GLOBAL DIVERSIFICATION: EVIDENCE FROM CORPORATE OPERATING PERFORMANCE

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Abstract

This study casts light on the impact of the decision to diversify globally on the firm's operating performance. Examining operating performance enables us to circumvent the measurement errors associated with excess value that is used to measure the diversification discount/premium. Our central empirical results for a sample of firms that chose to diversify globally reveal that sample firms, in spite of exhibiting a diversification discount, significantly outperform their domestic counterparts following the diversification. Our findings imply that global diversification does not result in misallocation of investment resources. The fact that our firms exhibit the diversification discount and yet outperform their domestic counterparts confirms previous studies' conclusions that the diversification discount is most likely an artifact of measurement error.

Keywords: Global, Diversification, Operating Performance

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Introduction

The recent plethora of studies on diversification reflects a large interest in the implications of diversification on firm value. The empirical evidence emerging thus far from these studies yields mixed results. Earlier studies in this area document a diversification discount indicating that industrially diversified firms are valued at a discount relative to a portfolio of comparable single-segment firms (Berger and Ofek (1995a), Stulz (1994) and Servaes (1995)). The obvious implication of these findings is that industrially diversified organizations are prone to misallocating their resources, and thereby destroying firm value. However, more recent studies provide contradictory evidence. For example, Campa and Kedia (2002) find that diversified firms were trading at a discount prior to adopting a diversification strategy, while other recent papers have even shown a diversification premium.[1] These results cast doubt on the hypothesis that the diversification discount is caused by misallocation of capital within the firm.

While much of the literature on diversification focuses on industrial diversification, the effect of geographical/global diversification[2] on the firm has received limited attention in the financial literature. Not unlike the research on industrial diversification, research in this area also produces inconclusive results. Bodnar, Tang and Winthrop (1999) and Errunza and Senbet (1984) document that global diversification confers value on the firm while Morck and Yeung (1991), who find a diversification premium, attribute the excess value to firms possessing intangible assets derived from R&D and advertising spending.[3] [4] Indirect evidence in support of global diversification decisions from research on investment portfolios, finds that U.S. investors can obtain substantial benefits from international diversification by holding U.S. multinational firms in their portfolios (see Errunza, Hogan and Hung

[1] Using a new establishment-level database (BITS), Villalonga (2004) finds a diversification *premium* after controlling for sample selection bias and concludes that the diversification discount is an artifact of the segment data used in prior studies while Sanzhar (2004) documents a significant large discount for multi-divisional firms that are neither industrially nor geographically diversified, where the divisions of the firm are closely related in terms of investment. Mansi and Reeb's (2002) findings reveal that the diversification discount stems from the risk-reducing effects of corporate diversification. In a different vein, Whited (2001) proposes that the value effect of diversification is an artifact of measurement error and shows that the diversification discount is not caused by inefficient investment.

[2] We use the terms geographical diversification and global diversification interchangeably.

[3] See also Fatemi (1984) who finds that firms experience a positive and significant cumulative abnormal return at the announcement of international expansion, and Doukas and Travlos (1988) who show that international acquisition announcements by U.S. firms are received positively by the market.

[4] Errunza and Senbet's (1984) and Morck and Yeung's (1991) sample periods are in the 1970s.

(1999)). The above studies imply that U.S. investors gain when they hold claims on cash flows that originate from non-U.S. operations. On the other hand, Denis, Denis and Yost (2002) and Click and Harrison (2000) find that global diversification is associated with a discount in firm value in the range of 6 percent to 18 percent. The literature measures whether global diversification has a net positive or net negative effect on firm value. However, with financial and trade barriers among countries gradually being eliminated, and speedier communication around the globe, increasingly the world is transforming into a unified, and the benefits at some point may overshadow the costs as barriers are abolished. Global arms of U.S. corporations are becoming more important to firms' viability. For example, over 50 percent of Coca Cola's revenues and profits, as well as for many other U.S. companies, originates from abroad. Hence, it is difficult to argue that a strategy of operating globally is per se value destroying. Previous research documenting the diversification discount does not address the question of why global diversification would exist if it, in fact, destroys firm value. Given the measurement error in excess value and the limited research on global diversification, this study casts light on the impact of the decision to diversify globally on the firm's operating performance. We reason that if firms that diversify globally sell at a discount due to poor investment decisions arising from diversification, then poor investments would be mirrored by poor firm operating performance when compared to an appropriate benchmark group. On the other hand, if the methodology that measures excess value is flawed, as suggested by Campa and Kedia (2002), and the global diversification decision is based on value maximization, then we should observe that firms choosing to diversify globally outperform their domestic counterparts, on average.

By examining the link between the global diversification decision and operating performance, we are able to circumvent the problems related to measurement of excess value encountered by previous studies examining the diversification discount. Our focus in this paper is to capture the net benefits or costs of geographic diversification by measuring abnormal operating performance. In summary, our analysis adds a new perspective to the corporate diversification literature by examining how globally diversified firms perform compared to their domestic counterparts.

We analyze a sample of 1,389 U.S. firms that chose to diversify globally in the period, 1997 to 2003. Our empirical findings document that firms that choose to add global operations outperform their benchmark firms in the year of the decision to globalize and in the two ensuing years. We find that the median globally diversified firm in our sample experiences a significantly higher cash flow to assets ratio in the event year (by 1.5%) than its matched firm portfolio. Similarly, in the two years following the diversification, the median diversified firm outperforms its matched portfolio by a statistically significant 2.1% and 2.5% respectively. Our primary finding of positive abnormal operating performance by globally diversifying firms counters the notion that global diversification results in value destruction and supports Hyland (1999) who finds no evidence that agency costs explain the decision of firms to diversify as well as Bodnar, Tang and Winthrop (1999), Errunza and Senbet (1984).

More importantly, the fact that our sample firms exhibit a significantly negative excess value clearly demonstrates that the superior operating performance that we observe is not due to a diversification premium. This finding establishes that a negative excess value cannot be interpreted to be synonymous with poor performance and further confirms the conclusions drawn by recent research that attributes the diversification discount phenomena to various artifacts (Whited (2001) and Campa and Kedia (2001)). We test the robustness of operating performance to the matching criteria that generated the benchmark firms and find that our results are robust to alternate matching criteria and to alternate measurement of performance. Univariate analysis reveals that sample firm superior performance is also invariant to whether firms operate in one industry segment or multiple segments. Similarly, whether a firm chose to operate in one or multiple foreign geographical segments, it outperforms its counterparts in the year of the diversification and in the two ensuing years. Our results also exhibit robustness to whether a firm reports investment in foreign assets or not. To assess the sensitivity of our results to the choice of the time period, we subdivide the sample into two time periods (1997-1999 and 2000-2003), and find no significant difference in abnormal operating performance over the two time periods. Our findings from univariate and multivariate regression analysis do not support the notion that inefficient cross-subsidization occurs in multiple industrial segment firms nor in multiple foreign segment firms. The regression results also document that larger firms and firms with higher cost of goods sold are better able to benefit from global diversification. Finally, we do not find support for Morck and Yeung's (1991) argument that global operations can enhance firm value by internalizing markets for intangible assets such as those generated from R&D expenditure and advertising.

The organization of the remainder of the paper is as follows. In section I, we discuss the literature and testable implications. We describe the sample selection criteria and the algorithm for choosing matching firms in section II. The empirical evidence is presented in section III. We conclude the paper in Section IV with a summary and conclusion.

I. Literature and Testable Implications

A. The Pros and Cons of Global Diversification

Prevailing theoretical wisdom posits that global diversification confers costs as well as benefits on shareholders. The degree to which one outweighs the other determines whether geographical diversification adds to or subtracts from shareholder value. A number of potential beneficial effects from global diversification have been advanced in the literature. Arguments in favor of value-enhancing global diversification rest on capitalizing on synergistic effects from lower production costs, increased operating flexibility and accessing of new markets. Globally diversified firms may enjoy increased operational flexibility such as the ability to shift production from high production cost countries to low cost countries. In addition, globally diversified firms can change the distribution of goods to markets where the demand is highest.

Another potential beneficial aspect of diversification is improved access to external capital markets documented by Hadlock, Ryngaert and Thomas (2001) who find evidence that Myers and Majluf's (1984) problem created by the presence of asymmetrical information at the time of equity issuance will be less severe for diversified firms than for focused firms. They conclude that diversification improves access to the market for external capital. This argument can be extended to globally diversified firms with geographically diversified operational units.

Dunning and Rugman (1985), among others, maintain that benefits from global diversification are rooted in exploiting foreign market opportunities and imperfections. For example, globally diversified firms could enhance firm value by exploiting the differences in tax systems across countries, thereby reducing their tax liabilities. Moreover, a globally diversified firm can gain by borrowing through affiliates that have higher tax rates to increase the interest tax shield[5]. Also, to the extent that capital markets are segmented, globally diversified firms can also potentially access outside capital markets at more favorable terms, thereby reducing the cost of capital (see Thomadakis and Usmen (1991)). Research on portfolio allocations (eg. Errunza, Hogan and Hung (1999) among others) finds that U.S. investors can obtain substantial benefits from international diversification by holding U.S. multinational firms in their portfolios. Diversification also gives the firm the ability to utilize internal capital markets. Whether such internal capital markets are a net positive or a net negative to the firm is still an open question. Some studies, such as Stein's (1997), contend that internal capital markets can create value as headquarters, by virtue of its control rights, engages in "winner picking" by channeling funds from one project to another. Maksimovic and Philips (2000) show that diversified firms allocate capital to the most productive units. However, a number of studies argue that there are agency costs associated with diversification (see Rajan, Servaes and Zingales' (2000) and Scharfstein and Stein's (2000)). These studies assert that unit managers wield their power to boost the assets under their control, thereby leading to inefficient cross-subsidization where funds are channeled from high growth to low growth units.

The aforementioned benefits of global diversification may be offset by value-reducing effects. For example, in an agency-cost argument, if managers pursue diversification because of private benefits they derive from managing a more diversified firm, diversification could reduce firm value. Also, it has been argued that managers may pursue diversification because it imbues them with greater power and prestige (Jensen (1986) and Stulz (1990)). Further, by increasing the value of resources under their control, manager may obtain larger compensation packages (Jensen and Murphy (1990)). Managers also may accrue benefits from diversification through personal risk reduction.

Some argue that globalization introduces dis-synergies because of the additional complexity of coordination of corporate policies among geographical divisions and information asymmetry between headquarters and divisional managers (Harris, Kreibel, and Raviv (1982). Because globally diversified firms are inherently more complex than purely domestic firms, it is more difficult for shareholders to monitor the managers of such firms (Bodnar, Tang and Weintrop (1999)). It can be argued that the costs engendered by complexity of coordination and organizational hierarchy may be larger the greater the geographical diversification. In addition, foreign market impediments (arising from unexpected changes in regulatory requirements, exchange controls, expropriation and adverse local economic and political developments) may render additional costs/risks to foreign operations. These arguments could lead to global diversification being associated with reduction in firm value and performance.

B. Testable Implications

Given that global diversification confers benefits as well as costs on diversifying firms, the degree to which costs exceed benefits or vice versa is an empirical issue. Our methodology of comparing sample firms' operating performance to matching

[5] The foreign borrowing, in turn, can be instrumental in hedging foreign exchange risk as well as country and political risks.

firms that are purely domestic enables us to provide evidence on the net effect of global diversification on the firm while avoiding the controversial measures of valuation presented in earlier studies. Whether firms that diversify globally under-perform their counterparts has not been addressed yet. There is also the possibility that not diversifying globally may be harmful to some firms. Anecdotal evidence from various discussions with executives at multinational firms indicates that some firms diversify globally to maintain their sales to corporate customers who are already global; otherwise they stand to lose the business. Thus, choosing not to follow their corporate clients abroad may have a negative impact on some firms.

Arguably, the costs and benefits of global diversification are not fixed, and may thus differ in magnitude over time; this is especially true as new foreign markets become more open and as regulations and red tape toward U.S. firms are reduced. To the extent that the costs of global diversification have diminished during the last decade due to continuing deregulation, and dismantling of currency controls, under- or over-performance of firms that operate globally may differ in magnitude over time. By partitioning the sample into two periods (1997-1999 and 2000-2003), we test whether there is a differential impact of globalization on firm performance over time. If opening up of new markets accompanied by deregulation has changed during these two periods resulting in reduction of the cost of doing business abroad, we should observe that firms tend to perform better in the latter period.

To assess whether global diversification results in inefficient cross-subsidization of less profitable geographic segments, we examine firm operating performance for single foreign geographic segment firms and multiple segment firms. Highly geographically diversified firms (i.e., with multiple foreign segments) are more prone to have variable profit outlooks, and hence, the possibility of subsidization of less profitable geographic segments by more profitable segments exists. In addition, the scale of complexity of managing an enterprise that has multiple geographic segments is greater than that of a firm with a single foreign segment. If inefficient cross-subsidization occurs, then we should observe that firms with a single foreign segment exhibit better performance, on average, than multiple foreign segment firms.

II. Sample Selection and Methodology

In this section, we depict the sample selection process and the methodology employed to compute corporate operating performance.

A. Sample Selection

The Compustat Geographical Segment (CGS) database reports segment information for all Compustat firms for the most recent seven years. Beginning with 1977, Statement of Financial Accounting Standards #14 (SFAS 14) required publicly traded firms with an industry or geographical segment constituting more than 10% of the firm's sales, operating income or assets, to provide audited financial data by each industry segment. FASB 14 gives each firm the discretion to categorize its foreign operations depending on its particular circumstances. However, in 1997, SFAS 131 began requiring firms to disclose and report segments (comprising 10% of assets, sales or profits) based on breakdown used by management in defining its segments internally. The purpose of SFAS 131 is to ensure that management reporting of segment financial information is according to internal organization of business activity. Since 1997, the Compustat Geographical Segment Database increased the number of foreign segments from four to five (including the domestic segment). Given that our sample period starts when SFAS 131 begins to take effect, our sample differs from prior samples examining global diversification in two ways: first, the number of foreign segments specified is larger, and second, the breakdown of segments may be more in accord with actual organization of business activity and hence more informative. We select our sample firms using the following criteria. We identify all firms in the annual Compustat Industrial data file that initially report foreign operations in the period 1997 to 2003. We restrict the sample to industrial firms incorporated in the U.S. Non-U.S. firms, utilities (SIC 4900 - 4999) and financial firms (SIC 6000 - 6999) are eliminated. We also exclude firms where the sum of the geographical segment sales is greater than 101% of total reported sales. These selection criteria result in a final sample of 1,389 firms that diversified globally during the period 1997 to 2003.

B. Methodology

Our principal measure of operating performance is pre-tax operating cash flows. We use pre-tax operating cash flows to measure operating performance rather than earnings for two reasons. First, earnings include interest expense, special items and income taxes which can obscure operating performance, the focus of our research. Second, operating cash flows represent the economic benefits generated by the firm, and as a pretax measure, they are unaffected by the changes in tax status or capital structure issues (Barber and Lyon (1996)).

Since the level of these economic benefits depends on the total value of the firm's assets, we scale cash flows by firm asset value to have a performance measure that can be used to compare across firms and through time. Pre-tax operating cash flows are net sales, less cost of goods sold, less selling and administrative expenses before

deducting depreciation and amortization expense (OIBDA, Compustat data item #13). Book value of assets is the year-end total asset value (liabilities and net worth) from the balance sheet (Compustat data item #6).

We examine diversifying-firm operating performance over a four-year period beginning with the year before the diversification (designated year -1) and ending two years after the diversification decision (year +2). Our primary benchmark for measuring global firm's abnormal operating performance is a control portfolio constructed for each firm using the following methodology. The control portfolio is formed from all firms with the same three-digit SIC code as the diversifying firm, that have no foreign sales in year -1 and year 0, and that have book value of assets within 50 percent of the diversifying firm's in the year prior to the global diversification. The performance of the control portfolio is the median value for the matching firms. We compute the abnormal operating performance of the diversifying firm by subtracting the performance of the control portfolio from the value for our sample firm (henceforth, matched-adjusted cash-flow return). If less than five firms are matched to the diversifying firm using these two criteria, we next match using 2-digit and 1-digit SIC codes. If a minimum of five matching firms is not found for the diversifying firm using 1-digit SIC code, that firm is dropped from the sample.[6]

This methodology controls for economy-wide and industry effects on performance. It also controls for possible mean reversion in earnings and other operating ratios that has been documented in prior studies (Fama and French, 1995). For significance testing, we use procedures suggested by Barber and Lyon (1996). In the non-parametric analysis, we test for differences from zero using medians tests and for significance differences between groups using the Wilcoxon signed-rank test. For the regression analysis, to reduce the influence of outliers and improve model specification, we trim the sample by deleting firms with matched cash flow return below the first or above the 99th percentile for the full sample in any of the test years.

III. Main Empirical Results

A. Summary Statistics

Panel A of Table 1 provides the distribution of 1,389 industrial firms that commenced global operations during the period 1997-2003. Panel B of the table documents the number of geographic and business segments for sample firms. Over half of the sample firms (50.51%) begin their global operations in one foreign geographic segment, a quarter of the firms (24.41%) have two foreign geographic segments and another quarter (24.83%) operates in three foreign geographic segments. Only two of the 1,389 sample firms chose to operate in four global segments. The mean and median numbers of non-U.S. geographical segments are 1.75 and 1, respectively. The fact that about half of the firms start foreign operations in multiple geographical segments suggests that these firms are making a significant commitment to global operations. Corroborating this notion are the statistics on the proportion of total sales originating from foreign operations in the first year. For example, the median of foreign sales as a fraction of total sales in the first year of global operation is 22.5%.[7] The information in the business segment columns in Panel B reveals that the sample is almost evenly split between firms that are exclusively focused in one business segment (57%) and firms that are industrially diversified (43%). We observe a range from one to ten business segments with an average of 1.98 segments.

Panel C of the table provides the distribution of firms by SIC category for each sample year and for the total sample period. The greatest frequency of sample firms occurs in the manufacturing sector (other), 34.05%, manufacturing (computer and electronics), 22.53%, and services, 27.07%. Each of the remaining industry categories accounts for less than 5 percent of the total firms that chose to globalize operations.

Table 2 provides summary statistics for sample firms as well as for the matching portfolios. The value for each matched portfolio is the median for all firms in that portfolio. The first four rows of the table reporting book value, cash flow, sales and market value in the year prior to going global indicate that both sample firms and the median firm from the matched portfolio are small in size with book value of equity of $151.32 million and $100.91 million, respectively. Table 2 also documents various other financial characteristics such as, total foreign sales in the year of the event, foreign sales as a proportion of total sales, and market to book ratio for the firm in the year of the event. Another noteworthy result in Table 2 is that the cost of goods sold to sales in the year the decision to diversify globally was made is significantly lower for our sample firms that for their counterparts. For instance, in the year of the decision to diversify, our sample firms enjoy a median cost of goods sold to sales ratio of 0.616 while the median match firm's comparable figure

[6] In the sample, 795 firms are matched based on 3-digit SIC code, 371 are matched based on 2-digit SIC code and the remaining are matched using 1-digit SIC code. Our empirical results are not sensitive to this matching criterion.

[7] These figures are similar to those observed by Christophe (1997) and Denis, Denis, and Yost (2002) for a sample of firms that have global operations but are not necessarily starting global operations.

stands at 0.641. Similar differential exists in the two following years (unreported). This finding points to one potential beneficial impact from global diversification that could result in augmentation of operating performance.

B. Operating Performance Results

Table 3A reports the operating performance of sample firms and the median matched-firm for the years surrounding global diversification (year -1, 0, +1, +2) using cash flow to book value measure of performance. The most notable result is that sample firms outperform their counterparts significantly not only in the years following geographic diversification but also in the year preceding the decision. The difference between the sample firms' cash flow to book value in the year prior to the event, 0.107, and that of the matched firm portfolios, .079, is statistically significant at the 1 percent level. This implies that firms that diversify globally are not poor performers prior to the diversification. In fact, the significant superior performance of sample firms in the year prior to the global diversification suggests that efficiently run firms decide to expand globally. Measured net of matched counterparts, the sample firms' operating performance in years 0, +1 and +2 are 1.5 percent, 2.1 percent, and 2.5 percent respectively, all of which are statistically significant. In combination, the results in Table 3A are consistent with the notion that sample firms outperform their competitors in the years that surround the event and that diversification is not an outgrowth of free cash flow problems.

To test the possibility that our sample firms are outperforming their counterparts because they are not undervalued to begin with, we calculate the excess value á la Berger and Ofek (1995) for our globally diversified firms. Excess value (EV) is defined as the natural logarithm of the ratio of the firm's actual market value to its imputed value. A firm's actual market value is its book value minus the book value of equity plus the market value of equity. The firm's total imputed value is the sum of the imputed values for each of its segments. Each segment's imputed value is obtained by multiplying the segment's sales by the median ratio of market value to sales for all single-segment firms in that industry. Following Berger and Ofek (1995), we eliminate firms with extreme excess values ($-1.386 < EV < 1.386$).

Our results are in line with those reported by prior research in this area in that globally diversified firms exhibit negative and significant mean and median excess values for the year of the diversification of -0.048 and -0.056 respectively while the mean and median excess values of single-segment match firms are insignificantly different from zero. This finding clearly demonstrates that the superior operating performance that we observe in this study is not due to a positive excess value; i.e., our sample firms are not exhibiting a diversification premium. Moreover, this finding establishes that a negative excess value cannot be interpreted to be synonymous with poor performance and further confirms the conclusions of the strand of literature that refutes the diversification discount phenomena. A number of studies have questioned the methodology that measures excess value, and hence the conclusions drawn from the diversification discount (see Whited (2001), Campa and Kedia (2002), Mansi and Reeb (2002), and Villalonga (2004)).

C. Robustness Checks

The first robustness check that we conduct relates to the operating performance measure itself. Panel B of Table 3 re-estimates Panel A using sales to book value as an alternative performance measure. The findings of Panel B are very similar to those reported in Panel A indicating robustness of our findings to the performance measure used.[8]

The results in Table 3 could be construed to imply that superior performance is caused by superior management and not necessarily due to the global investment decision. To test the robustness of our results, we use alternative benchmark to measure operating performance following the decision to diversify globally. Specifically, we control for the sample firms' operating performance prior to the decision to go global. We re-estimate the analysis in Table 3A using an alternative matching criteria, matching by SIC code and operating performance in the year prior to going global. The results[9], not reported in a table for parsimony, indicate that the performance of sample firms is still significantly higher than the median of the matched-firm portfolio for all three years: year 0, +1 and +2. This finding implies that the superior operating performance is robust to the matching criteria and also that the superior performance of sample firms cannot be attributed to managerial talent of diversifying firms exhibited in the year prior to the event.[10] We also conduct another

[8] We also conduct the analysis in the remainder of the paper using this alternative measure of performance (sales to book value) and find the results to be indistinguishable from those with cash flow performance measure.

[9] The results are available from the authors upon request.

[10] In order to investigate whether sample firm's performance after the diversification is caused by changes in the riskiness of the firm, we calculate the dispersion of the operating cash flow to book value pre- and post-diversification. We use the actual and absolute deviation of cash flow to book of firm j around the median of the whole sample as measures of dispersion. We find no statistically significant difference for these dispersion measures between year –1 and year +1. Also, no significant differences are detected when the dispersion measure for year –1 is compared to year +2, nor when a match-adjusted cash flow dispersion measure is used. Thus, the data allows us to conclude that there is no change in the variability of operating performance

matching procedure (unreported) where the sample firms are matched to domestic firms in the major industry category of the diversifying sample firm. Our findings exhibit robustness to this matching criterion as well.

Similar to other studies, our sample selection criterion for considering a firm to be globally diversified is that it reports foreign sales. Yet, a number of firms in our sample (n=979) do not report foreign assets in the year of the diversification. This group of firms perhaps represents firms that operate globally through outsourcing or by selling abroad, rather than owning physical assets abroad. To ensure that our results are robust to the inclusion of these firms, we measure relative cash flow to book value for firms that indicate foreign asset investments (n=395) and those that do not. The relative cash flow is defined as the sample firm's cash flow to book value divided by the median match-firm portfolio's cash flow to book value. The results reported in Panel A of Table 4 suggest that there is no material difference between the two sets of firms. Both subgroups significantly outperform their matched portfolio median in each of the four years. Moreover, the difference between the medians of the two subgroups is not statistically different from zero indicating that control of physical foreign assets is not a pre-condition for superior operating performance. Our results contrast with those obtained by Click and Harrison (2000) who document that multinational firms that own foreign assets are associated with value destruction.

Next, we subdivide the sample in two periods: 1997-1999 and 2000-2003. The results on operating performance of sample firms relative to benchmark firms from the year prior to diversification to two years following the event is reported in Panel B. The mean abnormal operating performance in the 1997-1999 period is positive and significant in each of the four years surrounding the diversification (year -1 through year +2) and range from 0.014 in the year of diversification to 0.022 two years after the event. Similarly, the median abnormal operating performance for the 2000-2003 period is significantly positive throughout the four-year period with a range of 0.016 to 0.034. It is noteworthy to mention that the match-adjusted cash flow return in 2000-2003 period is consistently larger in years 0, +1 and +2 than those reported for the 1997-1999 period, perhaps an indication that deregulation and liberalization in foreign countries have rendered global diversification more beneficial with the passage of time. However, based on the Wilcoxon z-value for difference of medians of the two subperiods' match-adjusted cash flow return, none of the differences are significantly different from zero. In Panel C of Table 4, we examine the abnormal operating performance of firms with sales of less than $20 million from firms with sales equal to or greater than $20 million. Some previous studies on global diversification exclude firms with sales less than $20 million. By subdividing the sample into two such groupings, we can ascertain whether our results of significant superior performance are a consequence of the inclusion of smaller firms. The median relative cash flow to book value for smaller firms in year 0, +1 and +2 relative to the global diversification event are negative and statistically significant. In contrast, the abnormal operating performance of firms with larger sales are positive and significant at the 1 percent level in every year from the year prior to the diversification to two years following global diversification. Firms with larger sales significantly outperform smaller firms over the four-year period. Thus, our finding of superior performance for the overall sample is somewhat mitigated by the inclusion of smaller firms. This result suggests that smaller firms may be at a disadvantage when operating globally.

D. Operating Performance by Industrial and Global Diversification

We examine the role of industrial diversification of the firm on operating performance following global diversification. The cross-subsidization argument suggests that firms with one industrial segment would outperform those with multiple segments. In addition, it is argued that complexity arising from diversification detracts from firm value. If complexity of global diversification is compounded with industrial diversification, then industrial diversification may hinder the firm from benefiting from global diversification. In this scenario, we would expect to find that industrially focused firms outperform those operating in multiple industrial segments. However, it is also plausible that the complexity of the operations of the firm arising from industrial diversification prepares the firm's management to deal with global complexity. In which case, we should observe that industrially diversified firms are better able to harness the benefits of global diversification.

In Panel D, the first subgroup is composed of firms whose operations are focused on one industry segment (N=784), while the second subgroup is comprised of firms with multiple industrial segments (N=590). The empirical results reveal that although the abnormal operating performance of focused firms (one industrial segment) is higher than that for firms with multiple-industrial segments, the difference is not statistically significant as measured by Wilcoxon z-value for the difference across the two subgroups. From these empirical findings it can be inferred that there is no

due to the global diversification. And as a result, the enhanced operating performance cannot be attributed to changes in risk.

inefficient cross-subsidization in industrially diversified firms and that complexity does not detract from firm performance. We also compare the relative operating performance of firms operating in one foreign segment versus those operating in multiple foreign segments. The findings reported in Panel E of Table 4 suggest no difference between the two subgroups. The results from the above two panels indicate that the superior performance of our sample firms is robust to the degree of industrial diversification and global diversification. Finally, we subdivide the sample into a two-by-two matrix (not reported in a table for brevity) based on industrial and geographical diversification (single and multiple industry segments and single and multiple geographic segments). We find that there are no significant differences among four different categories using matched-firm adjusted performance.

E. Operating Performance by Industry Categories

There may exist heterogeneity across firms in the costs and benefits of global diversification that lead to value enhancement for some industries from global diversification and value reduction for others. For example, industries that can reduce production costs significantly by operating in lower cost countries are more likely to profit from their ventures abroad. In an attempt to distinguish between these two possible outcomes, in Panel F of Table 4 we subdivide the sample into various industry categories based on SIC code. For brevity, we report the relative operating performance for industry categories with 50 firms or more. The abnormal operating performance for all industry categories with less than fifty firms is not statistically significant. The data reveal that only two industry groups' abnormal operating performance is positive and statistically significant in the event year and in the two ensuing years. These two industry groups are (1) manufacturing – computer and electronics and (2) manufacturing – other.[11] However, when we test for difference in medians across the different industry categories for each of the four years, the differences are not significant at customary levels. The fact that none of the industry groups significantly underperform following the diversification decision implies that geographical diversification's impact ranges from value neutral to value enhancing. The empirical results do not lend credence to the argument that managers are motivated by self-interested behavior that is harmful to shareholders, across various industry groups.

F. Multivariate Regression Analysis

In this section, we estimate various regression models to explain the abnormal performance of sample firms diversifying globally. We control for the following firm financial characteristics: relative natural log of firm size, relative leverage, relative R&D expenditure to sales, relative advertising expenditure to sales[12], relative leverage, relative capital expenditure to sales and relative cost of goods sold to sales. Relative variables are calculated by subtracting the median value for that variable for the matched firm portfolio from the corresponding value for the sample firm. To control for industry effects, we include two dummy variables representing the manufacturing (computer and electronics) and manufacturing (other) industry categories. In Table 5, we report six regression models explaining firm abnormal operating performance in year 0 and year +1. Unlike prior work in this area, our regression analysis does not suffer from pooling of cross-sectional and time-series data, which can result in mistaken inferences due to inflated t-statistics. The results from the regressions identify several variables that are significantly related to abnormal operating performance of firms that decide to diversify globally.We use a dummy to represent industrial diversification which takes a value of one if the firm's business spans more than one industrial segment. This variable is not statistically significant in any of the regression models suggesting that industrial diversification does not impact operating performance of firms that decide to diversify. This result contrasts with Denis, Denis and Yost (2002) who find that industrial diversification combined with geographical diversification results in a diversification discount. To proxy for the firm's degree of global diversification, we use two variables. The first is a dummy variable that takes a value of one if the firm has more than one foreign geographic segment. Following Errunza and Senbet (1984), we also use the proportion of foreign sales to total sales. It is argued that expanding abroad renders the firm's operations more complex than that of a domestic firm, and hence, the task of monitoring management becomes more onerous. This in turn may give license to managers to act in their own self-interest. Based on this argument, it would be expected that the greater the number of

[11] It is interesting to note that the retail industry's abnormal operating performance in the year prior to global diversification is significantly positive but reverts to positive and insignificantly different from zero in the three following years. The change in abnormal operating performance from year –1 to year +1 is significantly negative indicating that firms in the retail industry are worse off following global diversification. It is often argued by practitioners that global diversification in the retail industry may not yield as high a return as that in the U.S. given the lower purchasing power of most regions outside the U.S. This could perhaps be one explanation for this observation.

[12] We set all missing values of R&D or advertising expenditures to zero.

foreign segments, the lower the value of benefits from global diversification. However, with a greater number of foreign segments, it is more likely that the firm will benefit from diversification of foreign exchange risk. Given the two opposing effects, it is not clear what the net result of the degree of diversification will be on performance. The regression results show that the coefficients of the dummy variable proxying for global diversification is insignificant in all six models indicating that disadvantages arising from complexity of operations may be offset by other benefits. The combination of the findings for this variable and the industrial diversification variable do not support the notion that inefficient cross-subsidization occurs in multiple-industry segment firms nor in multiple foreign segment firms. Even though the coefficients of the proportion of foreign sales variable are negative and statistically significant in models 2 and 3 (when explaining abnormal performance in year 0), the size of the coefficient, -0.0007, is not economically significant. Further, in models 5 and 6 which explain the abnormal performance in year +1, the coefficients of this variable are not statistically significant. These results, combined with the fact that global diversification for the whole sample generates positive abnormal performance, suggest that greater global involvement at the *outset* of diversification may generate complexity that slightly reduces match-adjusted cash flow return. However, this complexity hurdle is overcome in year +1 as the firm adapts to operating globally. A related variable to the degree of global diversification is whether the firm reports foreign investments or not. We include a dummy variable that takes a value of one when the firm reports foreign investments and zero otherwise. This variable exhibits insignificance in five of the six models supporting the results from the univariate analysis and the view that foreign assets do not hamper firm's performance.

Commonly R&D is viewed as a proxy for technical expertise of the firm while advertising, which creates product differentiation, is used to proxy for marketing sophistication. Morck and Yeung (1991) argue that the value of international operations of the firm is a function of the company's firm-specific advantages such as R&D or advertising and that such firm-specific skills are principal catalysts for expanding globally. This line of reasoning implies that firms operating in research- and advertising-intensive industries are expected to enjoy greater operating performance. In contrast to the findings of Morck and Yeung (1991), we find the coefficients on the relative R&D variable are negative and significant in all models.[13] So are the coefficients on the advertising variable.

Empirical evidence on the influence of firm size and capital expenditure to sales is similar to that reported in previous studies. For instance, the size variable's coefficients are positive and significant in all models indicating that smaller firms are at a disadvantage when diversifying globally, while larger firms may be better able to process raw materials and labor inputs than smaller firms. The regression results show that capital structure does not contribute to a firm's abnormal operating performance neither in the year of diversification nor in the following year. The coefficients of the relative cost of goods to sales variable are consistently positive and statistically significant indicating that firms with a larger component of cost of goods sold to sales benefit more from operating in a global environment, perhaps because of lower production costs abroad that may have motivated the geographic diversification in the first place. Finally, in Models 3 and 6, we control for industry effects by including two dummy variables representing two largest industry categories-- manufacturing (computer and electronics) and manufacturing (other). The coefficient for the manufacturing (other) industry variable is positive and significant in Model 3 and positive and insignificant in Model 6 indicating that global diversification significantly enhances the operating performance of firms in this sector only in the year of the diversification. The other industry dummy variable is not significant in either model.

To check the robustness of multivariate results to a different benchmark, all the regressions in Table 5 are re-estimated using abnormal operating performance from alternative matching criteria where we match by SIC code and operating performance in the year prior to going global. Using the same independent variables from Table 5, the three regressions explain the abnormal operating performance (obtained with alternative benchmark) for years 0, +1 and +2. The results, and hence the implications, are remarkably similar to those obtained from the previous table. If anything, the few differences in Table 6 are more in support of the notion that global diversification is beneficial. For example, the variable representing the percent of foreign sales/total assets is insignificant in all three regressions (instead of negatively significant in Table 5) while the dummy variable representing diversification in one or more foreign areas becomes statistically significant in year +2. Both these findings indicate that global diversification does not confer wealth destruction.

[13] We also re-estimate the regressions using dummy variables which take a value of one if the relative R&D expenditures/sales or relative advertising/sales are above their respective median values and 0 otherwise. The coefficients on both dummy variables remain negative and significant.

IV. Summary and Conclusion

Our interest in the impact of global diversification is motivated by the limited number of empirical studies in this area and the need to understand how the decision to operate globally affects corporate operating performance. Our main empirical finding reveals that global diversification does not impact operating performance negatively. Specifically, we find that firms that choose to diversify globally exhibit positive abnormal operating performance relative to benchmarked firms in the year of the decision to diversify and in the two ensuing years. Our central result thus refutes the notion that global diversification results in misallocation of resources and is consistent with maximization of shareholder value in support of the findings of Bodnar, Tang and Winthrop (1999) and Hyland (1999), among others. We also document that the superior performance of globally diversified firms is not due to positive excess value as our sample firms exhibit a negative and significant excess value as measured by Berger and Ofek (1995). This result confirms the conclusions of prior studies that the diversification discount is an artifact of measurement error. Thus, our study shows that the negative excess value in previous studies cannot be interpreted to be synonymous with poor performance.

We conduct a number of robustness checks. First, we show that our matched-adjusted cash flow return measure is invariant to alternative sets of benchmark firms. Our result of positive abnormal performance also exhibits robustness over different time periods. Univariate analysis reveals that sample firm abnormal performance is invariant to whether firms operate in one industry segment or multiple segments. Similarly, whether a firm chooses to operate in one or multiple foreign geographical segments, it outperforms its matched portfolio in the year of the diversification and in the two ensuing years. These findings, which are corroborated by multivariate analysis, suggest that cross-subsidization and the increase in the organizational complexity due to diversification are not influential factors to firm operating performance.

References

1. Barber, B.M., and J.D. Lyon, 1996, Detecting abnormal operating performance: The empirical power and specifics of test statistics, *Journal of Financial Economics* 41, 359-399.
2. Berger, Philip G., and Eli Ofek, 1995, Diversification's effect on firm value, *Journal of Financial Economics* 37, 39-65.
3. Bodnar, Gordon M., Charles Tang, and Joseph Weintrop, 1999, Both sides of corporate diversification: The value impacts of global and industrial diversification. Working paper 6224, NBER.
4. Campa, Jose, and Simi Kedia, 2002, Explaining the diversification discount, *Journal of Finance* 57.
5. Christophe, Stephen E., 1997, Hystersis and the value of multinational corporations, *Journal of Business* 70, 435-462.
6. Click, Reid W. and Paul Harrison, 2000, Does multinationality matter? Evidence of value destruction in U.S. multinational corporations, Working Paper (Georgetown University).
7. Denis, David J., Diane K. Denis, and Kevin Yost, 2002, Global diversification, industrial diversification, and firm value, *Journal of Finance*, vol. 57, 1951-1979.
8. Doukas, John and Nickolas G. Travlos, 1988, The effect of corporate multinationalism on shareholders' wealth: Evidence from international acquisitions, *Journal of Finance* 43, 1161-1175.
9. Dunning, John, H. and Alan M. Rugman, 1985, The influence of Hymer's dissertation on the theory of foreign direct investment, *American Economic Review* 75 (2), 228-232.
10. Errunza, Vihang R., Kedreth Hogan, and Mao-Wei Hung, The impact of the EMS on exchange rate predictability, *Journal of Multinational Financial Management*, 1991 (1), 73-105.
11. Errunza, Vihang R. and Lemma Senbet, 1984, International corporate diversification, market valuation, and size-adjusted evidence, *Journal of Finance* 39, 727-743.
12. Fama, Eugene F., and Kenneth R. French, 1995, Size and book-to-market factors in earnings and returns, *Journal of Finance* 50, 131-155.
13. Fatemi, Ali M., 1984, Shareholders benefits from corporate international diversification, *Journal of Finance* 39, 1325-44.
14. Hadlock, Charles J., Michael Ryngaert and Shawn Thomas, Corporate Structure and Equity Offerings: Are there Benefits to Diversification? *Journal of Business* 2001, vol. 74, no. 4, pp. 613-635.
15. Hyland, David, 1999, Why firms diversify: An empirical examination, Working paper, University of Texas at Arlington.
16. Jensen, Michael C., 1986, Agency costs of the free cash flow, corporate finance and takeovers, *American Economic Review* (May), 654-665.
17. Jensen, Michael C. and Kevin J. Murphy, 1990, CEO incentives - It is not how much you pay, but how, *Journal of Applied Corporate Finance*, 3, 36-49.
18. Karris, M., Kreibel, C.H., and A. Raviv, 1982, Asymmetric information, incentives and intrafirm resource allocation, *Management Science* 28.
19. Maksimovic, Vojislav, and Gordon Phillips, 2002, Do conglomerate firms allocate resources inefficiently across industries? Theory and evidence, *Journal of Finance* 57, 721-767.
20. Mansi, Sattar A. and David M. Reeb, Corporate diversification: What gets discounted? *Journal of Finance* 2002, Vol. 57, no. 5, pp. 2167-2183.
21. May, Don O., 1995, Do managerial motives influence firm risk-reduction strategies?, *Journal of Finance* 50, 1291-1308.
22. Morck, Randall and Bernard Yeung, 1991, Why investors value multinationals? *Journal of Business* 64, 165-187.
23. Myers, Stewart C. and Nicholas S. Majluf, 1984, Corporate financing and investment decisions when

firms have information that investors do not have, *Journal of Financial Economics*, 13, 187-221.
24. Rajan, Raghuram G., Henri Servaes, and Luigi Zingales, 2000, The cost of diversity: The diversification discount and inefficient investment, *Journal of Finance* 55, 35-80.
25. Sanzhar, Sergey V., 2004, Two puzzles about the diversification discount: Pseudo-conglomerates and SFAS #131, Working Paper (London Business School).
26. Scharfstein, Davide S. and Jermey C. Stein, 2000, The dark side of internal capital markets: Divsional rent-seeking and inefficient investment, *Journal of Finance* 55, 2537-2564.
27. Servaes, Henri, 1996, The value of diversification during the conglomerate merger wave, *Journal of Finance* 51, 1201-1225.
28. Stein, Jeremy C., 1997, Internal capital markets and the competition for corporate resources, *Journal of Finance* 52, 111-133.
29. Stulz, Rene M., 1990, Managerial discretion and optimal financing policies, *Journal of Financial Economics* 26, 3-27.
30. Thomadakis, Stavros, Nilufer Usmen, 1991, Foreign project financing in segmented capital markets: Equity versus debt, *Financial Management* 20 (4).
31. Villalonga, Belen, 2004, Diversification discount or premium? New evidence from the business information tracking series, *Journal of Finance* 59.
32. Whited, Toni M., 2001, Is it inefficient investment that causes the diversification discount? *Journal of Finance* 56, 1667-1691.

Appendices

Table 1. Various Distributions of Firms That Diversified Globally

Sample consists of 1,389 U.S. industrial firms that diversified operations globally during the period 1997-2003. The sample is drawn from the *Compustat Geographic Segment Database* maintained by *Standard & Poors*.

Panel A: Distribution of Firms Diversifying Globally by Year

Year	Firms Diversifying Globally
1997	109
1998	354
1999	393
2000	234
2001	126
2002	90
2003	83
Total	1389

Panel B: Distribution of firms' foreign geographic segments and business segments

Number of segments	Reported Foreign Geographic Segments	Reported Business Segments
1	703	792
2	339	197
3	345	196
4	2	113
5	-	58
6	-	20
7	-	9
8	-	2
9	-	1
10	-	1
Total	1389	1389

Table 1 (Cont'd). Various Distributions of Firms That Diversified Globally

Panel C: Distribution by SIC category by year and for the total sample period

SIC Category	1997	1998	1999	2000	2001	2002	2003	Total
Agriculture	1	2	1	0	0	0	0	4
Mining, Oil	4	9	10	4	4	4	3	38
Construction	1	2	1	0	1	1	1	7
Manufacturing - Computer & electronics	27	80	93	66	24	14	9	313
Manufacturing - other	26	123	153	62	43	37	29	473
Transportation	10	22	11	13	6	2	4	68
Wholesale trade	7	11	21	6	3	3	0	51
Retail trade	5	8	12	8	4	4	9	50
Services	27	95	90	73	40	24	27	376
Public Administration	1	2	1	2	1	1	1	9
Total	109	354	393	234	126	90	83	1389

Table 2. Summary Statistics for Firms that Diversified Globally and Matching Firm Portfolios

Summary statistics for 1,389 firms that diversified globally during the period 1997 to 2003. The sample is drawn from the *Compustat Geographic Segment Database maintained by Standard & Poors*. We also report statistics for these firms' matching portfolios. The value for each matched portfolio is the median for all firms in that portfolio. Each matched portfolio is formed from all firms with: 1) no foreign sales in the year or the year prior to the firm adding foreign operations, 2) having same 3-digit SIC classification, and 3) with book value within 50% of sample firm's book value in the year prior to the diversification. If a minimum of five matching firms could not be found using these criteria, we match using 2-digit and 1-digit SIC codes. We report the median (means in brackets). Cash flow is defined as operating income before interest, taxes and depreciation. Utility firms and banks/financial service firms are eliminated (SIC codes 4900-4999 and 6000-6999).

Variable	Firms Diversifying Globally	Matched Firm Portfolios
Book value ($MM)	151.32 (1584.50)	100.91 (911.32)
Cash flow ($MM)	10.96 (216.18)	5.74 (120.50)
Sales ($MM)	122.98 (1407.70)	93.65 (804.89)
Market value of firm ($MM)	328.91 (4000.65)	159.87 (1620.70)
Total foreign sales in the year first reported ($MM)	23.89 (421.95)	-
Foreign sales as a fraction of total sales in the year first reported	0.225 (0.303)	-
Cost of goods sold as a fraction of total sales in the year of diversification	0.616 (1.152)	0.641 (0.715)
Market to book value ratio for the firm	1.65 (3.11)	1.564 (1.878)

Table 3. Operating Performance of Firms Diversifying Globally and Their Matched-Firm Portfolios

Operating performance for 1,389 firms that diversified operations globally during the period 1997- 2003 and for the matched-firm portfolios. The samples are drawn from the *Compustat Geographic Segment Database*. Operating performance is measured as a firm's ratio of operating cash flow (Compustat item #13) to its book value of assets (Compustat item #6) in Panel A and as ratio of sales to book value of assets in Panel B. We report median (mean) changes for firms diversifying globally, their matched firm portfolios and the matched-firm-adjusted ratios for diversifying firms. Utility firms and banks/financial service firms are eliminated (SIC codes 4900-4999 and 6000-6999).

Panel A: Cash Flow to Book Value of Assets

	Firms Diversifying Globally	Matched Firm Portfolio Medians	Firms Diversifying Globally - Median of Matched Portfolio
Cash Flow to Book Value in the year prior to the diversification	0.107*** (-0.011)	0.079*** (0.004)	0.019*** (-0.005)
Cash Flow to Book Value in the year of the diversification	0.092*** (0.001)	0.071*** (0.004)	0.015** (-0.001)
Cash Flow to Book Value in the year after the diversification	0.089*** (-0.014)	0.065*** (-0.002)	0.021*** (-0.010)
Cash Flow to Book Value in the second year after diversification	0.087*** (-0.069)	0.058*** (-0.001)	0.025*** (-0.075)

Panel B: Sales to Book Value of Assets

Sales to Book Value in the year prior to the diversification	0.983*** (1.070)	0.931*** (0.962)	0.037*** (0.110)
Sales to Book Value in the year of the diversification	0.949*** (1.064)	0.918*** (0.960)	0.040** (0.102)
Sales to Book Value in the year after the diversification	0.951*** (1.085)	0.923*** (0.989)	0.027*** (0.106)
Sales to Book Value in the second year after the diversification	0.956*** (1.194)	0.927*** (0.996)	0.022** (0.204)

***, **, * denote significance at the 1%, 5% and 10% levels respectively using medians test.

Table 4. Abnormal Operating Performance of Firms that Choose to Diversify Globally to Their Matched-Firm Portfolios by Sub-categories

Operating performance for 1,389 firms that diversified operations globally during the period 1997-2003 relative to those firms' matched-firm portfolios. The samples are drawn from the *Compustat Geographic Segment Database*. Operating performance is measured as a firm's ratio of operating cash flow (Compustat item #13) to its book value of assets (Compustat item #6). We report median (mean) changes for firms diversifying globally, their matched firm portfolios and the matched-firm-adjusted ratios for diversifying firms. Utility firms and banks/financial service firms are eliminated (SIC codes 4900-4999 and 6000-6999).

Panel A: Abnormal operating performance of firms reporting investment in foreign assets compared to firms not reporting foreign investment

	Abnormal cash flow to book value in year –1	Abnormal cash flow to book value in year 0	Abnormal cash flow to book value in year +1	Abnormal cash flow to book value in year +2
Firms not reporting foreign assets (n=979)	0.015*** (-0.014)	0.011*** (-0.008)	0.020*** (-0.013)	-0.027*** (-0.082)
Firms reporting foreign assets (n=395)	0.029*** (0.015)	0.028*** (0.016)	0.022*** (-0.003)	0.023* (-0.058)
Wilcoxon z-value for difference of medians	1.283	1.210	0.516	-0.797

Panel B: Abnormal operating performance of firms diversifying globally in 1997-1999 period vs. 2000-2003 period

	Abnormal cash flow to book value in year -1	Abnormal cash flow to book value in year 0	Abnormal cash flow to book value in year +1	Abnormal cash flow to book value in year +2
Period 1997-1999 (n=849)	0.020*** (-0.008)	0.014*** (-0.002)	0.016*** (-0.012)	0.022*** (-0.098)
Period 2000-2003 (n=525)	0.016*** (-0.002)	0.016*** (0.000)	0.031*** (-0.006)	0.034** (-0.006)
Wilcoxon z-value for difference of median	0.059	0.944	-1.351	0.707

Table 4 (Cont'd). Abnormal Operating Performance of Firms that Choose to Diversify Globally to Their Matched-Firm Portfolios by Sub-Categories

Panel C: Abnormal operating performance of firms with less than $20 million in total sales in year 0 compared to firms with $20 million or more in total sales

	Abnormal cash flow to book value in year -1	Abnormal cash flow to book value in year 0	Abnormal cash flow to book value in year +1	Abnormal cash flow to book value in year +2
Firms with less than $20 million in total sales (n=264)	-0.017 (-0.114)	-0.037 (-0.105)	-0.023** (-0.145)	-0.013* (-0.436)
Firms with $20 million or more in total sales (n=1110)	0.021*** (0.020)	0.021*** (0.024)	0.024*** (0.022)	0.027*** (0.008)
Wilcoxon z-value for difference of medians	-2.089**	-3.331***	-3.240***	-2.177**

Panel D: Abnormal operating performance of firms reporting more than one industry to firms reporting only one industry segment.

	Abnormal cash flow to book value in year -1	Abnormal cash flow to book value in year 0	Abnormal cash flow to book value in year +1	Abnormal cash flow to book value in year +2
One industry segment firms (n=784)	0.021*** (-0.026)	0.018*** (-0.012)	0.025** (-0.028)	0.038*** (-0.142)
Multiple industry segments firms (n=590)	0.019*** (0.021)	0.013*** (0.013)	0.016*** (0.014)	0.017*** (0.009)
Wilcoxon z-value for difference medians	0.445	0.075	-0.063	-0.817

Table 4 (Cont'd). Abnormal Operating Performance of Firms that Choose to Diversify Globally to Their Matched-Firm Portfolios by Sub-categories

Panel E: Abnormal operating performance of firms reporting more than one foreign segment compared to firms reporting only one foreign segment

	Abnormal cash flow to book value in year -1	Abnormal cash flow to book value in year 0	Abnormal cash flow to book value in year +1	Abnormal cash flow to book value in year +2
One foreign segment (n=697)	0.020*** (0.006)	-0.001*** (-0.001)	0.018** (-0.022)	0.023*** (-0.156)
Multiple foreign segments (n=1338)	0.018*** (-0.018)	0.016*** (-0.001)	0.026*** (0.002)	0.025*** (0.006)
Wilcoxon z-value	0.310	0.449	-1.405	-0.129

Panel F: Abnormal operating performance of globally diversifying firms across SIC classifications

	Abnormal cash flow to book value in year -1	Abnormal cash flow to book value in year 0	Abnormal cash flow to book value in year+1	Abnormal cash flow to book value in year +2
Manufacturing: Computer & electronics (n=310)	0.029*** (-0.002)	0.030* (-0.003)	0.040*** (0.003)	0.042** (-0.023)
Manufacturing: other (n=470)	0.026*** (0.032)	0.024*** (0.042)	0.025*** (0.021)	0.033*** (-0.168)
Transportation (n=68)	0.017 (-0.000)	-0.004 (0.025)	0.001 (0.077)	0.003 (0.007)
Wholesale trade (n=51)	-0.005 (0.015)	-0.018 (0.021)	-0.003 -0.064	0.001 (0.006)
Retail trade (n=50)	0.021** (0.031)	0.016 (0.011)	0.014 (-0.014)	0.011 (-0.070)
Services (n=372)	0.011 (-0.060)	0.011 (-0.049)	0.021 (-0.059)	0.020 (-0.046)
Chi-sq value for difference across categories	4.54	5.71	8.39	6.10

***, **, * denote significance at the 1%, 5% and 10% levels respectively using the Wilcoxon test.

Table 5. Regression Analysis of Abnormal Operating Performance of Firms Choosing to Diversify Globally

The table reports ordinary least squares regression estimates with the dependent variable being the abnormal operating performance for firms diversifying globally for the year of diversification and the following year. Independent variables are dummy variable indicating presence or absence of industrial diversification, investment overseas, multiple foreign operations, foreign sales/total sales and a set of control variables. Abnormal operating performance is defined as sample firm cash flow/book value minus that for matched firm. The sample is drawn from the *Compustat Geographic Segment* database. Operating performance is measured as a firm's ratio of operating cash flow (Compustat data item #13) to book value of assets (Compustat data item #6). Utility firms and financial firms are eliminated (SIC codes 4900-4999 and 6000-6999).

	In the year of global diversification			In the year following the global diversification		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-0.009 (-0.51)	0.008 (0.43)	-0.022 (-1.06)	-0.020 (-0.98)	-0.013 (-0.59)	-0.027 (-1.06)
Dummy equal to one if more than one industry	0.021 (1.21)	0.018 (1.00)	0.013 (0.74)	0.019 (0.89)	0.018 (0.82)	0.015 (0.68)
Dummy equal to one if more than one foreign area	-0.005 (-0.27)	0.036 (1.29)	0.005 (0.25)	0.024 (1.15)	0.028 (1.28)	0.030 (1.35)
Dummy equal to one if reporting foreign investment	0.026 (1.34)	0.032 (1.64)	0.036 (1.82)*	0.008 (0.35)	0.010 (0.44)	0.011 (0.50)
Percent of foreign sales/total sales		-0.0007 (-2.07)**	-0.0007 (-2.13)**		-0.0003 (-0.69)	-0.0003 (-0.69)
Natural log of ratio of relative firm market value	0.035 (4.18)***	0.034 (2.96)***	0.036 (4.45)***	0.024 (2.45)**	0.024 (2.43)**	0.025 (2.58)***
Relative leverage	-0.012 (-0.19)	-0.015 (-0.24)	-0.015 (-0.24)	0.071 (0.91)	0.071 (0.90)	0.073 (0.94)
Relative ratio of capital expenditure to sales	0.026 (2.22)**	0.026 (2.17)**	0.025 (2.15)**	0.022 (1.57)	0.022 (1.55)	0.022 (0.94)
Relative ratio of research and development to sales	-0.050 (-7.45)***	-0.048 (-7.04)***	-0.049 (-7.25)***	-0.042 (-5.32)***	-0.041 (-5.12)***	-0.042 (-5.21)***
Relative ratio of advertising expense to sales	-0.121 (-7.64)***	-0.115 (-7.10)	-0.115 (-7.16)	-0.131 (-7.03)***	-0.128 (-6.73)***	-0.129 (-6.76)***
Relative ratio of cost of goods sold to sales	0.005 (6.16)***	0.028 (5.82)***	-0.005 (-1.73)*	0.020 (3.65)***	0.020 (3.51)***	0.020 (3.60)***
Dummy equal one if manufacturing -other			0.071 (3.61)***			0.035 (1.45)
Dummy equal one if computer/electronics			0.017 (0.76)			-0.0006 (-0.69)
R^2	0.090	0.085	0.0952	0.109	0.110	0.101
F	11.13***	10.31***	9.91***	12.71***	11.48	9.80***
N	1016	1016	1016	944	944	944

***, **, * denote significance at the 1%, 5% and 10% levels respectively.

Table 6. Regression Analysis of Abnormal Operating Performance of Firms Diversifying Globally Using Alternative Matching Benchmark

Table reports ordinary least squares regression estimates. The dependent variables used in the three models are the abnormal operating performance for our sample firms for the year of diversification (year 0), the following year (year +1) and two years following diversification (year +2). All variables are obtained using alternative matching criteria where we match by SIC code and operating performance in the year prior to going global. The independent variables are: dummy variable indicating presence or absence of industrial diversification, investment overseas, multiple foreign operations, foreign sales/total sales and a set of control variables. Abnormal operating performance is defined as sample firm cash flow/book value minus that for matched firm portfolio. Matched firms are selected based on performance in the year prior to diversification and SIC code. Operating performance is measured as a firm's ratio of operating cash flow (Compustat data item #13) to book value of assets (Compustat data item #6). Utility firms and financial firms are eliminated (SIC 4900-4999 and 6000-6999).

	For the year relative to global diversification:		
	Year 0	Year +1	Year +2
Intercept	-0.019 (-1.16)	-0.028 (-1.32)	-0.039 (-1.15)
Dummy equal to one if more than one industry	0.005 (0.35)	0.000 (0.01)	0.003 (0.09)
Dummy equal to one if more than one foreign area	-0.016 (-1.05)	0.021 (1.09)	0.062 (2.09)**
Dummy equal to one if reporting foreign investment	0.004 (0.24)	-0.027 (-1.34)	-0.063 (-2.01)**
Percent of foreign sales/total sales	-0.0002 (-0.77)	-0.001 (-0.28)	-0.0008 (1.44)
Natural log of ratio of relative firm market value	0.017 (5.00)***	0.018 (4.15)***	0.020 (2.93)***
Relative leverage	-0.122 (-2.29)**	0.032 (0.48)	0.105 (0.98)
Relative ratio of capital expenditure to sales	0.033 (3.53)***	0.073 (6.28)***	-0.008 (-0.42)**
Relative ratio of research and development to sales	-0.027 (-6.13)***	-0.064 (-11.74)***	-0.019 (-1.94)*
Relative ratio of advertising expense to sales	-0.061 (-5.65)***	-0.133 (-10.04)***	-0.079 (-3.64)***
Relative ratio of cost of goods sold to sales	0.011 (3.38)***	0.024 (5.81)***	0.015 (2.15)**
Dummy equal one if manufacturing -other	0.033 (2.01)**	0.010 (0.50)	0.040 (1.20)
Dummy equal one if computer/electronics	0.014 (0.76)	0.000 (0.01)	0.004 (0.10)
R^2	0.078	0.197	0.056
F	7.02***	19.05***	4.06***
N	1015	947	840

***, **, * denote significance at the 1%, 5% and 10% levels respectively.