Foreign Investment Announcements by U.S. Firms Already Having Plants in the Target Country and U.S. Firms Not Having Plants in the Target Country, t-statistics for the Daily Mean Differences of AARs Between Two Samples for the Event Period -5 to +5 Trading Days: 1980-1992 (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

Day	Average Abnormal Returns, AAR,(%) Presence (N=98)	No Presence (N=49)	Positive AAR(%) Presence	No Presence	t-difference $AAR_{presence}$ - AAR_{no}
-5	0.0022(1.490)	-0.0031(-1.395)*	57.1	38.7	1.628*
-4	0.0024(1.436)	-0.0007(-0.264)	52.0	55.1	1.170
-3	0.0023(1.104)	0.0003(0.491)	51.0	48.9	0.495
-2	0.0013(0.908)	-0.0016(0.052)	54.0	55.1	0.699
-1	-0.0054(-3.025)***	0.0046(1.754)*	36.7	59.1	-2.730***
0	-0.0064(-3.399)	0.0059(3.051)***	36.7	59.1	-3.323***
+1	0.0026(1.470)*	-0.0020(-0.992)	53.0	44.8	1.298
+2	-0.0013(-0.818)	-0.0005(-0.207)	50.0	48.9	-0.270
+3	-0.0009(-0.465)	0.0037(0.941)	45.9	44.8.	-1.403
+4	0.0015(0.117)	0.0002(-0.637)	46.9	38.7	0.279
+5	-0.0031(0.136)	-0.0026(-1.186)	57.1	48.7	1.639

B. Cumulative Average Abnormal Returns (CAARs) for the Foreign Investment Announcements by U.S. Firms Already Having Plants and Firms Not Having Plants in the Target Country, t-statistics for the Mean Difference of CAARs Between Two Samples for Several Window Intervals: 1980-1992 (t-statistics are in parentheses) ***,**,* denote the significance at the 1%, 5%, 10% level.

Trading Interval	Cumulative Average Abnormal Returns, CAAR (%) Presence (N=98)	No Presence (N=49)	t-Difference $CAAR_{presence}$ - $CAAR_{no}$
[-5 to +5]	0.0015(0.451)	0.0042(0.067)	-0.267
[-5 to +1]	-0.0009(-0.074)	0.0034(0.357)	-0.530
[-2 to +1]	-0.0079(-0.800)	0.0069(0.995)	-2.416***
[-1 to +1]	-0.0091(-1.122)	0.0085(1.133)	-3.098***
[-1 to 0]	-0.0117(-1.808)**	0.0105(1.801)**	-4.420***
[0 to +1]	-0.0031(-0.538)	0.0039(0.819)	-1.519

Notes: (1) Day 0 is the first announcement date associated with foreign investment as reported in the Wall Street Journal.

(2) The presence of plants in the target firms was referred to the Directory of Multinationals and the Moody's Industrial Manual. The 9 observations is excluded since they are ambiguous to determine the foreign exposure.

E. Cross-Sectional Analysis

Finally, Table II-18 presents cross-sectional regression results of the two-day abnormal returns on a set of variables accounting for other potential factors such as the firm's characteristics, size of investment, and taxes among others.

[Insert Table II-18 about here]

The first regression shows the relation between the two-day abnormal returns and a set of dummy variables for the type of investment and the firm's investment opportunities. Value-maximizing firms (i.e., high q) with focus-increasing investments realize significant positive abnormal returns (t-statistic = 3.998), while overinvesting firms (i.e., low q) engaging in diversifying investments experience significant negative abnormal returns (t-statistic = -2.576). This evidence shows that focus-increasing investments tend to increase shareholder wealth, while diversifying investments do not.

In the second regression, the negative relation between the level of free cash flows and the two-day abnormal stock returns indicates that agency costs between managers and shareholders increase as free cash flows rise, supporting the prediction of the overinvestment hypothesis.

The impact of the Tax Reform Act of 1986 on the value of the firm is also examined in the third regression. The change in interest allocation rules introduced by the Tax

Table II-18

Cross-sectional Regressions of the Two-day Announcement Period Abnormal Returns ($CAR_{-1,0}$) on the Firm and Investment Characteristics for Foreign Investments by U.S. Firms: 1980-1992. (t-statistics are in parentheses) *,**,* denote the significance at 1%, 5%, 10% level.**

variable	reg 1 (N=147)	reg 2 (N=156)	reg 3 (N=156)	reg4 (N=83)
intercept	-0.0017 (-0.329)	0.0048 (0.812)	-0.0048 (-1.520)	-0.0032 (-0.161)
high q/focus[1]	0.0247 (3.998)***			0.0291 (2.966)***
high q/div[2]	0.0046 (0.509)			0.0036 (0.340)
low q/div[3]	-0.0009 (-2.576)***			-0.0034** (-1.945)
free cash flow		-0.0671 (-1.671)*		-0.0607 (-0.925)
Tax[4]			0.0271 (0.763)	-0.0014 (-0.239)
size of investment				0.0000 (0.007)
log(asset)				0.0029 (0.640)
debt/assets				0.0025 (0.104)
ownership[5]				0.0001 (0.323)
foreign sales/ total sales				0.0000 (0.059)
log(firm size)				-0.0039 (-0.710)
R^2 (%)	12.21	1.78	0.03	16.52

[1] high q/focus is 1 if a firm is value-maximizing with focus-increasing investments, and 0 otherwise.

[2] high q/div is 1 if value-maximizing with diversifying investment, and 0 otherwise.

[3] low q/div is 1 if overinvesting firms with diversifying investments, and 0 otherwise.

[4] Tax is 1 if investments are announced after 1986 Tax Reform, and 0 otherwise.

[5] It is defined as percent of outstanding shares held by insiders.

Reform Act of 1986 reduced tax deductibility of the U.S. interest expense.[45] Accordingly, the Tax Reform Act might have increased the firm's cost of capital and thus decrease foreign investment activities. The evidence in the third regression shows that changes in the Tax Reform Act in 1986 did not have any influence on the value of the firm around the two-day investment announcement period.

The fourth regression examines whether the two-day abnormal returns for corporate investments are related to several other firm characteristics. It is argued that, as firm's debt increases, managers are more closely monitored by creditors and have less cash flows to undertake sub-optimal or value-decreasing investments [Jensen (1986)]. This argument implies a positive relation between the stock market returns and firm's debt ratios. Also, if managers have a large stake in the firms they manage, they are less likely to invest in negative NPV projects, predicting a positive relation between the two-day abnormal returns and the fractions of shares held by managers [Lewellen, Loderer, and Rosenfeld (1985)].[46] In addition, there is the argument that, since large firms have more resources, larger internal capital markets, and economies of scale, firm size may be relevant in explaining the abnormal returns associated with new investments. Hence, the coefficient of the firm size variable is expected to be positive. Even though the firm's debt ratio, the fraction of ownership held by managers, and the firm size variables have

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[45] The U.S. government have sought to limit how much interest expense multinational firms can deduct from their U.S. income. It is because U.S. multinational firms can borrow money in one country and deploy the funds elsewhere. The loss of tax deductibility of interest expense might lead multinational firms to borrow and invest less, and scale back the scope of their foreign operations.

[46] Lewellen, Loderer, and Rosenfeld (1985) show that bidder returns increase with the faction of bidder equity held by managers.

coefficients with predicted signs, none of the coefficients appear to be significant at any level.

Furthermore, it is argued that, since firms involved in international business have expertise in foreign investments, firm's prior international exposure is expected to be positively related to the stock market returns. Ratio of foreign sales to total sales, used as proxy for firm's international involvement, is shown to be positively but not significantly related to the abnormal returns. Chen, Hu, and Shieh (1991) also report an insignificant relation between the ratio of foreign sales to total sales and the stock market returns for international joint ventures. In addition, the evidence shown in Table 18 suggests that size of investment and firm size have little explanatory power. Overall, the evidence shows that firm with investment opportunities (i.e., value-maximizing) that undertake focus-increasing investments experience substantial abnormal returns.

VII. Concluding Remarks

This study examines the effects of corporate investment decisions on the value of the firm, using a sample of foreign plant announcements by U.S. firms during the period of 1980-1992. In this paper, two possible explanations associated with the valuation effects of foreign investments are addressed: (1) firm's investment opportunities and (2) type of investment (i.e., focus-increasing and diversifying). In addition, the overinvestment hypothesis [Jensen (1986), Doukas (1995)] which implies that the impact of foreign investments on the value of the firm depends on the firm's investment opportunities and

the agency costs associated with the managerial discretion of corporate cash flows is investigated.

The evidence presented in this study is consistent with the predictions of the overinvestment hypothesis. That is, value-maximizing firms realize positive stock returns from foreign investment announcements, whereas overinvesting firms suffer losses. Furthermore, the relation between the two-day abnormal returns and the level of free cash flows is significantly negative, indicating that agency costs increase with the level of free cash flows as predicted by the overinvestment hypothesis.

The evidence on the effects of the type of investment on the value of the firm shows that focus-increasing investments increase shareholder wealth, while diversifying investments do not. That is, an increase in corporate focus is consistent with shareholder wealth maximization [John and Ofek (1995)]. In addition, pre- and post-performance tests provide evidence which shows that focus-increasing investments tend to improve corporate performance, while diversifying investments do not. This evidence appears to support the view [Lang and Stulz (1994)] that diversifying investments are not value-increasing. That is, firms might increase shareholder wealth by investing on the business in which they may have competitive edge.

Further, comparison between domestic and foreign investments indicates no significant differences in abnormal returns between the two samples. This evidence indicates that poorly managed firms go abroad for survival reasons [Shapiro (1986)]. This study also presents evidence which shows that when firms enter into a new geographic market create shareholder wealth, implying that they enhance their ability to arbitrage

cross-country differences by expanding the firm's network. Focus-expansion, however, appears to yield the highest gain for the shareholders of the expanding firms.

Cross-sectional analysis shows that the firm's investment opportunities and investments that strengthen its corporate focus are yielding the higheest returns. However, other control variables such as size of investment, fraction of shares held by managers, ratio of foreign sales to total sales, and firm size are found to have little explanatory power.

Consistent with the findings reported in Essay I, this study provides evidence which shows that well-mananged firms with growth opportunities increase shareholder wealth when they undertake focus-increasing foreign investments primarily in geographical regions without previous operating exposure.

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