

**Thesis of Doctoral (Ph.D.) Dissertation**

**DETERMINANTS OF BUSINESS GROUPS'  
PERFORMANCE: AN EMPIRICAL  
EVIDENCE FROM PAKISTAN**

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## **1. Research Background and Rationale**

Earlier research on business groups has primarily investigated how group membership affects the different financial outcomes of firms by comparing independent firms with group-affiliated firms. The mainstream of predominant research has explored how group affiliation affects firms' performance, specifically in accounting (e.g., Caves & Uekusa, 1976) and stock market returns (e.g., Khanna & Palepu, 2000a). Other research within the financial mainstream has analysed the investment behaviour of group-affiliated firms, specifically the sensitivity of capital investment to the availability of internal funds (Hoshi, Kasyap & Scharfstein, 1991; Shin & Park, 1999). Scholars have also examined the financing structures of group-affiliated firms, examining their relationships to banks and their debt–equity levels. Moreover, scholars have analysed the ability of business groups for sharing and minimising risk amongst member firms by smoothing operating cash flows and supporting distressed firms (Leff, 1978). A small stream of efforts emerged to show the way in which group affiliation influences foreign expansion strategies (e.g., Guillen, 2002, 2003). The scholars have also probed the effects of group affiliation on innovation (e.g., Branstetter, 2000; Chang, Chung & Mahmood, 2006). However, these studies suggest differences in the strategy between group-affiliated and independent firms. Their

focus largely determines whether group-affiliated firms learn from their associated firms. Scholars have also investigated the diversification behaviour of group-affiliated firms (e.g., Claessens, Djankov, Fan & Lang, 1999). In addition, studies have also begun to focus on whether business groups are capable of taking advantage of industry changes with increasing liberalisation and economic development (Khanna & Palepu, 2000b; Hoskisson, Cannella, Tihanyi & Faraci, 2004). There has been increased interest in the capital allocation decision of group-member firms, specifically whether business groups allocate funds in most efficient manner to maximise shareholders' wealth or whether groups use firms to keep funds away from minority shareholders (e.g., Bertrand *et al.*, 2002). Most of the research in this particular area has mainly focused on the effect that group affiliation has in capital markets for member firms. However, it is important to note that the impact and influence of tangible and intangible resources and interlocking directorates on financial performance and value of group-affiliated firms is less researched. To date, there have been very few researches that analytically explore the resource-sharing of group-affiliated firms in emerging economies. As a result, a comprehensive understanding of how resources at firm- and group-level (interlocking directorates) conceptualise into economic performance difference between group-affiliated and independent firms has been still missing.

Business groups abound in many countries around the world, implicitly indicating their economic influence is considerably large and meaningful. Still, the economic roles of business groups are challenging and interesting in many developing and developed economies. This study has explored the success and adaptability of business groups in the framework of developing economy of Pakistan. The aim of the study is to expand our understanding and knowledge regarding business groups' financial performance and the value of affiliated firms. The study has empirically analysed the relationship between group membership and the performance of public limited firms in Pakistan. The effect of group membership on financial performance and the value of member firms are dependent on the level of tangible and intangible resources and the sharing of interlocking directors in the group.

The emerging economy of Pakistan offers an ideal empirical environment for this study approach, and does so specifically for the following reasons. As proposed by Khanna & Yafeh (2005) that the diversified business groups are common in most developing economies; however, their role is poorly understood in India and Pakistan. In another study, Khanna & Yafeh (2007) reported that business groups are ubiquitous in developing countries, such as Pakistan, India, Brazil, Chile, Mexico and South Korea, as well as in developed countries, i.e. Japan, Sweden and Italy. They argue

that studies on the determinants of business group performance and their affiliate firms are needed from Pakistan. However, here is only one study available in the context of Pakistan that probes the profitability of 65 member firms of 43 business groups and 33 standalone firms from the non-financial sector of Pakistan during the period 1964–1968 (White, 1974); nonetheless, the empirical results revealed statistical insignificant difference between the profitability of group and non-group firms. Hence, there is a dire need to fill this research gap. The second reason for completing this research is that business groups contribute a large part of their production to the economy of Pakistan. Moreover, they cover their major part in the private sector of the economy and possess a leading edge for overall economic development and political favours (Saeed, Belghitar & Clark, 2015). Third, several business groups' owners migrated from India and are running their businesses since the independence of Pakistan in 1947. Therefore, business groups have long history and strong roots in the Pakistani economy. Thus, it provides sound grounds to study, from an empirical standpoint, the behaviour of business groups in Pakistan. Fourth, the most obvious reason for studying Pakistani business groups was that the publicly listed firms are member of only one business group, suggesting that it provided a clear basis to classify the group affiliate and stand-alone firms, hence suggesting conclusive results for group and non-group firms.

## **2. Structure of the Thesis and Applied Methodology**

Chapter Two analyses different theoretical approaches to business groups, considering: Why do business groups exist in emerging economies? How can a collection of firms arranged as a business group do what these firms cannot achieve as independent firms? Also, we discuss in detail how these theories relate to the different characteristics of business groups.

The first basic research question centres on whether group membership affects the performance of member firms. The current study analyses the way in which group membership effects the determinants of performance by comparing the book value and market value measures of both member firms and standalone firms, including the different control variables of firms. It is argued that results of earlier studies may be inconclusive owing to there being a limited sample or otherwise owing to the application of simple or less-sophisticated econometric techniques. This study uses panel data models, which facilitates the separation of the effect of group membership from firm-specific effects on the performance of firms. Studies related to business groups have still been searching for the answer as to why business groups exist and what their economic role is in a precise sense. Most importantly, are they good or bad from an efficiency point of view, particularly in emerging

economies? Thus, this presents one of the reasons behind investigating the economic functions of business groups to empirically analyse the well-being of business groups and their member firms. This study second and third questions addresses the issue of how intangible and financial resources owned by firms in a group and the sharing of interlocking directors influence the financial performance and value of group-member firms.

For the better understanding of these questions, I devote Chapter 3 of the dissertation. This chapter presents review of previous studies and theoretical rationale of the current study. In Chapter 3.2 the relationship between group affiliation and firm performance is described. Considering the significance of institutional voids, a growing number of studies exist in the literature, which place emphasis on the association between business group affiliation and the performance outcomes of firms. In a meta-analysis, Carney *et al.* (2011), based on 141 studies, related business group relationship with performance in 28 countries. They reported that the cost of group membership marginally balances its profits in the form of improved financial performance and that performance deviations existed of a certain difference at the firm and group levels. Thus, business groups can be witnessed in many forms and sizes, with their diversity featuring challenges over time. Meanwhile, proportional returns in terms of profit are recognised more so in



developing countries, where labour and financial markets are imperfect. In another comprehensive study of Khanna & Rivkin (2001) related to business group affiliation and corporate performance, based on a sample of 14 countries, the effects of business groups were seen to differ from 4.2% (Mexico) to 31.1% (Indonesia). Moreover, Chang & Hong (2002) found that business group effects account for between 5.7% and 9.7% of Korean firms' performance; this effect importantly disappeared during a long period.

Following Transaction Cost Theory, Chang & Choi (1988) point out that chaebol firms affiliated with diversified business groups are more profitable as compared to non-chaebol firms. Importantly, the benefits of group membership may also be created from the competence of the business groups to provide an alternative for market imperfections. Khanna & Palepu (2000a) examined that group membership alone does not increase firm value. However, affiliation in the case of the more diversified business groups only adds value to member firms. Perotti & Gelfer (2001) provided evidence from the Russian economy to support the view that group-affiliated firms have higher values of Tobin's Q when compared to standalone firms. Group membership does not involve only gains, but also costs. Evidence from 252 Korean manufacturing firms, Choi & Cowing (1999) analysed that firms affiliated with Chaebols

had significantly lower annual profit rates relative to independent firms. In another study, a large sample of 1080 Indonesian firms from 1995-1997, Mursitama (2006) explored Indonesian business groups, and showed that group membership has a negative impact on member firms' performance. Claessens *et al.* (2006) study sample based on the data of 2000 firms from nine East-Asian economies between 1994–1996, proposed that slow growing and mature firms' advantages from group membership, whereas young high-growth firms are more likely to lose.

Consistent with theory and empirical evidence that supports the hypothesis that firms affiliated with a group located in an emerging economy have higher financial performance than standalone firms, the institutional and Transaction Cost theories emphasise that business groups may add value to member firms by filling the voids left by the missing institutions that support the efficient working of markets (Khanna & Palepu, 1997; Kim *et al.*, 2004). Therefore, it is expected that group membership positively affects the performance of group-affiliated firms in Pakistan

Chapter 3.3 focuses on influence of tangible and intangible assets on performance of group-affiliated firms. A review of literature (Guillen, 2000; Kumar, Gaur & Pattnaik 2012) indicates that group-member firms have certain advantages. Group-member firms have the benefits of economies of scale and scope, have an easy access to

the resources of the entire network, and get privileged treatment from financial institutions and government agencies. Therefore, business groups are capable to assume risky strategic commitments, such as internalising R&D capabilities. As diversified business groups can afford substantial economies of scope. Business groups promote group-wide advertising, which focuses on the overall picture of a business group rather than highlighting an individual member firm. As a result, group-wide advertising also creates economies of scale-and-scope.

As argued by Eberhart *et al.* (2004), investors may view investment in tangible assets as an ordinary activity of a firm, although they are very responsive to investment in intangible assets, such as R&D and marketing activities. Srivastava *et al.* (1998) proposed that tangible assets provide advantages in the short run, although intangible assets have a tendency to offer benefits in the long-run. Thus, Sougiannis (1994) pointed out that it is more appropriate for firms to value their intangible assets, such as R&D, over a long period.

Financial resources are intended to be the liquid resources in the firm, and they enables firms to purchase other valuable resources; therefore, these resources provide competitive advantages to a firm (Chatterjee & Wernerfelt, 1991). Considering financial resources, the resource-based view implies that firm's unique resources create superior financial performance (Penrose, 1959; Wernerfelt, 1984).

Consistent with such spillover, Leff (1978) proposed that business groups with plentiful financial resources are capable to transfer resources with more potential to group-member firms. Therefore, this provides more flexibility and ease to member firms to raise capital through internal capital markets. As information asymmetries are more severe in emerging markets, the cost of capital is lower in internal capital markets compared to external capital markets. A similar point is also made by Yeh (2005) in favour of internal capital markets that low cost of capital improves firm performance. Many scholars suggested that a business group might be willing to provide capital internally to group-member firms because it has accurate information about their members.

Thus, it is expected that group-member firms with more cash availability and borrowing capacity are able to better finance their investment opportunities and show higher financial performance.

Chapter 3.4 discusses the role of interlocking directorates in terms of whether or not they facilitates group-member firms. White (1974) reported interlocking directorates are concentrated in ‘the 22 families’ of Pakistan. However, there is no empirical evidence available in the context of interlocking directorates and financial performance of Pakistani business groups. Khanna & Palepu (1999) asserted that over the changing important economic dynamics, the importance of ties amongst group-member firms, such as

interlocking directorates, their continuous presence and relevance is significant to be explored. Previous studies analysed different dimension of interlocks and the effects of CEO Board (Gulati & Westpha, 1999), determined the role of interlocks to preserve independence of outsider directors (Carpenter & Westpha, 1999). Thus, it influence on creation of collusions and effects on strategic behaviour (Gulati *et al.*, 2000), and their support and performance in information sharing and corporate acquisitions (Haumschild & Beckman, 1998). The interlocking directors contain important implications for the structure and efficient working of firm Boards, which result in the strategy and performance of firms (Hermalin & Weisbach, 2000).

Scholars have long been attracted to analysing the effects of interlocking directorates on different outcomes of a firm. Notably, the effects of interlocking directorates inside the business groups are incorporated, insights from Resource Dependence Theory (Pfeffer & Salancik, 1978). Theory predicts that Board interlocks might influence the value of firm, both positively and negatively, and that affiliation depends on the firm's comparative resources. Studies based on resource dependence perspective, Mizruchi (1996) asserted that Board interlocks increase the value of firm by reducing resource constraints. The empirical results of readings offer evidence for both positive and negative association between Board

interlocks and firm performance. Thereby supporting this outcome with resource dependence view (Phan, Lee & Lau, 2003; Horton, Millo & Serafeim, 2012) and negative relationship is asserted with agency view (Fich & Shivdasani, 2006; Devos, Prevost & Puthenpuracka, 2009). However, other researchers have provided no empirical evidence for both positive and negative outcomes (Meeusen & Cuyvers, 1985; Fligstein & Brantley, 1992).

Useem (1984) argued that Resource Dependence Theory suggests that interlocks serve as a network of information. Interlocking directors provides better counsel and advice, as they sit on other firms' Board and have access to diverse strategies and policies. Pfeffer & Salancick (1978) argued that based on Resource Dependence Theory, interlocks aim to decrease environmental uncertainty and support coordination amongst firms. Therefore, interlocks are considered a decent way to communicate important information (Hillman & Dalziel, 2003). Besides, interlocks discourages opportunistic behaviour by increasing the flow of information amongst firms (Phan *et al.*, 2003). Therefore, it is expected that interlocking directors positively effect on the performance of group-member firms.

Chapter 4 confers in regards the sources of data and criteria applied in the selection of the sample. An appropriate methodology is also explained to investigate the relationship between variables. In

addition, the description and measurement of variables are also provided in this chapter. Chapter 5 discusses the results of the study. The first part of this chapter seeks to answer the question as to whether group-affiliated firms are more profitable than standalone firms. The second part of the chapter explains the effect of tangible and intangible resources on accounting and stock market performance of group-member firms. The last part of this chapter discusses the role of interlocking directorates in terms of whether or not they facilitates group-member firms. The last chapter concludes the thesis by offering the findings of three studies, and explains the contributions of this study. Lastly, the implications, limitations and directions for future research are discussed.

### **3. Key Research Questions**

The following research questions are addressed:

1. Do the group-member firms perform financially better than standalone firms do?
2. What effect do tangible and intangible resources have on profitability of firms?
3. What is the impact of interlocking directorates on performance of firms?

Based on the literature of these questions and the databases available for the research, the following hypotheses are tested.

**Hypothesis 1:** Firms affiliated with business groups are more profitable than standalone firms are.  
Hypothesis 1 is answered in Chapter 5.1.

**Hypothesis 2:** The tangible and intangible resources have positive association with the financial performance of the affiliated firms.

**Hypothesis 3:** The tangible and intangible resources have positive association with the value of the affiliated firms



The answer of hypotheses 2 & 3 are answered in Chapter 5.2.

**Hypothesis 4:** The board-interlocking directors have a positive effect on the financial performance of the affiliated firms.

**Hypothesis 5:** The board-interlocking directors have a positive effect on the value of the affiliated firms.

Hypotheses 4 & 5 are examined in Chapter 5.3.

## **4. Results**

### **4.1 Group Membership and Firm Performance**

The t-test is estimated for analysing the differences in the means of group member and standalone firms' performance and control variables. It is observed that group-affiliated firms have significantly higher Return on Assets with a mean value of 5.008 than standalone firms 1.663. The second performance is measured by Tobin's q that is used to estimate market value of firms. Group-member firms are appeared to have higher Tobin's q ratios, with a mean value of 4.132 than standalone firms 3.467. Since, it is hypothesized that member firms are more profitable than standalone firms are. Particularly, the results of the t-test indicate that group firms are significantly more profitable in terms of accounting performance (ROA) and stock market performance (Tobin's q) than standalone firms. Thus, it is indicated that group affiliation improves member firms profitability. The performance difference is statistically significant at 1% level. It is also observed that group-affiliated firms are greater in size than standalone firms. As measured by total assets, the difference is statistically significant at 1% level. In addition, the growth is measured by current year sales minus last year sales divided by last year sales. The difference between affiliated and unaffiliated firms is statistically significant at

5%. This difference explains the advantages of economies of scale and scope for group-member firms. Moreover, the difference in employing the total debt between group-affiliated and unaffiliated firms is also analysed, the debt level in relation to total assets is higher in unaffiliated firms than group-affiliated firms. The overall results reveal that higher profitability, large size and better solvency position are important determinants of business group affiliation.

The results indicates that group affiliation has statistically significant positive influence on firm financial performance ( $p < 0.01$ ) and value of firm ( $p < 0.01$ ). Also, the results of group affiliation with control variables are statistically significant. The regression results with control variables support the first hypothesis (H1), the coefficient of group affiliation has positive effect on financial performance ( $p < 0.01$ ) and value of firms ( $p < 0.01$ ).

The results of control variables are also significant. The size has statistically significant positive effect on financial performance ( $p < 0.01$ ) and value of firm ( $p < 0.05$ ). Therefore, it is concluded that size of firm matters for financial performance. Lang & Stulz (1994) reported a positive effect of growth on firm value. Therefore, it was expected that sales growth and size are positively associated to value of firm. The sales growth coefficient is statistically significant in case of accounting based performance ( $p < 0.01$ ) and market based performance ( $p < 0.05$ ). Thus, it is implied that sales growth

contributes positively to the ROA and Tobin's q, as it is evidenced by the positive coefficients of sales growth variable. Amongst other control variables, it is observed that the coefficient of leverage has statistically significant negative effect ( $p < 0.01$ ) on firm performance and value of firm ( $p < 0.01$ ). The results suggest that as debt ratio increases the performance of firm decreases. The results of this study are consistent with Chittoor, Kale & Puranam (2015) and Manikandan & Ramachandran (2015) that group-member firms have higher accounting and stock market performance.

As suggested by Khanna & Palepu (1997) and Masulis et al. (2011) that group affiliation increases the value of member firms. The findings are consistent with the study of Chang and Choi (1988), they reported positive effect of group affiliation on performance of Chaebol firms. In line with our expectations as stated in H1, we find that the firms affiliated with business groups are more profitable than standalone firms. In the context of an emerging economy of Pakistan, consistent with earlier findings (e.g., Ahmad & Kazmi, 2016) that group-affiliated firms perform financially better than standalone firms, thereby showing that business groups have strong historical asset growth and more capable to invest in capital intensive projects.

In order to explore possibly the interaction effects, the control variables are interacted with main variable of interest i.e. group affiliation. The interaction GROUP-DUMMY\* SIZE is investigated to analyse the influence on financial performance and value of firms. The coefficients of the interaction term between group dummy and size is positive and statistically significant for financial performance ( $p < 0.01$ ) and value of firms ( $p < 0.01$ ). Thus, it also provides support for hypothesis 1. Since, large firms receive more advantages from group membership, such as easy access to external capital markets and greater economies of scale and scope.

The interaction between group affiliation and leverage (GROUP DUMMY\*LEV) is also introduced. In line with our expectations, the coefficient of the interaction term between group dummy and leverage is negative and statistically significant in case of financial performance ( $p < 0.01$ ) and value of firms ( $p < 0.10$ ). It is implied that for high debt ratio negatively affect and lowers the performance of affiliated firms. In other words, one unit increase in firms' leverage tends to decrease the firms' profitability performance and if there are two examined firms the affiliated firms have higher performance than the non-affiliated one do.

Moreover, the interaction between group affiliation and sales growth (GROUP DUMMY\*SGRW) is also examined. The coefficient of interactive term is positive and statistically significant

for financial performance ( $p < 0.01$ ) and value of firms ( $p < 0.05$ ). The interaction between group affiliation and firm characteristics, such as the size of the firm, sales growth and capital structure, are statistically significant for performance measures. Sales growth and size of the group-affiliated firms have an increasing influence on financial performance of firms than the non-affiliated ones.

#### **4.2 Intangible and Financial Resources**

Considering both R&D and advertising variables as important determinants and potential sources of intangible assets, together with financial resources, the fixed effects model is used in order to empirically analyse their effect on accounting and stock market performance measures since the Hausman test value is  $\chi^2 = 25.45$  ( $p = 0.0003$ ). Table 5.11 (Chapter 5) reports the results of baseline models 9 and 10 with and without control variables by using the fixed effect model to determine the influence of intangible and financial resources on the performance measures of group-member firms.

It is reported that R&D has a positive and statistically significant effect on financial performance ( $p < 0.05$ ) and value of firms ( $p < 0.10$ ). Furthermore, with control variables, R&D has also positive and statistically significant influence on accounting performance ( $p$

$< 0.05$ ) and stock market performance at 10% significance level ( $p < 0.10$ ).

In their study Mizik & Jacobson (2003) and Lin, Lee & Hung (2006) proposed that R&D is an important source for firms to invest in innovative products and modern technology, which further supports maintaining a competitive position in the market. Moreover, investment in R&D highlights the tendency of firms to concentrate on long-term value development and exploration (Kyriakopoulos & Moorman, 2004). The findings of this study are consistent with earlier studies, such as Krasnikov & Jayachandran (2008) and Srivastava, Shervani & Fahey (1998). In their study, there was the suggestion that R&D investment and advertising abilities are important determinants of both accounting performance and stock market performance measures.

In addition to intangible resources, financial resources significantly influence financial performance and the value of firms. It is reported that liquidity has a statistically significant impact on profitability ( $p < 0.01$ ) and the stock market performance ( $p < 0.01$ ) of group-affiliated firms. This suggests that liquidity of group-member firms, together with intangible resources, improve their accounting and stock market performance, thereby confirming Hypotheses 3 & 4 of this study. However, the results indicate that a higher level of debt of group-affiliated firms decreases their

profitability and market value. The effect of leverage is statistically significant and negative effect on financial performance ( $p < 0.01$ ) and value ( $p < 0.01$ ) of firm.

Supporting H2 and H3 the intangible resources and financial resources seems to be determining factors of group-member firms' financial performance and stock market performance.

#### **4.3 Interlocking Directorates and Performance**

Table 5.16 (Chapter 5) presents panel regression estimates of the base line models 13 and 14 considering the effect of Board interlocks on financial performance and value of firms. Supporting hypothesis 4, the study results revealed that in Pakistan interlocking directorates have positive influence on financial performance of firms. The coefficient of Board interlocks is positive and statistically significant at the 5% level ( $p < 0.05$ ). The positive relationship suggesting that Board interlocks may produce positive return for group-member firms. Mizruchi (1996) reported that Board interlocks may be an outcome and predictor of firm financial performance.

The results show that the size of a firm has a statistically significant effect on financial performance ( $p < 0.01$ ) and the value of firms ( $p < 0.01$ ). This is consistent with the statement of Warokka (2008),



who reported firm size as being an important determinant of firms' management policy and the performance of firms. An important aspect of business groups in Pakistan is the presence of holding firm. A holding firm is one that owns 50% or more than 50% shares of other group-member firms. Thus, this paves the way for founders of the firms to exercise their control to coordinate and monitor the affairs of group-member firms. Nevertheless, the children, siblings and close associates of founder are sitting in the Boards of holding and member firms. Therefore, interlocks are created between holding firm and group-member firms through directorial ties. It is revealed that that appointment of children and siblings in group-member firms as interlocking directors mainly to control and coordinate the internal affairs of business group. Thus, more deeply the directors of a group-member firms are interlocked, it is better for a firm to be performed in terms of financial performance. The results of study figure out that the net effect of Board interlocks is positive, it overcomes the negative impacts of Board interlocks that arises due to managerial entrenchment.

## Summary of Findings

<b>Hypotheses</b>	<b>Expected Sign</b>	<b>Statistical Support</b>
H1: Firms affiliated with business groups are more profitable than standalone firms are.	+	Supported
H2: The tangible and intangible resources have positive association with financial performance of the affiliated firms.	+	Supported
H3: The tangible and intangible resources have positive association with value of the affiliated firms.	+	Supported
H4: The board-interlocking directors have a positive effect on the financial performance of the affiliated firms.	+	Supported
H5: The board-interlocking directors have a positive effect on the value of the affiliated firms.	+	Not Supported

## **5. Possibilities for Future Research**

The dissertation concludes with suggestions for future research. Usually, a PhD dissertation is a report on certain milestones reached during a period a research programme. Some results might open new directions for future research and some can contribute to the work of other researchers.

This empirical study considers only non-financial firms, and is based on a single country framework of Pakistan. Thus, it would be valuable to extend this study by employing the data of both financial and non-financial firms and accordingly comparing with emerging economies, such as India and Bangladesh. Virtually, Pakistani and Indian economies have similar features. Therefore, a replication of this study in other emerging economies may endorse these study prospects of generalisability. Second, intangible resources and financial resources within business groups may create considerable economies of scale and scope. The findings of the study imply that business groups support member firms in avoiding bankruptcy and being a member of the business group benefit to have an easy access to external capital markets. Hence, this is the reason why the external capital providers favourably lend money if solvent business groups back to affiliated firms. Therefore, this study could be more valuable if it was to investigate the internal

favourable transactions, such as debt and equity financing, debt enforcement and the internal buying and selling of goods and services, for example; due to the lack of availability of data, however, this study does not cover the scope of internally traded transactions within the groups. Thus, specific transactional relationships will support the identification of the types of relationship amongst member firms within business groups by detecting the direction of transactions and the number of intragroup transaction partners—and more specifically by completing a transactional analysis between non-financial firms and financial firms within business groups.

Third, the research may also be extended to the financial sector in an effort to address the question concerning the benefits from group membership. Moreover, the type of characteristics and how these differentiate between manufacturing and non-manufacturing business group firms could also be explored. Furthermore, it would be important to consider that competition takes place amongst not only firms but also business groups (Gomes-Casseres, 2003; Heugens & Zyglidopoulos, 2008). It would be interesting to determine whether the rivalry amongst two business groups would affect resource-sharing at the group level, as well as the type of resources needing to be shared in this situation.

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#### Articles, studies (9)

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