Valuation Effects of Global Diversification

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July 2009

Journal of International Business Studies, Forthcoming.

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Abstract

This paper examines the effect of global diversification on firm value using a dataset of U.S. firms from 1994-2002. We document that global diversification enhances firm value. Specifically, we find Tobin's q, our proxy for firm value increases with foreign sales (measured as a fraction of the firm's total sales) even after we control for well-known determinants of firm value. In contrast, we find no such evidence for industrial diversification. We find evidence of both financial and real effects driving such a value enhancement from global diversification. Furthermore, we find that the valuation benefits from global diversification are higher if the firm diversifies into countries with creditor rights that are stronger than that of the United States. Our results are also robust to controlling for the firm's endogenous choice to diversify across countries or across industries. Our study is anchored by the theories of both the financial and real dimensions of global diversification, and our results support both theories. Overall, our results provide a unifying view that global diversification benefits are driven by both the real and financial dimensions.

Keywords: Cross-Border Investments, Creditor Rights, Diversification Strategies, Imperfect World Capital Markets Theory, Internalization Theory, Multinational Corporations (MNCs) and Enterprises (MNEs)

INTRODUCTION

An extensive academic literature has documented during the last fifteen years the valuation consequences of corporate industrial diversification. For example, Lang and Stulz (1994), and Berger and Ofek (1995) show that industrially diversified firms trade at a discount relative to undiversified firms in their industries. These two papers reach the same conclusion (as did several other subsequent papers) even though they use different value measures. Lang and Stulz (1994) use Tobin's q, defined as the market value of the firm divided by its replacement value. Berger and Ofek (1995) use an "excess value" measure, namely the natural logarithm of the firm's actual value to its imputed value calculated as the sum of values of its segments using valuation multiples (such as, price-earnings) of stand-alone companies in that industry.

In the extant literature, considerably less attention has been focused on the causes and consequences of corporate international diversification, also known as global diversification.[1] Indeed, there are several interesting questions that have not yet been addressed in sufficient depth in the literature. *First*, whether global diversification and industrial diversification are similar in nature? *Second*, what are the specific channels through which the valuation consequences of global diversification are amplified or attenuated? For example, are there certain country characteristics that could explain whether corporate diversification into such countries is value enhancing or value destroying? *Finally*, since the firm can choose to diversify either globally or industrially (or both), what influence does this have on inferences about the valuation consequences of global diversification?

We argue that global diversification is inherently different from industrial diversification. This view is supported by existing theories stemming from both the financial and real sides of the economy. On the financial or capital market side, there is a well-accepted theory and evidence based on market imperfections ("Imperfect world capital markets" theory) that rationalizes value creation from the financial dimension of multinationality (see, Errunza &

Senbet, 1981, 1984, and the references contained in those papers). This theory suggests that a globally diversified firm "completes the markets" by allowing its investors indirect access to countries with restrictions on portfolio holdings. In this regard, holdings of a U.S. based multinational firm whose shares are traded in the U.S. market allow U.S. based investors to have indirect access to the multinational portfolio diversification.

There are other well-known theories that focus on the real (as opposed to the financial) dimension of multinationality, such as the "Internalization" theory (see, Caves 1971, 1982; Morck & Yeung, 1991, 1992, and the references contained in those papers) and the "Managerial objectives" theory (see, for example, Jensen & Meckling, 1976). The internalization theory posits that a multinational firm increases its value by internalizing markets for certain of its intangible assets, such as those related to research and development (R&D) and advertising. Counterbalancing this view, the managerial objectives theory suggests that the divergence of interests between managers and shareholders is larger in more complex organizations, such as multinationals, which negatively affects the value of a multinational firm. In other words, global diversification is associated with both financial (e.g., based on the role of multinational companies in completing the market) and real (e.g., internalizing markets for intangible assets) dimensions. In contrast, industrial diversification relates only to the real side and does not have a financial dimension.

The existing empirical literature of global diversification does not emphasize this dichotomy. It focuses mostly on the real side and tends to ignore the financial dimension. As a result, this could lead to a misleading conclusion that both global and industrial diversification are value-destroying, especially if empirical tests focus primarily on the managerial objectives theory. As an example, the point estimates from Table VI of Denis, Denis and Yost (2002) of diversification discounts (measured in excess value terms) of 20% for industrial diversification and 18% for global diversification reinforce the notion that these two types of diversification are quite similar. In our paper, unlike the previous literature, we

integrate the real and financial dimensions of global diversification in our empirical analysis. Specifically, we examine whether there is evidence of real as well as financial dimensions of global diversification in our sample.

Further, we argue in this paper that the quality of corporate governance serves as an important channel through which the valuation consequences of global diversification are amplified or attenuated. We posit that poor country-level corporate governance reduces (and in the limit eliminates) any valuation benefits from global diversification. Take for example, the value creation from the financial dimension of multinationality as in Errunza and Senbet (1981, 1984), which is based on the role of multinational firms in providing indirect access to its investors who would otherwise be constrained from investing in countries with restrictions on portfolio holdings. If these countries with barriers to investment have poor corporate governance, this will clearly reduce the benefits of indirect diversification provided by the multinational firms to its investors. Towards this objective, we examine the influence of country-level corporate governance variables from the "Law and Finance" literature (see, for example, La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1997), such as the creditor rights and legal origin.

An important consideration in interpreting our empirical results is the issue of self-selection. While the idea of self-selection is well-recognized in the industrial diversification literature (see, for example, Campa & Kedia, 2002), the issue is more complicated in the global diversification setting. Not only are we dealing with the basic choice of the firm to diversify or not, but if it chooses to diversify, whether to diversify across industries or across countries or both. In our empirical analysis, we take into account the self-selection issue and examine the robustness of our results.

Our main findings are: *First*, we document that global diversification enhances firm value, as measured by Tobin's q. Specifically, we find that firm value increases with foreign sales (measured as a fraction of the firm's total sales) even after we control for well-known

determinants of firm value. In contrast, we find no such evidence for industrial diversification. In fact, the overall evidence concerning industrial diversification in our sample is that it is value-destroying. *Second*, we find evidence in support of both the real and financial dimensions of multinationality. This finding adds a new dimension to the earlier work in this area that found evidence of only the real (and not financial) dimensions of multinationality, such as Morck and Yeung (1991). *Third*, we find that the valuation benefits from global diversification is higher if the firm diversifies into a country with creditor rights that are stronger than that of the United States. This finding is consistent with these firms being able to borrow at better terms in those countries than in the United States, and provides some evidence of the importance of the quality of corporate governance (as measured by the relative strength of creditor rights) as a channel for valuation effects associated with global diversification. *Finally*, our results are robust to controlling for the firm's endogenous choice to diversify across countries or across industries.

Overall, our results provide a unifying view that global diversification benefits are driven by both the real and financial dimensions. From a policy perspective, our results provide answers to the following important question: If the firm has economic reasons to diversify, is diversifying globally more value enhancing than diversifying across industries? Our evidence shows that such a firm is better off from a valuation perspective to diversify internationally rather than across industries.

The rest of the paper is organized as follows. First, we position our paper in the existing literature by way of a review and the value added by our study, followed by the description of the data and the selection of the sample. We next describe the testable hypotheses and discuss the empirical results. The final section provides concluding remarks, including a discussion of the policy implications of our findings.

RELATED LITERATURE AND POSITIONING OF THE PAPER

In this section, we provide a brief summary of the related literature. We first describe theories that provide testable predictions of firm value as a function of the degree of multinationality. We then summarize the empirical evidence and discuss the positioning of our paper.

Valuation Effects of Multinationality

We start with a brief review of the theories linking multinationality to firm value. We classify these theories based on whether they relate to the financial or the real dimensions of multinationality.

Financial dimension. A theory that focuses on the financial dimension of multinationality is the "Imperfect world capital markets" theory (see, Errunza & Senbet, 1981, 1984) and the references contained in those papers). This theory suggests that a multinational firm "completes markets" by providing its investors indirect access to countries subject to constraints on international capital flows, information asymmetries etc. In other words, multinational firms offer their shareholders such indirect international diversification opportunities and thereby increase the value of a multinational firm relative to that of a comparable non-multinational firm. In the context of the U.S., a publicly traded multinational firm incorporated in the U.S. offers U.S. investors indirect access to the multinational portfolio diversification.

Real dimension. There are two well-known theories that focus on the real dimension of multinationality with exactly opposite predictions of firm value. One relates to intangible assets, and another is based on agency theory.

According to the "Internalization" theory (see, Caves, 1971), a firm can increase its value by internalizing markets for certain of its intangible assets. These intangibles need to be based on proprietary information (i.e., cannot be exchanged at arm's length basis) and should have some characteristics of public goods (i.e., value enhanced in direct proportion to the scale of the firm's markets). Examples of such intangibles are R&D and advertising expenditures. The basic idea underlying this theory is that the firm can bypass these transaction difficulties by internalizing the markets for such assets. This theory predicts that multinational firms possess useful intangible assets, the value of which increases with the firms' degree of multinationality.

The "Managerial Objectives" theory (see, for example, Jensen & Meckling, 1976) suggests that the divergence of interests between managers and shareholders is larger in more complex organizations, such as multinationals. As a result, managers of such firms have more freedom to act in their own self-interest (such as, private benefits of control or perquisite consumption) at the expense of shareholders. For example, a manager may favor international diversification to reduce firm-specific risk, a goal that is of relatively little importance to the firm's shareholders. This divergence of interests between managers and shareholders will negatively affect the value of a multinational firm relative to that of a comparable firm that operates only in a single country.

Empirical Evidence from Prior Studies

Errunza and Senbet (1981, 1984) empirically test the "Imperfect world capital markets" theory using data from the 1970s. They find evidence consistent with the financial dimension of multinationality. That is, they document a positive relationship between firm value and the degree of multinationality.[2] Specifically, Errunza and Senbet (1981) find that "excess value" is significantly positively related to the degree of multinationality, as measured by the fraction of sales due to foreign subsidiaries. Errunza and Senbet (1984) confirm this

result using four different measures of multinationality.[3] However, they do not test for other theories that reflect the real dimension of multinationality. Our study differs from these studies in that it tests for the value implications related to both the financial and the real dimensions of multinationality.

Morck and Yeung (1991) conduct tests of theories of financial and real dimensions of multinationality. Based on a sample of 1,644 firms in 1978, they find strong evidence in favor of one of the theories relating to the real dimension of multinationality, namely the "Internalization" theory.[4] However, they find no support for the financial dimension of multinationality, namely the "Imperfect world capital markets" theory. Specifically, they find that the degree of multinationality of the firm is positively related to the market value of the firm, as measured by Tobin's q, and that this positive relation is dependent on the extent of a firm's research and development or advertisement spending. Moreover, they show that international diversification is not valued by investors in the absence of investment in intangibles. In addition, they find no support for the "Managerial Objectives" theory.

Our study is closely related to Morck and Yeung (1991) in that we also test for theories related to both the financial and real dimensions of multinationality. However, unlike their study, we find evidence in support of both the real and financial dimensions of multinationality: the "Imperfect world capital markets" and the "Internalization" theories.

Denis et al. (2002) follow the wide-spread view that industrial diversification is value destroying and is consistent with "Managerial objectives" theory, and they examine the same issue in the context of global firms. They document a diversification discount for global firms that are incorporated in the U.S. of the same order of magnitude as that of the discount of domestic (U.S.) firms diversifying across multiple industries.

There have been several subsequent studies have re-examined whether global diversification destroys firm value. In contrast to the results of Denis et al. (2002), there are several studies that show either a premium to diversifying internationally, or a statistically

insignificant discounts for global firms. Bodnar, Tang and Weintrop (1998) document a diversification premium of 1.4% for global firms, and provide evidence that this premium is related to the breadth of the multinational network and varies over time with the level of the exchange rate. Most importantly, they demonstrate that the diversification premium is sensitive to test design and show that differences in the controls for firm size are responsible for the difference between their results and that of other papers suggesting a significant discount to international diversification.[5]

More recently, Dos Santos, Errunza and Miller (2008) examine cross-border mergers and acquisitions of U.S. firms between 1990-2000. They find that acquisitions of "fairly valued" foreign business units do not lead to value discounts, and that unrelated acquisitions result in significant discounts. Furthermore, they show that significant wealth gains accrue to foreign target shareholders regardless of the type of acquisition. In a related study, Doukas and Lang (2003) present evidence that global diversification increases shareholder value and improves long-term performance when firms engage in core-related foreign direct investment (FDI), whereas FDI outside the core business is associated with a loss in shareholder value. Overall, these studies conclude that international diversification does not destroy value.

Our study is related to this literature in that we test for and find evidence in support of both the financial and real dimensions of multinationality. Although not the focus of our study, the relative importance of the financial and real dimensions of multinationality over different time periods and subsamples of firms could potentially explain the seemingly contradictory nature of empirical evidence on global diversification.

We next describe the empirical evidence from prior studies regarding the valuation effects of the quality of corporate governance. We then place our analysis in the context of the empirical evidence from prior studies.

Quality of Corporate Governance

The relatively few studies that examine the linkage between quality of corporate governance and the global diversification discount/premium are summarized here. Fauver, Houston and Naranjo (2003) examine a large dataset of more than 8,000 companies from 35 countries during 1991-1995 and find that the value of corporate diversification is related to the level of capital market development, international integration, and legal systems. In a related paper, Lins and Servaes (1999) document significant industrial diversification discounts for firms in Germany, Japan and the United States. They find that concentrated ownership in the hands of insiders enhances the valuation effect of diversification in Germany, but not in Japan or the United Kingdom. They conclude that international differences in corporate governance affect the impact of diversification discount on shareholder wealth.[6]

In our study, we analyze whether the corporate governance channel amplifies or ameliorates the valuation consequences of global diversification. As described in the introduction, we posit that poor country-level corporate governance reduces the valuation benefits from global diversification. For example, the beneficial role of indirect diversification provided by the multinational firms to its investors can be vastly reduced if the countries which the multinational firm diversifies into have poor country-level corporate governance. Specifically, we will test in our empirical analysis whether country level variables, such as creditor rights and common law enhance or dampen the valuation effects of globally diversified firms.

Self-selection

Campa and Kedia (2002) examine the self-selection issue in the context of industrial diversification. They find that the industrial diversification discount drops, and sometimes turns into a premium. The authors recommend explicitly modeling the endogeneity of the diversification status in analyzing its effect on firm value.

As stated in the introduction, the self-selection issue is more complicated in the global

diversification setting as compared to the industrial diversification setting. Not only are we dealing with the basic choice of the firm to diversify or not, but if it were to diversify, whether it chooses to diversify across industries or across countries or both.

In our study, we take into account the self-selection issue and examine the robustness of our results. We find that our results are qualitatively unchanged when we take into consideration that firms self-select whether or not to diversify industrially or globally.

DATA AND SAMPLE SELECTION

The accounting rules governing segment reporting require U.S. firms to report financial information for individual industrial and foreign segments that account for more than 10 percent of consolidated sales, profits, or assets.[7] Specifically, companies are required to disclose operating information (sales, operating profit, and assets) for their foreign operations if either revenue from foreign operations exceeds 10 percent of consolidated revenue, or foreign assets exceed 10 percent of consolidated assets. In addition, if the firm has significant foreign operations in more than one geographic area (i.e., more than 10 percent of revenue or assets in two separate foreign locations), then the firm must disclose the foreign operating information for each region separately.

Our primary sources of data are the annual Compustat database and the Compustat segment database which extends from 1994 to 2002 and contains 8,297 firms. We retain 7,233 firms which are incorporated in the U.S. We focus on U.S firms for the following reasons: *First*, it follows naturally from the "Imperfect world capital markets" theory which is one of the theories that we test in our empirical analysis. That is, we take the perspective of a multinational firm based in the U.S., and infer whether the multinational firm provides indirect access to foreign markets to its U.S. based equity investors. *Second*, it ensures an easier comparison of our results to previous studies, such as Denis et al. (2002), Morck and

Yeung (1991) and Errunza and Senbet (1981, 1984). *Finally*, it provides an easier interpretation of the results since the sample is derived from a single market. As we describe later, our sample exhibits significant richness in the cross-section of creditor protection regimes through a multinational firm's exposure to these markets.

We eliminate utilities and financial firms (SIC codes 4900-4999, and 6000-6999) resulting in 6,205 firms. We eliminate an additional 50 firms from the segment database because we did not find a matching CUSIP number in the annual Compustat database. We also eliminate firm-year observations if either of the following conditions hold: (a) sales are below 20 million dollars[8], or (b) if the sum of the company's segment sales is not within plus or minus one percent of the sales figure reported in the annual Compustat database[9]. The final sample contains 23,158 firm-year observations of 4,358 firms.

We create a panel dataset. That is, we use a firm-year rather than a firm-year-country structure[10] to ensure comparability of our results with that of previous studies which tend to use a firm-year structure.[11]

TESTABLE HYPOTHESES AND VARIABLES

In this section, we develop testable hypotheses regarding the financial (i.e., role of multinational companies in completing markets) and real (e.g., internalizing markets for intangible assets) effects of multinationality. We also formulate a testable hypothesis regarding the interaction of financial and real effects of global diversification with the quality of corporate governance in foreign countries. We then describe how we construct variables used in the empirical analysis, the results of which are presented in the next section.

Global Diversification

As we have reasoned previously, we expect that explanations based on the financial dimension and the real dimension driven by the level of certain intangible assets result in an increase in firm value from global diversification. In contrast, the real dimension explanation driven by managerial agency issues would result in a decrease in firm value with global diversification. We formalize them in terms of the following testable hypotheses.

> Hypothesis 1 *(Financial)*: The value of the firm is positively related to the extent to which it is globally diversified.

> Hypothesis 2 *(Real: Intangibles)*: The value of the firm is positively related to the extent to which it is globally diversified and has intangible assets.

> Hypothesis 3 *(Real: Agency)*: The value of the firm is negatively related to the extent to which it is globally diversified.

Quality of Corporate Governance

We examine the role of country level governance in affecting corporate behavior. We posit that poor corporate governance reduces the valuation benefits from global diversification. Depending on the source of such valuation benefits (e.g., the financial dimension or the real dimension), the corporate governance channel could be viewed as a financial effect or as a real effect. For example, the beneficial role of indirect diversification provided by the multinational firms to its investors can be vastly reduced if the countries which the multinational firm diversifies into have poor corporate governance. In the limit, if the corporate governance of such countries is really low, this could completely eliminate any valuation benefits

that could have otherwise accrued from the financial dimension of multinationality had the country level governance been good.

In particular, strong legal/creditor protection rights should matter most for multinational firms that diversify into foreign countries through physical investments in plant, property and equipment (resulting in foreign sales in those countries) or by sourcing debt or equity capital in those foreign countries. The reasons for this view are the better protection of collateral value of plant, property and equipment and the potential lowering of cost of capital afforded by strong legal/creditor protection rights.[12]

We hypothesize that the larger the diversification into countries with a higher quality of corporate governance, the larger the valuation effects for globally diversified firms should be. We formalize this hypothesis as follows:

> Hypothesis 4 *(Corporate Governance)*: The value of the firm is positively related to the extent to which it is globally diversified into countries with a higher quality of corporate governance.

We next provide a brief description of how we construct the variables that we use in our empirical analysis. See the Appendix for more details of how each variable is constructed.

Variables

Our dependent variable is Tobin's q. To test hypothesis 1 *(Financial)*, we follow Errunza and Senbet (1981). In particular, we measure multinationality as foreign sales, expressed as a fraction of total sales. We expect this coefficient to be positive after we control for other determinants of firm value.

Foreign sales / sales: Stands for foreign sales, as a fraction of total sales of the company. This variable ranges from zero to one. A higher value indicates that the firm is globally diversified.[13]

For robustness, we follow Errunza and Senbet (1984) and consider in the empirical results section two alternative measures of multinationality, namely an indicator variable that takes a value of one if the firm reports a foreign segment and zero otherwise, and a count variable of the number of global segments reported. We expect the coefficient of such variables measuring multinationality to be positive after we control for other well-known determinants of firm value which are described below. See the Appendix for more details of how each of these variables is constructed.

An indirect test of hypothesis 1 *(Financial)* is that we should see no increase in firm value if the firm diversifies industrially since there is no role for financial effects with industrial diversification. Analogous to our measure of multinationality, we construct a measure of industrial diversification. We expect this coefficient to be non-positive (i.e., zero or negative) after we control for other determinants of firm value.

Nonprimary sales / sales: Stands for sales in nonprimary SIC codes (i.e., total sales minus industry segment sales corresponding to primary SIC code), as a fraction of total sales of the company. This variable ranges from zero to one. A higher value indicates that the firm is industrially diversified.

To test hypothesis 2 *(Real: Intangibles)*, we follow Morck and Yeung (1991) and interact our measure of multinationality with that of intangible assets, such as R&D and advertising expenditures. That is, we interact foreign sales as a fraction of total sales with the level of R&D expenditure and advertising expenditure, each scaled by total sales.[14] We expect the

coefficients of these interaction terms to be positive after we control for other determinants of firm value.

To test hypothesis 3 *(Real: Agency)*, we examine the sign and magnitude of the coefficient of foreign sales. After we control for other determinants of firm value, a negative coefficient of foreign sales is supportive of managerial agency issues resulting in a destruction of firm value with increased globalization.

Finally, we interact creditor rights, measured on a relative basis vis-a-vis the United States[15] and common law (based on legal origin from La Porta et al. (1997)) with our measure of multinationality and use them as inference variables to test hypothesis 4 *(Corporate Governance)*. We expect these coefficients to be positive after we control for other determinants of firm value. Fauver et al. (2003) find in a multi-country large sample study that the value of diversification is related to the legal systems, capital market development and international integration.

We use the following control variables based on prior studies of diversification, e.g, Morck and Yeung (1991), Berger and Ofek (1995), and Denis et al. (2002). See the Appendix for a detailed description of how these variables are constructed.

Ln(capitalization): The natural logarithm of market capitalization of the firm.

Liabilities / assets: The ratio of long-term debt to total assets of the firm.

EBIT / sales: The ratio of earnings before interest and taxes and sales.

Capital expenditure / sales: The ratio of capital expenditures and sales.

R&D / sales: The ratio of R&D expenses and sales.

Advertisement / sales: The ratio of advertisement expenses and sales.

Firm that diversify, such as multinationals tend to be larger. Hence, we include the natural logarithm of the market capitalization of the firm to eliminate any effect solely due to firm size. A leverage variable (Liabilities/assets) is included to proxy for any variation

in firm values from differences in capital structure. Berger and Ofek (1995) demonstrate the importance of controlling for measures of profitability (EBIT) and growth opportunities (capital expenditure). We follow Morck and Yeung (1991) in controlling for R&D and advertising expenditures (as proxies for technical expertise and consumer goodwill respectively) and we expect them to be positively related to firm value.

EMPIRICAL RESULTS

We first present results related to global diversification, i.e., hypotheses 1 thru 3 as described in the previous section. We then examine whether our results are robust to the firm's choice to diversify globally or industrially. Finally, we present the evidence relating to the quality of corporate governance, i.e., hypothesis 4 as described in the previous section.

Global and Industrial Diversification

We start with univariate analysis, where we analyze whether the firm value, as proxied by the Tobin's q depends on the type of diversification (i.e., whether the firm is globally and/or industrially diversified). The results are presented in Table 1, and are consistent with a positive valuation effect of global diversification. Specifically, we find that the average Tobin's q of single-industry multinational[16] firms is higher at 2.172 as compared to 1.902 for single-industry domestic firms. The difference of 0.270 is statistically significant at the 1% level.

"Table 1 goes about here"

We find the same result for multi-industry global firms as compared to multi-industry domestic firms. That is, the average Tobin's q of multi-industry global firms is higher at 1.685 relative to 1.530 for multi-industry domestic firms. The difference of 0.155 is again

statistically significant at the 1% level. These results are consistent with hypothesis 1 *(Financial)* and hypothesis 2 *(Real: Intangibles)*. In our subsequent multivariate regression analysis, we will investigate which of these two explanations rationalize our findings.

While not the main focus of our study, Table 1 is also consistent with the diversification discount result that was documented in several earlier studies of industrial diversification (e.g., Lang & Stulz, 1994; Berger & Ofek, 1995), namely that domestic firms which diversify into multiple industries are less valuable than domestic firms that focus on a single industry. In other words, the average Tobin's q of multi-industry domestic firms is lower at 1.530 as compared to 1.902 for single-industry domestic firms, and the difference of -0.372 is statistically significant at the 1% level.

Since the univariate analysis does not control for firm characteristics, such as size, leverage, profitability etc., we next conduct multivariate analysis to further understand the sources of value enhancement from global diversification. Specifically, we run OLS regressions to examine how variables measuring industrial and global diversification, firm characteristics, and other control variables described in the testable hypotheses and variables section influence Tobin's q. The descriptive statistics of the variables used in the multivariate regression analysis are shown in Table 2.

"Table 2 goes about here"

The OLS regression results for our sample are presented in Table 3. Since our dataset is a panel dataset (i.e., has a firm-year structure) we control for clustering effects by firm in all the regressions.[17] In Model 1, we regress Tobin's q on proxies of global and industrial diversification, namely foreign sales and nonprimary sales, both measured as a fraction of total sales. We also include other control variables in these regressions that were described in the previous section. If hypothesis 1 *(Financial)* were to hold, we would expect the coefficient of foreign sales[18] to be positive and significant.

We find evidence consistent with the financial dimension of global diversification. The coefficient of foreign sales in Model 1 of Table 3 is 0.236 and is significant at the 1% level. This effect is also meaningful in economic terms. That is, all else equal, a 1% increase in foreign sales translates into a non-trivial increase of 0.13% in Tobin's q.[19] We also find that industrial diversification results in a value loss, as evidenced by the coefficient of nonprimary sales, as a fraction of total sales being negative and significant at the 1% level.

"Table 3 goes about here"

In Models 2, 3 and 4, we follow Morck and Yeung (1991) and test for the internalization theory (i.e., hypothesis 2 *(Real: Intangibles)*). We interact intangible assets such as R&D and advertisement expenditures (both scaled by sales) with our proxy for global diversification, and augment our Model 1 with these interactive variables. If hypothesis 2 *(Real: Intangibles)* were to hold, we would expect the coefficients of these interactive variables to be positive and significant. Moreover, if the value enhancement for global firms is due to the real dimension (i.e., internalizing markets for intangible assets) rather than due to the financial dimension (i.e., providing indirect access to markets that are otherwise inaccessible to investors), we would expect the coefficient of our proxy for global diversification (i.e., foreign sales) to become statistically insignificant. In fact, Morck and Yeung (1991) provide such evidence.

We find evidence consistent with the real dimension (internalization theory) of global diversification. The coefficient of R&D expenditures interacted with foreign sales (both measures scaled by total sales) is positive and statistically significant at the 1% level. Similarly, we find that the coefficient of advertisement expenditures interacted with foreign sales (both measures scaled by total sales) is positive and significant, albeit the level of statistical significance is lower (at 5% in Model 3 and 10% in Model 4) as compared to that of the R&D expenditures (at 1% in both Model 2 and Model 4). These effects are meaningful in economic terms. That is, all else equal, a 1% increase in R&D expenditures or in adver-

tisement expenditure at the average level of foreign sales translate into a 0.06% increase in Tobin's q.[20] Moreover, our estimates are in the similar ballpark as that can be inferred from the Morck and Yeung (1991) study.[21]

Interestingly, we find that the coefficient of foreign sales continues to be positive and statistically significant in Models 2, 3 and 4 of Table 3. This suggests that there is evidence in support of both the financial and real dimensions (based on intangible assets) of multinationality. These findings contrast with that of Morck and Yeung (1991) who find support only for the real dimension based on intangible assets − see Table 4 of their paper for details.

Overall, we find that global diversification enhances firm value, as measured by Tobin's q. Specifically, we find that firm value increases (both statistically as well as economically) with foreign sales (measured as a fraction of a firm's total sales) even after we control for other determinants of firm value. In contrast, we find evidence that industrial diversification is value-destroying. We also find evidence in support of both the real and financial dimensions of multinationality. We next conduct several tests to examine the robustness of these findings.

Changes in segment reporting. The accounting rules relating to segment reporting changed half-way through the sample period. The Statement of Financial Accounting Standards (SFAS) 131 defined in 1997 how segment data should be reported. Prior to this date, the governing standard was SFAS 14 which reflected a *line of business* approach, requiring that companies report information by industry and by geographic area. In contrast, SFAS 131 uses the *management approach*, requiring that external segment reporting should follow the same structure that management uses for internal reporting. The latter standard is intended to present to external readers the same information that management considers important in evaluating operations.[22]

To analyze the extent to which our results are influenced by the change in segment reporting rules, we augment the regressions in Table 3 with an indicator variable that takes

a value of one for post-1997 period (i.e., 1998-2002) where the segment reporting standard was SFAS 131 and zero for the pre-1997 (i.e., 1994-1997) where the segment reporting standard was SFAS 14.

"Table 4 goes about here"

We find that our results (reported in Table 4) are not materially influenced by the change in segment reporting rules. In particular, we find that the coefficient of foreign sales, and when interacted with R&D expenditures or advertising expenditures continue to be positive and statistically significant as in Table 3.

Industry effects. In this section, we investigate whether industry effects potentially influence our results. In particular, we adjust the dependent variable, Tobin's q, by subtracting the median Tobin's q for that industry. We construct the industry median Tobin's q based on the most disaggregated industry definition of the primary sic code for which we have at least five firms in that industry. For example, if we have fewer than five firms based on 4-digit sic code, we use the 3-digit, 2-digit and eventually 1-digit sic code in that order. The results, not reported separately in a table (but available upon request from the authors) are qualitatively unchanged.

Self-selection. An important consideration in interpreting our empirical results is the issue of self-selection. In this section, we take into account the self-selection issue by simultaneously considering two decisions of the firm to diversify: industrially (or not) and globally (or not). That is, we deal with not only the basic choice of the firm to diversify or not, as well as if the firm were to diversify, whether it diversifies across industries and/or across countries.

We run the regressions after including inverse Mills ratios associated with the selection equations that correspond to global diversification and industrial diversification. We use a

bivariate probit model with sample selection to control for self-selection (See, Greene (2008) for details). The results are tabulated in Table 5. For the sake of brevity, we only report the results for the regression equations in that table. However, we describe below the variables that we use in the selection equations.

"Table 5 goes about here"

The dependent variable in the first selection equation is a dummy variable which takes a value of 1 if a firm operates in only one country (U.S.), and zero otherwise. The dependent variable in the second selection equation is a dummy variable which takes a value of 1 if the firm operates in only one industry, and zero otherwise. The explanatory variables in the selection equations are the full set of control variables from Table 3, namely, the log of market capitalization, the ratio of liabilities to assets, and EBIT, capital expenditure, R&D expenditures and Advertising expenditures, all measured as a fraction of total sales. For the same reasons mentioned in the testable hypotheses and variables section, we view these variables as important determinants of the firm's decision to diversify industrially or globally.

The results in Table 5 are qualitatively unchanged. As an additional robustness check, we used several different specifications for the selection equations. For example, including subsets of the variables mentioned above. The results, not reported separately indicate that our results are robust to these specifications. Overall, we find evidence of both the financial and real dimensions of global diversification after we control for self-selection.

Diversification measures. In this section, we examine whether our results are robust to using two alternative measures of diversification. They are: (a) global dummy, an indicator variable that takes a value of one if the firm reports at least one non-U.S. segment, and zero otherwise, and (b) number of global segments, a numeric count variable of the number of

global segments reported by the firm. Specifically, we use one of the alternative measures at a time instead of the foreign sales variable in our regressions. For consistency purposes, we also replace the non primary sales variables with an equivalent alternative measure, i.e., the multi-industry dummy or the number of industry segments variable. See the Appendix for a description of how these variables are constructed.

The results, not reported separately in tables, show strong evidence in support of the real dimension (based on intangible assets) of multinationality. For example, the coefficients of the interactive variables of the multinationality measure and intangible assets, such as R&D expenditures or advertising expenses are positive and statistically significant in all the regression specifications that correspond to those in Table 3. However, the evidence regarding financial dimension is positive and statistically significant at the 5% level in two of the four regressions that correspond to those in Table 3.

The evidence presented so far is consistent with hypotheses 1 *(Financial)* and 2 *(Real: Intangibles)*. In other words, we find evidence of both the financial and real dimensions of multinationality. That is, firm value increases with the degree of multinationality either directly (financial dimension) or through its interaction with intangible assets (real dimension: intangibles). Overall, our evidence is consistent with a view that global diversification is value enhancing. In contrast, we find that industrial diversification appears to be value destroying.

We next analyze the influence of the quality of corporate governance, as measured by country-level variables. Specifically, we will focus on the role of creditor rights and common law on the valuation consequences of global diversification.

Corporate Governance Channel

In this section, we assess the influence of country variables identified earlier in the testable hypotheses and variables section. Specifically, we interact creditor rights (measured on a

relative basis vis-a-vis the United States) and common law variables with our measure of multinationality and augment the regression specification in Model 4 of Table 3 in a sequential manner.

The results are presented in Table 6. Model 1 of this table reproduces our earlier Model 4 from Table 3. This econometric specification provides a point of reference to analyze the influence of country variables on firm valuation attesting to the corporate governance channel of valuation consequences of global diversification.

"Table 6 goes about here"

We first add the creditor rights variable measured on a relative basis, particularly whether the creditor rights are stronger than that of the United States (see the Appendix for how this variable is constructed), interacted with foreign sales to the regression in Model 1. The results are shown under Model 2. Consistent with hypothesis 4 *(Corporate Governance)*, we find that the coefficient of the interactive creditor rights variable of 0.347 is positive and statistically significant at the 1% level. That is, when firms diversify into countries with stronger creditor rights (relative to the United States), they benefit from a higher valuation.[23]

We next add the interactive common law variable to the regression in Model 1. The results, presented in Model 3 reveal that while global diversification continues to be value-enhancing (coefficient 0.364, statistically significant at the 5% level), there is no additional valuation benefit from diversifying into common law countries.[24]

When we add both the country-level variables to the regression in Model 1 (see Model 4 of Table 6), we continue to find that when firms diversify into countries with creditor rights stronger than that of the United States[25], they benefit in terms of a higher firm valuation. This result is consistent with the Corporate Governance hypothesis.

CONCLUSIONS

This paper examines the effect of global diversification on firm value using a dataset of U.S. firms from 1994-2002. We explicitly control for the effect of industrial diversification in our analysis. We find that global diversification is generally value enhancing, whereas industrial diversification is not. Specifically, we find that the firm's Tobin's q increases with foreign sales (measured as a fraction of a firm's total sales) even after we control for well-known determinants of firm value. We find evidence of both financial and real effects driving such a value enhancement from global diversification. Thus, our results provide a unifying view that global diversification benefits are driven by both the real and financial dimensions.

One implication of our study is that if firms were to diversify, they should achieve valuation gains from diversifying globally than from diversifying industrially. Further more, if such diversification were channeled into countries with creditor rights stronger than that of the United States, the valuation gains are likely to be even larger.

In our study, we have focused on a U.S. based sample for numerous reasons. Whether one would get results similar to ours based on a broader sample of U.S. and non-U.S. multinationals is an interesting research question that represents a useful extension of our work.

NOTES

[1]Another synonym for corporate international diversification is geographic diversification. However, since "geographic" could imply both domestic as well as international dimensions, we do not use that term to avoid possible ambiguity.

[2]Errunza and Senbet (1981, 1984) use the term degree of international operations which we treat as being synonymous with the degree of multinationality.

[3]These four measures are: (a) Foreign sales percentage, (b) Number of foreign, i.e., non-U.S. subsidiaries, (c) Entropy measure of firm's geographical diversification, and (d) Absolute foreign sales, measured in dollars.

[4]In a related paper, Delios and Beamish (1999) claim that the observed positive relationship between geographic scope and performance is spurious because it is the possession of proprietary assets that is the foundation of superior performance, not expansion into international markets per se. They test this hypothesis with data on the corporate performance of 399 Japanese manufacturing firms, and demonstrate that geographic scope was positively associated with firm profitability, even when the competing effect of proprietary assets on firm performance was considered.

[5]For example, Doukas and Kan (2006) examine foreign direct investments and find that global diversification has a positive impact on bondholders' wealth while it has a negative influence on shareholder value. In a related study, Fauver, Houston and Naranjo (2004) find that international diversification has no effect on firm value for U.K. or German multinational firms, whereas it results in a diversification discount for U.S. multinational firms.

[6]Also, see Jiraporn, Kim, Davidson and Singh (2006) and Nam, Tang, Thorton and Wynne (2006) for evidence of the influence of shareholder rights and managerial compensation on firm value.

[7]See the empirical results section for segment reporting rule changes that occurred during

the sample period.

[8]To ensure comparability of our results with other studies, e.g., Bodnar et al. (1998), we impose this restriction to prevent potential distortions from small firms.

[9]The purpose of this restriction is to ensure that all firm sales have been allocated to individual business and global segments. See, Denis et al. (2002) who also use the same restriction.

[10]A simple example illustrates the difference between these two structures. If firm X reports three segments annually during each year in the sample period, a dataset based on the firm-year approach has one observation each year whereas a dataset based on the firm-year country approach has three observations each year.

[11]In addition, when we use a firm-year structure, it requires us to only correct for clustering effects by firm which we do in all our tables. This approach helps us avoid the econometric issues relating to simultaneously correcting for clustering effects by the firm and country had we chosen a firm-year-country structure for our dataset. See Petersen (2008) for an explanation of the size of resultant bias from not correcting for such simultaneous clustering.

[12]We thank two anonymous referees for these insights which have helped us sharpen the corporate governance hypothesis.

[13]Companies are not required to report under the accounting rules that relate to segment reporting whether their foreign sales are through a foreign subsidiary or not. Additionally, we inquired and verified with Standard & Poors' that there is no data item in the Compustat database that allows us to capture this distinction in foreign sales. As a result, we are unable to distinguish between these two forms of foreign sales in our empirical analysis.

[14]Morck and Yeung (1991) scale R&D expenditures and advertising expenditures by the level of tangible assets rather than by total sales as we do. Since we employ R&D expenditures and advertising expenditures, scaled by total sales as control variables (following more recent papers, such as Denis et al., 2002), we decided to interact these variables (rather than

create new ones scaled by the level of tangible assets) with our measure of multinationality.

[15]Since our sample consists of U.S. firms, we measure this variable relative to that of the United States. We thank an anonymous referee for the suggestion. See the Appendix for how this variable is constructed.

[16]We consider multinational firms and global firms synonymously.

[17]We thank an anonymous referee for drawing our attention to this econometric issue.

[18]For brevity, we refer to "foreign sales, measured as a fraction of total sales" simply as foreign sales.

[19]Given that the average Tobin's q is 1.877 (see Table 2), and the coefficient of foreign sales in Model 1 of Table 3 is 0.236, this implies an elasticity of 0.13 (=0.236/1.877). That is, a 1% increase in foreign sales results in a 0.13% corresponding increase in Tobin's q, which is the same as $0.01\times0.236/1.877$.

[20]Given that the average Tobin's q is 1.877 and the average level of foreign sales is 0.14 (see Table 2), and the coefficient of the interactive variable based on R&D expenditures in Model 4 of Table 3 is 0.806, this implies an elasticity of 0.06 ($=0.14\times0.806/1.877$). That is, a 1% increase in advertisement expenditure results in a 0.06% corresponding increase in Tobin's q purely from the interaction term, which is the same as $0.01\times0.14\times0.806/1.877$. A similar calculation based on the coefficient of the advertisement expenditures interactive variable in Model 4 shows an elasticity of 0.06 ($=0.14\times0.855/1.877$). That is, a 1% increase in advertisement expenditure results in a 0.06% corresponding increase in Tobin's q purely from the interaction term, which is the same as $0.01\times0.14\times0.855/1.877$.

[21]A calculation similar to the one in footnote 20 based on data from Table 1 and Table 5 (column 1) of Morck and Yeung (1991) study yields an increase in q of 0.14% for a 1% increase in R&D spending, and a 0.24% increase in q for a 1% increase in advertising expenditures from the interaction terms. We need to be cautious in drawing anything more than our estimates being in the similar ballpark to theirs since the regression specifications are not

exactly identical.

[22]See Huefner et al. (2005), Module D for an excellent discussion of the accounting standards underlying segment reporting.

[23]One possible explanation for the higher firm valuation is that these firms were able to borrow on better terms in those countries than in the United States. We thank an anonymous referee for this insight.

[24]Our evidence differs from that of Fauver et al. (2003), possibly due to the latter study using data from a different time period (1991-1995). In the spirit of the Fauver et al. (2003) study, we examined several country-level proxies based on the level of economic and financial development, such as a weighted GDP per capita (the weights being the sales in that country as a fraction of total sales), trade openness (i.e., the ratio of imports to GDP), accounting standards, corruption, and efficiency of judicial system. The only variable from this set, which when interacted with our measure of multinationality that was statistically significantly related to firm value was the weighted GDP per capita. Results that include the weighted GDP per capita are available from the authors upon request.

[25]We also used antidirector rights of La Porta et al. (1997), which has subsequently been revised by Spamann (2008), as well as the more recent anti self dealing index of Djankov et al. (2008) interacted with our measure of multinationality in lieu of interactive creditor rights variable in Table 6. However, none of these variables were significant at the usual 5% level.

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Table 1
Firm Value and Type of Diversification

This table provides a comparison of Tobin's q based on the type of diversification. The sample consists of 23,158 firm-year observations between 1994 and 2002. Firms are classified as multi-industry (i.e., industrially diversified) if they report more than one business segment on Compustat's Industry Segment File and as single-industry otherwise. Firms are classified as multinational (i.e., globally diversified) if they report more than one geographic segment on Compustat's Geography Segment File and as domestic otherwise. The number of observations are shown in parentheses. Differences in sample means are measured using a standard two-tailed t-test, and superscript a denotes statistical significance at the 1% level.

	Single-industry (1)	Multi-industry (2)	Difference (2) - (1)
Domestic (3)	1.902 (9,799)	1.530 (3,405)	-0.372[a]
Multinational (4)	2.172 (5,847)	1.685 (4,107)	-0.487[a]
Difference (4) - (3)	0.270[a]	0.155[a]	

Table 2
Descriptive Statistics

This table provides the descriptive statistics for the sample of 23,158 firm-year observations over the period 1994-2002. See the Appendix for a description of how these variables are constructed.

Variable	Mean	Median	Std. Dev.
Tobins q	1.877	1.424	1.359
Global dummy = 1 if the firm reports at least one non-U.S. segment	0.430	0.000	0.495
Multi-industry dummy = 1 if the firm reports two or more industry segments	0.324	0.000	0.468
Number of global segments	2.073	1.000	1.655
Number of industry segments	1.655	1.000	1.146
Foreign sales / sales	0.140	0.000	0.224
Nonprimary sales / sales	0.225	0.000	0.385
Creditor rights dummy	0.187	0.000	0.390
Common law	0.960	1.000	0.128
Ln(capitalization)	5.665	5.532	1.955
Liabilities / assets	0.541	0.504	0.384
EBIT / sales	-0.652	0.060	33.519
Capital expenditure / sales	0.171	0.039	3.663
R&D / sales	0.203	0.000	6.593
Advertisement / sales	0.018	0.000	0.914
Observations		23,158	

Table 3: Financial and Real Dimensions of Global Diversification

This table presents the OLS estimates of linear regression models for a sample of 23,158 firm-year observations during 1994-2002. The dependent variable is Tobin's q. The independent variables include variables that measure the financial and real dimensions of global diversification and other control variables used in the previous literature − see the Appendix for definitions of these variables. Robust t-statistics based on White's (1980) variance-covariance matrix that corrects for clustering of firm effects are shown in parentheses. Superscripts a, b, and c denote statistical significance at the 1%, 5% and 10% levels using a two-tailed test.

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	0.735	0.705	0.737	0.707
	(13.54)^a	(12.95)^a	(13.60)^a	(13.01)^a
Foreign sales / sales	0.236	0.127	0.221	0.119
	(3.56)^a	(1.83)^c	(3.34)^a	(1.73)^c
Nonprimary sales / sales	-0.628	-0.618	-0.627	-0.617
	(-19.66)^a	(-19.39)^a	(-19.65)^a	(-19.39)^a
Foreign sales / sales × R&D/sales		0.830		0.806
		(3.74)^a		(3.58)^a
Foreign sales / sales × Advertisement/sales			1.237	0.855
			(2.35)^b	(1.89)^c
Ln(capitalization)	0.174	0.177	0.174	0.176
	(18.65)^a	(18.93)^a	(18.67)^a	(18.94)^a
Liabilities / assets	0.059	0.070	0.057	0.069
	(0.80)	(0.95)	(0.78)	(0.93)
EBIT / sales	0.000	0.000	0.000	0.000
	(0.06)	(0.03)	(-0.06)	(-0.06)
Capital expenditure / sales	-0.003	-0.003	-0.004	-0.004
	(-1.46)	(-1.50)	(-1.63)	(-1.62)
R&D / sales	0.006	0.006	0.006	0.005
	(1.73)^c	(1.66)^c	(1.70)^c	(1.64)
Advertisement / sales	0.051	0.049	0.045	0.045
	(1.22)	(1.22)	(1.17)	(1.18)
Year dummies	yes	yes	yes	yes
Adjusted R^2	0.0912	0.0943	0.0915	0.0945
Number of observations	23,158	23,158	23,158	23,158

Table 4: Financial and Real Dimensions of Global Diversification
(Controlling for a Change in Segment Reporting Standards during Sample Period)

This table presents the OLS estimates of linear regression models for a sample of 23,158 firm-year observations during 1994-2002. The dependent variable is Tobin's q. The independent variables include variables that measure the financial and real dimensions of global diversification, a reporting dummy variable that takes a value of one during 1998-2002 (and zero otherwise) to control for a change in segment reporting standards during the sample period, and other control variables used in the previous literature − see the Appendix for definitions of these variables. Robust t-statistics based on White's (1980) variance-covariance matrix that corrects for clustering of firm effects are shown in parentheses. Superscripts a, b, and c denote statistical significance at the 1%, 5% and 10% levels using a two-tailed test.

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	1.037	1.025	1.039	1.027
	(18.95)^a	(18.78)^a	(19.02)^a	(18.83)^a
Foreign sales / sales	0.236	0.127	0.221	0.119
	(3.56)^a	(1.83)^c	(3.34)^a	(1.73)^c
Nonprimary sales / sales	-0.628	-0.618	-0.627	-0.617
	(-19.66)^a	(-19.39)^a	(-19.65)^a	(-19.39)^a
Foreign sales / sales × R&D/sales		0.830		0.806
		(3.74)^a		(3.58)^a
Foreign sales / sales × Advertisement/sales			1.237	0.855
			(2.35)^b	(1.89)^c
Ln(capitalization)	0.174	0.177	0.174	0.176
	(18.65)^a	(18.93)^a	(18.67)^a	(18.94)^a
Liabilities / assets	0.059	0.070	0.057	0.069
	(0.80)	(0.95)	(0.78)	(0.93)
EBIT / sales	0.000	0.000	0.000	0.000
	(0.06)	(0.03)	(-0.06)	(-0.06)
Capital expenditure / sales	-0.003	-0.003	-0.004	-0.004
	(-1.46)	(-1.5)	(-1.63)	(-1.62)
R&D / sales	0.006	0.006	0.006	0.005
	(1.73)^c	(1.66)^c	(1.70)^c	(1.64)
Advertisement / sales	0.051	0.049	0.045	0.045
	(1.22)	(1.22)	(1.17)	(1.18)
Reporting dummy	-0.302	-0.321	-0.303	-0.320
	(-9.67)^a	(-10.26)^a	(-9.68)^a	(-10.25)^a
Year dummies	yes	yes	yes	yes
Adjusted R^2	0.0912	0.0943	0.0915	0.0945
Number of observations	23,158	23,158	23,158	23,158

Table 5: Financial and Real Dimensions of Global Diversification (Corrects for Self-Selection)

This table presents sample selection models for a sample of 23,158 firm-year observations during 1994-2002. The dependent variable of the regression equation is Tobin's q. The independent variables include variables that measure the financial and real dimensions of global diversification and other control variables used in the previous literature − see the Appendix for definitions of these variables. To control for self-selection, we include inverse Mills ratios from a bivariate probit model determining the dual choice of global and industrial diversification in the regression equation. Robust t-statistics based on White's (1980) variance-covariance matrix that correct for clustering of firm effects are shown in parentheses. Superscripts a, b, and c denote statistical significance at the 1%, 5% and 10% levels using a two-tailed test.

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	0.761	0.731	0.763	0.734
	$(21.28)^a$	$(20.38)^a$	$(21.33)^a$	$(20.43)^a$
Foreign sales / sales	0.271	0.155	0.254	0.147
	$(5.09)^a$	$(2.83)^a$	$(4.75)^a$	$(2.67)^a$
Nonprimary sales / sales	-0.365	-0.370	-0.364	-0.369
	$(-9.45)^a$	$(-9.61)^a$	$(-9.42)^a$	$(-9.58)^a$
Foreign sales / sales × R&D/sales		0.783		0.759
		$(8.51)^a$		$(8.19)^a$
Foreign sales / sales × Advertisement/sales			1.242	0.884
			$(3.25)^a$	$(2.30)^b$
Ln(capitalization)	0.164	0.167	0.164	0.167
	$(34.56)^a$	$(35.09)^a$	$(34.52)^a$	$(35.03)^a$
Liabilities / assets	0.047	0.058	0.045	0.056
	$(2.09)^b$	$(2.56)^b$	$(2.02)^b$	$(2.50)^b$
EBIT / sales	0.000	0.000	0.000	0.000
	(0.17)	(0.11)	(-0.05)	(-0.05)
Capital expenditure / sales	-0.003	-0.003	-0.003	-0.003
	(-1.14)	(-1.16)	(-1.25)	(-1.24)
R&D / sales	0.006	0.006	0.006	0.006
	$(3.33)^a$	$(3.17)^a$	$(3.17)^a$	$(3.07)^a$
Advertisement / sales	0.052	0.051	0.046	0.047
	$(2.10)^b$	$(2.05)^b$	$(1.86)^c$	$(1.88)^c$
λ_{global}	-0.056	-0.056	-0.056	-0.057
	$(-3.30)^a$	$(-3.36)^a$	$(-3.35)^a$	$(-3.40)^a$
$\lambda_{industry}$	0.124	0.120	0.125	0.120
	$(6.60)^a$	$(6.37)^a$	$(6.63)^a$	$(6.40)^a$
Year dummies	yes	yes	yes	yes
Adjusted R^2	0.0940	0.0968	0.0944	0.0969
Number of observations	23,158	23,158	23,158	23,158

Table 6: Quality of Corporate Governance

This table presents the OLS estimates of linear regression models of Tobin's q on variables measuring the financial and real effects of global diversification, interactive country variables proxying for the quality of corporate governance, and other control variables described in the Appendix. Robust t-statistics based on White's (1980) variance-covariance matrix that corrects for clustering of firm effects are shown in parentheses. Superscripts a, b, and c denote statistical significance at the 1%, 5% and 10% levels using a two-tailed test.

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	0.707	0.709	0.707	0.709
	(13.01)^a	(13.06)^a	(13.02)^a	(13.06)^a
Foreign sales / sales	0.119	-0.084	0.364	0.026
	(1.73)^c	(-0.98)	(2.50)^b	(0.15)
Nonprimary sales / sales	-0.617	-0.617	-0.614	-0.616
	(-19.39)^a	(-19.41)^a	(-19.21)^a	(-19.28)^a
Foreign sales / sales x R&D/sales	0.806	0.793	0.786	0.787
	(3.58)^a	(3.60)^a	(3.54)^a	(3.57)^a
Foreign sales / sales x Advertisement/sales	0.855	0.936	0.794	0.906
	(1.89)^c	(2.11)^b	(1.76)^c	(2.03)^b
Foreign sales / sales x Creditor rights dummy		0.347		0.317
		(3.55)^a		(3.07)^a
Foreign sales / sales x Common Law			-0.330	-0.124
			(-1.96)^b	(-0.70)
Ln(capitalization)	0.176	0.177	0.177	0.177
	(18.94)^a	(19.02)^a	(19.04)^a	(19.04)^a
Liabilities / assets	0.069	0.071	0.069	0.071
	(0.93)	(0.97)	(0.93)	(0.97)
EBIT / sales	0.000	0.000	0.000	0.000
	(-0.06)	(-0.06)	(-0.06)	(-0.06)
Capital expenditure / sales	-0.004	-0.004	-0.004	-0.004
	(-1.62)	(-1.62)	(-1.63)	(-1.63)
R&D / sales	0.005	0.005	0.005	0.005
	(1.64)	(1.64)	(1.64)	(1.64)
Advertisement / sales	0.045	0.045	0.045	0.045
	(1.18)	(1.19)	(1.18)	(1.19)
Year dummies	yes	yes	yes	yes
Adjusted R^2	0.0945	0.0955	0.0948	0.0955
Number of observations	23,158	23,158	23,158	23,158

Appendix
Variable Definitions

Measures of Multinationality	
Foreign sales / sales	Estimated as the sum of non-U.S. segment sales divided by net sales of the firm. Source: Compustat segment files.
Global dummy	An indicator variable that takes a value of one if the firm reports at least one non-U.S. segment, and zero otherwise. Source: Compustat segment files.
Number of global segments	Number of global segments reported by the firm. Source: Compustat segment files.
Measures of Real Effects (Intangibles)	
Foreign sales / sales × R & D / sales	Created by interacting Foreign sales / sales and R & D / sales variables. See measures of multinationality and firm-specific variables for details of how these individual variables are constructed. Source: Compustat segment and annual files.
Foreign sales / sales × Advertising / sales	Created by interacting Foreign sales / sales and Advertising / sales variables. See measures of multinationality and firm-specific variables for details of how these individual variables are constructed. Source: Compustat segment and annual files.
Measures of Industrial Diversification	
Nonprimary sales / sales	Estimated as sales minus primary segment sales. The primary segment is the segment where the business segment SIC code equals the primary SIC code in the company segment file. If we do not find a match, the segment with the largest sales becomes the primary segment. Source: Compustat company segment and business segment files.
Multi-industry dummy	An indicator variable that takes a value of one if the firm reports two or more industry segments, and zero otherwise. Source: Compustat business segment files.
Number of industry segments	Number of industry segments reported by the firm. Source: Compustat business segment files.

Appendix
Variable Definitions
(Continued)

Country-level Corporate Governance Variables	
Foreign sales / sales × Creditor rights dummy	Created by interacting Foreign sales / sales and Creditor rights dummy. The Creditor rights dummy variable measures whether the countries into which the firm has diversified have stronger creditor rights relative to that of the United States. We construct this variable as follows: For each firm-year, we calculate the weighted average of the creditor rights variable across all countries in which the firm has foreign sales, the weights being sales in that country as a fraction of the firm's total sales during the same year. If this weighted average is larger than one (since the creditor rights variable for United States is one), the Creditor rights dummy variable takes a value of one and zero otherwise. The creditor rights data (scale of 0-4, with a higher value indicating stronger creditor rights) used in constructing the Creditor rights dummy variable is from La Porta et. al. (1997).
Foreign sales / sales × Common law	Created by interacting Foreign sales / sales and Common law variables. We construct the latter variable as follows: For each firm-year, we calculate the weighted average of the common law variable across all the countries in which the firm has foreign sales, the weights being sales in that country as a fraction of the firm's total sales during the same year. The common law variable is from La Porta et al. (1997) and is defined as 1 if the laws are modeled on English law and 0 otherwise.
Firm Specific Variables	
Ln (capitalization)	The natural logarithm of market capitalization of the firm. It is estimated as total assets (item 6) plus market capitalization (stock price at fiscal year end (item 199) times common shares outstanding (item 25)) minus common equity (item 60) minus deferred taxes (item 74). Source: Compustat annual files.
Liabilities / assets	The ratio of total liabilities (item 181) to total assets (item 6). Source: Compustat annual files.
EBIT / sales	The ratio of earnings before interest and taxes and sales. It is estimated as operating income after depreciation (item 178) divided by net sales (item 12). Source: Compustat annual files.
Capital expenditure / sales	The ratio of capital expenditures (item 128) and net sales (item 12). Source: Compustat annual files.

Appendix
Variable Definitions
(Continued)

Firm Specific Variables (Continued)	
R&D / sales	The ratio of R&D expenses (item 46) and net sales (item 12). If item 46 was coded by Compustat as not available or insignificant, we assigned a zero value to this variable. Source: Compustat annual files.
Advertisement / sales	The ratio of advertising expenses (item 45) and net sales (item 12). If item 45 was coded by Compustat as not available or insignificant, we assigned a zero value to this variable. Source: Compustat annual files.