Do US Multinationals Differ from Non-US Multinationals in Value Creation?

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Abstract

Using a sample of domestic and multinational conglomerates from four countries, this paper shows that the value impact of corporate diversification is not uniform across countries. The evidence shows that smaller countries like Germany, Japan, and the UK have a larger proportion of multinational conglomerates because multinational conglomerate diversification does not destroy value. These results contradict previous literature, which primarily focuses on US firms. In particular, though industrially diversified firms are valued at a discount in the US, they are valued at a premium in Germany and when multinational conglomerate diversification is taken into account this premium disappears. These results suggest that the value of corporate diversification is related to the size of the country and its institutional framework.

Introduction

The theoretical literature highlights the importance of host-country, home-country, and industry effects on the motivation and performance of multinational investment. The empirical literature on value creation and foreign direct investment (FDI), however, has either focused on US-based multinational enterprises (MNEs), and ignored the industry mix of FDI. Since many MNEs are both industrially and internationally diversified, it is important to consider the impact of industrial diversification, international diversification, and their interaction.

Institutional structure and corporate governance vary across MNE host countries. La Porta et al (1999) find that the widely held ownership structure of the typical US firm is quite uncommon for large corporations outside the US, which have a substantial family or state ownership stake. There is also a wide variation in the number of multinationals across countries, which suggests that multinationals in different countries do not have the same motives for diversification. Consequently, it may not be appropriate to assume that diversification discounts observed in the US are also the norm elsewhere.

This paper examines the link between international diversification or FDI and value creation in four of the largest home-countries for multinational investment – Germany, Japan, the UK, and the US. The focus here is on the interaction between industrial and international diversification and value. While industrial diversification and international diversification have been examined separately, the interaction between these forms of diversification has not been previously examined in the literature.

Several concerns exist with respect to the diversification literature. Recent papers have found that conglomerates destroy value.[1] There is conflicting evidence also showing a global diversification discount for US multinationals.[2] Further, the literature controls for industry effects but ignores country or interaction effects.[3] Much of the diversification literature does not examine multinational conglomerates though they are some of the largest firms with substantial economic impact and most of the evidence is limited to US firms.

This paper not only expands the sample beyond US borders but also addresses some of the limitations in the literature. The methodology used in this paper controls for both industry and country effects separately and together in order to remove any confounding of the two effects. This is not possible with the standard Berger and Ofek (1995) methodology.[4] The interaction between multinational and industrial diversification is also examined.

The results support the international business theoretical literature in throwing doubt on the applicability of US results to the rest of the world. While US results are consistent with previous literature, the impact of industrial, international, and multinational conglomerate diversification is not uniform across the four countries in the sample. First, the impact of industrial diversification is not negative in all countries, *e.g.*, industrially diversified firms in Germany trade at a premium (consistent with Lins and Servaes (1999)). Second, the impact of

[1] Berger and Ofek (1995), Lang and Stulz (1994), Lins and Servaes (1999). More recent evidence shows that firms choose to diversify across different lines of business and the industrial diversification discount disappears when one accounts for this self-selection bias (Campa and Kedia (2002)).

[2] Christophe and Pfeiffer (1998), Click and Harrison (2000), and Denis, Denis, and Yost (2002)

[3] Fauver, Houston, and Naranjo (2003), and Denis, Denis, and Yost (2002) control for interaction effects. They do not control for country or regional effects. These papers are discussed in more detail in the literature review.

[4] Data reporting constraints limit the scope of the analysis with the Berger and Ofek methodology, *i.e.*, firms do not report sales by product segment in each country of operation. Hence it is not possible to construct a benchmark portfolio of firms in the same multiple industry segments and country segments as the multinational conglomerate.

geographic diversification is not always positive, *e.g.*, German and Japanese firms are negatively impacted by international diversification. Third, multinational conglomerates trade at a premium in Germany and Japan. The smaller countries in the sample like Germany, Japan, and the UK have a much larger proportion of conglomerates (ranging from 42 to 58 percent of the sample) compared to the US (29 percent).

It appears that successful firms in these countries are forced to diversify internationally either due to the lack of domestic opportunities for expansion or alternatively to leverage their proprietary assets.[5] The evidence in this paper is also consistent with the Hitt, Hoskisson, and Kim (1997) argument that experience with product diversification builds managerial capabilities that allow effective international management which consequently enables multinationals to perform better. Tallman and Li (1996) also suggest that early product diversification focuses on highly related product markets so they are able to capture the synergies (Geringer et al (1989), Rumelt (1974)) followed by international expansion to exploit economies of scale.

The paper is organized as follows. The first section reviews some of the prior literature on diversification and multinational investment. The next section describes the data. Next, the methodology is discussed. Then the paper presents the results and a discussion of the results. The final section concludes.

Why do Firms Diversify? A Literature Review

Theory

There is a vast literature on the costs and benefits of diversification based on market imperfections and transactions cost theory. The arguments about the benefits from diversification

[5] Dastidar (2003) finds that firms with an increased probability of diversifying internationally are likely to have higher values in Germany and the UK.

predict that diversification has a positive impact on firm value. Stulz (1990) argues that diversified firms create larger internal capital markets and thereby reduce the underinvestment problem suggested by Myers (1977). Diversified firms are also predicted to have greater debt capacity than stand-alone firms because their cash flows are imperfectly correlated. Therefore, diversified firms have less incentive to forego positive NPV projects than stand-alone firms. Further, diversified firms may have higher values than non-diversified firms due to winner-picking by headquarters, *i.e.*, the creation of value by actively reallocating scarce resources across projects (Stein (1997)). These arguments apply equally to firms that are diversified across product lines and those that are diversified across national borders since they do not distinguish between related and unrelated diversification.

However, diversification also has its disadvantages based on agency cost theory. Jensen (1986) argues that excess free cash flow could result in managers undertaking projects that do not increase shareholder wealth. Since diversified firms have larger internal capital markets, they are also likely to generate more free cash flow than single-segment firms. Further, the internal capital markets hypothesis could imply cross-subsidization of poorly performing segments by better-performing segments. Another argument refers to information asymmetries within the diversified firm. Since information is more dispersed, this could result in incentive misalignment of central and divisional managers, thereby making such firms less profitable than their separate lines of business (Berger and Ofek (1995)). The flip side of the winner-picking argument mentioned earlier (Stein (1997)) is loser-sticking, *i.e.*, forcing some projects to get lower funding than they could obtain as stand-alones[6]. Rummelt (1974) suggest that managers operating in an unprofitable industry go for product diversification to improve prospects. Part of the search

[6] Shin and Stulz (1998) find that investment of smaller divisions is strongly related to cash flows of other divisions.

process to improve prospects could be to go into unrelated industries (Chang (1992) so firms competing in less attractive industries have higher levels of product diversification (Delios and Beamish (1999). Again, many of these arguments apply equally to firms that are diversified across product lines and those that are diversified across national borders.

In addition to the above advantages and disadvantages, multinational corporations (MNCs) have additional benefits and costs originating from their geographic diversification. Internationally diversified firms could benefit by internalizing the market for information-based assets or proprietary assets (Dunning (1973); Buckley and Casson (1976); Rugman (1981); Caves (1971, 1996)). The market for these assets is imperfect in that they are difficult to sell and the diversified firm internalizes the market for these assets. Errunza and Senbet (1981, 1984) and Kogut (1983) suggest that MNCs are able to exploit differences in product and factor markets, international taxation, and financial markets which enable them to extract higher rents than those achieved by local competitors. These higher rents then allow multinationals to develop the proprietary assets (Kobrin (1991)) and innovation (Kotabe (1990)) needed to consolidate their competitive advantage. Multinationals must use existing assets but also develop new ones to enter into new markets (Hennart and Park (1993)), they can use existing proprietary assets from multiple markets to apply to new market (Kogut and Chang (1991), Porter (1985)), all of which increases with geographic scope and has become particularly relevant in the 90s (Dunning (1998)). Diversifying across borders also decreases the variability or risk of the firms' revenue streams (Hisey and Caves (1985), Kim Hwang, and Burgers (1993)). Some of the costs associated with international diversification include significant barriers to coordination across countries (Sundaram and Black (1992)), which in turn increase information processing demands.

Further, individual investors are able to diversify internationally with the increasing integration of international capital markets at a lower cost relative to firms. In the face of such capital market integration is corporate diversification relevant?

Consequently, based on the theoretical arguments mentioned above, it is not clear that industrial or international diversification should have a positive or a negative effect on firm value. Further, it is also not clear what the interaction effect of industrial and international diversification should be for multinational conglomerates. This is primarily an empirical question.

Empirical Evidence

As mentioned in the introduction, there exists substantial evidence on the negative impact of industrial diversification on firm value. Firms that diversify across product lines are poor performers relative to firms that do not (Lang and Stulz (1994), Berger and Ofek (1995), Hitt, Hosskisson, and Kim (1997)).

However, many MNCs are both internationally and industrially diversified. The empirical evidence on firms that diversify across national borders shows a positive impact (Errunza and Senbet (1981, 1984)). They find that the current degree of international involvement (foreign income based on sales) is positively related to excess value.[7] Bodnar, Tang, and Weintrop (1999)

[7] Errunza and Senbet (1981, 1984) also find that the relationship between firm value and degree of international involvement is stronger during the period with greater restrictions on capital flows. This suggests that MNCs also provide a vehicle for international portfolio diversification. However, given greater capital market integration over the past decade, this advantage is perhaps of lesser importance today as suggested by the results in Dastidar (2003). She finds that multinational firms in the U.K. and the US are valued no differently than an international benchmark portfolio, implying that multinationals are not worth more than the sum of their parts and that investors could replicate the multinational by investing in single-segment firms located in the regions where the multinational operates.

show that multinational firms suffer less from industrial diversification than domestic firms. They suggest that the industrial diversification discount, based on the widely used Berger and Ofek (1995) methodology, is overstated when one does not account for geographic diversification.[8] Several studies have found a positive relationship between international diversification and profitability (Grant (1987); Grant et al. (1988); Buhner (1987); and Kim et al. (1989)). Other studies find that US bidders gain from industrial and international diversification by focusing on acquisitions (Doukas and Travlos (1988) and Doukas (1995)). This suggests that MNCs are likely to be successful and have higher firm values. Doukas and Lang (2003) find that geographic diversification increases shareholder value when firms engage in related international greenfield investments. However, recent papers by Christophe and Pfeiffer (1998); Click and Harrison (2000); and Denis, Denis, and Yost (2002) a find that global diversification reduces shareholder value. Hitt, Hoskisson, and Kim (1997) argue that the reason for the mixed results is because the relationship is more complex i.e. non-linear. As firms expand more internationally the costs begin to outweigh the benefits creating a curved relationship between internationalization and firm performance.

The evidence discussed thus far is mainly for US firms. In the international sphere, Lins and Servaes (1999) investigate industrial diversification discounts in Germany, Japan, the UK, and the US. They find that Germany has no significant diversification discount but it is measured imprecisely because of the small sample. UK has a discount similar to the US and Japan's discount is significantly lower. However, they do not control for geographic diversification.[9] Fauver, Houston, and Naranjo (2003) do control for geographic diversification and find no

[8] Bodnar, Tang, and Weintrop (1998) do not isolate the impact of multinational conglomerates.
[9] Delios and Beamish (1999) also find an industrial diversification discount in Japan. They do not control for geographic diversification.

premium or discount in Germany and a discount in Japan, the UK, and the US for industrial diversification. They also find a discount in Germany and premium in Japan and the US for geographic diversification. They calculate the diversification discount relative to a domestic benchmark (controls for industry effects) and an international benchmark (controls for country effects). They do not control for interaction effects, which would be particularly relevant for multinational conglomerates. This study simultaneously controls for both effects as well as the interaction effect.[10]

In summary, the literature provides both positive and negative reasons for industrial and geographic diversification and it is an empirical question as to whether the benefits outweigh the costs or *vice versa*. Further, industrial and geographic diversification could have opposing or complementary effects for multinational conglomerates. This paper looks at how investors value industrial and international diversification and its interaction for a sample of German, Japanese, UK, and US firms.

Data

Data are obtained from the Worldscope database for the period from 1990 to 1998. Since data on geographic segments are primarily available from 1990 onwards, this sample period is chosen to maximize the number of firms with international data. The sample includes 896 firm years in Germany, 7,513 in Japan, 1,325 in the UK, and 6,412 firm years in the US. Accounting and market capitalization data are obtained from Datastream. Firms that are excluded from the sample include: firms with two-digit SIC codes between 40 and 49 (utilities) and 60 and 69

[10] Denis, Denis, and Yost (2002) control for interaction effects but their sample is limited to the US.

(financial firms) (Source: Worldscope); firms with negative or zero segment sales;[11] firms where the sum of the segment sales is less than 90 percent of the total sales reported for the firm; firms with total assets less than 100,000, and firms with missing market value data or no match on Datastream. The final sample includes 16,146 firm years.

The sample is then broken down by country and type of diversification (Table 1). Firms are considered industrially diversified if they have multiple segment sales at the two-digit SIC code level and are considered geographically diversified if they have regional sales in addition to domestic sales. The five regions for the sample include: Asia and Pacific Region; Europe; NAFTA countries (the US, Canada, and Mexico); the Rest of the World; and domestic sales. Firms in the sample could be single-segment firms, geographically diversified firms, industrially diversified firms, or both.

	Internationally Diversified	Not Internationally Diversified
Industrially Diversified	Multinational Conglomerate (1,1)	Local Conglomerate (1,0)
Not Industrially Diversified	Pure Multinational (0,1)	Single Segment Local Firm (0,0)

The usual method adopted by most papers that use the Lang and Stulz (1994) or the Berger and Ofek (1995) excess value measure lumps the purely domestic firms with those that are single-industry but geographically diversified, and also combines the sample of the conglomerates with the international conglomerate sample. These samples consider industrial diversification only and do not take geographic diversification into account. The sub-sample of industrially diversified firms (1,0) together with the sub-sample of industrially and geographically diversified firms – multinational conglomerates (1,1) may be considered the

[11] Negative sales are usually classified as adjustments, consolidation adjustments, deductions, divestments, group services, inter-company eliminations, or taxes.

Berger and Ofek (1995) equivalent sample for multi-segment firms. This sample includes all industrially diversified firms, some of which could be geographically diversified as well. The sub-sample of geographically diversified firms - multinationals (0,1) together with the sub-sample of non-diversified firms – purely domestic firms (0,0) may be considered the Berger and Ofek (1995) equivalent sample of single-segment firms. This sample includes all firms that are not industrially diversified. In this paper, however, each sub-sample is treated separately.[12]

The proportion of firms in each category is not uniform across the five countries in the sample. Generally, the single-segment firms form the largest portion of the sample in Japan, the UK and the US, but not in Germany (see Table 1, Panel A). Germany and the UK have more internationally diversified firms than industrially diversified firms. It appears that a large proportion of the diversified firms in these three countries are multinational conglomerates. A possible explanation offered by Caves (1971) and Franko (1976) is that the lack of raw materials in the European industrial countries together with their high levels of industrialization resulted in many MNCs integrating backward into the acquisition of raw material. Further, the small national markets of some European countries also induce foreign direct investment so that firms can diversify their risks. Domestic conglomerates dominate the Japanese sample of diversified firms. Caves (1996) suggests that the cultural distance of Japan from the Western industrial countries and its dependence on foreign technologies provided little incentive for Japanese firms to go abroad. Further, the Japanese firms also faced strong political pressure preventing the establishment of production facilities outside Japan, all of which could explain the preponderance of domestic conglomerates.

[12] A similar classification is adopted in Denis, Denis, and Yost (2002) and Hitt, Hoskisson, and Kim (1997).

There is also a difference across countries in the industrial composition of segments, according to Panel B. Most firms operate in the manufacturing sector, *i.e.*, with two-digit SIC codes between 20 and 39, followed by the services industry. The percentage of firms in the manufacturing sector varies from 38 percent in the UK to 63 percent in Germany.

According to Panel C, firms primarily sell domestically and then to the Rest of the World, to Europe, and North America.[13] The total number of segments in each country is much larger than the number of firms because a single firm could have multiple segments.

Table 2 presents the mean and median values of various firm characteristics for several sub-samples described earlier – single-segment firms (0,0); geographically diversified firms – multinationals (0,1)[14]; industrially diversified firms (1,0); and industrially and geographically diversified firms – multinational conglomerates (1,1). Firms that are both multinational and conglomerate are generally larger in terms of market capitalization and sales across all countries in the sample followed by firms that are just geographically diversified.[15] Firms that are multinational have slightly higher Q ratios in the UK and the US. The number of geographic segments in Germany and the UK is higher than that in Japan and the US, which is consistent with the finding in Table 1, Panel A that there are more internationally diversified firms than industrially diversified firms in these countries.

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[13] Sales by US firms in the North American region are classified as domestic sales. Hence there are no geographic segments in the North American region for US firms.

[14] This sub-sample is also examined in Dastidar (2003). The analysis examines pure multinationals (0,1) relative to an international benchmark portfolio to determine whether they are worth more than the sum of their individual parts or segments. This paper, on the other hand, examines these pure multinationals together with multinational conglomerates (1,1) relative to their local counterparts.

[15] The Worldscope database mainly reports data on large firms in a particular country. This should not matter since MNCs are likely to be much larger than the average firm in order to overcome the local advantage of the domestic single-segment firm and the size argument also supports the hypothesis that MNCs run through opportunities in the domestic market before venturing abroad (Caves (1971, 1996)).

Methodology

Firm value is measured as the log of the ratio of market value to sales because it reflects the present value of future cash flows and does not require any risk adjustment like stock returns and accounting measures (Lang and Stulz (1994)). The measure most commonly used in the literature is the Lang and Stulz (1994) or the Berger and Ofek (1995) definition. According to Bodnar, Tang, and Weintrop (1999), this definition is inaccurate because it fails to distinguish industrial from geographic diversification (*e.g.*, Lins and Servaes (1999)). Berger and Ofek (1995) and Bodnar, Tang, and Weintrop (1999) use alternative measures of firm value and find that they yield similar results. An alternative measure also used in this paper is Q (see section on robustness checks). The tables report the analysis with log of the ratio of market value to sales as the dependent variable, since the sample is less restricted due to data constraints.

The regression methodology used in this paper is similar to the approach adopted in Morck and Yeung (1991). Firm value is assumed to vary due to the different industries and geographical regions the firm operates in, its level and type of diversification, various control variables such as size, leverage, and profit margin, plus an error term.[16] This is also similar to an industry or regional fixed effects approach, though each firm could have multiple industry or regional fixed effects.

The dummy variable regression methodology has several advantages. First, it allows both industry and country effects to be explicitly taken into account simultaneously (*i.e.*, it is a composite measure) whereas the Berger and Ofek (1995) or the Lang and Stulz (1994) excess

[16] The methodology may also be considered an adaptation of the dummy variable regression described in Heston and Rouwenhorst (1994) and Griffin and Karolyi (1998) without weighted least squares or restrictions.

value measures examine industrial diversification alone.[17] The Berger and Ofek methodology has an additional drawback for smaller data samples. The number of single-segment firms in a particular industry may be too small to obtain an accurate measure of the median imputed value for that industry.[18] In contrast, the dummy variable regression methodology uses the entire data sample (multi-segment and single-segment firms) to estimate the impact of industrial and geographic diversification.

The entropy measure commonly used in the strategy literature is a sales weighted sum of product or geographic segment size. This measure also does not simultaneously control for both industry and country effects. Hitt, Hoskisson, and Kim (1997) includes industry dummies as controls for industry effects though country or regional effects are not included i.e. the location of the firms' international operations.

The variables used to capture the impact of diversification are as follows: The impact of industrial diversification is measured by the coefficient on an industrial diversification dummy that equals one if the firm operates in more than one product segment (ID). Similarly, the impact of geographic diversification is measured by a geographic diversification dummy that equals one if the firm operates in more than one geographic segment (GD). An interaction variable captures the impact of diversification for multinational conglomerates, *i.e.*, firms that are both industrially and geographically diversified.

[17] The Berger and Ofek (1995) measure calculates imputed values for the firm based on industrial segment data alone. Composite industrial and geographic segment imputed values cannot be calculated because firms report sales by industry code and geographic location separately. The Berger and Ofek (1995) measure would require sales broken down by industry and then further broken down by location. These data are not available.

[18] This is particularly important because most firms are both industrially and geographically diversified (see Table 2).

The impact of higher levels of industrial diversification is measured by the coefficients on an industrial diversification dummy that equals one if the firm operates in two product segments (ID2), and an industrial diversification dummy that equals one if the firm operates in three or more product segments (ID3+). The impact of higher levels of geographic diversification is measured by the coefficients on a geographic diversification dummy that equals one if the firm operates in two geographic segments (GD2), and a geographic diversification dummy that equals one if the firm operates in three or more geographic segments (GD3+).

The diversification dummies capture the impact of industrial, geographic, and multinational conglomerate diversification after accounting for the impact of the particular industry or region the firm operates in. Industry and country dummies (I_1 to I_{87} and C_1 to C_5) capture the pure industry and country effects. Industry dummy variables are defined for each industry based on two-digit SIC codes, which equal one if the firm has sales in that industry (I_1 to I_{87}). Regional dummies are defined for five regions of the world, which equal one if the firm has sales in that region (C_1 to C_5). C_1 equals one if the firm has sales in the Australasian region, C_2 equals one if the firm has sales in the European region, C_3 equals one if the firm has sales in the North American region, C_4 equals one if the firm has sales in the Rest of the World, and C_5 equals one if the firm has domestic sales.

Results

The multivariate regressions in Tables 3 to 6 use the log of annual market capitalization to sales as the dependent variable. This is similar to the Berger and Ofek (1995) excess value measure except that the dependent variable does not adjust for industry effects. Instead, all the regressions explicitly control for industry effects with industry dummies for each 2-digit SIC

code (I_1 to I_{87}) as independent variables. The number of industry dummies varies from country to country because not all industries are represented in each country. All regressions are pooled OLS regressions and the data are panel data with multiple firm years for each firm in the sample.

Impact of Industrial and Geographic Diversification

In Table 3 the regression measures the effect of product diversification and geographic diversification[19] and is of the form:

$$MS_{it} = \acute{a} + \hat{a}_1 ID_{it} + \beta_2 GD_{it} + æ_1 \text{ leverage}_{it} + æ_2 \text{ size}_{it} + æ_3 \text{ profit}_{it}$$

$$+ \delta_1 I_{1it} + \delta_2 I_{2it} + ... + \delta_{87} I_{87it} + \varepsilon_{it} \qquad (5).$$

The multivariate regressions examine the impact of diversification after controlling for industry and additional variables that effect firm value such as relative leverage, relative size, and relative profit margin.[20] Relative size and leverage are included to control[21] for changes in firm value that could be due to changes in capital structure or size of the firm.[22] Leverage also controls for the degree of financial slack available or whether the firm is capital constrained.

[19] Individual regressions with just product diversification or just geographic diversification were examined. These regressions are not reported as the magnitude and significance of the coefficients for ID and GD do not change relative to those in Table 4. This is because the dummies for industrial and geographic diversification are not highly correlated with each other across the five countries in the sample.

[20] All relative measures are the actual value minus a sales weighted median industry and regional imputed value. Relative size, for example, captures the deviation of the firms' actual size from that of the sales weighted portfolio of single-segment domestic firms. Since MNCs are likely to be much larger than the domestic firm, an absolute measure of size would not sufficiently control for this effect. Similar relative control variables are used in Bodnar, Tang, and Weintrop (1999), Denis, Denis, and Yost (2002) and Fauver, Houston, and Naranjo (2003).

[21] Correlations between the explanatory variables are low in general.

[22] All the control variables used in the regression analysis are ratios that are considered to be common across countries and hence have maximum comparability across borders, according to Datastream.

Based on the empirical evidence in the US, one would expect a negative coefficient for product or industrial diversification and a positive coefficient for geographic or international diversification. As expected industrial diversification has a negative and statistically significant impact in Japan and the US, which is consistent with prior empirical evidence (Lang and Stulz (1994), Berger and Ofek (1995), Hitt, Hoskisson, and Kim (1997), Delios and Beamish (1999), and Lins and Servaes (1999)).[23] The impact is insignificant in the UK, *i.e.*, there is no diversification discount. In Germany, however, industrial diversification increases firm value. These results for Germany are consistent with Lins and Servaes (1999).

Geographic or international diversification has a negative and statistically significant impact in Germany and Japan, though it has a positive impact in the US. The result for the US is consistent with that of Bodnar, Tang, and Weintrop (1999) and Morck and Yeung (1998). The impact of geographic diversification is insignificant in the UK.

Impact of Multinational Conglomerate Diversification

If product diversification is considered beneficial as in the case of Germany, one would expect German firms to be more industrially diversified. Instead they are more internationally diversified than firms from other countries in the sample. However, this regression does not control for multinational conglomerates, which are all considered to be industrially diversified firms. This could have confounding effects on the industrial diversification discount. One could also hypothesize from the results of Lins and Servaes (1999) of an insignificant discount in Germany that the lack of a discount is perhaps due to the impact of multinational conglomerate diversification (Bodnar, Tang, and Weintrop (1999)), since Lins and Servaes (1999) do not

[23] The signs on the control variables are consistent with previous literature.

explicitly take into account the impact of geographic diversification or multinational conglomerate diversification. It is possible that the two types of diversification – industrial and geographic – counteract each other in Germany. The industrially diversified group (ID equals one) as well as the geographically diversified group (GD equals one), both include multinational conglomerates. Though the overlap of the two groups does not imply high correlation, this could have confounding effects. Hence it is important to take the "interaction effect" into account separately. This interaction effect has also not been previously examined for non-US multinationals.

Table 4 specifically accounts for multinational conglomerate diversification in addition to industrial and geographic diversification. The coefficient on ID captures the diversification effect for firms that are just industrially diversified, the coefficient on GD for firms that are just geographically diversified, and the coefficient on ID*GD for firms that are both industrially and geographically diversified, *i.e.*, multinational conglomerates.

$$MS_{it} = \alpha + \beta_1 ID_{it} + \beta_2 GD_{it} + \beta_3 ID*GD_{it} + \gamma_1 \text{ leverage}_{it} + \gamma_2 \text{ size}_{it}$$

$$+ \gamma_3 \text{ profit}_{it} + \delta_1 I_{1it} + \delta_2 I_{2it} + \ldots\ldots\ldots + \delta_{87} I_{87it} + \varepsilon_{it} \qquad (6).$$

Multinational conglomerate diversification increases firm value in Germany and Japan. The impact is insignificant in the UK and in the US. Previous results for industrial and international diversification do not change for Japan, the UK, and the US. The only results that do change are in Germany. The inclusion of the multinational conglomerate dummy makes the impact of diversification for firms that are just industrially diversified (coefficient on ID) insignificant for German firms. This suggests that the positive impact of product diversification observed in Table 3 is due to the positive impact of multinational conglomerate diversification in Germany.

In summary, multinational conglomerates are valued in Germany and Japan. The results on industrial diversification for Germany, Japan, and the US are consistent with previous literature (Lins and Servaes (1999)). The results on international diversification for the US are consistent with Bodnar, Tang, and Weintrop (1999) and Morck and Yeung (1998). It appears that multinational conglomerate diversification is valued in Germany, though pure international diversification is not. In Japan, pure industrial and international diversification has a negative impact on firm value though multinational conglomerates appear to be able to benefit from the synergies from product and international diversification. Pure international diversification has a positive impact for US firms. These results are new to the literature.

Impact of Higher Levels of Diversification

Next the different levels of diversification are examined, as it is possible that the impact of diversification on firm value may not be uniform across all levels of industrial and international diversification. Lang and Stulz (1994) find that the levels of diversification beyond three segments do not matter so firms with two segments and firms with three or more segments are examined. The regression in Table 5 examines higher levels of industrial and geographic diversification and is of the form:

$$MS_{it} = \alpha + \beta_1 ID2_{it} + \beta_2 ID3 + \beta_3 GD2_{it} + \beta_4 GD3_{it} + \beta_5 ID2_{it}*GD2_{it} + \beta_6 ID2_{it}*GD3_{it}$$
$$+ \beta_7 ID3_{it}*GD2_{it} + \beta_8 ID3_{it}*GD3_{it} + \gamma_1 leverage_{it} + \gamma_2 size_{it}$$
$$+ \gamma_3 profit_{it} + \delta_1 I_{1it} + \delta_2 I_{2it} + ... + \delta_{87} I_{87it} + \varepsilon_{it} \qquad (7).$$

This table accounts for higher levels of industrial and geographic diversification for diversified firms and for multinational conglomerates.

In Germany, the impact of diversification for domestic conglomerates (no discount) and pure multinational firms (discount) is consistent with previous tables. Firms with two and more geographic segments trade at a significant discount. However, multinational conglomerates that are less industrially diversified (*i.e.*, just two industrial segments) and more than two geographic segments trade at a large significant premium (ID2*GD3). Multinational conglomerates with high levels of both industrial and geographic diversification also trade at a large significant premium (ID3*GD3). When one examines product or geographic diversification alone, it appears that industrial diversification is valued positively in Germany. However, it is multinational conglomerate diversification that drives the results. So single-segment German firms do not benefit from international diversification but multinational conglomerates with high levels of international diversification do.

In Japan, firms with low levels of industrial diversification trade at a discount but not those with higher levels of product diversification. The negative impact of geographic diversification is primarily driven by firms with more than two international segments. Further, the positive impact of multinational conglomerate diversification is driven by firms with low levels of industrial diversification, *i.e.*, only two industrial segments (ID2*GD2), but possibly more than two international segments (ID2*GD3).

In the UK, diversification does not matter. This seems surprising in light of previous literature. Later, in the section on robustness checks, the results are tested using an alternative measure of firm value (Q). Since most of the results in the UK are insignificant, it is possible that an alternative measure of firm value may provide deeper insights.

In the US, domestic conglomerates trade at a discount regardless of the level of industrial diversification. The premium for pure multinationals is driven by firms with higher levels of

international diversification. As before, there is no premium or discount for multinational conglomerates regardless of the level of diversification.

Impact of Regional Sales

Thus far all the multivariate regressions control for industry effects only. The geographic diversification variables do not control for the region of diversification. One could argue that sales in certain regions with high information asymmetries could have a negative impact on firm value, while sales in other regions could have a positive impact. The overall impact of international diversification could wash out due to the opposing effects. Table 6 controls for the location of the firm's sales.

$$MS_{it} = \beta_1 ID_{it} + \beta_2 ID_{it} * GD_{it} + æ_1\ leverage_{it} + æ_2\ size_{it} + æ_3\ profit_{it} + \gamma_1\ C_{1it}$$

$$+ \gamma_2\ C_{2it} + ... + \gamma_5\ C_{5it} + \delta_1\ I_{1it} + \delta_2\ I_{2it} + ... + \delta_{87}\ I_{87it} + \varepsilon_{it} \qquad (8).$$

The geographic diversification dummy (GD) is dropped from this regression since the sum of the location variables add up to one. If the firm is geographically diversified this impact is captured by the location variables (C_1- C_5). The intercept term is also dropped since all firms have domestic sales (C_5).

Comparing the results in Table 4 with those in Table 6, the impact of industrial diversification and multinational conglomerate diversification remains unaffected in all the countries except the UK. After taking into account the impact of regional sales, multinational conglomerate diversification has a negative impact on firm value in the UK. This was previously insignificant.

Domestic sales have a large negative impact on firm value in Germany, the UK, and the US and an insignificant impact in Japan. In Germany, the negative impact of geographic

diversification observed in Table 6 appears to be driven by sales in the Rest of the World (primarily emerging markets). In Japan, sales in all regions except Europe have a large negative impact on firm value. In the UK, sales in the Australasian region have a positive impact, while sales in the rest of Europe has a negative impact. In the US, increased sales in the Australasian region and emerging markets imply higher firm values.

Robustness Checks

As an alternative to the log of annual market capitalization to sales as the dependent variable, all the regressions are rerun using Q measured as the ratio of market capitalization plus long-term debt plus current liabilities divided by total assets. As compared to the results in Table 4, the sign and significance of the coefficients do not change in Germany and the US. In the UK, the impact of pure geographic diversification, which was previously insignificant, now becomes significant and positive. Geographic diversification has a positive impact on firm value (16 percent) when Q is used as a measure of firm value. Further, the impact of pure industrial diversification in Japan is now insignificant.[24] It was previously negative and significant with the log of annual market capitalization to sales as the dependent variable.

Discussion

The results presented in this paper are not consistent across the countries in the sample. What causes the impact of diversification to differ across countries? Let us examine them on a case-by-case basis.

[24] This appears to be due to the impact of leverage in the dependent variable.

Product diversification generally implies a discount which is consistent with prior literature. This discount may be explained using agency cost theory which suggests that managers with excess free cash flow may forego positive NPV projects and increase consumption of perks or build empires. Alternatively, managers could be cross-subsidising poorly performing segments.

However, German firms do not face this product diversification discount, which is also consistent with prior literature (Lins and Servaes (1999) and Fauver, Houston, and Naranjo (2003)). Krainer (1967), Franko (1976) and Caves (1996) argue that the lack of raw materials in the European industrial countries together with their high levels of industrialization led to the creation of multinationals that were integrated backward into the acquisition of raw material. Further, the small national markets of some European countries offer successful firms limited opportunities to diversify risks and therefore induce heavy foreign direct investment (Caves (1996)). Recent evidence for US conglomerates indicates that successful firms choose to diversify across lines of business (Campa and Kedia (2002)). Extending this argument to multinationals, successful firms choose to diversify internationally (Dastidar (2003)) and the experience gained with product diversification can build managerial capabilities that allow effective management across national borders (Hitt, Hoskisson, and Kim (1997)). These arguments could help to explain why industrial diversification does not have the expected negative impact. Successful firms in small countries with limited opportunities for expansion choose to diversify across industry lines as well as across national borders.

So why do Japanese firms face an industrial diversification discount given that Japan is also a relatively small country? Lins and Sevaes (1999) provide evidence that firms that belong to a keiretsu trade at a discount because the group is a conglomerate and so the firm does not

need to be diversified to get the benefits of diversification. The sample in this paper is comprised of very large firms which are likely to be part of a keiretsu. This test is beyond the scope of the current paper.

The positive impact of multinational conglomerate diversification in Germany and Japan is also consistent with the story that successful firms diversify domestically and internationally due to the small size of the local market and not because managers want to build empires. Successful conglomerates build managerial capabilities, which are then transferred across national borders (Hitt, Hoskisson, and Kim (1997)). Tallman and Li (1996) suggest that early product diversification focuses on highly related product markets so firms are able to capture synergies across different lines of business. When firms expand internationally they can also exploit economies of scale and scope (Geringer et al (1989), Rumelt (1974)). Global markets have intense competition and achieving synergies and economies of scale allow these firms to compete effectively (Hitt, Keats, and DeMarie (1995)). Multinational firms achieve complementarities between different resources across business units that are difficult for competitors to imitate (Harrison, Hitt, Hoskisson, and Ireland (1991)). The results in this paper show that multinational conglomerate diversification does not have a negative impact on firm performance and for small countries it positively impacts firm performance. This implies that the commonly observed industrial diversification discount is not important for multinational conglomerates.

International diversification has a positive impact on firm value in the US. This is also consistent with the previous literature (Bodnar, Tang and Weintrop (1999), Morck and Yeung (1991), (Hitt, Hoskisson, and Kim (1997)). What is surprising, though, is that international

diversification has a negative impact on firm value in Germany[25] and Japan. Sundaram and Black (1992) suggest that there are significant barriers to coordination across countries, which in turn increase information processing demands associated with language, cultural, political, and regulatory differences. Hitt, Hoskisson, and Kim (1997) argue that as firms expand more internationally the costs begin to outweigh the benefits creating a curved relationship between internationalization and firm performance. Further, pure international diversification could have a negative impact because managers have no experience in managing multiple divisions.

The results on levels of diversification (Table 5) show that US-based domestic conglomerates trade at a discount regardless of the level of diversification. In Japan, however, the impact is only observed at lower levels of industrial diversification. The premium for US firms with pure international diversification is associated with high levels of international diversification only. In Germany and Japan the costs outweigh the benefits of international diversification, especially at higher levels of international diversification in Japan.

Multinational conglomerate diversification positively impacts firm value in Germany and Japan - although this positive impact is driven by high levels of international diversification in Germany and low levels of industrial diversification in Japan. In the US and the UK, the impact of multinational conglomerate diversification is insignificant regardless of the level of diversification.

The results on the location of the firms international operations (Table 6) suggest that larger distance has a positive impact on firm value except for emerging markets where the information asymmetries could outweigh the benefits of multinational diversification.

[25] Since the number of observations for Germany increases substantially from 1997 to 1998, the regressions are rerun excluding 1998 data. It does not impact the regression in Table 6 when industrial, international, and multinational conglomerate diversification is accounted for. The impact of industrial diversification does become insignificant in Table 3.

Continuing with the distance argument, it appears that UK multinationals have no added advantage from sales closer to home (in the European region). Consistent with the results for European firms, it appears that Japanese multinationals also have no added advantage from sales closer to home (in the Australasian region). A possible explanation could be that exports are perhaps an easier mode of entry into regions closer to home with lower regional trade barriers. Consequently, regional subsidiaries are not valued highly.

Conclusion

This paper shows that the impact of diversification is not consistent across countries. Interestingly, industrially diversified firms in Germany do not trade at a discount while geographically diversified firms do. However, the industrial diversification premium in Germany disappears when one accounts for multinational conglomerate diversification. Multinational conglomerates are valued positively in Japan and Germany. The multinational conglomerate premium in Germany is driven by higher levels of international diversification while the premium in Japan is from lower levels of industrial diversification. Overall the results on industrial diversification are consistent with prior literature. The results on geographic diversification for the US are also consistent with prior literature.

The results for Germany and Japan show international diversification can be negative. In Germany and Japan it is for pure multinationals. In Germany the impact of industrial diversification is positive for the multinational conglomerates.

Further, regional sales also impact firm value. International sales in regions closer to home reduce firm value (European sales for UK firms and Australasian sales for Japanese firms), while sales in some regions further away from the home country increase value. For example,

Australasian sales increase firm value for UK and US firms. These results are consistent with the argument that distance matters.

There are several differences in the results across the four countries in the sample. A few explanations are proposed but this needs further investigation. A possible hypothesis is that differences in the institutional framework across the countries drive the differences in the industrial and geographic premium or discount. For example, Lins and Servaes (1999) provide evidence that firms with a strong *keiretsu* affiliation have greater value loss from industrial diversification than firms without such an affiliation. However, if *keiretsu* firms are more successful than the average firm, they are more likely to expand abroad and the premium for multinational conglomerates in Japan could be associated with *keiretsu* affiliation.

Cultural factors could also be another possible reason for the difference in the impact of industrial and international diversification. Cultural and political barriers curtailed Japanese expansion abroad in the 80s and the 90s, which suggests that many firms had no option but to expand domestically across multiple lines of business. As discussed previously in the data section, the number of domestic conglomerates in Japan far outnumbers the number of internationally diversified firms and the number of multinational conglomerates.

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Table 1: Sample Description

This table describes the distribution of the sample across time, nationality, and industry. All data are from Worldscope. The total number of firm years in the sample (16,146) is divided by country and type of diversification. ID is a dummy that equals one for firms that are industrially diversified and zero otherwise. GD is a dummy that equals one for firms that are geographically diversified and zero otherwise. The sample includes firms headquartered in Germany, Japan, the UK, and the US. Panel A provides a breakdown of firms by year and type of diversification. Panel B provides a breakdown by industry. Panel C provides a breakdown by geographic segment. The analysis is based on 2-digit SIC codes that are grouped together for presentation. Geographic segments are grouped into five regions (domestic, Australasia, Europe, North America, and the rest of the world). The Australasian sample includes domestic single industry firms from Australia, Hong Kong, Japan, New Zealand, and Singapore; Europe includes Austria, Belgium, Denmark, Finland, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the UK; North America includes Canada and the US; and the world includes Brazil, Chile, China, Columbia, Czech Republic, Egypt, Greece, India, Indonesia, Israel, Morocco, Mexico, Malaysia, Pakistan, Peru, Philippines, Poland, Portugal, Russia, South Africa, South Korea, Taiwan, Thailand, Turkey, Venezuela, and Zimbabwe.

Panel A

Country	ID,GD	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
Germany	0,0	35	20	16	26	24	25	29	31	51	257
	0,1	12	18	20	19	18	21	31	25	36	200
	1,0	10	19	15	14	16	16	23	27	13	153
	1,1	24	25	24	25	38	36	39	42	33	286
Subtotal		81	82	75	84	96	98	122	125	133	896
Japan	0,0	839	368	346	324	310	344	335	325	341	3,532
	0,1	0	35	42	34	44	46	34	40	156	431
	1,0	90	400	433	402	401	359	331	338	429	3,183
	1,1	4	29	32	27	28	22	36	34	155	367
Subtotal		933	832	853	787	783	771	736	737	1,081	7,513
UK	0,0	96	41	39	32	30	41	42	58	63	442
	0,1	29	37	30	28	33	37	43	45	41	323
	1,0	11	21	18	17	26	21	24	21	24	183
	1,1	33	68	52	32	30	40	44	48	30	377
Subtotal		169	167	139	109	119	139	153	172	158	1,325
US	0,0	597	240	252	264	310	396	438	493	458	3,448
	0,1	15	78	96	92	142	139	187	218	247	1,214
	1,0	46	110	111	113	128	151	144	151	152	1,106
	1,1	24	48	70	77	77	77	77	86	108	644
Subtotal		682	476	529	546	657	763	846	948	965	6,412

continued

Table 1 - continued

Panel B: Breakdown by Industry (2-digit SIC code)				
Industry	GE	JP	UK	US
Agriculture, Forestry, And Fishing (0-9)	8	32	16	58
Mining and construction (10-19)	65	1,284	165	631
Manufacturing (20-39)	562	3,775	510	2,944
Transportation, Communications, Electric, Gas, And Sanitary Services (40-48)	93	816	174	680
Wholesale and retail trade (50-59)	94	876	248	1,089
Services and Public Administration (70-99)	74	730	212	1,010
Total	896	7,513	1,325	6,412

Panel C: Number of Geographic Segments by Region						
	Australasia	Europe	North America	World	Domestic	Total
Germany	118	315	198	461	895	1,987
Japan	195	130	195	690	7,507	8,717
UK	235	521	456	422	1,298	2,932
US	481	1,047	0	1,438	6,402	9,368
Total	1,140	2,275	1,027	3,398	16,817	24,657

continued

Table 2: Univariate Statistics

This table provides univariate firm characteristics averaged over the period from 1990 to 1998. ID is a dummy that equals one for firms that are industrially diversified and zero otherwise. GD is a dummy that equals one for firms that are geographically diversified and zero otherwise. Market value and sales figures are in US dollars. Leverage is the ratio of total debt to total assets. Q is the sum of the market value of equity plus the book value of debt plus current liabilities divided by total assets. All of the accounting variables data are from Datastream. The accounting variables are considered to be common across countries and hence have maximum comparability across borders according to Datastream.

Country	ID,GD	Market Capitalization	Sales	Leverage	Log(Assets)	Q	Ln(Market Cap. / Sales)	Number of Geographic Segments	Number of Product Segments
Germany	0,0	331169	753112	0.18	12.80	0.93	-0.71	1.00	1.00
	0,1	247656	935819	0.22	12.98	0.84	-1.27	3.17	1.00
	1,0	186557	413313	0.21	12.62	0.94	-0.83	1.00	2.44
	1,1	779917	1844976	0.21	13.41	0.90	-1.16	3.30	2.69
Japan	0,0	1591548	1900972	0.27	13.44	1.72	-0.31	1.00	1.00
	0,1	1702381	3171854	0.32	13.87	1.45	-0.57	2.43	1.00
	1,0	842658	1353403	0.29	13.36	1.51	-0.52	1.00	2.55
	1,1	4742151	7651510	0.37	14.81	1.46	-0.59	2.60	2.33
UK	0,0	1326118	1605851	0.19	12.95	1.48	-0.27	1.00	1.00
	0,1	1781965	1165486	0.23	12.71	1.67	-0.24	3.13	1.00
	1,0	1361192	1351788	0.23	12.74	1.42	-0.09	1.00	2.37
	1,1	3064403	3373944	0.21	13.62	1.46	-0.51	3.40	2.77
US	0,0	1320164	1688318	0.27	13.01	1.82	-0.42	1.00	1.00
	0,1	3264977	2529971	0.21	13.39	2.14	-0.07	2.54	1.00
	1,0	1522930	1749562	0.30	13.46	1.42	-0.51	1.00	2.34
	1,1	4688054	5016765	0.27	14.17	1.64	-0.34	2.67	2.36

Table 3: Effect of Industrial and International Diversification for Firms by Country

The dependent variable is the log of average annual market capitalization to sales. This is regressed on an industrial diversification dummy (ID), which equals one if the firm operates in at least two product segments; an international/geographic diversification dummy (GD), which equals one if the firm operates in at least two regions (domestic, Australasia, Europe, North America, and/or the rest of the world).; leverage (ratio of total debt to total assets); size (log of total assets), and profit margin (profits after tax to total sales). Relative values of the independent variables are the difference between the actual value and the sales weighted benchmark values for each segment that the firm operates in. Data for the explanatory variables are from Datastream. The regressions are pooled OLS regressions with *p*-values in parentheses.

	GE	JP	UK	US
Industrial Diversification (ID)	0.156	-0.061	-0.056	-0.230
	(0.08)	(0.06)	(0.56)	(0.00)
Geographic Diversification (GD)	-0.252	-0.208	-0.065	0.087
	(0.00)	(0.00)	(0.33)	(0.00)
Relative Leverage	-0.850	-0.661	-0.982	-1.471
	(0.00)	(0.00)	(0.00)	(0.00)
Relative Size	-0.021	-0.028	-0.014	0.045
	(0.02)	(0.00)	(0.17)	(0.00)
Relative Profit Margin	0.001	0.068	0.005	0.000
	(0.81)	(0.00)	(0.03)	(0.07)
Industry Dummies	Yes	Yes	Yes	Yes
Adjusted R-sq	0.28	0.38	0.35	0.32
N	888	7,511	1,292	6,262

Table 4: Interaction of Industrial and International Diversification for Firms by Country

The dependent variable is the log of average annual market capitalization to sales. This is regressed on an industrial diversification dummy (ID), which equals one if the firm operates in at least two product segments; an international/geographic diversification dummy (GD), which equals one if the firm operates in at least two regions (domestic, Australasia, Europe, North America, and/or the rest of the world); an interaction dummy, which equals one if the firm operates in at least two product segments and at least two regions; leverage (ratio of total debt to total assets); size (log of total assets), and profit margin (profits after tax to total sales). Relative values of the independent variables are the difference between the actual value and the sales weighted benchmark values for each segment that the firm operates in. Data for the explanatory variables are from Datastream. The regressions are pooled OLS regressions with *p*-values in parentheses.

	GE	JP	UK	US
Industrial Diversification (ID)	-0.087	-0.086	0.037	-0.229
	(0.49)	(0.01)	(0.75)	(0.00)
Geographic Diversification (GD)	-0.420	-0.288	-0.005	0.088
	(0.00)	(0.00)	(0.95)	(0.01)
Multinational Conglomerates (ID*GD)	0.390	0.182	-0.163	-0.002
	(0.00)	(0.00)	(0.15)	(0.96)
Relative Leverage	-0.820	-0.660	-1.006	-1.471
	(0.00)	(0.00)	(0.00)	(0.00)
Relative Size	-0.024	-0.028	-0.013	0.045
	(0.01)	(0.00)	(0.20)	(0.00)
Relative Profit Margin	0.001	0.068	0.005	0.000
	(0.74)	(0.00)	(0.03)	(0.07)
Industry Dummies	Yes	Yes	Yes	Yes
Adjusted R-sq	0.29	0.38	0.35	0.32
N	888	7,511	1,292	6,262

Table 5: Effect of Type and Level of Diversification for Firms by Country

The dependent variable is the log of average annual market capitalization to sales. This is regressed on a diversification dummy (ID2), which equals one if the firm operates in two product segments; a diversification dummy (ID3+), which equals one if the firm operates in more than two product segments; an international/geographic diversification dummy (GD2), which equals one if the firm operates in two geographic segments; an international/geographic diversification dummy (GD3+), which equals one if the firm operates in more than two geographic segments; leverage (ratio of total debt to total assets); size (log of total assets), and profit margin (profits after tax to total sales). Relative values of the independent variables are the difference between the actual value and the sales weighted benchmark values for each segment that the firm operates in. Data for the explanatory variables are from Datastream. The accounting variables are considered to be common across countries and hence have maximum comparability across borders according to Datastream. The regressions are pooled OLS regressions with *p*-values in parentheses.

	GE	JP	UK	US
ID2	0.093	-0.102	-0.018	-0.265
	(0.50)	(0.01)	(0.89)	(0.00)
ID3	0.396	-0.097	-0.046	-0.416
	(0.10)	(0.12)	(0.83)	(0.00)
GD2	-0.249	-0.070	-0.046	0.039
	(0.04)	(0.12)	(0.70)	(0.30)
GD3	-0.443	-0.814	0.004	0.135
	(0.00)	(0.00)	(0.96)	(0.00)
ID2*GD2	0.075	0.229	-0.164	0.006
	(0.67)	(0.00)	(0.36)	(0.94)
ID2*GD3	0.355	0.373	-0.094	-0.008
	(0.03)	(0.00)	(0.52)	(0.91)
ID3*GD2	0.188	0.024	-0.195	-0.059
	(0.43)	(0.82)	(0.36)	(0.65)
ID3*GD3	0.602	0.124	-0.229	0.028
	(0.01)	(0.34)	(0.17)	(0.81)
Relative Leverage	-0.773	-0.654	-1.007	-1.470
	(0.00)	(0.00)	(0.00)	(0.00)
Relative Size	-0.021	-0.029	-0.013	0.045
	(0.03)	(0.00)	(0.21)	(0.00)
Relative Profit Margin	0.001	0.068	0.005	0.000
	(0.72)	(0.00)	(0.03)	(0.07)
Industry Dummies	Yes	Yes	Yes	Yes
Adjusted R-sq	0.30	0.39	0.35	0.32
N	888	7,511	1,292	6,262

Table 6: Effect of Type of Diversification for Firms by Region

The dependent variable is the log of average annual market capitalization to sales. This is regressed on an industrial diversification dummy (ID), which equals one if the firm operates in at least two product segments; an international/geographic diversification dummy (GD), which equals one if the firm operates in at least two regions (domestic, Australasia, Europe, North America, and/or the rest of the world); an interaction dummy, which equals one if the firm operates in at least two product segments and at least two regions; leverage (ratio of total debt to total assets); size (log of total assets), and profit margin (profits after tax to total sales). Relative values of the independent variables are the difference between the actual value and the sales weighted benchmark values for each segment that the firm operates in. Data for the explanatory variables are from Datastream. The regressions are pooled OLS regressions with *p*-values in parentheses.

	GE	JP	UK	US
Industrial Diversification (ID)	-0.061	-0.095	0.043	-0.211
	(0.62)	(0.01)	(0.70)	(0.00)
Multinational Conglomerates (ID*GD)	0.343	0.231	-0.215	-0.016
	(0.01)	(0.00)	(0.04)	(0.77)
Relative Leverage	-0.824	-0.650	-1.007	-1.463
	(0.00)	(0.00)	(0.00)	(0.00)
Relative Size	-0.021	-0.030	-0.005	0.040
	(0.02)	(0.00)	(0.63)	(0.00)
Relative Profit Margin	0.001	0.068	0.005	0.000
	(0.70)	(0.00)	(0.04)	(0.07)
Australasia	-0.003	-0.572	0.209	0.101
	(0.98)	(0.00)	(0.01)	(0.02)
Europe	-0.131	0.039	-0.140	0.011
	(0.15)	(0.63)	(0.04)	(0.76)
North America	0.127	-0.418	0.101	
	(0.26)	(0.00)	(0.19)	
Rest of the World	-0.350	-0.092	0.024	0.089
	(0.00)	(0.01)	(0.71)	(0.01)
Domestic	-0.675	0.017	-0.326	-0.594
	(0.00)	(0.81)	(0.01)	(0.00)
Industry Dummies	Yes	Yes	Yes	Yes
Adjusted R-sq	0.65	0.51	0.40	0.39
N	888	7,511	1,292	6,262