Corporate Governance in Family Owned Small Firms

Abstract: *In this paper, we examine the impact of corporate governance on the performance of unlisted family owned small firms in India. By employing regressions with panels corrected standard errors as well as generalized least squares (GLS), we show that family-managers are guided by the principles of stewardship theory and exploit a firm's competitive advantage leading to its improved performance.*

Keywords: **Corporate Governance, Board Size, Firm Performance, Agency Theory, Stewardship Theory, Altruism, Privately Owned Firms, Family Business, and Family CEO**

1. Introduction

Although family ownership has some positive effects on the performance of a firm, it also has adverse effects on its performance stemming from limitations such as conflicts of interest, issues surrounding kinship in management control, altruism and others. The literature is rich with studies that examine the effect of family ownership and control on the performance of lager firms (Shleifer and Vishny, 1997; Winter et al., 1998; Astrachan and Shanker, 2003; Burkart et al., 2003; Schulze et al., 2003). Investigating the relationship between family ownership and firm performance of publicly traded U.S firms listed in S&P 500, Anderson and Reeb (2003) observe that family firms (both young and old) perform better and are more valuable than non-family firms are. Based on the resource-based view of the firm, Carney (2005) observes in his study of firms in emerging market that family-controlled firms have competitive advantage. Maury (2006) in their empirical examination of the performance of western European family-controlled firms vis-à-vis nonfamily owned firms observe that active family control is

associated with higher profitability compared to nonfamily firms, whereas passive family control does not affect profitability. However, it is yet to be established in the case of family owned unlisted small firms.

Kowalewski et al., (2010) investigate the influence of family involvement on firm performance in Polish firms and find an inverted U-shaped relationship between the share of family ownership and firm performance. They also observe that firms with family CEOs are likely to outperform their counterparts that have nonfamily CEOs. However, Villalonga and Amit (2006) observe that family ownership creates value only when the founder serves as CEO of the family firm or as chairperson with a hired CEO. However, it is yet to be established in the case of family owned small firms to what extent board independence and independence of management is related to firm performance. Eisenberg et al., (1998) in their study with a sample of small and midsize Finnish firms observe a significant negative correlation between board size and profitability. Similarly, Mak and Kusnadi (2005) studying impact of corporate governance mechanisms on the firm value of Singapore and Malaysian firms observe an inverse relationship between board size and firm value in both countries which suggests that the negative relationship between board size and firm value transcends diverse corporate governance systems. We intend to know how this relationship in the case of family owned small firms is.

Family ownership does have an adverse effect on the relationship between board committees, specifically the remuneration committee, and the performance of public companies in Hong Kong (Tin-Yan and Shu-kam, 2012). Hence, the effectiveness of a board committee is contingent on its independence and family ownership. On the contrary, however, we are interested to know whether these types of relationships and dynamics exist in the case of small-unlisted family owned firms. Studies that examine the family effect on the performance of small

firms are limited in comparison to the studies on large firms. Westhead and Howorth (2006) could not find evidence of significant correlations between family ownership and several measures of firm performance. There is less empirical research on the performance effects of family ownership, active family management and the role of board directors. In Asian countries, family influence is central; however, little research exists regarding the effects of family ownership and corporate governance on firm performance. That said, there exists still a research gap to establish a clear relationship between corporate governance and firm performance in unlisted family owned firms.

This paper is an attempt to take a meticulous investigation of the aspects of corporate governance such as family control, board size, independence of the board, management, and accounting committee and its independence and others that affect firm performance[1] in the case of *unlisted family owned small firms* (UFOSFs) particularly in the context of emerging economies. It is because of the reasoning that corporate governance practices in UFOSFs in developing countries especially in the case of Asian UFOSFs seem to differ with that of their counterparts in the developed or industrialised economies owing to several characteristics such as; societal structure, values, business ethics, entrepreneurial culture, resource scarcity, business and regulatory environment. Very few studies are reported on the topic of corporate governance and firm performance in the context of UFOSFs when compared to the significant role played by these firms in economic development.

In aggregate, this study indicates that board size and independent directors' influence is an important element in alleviating moral hazard conflicts in firms with continued founding-family ownership. Anderson et al., (2003) observe that, on an average, family firms perform

---

[1] The term "firm performance" in this paper is used as a convenient phrase as in many empirical studies is meant as a quantifiable and specific performance on an accounting measure. In the more limited theoretical literature, firm performance has typically meant economic profits in static models or firm value—the present discounted value of economic profits—in dynamic models.

better than non-family firms do. Still, numerous and well-known accounts of family looting or rogue activities indicate that not all instances of family ownership lead to superior firm performance. Our analysis suggests that the ability of outsiders to monitor family activity and advise the family chief executive officer (CEO) and on the other hand the family CEO's ability to learn from the expert advice of the outsiders in the board is a crucial factor in determining the superior performance of small family firms. Our findings also reveal that audit committee and its independence augment the efforts of small family firms in augmenting their performance. The rest of the paper is organised as follows. In section-2, the theoretical framework of the study based on literature review is introduced. In section-3, Data collection and the methodology of this study are narrated. While section-4 presents our empirical results and the resultant discussion, Conclusions including the contributions and implications of the study are made in section-5.

2. Theoretical Considerations

As advocated by Mintzberg, one of the "ways of seeing" involves looking back that, understands the present by appreciating the past. Accordingly, we begin with appreciation of the seminal works in the area of corporate governance and firm performance. A good strand of literature has focussed on the topical context of corporate governance and brings us fairly well up to date. To mention, Shleifer and Vishny (1997) on the general theme of corporate governance; Core et al., (1999) on executive compensation; Harris and Raviv (2008) on boards of directors and Burkart et al., (2003) on block holders. The conventional agency theory of corporate governance perceives the firm as a nexus of contracts between free and rational individuals optimizing their own interests (Fama and Jensen, 1983; Jensen and Meckling 1976;

and Jensen, 1986). Corporate governance practices are justifiably considered as a desired check and balance system of top management of the firm who run the firm on behalf of the owners. An alternative interpretation, however, points that a firm is a legal entity with rights and responsibilities just like a natural, civilized, and compassionate person emphasizing the overall reputation of a firm and responsibility to a number of stakeholders. Instead of a naïve belief in the *single principal-agent theory* and its exuberant laissez-faire model based on individual self-interest only, a *multiple-principal-agent theory* quite often referred to as the *stakeholder theory* (Mintzberg, 2002) will have more chance to embrace essential changes to address the global challenges.

Recent thinking about strategic management and business policy has predominantly been influenced by the agency theory, which holds the view that managers will not act to maximize the returns to shareholders unless appropriate governance structures are implemented to safeguard the shareholders interest (Jensen and Meckling, 1976). Agency theory is essentially a control-based theory, its proponents arguing that corporate governance mechanisms ought to be designed so that managerial self-interest is contained and disciplined (Jensen and Meckling, 1976). Without doubt, it is the dominant approach used in corporate governance research (Daily et al., 2003). One fundamental question that agency theorists have taken rather lightly is "Who has the actual rights to decide over what?" For example, with respect to executive compensation, it is argued that agency theory has overlooked the strong incentives that pay-for-performance plans have created for managers to engage in deceitful and illegal activities (Denis (2001). While Agency theory contemplates the relationships between family ownership, minority shareholders and managers as typical agency contracts, Stewardship theory offers a distinct and complementary perspective on families' purposes and behaviours. The notion is that stewards are

inspired by higher-level needs, such as organisational commitment to attain the set objectives and accomplishment of its collective good (Donaldson, 1990). Stewardship theory applies fittingly to family firms as the family owners often have a profound emotional investment in their firms owing to the reality that their fortune, personal contentment, and reputation are tied to success of the firm. Family firms mostly are characterized by an intense relationship between managers and controlling family owners. This characteristic can be studied from the perspectives of both the theories.

Considering the control aspects of firm, family ownership and its high levels of control can lead to agency problem with the minority owners or dormant owners (Cronqvist and Nilsson 2003). The value or performance enhancing effects of family ownership are vividly experienced when the family actively manages the firm through a family chief executive officer (CEO) or Chairperson of the board (Maury (2006), Villalonga and Amit, 2006). No correlations could be established between family involvement in ownership and firm performance in spite of the use of several types of performance measures. For such firms, there is less empirical research on the performance effects of family ownership, active family management and the role of board directors. That said, there exists still a research gap to establish a clear relationship between corporate governance and firm performance in unlisted family owned firms.

Ownership and Firm Performance

Family ownership appears to be a value enhancing factor in listed firms, as compared to other forms of ownership (Anderson and Reeb, 2003; Barontini and Caprio, 2006 and Maury 2006). According to Agency theory, equity ownership influences managers' risk-taking propensity suggesting that managers become risk averse as their ownership in the firm increases. Concentration of ownership among the top management can lead to risk aversion, less pressure

from outside investors, lesser transparency and accountability (Carney, 2005). Cronqvist and Nilsson (2003) have demonstrated a negative relationship between the level of control and the return on assets (ROA) in their sample of Swedish listed firms. Gomez-Mejia et al., (2001) have found that entrepreneurs and managers of family firms are more prone to engage in managerial entrenchment to the detriment of the firm, resulting in unconvincing performance. As UFOSFs are by and large closely held and owner-managed firms, one of the questions that is aimed to address is whether family ownership is a value-increasing proposition, i.e, given a certain level of control, whether the attributes of the family ownership have an effect on firm value or performance. Family ownership appears to be a value-enhancing factor in listed firms, as compared to other forms of ownership (Barontini and Caprio, 2006 and Maury, 2006). In this backdrop, given a certain level of control, whether the attributes of the family ownership have an effect on firm value or performance in the case of UFOSFs?. Accordingly, in this study ownership is hypothesised to be significantly affecting the performance of family owned and closely held firms.

Board of Directors

There is growing body of multi-disciplinary research and commentary addressing the issue of board composition and firm financial performance (Dalton et al., 1998; Dalton and Dalton, 2011). In family owned SMEs, the boards which are described generally as the "apex of a firm's decision control system" are indeed closely held and have direct and elaborate insights into the internal processers of the firm (Cowling, 2003). In view of this, some of the boards exist for namesake (Brunninge and Nordqvist, 2004). However, there are a number of SME boards that exemplarily use the boards for strategic decision-making (Feigner, 2005). Board size has also been proposed as one of the significant factors related to corporate governance in many

studies (Raheja, 2005). However, Mak and Kusnadi (2005) describe that lean boards are positively correlated to high firm performance. A significant negative relationship between the size of the board and firm value as well as performance has been established (Eisenberg etal., 1998) for Finnish SMEs. Board Size also influences on the board meeting frequency and firm performance and also on board effectiveness and board dissent (Warther, 1998). It is widely agreed that the size of the board has been decreasing in large firms, but not in smaller ones. As Board size influences on the board meeting frequency and firm performance (Vafeas, 1999) and also on board effectiveness and board dissent (Warther, 1998), what is the effect of board size in the case of UFOSFs. In this backdrop, it is desirable to study the effect of board size on UFOSFs, in concert with variables measuring the managerial activity of the firm.

Outsiders in the Board of Directors

In family firms, though the true independence of outside directors can be questionable, Outsiders in board can perhaps be used as a control variable in spite of its insignificance (Rosenstein and Wyatt, 1990; Anderson et al., 2003). Independent directors (who are not officers or employees of the corporation and who are otherwise unaffiliated with the corporation) are considered to be "the crucial corporate governance mechanism for monitoring managers". However, outside directors with multiple board appointments may be too busy to mind the businesses (Ferris et al., 2003). Mostly, family members may rely predominantly on outside directors with the required functional skills and 'independence of mind' (Bammens et al. 2008) to perform the board's control task. As family members may rely predominantly on outside directors with the required functional skills and 'independence of mind' (Bammens et al. 2008) to perform the board's control task, what is the effect of outside directors on the performance of

UFOSFs? Accordingly, while hypothesising that outside directors would have a stronger positive effect on the performance of UFOSFs, it is endeavoured to study its effect.

Audit Committee

The role of audit committee mostly can be summarised as; (i) oversight of financial reporting and accounting, (ii) oversight of the external auditor, (iii) oversight of regulatory compliance, (iv) role in monitoring the internal control process, and (v) oversight of risk management. Klein (2002) informs a negative relationship between firm performance and audit committee independence. Further, Anderson and Reeb (2004) observe that exclusively independent audit committees have lower debt financing costs. As exclusively, independent audit committees have lower debt financing costs (Anderson and Reeb, 2004) and a negative relationship between firm performances (Klein, 2002). Given the importance of the audit committee in corporate governance activity of a firm, hypothesising that audit committee has a positive correlation with firm performance of UFOSFs we study its effect.

Outsiders in Audit Committee

In general, the audit committee has at least three members (directors) and two-third (2/3) of the members is non-executive independent directors. The chairperson is generally selected amongst the independent non-executive directors and shall be appointed by the board. The number of outsiders in the audit committee is largely felt as an indication about the independence of the audit committee as the independent directors do not depend on the management for promotion or other such benefits. In view of this, outsiders in audit committee play a significant role in ensuring corporate governance practices in the area of auditing. As exclusively independent audit committees have lower debt financing costs (Anderson and Reeb, 2004) and a negative relationship between firm performance (Klein, 2002), we study the effect of audit

committees and their independence and hypothesise that independent audit committee has positive significant impact on the firm performance in the case of UFOSFs.

Family CEO

CEO of a firm has a larger impact on the functional efficiency of a firm and hence the CEO compensation and incentivisation has a greater effect on the firm performance. Several papers have documented a positive relationship between CEO turnover and poor performance in large corporations as well as in other types of organizations (Weisbach, 1988; Kaplan, 1994). Anderson and Reeb (2003) have observed a significant positive effect for family CEOs and noticed an insignificant effect for CEO descendants, whilst Barontini and Caprio (2006) witnessed significant positive effects for both firms with descendants on board and founder-controlled corporations. Literature reveals that when the founding family is active either in the executive or supervisory board, family firms are significantly more profitable than widely held firms are. Further, the effect was robust when the founder served as CEO. In the case of family owned small firms where the family CEO experiences little turnover irrespective of one's performance, this study intends to analyse the effect on firm performance. The question that is being attempted to investigate under this aspect of governance is whether family CEO affects firm performance of UFOSFs. While studying the effects of family CEOs a positive effect is expected.

3. Methodology

3.1 Data and Variables

This study is based on the primary data collected through pre-tested questionnaire using survey method for UFOSFs in India[2]. Balanced panel data for 83 SMEs of 18 states spread across five

---

[2] India provides an ideal environment for investigating the productive efficiency of UFOSFs which are popularly termed as small and medium size firms (SMEs). In view of its huge diversity in terms of demography, geography, literacy levels, consumption patterns, industrial environment and economic environment, India offers itself as an ideal study area of the study of UFOSFs.

different regions of India[3] (by pooling the cross sectional observations for 15 parameters for three years 2008, 2009 and 2010) is arranged for analysis. Sample frame of the firms considered for study is presented in table-1. Stratified random sampling was adopted in cherry picking the unlisted family owned firms for the study. Out of the 83 firms studied, 57 were involved in manufacturing activity and the remaining 26 in other activities. Single family as the single largest shareholder owns 46 of the sample under study and the remaining had the partnership of two to four families as major shareholders in the firm/s.

Table-1 is about here

Balanced panel data is resorted to as these are better suited to study the dynamics of change and also these are now being increasingly used in economic research in view of their advantages such as informativeness, more variability, less collinearity among the variables, more degrees of freedom, and more efficiency. We study the relationship between firm performance and family control by ownership and management, and corporate governance variables, with the following model that in its basic form is as follows:

Performance =α + β$_i$ (Financial variables) +β$_j$ (Ownership) + β$_k$ (Control Factors) + μ

Pooling all the observations, we can write the following equation;

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \ldots\ldots + \beta_n X_{nit} + \mu_{it} \longrightarrow \boxed{1}$$

Where; i = 1,2,3,4 …N [i.e. the cross section identifier] and t = 1, 2 and 3 [the time identifier].

Where, Y is the dependent variable. β_1 is constant, β_2, β_3,… β_n are the coefficients of the explanatory variables of corporate governance criteria, X_2, X_3… X_n are the explanatory variables

---

[3] In India UFOSF (popularly termed as SME), sector accounts to the extent of 8 per cent of the country's GDP, 45 per cent of the manufactured end products and 40 per cent of its exports. The labour to capital ratio in SMEs and the complete growth in the SME sector is considerably greater than that in the large industries. Further, with geographic dispersion of the SMEs being more or less even, SMEs are central for the objectives of inclusive growth. According to the All-India Census, SMEs provide employment to estimated 60-mn persons. Only 1.5 mn of SMEs are in the registered segment, women own about 7% of them, and around 94% are proprietorships or partnerships (GOI, 2010).

and μ_{it} is the error term. In order to take into account the individuality of each firm and if we assume that the slope coefficients are constant across firms,

We write the model as below;

$$Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + \ldots\ldots + \beta_n X_{nit} + \mu_{it} \longrightarrow \text{②}$$

The equation (2) is a typical fixed effects (regression) model due to the reason that although the intercept may differ across firms; each firm's intercept does not vary over time i.e making it as time invariant. However, we do not like to treat β_{1i} as fixed; instead, we assume that it is a random variable with a mean value of β_1. The intercept value for an individual firm is expressed as below:

$$\beta_{1i} = \beta_1 + \varepsilon_i \longrightarrow \text{③}$$

where $i = 1, 2 \ldots.N$ and εi is a random error term with a mean value of zero and variance of σ_ε^2. What we are essentially trying to state is that, the firms have common mean value for the intercept and the individual differences in the intercept values of each company are reflected in the error term ε_i. By substituting equation (3) into (2), we obtain:

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \ldots\ldots + \beta_n X_{nit} + \varepsilon_i + \mu_{it}$$

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \ldots\ldots + \beta_n X_{nit} + \omega_{it} \longrightarrow \text{④}$$

Where ω_{it} is the composite error term that consists of two components namely; ε_i (firm specific error term and μ_{it} is firm specific and time series specific combined error component. It is further assumed that each firm specific error components are not correlated with each other and are not auto correlated across both cross-section and time-series units. Accordingly, we make the following assumptions;

$$\varepsilon_i \sim N(0, \sigma_\varepsilon^2) \text{ and } \mu_{it} \sim N(0, \sigma_\mu^2)$$

$$E(\varepsilon_i\,\mu_{it}) = 0 \quad E(\varepsilon_i\,\varepsilon_j) = 0 \quad (i \neq j)$$

$$E(\mu_{it}\,\mu_{is}) = E(\mu_{it}\,\mu_{jt}) = E(\mu_{it}\,\mu_{js}) = 0 \quad (i \neq j;\; t \neq s)$$

Further, as a consequence of above assumptions, we are required to write as below:

$$E(\omega_{it}) = 0 \text{ and var } (\omega_{it}) = \sigma_\varepsilon^2 + \sigma_\mu^2$$

From the above equations, it follows that ω_{it} is homoscedastic. However, when $(t \neq s)$, ω_{it} and

ω_{is} are correlated; which means that, $\quad$ corr $(\omega_{it},\, \omega_{is}) = \sigma_\varepsilon^2 / (\sigma_\varepsilon^2 + \sigma_\mu^2)$

Since N is large and T is small, when we have the above stated assumptions, we believe that

error components model (ECM) or random effects model (REM) is the appropriate model for

estimation of the effects[4]. Adopting the above-developed model as in equation (4) above

specifically to this study, we get,

$$Performance = \beta_1 + \beta_2\,FS\_ln + \beta_3\,FA\_ln + \beta_4 TA\_ln + \beta_5\,Sol\_ln + \beta_6 N\_F +$$

$$\beta_7 Own + \beta_8 F\_Age + \beta_9\,B\_SIZE + \beta_{10} O\_Dir + \beta_{11} A\_C + \beta_{12} OAC + \beta_{13} T\_E\_ln$$

$$\beta_{14} Hr\_M + \beta_{15}\,F\_CEO + \omega_{it} \longrightarrow \; ⑤$$

Profitability is employed as a measure of performance and is expressed in terms of return on

assets (ROA) and return on equity (ROE) and these two are the dependent variables in this study.

Table-2 presents the description about the variables employed in the study.

<center>Table-2 is about here</center>

3.2 Robustness of the Model

The study uses distinctive regression techniques to test the relationship between corporate

governance and firm performance. Ordinary least squares (OLS) method is not the best linear

unbiased estimator (BLUE) and can produce incorrect standard errors when the errors are non-

spherical. Generalized least squares (GLS), which incorporates information about the errors and

---

[4] As shown by Taylor that for $T \geq 3$ and $(N - K) \geq 9$, where T is the number of time series data, N is the number of cross sectional units and K is the number of regressors, the statement holds. Refer W. E. Taylor, "Small Sample Considerations in Estimation from Panel Data", Journal of Econometrics, Vol.13, 1980, pp.203-223

thereby makes up for the inefficiency of OLS is BLUE and will give correct standard errors. Since our method of fusing cross-sectional and time series data is sensitive to heteroscedasticity, we check this problem using white heteroscedastic-consistent standard errors and covariance. Further, Beck and Katz (1995) argue that a superior way to handle complex error structures in time series cross section (TSCS) data analysis is to estimate the coefficients by OLS and then compute panels corrected standard errors (PCSEs). Since OLS coefficients are used to produce estimates of the residuals, it is possible that bias in OLS coefficients could lead to problems with the estimates of standard errors, which is the area where the Beck and Katz method gives the best gains. Accordingly, we have also employed regression with panels corrected standard errors (PCSEs) (Panel level heteroscedastic and correlated across panels (default)). It is believed that significance of the method of PCSEs depends crucially on the consistency of ordinary least squares point estimates. Panel data regression is corrected for the serial autocorrelation by Cochrane-Orcus method (Gujarati, 1995). Some of the commonly observed potential problems with pooled data have been adequately addressed. The Hausman-Taylor estimation gives the primary results. The results are estimated (ordinary least squares) both with and without the control variables, to examine the robustness of the main results to the exclusion of these controls.

4. Empirical Analysis and Results

Descriptive statistics of variables employed in the study are presented in Table-3. About 69 % of the sample firms are engaged in manufacturing activity (NATURE). Average firm age (AGE) is about 10 years and the mean ROA and ROE of the sampled firms is about 24% and 56% respectively. The sample firms have an average capital (CAPITAL) of $ 0.45 mn and investment (INVEST) of $ 0.245 mn resulting in the mean solidity ratio of 3.70. The average board size (BSIZE) of the 83 firms studied is nine, while the proportion of the Outside Directors

(OD) on the board is about two. While 55% of the firms are family owned, (OWN) and 94% of them are managed by family chief executive officers (FCEO). About 53% of the firms have human resource manager (HRM) and each firm employs (EMP) around 53 persons. Average firm size (FS) is of the order of $ 0.72 mn with an average net profit (NP) of about $ 0.0259 mn. Around 79 % of the sample firms have audit committees (AC) composed of at least 79% of outside members (OAC). Correlation statistics of the variables studied are presented in table-4.

<div align="center">Table-3 is about here</div>

<div align="center">Table-4 is about here</div>

The model is specified as below:

$$ROA = \beta_1 + \beta_2 \, FS\_ln + \beta_3 \, FA\_ln + \beta_4 TA\_ln + \beta_5 \, Sol\_ln + \beta_6 N\_F + \beta_7 Own +$$
$$+ \beta_8 F\_Age + \beta_9 \, B\_SIZE + \beta_{10} O\_Dir + \beta_{11} A\_C + \beta_{12} OAC + \beta_{13} T\_E\_ln +$$
$$+ \beta_{14} Hr\_M + \beta_{15} \, F\_CEO + \omega_{it} \longrightarrow (6)$$

Models I-A and B (for ROA as dependent variable) indicate the estimations based on the above equation (6) for random effects employing both the types of robust as well as bootstrap errors. With ROE as the dependent variable, the model is specified as below:

$$ROE = \beta_1 + \beta_2 \, FS\_ln + \beta_3 \, FA\_ln + \beta_4 TA\_ln + \beta_5 \, Sol\_ln + \beta_6 N\_F + \beta_7 Own +$$
$$+ \beta_8 F\_Age + \beta_9 \, B\_SIZE + \beta_{10} O\_Dir + \beta_{11} A\_C + \beta_{12} OAC + \beta_{13} T\_E\_ln +$$
$$+ \beta_{14} Hr\_M + \beta_{15} \, F\_CEO + \omega_{it} \longrightarrow (7)$$

Models II-A and B (for ROE as dependent variable) indicate the estimations based on the above equation (7) for random effects employing both the types of robust[5] as well as bootstrap errors. Table-5 reports the results of the analysis based on the estimation of Models I and II.

<div align="center">Table - 5 is about here</div>

---

[5]We control for extreme observations in ROA and ROI both by performing robust estimations, and by eliminating observations that constitute extreme outliers.

With ROA as the dependent variable, it is observed that the coefficient for outside directors is positive and significant at 1% level and audit committee is found to be positively significant at 10% level. With ROE as the dependent variable, it is observed that the coefficient for outside directors is positive and significant at 10% level, board size is positively significant at 10%, audit committee is found to be positively significant at 1% level, and outsiders in audit committee is positively significant at 5% level.

Table - 6 is about here

In addition, the results of the regression with panels corrected standard errors (PCSEs) (Prais-Winsten regression panel level heteroscedastic and correlated across panels) are furnished in table-7. Accordingly, ownership is found to be significant at 1% level under no autocorrelation model. Family CEO is significant at 1% and 5% levels under no autocorrelation and common AR (1) models. HR Manager is observed to be significant at 1% level. While audit committee is negatively significant at 1% level, outsiders in audit committee is positively significant at 1% under no autocorrelation model. Board size is distinctly significant at 1% levels in all the three models of analysis.

Stata estimates extensions to generalized linear models in which one can model the structure of the within-panel correlation. By employing the generalized estimating equation, (GEE) estimation reduces to a generalized linear model, and the results will be identical to estimation by generalized linear model. In view of this, we have also run the GEE estimation for both the dependent variables. The results of the GEE model are furnished in table-8. We observe that board size is significant at 10% level. Outside directors is quite significant at both 1% and 5% levels. In addition, audit committee is significant at 1% level. Further, we also conducted the

Arellano-Bond dynamic panel data estimation for the data. The results are presented in table-7. We notice that audit committee is significant at 10% level.

Table - 7 is about here

A chronic concern with econometric studies on corporate governance and performance is the incidence of endogeneity. The treatment of an instrumental variable and then executing a simultaneous equation model are two popular measures for dealing with endogeneity. This study has attempted to address this issue too with the use of appropriate methods of analysis under panel data. We ran the Hausman-Taylor estimation (table-8) and found that outside directors, audit committee and family CEO are positively significant at 1% level for ROA.

Table - 8 is about here

Discussion on Results

Results on some aspects of study are on expected lines even though some of them were not as expected made the research quite challenging. *Family Ownership* is observed to have a significant influence on firm performance. These results are similar to that of Anderson and Reeb (2003), Barontini and Caprio (2006) and Maury (2006) and establish our hypothesis that family ownership is quite suitable for an entrepreneurial organisation (more particularly UFOSFs) as family firms could represent a suitable organizational form where the objectives of the owner and the firm are aligned together (Schulze et al. 2003). The component of trust is even more significant and augments firm performance in family owned small firms, because family firms have ready access to resources such as the social capital and stewardship behaviours that stem from common ancestry and shared family identity (Corbetta and Salvato, 2004) that can be sought by the large public corporations only by making significant investments, in so doing, gives family owned firms a "comparative advantage" (Carney, 2005).

Board size has emerged as strongly correlated corporate governance factor especially with regard to both ROA and ROE. The statistically positive significance of the association between board size and performance (both ROA and ROE) indicates that the larger the board the more is good for increased firm performance. The results are similar to that of Goodstein et al., (1994) and Dalton et al., (1998). However, Coles et al., (2008) document a negative relationship between board size and firm performance ascribing the reason that larger boards suffer from board cohesiveness is undermined because board members will be less likely to share a common purpose, communicate with each other clearly, and reach a consensus that builds on the directors' different points of view. On the contrary, this study finds that large boards bring in professionalism coupled with skills and managerial acumen, which is very much required for efficient management of the firm to propel its performance. Further, the independence of the directors aids in transparency and accountability of the board and compliance to the governance norms.

Outside directors, in tune with the results of Board size are significant statistically at all the different models of analysis though at 10% level of significance. Our hypothesis that outside directors would have a positive effect on the performance among family owned and closely held firms is supported by these results, thus underscoring the argument that outside directors add value in terms of cognitive diversity, relationships with important external stakeholders and moreover this legitimacy augurs well particularly to closely held firms (Olof Brunninge, et al., 2007, Nguyen and Nielsen 2009, Core, et al., 1999). Our results are consistent with the results of study by Liang and Li (1999) who report (in their study with a sample of 228 small, private firms in China) that the presence of outside directors is positively associated with higher returns on investment.

Audit committee as a determinant is found to be positively significant with the performance of the firm. This is consistent with the results of some previous studies such as; Klein (2002) and Anderson et al., (2004), where they reported strong positive relationship between audit committee and the performance variables they used in their studies. Whereas, some papers reports no significant relationship between ROE and audit committee stating the reason that audit committees being occupied by majority of outside members have no influence on the firm's performance. Klein (2002) narrates a negative relationship between earnings management and audit committee. On the contrary, we are of the opinion that since they perform a very objective role in corporate governance activity the firm gets prompted to energise their performance efficiency. An effective audit committee, among other things, can enhance the accountant's objectivity by providing a platform apart from management where the accountants may discuss their concerns. It accelerates smooth flow of communication among the board of directors, management, internal auditors and independent accountants. Further, an audit committee augments auditor independence from management by appointing, compensating and overseeing the work of the independent accountants. 'outsiders in audit committee' is found to be positively significant in the study. The crucial role of outside auditors is to platitudinize an opinion on whether an entity's financial statements are free of material misstatements. Hence, outside auditors and audit committees undertake to ascertain the validity and reliability of corporate financial statements.

Family CEO represents family involvement in management and is found to have a positive effect on firm performance. This is in line with the previous evidence reported by Barontini and Caprio (2005), Anderson, and Reeb (2003). Kowalewski et al., (2010) also found (taking into account the endogeneity of family ownership and robustness to a number of

specification checks) that firms with family CEOs are likely to outperform their counterparts that have non-family CEOs. The proponents of agency theory supposed that when ownership and management reside within a family, agency costs would be low, if not absent. For instance, Fama and Jensen (1983) state, "family members . . . have advantages in monitoring and disciplining related decision agents". Conversely, eliciting from the literature on family economics, we can notice that (e.g., Becker, 1981, Schulze et al., 2003) a tendency toward altruism can exhibit itself as a problem of self-control and create agency-costsin family firms due to free-riding, biased parental perception of a child's performance, generosity in terms of perquisite consumption and difficulty in enforcing a contract. However, our results accentuate that family CEO has a positive effect on the firm performance because of the fact that when family member/s serve as CEO, profitability is better than with a non-family member as CEO (Anderson and Reeb, 2003). Family CEOs seem to realize the benefit of outsiders in the board for direction and elect to rely on the independent structure for boosting firm performance (Daily and Dalton, 1992).

5. Conclusion

This study unlike other studies has examined the major corporate governance mechanisms (*family ownership, board size, outside directors, audit committee, outsiders in audit committee, and family CEO*) together in the case of UFOSFs. The outcome of the study with regard to the impact of board size advocates that larger boards do help the firms by encouraging team development, facilitating inter-organisational links, and effective strategy making. It supports the argument that larger boards possess a wide range of expertise to guide the firms in making better decisions. Undoubtedly, the results of the study have demonstrated that depending upon the firm size, family owned small firms with a reasonable large size, say, of about nine

members, would have better performance. This calls for induction of experts and professionals on the boards of the family owned firms in order to enhance the performance of the small firms.

By bringing together, the agency cost theory and stewardship theory and other theoretical perspectives to the traits of small family firms; this study offers evidence and throws new light on the competitive advantages of small family firms in terms of their positive significance on firm performance. Family firms own valuable resources and capabilities, such as the overlapping responsibility of owners and managers, the sustained presence of family shareholders, entrepreneurship and information advantages. Moreover, the potential value of these resources and capabilities is more likely to be capitalized when the family firm is small. As Kole (1995) has observed, the positive relationship between firm performance and family ownership is sustained at a high level for small firms. Further, this study sheds light on two diverse theoretical perspectives of family firms: agency theory and stewardship theory. Agency theorists underscore the owner-manager conflicts and are more haunted with the potential disadvantages of family ownership. As an antithesis, stewardship theorists predict goal-alignment between the principals and stewards and bestow added attention to the latent advantages of family ownership. Accordingly, this study supplements more to stewardship theory than to agency theory, implying that in small family firms, the concerns of owners as well as managers are better aligned thus enhancing the performance of the firm. Mostly, the results suggest that family ownership is an effective organizational structure for UFOSFs.

References:
Anderson R, Mansi S and Reeb D, (2003). Founding family ownership and the agency cost of debt, *Journal of Financial Economics,* 68: 263-285.
Anderson R and Reeb D, (2003). Founding family ownership and firm performance: evidence from the S&P 500, *Journal of Finance,* 58: 1301-1328.
Anderson R, Mansi S and Reeb D, (2004). Board characteristics, accounting report integrity and the cost of debt, *Journal of Accounting and Economics*, 37: 315- 342.

Astrachan J H, Klein, S and Smyrnios K X, (2002). The F-PEC Scale of Family Influence: A Proposal for Solving the Family Business Definition Problem, *Family Business Review*, 15, 45–58

Astrachan J H and Shanker M C, (2003). Family businesses' contribution to the U.S economy: a closer look, *Family Business Review*, 16: 211–219.

Bammens Yannick, Wim Voordeckers and Anita Van Gils, (2008). Boards of directors in family firms: a generational perspective, *Small Business Economics,* 31:163–180.

Barontini R and Caprio L, (2006). The effect of family control on firm value and performance: evidence from continental Europe, *European Financial Management*, 12: 689–723.

Becker G S, (1981). Altruism in the family and selfishness in the market place, *Economica,* 48(189): 1-15.

Brunninge, O and Nordqvist M, (2004). Ownership Structure, Board Composition and Entrepreneurship: Evidence from Family Firms and Venture Capital Backed Firms, *International Journal of Entrepreneurial Behaviour and Research*, 10(1/2), 85–105.

Burkart M, Panunzi F and Shleifer A, (2003). 'Family firms', *Journal of Finance*, 58: 2167–201.

Cadbury Adrian, (2000). *Family firms and their governance - creating tomorrow's company from today's*. Egon Zehnder International
Available at: http://rru.worldbank.org/Documents/PapersLinks/family_firms.pdf

Carney M, (2005). Corporate Governance and Competitive Advantage in Family-Controlled Firms, *Entrepreneurship Theory and Practice*, 29: 249–265

Carney M, (2005). Corporate governance and competitive advantage in family-controlled firms, *Entrepreneurship Theory & Practice,* 29 (3): 249–265.

Chen H L and Hsu W T, (2009). Family ownership, board independence, and R&D investment, *Family Business Review,* 22 (4): 347-362

Coles J L, Daniel N D and Naveen L, (2008). Boards: does one size fit all? *Journal of Financial Economics*, 87: 329-356.

Core J E, Holthausen R W and Larcker D F, (1999). Corporate governance, chief executive officer compensation, and firm performance, .*Journal of Financial Economics,* 51: 371-406.

Cowling M, (2003). Productivity and corporate governance in smaller firms, *Small Business Economics,* 20, 335–344.

Cronqvist H and Nilsson M, (2003). Agency Costs of Controlling Minority Shareholders, *Journal of Financial and Quantitative Analysis* 38 (4): 695-719

Daily C M and Dallton D R, (1992). The relationship between governance structure and corporate performance in entrepreneurial firms. *Journal of Business Venturing*, 7(5): 375–386

Daily C M, Dalton D R, and Cannella A A, (2003). Corporate governance: decades of dialogue and data. *Academy of Management Review,* 28: 371–382.

Dalton D R, Daily C M, Ellstrand A E, Johnson J L, (1998). Meta-analytic reviews of board composition, leadership structure and financial performance, *Strategic Management Journal* 19(3): 269–290.

Dalton D R and Dalton C M, (2011). Integration of micro and macro studies in governance research: CEO duality, board composition and financial performance, *Journal of Management*, 37(2): 404–411.

Denis D, (2001). Twenty-five years of corporate governance research. . . and counting. *Review of Financial Economics,* 10: 191–212.

Donaldson L, (1990). The ethereal hand: organizational economics and management theory, *Academy of Management Review*, 15: 369–381.

Donaldson, L and Davis, J.H., (1991). Stewardship theory or agency theory: CEO governance and shareholder returns, *Australian Journal of Management*, 16 (1): 49-64

Dyer Jr W G and Sanchez M, (1998). Current state of family business theory and practise as reflected in Family Business Review 1988-1997. *Family Business Review*, 11(4)

Eisenberg T, Sundgren S, Wells T M, (1998). Larger board size and decreasing firm value in small firms, *Journal of Financial Economics*, 48 (1): 35-54

Fama E F and Jensen M C, (1983). Separation of ownership and control, *Journal of Law and Economics* 26, 301– 326.

Fiegener, M. K (2005). Determinants of Board Participation in the Strategic Decisions of Small Corporations, *Entrepreneurship: Theory and Practice,* 29(5), 627–650.

Ferris S P, Jagannathan M and Pritchard A C, (2003). Too busy to mind the business. monitoring by directors with multiple board appointments, *Journal of Finance* 58 (3): 1087–1112

GOI, (2010). Report of The Task Force on MSME, Prime Minister's Office, Government of India, New Delhi, India, January

Goodstein J, Gautham K and Boeker W, (1994). The Effects of Board Size and Diversity on Strategy Change, *Strategic Management Journal*, Vol. 15, pp. 241-50.

Gomez-Mejia L R, Nunez-Nickel M and Gutierrez I, (2001). The role of family ties in agency contracts. *Academy of Management Journal*, 44: 81-95.

Goyal V K and Park C W, (2002). Board leadership structure and CEO turnover, *Journal of Corporate Finance* 8, 49–66.

Gujarati D.N (1995). Basic Econometrics, McGraw-Hill Companies; 3rd edition

Harris M and Raviv A, (2008). A theory of board control and size, *Review of Financial Studies,* 21: 1797-1832.

Huther, J., (1997). An empirical test of the effect of board size on firm efficiency, *Economics Letters*, 54: 259–264.

Jensen M, (1986). Agency cost of free cash flow, corporate finance, and takeovers, *American Economic Review*, 76: 323-329.

Jensen M C and Meckling W H, (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics,* 3: 305–360.

Kaplan S, (1994). Top executive rewards and firm performance: a comparison of Japan and the United States. *Journal of Political Economy,* 102(3): 510-46.

Klein, A (2002). Audit committee, board of director characteristics and earnings management, *Journal of Accounting and Economics*, 33: 375- 400

Klein P, Shapiro D and Young J, (2005). Corporate governance, family ownership and firm value: the Canadian evidence. *Corporate Governance: An International Review*, 13: 769–784.

Kowalewski Oskar, Talavera Oleksandr and Stetsyuk Ivan, (2010). Influence of Family Involvement in Management and Ownership on Firm Performance: Evidence From Poland, *Family Business Review*, 23(1): 45–59

Linck J S, Netter J M and Yang T, (2007). The determinants of board structure, *Working paper, University of Georgia.*

Mak Y T, and Kusnadi Y, (2005). Size really matters: further evidence on the negative relationship between board size and firm value, *Pacific-Basin Finance Journal*, 13: 301-318.

Maury Benjamin, (2006). Family ownership and firm performance: Empirical evidence from Western European corporations, Journal of Corporate Finance, 12 (2): 321-341

Mintzberg H, Simons R and Basu K, (2002). Beyond selfishness, *Sloan Management Review,* 44(1): 67-74

Morck R and Yeung B, (2004). Family control and the rent-seeking society, *Entrepreneurship Theory and Practice*, 28: 391–409

Oliver Hart, (1995). Corporate governance: some theory and implications, *The Economic Journal*, 105(430): 678-689.

Olof Brunninge, Mattias Nordqvist and Johan Wiklund, (2007). Corporate governance and strategic change in SMEs: the effects of ownership, board composition and top management teams, *Small Business Economics,* 29:295–308.

Oskar Kowalewski, Oleksandr Talavera and Ivan Stetsyuk, (2010). Influence of family involvement in management and ownership on firm performance: evidence from Poland, *Family Business Review*, 23(1): 45–59.

Osteryoung J S and Newman D L, (1993). What is a Small Business? *Journal of Small Business Finance*, 2(3): 219-231.

Raghuram G. Rajan & Luigi Zingales, (2001). The firm as a dedicated hierarchy: a theory of the origins and growth of firms, *The Quarterly Journal of Economics*, 116(3): 805-851.

Raheja, C., (2005). Determinants of board size and composition: a theory of corporate boards, *Journal of Financial and Quantitative Analysis,* 40 (2): 283–306.

Rosenstein S and Wyatt J G, (1990). Outside directors, board independence and shareholder wealth, *Journal of Financial Economics* 26: 175–191.

Shleifer. A and Vishny . Robert W,. (1997). A survey of corporate governance, *The Journal of Finance,* 52 (2): 737-783.

Schulze W S, Lubatkin M H, and Dino R N, (2003). Exploring the agency consequences of ownership dispersion among the directors of private family firms, *Academy of Management Journal*, 46: 179–94.

Tin-yan Lam and Shu-kam Lee, (2012). Family ownership, board committees and firm performance: evidence from Hong Kong, *Corporate Governance*, 12 (3): 353 - 366

Vafeas, N., (1999). Board meeting frequency and firm performance, *Journal of Financial Economics,* 53 (1): 113–142.

Villalonga, B., and A. Amit, (2006). How do family ownership control and management affect firm value? *Journal of Financial Economics,* 80: 385–417.

Walsh, J. P and Seward, J. K (1990). On the efficiency of internal and external corporate control mechanisms, *Academy of Management Review,* 15: 421-458.

Warther, V.A., (1998). Board effectiveness and board dissent: a model of the board's relationship to management and shareholders, *Journal of Corporate Finance,* 4: 53–70.

Weisbach, M. (1988). Outside directors and CEO turnover. *Journal of Financial Economics*, 20: 431-60.

Westhead P and Howorth C, (2006). Ownership and management issues associated with family firm performance and company objectives, *Family Business Review*, 19(4): 301–316.

Winter, M., Fitzgerald, M., Heck, R., Haynes, G., and Danes, S (1998). Revisiting the study of family businesses: methodological challenges, dilemmas, and alternative approaches, *Family Business Review,* 11: 239-252.

Table-1: Sample Frame of SMEs

Central Region	Eastern Region	Western Region	Northern Region	Southern Region
Chhattisgarh (2)	Assam (3)	Gujarat (7)	Haryana (4)	Andhra Pradesh (5)
Jharkhand (2)	Bihar (2)	Maharashtra (9)	Himachal Pradesh (2)	Karnataka (4)
Madhya Pradesh (4)	Orissa (3)	Rajasthan (3)	Punjab (8)	Kerala (4)
	West Bengal (10)		Uttar Pradesh (6)	TamilNadu (4)
Total (8)	Total (18)	Total (20)	Total (20)	Total (17)
Grand Total (83)				

Table-2: Definitions for Key Variables

Variable		Description
Return on Assets	ROA	Net Income / Average Total Assets, where Average assets has been calculated over 2 years
Return on Equity	ROE	Net income / (Average Capital employed) where a 2-year average for capital has been used
Determining Variables		
Ownership	Own	A dummy variable which takes the value of 1 the largest single owner in the firm owns more than 50% of the equity
Board Size	B_SIZE	Number of board members
Outsiders in Board	OD	Number of outsiders (non-promoters and their relatives) in the composition of the board
Audit Committee	A_C	A dummy variable which takes the value of 1 if the firm has an organised audit committee, 0 if there is no audit committee
Outsiders in Audit Committee	OAC	A dummy variable which takes the value of 1 if the firm has outsiders in the audit committee, 0 if there are no outsiders in the audit committee
Total Employees in the firm	T_E_ln	Logarithm of Total Employees in the firm
Human Resource Manager	Hr_M	A dummy variable which takes the value of 1 the firm has engaged an Personnel Manager / Industrial Relations Manager / HR Manager
Family CEO	F_CEO	A member of the controlling family is CEO of the company. A dummy that takes the value of 1 if the CEO is a family CEO
Control Variables		
Firm Size	FS_ln	Logarithm of annual turnover
Fixed Assets	FA_ln	Logarithm of Fixed Assets
Investments	Inv_ln	Logarithm of Investments
Total Assets	TA_ln	Logarithm of Total Assets
Solidity	Sol_ln	Equity to Total Assets
Nature of the Firm	N_F	A dummy variable which takes the value of 1 if the firm is engaged in Manufacturing activity
Firm Age	F_Age	A dummy that takes the value of 1 if the firm is founded for more than 10 years ago

Table-3: Descriptive Statistics of Variables

Stats	FS	TA	FA	Inv	Sol	HRM	FCEO	NP	ROA	ROE	OWN	AGE	BSize	OD	AC	OAC	TE	Nature
Mean	728260	228260	352173	245652	3.70	0.53	0.94	25967	0.24	0.56	0.55	10	9.2	1.76	0.79	0.77	53	0.69
Max	2154347	1026086	2117391	304347	40.63	1.00	1.00	119565	1.22	4.20	1.00	23	15	6.00	1.00	1.00	493	1.00
Min	60188	31283	24642	27118	0.03	0.00	0.00	2690	0.01	0.00	0.00	4	5.0	0.00	0.00	0.00	4.0	0.00
Cv	0.81	1.12	1.29	2.77	1.88	0.94	0.25	0.82	0.99	1.48	0.90	0.4	0.3	1.04	0.51	0.55	1.4	0.68
Skewness	0.56	1.46	1.59	3.65	2.90	-0.1	-3.7	1.40	1.69	2.28	-0.2	0.4	0.9	0.99	-1.4	-1.2	3.9	-0.8
Sd	586956	254347	454347	682608	6.94	0.50	0.24	21167	0.24	0.82	0.50	4.1	2.7	1.84	0.41	0.42	77	0.46
Kurtosis	2.11	4.06	5.07	14.74	11.99	1.01	14.6	4.92	5.52	8.08	1.05	2.4	2.8	3.12	3.05	2.67	19	1.65
Obs	249	249	249	249	249	249	249	249	249	249	249	249	249	249	249	249	249	249

Note: Amount in Dollar terms

Table-4: Correlations Statistics of Variables

	FS	TA	FA	Inv	Sol	Nature	OWN	AGE	BSize	OD	AC	OAC	TE	HRM	FCEO	NP	ROA	ROE
FS	1																	
TA	-0.06	1																
FA	0.30	0.48	1															
Inv	-0.05	0.02	0.02	1														
Sol	0.16	0.28	0.52	0.01	1													
Nature	-0.08	-0.22	-0.009	-0.05	-0.05	1												
Own	0.29	0.02	0.07	-0.006	-0.003	-0.3	1											
Age	-0.46	0.08	-0.02	-0.04	-0.1	0.17	-0.2	1										
BSize	0.21	0.01	0.03	0.021	-0.03	0.25	-0.4	0.3	1									
OD	0.37	0.009	0.13	0.044	-0.12	0.33	-0.4	0.32	0.8	1								
AC	0.35	0.05	0.08	0.026	0.23	0.27	-0.2	0.16	0.18	0.20	1							
OAC	0.39	-0.13	0.04	-0.06	0.17	0.31	-0.3	0.26	0.29	0.31	0.80	1						
TE	0.51	-0.14	0.07	-0.01	-0.08	0.12	-0.3	0.15	0.34	0.31	0.12	0.26	1					
HRM	0.32	-0.04	0.09	0.03	-0.04	0.40	-0.3	0.09	0.15	0.22	0.30	0.40	0.42	1				
FCEO	0.40	-0.02	0.18	-0.03	0.03	-0.06	-0.02	0.06	-0.06	-0.2	-0.04	-0.01	-0.01	-0.13	1			
NP	-0.06	-0.02	-0.03	0.04	0.001	0.03	-0.1	0.05	0.28	0.16	0.25	0.38	0.27	0.26	0.10	1		
ROA	0.46	0.23	0.45	-0.008	0.15	0.01	-0.1	0.12	0.13	0.05	0.21	0.3	0.19	0.16	-0.0004	0.48	1	
ROE	0.31	-0.48	-0.13	-0.05	-0.3	0.17	-0.1	0.19	0.21	0.23	0.09	0.19	0.13	0.15	-0.07	0.24	0.51	1

Table-5: Determinants of ROA and ROE in UFOSFs

Model	I-A	I-B	II-A	II-B
Dependent Variable	ROA Robust	ROA Bootstrap	ROE Robust	ROE Bootstrap
Constant	1.29***	1.29***	-0.112	-0.112
	4.28	3.45	-0.13	-0.08
FS_ln	0.045***	0.045***	0.059*	0.059*
	3.41	3.41	1.78	1.18
FA_ln	0.012	0.012	0.004	0.004
	1.15	1.06	0.13	0.09
TA_ln	-0.130***	-0.130***	-0.008***	-0.008***
	-9.00	-7.36	-2.71	-2.10
Sol_ln	0.003***	0.003***	-0.011***	-0.011***
	2.18	1.93	-3.86	-2.62
N_F	-0.072	-0.072	0.388***	0.388
	-1.15	-1.28	3.43	1.73
Own	0.011	0.011	0.051	0.051
	0.22	0.18	0.29	0.18
F_Age	-0.012**	-0.012**	0.016**	0.016**
	-2.32	-2.15	1.03	0.73
B_SIZE	-0.015	-0.015	0.071*	0.071
	-1.08	-0.86	1.86	1.55
O_Dir	0.053***	0.053***	-0.08**	-0.08**
	2.93	1.50	-1.70	-1.23
A_C	0.119*	0.119*	-0.102***	-0.102**
	1.69	1.18	-3.44	-0.63
OAC	-0.075	-0.075	0.46	0.463
	-1.05	-0.69	2.23	1.50
T_E_ln	0.023	0.023	0.043	0.043
	1.12	1.02	0.75	0.67
Hr_M	0.010	0.010	-0.147	-0.147
	0.18	0.13	-0.81	-0.55
F_CEO	0.123	0.123	-0.346	-0.346
	1.27	1.15	-1.03	-0.67
Adj. R^2	0.628	0.628	0.330	0.330
F-Value / Wald Chi^2	242.51	107.81	226.17	22.07
Obs	249	249	249	249

Note:*, **, *** indicate significant at 10%, 5% and 1% respectively
The table reports (Panel Regression Results (GLS) with Random Effects) the estimated coefficients, t-values and p-values (in parenthesis) as well as goodness-of-fit statistics from the Models: I-A and B to II-A and B. While the Models: I-A and II-A are estimated by employing robust standard errors the Models: I-B and II-B are estimated by employing bootstrapped standard errors.

Table-6: Regression with Panels Corrected Standard Errors (PCSEs)

Model	Common AR(1)	Panel-specific AR(1)	No-Auto Correlation	Common AR(1)	Panel-Specific AR(1)	N-Auto Correlation
Dependent Variable	ROA			ROE		
Constant	0.994***	0.986***	0.969***	0.711	0.474	0.852**
	3.46	5.36	10.04	1.06	0.70	2.02
FS_LN	0.046***	0.052***	0.043***	0.121**	0.099***	0.214***
	3.21	4.63	9.27	2.08	3.18	6.50
F_A_ln	0.010	0.002	0.005	-0.027	-0.025	-0.763***
	1.11	0.36	0.25	-1.17	-0.94	-6.16
TA_ln	-0.124***	-0.131***	-0.113***	-0.138***	-0.121***	-0.185***

	-9.96	-12.12	-15.62	-3.29	-3.80	-44.31
Sol_ln	0.002	0.002*	0.001	-0.021***	-0.024***	-0.044***
	1.20	1.66	1.48	-2.65	-3.23	-10.26
N_F	-0.037	0.000	-0.021***	0.158***	0.324***	0.161***
	-0.84	0.01	-2.88	4.40	4.27	46.19
Own	0.025	0.079**	0.029***	-0.001	0.046**	0.104***
	0.74	2.27	4.56	-0.02	0.86	4.49
F_Age	0.001	0.003	0.003***	0.016***	0.0001	0.014***
	0.33	1.31	2.88	4.92	0.03	12.49
B_SIZE	0.004**	0.004**	0.010**	0.054***	0.066***	0.029***
	0.36	0.58	1.62	3.83	5.20	5.15
O_Dir	0.001*	0.016*	0.018*	0.046*	0.035*	0.006*
	0.00	1.08	1.40	1.74	1.16	0.71
A_C	0.045	0.009*	0.043**	0.091*	0.008**	0.221***
	0.75	0.23	0.97	1.01	0.12	5.88
O_AC	0.16	0.029**	0.063**	0.139	0.024**	0.202***
	1.13	0.79	1.57	1.14	0.24	3.34
T_E_ln	0.040*	0.043**	0.052***	0.003	0.029**	0.006**
	1.93	2.56	11.14	0.19	0.80	0.52
Hr_M	-0.010	-0.014	-0.025**	0.003	-0.087	-0.048***
	-0.25	-0.57	-2.27	0.05	-1.93	-3.03
F_CEO	0.030	0.111***	0.154	0.302**	0.149	0.225***
	0.56	2.72	0.50	2.09	0.90	4.37
Adj. R^2	0.481	0.744	0.399	0.243	0.415	0.329
F-Value / Wald Chi^2	231.89	425.05	724062	77502	37013	44706
Obs	249	249	249	249	249	249

Note: *, **, *** indicate significant at 10%, 5% and 1% respectively
(Prais-Winsten regression panel level heteroscedastic and correlated across panels)
The table reports (panel regression results) the estimated coefficients and t-values

Table-7:
Results of GEE Model Analysis and Arellano-Bond Dynamic Panel Data Estimation

	GEE Population-Averaged Model		Arellano-Bond Dynamic Panel-Data Estimation	
Dependent Variable	ROA	ROE	ROA Robust	ROE Robust
Constant	1.318***	0.087	0.323**	-0.305
	3.97	0.080	2.23	-0.71
F_S_ln	0.045***	0.054	-0.193	0.121
	3.210	1.240	-1.14	0.16
F_A_ln	0.011	0.009	0.003	-0.020
	1.310	0.320	0.97	-1.21
TA_ln	0.133***	-0.069*	-	-
	-11.620	-1.920		
Sol_ln	0.004**	0.010**	-	-
	2.510	-2.270		
N_F	-0.054	0.138	-0.049	-0.018
	-0.930	0.680	-1.52	-0.16
Own	0.021	-0.072	-	-
	0.370	-0.360		
F_Age	-0.013***	0.021	-	-
	-3.040	1.440		
B_SIZE	-0.016	0.069*	-	-
	-1.390	1.770		
O_Dir	0.054***	0.076**	-	-

	4.550	2.020		
A_C	0.122***	0.117**	0.045*	0.124
	3.690	1.150	1.86	0.75
O_AC	0.057*	0.229*	-	-
	0.800	0.930		
T_E_ln	0.027	-0.007	-	-
	1.160	-0.090		
Hr_M	-0.004	0.044	-	-
	-0.060	0.210		
F_CEO	0.128*	0.349*	-	-
	1.290	1.000		
F-Value / Wald Chi^2	271.37	24.78	15.62	12.96
Obs	249	249	83	83

Note: Arellano-Bond test that average auto covariance in residuals of order 1 is 0
*, **, *** indicate significant at 10%, 5% and 1% respectively
The table reports (panel regression results) the estimated coefficient and t-values

Table-8: Results of Analysis using Hausman-Taylor Estimation

Dependent Variable	ROA		ROE	
Variable	Coef.	p-value	Coef.	p-value
Constant	0.533***	0.006	0.802	0.625
F_S_ln	0.027*	0.069	0.027	0.565
F_A_ln	-0.004	0.681	0.035	0.262
TA_ln	-0.135***	0.000	-0.016	0.678
Sol_ln	0.003**	0.012	-0.003	0.429
N_F	-0.043	0.683	0.124	0.610
Own	0.073	0.490	-0.207	0.394
F_Age	-0.027***	0.000	0.033**	0.039
B_SIZE	0.010	0.573	0.070	0.121
O_Dir	0.078***	0.000	0.097**	0.020
A_C	0.089***	0.009	0.116	0.279
T_E_ln	0.088***	0.005	0.029	0.767
Hr_M	0.070	0.509	-0.012	0.962
F_CEO	1.368***	0.006	1.896	0.109
F-Value / Wald Chi^2	308.11		17.38	
Obs	249		249	

Note: *, **, *** indicate significant at 10%, 5% and 1% respectively