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.

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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