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Does corporate diversification create value?

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Abstract

This study addresses the issue of whether the form of corporate diversification practiced in the Philippines, particularly that based on diversified family-based conglomerates and business groups, can create or destroy value. The study produces somewhat mixed results. Corporate diversification through the holding company route, per se, does not raise or reduce firm value as perceived by market investors. However, diversification into two unrelated businesses either via subsidiaries or internal divisions appears to add to firm value but any further diversification only subtracts value. Diversification through the route of interrelated business groups also appears to decrease value perceptions. These findings are robust with respect to the addition of variables found to have explanatory power on firm value such as consistency in dividend payout, asset growth, and industry grouping. In addition, value appears to be independent of capital structure and firm size.

JEL classification: G34, G31
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1. Introduction

The Philippine corporate sector is dominated by diversified family-based conglomerates and business groups. De Dios and Hutchcroft [2002] and Saldaña [2001] briefly reviewed the historical developments that underlie the existing structure of the corporate sector. In particular, according to this view, firm diversification is used by competing business groups as a hedge against changing political and economic conditions, especially the unpredictable shifts in economic policies that go along with such changes. Under this reasoning, the decrease in risk because of diversification should enhance asset values (in addition to the anticipated efficiency gains). On the other hand, it is a well-known tenet in finance (see for example the text of Brealey and Myers [1996]) that firms cannot add value by diversifying since investors can do that better themselves in a developed capital market. Furthermore, various studies in the US have indicated that corporate diversification tends to destroy value perhaps because of loss in focus. For example,

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Lang and Stulz [1994] and Berger and Ofek [1995] concluded that the stock market puts lower values on diversified firms. Comment and Jarrell [1995] also found that firms destroy value when they diversify, and create value when they stay focused. In the Philippines, De Dios [1994] suggested that diversification by family-based business groups, although profitable privately, may often be socially inefficient. Given differing views, this study addresses the question of whether the form of corporate diversification practiced in the Philippines creates or destroys value, from the viewpoint of an outside investor.

The measure of firm value used is a surrogate for Tobin's q (Tobin [1969]). Tobin's q or simply q is defined as the ratio of the market value of outstanding claims on the firm to the replacement cost of its net assets. It can be shown that the present value model of stock prices is an equivalent concept to q (Aquino [2002]). As such, q reflects the capitalized value of the effects of corporate strategy, including the decision to diversify or not. Thus, diversification adds or subtracts value if the q's of diversified firms are greater or less, respectively, than those of undiversified firms.

The study is organized as follows: Section 2 describes the data and methodology used. Section 3 presents the analysis and results of the study, and Section 4 concludes.

2. Data and methodology

The data used in the study came mainly from the 2001 issue of the *Corporate Handbook* published by the Philippine Stock Exchange (with CEIC Data) which contains financial and stock market information of companies listed on the Philippine Stock Exchange, including a summary of their business activities, five-year (1996-2000) financial summary and ratios, and share prices. The study covers 156 out of the 196 listed firms excluding those in the banking and finance sector. Some 40 firms were excluded based on the selection criteria described in Yu [2003], i.e., 20 had no or minimal revenues and were considered "dormant" during the five years either because they were in pre-operating stage, were shut down, or were undergoing reorganization. Nine had average asset growth rates of over 1,000 percent during the period, indicating that the firms may have changed their focus (e.g., from mining to internet) or business purpose (e.g., from garments to holding company). Seven had negative average equity during this period, so it was impossible to compute for their leverage ratios. Four had less than three years of operations, so averaging only two years worth of data or even using one year of data was not enough to even out fluctuations in the business cycle.

There exists no available compilation of Tobin's q figures either at the industry or the firm level. To obtain estimates of q at the firm level, one can use, for example, the estimation method used by Aquino [1999-2000], a variant of the procedures

used by Lang and Stulz [1994]) and Lang, Schultz and Walkling [1989] which in turn were based on earlier work by Lindenberg and Ross [1981] and Smirlock et al. [1984]. However, detailed financial data for all companies included in the study covering a sufficient number of years are hard to come by; moreover, some firms have only been in existence for a short period of time. Thus, a surrogate measure, which is computed as the ratio of the firm's total market value to its book value, is used. The firm's total market value is computed as the sum of debt at book value and the market capitalization of equity. That this alternate measure, denoted *q*-proxy, is an acceptable surrogate is justified by its high correlation with Tobin's *q* as estimated by the procedure cited earlier. For instance, the R^2 for the 16 firms studied by Aquino [2002] is 0.8558. The R^2 for the 26 firms in Aquino [1999-2000] is 0.8494. The R^2 for the combined 42 firms is 0.8502. Using each firm's debt-equity ratio (DE) and price-to-book ratio (PB) reported in the *Corporate Handbook*, *q*-proxy is estimated as:

$$\begin{aligned} q-proxy &= (D+MC)/(D+SE) \\ &= (D/SE + MC/SE)/(D/SE + SE/SE) \\ &= (DE+PB)/(DE+1) \end{aligned}$$

where *D* is total debt, *MC* is total market capitalization of the firm's equity and *SE* is the book value of the firm's equity. The financial data and ratios used are averages for 1996 (or the year the firm was listed, whichever is later) to 2000.

Initially, the price-to-book ratio *(PB)* was considered to proxy for *q*. However, a regression of *PB* against the debt-equity ratio *(DE)* showed a positive association between the two variables with a t-statistic on the slope coefficient of 7.258 and a p-value very close to zero. When the "unlevering" in equation (1) was made, the regression of *q* against *DE* resulted in a t-statistic of -0.025 and a p-value greater than 0.98. This implies that the market value of the firm as a whole is not dependent on capital structure. As an aside, this result lends some support to the validity of the Modigliani and Miller [1958] propositions to the Philippine situation, despite differential taxation of interest and dividends, and is consistent with the pecking order hypothesis of capital structure.[1]

The basic approach of the study is regressing *q* against various diversification measures and other variables that may affect the level of *q*. The study used various measures of diversification: whether the firm is a holding company or not; whether the firm is a member of a leading Philippine business group or not; and the number of unrelated businesses or segments in which the company is substantially engaged. The last measure is similar to that used in the study by Lang and Stulz [1994]. Two sets of activities are considered different segments if the first two digits of their Philippine Standard Industrial Classification (PSIC) Codes are different. Thus,

[1] The pecking order capital structure hypothesis states that firms requiring additional capital will first exhaust internal sources before turning to external sources; then if external capital is needed, debt first before additional equity. In the Philippines, this hypothesis is supported by the studies of De Dios [1994], Kester, Chang, Echanis, and Soedigno [1995-1996] and Saldaña [2001].

printing (PSIC Code 22210) and manufacture of paint (PSIC Code 24231) constitute two different business segments. The determination of whether the firm is a holding company and the number of business segments the company is engaged in is based on its description of business in the *Corporate Handbook*. The determination of whether the company is part of a leading business group is based on the listing of top business groups compiled by Saldaña (2001)[2] cross-referenced with the description of the company's business and the list of major shareholders in the *Corporate Handbook*.

3. Data analysis and results

The results of initial regressions of q against variables representing the corporate structure of sample companies are shown in Table 1 (the figures in parentheses are the t-statistics). Regression of q against a dummy or indicator variable which equates to one if the firm is a holding company and zero otherwise did not produce significant results. This is probably because many companies which do not classify themselves as holding companies may in fact also own or control subsidiaries or have separate divisions within the company engaged in various related or unrelated businesses; an example would be San Miguel Corporation. Furthermore, many of the listed holding companies are concentrated only in one type of business, e.g., property or manufacturing. To address these considerations, dummy variables are added to the regression representing the number of segments (i.e., lines of unrelated businesses) in which the company (holding or non-holding) is involved. Thus,

S2 – is set to one if the firm has subsidiaries and/or divisions engaged in at least two unrelated business segments, and zero otherwise.

S3 – is set to one if the firm has subsidiaries and/or divisions engaged in at least three unrelated business segments, and zero otherwise.

S4 – is set to one if the firm has subsidiaries and/or divisions engaged in at least four unrelated business segments, and zero otherwise.

The addition of the dummy variables improved the results significantly when the number of segments is at least two and three or more. The coefficient for S2 is positive with a t-statistic of 1.6949 (p-value of 0.0921). The coefficient for S3 is negative with a t-statistic of -1.9815 (p-value of 0.0493). The results suggest that adding a second segment appears to add value to the firm, as indicated by the positive coefficient of the dummy variable representing at least two segments, but any additional business segment beyond that appears to subtract value. Dropping the holding company dummy variable from the regression shows similar results as far as the impact of the number of segments is concerned. From these results, the conclusion drawn is that being a holding company per se does not reduce or subtract

[2] De Dios [1994] used the term business group to refer to a network of financial (mainly banks) and non-financial institutions, typically conglomerates, with interlocking directorates. Most of the business groups listed in Table 3.11 of Saldaña [2001] are associated with affiliate banks.

Table 1. Regression of *q* against corporate structure and number of segments

Regression	*Holding Company*	*Business Group*	*2 or More Segments*	*3 or More Segments*	*4 or More Segments*	*F-statistic*
Holding Co.	-0.0296 (-0.1366)	-	-	-	-	0.0187
Holding Co. and 2 Segments	-0.1065 (-0.4241)	-	0.1763 (0.6070)	-	-	0.1935
Holding Co. and 3 Segments	-0.0423 (-0.1689)	-	0.6155 (1.6949)	-0.8938 (-1.9815)	-	1.4402
Holding Co. and ≥4 Segments	-0.0435 (-0.1730)	-	0.6161 (1.6915)	-0.7976 (-1.5124)	-0.2193 (-0.3549)	1.1055
Two Segments	-	-	0.1141 (0.4564)	-	-	0.2083
Three Segments	-	-	0.5960 (1.7365)	-0.9036 (-2.0266)	-	2.1598
Four or More Segments	-	-	0.5960 (1.7315)	-0.8083 (-1.5483)	-0.2179 (-0.3539)	1.4734
Business Group	-	-0.3434 (-1.7494	-	-	-	3.0605
Business Group and 2 Segments	-	-0.3488 (-1.7654)	0.0788 (0.3237)	-	-	1.5737
Business Group and 3 Segments	-	-0.3212 (-1.6346)	0.5960 (1.7459)	-0.8406 (-1.8883)	-	2.3463
Business Group and ≥4 Segments	-	-0.3175 (-1.5962)	0.5960 (1.7403)	-0.8033 (-1.5465)	-0.0869 (-0.1406)	1.7533

Note: The figures in parentheses are the t-statistics.

firm value as perceived by market investors. In addition, diversification into two unrelated businesses appears to add to firm value but any further diversification only subtracts value.

Holding companies are not the only avenue for diversification and control by corporate groups. Many of the holding companies with controlling or significant shares in listed companies, including a significant number of listed holding companies, are private companies and are not included in the list of companies included in this study. Moreover, obtaining q estimates for these private companies from published financial data alone is not a feasible undertaking. To address these difficulties, a third measure of corporate diversification is used via a dummy variable indicating whether the company is a member of a business group or not. Using this diversification measure in the regression shows more definitive results. The business group membership dummy variable shows a negative coefficient ranging from minus 0.3175 to minus 0.3488 with p-values of 0.10 or less in various regressions with and without the segment number indicator variables (except S4 which has a p-value of 0.1125). This suggests that the market discounts the firm value by an average of 31 percent to 34 percent of book value if it is a member of a business group, suggesting statistically that diversification in this form destroys value.

Table 2 shows the results of combining the diversification measures; for example, a dummy variable is set to one if the firm is either a holding company or a member of a business group. The rationale for this combination is to verify whether the market treats a company similarly if it is diversified in at least one measure. As previously, the market seems to be indifferent as to whether the firm is a holding company or not. However, the results for business group membership is significantly strengthened when the combined measure used is a dummy variable set to one if the firm is a business group member and/or has at least three significant business segments and zero otherwise. The coefficient is negative 0.3621 with t-statistic of -1.8562 and p-value of 0.0653.

The robustness of the results is then tested by considering other variables that may affect the level of q. If any other variable or variables affect q, it would also be interesting to determine if the perceived effect of diversification on q can stand on its own or can only be considered as pass-through effects of these other variables.

The first variable considered is whether the company had been paying dividends consistently during the period under study (1996-2000). As Lang and Stulz [1994] noted, in a neo-classical model with a decreasing returns to capital assumption, q can differ from one only because the firm cannot raise enough capital to fund all positive NVP (net present value) projects. Aquino [1999-2000], using high debt-equity and fixed assets to total assets ratios as indicators for financial constraint, found that these factors had a restraining effect on firm investment. Following a different approach used by Lang and Stulz [1994] and Fazzari, Hubbard and Petersen [1988], a dummy variable which is equated to one if the firm pays dividends is

Table 2. Regression of q against diversification measures

Regression	*Coefficient*	*t-statistic*	*p-value*	R^2
Holding Co. and/or Co. with at least 2 segments	0.1789	0.8613	0.3904	0.0048
Business group member and/or Co. with at least 2 segments	-0.2549	-1.2958	0.1970	0.0108
Business group member and/or Co. with at least 3 segments	-0.3621	-1.8562	0.0653	0.0219
Holding Co. and/or business group member	-0.0705	-0.3490	0.7275	0.0008
Holding Co. and/or business group member and/or with at least 2 segments	-0.0680	-0.3309	0.7412	0.0007

used as the indicator whether a company is financially constrained or not. Their reasoning is that a firm that pays dividends consistently could invest more by withholding dividends and thus is unlikely to be financially constrained. Thus, a company which is not financially constrained is more likely to be able to drive its q down to one as all its positive NPV projects are implemented. Under an expanded approach to NPV theory called real option theory (see for example, Dixit and Pindyck [1994]), however, this may not necessarily be so. A firm with a positive NPV project may decide to postpone and keep alive its option to invest on this project as long as the intrinsic value of the option to defer is positive. Under this scenario and assuming a rational market, the q of such a company will continue to be higher than one.

Under an alternative signaling approach, a consistent dividend payout policy can have a positive effect on stock prices and therefore on q. To provide a brief background, under the Miller-Modigliani [1961] dividend irrelevance proposition, the value of a firm is not affected by its dividend policy in a world without taxes or transaction costs. However, in the presence of personal taxes where dividends and capital gains are taxed differently, Miller and Modigliani themselves stated that their proposition may not hold. Specifically, when dividends are taxed effectively higher than capital gains, as in the Philippines, payment of dividends will only serve to lower the value of the firm and its stocks (aside from the asset reduction effect of the cash payout). This is one plausible explanation why local corporations hardly pay any dividends. The general belief seems to be that consistent dividend payments have a positive impact on prices despite tax disadvantages. One strand in the financial economics literature, pioneered by Bhattacharya [1979], explains this in terms of the informational or signaling content of dividends. In a world of imperfect information, insiders (managers and controlling stockholders) know more about the firm's prospects than outsiders (potential investors and minority or non-controlling stockholders). Insiders would like to communicate to outsiders the good prospects of the company. However, costless communication will not be credible as every firm, regardless of prospects, will want to communicate costless optimistic messages to potential investors. Thus, for the signal to be credible, it must have a cost. In the case of dividends, this consists of the need for the firm to access outside sources of finance when required in place of retained earnings and the tax disadvantage of dividend payments to stockholders as against capital gains. Miller and Rock [1985] developed a signaling model in similar vein to that of Bhattacharya [1979]. The model predicts that the disclosure of earnings provides the same information as disclosure of net dividends. The effect of dividend payments is the additional need for external funding to finance projects. Following the free cash flow hypothesis of Jensen [1986], stockholders would prefer that the firm maintain low levels of cash (by declaring them as dividends) and a high level of debt. In this way, the stockholders will lower their cost of monitoring firm management (a function which is largely taken over by creditors). Pursuing the argument further, monitoring by creditors and the fear of default will then lead firm management to choose less risky projects, thereby reducing the riskiness of the firm's stocks.

The other variables considered that may have an effect on q are membership in the Phisix[3], industry group membership, company size proxied by total asset book value, and past growth proxied by average annual growth in total assets. Two industry dummy variables are used: one is set to one if the firm belongs to the oil and mining sector (and zero otherwise) and the other is set to one if the firm belongs to the property sector (and zero otherwise). The default is that the firm belongs to other non-financial sectors.

The results of the regression are shown in Table 3. For the dividend dummy, the results support the signaling view. Consistent dividend payment appears to add 67 percent to 75 percent of book value to the firm's value. This empirical evidence is consistent with the experience in the US and elsewhere (see Lease et al. [2000]). The finding that dividend policy has an impact on firm value is also consistent with the belief of executives of listed Philippine firms surveyed in Kester, Chang, Echanis, and Soedigno [1995-96]. These executives were of the opinion that the market used dividend announcements in assessing market values. Furthermore, they believed that dividend payments provided a signaling device regarding company prospects.

The other variables found significant are the oil and mining sectors dummy variable and asset growth. Inclusion in the Phisix and company size do not appear to have any significant effect on firm value. However, it appears that being a member of the oil or the mining sector subtracts from the firm value; this finding is consistent with the current depressed state of these sectors. It also appears that past growth is a significant predictor of expected future growth as embodied in the q measure[4]. It is worth noting that previous findings remain valid and are consistent with the results yielded by additional explanatory variables. The coefficients for the dummy variable representing business group membership remain negative (ranging from -0.31 to -0.44) and statistically significant. When the diversification measure is redefined to be business group membership and/or being engaged in at least three business segments, the regression coefficient remains negative and statistically significant with t-statistic of 1.6734 and p-value of 0.0964. These results indicate that the perceived effects of diversification on firm value are not merely pass-through effects.

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[3] Philippine Stock Exchange Composite Index (Phisix). It is based on the market capitalization of the common stocks of 30 listed companies. Phisix is the commonly used proxy for the overall market.

[4] The question may be raised as to whether average annual asset growth can properly be treated as an exogenous variable in the regression equation. A Hausman test (see Davidson and McKinnon [1993]) was performed using return on equity, return on total assets, and other long-term assets—variables which are correlated with average annual asset growth rate at the firm level—as instrumental variables. The result of the Hausman test indicates that the regression equation of q against the business group membership, dividend payout, and oil and mining sector membership dummy variables and past asset growth is consistent. The coefficient on the residual after asset growth is regressed against the instrumental variables when included in the regression equation on q with the other variables has a t-statistic of 1.7560 and p-value of 0.0811. Further treatment of the relationship between q as an indicator of the firm's future worth and past growth is beyond the scope of the current investigation.

Table 3. Regression of *q* against business groupindicator and other variables

Regression	*Business Group*	*Dividend*	*Oil and Mining*	*Property*	*Index*	*Total Assets*	*Asset Growth*	*F-statistic*
Dividend	-0.4196 (-2.1450)	0.7495 (2.4612)	-	-	-	-	-	4.6092
Industry	-0.3787 (-1.9346)	-	-0.9098 2.6804)	0.0401 (0.1544)	-	-	-	3.5428
Index Membership	-0.3979 (-1.9458)	-	-	-	0.2738 (0.9544)	-	-	1.9847
Size - Total Assets	-0.3565 (-1.6896)	-	-	-	-	0.0007 (0.1731)	-	1.5356
Asset Growth	-0.3059 (-1.6569)	-	-	-	-	-	0.0119 (4.6310)	12.4567
Dividend and Industry	-0.4399 (-2.2526)	0.6689 (2.2105)	-0.6904 (2.1395)	0.0048 (0.0187)	-	-	-	3.9466
All Variables	-0.3418 (-1.7102)	0.6830 (2.3212)	-0.6907 (-2.1455)	-0.0685 (-0.2797)	0.1484 (0.5296)	-0.0040 (-1.0626)	0.0112 (4.3602)	5.3494
All Variables (Co's with at least 3 segments)	-0.3776 (-1.6734)	0.6806 (2.3003)	-0.6998 (2.1348)	-0.0733 (0.2933)	0.1397 (0.4952)	-0.0033 (0.8610)	0.0106 (3.9942)	4.2567

Note: The figures in parentheses are the t-statistics.

4. Concluding remarks

Overall, the study has somewhat mixed findings. Corporate diversification through the holding company route, per se, does not raise or reduce firm value as perceived by market investors. However, diversification into two unrelated businesses either via subsidiaries or internal divisions appears to add to firm value but any further diversification only subtracts value. Diversification through the route of interrelated business groups also appears to decrease value perceptions. These findings are robust with respect to the addition of variables found to have explanatory power on firm value such as consistency in dividend payout, asset growth and industry grouping. In addition, value appears to be independent of capital structure and firm size.

The lower q ratios found for firms belonging to business groups need further explanation. Lower q's imply that investors require a higher expected return when investing in a company associated with a business group. This is similar to the "diversification discount" in multiple-segment firms found in US empirical studies, including those cited previously. A number of explanations have been offered to explain the discount (see, for example, Weston, Siu and Johnson [2001]), some of which may be adapted to the Philippine case. First, external capital markets presumably can allocate resources more efficiently than internal capital markets. Without the guidance of price signals from a competitive market, managers may make inferior investment decisions in internal allocations. Second, there may be external or internal political influences that result in poor investment decisions or in continuing to subsidize underperforming segments within the group. A third explanation is that managers of multiple (i.e., three or more) businesses cannot be expected to be as well informed about each business as managers of more focused businesses. A fourth reason could be that investors and analysts are less likely to follow diversified firms or firms in groups because of difficulties in securing and analyzing information. Finally, there could be apprehension, rightly or wrongly, that the controlling shareholders may expropriate the wealth of shareholders not belonging to the controlling group. These explanations are plausible in varying degrees but further research is indicated.

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