INTERLOCKING DIRECTORATES AND FINANCIAL PERFORMANCE: AN EMPIRICAL ANALYSIS OF PAKISTANI BUSINESS GROUPS

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ABSTRACT

This study explores the role of interlocking directors of Pakistani business groups and financial performance. In panel regression the effect of vertical interlocks, intra-group interlocks, leverage and sales growth are tested. Through empirical testing it is argued that vertical interlock is statistically significant and positive but intra-group interlock is statically insignificant and negative. The result suggests that vertical interlocking directors are playing key role to increase the financial performance of group member firms. A vertical interlocking director increases financial performance of group firm by supporting in coordination and promotion of transactions between group member firm and holding firm. The sample consists of 55 public limited firms listed at Pakistan Stock Exchange (PSX) and covering period is 2011 to 2015.

1. Introduction

Business groups are the key players of Pakistan's economy. They consist of legally independent firms operating in different industries and bound together by formal and informal ties. These group affiliated firms are together by direct or indirect controlling stakes owned by ultimate shareholder or by cross-shareholdings. The key of this study is to configure the impact of interlocking directors on firm's financial performance. Interlocking take place when a director sits on his firm board and one other firm's board. It is a common practice in business groups to share directors between group affiliated firms; by doing this they are controlling the affairs of holding and group affiliated firms. The aim of the study is to see whether vertical and intra-group interlocking of directors increases financial performance or not? Keister (1998) and De. (2003) in China and India respectively have observed that interlocking directorates in business groups are playing key role to shape the performance of group affiliated firms.

In many studies, it has been observed that intra-group interlocks are used as a tool to control and coordinate group affiliated firms, and more importantly to channelize information among group firms (Orru et al., 1989; Collin, 1998; Keister 1998). Maman (2001) viewed that intra-group interlocks are representing the market of internal directors; it's an opportunity for directors to move in different group affiliated firms for diverse experience, learning and culture.

In this study, the impact of interlocking directorates on financial performance of group affiliated firms has been investigated for a sample of 55 Pakistani firms and covering period is 2011 to 2015. Pakistani business groups provides an interesting environment to study interlocks, reason is family controlled financial and non-financial groups are playing key role in the accumulation and allocation of capital, this case can also be seen in Indian, Bangladesh and China. In this study mainly intra-group interlocks and vertical interlocks have been studied. Intra-group interlock is defined as the directors having positions in more than one group affiliated firm. Vertical interlock is defined as the directors sitting in parent firm as well as in group affiliated firm. Vertical interlocking is a common practice in business groups because of intra-group resource sharing; this needs strong coordination and monitoring. Vertical interlocking helps in quick decision making and control.

Maman (1999) stated that vertical interlock is more useful in diversified business groups than focused groups in order to avoid control and coordination problems. There are different hierarchy levels of directorship; it has been observed that directors with high level positions are holding more directorship than lower levels. Interestingly, in family owned firms the sons and daughters of owners are holding positions almost in every group affiliated firm. Maman (2001) reported that placement of trustworthy directors specially those who are holding high positions in the group improves coordination between parent and affiliated firm and minimize opportunistic behaviour in group members.

The plan of study is to empirically explore the association between financial performance as dependent variable and independent variables that are vertical interlocking, intra-group interlocking, leverage and sales growth measures. The question is whether interlocking directorates and solvency measures contribute to improve the financial performance of group member or not? The earlier studies on interlocking have furnished sound help for the current study. In this study; the direct relationship between dependent variable and independent variables has been investigated. Moreover; this study is based on historical data to see the relationship of defined variables.

The quantitative method is used to analyze the data. The fixed effect and random effect models have been applied to panel data to observe the influence of interlocking directorates and solvency measures on financial performance of group firms. Since, the results indicate that independent variables vertical interlocking and sales growth is positively correlated with financial performance. The results are statistically significant in case of vertical interlocking and solvency.

2. Literature Review

Pfeffer and Salancik (1978) have concluded that resource dependence is one of the greatest reasons for interlocking among boards. This is argued that to reduce uncertainty, interlocks are established. In many studies it is rationalized that a firm makes connection through an interlock to assure access to external resources. Thus, interlocking is viewed as sharing device. As a result, sharing of directors, uncertaininty is reduced. Therefore, in order to confirm resource dependency, because resource dependency reduces uncertaininty and assure the availibility of resources that in returnraise profits. The firm’s profit level will increase if interlocking directors offers additional information to a company (Burt 1980, Burt 1983, Boyd 1990, and Langa nd Lockhart 1990).

Schoorman et al., (1981) and Haunschild & Beckman (1998) investigated that directors interlocking leads to more profitability since they assist in proper flow of information among firm and its partners and financiers. In addition, the sharing of experienced and visionary directors may also contribute to higher profitability. On the other side, it is argued that busy directors are less effective; because they don’t have much time to dedicate them to all group firms equally, thereby decreasing profitability (Shivdasani and Yermac, 1999; Ferris et al., Fich and Shivdasani, 2006).

Fama and Jensen’s (1983) have pointed out two different hypotheses. First, interlock may show the quality of directors. A director having multiple seats on different firms’ boards showing his wider acceptance of expertise and sincerity in his profession. In this case, multiple directorships will support active monitoring and decrease agency costs. This ultimately increases the confidence of shareholders and lead to higher market capitalization and goodwill. Second, negative view, membership of too many boards makes directors busy and they do not function as effective monitors. This increases agency cost and managers serve their own private benefits at the expense of shareholders and it result in negative relationship between market return and outside directorships.

Fich and Shivdasani (2006) observed that if a firm has many outside directors those who are serving three or more than three firms board will have significantly lower market to book ratios, as compare to those firms where directors are serving only one or two board seats but not more three. Therefore, serving less than three boards is economically significant and good for financial health of a firm.

Kuntluru et al., (2008) found a signficant positive association between sales growth and fianncial performance of firm. As the sales growth is increasing the return on assets in increasing. It shows the efficiency of marketing team to find the new markets and customers.

Devos *et al.*, (2009) evidenced that interlocking is negatively correlated with performance of firms. The poorly performing firms are more likely to interlock directors on their board and market negative reacts on the announcement of appointment of directors that creates interlocks.

Mrizak (2009) concluded that performance of a firm is a function of the position of a company to others in the whole network. The results suggest that firm location in the network is more important than simply the number of ties.

Tauseef et al. (2015) reported that sales growth has positve association and statistically significant impact on financial performance of a firm's. Initially increase in total debt-to-total asset ratio increases financial performance until an optimal debt level is achieved but after that it starts decreasing.

3. Research Methods and Data

The interlocking director's data is taken from the annual reports of individual group affiliated firms. The data is carefully taken by comparing the annual reports of group affiliated firms from 2011 to 2015. This is the requirement of Securities Exchange Commission of Pakistan (SECP), Companies Ordinance 1984; that every public limited company has to report the names of board of directors under the heading of corporate information. Therefore, the annual report of public limited company is considered as most valuable source of directors interlocking.

Five years data 2011 to 2015 of financial performance, sales growth and leverage have been collected from the balance sheet analysis of non-financial sector reported by the state bank of Pakistan (SBP). In this study the size of sample is 55 companies and275 observations. The quantitative method is used to analyze the data. The nature of data for this study is panel data. The panel data is also called longitudinal data; N (companies) units are analyzed for T time. It is a combination of time series and cross sectional data.

The panel regression technique is used. The relationship between financial performance and independent variables has been examined by applying statistical tool. The present study has used STATA 11 for data analysis. Commonly, fixed effect and random effect models are used for panel data analysis. The STATA is used for fixed effect and random effect analysis to see the impact of independent variables on dependent variable. In order to decide between fixed effects and random effects model, Hausman test is needed to run. The Hausman test provides the decision criteria which is the preferred model either fixed or random effects. According to Hausman test if probability value is less than ($p < 0.05$); in that case fixed effect model is preferred.

The following explanation describes the measurement of variables related to financial performance, board interlocking, sales growth and leverage. The prime variable of interest in this study is the interlocking directorship. The interlocking directorship is measured in two way; vertical interlocking andintra-group interlocking.

3.1. Dependent Variable

Financial Performance: The dependent variable fianncial performance is return on assets (ROA) i.e. measured in percentage form.

3.2. Independent Variables

Vertical interlocking: vertical interlocking is measured by the log of interlocks the company has with parent firm belonging to the same group.Vertical interlocking is positively coorelated with financial performance of group affiliated firm. As it increases the coordination between parent firm and affiliated firm.

Intra-group interlocking: intra-group interlocking indicates the number of directors of one group member firm are sitting on another group memeber firm's board. intra-group interlocking is measured by the log of all interlocks the firm has with firms belonging to the same group. Intra-group interlocking is negatively coorerlated with financial performance of group affiliated firm.

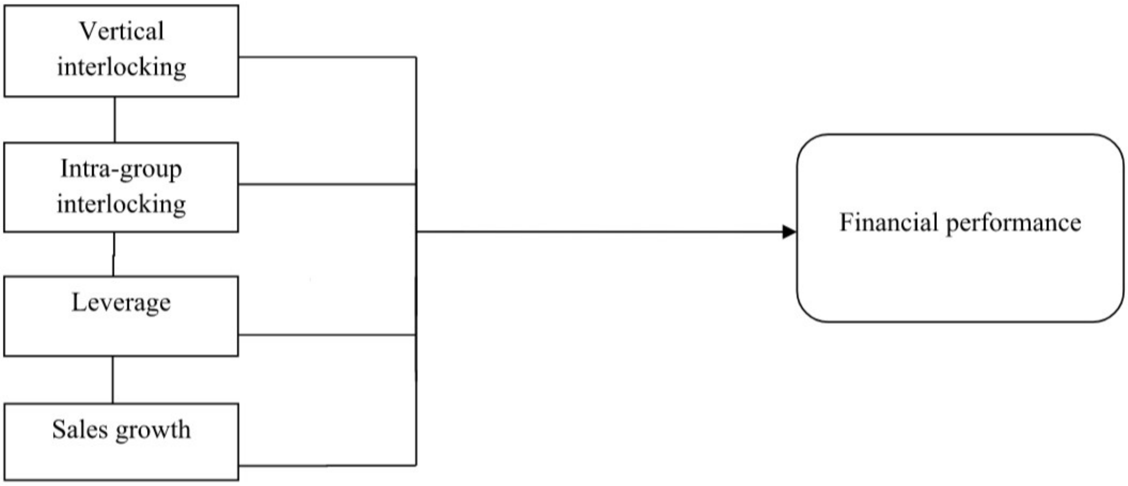
Leverage: it is measured by the ratio of total debt to total assets. Leverage is negatively correlated with financial performance of firm. Leverage indicates the amount of debt a firm using to finance assets. A firm with more debt as compare to equity is considered to be highly leveraged. More debt more interest payments that in return decrease profits of a firm.

Sales growth: growth is measured by log of sales growth (sales in 2011 / sales in 2010) and it is positively correlated with financial performance of group firm.

3.3. Hypotheses

H1: – Vertical interlocking positively impact financial performance.
H2: – Intra-group interlocking negatively impact financial performance.
H3: – Leverage negatively impact financial performance.
H4: – Sales growth positively impact financial performance.

3.4. Research Modell



4. Discussion and Conclusion

To analyze the effect of interlocking directors on firm performance, the independent variables are regressed against return on assets. The return on assets is measured by company's annual earnings divided by total assets over the period 2011 to 2015. The higher ROA is preferred because it shows that company is earning more with less investment.

The correlation results in Table 1 show that there is a positive correlation (.104) between vertical interlocking and financial performance. When vertical interlocking directors are increasing on the board of group member firms, they will improve the financial performance of firms. Vertical interlocking directors have positive impact on financial performance of group members. This indicates that vertical interlocking does not hurt the performance of group members.

The correlation between intra-group interlocking and financial performance is about -.023. The relationship between these two variables is negative, which indicates that as intra-group interlocking increase, financial performance decrease.

Table 1.: Correlation between dependent and independent variables

Correlation with financial performance	
Vertical interlocking	104
Intra-group interlocking	-.023
Leverage	-.432
Sales growth	.0365

The correlation between leverage and financial performance is negative. The correlation between leverage and performance is about -.432. It is showing that increasing debt will increase interest cost since it will decrease profitability of firm. Sales growth is positively correlated with financial performance of firm. The correlation between sales growth and performance is about .0365. Increasing sales growth increases financial performance.

Table 2: Regression Coefficient Estimates

	Financial Performance coefficients	P-value	Z-statistics
Intercept / Constant	*8.592*	*0.085*	*1.72*
Vertical Interlocking	*6.601*	*0.044*	*2.02**
Intra-group interlocking	*-4.016*	*0.226*	-1.21
Leverage	-.1279	.000	-5.63***
Sales growth	*.651*	*0.064*	*1.85*
R-square	.0751		
Waldchi	36.35	0.0000	

Note: ***, ** and * denote significance at the 1, 5 and 10 percent level

Table-2 includes p-values, z-statistics, R square (R^2)and Wald chi significance value. It is observed that $R^2 = 0.0751$ or 7.51% variation in financial performance is observed. The R^2 is coefficient of determination; it measures the variation of dependent variable due to independent variables. Thus, the vertical interlocking, intra-group interlocking, leverage and sales growth are used in the model as independent variables, have 7.51% impact on the financial performance which is dependent variable. The above table shows the impact of vertical interlocking, intra-group interlocking, leverage and sales growth on financial performance of firms.

The significance Wald chi (F test) measures the overall fitness of model whether the model is statistically significant or not? The F-significance value is 36 35 ($p < 0.0000$); it indicates the overall fitness of model; that the relationship between dependent variable and independent variables is statistically justified. In this study, random effect model is preferred, according to Hausman test the probability value is more than ($p > 0.05$) i.e. significant. The coefficient table is providing estimates of the z-statistics and p value. In this coefficient table z value is also mentioned. It is showing the ability of influence of independent variables on financial performance. All the independent variables can be ranked with the help of this z value. Variables with high z value are more influential as compare to those with lower z value. Leverage is having the highest rating among other variables because z value is higher, thus in this study it is the most influential variable on financial performance.

In Pakistani business groups the owners of group are holding the positions of directors; they are controlling the affairs of group affiliated companies by sitting on the board of almost every affiliated firm. The owners of group are primarily holding the positions of vertical interlocking directors and their role is more influential than intra-group directors. It is also observed that group firms are strongly vertically interlocked as compare to intra-group interlocking. They are responsible for decision making and better financial performance. The role of vertical interlocking directors is statistically significant z 2.02 (*P* .044) it shows that they are making good coordination and maintaining relationship balance between holding firm and group members. The results are consistent with Collin (1998) and Keister (1998) interlocking directors may increase financial performance of firm because they facilitate information flows between a firm and its partners and financiers.

The z value of intra-group interlocking is -1.21 (p .226), which is statistically insignificant. But intra-group interlocking has negative impact on financial performance of group members. The intra-group interlocking directors have no influence on board decisions. It is observed that intra-group interlocking directors are not the facilitators of controlling shareholders.

The results suggest that vertical interlocking directors are much more important than intra-group directors. There are two possible reasons for interlocking directors having negative impact on financial performance, first reason is they are too busy and sitting on the board is just formality; second when number of directors are increasing on the board might affect the performance of competent directors. The result of intra-group interlocking is consistent with Loderer and Peyer (2002) and Fich et al. (2006), they found a negative relationship between interlocking and firm performance. One possible explanation for this negative explanation is proposed in the literature is that busy directors can dedicate less time and less effective. Meeusen and Cuyvers (1985) and Silva et al., (2006) argued that the controller of groups is using intra-group directors as a tool to expropriate value from group firms, thereby reducing profitability.

The z value of leverage is -5.63 (p .000), which is statistically significant. The association between leverage and financial performance is negative; it indicates that when the level of debt is increasing since it decreases financial performance. The interest payments will negatively affect the profitability of firm.Sales growth has positive association with financial performance of firm. The z value of sales growth is 1.85 (p .064), which is statically insignificant. But positive relationship shows increase in sales growth increases financial performance of group member firm.

Conclusion

The study concludes positive association between dependent variable financial performance and indpendent variables vertical interlocking and sales growth measures in Pakistan's business groups considering data for 5 years 2011–2015. The negative interaction is also observed between financial performance and intra-group interlocking and leverage. The findings of the study show a statisically significant association in case of vertical interlocking and leverage with financial performance of group affiliated firms.

It is concluded that vertical interlocking is beneficial for parent firm and group member firm; vertical interlocking directors are providing helping hand in different forms (i) better coordination and monitoring (ii) facilitate information flows (iii) controlling group members (iv) to keep unity with in the group (v)communication network within group (vi) to align group member objectives with parent firm.

In Pakistani context business groups are involved in intra-group resources sharing; this resource sharing is in several forms e.g. internal buying and selling of goods and services, internal borrowing and lending, sharing human resource and tecnology sharing. To control and monitor the intragroup resource sharing, vertical interlocking is needed for central coordination.The study concluded a negative and statistically insignificant assoication between intra-group interlocking and financial performance; the controller of the group is using intra-group interlocking to expropriate value from group members.

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