

# **Cross Subsidization and its Effect on Pakistani Business Group's Affiliated Firm Performance**

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## **Abstract**

This study provides a contribution to the existing literature on the role of business groups in the world and in Pakistan in particular. The analysis shows that stock market and accounting performance measures of Pakistani group unaffiliated firms are significantly superior to those of affiliated firms. This study further investigated that groups subsidize their unprofitable firms, which is associated with negative effect of cash flow dummy that reduce significantly the value of affiliated firm's Tobin's q more than unaffiliated firms. The increased use of debt by groups might be explained by a possible apparent tax advantages that groups enjoy from this use of debt.

Taken as a whole, our evidence implies that group affiliated firms underperform unaffiliated firms in Pakistan.

**JEL classification numbers:** G11, G32,

**Keywords:** Business Group, Cross-subsidization, Pakistan, Tobin's q

## **1 Introduction**

The phenomenon of business groups, including the proper definition and the effects business groups, has been a subject for a debate in academic literature for a number of decades. Business groups are seen to play a significant role in many countries in the world, including both developing and developed economies. Business groups serve as the primary economic engine for the development of the national and local economies in Pakistan. The reason that business groups have been used by the government as a tool of economic reform is that Pakistan has needed to move from a hierarchical system that typifies central planning to a market-based system. The Pakistani government knew that

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the nation needed an intermediary institution that would facilitate the enterprise reform and, thereby, the economic transition. The solution was the encouragement of business group formation that would facilitate the movement towards the market based system.

From an economic point of view, business groups are formed to compensate for market imperfections, on the other hand, sociology tends to regard these reasons as too narrow, as they do not take into account social, cultural, and historical factors. Much of the economic growth in Pakistan has been fuelled by powerful business groups that operate across a wide spectrum of industrial sectors (Khanna & Palepu, 1997), with a significant amount of common ownership and control, usually by a family (Ikram and Naqvi, 2005).

In literature, there has been an increased attention to the role of business groups in developing countries in recent years, surprisingly very little has been done to study business groups performance in Pakistan. Since there is a lot of controversy surrounding the effects of business groups on the economy immature markets (Poukliakova, 2005), studies of business groups in other countries can serve to resolve ambiguity regarding the effects of business groups. In particular, countries like Pakistan that are generally characterized as economy in the transitional stage can serve this purpose because the process of transition makes many effects of business groups more pronounced and testable. This study aims to fill this gap. This study is first in nature which compares the performance of Pakistan group affiliated firms with unaffiliated firms at three different group's diversification levels in Pakistan.

This study contributes to the limited existing body of literature that explains the existence of pyramidal business groups that affects the firm's performance. The key questions of this study bear on recent empirical literature that has evaluated whether affiliation with a business group is associated with superior or inferior corporate performance.

In summary, this study provides a contribution to the existing literature on the role of business groups in the world and in Pakistan in particular. Findings of this study add to the existence literature that stock market and accounting performance measures of group unaffiliated firms are significantly superior to those of affiliated firms. This study contributes evidence that groups subsidize their unprofitable firms, which is associated with negative effect of cash flow dummy that reduce significantly the value of affiliated firm's Tobin's q more than unaffiliated firms. The increased use of debt by groups might be explained by a possible apparent tax advantages that groups enjoy from this use of debt. In addition, this study found that the most diversified group affiliated firms have larger accounting and market valuation as comparatively to the least and intermediate group diversified firms.

## **2 Literature Review**

There are several observations have been made by different researchers that why the business grouping such a widespread phenomenon. These imperfections are detrimental to the efficient functioning of markets, increasing the scope for firms, who will try to internalize tasks that would otherwise be delegated to the market. More specifically, with ill-functioning capital markets, business groups may play an important role in generating and allocating funds to investment projects.

From a theoretical perspective, business group affiliation may enhance a firm's access to external capital for several reasons. First, business group affiliation may improve a firm's access to external capital because banks and other financial institutions may be more

willing to lend to firms that belong to a business group. Second, studies have shown that foreign investors are more interested in investing in group-affiliated firms than in stand-alone firms in emerging economies because the scale and scope of the group assures returns similar to the portfolio management in mutual funds (Khanna and Palepu, 1997). Third, a firm may be able to obtain funding from other group companies through an intra-group capital market.

From an economics perspective, business groups substitute for imperfect market institutions in the emerging economies (Caves and Uekusa, 1976; Chang and Choi, 1988; Khanna and Palepu, 1997, 2000a; Leff, 1978).

Khanna & Palepu (1997) point out that several major aspects of the institutional environment in emerging economies, such as product market, capital market, and labor market, are substantially different from those in developed economies. With respect to corporate investment perspective, this may imply that business group affiliates may have better access to external capital, either from within the group or from outside the group (Lensik, Remco and Shubashis 2003).

Based on the discussed literature, it is obvious that a consensus does not exist concerning the benefits and costs of business grouping. Thus, the study of Pakistani business groups contributes to the unresolved debate regarding the impact of business group affiliation on shareholder wealth.

Prevailing managerial theories advocate the importance of corporate focus that is companies should specialize in their competitive advantage and warn of the disadvantages of unrelated diversification (Martin and Sayrak, 2003) which is not based on unambiguous theoretical predictions. Theoretically, corporate diversification could be beneficial to shareholders if a firm has some resources that can be profitably deployed outside the industry in which it operates, such as entrepreneurial skills, technology, etc. There are also theoretical foundations for the view that diversification can be harmful if it is driven by managerial objectives such as “empire building” or “risk aversion”, or if it leads to agency problems among division managers (e.g. Rajan, Servaes and Zingales, 2000; Scharfstein and Stein, 2000). It is based on empirical regularities observed primarily in the US that diversification destroys shareholder value and it is not just only based on an unambiguous theoretical prediction.

Modern evidence suggests that for US corporations, diversification is typically associated with a loss of firm value which is called the “diversification discount.” Corporate diversification, especially into unrelated industries, is one of the main reasons for the destruction of shareholder wealth, possibly serving the interests of risk-averse managers and perhaps also creditors (Morck, Shleifer and Vishny 1990; Lang and Stulz, 1994). Among other reasons, La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000) state that in many countries, there is significant expropriation of minority investors and creditors by the controlling shareholders which result from the stealing of the profits by insiders, selling their firm’s products or assets at lower than market prices to firms they control or own, appointing incompetent family members, unfairly rewarding executives with company stocks, free loans, and huge raises.

On the other hand, several recent studies have cast some doubt on the causal interpretation of the diversification discount (Campa and Kedia, 2002; Whited, 2001) and corporate focus is still viewed as a desirable corporate strategy, far more so than less-focused alternatives. In addition, the application of the US-based literature on the context of business group’s diversification is to ask whether the empirical association of diversification with lower shareholder value also exists in less-developed economies. The

general answer to this question seems to be that the diversification discount tends to be lower in environments where markets, including, but not limited to, financial markets, are less developed. In some cases, diversified entities are even traded at a premium rather than a discount.

Khanna and Palepu (2000a) who investigate the effects of group diversification on firm value using a sample of Indian firms, argue that firms can benefit from corporate diversification due to the presence of an active internal capital market which helps diversified firms to pool their available funds and reallocate them to their most efficient use. They found that group diversification initially deteriorates firm performance, but as the diversification level exceeds a certain level, it has a value-enhancing effect.

In sum diversification may be a means to achieve superior performance, or it may be more closely related to other features of business groups, such as conflicts between controlling and minority shareholders or the genealogical evolution of the controlling family. In addition, diversification of business groups may not be a means to achieve any particular goal. Instead, it could simply be the outcome of other activities such as rent-seeking ties with the authorities or market power. In addition, both the motives for diversification and the resulting outcomes (the performance of diversified groups and their welfare implications) are likely to vary across different institutional and economic environments.

In countries like Pakistan, external investors lack effective means to control private benefit seeking by family controllers because they do not share in the control of local corporations in Pakistan (Gohar and Karacear, 2009). In addition, external investor control is further diluted as the family retains majority votes and as a result has complete dominance over the Board of Directors. Therefore, concentrated control in the hands of the family increases the controller's discretion to create private benefits and these benefits seeking sets incentives for family controllers to establish corporate structures that ensure and reinforce majority control.

In summary, data suggests that many corporations in Pakistan use cross-shareholding, interlocking directorships and pyramid structures to fulfill the objective of retaining majority control. These are advantageous for family controllers as they allow them to make cash transfers across family companies through various means like: companies give each other high (or low) interest loans, manipulate transfer prices, sell assets to each other at above or below market prices, etc. The insets provide some recent evidence collated by the Securities and Exchange Commission of Pakistan (SECP) regarding private rent seeking by Pakistani corporate controllers.

The above discussion suggests that concentrated control in Pakistani business firms, which is supported by interlocking directorship, cross-shareholdings and pyramid structures, may strengthen incentives for excessive private benefit seeking in Pakistan.

### **3 Research Design and Methodology**

The data for this study is obtained primarily from a publicly available database maintained by Securities & Exchange Commission of Pakistan (SECP) and Karachi Stock Exchange (KSE). The data set we use in our study consists of nongroup and group affiliated Pakistani private sector firms listed on the KSE with the required data. We analyze data from 2002 because it is the year for which we have the most coverage in the database and from this year data presently available on the KSE database which is used to

obtain firm-level financial and accounting information. Sample of this study consists of 236 firms that are traded in the Karachi Stock Exchange (KSE) from the year 2002 to 2010 after data screening. Out of 236 sample firms, 112 are classified as firms affiliated with a diversified business groups and remaining 124 firms are classified as unaffiliated with any business group firms. In analysis of potential benefits of group affiliation this study also supplement the KSE data with a variety of publicly available information sources and some privately collected data.

In our analysis, definition of the level of group diversification that are, number of industries is used as dummy in order to examine the effect of the level of diversification on firm performance as defined by Gonenc et al., (2007). The number of industries in which the firm operates is used to determine the level of diversification in affiliated groups, for example, if the affiliated firms of the group operate in only one industry, they are classified as least-diversified firms (LDFs); in two to three different industries, as intermediate-diversified firms (IDFs); and in four or more than four industries, as most-diversified firms (MDFs). The two-digit industry codes assigned to the firms by KSE is used to determine the level of diversification in affiliated groups.

### 3.1 Performance Measures

This study uses stock market and accounting measures of performance to determine the effects of group membership. First performance measure used in this study is operating return on assets (OPROA), is defined as the operating profits, measured as earnings before interest and taxes, divided by total assets. Return on assets (ROA), second performance measure, is defined as the firm's net income divided by total assets. Finally, Tobin's q ratio was used to measure market valuation. Tobin's q is defined as the sum of the market value of equity plus short- and long-term liabilities, scaled by total assets, where market value of equity is calculated using closing stock prices on the last trading day of the year.

Following control variables are also included in this study.

The first control variable included is the size of the firm and is measured as the natural log of assets.  $Size = \text{Natural log of average of assets during the period studied}$ . The second control variable is "debt ratio" which is defined as the sum of short-term and long-term liabilities divided by total assets. The sales growth is used as a third controlled variable and is measured as the real value rather than the nominal value and is defined as the percentage increase in the sales of the firms in two consecutive years, adjusted for inflation.

## 4 Results and Discussion

Table 1 reports the mean values of sample statistics for a variety of attributes of entire sample and the sub-samples of group-affiliated and unaffiliated firms.

The group affiliates' mean (median) average sales growth is 69.4% (15.10%). Relatives to the group unaffiliated firms, affiliated firms are smaller in terms of both sales growth and in size. In average, the mean (median) of unaffiliated firms has 79.6% (17.20%) in sales growth and 3.235 (3.187) in size.

Table 1: Sample Summary Statistics and Performance Measures

GROUP	Whole Sample (n = 236)			Affiliated Firms (n = 112)			Unaffiliated firms (n = 124)			F-statistic
	Std.			Std.			Std.			
	Mean	D	Median	Mean	D	Median	Mean	D	Median	
Sales. G	0.748	2.907	0.167	0.694	3.273	0.151	0.796	2.544	0.172	0.073 (0.79)
Debt Ratio	0.747	0.526	0.696	0.779	0.431	0.713	0.719	0.599	0.666	0.751 (0.39)
Size	3.201	0.630	3.163	3.163	0.492	3.160	3.235	0.733	3.187	0.758 (0.38)
OPROA	0.072	0.107	0.050	0.054	0.097	0.035	0.088	0.113	0.065	6.264*** (0.01)
ROA	0.048	0.081	0.037	0.035	0.075	0.024	0.061	0.085	0.048	5.937*** (0.01)
TOBINQ	1.322	0.752	1.118	1.165	0.417	1.039	1.464	0.939	1.192	9.639*** (0.00)

This table presents sample mean (median) summary statistics. The statistical significant of difference of means is computed by F-test. \*\*\*, \*\*, and \* denote statistically significant difference between the values of affiliated and unaffiliated firms at 1 percent, 5 percent, and 10 percent significance levels, respectively.

The correlation matrix displayed in Table 2 which shows the intercorrelations between performance measures and different variables of this study.

The table reports correlation matrix for different variables of this study. Tobin's q is approximated by (market value of equity + book value of debt)/ (book value of assets). ROA is calculated as (net income)/ (total assets) and OPROA is defined as (earnings before interest and taxes)/ (total assets). The group dummy measures membership in diversified group and the number of industries is used as a measure of group diversification. The least diversified firms (LDFs) refers to group in one industry, the intermediate diversified firms (IDFs) in two to three industries, and the most diversified firms (MDFs) having four or more industries. Among controllable variables, firm size is the natural log of average of assets; debt ratio is total liabilities divided by total assets and sales growth is percentage increase in the sales of the firms.

Table 2: The Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10
1. GROUP	1.00									
2. LDF	0.25**	1.00								
3. IDF	0.53**	-0.12	1.00							
4. MDF	0.55**	-0.13	-0.27**	1.00						
5. Sales Growth	-0.02	-0.05	0.06	-0.06	1.00					
6. Debt Ratio	0.06	-0.03	0.00	0.08	0.00	1.00				
7. Size	-0.06	-0.03	-0.01	-0.05	0.22**	-0.31**	1.00			
8. OPROA	-0.16*	-0.10	-0.20**	0.05	0.04	-0.36**	0.30**	1.00		
9. ROA	-0.16*	-0.09	-0.18**	0.04	0.03	-0.39**	0.33**	0.98**	1.00	
10. TOBINQ	-0.20**	-0.14*	-0.17**	0.00	0.04	0.45**	-0.02	0.31**	0.26**	1.00

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

From the correlation matrix in the Table 2, this study found that Tobin's q has a significant negative relationship with the group dummy among performance measures

which means that group dummy decreases the value of Tobin's q significantly. This shows that investors assign low value to group affiliated firms and one of the most important possible explanations for the value loss observed in business groups firms might be the subsidization of failing or poorly performing business segments by other members of the group. Meyer, Milgrom, and Roberts (1992) argue that an unprofitable line of business can continue to operate through subsidies from its profitable segments if it is part of a conglomerate. They predict that failing business segments create more value loss as part of a conglomerate than as a stand-alone segment since independent firms have no parent to provide an operating subsidy. Shin and Stulz (1998) argue this, that financial cross guarantees link the members of a group and provide the basis for an internal capital market. Thus a failing group affiliates has resources to other sources of funding that can insulate it from the discipline of the market place.

To test this hypothesis, negative cash flow that is earning before interest and taxes less than zero is used as the measure of a poorly performing firm and as the trigger for a likely cross-subsidy. We test whether the presence of a negative cash flow has a more negative effect on the market performance measure that is Tobin's q value of a group affiliated firms than on an unaffiliated firms. Such a result is consistent with an unprofitable group affiliated firms draining value form other members of the affiliated firms through cross-subsidies.

This study run the regression analyses for affiliated and unaffiliated firm's Tobin's q as a dependent variable and a negative cash flow dummy as an explanatory variable along with other control variables in the Table 3.

This table presents coefficient estimates from regressions of Tobin's q of affiliated and unaffiliated firms during 2002-2010. The dependent variable is Tobin's q which is approximated by (market value of equity + book value of debt)/ (book value of assets). The explanatory variables include a negative cash flow indicator and a set of control variables. For the group affiliated firm's analysis, the negative cash flow dummy = 1 when one of the affiliated firms has negative EBIT. For the unaffiliated firm's analysis, the negative cash flow indicator is = 1 when the firms has negative EBIT. Among controllable variables, firm size is the natural log of average of assets; debt ratio is total liabilities divided by total assets and sales growth is percentage increase in the sales of the firms in two consecutive years, adjusted for inflation.

Table 3: Group Affiliated and Cross-subsidization Effects

Variable	Affiliated Firms	Unaffiliated Firms
Intercept	0.746*** (3.310)	0.403 (0.972)
Negative cash flow dummy	-0.202** (-2.363)	-0.134 (-1.614)
Firm size	-0.029 (-0.366)	0.133 (1.484)
Debt ratio	0.714*** (8.147)	0.497*** (5.848)
Sales growth	0.083 (1.108)	-0.007 (-0.086)
N	111	123
F-statistics	19.621***	8.875***
Adjusted R <sup>2</sup>	0.402	0.204

\*\*\*, \*\*, and \* denote significant difference from unaffiliated category at the 1, 5, and 10 percent levels, respectively. T-values are reported in parentheses below the coefficient estimates.

This study observed that the negative cash flow dummy variable has a significant negative relationship with Tobin's  $q$  of the group affiliated firm's and it is insignificant for unaffiliated firms. This result suggests that the existence of a poorly performing firm within the group can reduce the value of the affiliated firms. This is consistent with Chevalier (2000) and Whited (2001) who note that cross-subsidization can be a contributory factor, though not the only explaining the loss in value for diversified firms. In contrast, there might be benefits that arise from membership in a business group and there are benefits associated with the affiliated firms. Lewellen (1971) for instance, notes that by combining business segment with imperfectly correlated earnings, the risk of the firm's debt is reduced and thus increases the firm's debt capacity. The firm's increased debt capacity subsequently generates increased tax shields and corresponding fewer taxes paid for the business conglomerate. One such possible benefit is a co-insurance effect which is the existence of possible financial benefits that might be attributable to group membership. If affiliate firms are able to co-insure each other's debt because of an imperfect correlation between their cash flows, then the debt capacity of affiliated firms should increase.

The table I shows that the affiliated firms use more debt to finance their assets than do unaffiliated firms. This greater use of debt for affiliated firms suggests that membership in a business group increases a firm's debt capacity.

An important implication of this increased use of debt is that it will generate additional tax shield, which in turn, will result in fewer taxes paid by group affiliated firms.

In this study, we observe that affiliated firms experience a tax rate that is all taxes paid standardized by total sales is significant lower than the tax incurred by unaffiliated firms. The total tax expenditure scaled by total sale is 0.007 for affiliated firms versus 0.015 for unaffiliated firms (not presented in this study). This suggests that the tax savings from the higher interest tax shields of affiliated firms are meaningful and that the higher leverage of affiliated firms results in less taxes paid.

## 5 Conclusion

This study provides a contribution to the existing literature on the role of business groups in the world and in Pakistan in particular. The analysis shows that stock market and accounting performance measures of group unaffiliated firms are significantly superior to those of affiliated firms. Thus, our evidence contradicts to the most of the emerging market hypotheses that the affiliated group firms outperform unaffiliated group firms in majority of the emerging market and it focus attention to the severe effects of tunneling in these market as suggested by Ikram and Naqvi (2005) that tunneling is prevalent in Pakistani business groups. In addition, we find evidence indicating that groups subsidize their unprofitable firms, which is associated with negative effect of cash flow dummy that reduce significantly the value of affiliated firm's Tobin's  $q$  more than unaffiliated firms. The increased use of debt by groups might be explained by a possible apparent tax advantages that groups enjoy from this use of debt.

Taken as a whole, our evidence implies that group affiliated firms underperform unaffiliated firms in Pakistan. Findings of this study support Morck et al. (2003) results that regard family-controlled pyramidal business groups in countries where minority shareholders are not well protected as environments where expropriation of small shareholders by controlling wealthy families is likely to take place, a phenomenon which



may adversely affect the ability of firms to raise external finance. Similarly, Bari et al., (2003) argue that the expropriation of minority shareholders is a common occurrence in Pakistani companies. Their findings reveal that there is a positive correlation between the concentration of family control and the controlling shareholder's discretion in terms of appropriating personal benefits which is further exacerbated by weak corporate governance mechanisms, inadequate disclosure and ineffective auditing practices. They find that the desire to retain family control holds corporations back from financing their projects through the stock market and makes them solely dependent on retained profits. In order to retain family control, large corporations have been seen to oppose the market reforms, including those on the disclosure and auditing requirements. The families' objective of retaining control is an important reason why Pakistan's capital markets are illiquid and inefficient (Bari et al., 2003).

Another reason for this low performance is that, in Pakistan, agency problem is most severe in Pakistani business group as investigated by Ghani and Ashraf (2005). In Pakistan, the corporate governance mechanism such as protection of outside investors and creditors is very poor, timely and full enforcement of laws is highly problematic, and poor quality of external financial disclosures are some of the major reasons of this severity. The neutral and negative effects of group affiliation in Pakistan and other countries suggest that group affiliation need not always be beneficial. The continued existence of possibly inefficient groups is consistent with poorly developed selection environments, where weak organizational forms are not weeded out (Khanna and Rivkin, 2001).

To address these problems requires greater transparency to reveal the control links and the parties acting in concert, plus regulatory and legal reforms to strengthen the rights of minority shareholders, such as lowering the minimum percentage of shareholdings required to block major decisions, call an extraordinary shareholders' meeting, or file class action suits. Such reforms would not only help minority shareholders challenge expropriation; they would also force the controlling shareholder to acquire more ownership rights to maintain control. This should reduce the incentive to expropriate and might force a consolidation of business groups into the more transparent structures prevalent in Europe that capital markets could police more effectively. In sum, we suggest that in well-regulated and transparent markets, family business group affiliated firms could reduce agency problems and perform as well as unaffiliated firms.

As is the case with other research, this study admittedly has following limitations;

First, even under the assumption that a causal interpretation can be assigned to this correlation, the particular reasons why diversification is good or bad in certain countries or institutional environments cannot be inferred.

Second, this study relies primarily on stock market data and do not address the selection issue associated with the decision to list some group companies but not others.

Third, to the extent that differences in performance between group-members and other firms are documented, it is not straightforward to relate such differences to particular group attributes (Khanna and Yafeh, 2005).

Fourth, diversification at the level of the individual line of business than diversification at the group level could affect performance measures.

For future research, this study suggests that there is a need to explore how the logic followed in group diversification strategy differs across these and thus ownership, related resources, entrepreneurial scarcity and informational imperfections (Ghemawat and Khanna, 1998) must be included as another explanation of diversification in business groups.

Another important issue that could be explored by future studies can analyze the ways in which the characteristics of the country support the creation of business groups by providing opportunities for diversification or induce the transformations of business groups.

For future research it is also suggested that as tunneling is prevalent in Pakistan (Ikram and Naqvi, 2005) the need is to investigate that how do Pakistani businesses tunnel resources? For example, central or powerful firms in the business group, or key shareholders, may be using their influence to tunnel away affiliates' resources. Further research is needed to disentangle these alternative explanations.

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