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Foreign direct investment, diversification and firm performance

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Abstract
In this study we present evidence that geographic diversification increases shareholder value and improves long-term performance when firms engage in core-related foreign direct (greenfield) investments. Non-core-related foreign investments are found to be associated with both short-term and long-term losses. Our results suggest that the synergy gains stemming from the internalization of markets are rooted in the core business of the firm. Geographic diversification outside the core business of the firm bears strongly against the prediction of the internalization hypothesis. The analysis also shows that, regardless of the industrial structure of the firm (that is, number of segments), foreign direct investments outside the core business of the firm are associated with a loss in shareholder value, whereas core-related (focused) foreign direct investments are found to be value increasing. Unrelated international diversification, however, is less harmful for diversified (multi-segment) than specialized (single-segment) firms. The larger gains to diversified firms suggest that operational and internal capital market efficiency gains are considerably greater in multi-segment than single-segment firms when both expand their core business overseas.
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Introduction

Over the last two decades the substantial progress toward removal of cross-border restrictions on international capital flows and the trend toward an integrated world economy has increased the growth of foreign direct investment activity. In addition to the general relaxation of capital controls by many nations, cross-border investment has been stimulated by the European economic integration process, the opening of eastern European markets, and the global wave of privatization.[1] Although this remarkable global investment activity seems to be broadly consistent with the internalization theory, predicting synergy gains from international expansion (Caves, 1971; Buckley and Casson, 1976; Dunning, 1973), it remains unclear whether geographic diversification is more profitable for firms that expand their core business than firms that expand their non-core business. The purpose of this paper is to examine whether the synergy gains arising from the internalization of markets are more pronounced when firms engage in geographic diversification around the core or the non-core business.

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Previous studies have produced mixed results about the effects of geographic diversification, and therefore it would seem unwise to conclude that both forms of geographic diversification are likely to be equally profitable (or unprofitable).[2] Errunza and Senbet (1981, 1984), using multinational firms only, find evidence in support of a positive relation between excess firm value and the firm's extent of international diversity. Focusing on international acquisitions, Doukas and Travlos (1988) and Doukas (1995) document the fact that US bidders gain from industrial and international diversification. Similarly, Morck and Yeung (1991, 2001) find a positive relation between international diversification and firm value. However, they show that industrial diversification and international diversification add (or destroy) value in the presence (or absence) of intangible assets. They interpret their findings as evidence in support of the view that the synergistic benefits of international diversification stem from the information-based assets of the firm. Christophe and Pfeiffer (1998) and Click and Harrison (2000) find that multinational firms trade at a discount relative to domestic firms. More recently Denis *et al*. (2002), using the Berger and Ofek (1995) excess value measure and aggregate data, show that global diversification reduces shareholder value by 18%, whereas industrial diversification results in 20% shareholder loss. In contrast, Bodnar *et al*. (1999), relying on a similar valuation measure, find shareholder value to increase with global diversification.[3] The considerable increase in cross-border investment activity by US firms in light of the conflicting empirical evidence raises concerns about the effects of international diversification on firm value, and warrants additional investigation.

Unlike previous papers, this study examines whether the gains of internalization arise from the geographic expansion of core or non-core business of the firm. In this study, we address the short-term and long-term synergy effects of direct corporate and international diversification of US firms. Surprisingly, very little is known about the valuation effects of foreign direct investment activity of US firms. This is the first study to address this issue by investigating the valuation effects of foreign direct (greenfield) investment transactions. Greenfield foreign transactions offer a unique opportunity to re-examine the validity of the internalization theory by appraising the international capital budgeting decisions of the firm. As is the case with domestic investments, firms that invest across national markets are likely to engage in investment activities outside their core business (industrial diversification). Indeed, we find that 64.09% of foreign direct investment activity of US firms was associated with non-core-related business over the period 1980–1992.[4] In light of the evidence, documented in several recent studies, that industrial diversification has a negative influence on shareholder value, the increase in cross-border diversifying investment transactions raises similar concerns of whether foreign direct investment is directed to its most profitable use. In addition, since new foreign plants represent corporate expansion motivated by the firm's internal growth or core competencies, it is not known whether this type of expansion is value-increasing.[5] Moreover, although most theoretical predictions about geographic diversification suggest a positive relation between firm value and foreign investment, the form of foreign direct investment that is expected to be the most value-increasing remains fairly unknown. Whether industrial diversification across countries is associated with increases in firm value and performance by pooling cash flows from different lines of business and markets is an unresolved issue and deserves examination.[6]

In this paper we examine whether the act of international corporate diversification itself destroys shareholder value. Our analysis differs from previous studies in the sense that this study relies on the market's assessment of unrelated and related foreign direct investment activities and the long-term performance of the firm to draw inferences about the value of diversification. If international diversification is a value-added activity because of synergy gains, as the internalization theory predicts, it is important to know whether such synergies arise from related or unrelated international investments. Whereas previous studies have addressed aspects of foreign investment activity by focusing on mergers and acquisitions and other forms of geographic diversification, this paper analyzes for the first time the effects of US foreign direct (greenfield) investments. The sample of this study includes firms that made foreign new plant announcements during the period 1980–1992.[7] While the purchase of foreign assets, creation of joint ventures and the formation of alliances with foreign partners may expand the corporate diversity of the firm, these corporate activities may bias in favor of finding that diversification destroys

firm value. Foreign acquisitions may be associated with the purchase of poorly managed assets (e.g. Graham *et al.*, 2000). Similarly, expanding the firm's foreign operations through joint ventures and business alliances may involve poor performers. Therefore these transactions are likely to produce evidence in favor of diversification discount and hence lead one to wrongly conclude that diversification destroys value. Foreign direct investments through the establishment of new plants, however, avoid this bias.

The evidence shows that, regardless of the industrial structure of the firm, unrelated foreign direct investments are associated with negative announcement effects and long-term performance decreases in subsequent years, whereas related investments are associated with positive short-term and long-term performance. Although our findings indicate that both specialized and diversified firms benefit from core-business-related rather than non-core-business-related foreign direct investments, the gains are larger for diversified firms. We conclude that geographic expansion of the firm's core business itself is beneficial to shareholder value. In contrast, we find that geographic expansion of the firm's peripheral (non-core) business harms firm value and performance. Hence the evidence indicates that the internalization theory is more consistent with the international expansion of the core rather than the non-core business of the firm. That is, the positive synergies from global diversification are rooted in the firm's core competencies.

The paper is organized as follows. We first describe the sources of data and the sample of foreign direct investments. Next, we document and discuss the empirical results. Then we examine the relation between corporate diversification and short-term and long-term performance of specialized and diversified firms. Finally, the last section concludes.

Data sources and sample description

The sample used in this study consists of US firms that announced new foreign plants over the period 1980–1992. The announcements are obtained from the Dow Jones Retrieval Service, which provides news service articles and selected stories from the Dow Jones News Wire (DJNW, the Broad Tape). The sample contains new plant investments and not investments associated with expansion of existing operations in foreign countries. We use three key words –*foreign*, *plant* and *investment* to identify foreign investment transactions. This search initially resulted in 435 transactions. The announcement date for each foreign investment is confirmed in the *Wall Street Journal*. This sample includes specific investment transactions and not annual capital-budgeting announcements that have previously been used to proxy for the investment activity of the firm. Unlike annual capital budgeting announcements, which are to a large extent predictable, this sample contains irregular investment transactions. They are project-specific investments and are less reversible than annual capital budgeting announcements. Firms announcing the purchase of equipment or machinery and/or purchase of a plant from other companies are also excluded from the sample. This renders the sample size of this study considerably smaller in comparison with samples using annual capital budgeting events. The sample events were required to meet several criteria. The firm's common stock was listed on the CRSP daily return files. Accounting and financial data were available in the Compustat annual database. Stock return data were available for at least a 240-day period, starting 220 days before the announcement date in the *Wall Street Journal*. Only events covered in the *Wall Street Journal* are included. Firms with concurrent corporate announcements such as takeover, exchange offer, new offerings of securities, purchase of equipment and machinery, and capital budgeting for the 20-day period around the announcement day were excluded from the final sample. The value of foreign investment projects must be at least $3 million. This search and screening procedure produced a final sample of 156 foreign direct investment announcements.

Information about the business segment of the firm is obtained from the Compustat Industry Segment file. SEC regulation S-K requires firms to report segment information. Firms must report information for segments that represent 10% or more of consolidated sales. The Compustat industry segment file provides information on earnings before interest and taxes (EBIT), depreciation, net sales, total assets, the number of reported segments of the firm, and the main and secondary SIC codes.[8] The mean value of Tobin's q for the 156 US firms undertaking foreign investments from 1980 to 1992 is 0.91.[9] Moreover, the median of Tobin's q is 0.67 for this sample. The firms that engage in foreign direct investment activities are quite large. The average and median firm values are

Table I Sample characteristics

Panel A. Frequency distribution of the foreign direct investment announcements by year

Year	*Foreign*
1980	15
1981	12
1982	10
1983	7
1984	14
1985	11
1986	10
1987	10
1988	10
1989	11
1990	16
1991	14
1992	16
Total	156

Panel B. Frequency distribution of the foreign direct investment announcements by industry

Four-digit SIC code	*Industry group*	*Frequency*
2030	Can, frozen, preserve	3
2040	Grain mill products	1
2052	Cookies and crackers	1
2080	Beverages	7
2111	Cigarettes	3
2250	Knitting mills	1
2621	Paper mills	2
2631	Paper board mills	1
2800	Chemicals and allied products	3
2810	Industrial inorganic chemicals	1
2820	Plastic, synthetic materials	16
2821	Plastic, resins, elastomers	8
2834	Pharmaceutical preparations	6
2840	Soap, detergents, toilet	1
2844	Perfume, cosmetics	1
2851	Paints, varnishes, lacquers	2
2860	Industrial organic chemicals	1
2890	Miscellaneous chemical products	1
2911	Petroleum refinery	7
3011	Tires and inner tubes	4
3089	Plastic products	1
3220	Glass, glassware	1
3316	Cold roll steel sheet, strip	1
3317	Steel pipe and tube	1
3330	Primary smelting and refined metal	1
3334	Primary products of aluminum	4
3420	Cutlery, handtools	1
3523	Farm machinery and Equipment	2
3531	Construction machinery	1

Table I *continued*

Panel B. Frequency distribution of the foreign direct investment announcements by industry

Four-digit SIC code	*Industry group*	*Frequency*
3533	Oil and gas field machinery	1
3537	Industrial trucks, tractors	1
3541	Machine tools, metal cutting	1
3570	Computers and office equipment	7
3571	Electronic components	1
3579	Office machines	1
3589	Service industry machinery	1
3600	Electrical equipment	2
3612	Power, distributor transformers	1
3663	Radio, TV broadcast, comms equipment	7
3670	Electronic components, accessories	1
3674	Semiconductors, related devices	8
3711	Motor vehicles and car bodies	25
3720	Aircraft and parts	1
3721	Aircraft	1
3724	Aircraft engines and parts	3
3760	Guided missiles and space vehicles	1
3841	Surgical, medical instruments	1
3861	Photographic equipment and supply	3
4813	Phone comms and equipment	2
7823	Motion picture, videotape	1
Total		156

Panel C. Frequency distribution of foreign direct investment announcements by region

Region[a]	*Frequency*
South East Asia	23
China	5
Japan	7
Western Europe[b]	69
Eastern Europe[c]	7
Middle East[d]	1
Canada	23
Mexico	14
South America[e]	7
Total	156

The sample used in this study consists of 156 foreign direct investment announcements made by US firms from 1980 to 1992.The sample was collected from the *Wall Street Journal*.
[a]South East Asia: Indonesia, Malaysia, South Korea, Sri Lanka, Taiwan, Thailand.
[b]Western Europe: Austria, Belgium, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, UK.
[c]Eastern Europe: Czech, Poland, Russia.
[d]Middle East: United Arab Emirates.
[e]South America: Argentina, Brazil, Chile, Guyana.

$11.3 billion and $5.8 billion, respectively. We can only identify two-thirds of firms that report the size of their foreign investments in the *Wall Street Journal* and DJNW. The reported value of foreign investment transactions is substantial. The average and median values are $199 million and $59 million, respectively. The maximum size of the foreign investment is $2.4 billion. These figures may be upwardly biased, as firms with small investments tend not to report the value of the investment. The mean and median foreign sales to total sales ratios are around 32%.[10] This figure suggests that the firms in this sample have substantial international involvement. The mean (median) insider ownership is 8.2% (4%), implying that ownership of these firms is quite dispersed.[11]

Table 1 presents descriptive characteristics of the sample. Panel A describes the frequency distribution of the 156 foreign direct investment announcements over time. Consistent with the recent trend towards globalization, the sample of foreign direct investments indicates increasing foreign investment activity in more recent years. Panel B reports the frequency distribution by four-digit standard industrial classification (SIC) codes, indicating that a relatively broad cross-section of industries is represented in the sample. The 156 firms involved in foreign investments represent 50 different four-digit (16 two-digit) SIC industries. Panel C lists the frequency distribution of foreign investments by region. Western Europe was the most frequent target region (44.23%), followed by South East Asia (14.74%), Canada (14.74%), Mexico (8.97%), Eastern Europe (4.48%), South America (4.48%), Japan (4.48%) and China (3.20%).

In this study, the analysis is carried out based on foreign direct investment transactions identified as related and unrelated to the core business of the expanding firm using the four-digit SIC industry classification. In line with previous studies, we define a line of business by the four-digit SIC code augmented by a procedure similar to the one used by Lamont (1997) and Scharfstein (1998). New-plant investments within the firm's primary four-digit SIC code are classified as related, whereas new-plant investments outside the main four-digit SIC code (that is, in any of the firm's existing non-primary SIC code industries) are classified as unrelated.[12] Moreover, we break the sample into single-segment and multi-segment firms. Investments are classified into two categories.

Empirical results

Announcement returns, post-investment performance, and diversification

Foreign direct investment announcement returns

To assess the effects of foreign direct investment decisions on share prices, the abnormal returns of US investing firms are computed using standard event-study methodology.[13] The abnormal excess returns are computed by subtracting a firm's expected daily return from its actual return. The expected daily returns for each firm are calculated by estimating a market model's parameters from −220 to −20 days before the investment announcement day in the *Wall Street Journal*. Our final sample contains no concurrent announcements from day −20 to day 0.[14] The CRSP value-weighted index is used as a proxy for the market return.[15] To value the statistical significance of the abnormal returns, the standardized abnormal returns are computed by dividing abnormal returns by the estimated standard deviation of the prediction from the market-model regression. Finally, to test whether the standardized abnormal return is significantly different from zero, the *z*-statistics are estimated by summing the standardized abnormal returns. Then we divide this sum by the square root of the number of observations in the sample.

Table 2 reports abnormal returns and cumulative abnormal returns. The evidence suggests that a negative average (median) abnormal return, −0.23% (–0.15%), occurs 1 day before the *Wall Street Journal* announcement day. The market's reaction appears to be significant at conventional levels of significance. On this day, 44.2% of abnormal returns are positive. Similar results are also obtained for the cumulative average and median abnormal returns for the 2-day event window of [−1, 0].[16] The negative 2-day abnormal return of foreign direct investments seems to suggest that the costs associated with foreign direct investments (that is, cost of acquiring information, monitoring and bonding expenses) tend to offset the benefits of international diversification. These results indicate that foreign direct investments are not perceived by investors as value increasing transactions. Previous studies based on foreign acquisitions by US firms (Doukas and Travlos, 1988; Morck and Yeung, 1992) show a positive but insignificant average 2-day return for US foreign acquisitions of 0.09 and 0.29%, respectively.[17,18] The negative valuation effect documen-

Table 2 Daily and cumulative abnormal returns for foreign direct investment announcements

Day	*Average [median] abnormal returns*	*z-statistics (p-value)*	*Positive ARs (%)*
–5	0.0009 [0.0005]	0.643 (0.521)	51.3
–4	0.0011 [0.0008]	0.762 (0.446)	52.6
–3	0.0018 [0.0012]	0.891 (0.401)	50.6
–2	0.0009 [0.0005]	1.104 (0.271)	53.8
–1	–0.0023* [–0.0015]*	–1.749 (0.425)	44.2
0	–0.0018 [–0.0011]	–0.798 (0.425)	46.2
+1	0.0013 [0.0007]	0.655 (0.513)	50.0
+2	–0.0009 [–0.0002]	–0.549 (0.583)	47.6
+3	0.0008 [0.0004]	0.237 (0.812)	50.4
+4	0.0014[0.0005]	0.689 (0.491)	54.5
+5	–0.0007 [–0.0003]	0.232 (0.816)	46.0

Trading interval	*Cumulative average [median] abnormal returns*	*z-statistics (p-value)*
[–5 to +5]	0.0034 [0.0015][a]	0.623 (0.533)
[–5 to +1]	0.0019 [0.0011]	0.551 (0.582)
[–2 to +1]	−0.0019 [–0.0014]	–0.394 (0.693)
[–1 to +1]	−0.0028 [–0.0019]	–1.092 (0.276)
[–1 to 0]	−0.0041* [–0.0026]*	–1.810 (0.073)

The sample used in this study consists of US firms with foreign direct investment announcements in the *Wall Street Journal* from 1980 to 1992. Daily (ARs) and cumulative (CARs) abnormal returns are computed from the market model as prediction errors, *z*-statistics, the associated *p*-values are reported in parentheses, and window median values are reported in square brackets. *Denotes the significance at the 10% level. Day 0 refers to the first announcement day of foreign direct investments by US firms as reported in the *Wall Street Journal*.
[a]Median significance tests are based on the Wilcoxon signed rank test.

ted for the foreign direct investment activity of US firms appears to be consistent with the views of *empire building* (Jensen, 1986) and *over-investment* (Stulz, 1990) and the evidence reported by Doukas (1995) for low-*q* bidders of foreign targets. However, the negative valuation of foreign direct investment activity is likely to be driven by the nature of investment and specific firm attributes. We conjecture that the nature of investment and its potential fitness with the existing operations of the firm may be essential to the market's valuation.

Core-related vs non-core-related foreign direct investment announcement returns

It is quite possible that shareholder losses from foreign direct investments may arise from increasing operating inefficiencies caused by the nature of the foreign investment and the industrial structure of the firm. A firm that invests in lines of business outside its core business is likely to become more diversified than a firm that expands its core business overseas. Non-core-related foreign investments could interfere with the firm's core business operations and lead to significant operating inefficiencies. Non-core foreign expansion may also exert a negative influence on the performance of the firm because of negative synergies among the different business segments, and the misallocation of management time and other resources across business segments, which are less likely to occur when a firm invests in projects that are identical with its core business. Consequently, the negative effects of foreign direct investments on firm value and performance are likely to be more pronounced for firms investing outside the core business than for firms that expand their core business geographically. If internal capital market efficiencies increase from investing outside the core business of the firm they should have a positive impact on firm value when firms undertake non-core-related investments. Therefore we split the sample of foreign investment announcements into two groups: core-related (related) and non-core-related (unrelated) investments.

Table 3 reports the abnormal returns for related and unrelated investments from day −5 to day 5. The abnormal return on the day of the *Wall Street Journal* announcement (day 0) for focused investments is 0.15%. The announcement effect for non-core-related investments is −0.24% and significant at the 1% level on day −1. Most of the excess return difference between core-related and non-core-related investments comes from days −1 to 0, which is the time interval on which the foreign investment news becomes available to the market through the DJNW news services. For investments that expand the core business of the firm overseas, the 2-day [–1,0] average (median) abnormal return is 0.24% (0.20%). For investments outside the core business of the firm, the average (median) 2-day abnormal return is −0.38% (–0.25%) and significant at the 5% level. The difference in cumulative average (median) abnormal returns between focused and diversifying investments is significant at the 5% (10%) level for the [–1,0] window. The excess return difference between the two types of investment is captured over this 2-day interval in most cases.[19] This significant return difference indicates that the market anticipates that non-core-related foreign direct investments have the potential to harm the operating efficiencies of the

Table 3 Daily, cumulative abnormal returns, and Tobin's q values for core-related (focused) and non-core related (diversifying) foreign direct investment announcements[a]

Day	*Average abnormal returns, AR (%)*		*Positive AR (%)*		*t-Difference,* $AR_{focus}-AR_{div}$
	Core-related investments[b] (focused) (N = 56)	*Non-core related investments (diversifying) (N = 100)*	*Core-related investments*	*Non-core related investments*	
–5	–0.0011 [–0.0003]	0.0008 [0.0004]	48.5	51.2	–0.0019 [–0.0007]
–4	0.0010 [0.0006]	–0.0015 [–0.0012]	52.6	47.2	0.0025 [0.0018]
–3	0.0025 [0.0014]	0.0010 [0.0006]	51.6	51.0	0.0015 [0.0008]
–2	0.0021 [0.0027]	–0.0002 [–0.0001]	55.1	46.0	0.0023 [0.0028]
–1	0.0009 [0.0011]	–0.0024*** [–0.0018]*	51.9	40.3	0.0033* [0.0029]*
0	0.0015* [0.0009]	–0.0014 [–0.0007]	50.1	45.2	0.0029 [0.0016]
+1	0.0005 [0.0002]	0.0031 [0.0020]	51.2	52.0	–0.0026 [–0.0018]
+2	–0.0006 [–0.0003]	–0.0003 [–0.0001]	48.6	45.0	–0.0003 [–0.0002]
+3	0.0020 [0.0015]	0.0012 [0.0008]	56.0	51.6	0.0008 [0.0007]
+4	–0.0010 [–0.0004]	0.0008 [0.0005]	49.2	52.4	–0.0018 [–0.0009]
+5	0.0004 [0.0002]	0.0011 [0.0007]	51.8	53.2	–0.0007 [–0.0005]

Trading intervals	*Cumulative average and median abnormal returns, CAR (%)*				*t-Difference,* $CAR_{focus}-CAR_{div}$ *[median]*
	Core-related (focused) investments (N = 56)	*% Pos*	*Non-core related (diversifying) investments (N = 100)*	*% Pos*	
[–5 to +5]	0.0082 [0.0076][c]	51.4	0.0020 [0.0011]	48.5	0.0062 [0.0065]
[–5 to +1]	0.0074 [0.0066]	51.7	–0.0010 [–0.0008]	47.5	0.0084 [0.0074]
[–2 to +1]	0.0050 [0.0049]	52.9	–0.0009 [–0.0006]	45.0	0.0059 [0.0055]
[–1 to +1]	0.0029 [0.0022]	51.8	–0.0007 [–0.0005]	45.9	0.0036 [0.0027]
[–1 to 0]	0.0024* [0.0020]*	52.0	–0.0038** [–0.0025]**	42.8	0.0062**[0.0045]*

The sample used in this study consists of US firms with foreign direct investment announcements in the *Wall Street Journal* from 1980 to1992. If the four-digit SIC code of the investment is the same as the core SIC code of the company that accounts for 50% or more of its total sales, then it is classified as focused (core-related) investment, otherwise it is classified as diversifying investment.

[a]Daily (*AR*) and cumulative (*CAR*) abnormal returns are computed from the market model as prediction errors, *z*- statistics, the associated *p*-values are reported in parentheses, and window median values are reported in square brackets. ***, **, *Denote the significance at the 1, 5, 10% level. Day 0 refers to the first announcement day of foreign direct investments by US firms as reported in the *Wall Street Journal*.

[b]The firm's main four-digit SIC code is determined by a specific business segment that accounts for 50% or more of its total sales. In those cases where no digit-specific segment accounts for 50% or more of the firm's total sales, the largest segment in terms of total sales defines the firm's main SIC code.

[c]Median significance tests are based on the Wilcoxon signed rank test.

firm and therefore exert a negative impact on its future performance.

Post-foreign investment operating performance

We have documented different announcement effects for diversifying and non-diversifying direct investments. Consistent with the diversification hypothesis that predicts value losses, our evidence suggests that diversifying (focused) investments cause negative (positive) valuation effects, probably because the market anticipates that they will decrease (increase) the operating efficiencies of the firm. To assess whether the difference in stock price performance between diversifying and focused investments is consistent with the market's expectation, we examine corporate profitability changes in the years following the investment announcement.

The mean and median change in profitability are examined for firms that engage in diversifying and focused foreign investments using the accounting measure of earnings before interest, taxes, and depreciation (EBITD) to sales.[20] To account for industry changes on the firm's performance, we

Table 4 Industry-adjusted profitability changes and BHAR around the announcement of core-related (focused) and non- core-related (diversifying) foreign direct investments

Panel A. Long-term performance

Industry-adjusted performance measures	*Core-related investments*			*Non-core-related investments*		
	Mean	*Median*[a]	*% Pos*	*Mean*	*Median*	*% Pos*
Change in operating margin (EBITD/sales)[b]						
Years −1 to +2	0.0087*	0.0055*	51.7	–0.0060*	–0.0051*	45.1
Years −1 to +3	0.0081*	0.0064*	50.4	–0.0051**	–0.0046*	47.2
Buy-and hold returns (BHAR)						
Years 0 to −2	0.0252	0.0180	50.9	–0.0105	–0.0086	43.4
Years 0 to +3	0.0364	0.0235	52.3	–0.0116	–0.0132	45.0

Panel B. Performance differences across samples: core-related (focused) –non-core related (diversifying) investments

	Mean	Median
Change in operating margin (EBITD/sales)		
Years −1 to +2	0.0147*	0.0106*
Years −1 to +3	0.0132**	0.0111
Buy-and-hold returns (BHAR)		
Years 0 to +2	0.0357*	0.0226*
Years 0 to +3	0.0480**	0.0367**

The sample used in this study consists of US firms with foreign direct investment announcements in the *Wall Street Journal* from 1980 to 1992. If the four-digit SIC code of the foreign direct investment is the same as the core SIC code of the company that accounts for 50% or more of its total sales, then it is classified as focused/related investment, otherwise it is classified as diversifying investment. The industry adjustment is based on the 'chop-shop' approach. Industry-adjusted profitability changes are computed as the difference between the change in the firm's profit margin and the change in its pure-play industry median profit margin from year −1 to years 2 and 3.The pure-play industry profit margin is a weighted average of the firm's corresponding industry medians for each segment. BHAR capture return differences across firms that engage in different forms of foreign investment activity relative to an industry benchmark portfolio that is matched in terms of common four-digit main SIC industry classification, size and book-to-market ratio characteristics. ***, **, *Denote the significance at the 1, 5, 10% level.

[a]Median significance tests are based on the Wilcoxon signed rank test.

[b]The operating margin is defined as the ratio of EBITD (earnings before interest, taxes, and depreciation) to sales. Similar results, not reported here, are also obtained using alternative measures of performance such as the return on assets, defined as the ratio of EBITD/book value of total assets, and the return on equity, defined as the ratio of EBITD/market value of equity.

use industry-adjusted profitability measures.[21] Following a methodology similar to that of Lang and Stulz (1994), the industry adjustment is based on the 'chop-shop' approach. Industry-adjusted profitability changes are computed as the difference between the change in the firm's profit margin and the change in its pure-play industry median profit margin from year −1 to years 2 and 3. The pure-play industry profit margin is a weighted average of the firm's corresponding industry medians for each segment. Long-term performance is also measured using buy-and-hold abnormal returns (BHAR) as suggested in Barber and Lyon (1997).[22] BHAR for year 0 to year 2 and year 0 to year 3 are estimated using a matched sample of firms as the benchmark return.[23] Following Barber and Lyon (1997), sample firms involved in foreign direct investments are matched to control firms on the basis of size, book-to-market and common four-digit main SIC industry classification characteristics. Therefore the BHAR are designed to capture return differences across firms that engage in different forms of foreign investment activity relative to an industry benchmark portfolio that is similar in size and book-to-market ratio.

Table 4 reports industry-adjusted profitability changes for year −1 to year 2 and year −1 to year 3, and buy-and-hold returns over a 2- and 3-year period.[24] The evidence indicates that firms investing outside their core business in foreign countries perform worse than the industry median. These firms become less profitable in the years after the foreign investment announcement. The results also show that the performance of firms that engage in

focused foreign projects is greater than the industry median. Thus this improvement does not result from the general improvement of the firm's industry. In general, the below-the-industry (above-the-industry) post-performance of firms investing in non-core-related (core-related) foreign projects is consistent with the short-term valuation effects reported earlier.

The buy-and-hold returns confirm the superior long-term stock price performance of firms that expand their core business across markets. The average difference between firms investing in their primary four-digit SIC code industry and firms investing in any of their existing non-primary SIC code industries for the 2-year and 3-year period is 3.57 and 4.80%, respectively. Therefore we conclude that diversifying and focused foreign investments produce different short-term and long-term effects. Specifically, diversifying foreign investments are found to be associated with a performance loss, whereas focused foreign investments are found to be associated with a performance gain. The value loss of non-core-related foreign direct investments seems to reflect the failure of this strategy to exploit financial economies of scope or derive benefits associated with internal capital and non-capital markets. In addition, this evidence suggests that diversifying investments increase (1) the negative synergies among different business (industrial) segments, and (2) segment interference with the core business of the firm that, in turn, adversely affects its subsequent profitability. The negative valuation effects and long-term performance deterioration of diversifying foreign investments, of course, could vary across diversified and focused firms. This issue is examined in a later section.

Analysis of cross-sectional regression results

In this section we further examine the relation between change in performance (short-term and long-term) and diversifying foreign direct investment transactions. Specifically, we investigate the relation between firm's announcement 2-day abnormal return, 2-year and 3-year buy-and-hold returns, and post-investment industry-adjusted operating margins and alternative measures of change in corporate diversification, Tobin's q ratio and other control variables, as suggested in the literature. We use two diversification measures.[25] The first measure is based on whether the foreign investment is within or outside the core business of the firm. A foreign investment that is outside (within) the firm's core business is classified as diversifying (non-diversifying). The diversification dummy variable is set equal to 1 if the foreign investment is classified as diversifying, and 0 otherwise.[26] The second diversification measure is an asset-based Herfindahl index change variable. The Herfindahl index change from year -1 to year 0 is used to capture the influence of the change in the industrial structure of the firm (diversification) that results from its foreign investment transaction. It is calculated across n business segments as the sum of the squared assets per business segment relative to the squared total assets.[27] This index ranges between 0 and 1. It is equal to 1 when the firm consists of one segment. A firm becomes more diversified as its number of segments increases. Therefore, if a firm invests outside its core business, the Herfindahl index will decrease over the time interval year -1 to 0.

Consistent with the view that the initial investment in a foreign country allows a company to arbitrage institutional, product and capital market imperfections that may exist across countries, we use a foreign presence dummy variable. The dummy variable for foreign presence takes the value of 1 if the firm has no operating presence in the foreign country at the announcement day, and 0 otherwise. The degree of foreign exposure of the investing firm in a foreign country is determined from the Directory of Multinational Enterprises (1992) and the Directory of American Firms Operating in Foreign Countries (1992). Testing for the value of the firm's multinational structure makes it necessary that we account for other firm characteristics or possession of intangible assets, as argued by the internalization theory of foreign investment (Buckley and Casson, 1976).[28] This theory posits that foreign direct investment occurs when a firm is able to increase its market value by internalizing markets for its intangible assets. In line with previous studies (Doukas, 1996), we use Tobin's q to measure the magnitude of the firm's intangible assets.[29]

Jensen (1986) argues that corporate debt disciplines managerial behavior, as the actions of management are closely monitored by creditors. Consistent with the monitoring effects of debt, Ofek (1994) reports that higher levels of debt by distressed firms tend to force managers to undertake early corporate restructuring. McConnell and Servaes (1995) find that leverage is negatively related with the corporate value of high-growth firms and positively related with the corporate

value of low-growth firms (that is, firms with few positive net present value projects). Lang *et al*. (1996) report a strong negative relationship between leverage (book value of total debt to total assets) and subsequent growth in terms of number of employees and capital expenditures only for firms with poor investment opportunities (that is, firms with Tobin's $q<1$). This evidence is consistent with Jensen's (1986) view that leverage prohibits firms with poor investment opportunities from investing (over-investing) in negative net present value projects. The total debt to total assets ratio variable is used to capture the possible effects of debt on corporate performance.

The size of the foreign investment may convey information to the market about managerial performance and firm's financial state. It can be argued that large investments may be construed as management signals of future cash flow performance or growth opportunities of the firm. It has been argued (Jensen, 1986; Stulz, 1990) that managers have an incentive to invest in large projects because they derive utility from managing a larger firm. This incentive leads managers to undertake large negative net present value projects. Thus investors might be more sensitive to large than to small investments. Large investments may also convey to the market the financing needs of the firm. Because financial resources available to management are limited, the firm will have to rely on outside funding for major projects. As a result, managers will be forced to pay out funds in the future that might cause the firm to forgo positive net present value investment opportunities. In light of this literature, we control for the size effects of foreign investment using the ratio of investment to total assets.

Furthermore, the ownership structure of the firm may impact on the investment decision of the firm and its corporate performance. Demsetz (1983) argues that, if insiders' equity stake is very large, they might be able to effectively resist any outside takeover attempt and other aspects of the corporate control market. Stulz's (1988) model, however, implies a non-linear relationship between corporate performance and management equity ownership. Morck *et al*. (1988) provide evidence in support of such a non-linear relation, but the form of such a relation is not predictable *a priori*. We anticipate that insider fractional equity ownership will be positively related with foreign investment abnormal returns, whereas managerial entrenchment arising from high levels of equity ownership (ownership squared)[30] is expected to be negatively correlated with investment returns.[31]

We also control for another set of effects that relate to the firm's degree of international trade involvement (foreign sales to total sales) and firm size (natural log of firm's equity value).[32] Firms with high international operating exposures should experience insignificant value gains from foreign direct expansion. The size variable is designed to control for the size effect (Morck and Yeung, 1992). A negative relationship between short-term and long-term corporate performance and the size variable is expected. If larger firms, however, have greater internal capital markets and a bigger pool of managers they will have more resources available to undertake positive net present value projects than smaller firms, and therefore size may be positively correlated with firm performance.

Analysis of the announcement period performance

In an efficient capital market, expected changes in future cash flows as a result of a diversifying foreign investment should be incorporated in firm value when the investment is announced. Table 5 reports results based on tests that relate two alternative measures of increases in international diversification and the firm's abnormal return when a foreign investment is announced.[33] Regression 1 shows a negative and significant relation between diversification and the abnormal announcement return. The implication of this result is that the less related the foreign investment is to the core business of the firm, the higher is the shareholder value loss. Consistent with our previous results, the negative coefficient of the diversification dummy suggests that non-core-related investments are not perceived by investors as value-increasing transactions. Regression 2 provides further support for this result, and confirms the view that diversifying foreign investments result in value losses. This regression uses the Herfindahl index change as a measure of diversification. The results show that there is a significant negative relationship between increased diversification and the abnormal announcement return. Overall, these results demonstrate that industrial diversification across countries is an important determinant of value loss to the investing firm.

The coefficient of the foreign presence dummy is found to be positive and significant in both regressions. Consistent with previous evidence (Doukas and Travlos, 1988), this result indicates that gains from foreign direct investment are larger

Table 5 Short-term and long-term abnormal returns and measures of change in diversification

Variable	*Dependent variable*					
	$CAR_{-1,0}$		$BHAR_{years\ 0,2}$		$BHAR_{years\ 0,3}$	
	Reg 1	*Reg 2*	*Reg 3*	*Reg 4*	*Reg 5*	*Reg 6*
Intercept	0.0061	0.0056	0.0116	0.0141	0.0132	0.0187
	(0.122)	(0.122)	(0.171)	(0.352)	(0.400)	(0.335)
Diversification dummy[a]	–0.0114		–0.0178		–0.0155	
	(–2.976)***		(–2.881)***		(–1.878)*	
Herfindahl index change[b]		–0.0186		–0.0331		–0.0255
		(–3.301)***		(–2.551)***		(–3.108)**
Foreign presence dummy[c]	0.0194	0.0173	0.0164	0.0298	0.0551	0.0272
	(2.100)***	(2.401)***	(2.420)**	(1.873)*	(1.876)*	(1.915)*
Tobin's *q*	0.0231	0.0182	0.0198	0.0351	0.0247	0.0307
	(2.911)***	(3.1440)***	(2.876)***	(2.022)**	(2.039)*	(1.912)*
Total debt/total assets	0.0196	0.0250	0.0186	0.0152	0.0521	0.0803
	(1.003)	(0.963)	(0.682)	(1.061)	(0.644)	(0.0450)
Investment/total assets	0.0140	0.0162	0.0185	0.0177	0.0156	0.0123
	(0.702)	(0.501)	(0.514)	(0.402)	(0.512)	(0.432)
Foreign sales/total sales	0.0045	0.0063	0.0055	0.0027	0.0033	0.0051
	(0.551)	(0.688)	(0.385)	(0.444)	(0.186)	(0.330)
Log (firm size)	–0.0102	–0.0181	–0.0114	–0.0138	–0.0152	–0.0180
	(–1.445)	(–1.603)	(–0.340)	(–0.556)	(–0.382)	(–0.361)
Adj R^2 (%)	7.311	6.401	6.002	5.320	6.001	5.125

Regression results explaining the relation between short-term and long-term (BHAR are matched on size, book-to-market and common four-digit main SIC industry classification characteristics) abnormal returns and alternative measures of increase in diversification around the foreign investment announcement controlling for other effects. Tests are conducted using a sample of 156 US firms with foreign direct investment announcements in the *Wall Street Journal* from 1980 to1992. BHAR capture return differences across firms that engage in different forms of foreign investment activity relative to an industry benchmark portfolio that is matched in terms of common four-digit main SIC industry classification, size and book-to-market ratio characteristics. ***, **, *Denote the significance at the 1, 5, 10% level. The *t*-statistics, in parentheses, are based on White (1980) adjusted standard errors.

[a]The diversification dummy is set equal to 1 if the four-digit SIC code of investment is outside the firm's main four-digit SIC code (that is, firm's core business), and 0 otherwise. That is, the dummy is equal to 1 when the firm invests in any industry with SIC code other than its primary SIC code, and 0 otherwise.

[b]The Herfindahl index change from year −1 to year 0 is used to capture the influence of the change in the industrial structure of the firm (diversification) resulting from its foreign investment decision.

[c]Foreign presence dummy is set equal to 1 if the firm has no operating presence in the foreign country at the announcement day, and 0 otherwise.

when firms expand into new markets. This result supports the view that geographic diversification impacts positively on firm value. This is consistent with the generally held view of greater growth opportunities for foreign than domestic business operations. The positive and significant relation between Tobin's *q* and the 2-day excess return provides evidence consistent with the internalization theory of foreign direct investment, which posits that gains to shareholders from multinational expansion depend on the firm's magnitude of intangible assets or growth opportunities. Alternatively, if Tobin's *q* measures the quality of current and future investments of the firm, these results suggest that value-maximizing firms (high *q* firms) engage in shareholder value creation investments that enhance the operating and internal capital market efficiencies of the firm on a global scale. The rest of the control variables are related to the abnormal returns as predicted. However, they do not appear to have significant explanatory power.

Analysis of the post-investment performance

We have documented a decline in firm value for non-core-related foreign direct investments when they are announced. This is consistent with the market's expectation that future cash flows will decrease as a result of the firm's diversifying investment at the announcement day. We have examined the relation between short-term performance and the nature of foreign investment, but we now turn our investigation on the relation between long-term performance measures and alternative measures of diversification. Table 5 provides additional evidence on the relation between change in performance and increase in

Table 6 Industry-adjusted profitability changes and measures of change in diversification

Variable	*Dependent variable*			
	EBITD/sales$_{years\ -1,2}$		*EBITD/sales$_{years\ -1,3}$*	
	Reg 1	*Reg 2*	*Reg 3*	*Reg 4*
Intercept	0.0086	0.0066	0.0053	0.0071
	(0.511)	(0.448)	(0.403)	(0.312)
Diversification dummy[a]	–0.0073		–0.0068	
	(–2.211)**		(–1.942)*	
Herfindahl index change[b]		–0.0324		–0.0410
		(–2.1220)**		(–1.844)*
Foreign presence dummy[c]	0.0326	0.0215	0.0341	0.0382
	(1.820)*	(1.983)*	(1.847)*	(1.801)*
Tobin's *q*	0.0402	0.0307	0.0256	0.0318
	(1.981)**	(2.017)**	(1.870)*	(2.086)*
Total debt/total assets	–0.0440	–0.0310	–0.0318	–0.0392
	(–1.221)	(–1.274)	(–1.103)	(–0.901)
Investment/total assets	0.0140	0.0134	0.0173	0.0155
	(0.330)	(0.298)	(0.320)	(0.402)
Foreign sales/total sales	0.0031	0.0036	0.0042	0.0054
	(0.123)	(0.155)	(0.298)	(0.4431)
Log (firm size)	–0.0133	–0.0146	–0.0181	–0.0134
	(–0.337)	(–0.302)	(–0.355)	(0.326)
Adj R^2 (%)	5.661	6.002	5.055	5.144

Regression results explaining the relation between industry-adjusted profitability changes and alternative measures of increase in diversification around the foreign investment announcement controlling for other effects. Industry adjustment is based on the 'chop-shop' approach. Industry-adjusted profitability changes are computed as the difference between the change in the firm's profit margin and the change in its pure-play industry median profit margin from year −1 to year 2 and 3. The pure-play industry profit margin is a weighted average of the firm's corresponding industry medians for each segment. Tests are conducted using a sample of 156 US firms with foreign direct investment announcements in the *Wall Street Journal* from 1980 to 1992. ***, **, *Denote the significance at the 1, 5, 10% level. The *t*-statistics, in parentheses, are based on White (1980) adjusted standard errors.
[a]The diversification dummy is set equal to 1 if the four-digit SIC code of investment is outside the firm's main four-digit SIC code (that is, firm's core business), and 0 otherwise. That is, the dummy is equal to 1 when the firm invests in any industry with SIC code other than its primary SIC code, and 0 otherwise.
[b]The Herfindahl index change from year −1 to year 0 is used to capture the influence of the change in the industrial structure of the firm (diversification) resulting from its foreign investment decision.
[c]Foreign presence dummy is set equal to 1 if the firm has no operating presence in the foreign country at the announcement day, and 0 otherwise.

the degree of firm's industrial diversification internationally. First, we measure long-term performance with buy-and-hold returns from the announcement year to years 2 and 3, respectively. These results are reported in the last four regressions of Table 5. Regression 3 shows a negative and significant relation between the diversification measure and buy-and-hold returns for the 2-year post-investment horizon. The same result is obtained in regression 4 when the Herfindahl index change is used as an alternative measure of diversification. Consistent with the previous findings, the foreign presence and Tobin's *q* variables remain significant and with the same sign in both regressions. Regressions 5 and 6 report similar results based on buy-and-hold returns over the 3-year post-investment period using the same set of variables. The motivation behind the use of a 3-year performance measure is to avoid the possible bias associated with a shorter window-based performance measure that may penalize the more distant cash flows of investment projects. These results further suggest that the long-term profitability of the firm declines as a results of foreign investment transactions outside the core line of business, consistent with the market's reaction when these transactions are announced.

The second performance measure used is the firm's pure-play industry-adjusted change in operating margin (EBITD/Sales) from year −1 to years 2 and 3, respectively.[34] The regression results, reported in Table 6, show that the change in operating margin is inversely related to the firm's non-core business foreign investment activity. The

significant negative coefficient of the diversification measure is stable, regardless of which definition is used. Consistent with the market's reaction when the investment is announced, this result suggests that foreign investment projects that increase the industrial structure of the firm decrease its performance in the years following the investment announcement. Specifically, regression 1 shows that foreign investments outside the firm's core business exert a significant and negative influence on the firm's change in operating margin 2 years after the investment. Regression 2, illustrates a similar negative and significant relation between the firm's post-investment performance and the increase in diversification, as measured by the Herfindahl index change. In both regressions the same control variables are used as before. Point estimates for the coefficients of the control variables do not change much. It is noteworthy that the foreign presence and the Tobin's q variables continue to play a significant role in explaining the post-investment performance of the firm. Consistent with the geographic diversification hypothesis, the positive and significant coefficient of the foreign presence dummy suggests that foreign direct investment projects enhance the performance of the firm when they are directed in geographical sites where the firm does not have operations. This implies that foreign direct investment into new national markets increases the ability of the firm to internalize the value of its intangible assets.

The last two columns report regression results based on the change in operating margin from year -1 to year 3 using the same set of variables as before. These findings are similar to those reported in regressions 1 and 2 relying on the change in operating margin from year -1 to year 2. The relation between this longer measure of performance and the two measures of diversification continues to be negative and significant at the 10% level.

In sum, the evidence suggests that core-related foreign direct investments outperform non-core-related investments in terms of both short-term and long-term performance.[35] Industrial diversification across countries is associated with a shareholder value loss. The value loss seems to arise from decreases in cash flows due to negative synergies and inefficiencies created as a result of the firm's diversifying foreign direct investments. Non-diversifying (focused) foreign investments, however, are found to increase firm value. The shareholder gains from expansion of core business overseas are also found not to be temporary. Furthermore, these gains are larger when firms invest in a foreign country for the first time and possess high intangible assets. In general, our results seem to be consistent with several recent studies showing that diversified firms trade at a discount.[36]

Corporate diversification and performance of single-segment and multi-segment firms

In this section we analyze whether the synergy gains from international diversification depend on the industrial structure of the firm. Specifically, we examine this issue for single-segment (specialized) and multi-segment (diversified) firms. Our motivation here is to determine whether the internalization theory applies to firms that are more or less diversified.

Table 7 relates the firm's short-term and long-term performance measures to the characteristics of foreign investment for single-segment and multi-segment firms. We use cross-sectional regressions with a set of control variables, three dummy variables and an intercept to relate the short-term and long-term performance measures to corporate diversification intensity variables for single-segment and multi-segment firms. The first dummy variable takes the value of 1 for a non-core-related investment by a single-segment firm; the second takes the value of 1 for a core-related investment by a multi-segment firm; and the third takes the value of 1 for a non-core-related investment by a multi-segment firm. Therefore the intercept in the regressions corresponds to the average return for a focused investment by a single-segment firm. If focused foreign investments create operating synergies on a global scale that enhance firm value, it is expected that the coefficient of the intercept will be positive, as it corresponds to the return of focused investments by single-segment firms. The effects of the other three groups of firms are measured by the sum of the coefficients of the intercept and the corresponding dummy variable.

Table 7 presents results of regressions relating firm's short-term and long-term performance measures to diversification intensity measures for single-segment and multi-segment firms. Regression 1 documents a positive and significant relation between focused investments and the abnormal announcement return. We find that both specialized and diversified firms benefit from focused foreign expansion. Consistent with our previous evidence, this result suggests that focused invest-

Table 7 Short-term and long-term changes in profitability and firm's industrial structure

Variable	*Dependent variable*				
	$CAR_{-1,0}$ *Reg 1*	$EBITD/sales_{years\ -1,2}$ *Reg 2*	$EBITD/sales_{years\ -1,3}$ *Reg 3*	$BHAR_{years\ 0,2}$ *Reg 3*	$BHAR_{years\ 0,3}$ *Reg 5*
Intercept	0.0034	0.0070	0.0632	0.0334	0.0442
	(1.988)*	(1.772)*	(1.872)*	(1.752)*	(1.863)*
Single-segment non-core related[a]	–0.0118	–0.0102	–0.0128	–0.0438	–0.0548
	(–1.883)*	(–1.911)*	(–1.887)*	(–1.762)*	(–1.768)*
Multi-segment core-related[b]	0.0031	0.0073	0.0097	0.0321	0.0344
	(1.967)*	(2.207)**	(1.881)*	(1.690)*	(1.773)*
Multi-segment non-core related[c]	–0.0043	–0.0048	–0.0052	–0.0305	–0.0328
	(–1.981)*	(–1.766)*	(–1.759)*	(–1.688)*	(–1.642)*
Foreign presence dummy (see footnote 3)	0.0280	0.0431	0.0354	0.0358	0.0321
	(2.543)**	(1.783)*	(1.895)*	(1.669)*	(1.702)*
Tobin's *q*	0.0266	0.0185	0.0241	0.0198	0.0233
	(3.001)**	(2.011)**	(1.890)*	(1.962)*	(2.012)**
Total debt/total assets	0.0459	–0.0888	–0.0692	0.0710	0.0651
	(0.884)	(–0.763)	(–0.698)	(0.551)	(0.527)
Investment/total assets	0.0130	0.0220	0.0350	0.0186	0.0172
	(0.849)	(0.334)	(0.616)	(0.551)	(0.348)
Foreign sales/total sales	0.0043	0.0028	0.0037	0.0055	0.0064
	(0.149)	(0.155)	(0.162)	(0.229)	(0.176)
Log (firm size)	–0.0050	–0.0124	–0.0160	–0.0201	–0.0185
	(–1.002)	(–0.430)	(–0.386)	(–0.451)	(–0.371)
Adj R^2 (%)	7.451	6.540	6.411	7.220	6.530

Regression results explaining the relation between short-term and long-term abnormal returns and measures of increase in diversification for firms with different industrial structure around the foreign investment announcement controlling for other effects. BHAR are matched on size, book-to-market and common four-digit main SIC industry classification characteristics. Tests are conducted using a sample of 156 US firms with foreign direct investment announcements in the *Wall Street Journal* from 1980 to 1992. The intercept in each regression corresponds to the average portfolio return for a single-segment firm investing in a foreign project with the same SIC as its main four-digit SIC (focused investment). ***, **, *Denote the significance at the 1, 5, 10% level. The *t*-statistics, in parentheses, are based on White (1980) adjusted standard errors.

[a]Indicator variable that is set equal to 1 if the four-digit SIC code of the investment is not the same as the single-segment firm's main four-digit SIC code, and 0 otherwise.

[b]Foreign presence dummy is set equal to 1 if the firm has no operating presence in the foreign country at the announcement day, and 0 otherwise.

[c]Indicator variable that is set equal to 1 if the four-digit SIC code of the investment is not the same as the multi-segment firm's main four-digit SIC, and 0 otherwise.

ments create operating synergies that enhance shareholder value. It is interesting to note that the gains from focused investments are greater for multi-segment than for single-segment firms. This suggests that focused foreign investments tend to have positive effects on the other segments (that is, non-core business) of the firm as well. However, losses from investing in foreign markets are concentrated on investments outside the core business of the firm. This suggests that both specialized and diversified firms lose from diversifying foreign expansion. These losses are more pronounced for single-segment than for multi-segment firms. In general, the evidence suggests that investors believe that non-core investments are not expected to have a good fit with the core business of the firm and therefore cause adverse effects on shareholder value.

Regressions 2 and 3 provide further support for these findings. In these regressions, we examine the relation between changes in performance from year −1 to years 2 and 3, measured by industry-adjusted operating margins, and the diversification measure for single-segment and multi-segment firms. Both regressions show that the change in operating margin is negatively related with the diversification measure. This suggests that foreign investments that increase the industrial diversification of the firm harm its subsequent performance. However, the combination of unrelated lines of business with the core operations of multi-segment firms appears to have less harmful effects on their performance in

comparison with similar investments by single-segment firms. The substantially greater losses from industrial diversification for single-segment than for multi-segment firms across countries seems to suggest that the former are on a survival path probably because they have exhausted their domestic core-business competencies seeking growth outside the US and in industries where they lack management skills to succeed. The less dramatic negative effects of industrial and international diversification on the performance of multi-segment firms reveal the power of industrial and internationally diversity of these organizations to handle the risks of new business. On the other hand, the results show that the long-term performance of single-segment and multi-segment firms improves when they expand their core business across national markets. As before, these benefits are considerably larger for multi-segment firms. Regressions 4 and 5 document a similar relationship between performance, measured by buy-and-hold returns over the 2- and 3-year horizon, and the diversification measure for single-segment and multi-segment firms.

In sum, the evidence shows that unrelated foreign direct investments result in considerable long-run profit losses. The results also show that multi-segment firms and, to a much greater extent, single-segment firms that pursue non-core-related international investments experience significant shareholder value losses. Such long-run profitability losses imply that business additions outside the core business of the firm reduce its existing operating efficiencies and corporate cohesion because they lack good fit with the core business of the firm. Alternatively, this evidence suggests that diversifying firms experience strong competitors in these new lines of business, so that they are unable to effectively compete against them as originally thought by managers when investment decisions were made. It could be argued that these firms do not seem to have the comparative and organizational advantages (such as product, customer function, or core competencies) required to do well in lines of business outside the core business.[37] Overall, the evidence illustrates that unrelated international diversification, especially for less specialized firms, reduces the corporate focus of the firm and therefore its existing operating efficiency, resulting in short-run and long-run shareholder value losses. Thus the evidence supports the view that related international diversification is value-increasing for both specialized and diversified firms, whereas unrelated international diversification is less harmful to diversified than specialized firms. However, the benefits from focused foreign direct investments appear to be larger for diversified than for specialized firms.

Conclusion

In this paper, we investigate whether firms that launch new plants in foreign countries realize similar gains from core-related and non-core-related investment transactions. Specifically, we analyze whether geographic diversification is more profitable for firms that expand their core business than for firms that expand their non-core business.

Our evidence points out that firms achieve higher gains from international diversification when they engage in core-related greenfield investment transactions. We document significant positive abnormal returns and post-investment profit margin gains in the performance of firms that expand their core business across national markets. Foreign investments outside the core business of the firm are found to be associated with significant negative announcement effects and profit margin losses in years following the investment. Our findings support the view that foreign investments that increase the industrial diversification of the firm tend to exacerbate its (1) existing operating inefficiencies and (2) negative synergies among different segments of the firm, resulting in short-term and long-term losses. Hence unrelated geographic diversification bears strongly against the prediction of the internalization hypothesis.

We also investigate whether international diversification is more valuable to single-segment (specialized) or multi-segment (diversified) firms and how it affects their post-investment performance. The evidence indicates that both specialized and diversified firms benefit from focused international investments, while diversifying international investments are more harmful to specialized than diversified firms. Hence the decrease in corporate focus (that is, expansion of non-core business) is an important determinant of the international diversification loss. We find the international investment gains, however, to be significantly larger for the focused investments of diversified firms than those of specialized firms. Our evidence also shows that the international investment gains of focused investments are large for both specialized and diversified firms that invest in new markets. The international diversification gains, however, are found to be considerably larger for diversified firms

than for specialized firms, supporting the view that operational and internal capital market efficiency gains are substantially greater in multi-segment firms than in single-segment firms when both expand their core business overseas.

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Notes

[1]During the period 1991–1994, foreign direct investment by multinational companies grew at 12.7% per year. In 1995, foreign direct investment reached an unprecedented $315 billion (see *Financial Times*, 25 September 1996).

[2]Similarly, Doukas (1995) argues that firms that diversify around specific (that is, core) resources are more profitable than firms that diversify more broadly. Singh and Montgomery (1987) provide evidence consistent with this view based on a sample of 105 domestic acquisitions in the period 1975–1980.

[3]Several recent studies have expressed considerable doubts about the excess value measure used in previous studies to capture the diversification discount (e.g. Villalonga, 2000; Campa and Kedia, 2002; Graham *et al*., 2002; Mansi and Reeb, 2002).

[4]Even though foreign direct investments are subject to many of the same influences and motivations as domestic investments (e.g. Agmon and Lessard, 1977; Errunza and Senbet, 1981; Adler and Dumas, 1983; Fatemi, 1984; Hisey and Caves, 1985; Doukas and Travlos, 1988; Morck and Yeung, 1991, 1992; Williamson, 1970), they are likely to be severely affected by greater costs of information asymmetry, agency conflicts, costs associated with added layers of corporate bureaucracy, inefficient local management and workers, and other costs that may arise from cultural, political and economic differences with the host country in comparison with domestic investments.

[5]Previous studies (e.g. Doukas and Travlos, 1988; Morck and Yeung, 1991, 1992; Doukas, 1995), however, address corporate expansion through the purchase of external growth opportunities such as international acquisitions.

[6]An exception is Doukas and Travlos (1988), who examine bidders' stock price performance when they acquire a foreign target in related and unrelated industries.

[7]Unlike acquisitions of foreign assets, foreign direct investments are not likely to be plagued by costs and inefficiencies associated with cultural, managerial and political differences between the merging companies. Furthermore, while foreign direct investment is used to expand the operating structure of the firm, cross-border acquisitions may be used to restructure the firm in response to industry and international market shocks (e.g. Andrade and Stafford, 1997). Hence the use of foreign direct investment data to study the short-term and long-term effects of corporate investment decisions avoids these problems associated with the acquisitions data.

[8]The SIC codes used by Compustat are assigned by Standard & Poor's. They are based on sales and are reviewed annually.

[9]The construction of Tobin's q is described in the Appendix

[10]Foreign sales/total sales ratios were collected from the Value Line Investment Survey.

[11]Insider ownership information, included for reference, was also obtained from the Value Line Investment Survey.

[12]To make sure that the four-digit SIC code of the company represents its core business, we also require that it accounts for 50% or more of its total sales. Other studies have routinely used only SIC codes to identify the core line of business of a corporation. Foreign investment activity based on the two-digit SIC code classification produces smaller diversification intensities.

[13]An advantage of using event-study methodology is that it is not plagued by the limitations associated with the construction of an appropriate benchmark. This might be one of the reasons why previous diversification studies have produced mixed results. In the international context, the creation of such a benchmark could be even more daunting. We would like to thank a referee for pointing this out.

[14]We identified nine such announcements. Five were announcements of acquisitions, two stock repurchase and two of equity issuance. These firms were excluded from the final sample.

[15]We also estimate the market model parameters using the equal-weighted market return, and the results are essentially unchanged.

[16]The 2-day abnormal return is -0.30% [–0.24%] and significant at the 10% level, when the analysis is restricted to 153 firms with observations less than three standard deviations from the mean. Matsusaka (1993) finds positive bidder returns at the

announcement of conglomerate acquisitions in the late 1960s and early 1970s. Ravenscraft and Scherer (1987) record that conglomerate acquisitions during the 1960s were unsuccessful because of the post-acquisition poor performance and subsequent bust-up. Similar evidence is also reported by Kaplan and Weisbach (1992). Servaes (1996) finds a negative relation between diversification and firm performance in the 1960s, and a negative but weaker relation in the 1970s.

[17]Lummer and McConnell (1990) show that the formation of international joint ventures increases a firm's value by 0.4%. Finnerty *et al*. (1986), however, find insignificant announcement effects for 110 international joint ventures. Similarly, Lee and Wyatt (1990) report significantly negative stock price reactions for US–foreign joint venture announcements. The overall evidence is different from that reported in McConnell and Muscarella (1985), which shows a slightly positive announcement effect for annual capital budget expenditure announcements in the USA.

[18]The negative abnormal returns associated with foreign direct investments, however, resemble the bidder returns reported for takeovers, as summarized by Jensen and Ruback (1983), where on average bidders' shareholders do not gain or lose.

[19]The 2-day abnormal returns for the diversifying and focused samples are -0.41 and 0.22% and significant at the 5 and 10% level, respectively, when the analysis is restricted to firms with observations less than three standard deviations from the mean. These results are based on detecting three such firms in the sample.

[20]The analysis was also conducted using EBITD to book value of assets, and EBITD to market value of equity accounting measures of performance. The results, available upon request, were similar to those reported in Panel A of Table 4. John and Ofek (1995) used the same accounting measure to capture the firm's efficiency in operations.

[21]An alternative approach to control for industry effects is to use an industry indicator variable (Bradley *et al*., 1984).

[22]Barber and Lyon (1997) note that several biases (that is, new listing rebalancing, skewness, and a negative bias in continuously compounded returns) are introduced in long-term performance studies when the BHAR method is not used.

[23]The BHARs are measured from day $+3$ to $+500$ (year 2) and $+750$ (year 3), respectively.

[24]The time interval (year -1 to years 2 and 3) of the post-investment profitability measures accounts for the net improvement (deterioration) 1 year before the investment and afterwards. The start of the time interval is dictated by the availability of results nearest to the announcement year 0. Additional inspection shows that the profitability of firms 2 years prior to the announcement of diversifying investments is poor, and it becomes even worse afterwards. The pre-announcement performance of firms that are engaged in non-diversifying investments, however, is equal to or slightly worse than the industry mean and median, but not statistically significant.

[25]John and Ofek (1995) and Comment and Jarrell (1995) have used similar measures of corporate focus.

[26]Alternative measures of increase in diversification were also used, such as the change in the number of business segments that the investing firm reports 1 year before the announcement to the announcement year, or a business segment dummy that is set equal to 1 if the number of segments increases over the time interval year -1 to 0, and 0 otherwise. These results, available upon request, are similar to those reported for the two measures of diversification used in Table 5.

[27]The estimation of the Herfindahl index for the announcement year is estimated as the sum of the squared assets per business segment prior to the investment announcement plus the square of the new investment relative to the squared assets of all segments prior to the announcement plus the new investment. This method is different from the conventional Herfindahl index, which can be constructed only for year -1 using the Compustat segment data tape.

[28]This theory was introduced by Coase (1937) and subsequently developed by Caves (1971), Dunning (1973), Williamson (1975), and Buckley and Casson (1976).

[29]We have also accounted for the effects of post-announcement investment activity on the long-term performance of the firm by constructing a subsequent investment dummy variable. The subsequent investment dummy variable is set equal to 1 if the firm invests from year 0 to years 2 and 3, and 0 otherwise. The results remain essentially unchanged.

[30]McConnell and Servaes (1995) use a similar entrenchment variable. In a slightly different context, Lewellen *et al*. (1985) show that bidder returns increase with the fraction of bidder equity held by managers.

[31]Although we have used both ownership variables to control for the ownership effects (results not reported here), our results were not affected by omitting them. Similar results were obtained by Morck and Yeung (1992).

[32]We have also used the natural log of total assets from Compustat as an alternative measure of firm size. The results are essentially unchanged.

[33]As the subsequent investment and ownership variables did not have significant bearing on the initial regressions, the reported results are based on regressions excluding these control variables. Only a very small fraction of firms is involved in subsequent foreign investments. Five per cent of the firms engage in foreign investment activity over the 2-year period and 7% in the 3-year period after the initial announcement. These results are available upon request.

[34]Similar results, available upon request, are found when we use the other two measures of performance (EBITD/total assets and EBITD/market value of equity).

[35]The consistency between the market's negative (positive) reaction to foreign investment announcements and the long-term operating decrease (increase) in firm value indicates that shareholders have efficiently assessed the value of international diversification.

[36]Our results are also consistent with the evidence that corporate divesting (John and Ofek, 1995) and refocusing (Comment and Jarrell, 1995) increases firm value.

[37]See Prahalad and Hamel (1990).

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Appendix

Tobin's q estimates are obtained using the Perfect and Wiles (1994) method, which is a modified version of the Lindenberg and Ross (1981) algorithm for generating firm q values. The source of the data used to estimate q values is contained in the Compustat data tape, the Business Conditions Digest, and the Moody's Industrial Manuals. Perfect and Wiles (1994) determine the market value of the firm by the sum of:

(1) year-end value of common stock;
(2) preferred dividends capitalized by the Standard and Poor's preferred stock yield index;
(3) year-end market value of the firm's long-term debt; and
(4) year-end book value of the firm's short-term debt with maturity less than 1 year.

To obtain replacement cost estimates, the basic Lindenberg and Ross (1981) methodology is used except that firm-reported asset replacement cost data are not necessary to estimate the replacement value of the firm's assets according to the Perfect and Wiles (1994) method. This method also assumes that the rate of technical progress is zero. The main advantage of the Perfect and Wiles (1994) procedure is that q ratios can be generated for all firms irrespective of the time period based on data availability from the Compustat database.

Tobin's q is defined as

$$q = \frac{Comval + Perfval + LTDebt + STDebt}{RC},$$

where RC is the replacement cost of the firm's assets; *Comval* is the year-end value of the firm's common stock; *Perfval* is the estimated year-end market value of the firm's preferred stock (that is, firm's total preferred dividends capitalized by the Standard and Poor's preferred stock yield index); *LTDebt* measures the value of the long-term debt with maturity greater than 1 year; and *STDebt* is the year-end book value of the firm's short-term debt with maturity less than 1 year.

The following formula is used to estimate the *LTDebt* variable:

$$LTDebt_t = SBond_t E_{j=0}^{n-2} f_{t,t-j} \times \left\{ \left(\frac{R_{t-j}^A}{R_t^A} \right) [1 - (1 + R_t^A)^{-(n-j)}] + (1 + R_t^A)^{-(n-j)} \right\},$$

where *SBond* is the year-end book value of the firm's long-term debt in year *t*; $f_{t,t-j} = N_{t-1}/E_{k=0}^{n-2}N_{t-k}$; N_t is the sum of all new debt issued in year *t*; and R_t^A is the yield to maturity of a firm's debt at time *t* under the simplifying assumption that all debt issued in year *t* is priced to yield the average interest rate in *A*-rated debt for that year.

The replacement cost, *RC*, is defined as

$$RC_t = TA_t + RNP_t - HNP_t + RINV_t - HINV_t;$$

where TA_t is the book value of total assets in year *t*; $RNP_t = RNP_{t-1}[-1 + {}_t)/(1 + {}^*{}_t)] + I_t$ is the estimated value of net plant replacement cost in year *t*; $RNP_{t=0} = HNP_{t=0}$, where *HNP* is the historical net plant at year *t*; M_t is the growth of capital goods prices in year *t* estimated by the gross national product deflator for non-residential fixed investment; ${}^*{}_t$ is the real depreciation rate in year *t* estimated by DEP_t/HNP_{t-1}, where DEP_t represents book depreciation in year *t*; I_t is the investment in new plant in year *t*; $RINV_t$ is the firm-reported replacement value of inventories in year *t*; and $HINV_t$ is the historical book value of inventories in year *t*.

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