

THE MEDIATING EFFECT OF EARNINGS QUALITY ON THE RELATIONSHIP OF BOARD STRUCTURE AND FINANCIAL PERFORMANCE: A CASE OF THE STOCK EXCHANGE OF THAILAND (SET)

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Abstract: The purpose of this research is to examine the relationship between the firm's corporate governance and ownership characteristics, its earnings quality, and its financial performance in the Stock Exchange of Thailand. Earnings quality was represented by abnormal accruals. Six corporate governance factors and three ownership categories were included. Data was collected from annual reports of 200 publicly listed non-financial firms on the SET (2014-2015) ($n = 400$ firm-years). Analysis was conducted using structural equation modelling. Factors that affected abnormal accruals included board independence, board meeting frequency, and firm size. Financial performance was affected by institutional and family ownership, firm size, and accruals. Additionally, indirect effects of board size, board independence, CEO duality and gender diversity were mediated through accruals. The implication of this study is that earnings quality is an important mediator in this relationship.

Keywords: Board structure, ownership structure, earnings quality, financial performance.

1. INTRODUCTION

This research examines the relationship between corporate governance, earnings quality and firm performance in the Stock Exchange of Thailand (SET). There are different theoretical bases for the implementation of corporate governance practices, which may lead to variations in the practices implemented (such as stakeholder management, corporate social responsibility, and oversight practices) (Calder, 2008). For this research, the main concern is the financial monitoring and control of the firm by the board of directors, who have a fiduciary duty to the firm to protect the interests of the owners (shareholders or investors) (Calder, 2008). This set of fiduciary responsibilities is based in agency theory. The principal-agent problem is the key conflict at the heart of agency theory. The problem is based on the actions of two parties, the principal (or owner of a resource) and the agent (the controller of the resource) (Shapiro, 2005). Ethically, the agent should control the resource in a way that benefits

its owner, but human decision-making processes mean that either unintentionally or intentionally the agent may act in its own benefit. Agency theory assumptions include bounded rationality and self-interest decision-making, along with an information asymmetry (Shapiro, 2005). Information asymmetries allow the agent to make self-dealing decisions utilizing the resources of the firm because they hold functional control of these resources (Shapiro, 2005).

The problem presented by agency theory is the effects of separation of ownership and control of the firms. In publicly listed firms, beneficial ownership of the firm is typically assigned to shareholders (investors in the firm), while control is assigned to professional managers (the CEO and other executives) (Calder, 2008). This opens up the possibility for emergence of a principal-agent conflict, in which the managers of the firm use information and power asymmetries in order to act in their own interests (Jensen & Meckling, 1976). Thus,

the reason that firms have board of directors in the first place is to monitor the manager's performance and align the interests of the manager to the firm's own (Jensen & Meckling, 1976). Some of the duties of the board of directors, including executive compensation, auditing, and general management oversight, directly reflect this monitoring duty. However, firm owners are not powerless, particularly in cases with institutional, highly concentrated, or family ownership (Bhagat & Jefferis, 2002). Thus, the interaction of corporate governance structures and firm owners (especially large owners) shapes the direction of the firm.

One of the complexities of studying this topic is that, as the literature review shows, results are often conflicting and contradictory. In some cases, studies have successfully teased out factors that cause conflicts in a single area, such as family ownership and founder participation (Andres, 2008). However, when regarding other aspects, there is often continued conflict between the variables. This study introduces earnings quality as a potential mediating variable in the relationship between the corporate governance factors and the firm's financial performance to explain some of this variance. Earnings quality, or the extent to which the firm's reported earnings reflects its real position, is a widely-used measure of the extent of management quality (Dechow, Ge, & Schrand, 2010). While it could have a meaningful relationship in this study, this has not been tested before, and thus contributes a possible novel relationship. The purpose of the study is to examine the relationship between the firm's corporate governance and ownership characteristics, its earnings quality, and its financial performance in the Stock Exchange of Thailand. To meet this purpose, the study examines the empirical relationships between the board of directors, ownership structure, and firm financial performance, and the potential mediating effect of earnings quality in these relationships.

2. LITERATURE REVIEW

Board Structure

Board size has an inconsistent relationship to financial performance. In India, a study showed a strong positive effect of board size on the firm's financial performance (Jackling & Johl, 2009). However, these results are directly

contradicted by a study that examined UK-based firms, which found a negative relationship that persisted despite attempts to control it (Guest, 2009). One study set out to explain the effect of variant influences of board size on firm performance in American firms (1992-2001) using a complexity perspective (Coles, Daniel, & Naveen, 2008). In simple firms, there was a negative relationship between board size and firm performance. However, for complex firms, the relationship was reversed, with larger boards being associated with better financial performance. The authors attributed this to greater demand for expertise (Coles, et. al., 2008). Institutional structures could also play a role, as in weak institutional environments, the board plays a bigger role in organizational monitoring and control than those in stronger institutional environments (Guest, 2009; Jackling & Johl, 2009). The proposed relationship for board size is:

Hypothesis 1: Board Size is negatively associated with firm financial performance.

Board Independence

Several studies have shown positive relationships of board independence and firm financial performance (Gani & Jermias, 2006; Jackling & Johl, 2009; Ramdani & Witteloostuijn, 2010). Gani and Jermias (2006) compared two firm orientations, finding that for cost efficiency firms, there was a strong positive relationship between board independence and financial performance, as expected. However, this relationship was much weaker for firms focusing on innovation. The authors speculated that this could be because firms using innovation strategies require more inside information about the firm's operations and activities for effective oversight. Another study used quantile regression to examine the relationship in one of the few studies to include Thailand, finding that effects of board independence were only significant for firms in the second quantile group (Ramdani & Witteloostuijn, 2010). These studies suggest the following relationship:

Hypothesis 2: Board Independence is positively associated with firm financial performance.

Jackling and Johl (2009) showed that CEO duality had a strong negative association with the firm's financial performance. Other studies have mostly agreed. Lam and Lee (2008) found that firms under family control

showed the expected negative effect, but firms that were not under family control showed a positive relationship (Lam & Lee, 2008). Another study also found a significant negative relationship (Ramdani & Witteloostuijn, 2010). Thus, the following hypothesis is proposed:

Hypothesis 3: CEO Duality is negatively associated with firm financial performance.

Gender diversity is theorized to improve firm performance by changing the psychological environment of the board of directors and increasing monitoring levels, which can improve board quality (Campbell & Mínguez-Vera, 2008). However, many firms have very gender-imbalanced boards, due to the predominance of men in the working environment and cultural considerations (Campbell & Mínguez-Vera, 2008). Joecks, et. al., (2013) showed that adding a small number of women to the board is not enough to ensure representation. Only when female representation passes one in three members are positive effects observed (Joecks, et. al., 2013). Another study found a significant positive relationship between gender representation and firm financial performance (Campbell & Mínguez-Vera, 2008). A third study found no significant relationship between the board's gender diversity and the firm's financial performance (Marinova, Plantenga, & Remery, 2016). The relationship tested here is:

Hypothesis 4: Gender Diversity is positively associated with firm financial performance.

Meeting frequency also shows conflicting relationships. One study found that there was a very strong and positive relationship between the number of board meetings per year and the firm's financial performance, which was not eliminated by controlling the dataset (Ntim & Osei, 2011). However, another study found no relationship (Jackling & Johl, 2009). One explanation comes from a study of busy boards, which found that the number of board meetings per year had a persistent negative effect on firm performance (Fich & Shivdasani, 2006). This suggests that busy boards may be overloaded and less efficient (Fich & Shivdasani, 2006). The relationship tested here is:

Hypothesis 5: Board Meeting Frequency is associated with firm financial performance.

Ownership Structure and Firm Performance

Ownership classes studied were institutional ownership, ownership concentration, and founder/family ownership. One study found a positive relationship between institutional ownership and operating profit, but this was not true for all classes of investors (Cornett, Marcus, Saunders, & Tehranian, 2007). Another study found that there was a significant positive relationship between institutional ownership and corporate performance (Gürbüz, Aybars, & Kutlu, 2010). A third study found that there was no such significant relationship (Lee, 2008). The tested relationship here is:

Hypothesis 6: Institutional Ownership is positively associated with firm financial performance.

Studies on ownership concentration show that ownership concentration may have a U-shaped or non-linear relationship to financial performance (Hu & Izumida, 2008; Lee, 2008). Hu and Izumida (2008) explain this nonlinear relationship as resulting from the balance of two different effects. At low levels of firm ownership concentration, there is a high expropriation effect, where investors demand a relatively high proportion of the firm's resources regardless of the effect on the firm. At high levels of concentration, there is a stronger incentive for high levels of monitoring, termed the monitoring effect (Hu & Izumida, 2008). Other researchers found investor class differences (Heugens, van Essen, & van Oosterhout, 2009). Based on these studies, the following hypothesis is proposed:

Hypothesis 7: Ownership Concentration is positively associated with firm financial performance.

In general, family or founder financial ownership may have a positive impact on the firm's financial performance when the founder or founding family is still active in firm management, but not afterward (Andres, 2008; Chu, 2011). Chu's (2011) study in Taiwan found that in firms where this was the case, higher financial performance could be observed. These are only a sampling of the results on the relationship between these two variables, but both Andres (2008) and Chu (2011) have noted in their literature review that evidence overall is highly conflicted and seems to be dependent on factors like geographic location and so on. Thus, for

the purposes of this study there will be presumed to be a positive relationship between the two, but this could vary as the founders' generation changes:

Hypothesis 8: Founder/Family Ownership is positively associated with firm financial performance.

Relationship Earnings Quality and Firm Performance

Several studies have determined directly or indirectly that firms with poorer financial performance were more likely to use earnings management practices or tools (Charitou, Lambertides, & Trigeorgis, 2007; Iatridis & Kadaronis, 2009). Charitou, et. al., (2007) showed that distressed firms (those with higher default likelihood and lower growth outlook) were less likely to release bad news in a timely fashion and more likely to use earnings management to show consistent small positive earnings compared to non-distressed firms. Iatridis and Kadaronis (2009) also showed that firms with low profitability and high debt needs were more likely to use earnings management. Once again, earnings management degraded information quality of the firm's financial reporting, and thus these firms showed lower levels of earnings quality. A third study found that firms with poor readability of their financial statements were also more likely to show evidence of earnings management and lower current profits (Li, 2008). However, a fourth study showed that firms that had high growth rates and high financial

performance were actually somewhat more likely to use earnings management, thus showing lower earnings quality than other firms (Jevons Lee, Li, & Hue, 2006). Thus, there are two key problems with these research findings. The first is that the relationship tested is typically between financial performance and earnings management, rather than the other direction. The second is that there are conflicts in the research findings. Thus, the hypothesis for this aspect of the study is:

Hypothesis 9: Earnings quality (Abnormal accruals) has a relationship with the firm's financial performance.

Relationship of Corporate Governance, Earnings Quality and Firm Performance

The novel relationship explored in this research is the relationship between corporate governance, earnings quality, and firm performance. It is proposed that earnings quality plays a mediating role in the relationship between corporate governance and firm performance, based on the previous research reviewed above, which showed relationships between corporate governance factors and earnings quality and between earnings quality and firm performance. This relationship is tested as:

Hypothesis 10: Earnings quality (Abnormal accruals) plays a mediating role in the relationship between corporate governance characteristics and firm performance.

Conceptual Framework

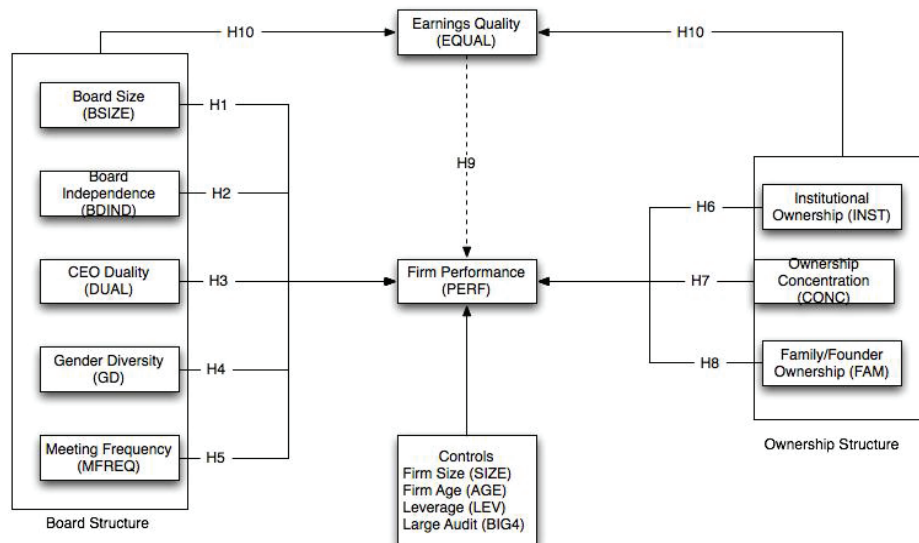


Figure 1: Conceptual framework of the study

3. DATA AND METHODS

The research methodology is a cross-sectional, quantitative analysis. Table 1 summarizes the definition and measurement of the variables.

Table 1
Summary of variable definitions and measurements

Variable	Code	Measurement or Calculation
Board Size	BSIZE	Count of board members
Board Independence	BDIND	Ratio of independent board members to total board members
CEO Duality	DUAL	Dummy variable (0 = CEO duality is not present, 1 = Otherwise)
Gender Diversity	GD	Ratio of female directors to total board members
Meeting Frequency	MFREQ	Total board meetings reported in one year
Institutional Ownership	INST	Ratio of institutional ownership to total ownership of the firm
Ownership Concentration	CONC	Percentage of shares held by largest shareholder
Family/Foundation Ownership	FAM	Family management (FAM-MAN) (Dummy variable: 0 if CEO is not member of founding family, 1 otherwise) Family ownership (FOM-OWN): Percent of shares owned by the founder and/or founding family
Earnings Quality	EQUAL-ACCRAUAL	Modified Jones (1991) model of abnormal accruals: $ACC_{i,t} = \alpha + \beta_1(\Delta REV_{i,t} - \Delta AR_{i,t}) + \beta_2 PPE_{i,t} + \epsilon_{i,t}$
Firm Performance	PERF-ROA PERF-ROE	Ratio of net earnings to total assets Ratio of net earnings to total equity
Firm Size	SIZE	ln (Total Assets)
Firm Age	AGE	Number of years since firm listing on SET
Leverage	LEV	Ratio of Total Debt to Total Equity
Large Audit Firm	BIG4	Dummy variable (0 if firm does not use KPMG, PwC, E&Y or Deloitte, 1 otherwise)

Data was extracted for a random selection of non-financial firms listed on the Stock Exchange of Thailand (SET) (2014 to 2015). A total of 200 firms were included in the sample, resulting in a sample of $n = 400$ firm-years. This data was extracted from the SETSMART database, which is a publicly available database listing firm financial results and other public filings following the SET's

requirement. Data was extracted from Form 56-1 filings, which firms are required to file to discharge its annual reporting and disclosure requirements. Any firms that had not filed their Form 56-1 during the two-year period, as were all firms that either listed during 2015 or delisted during the study period.

Data analysis was conducted using structural equation modeling (SEM). SEM analysis was chosen because it allows for confirmation of a complete research model, including interactions between variables, and identification of latent variables (Kaplan, 2008). SEM includes a range of different techniques, including confirmatory factor analysis (CFA) and LISREL analysis. For this research, CFA was selected as the technique. The analysis was conducted in SPSS. Model fit and predictive or explanatory power is based on standard rules of thumb.

4. FINDINGS

Firm Performance (ROA)

Goodness of fit: The absolute goodness of fit measure does not pass the criterion value ($\chi^2 = .000$). However, several relative goodness of fit measures were acceptable, including RMSEA (.060) CFI (.941), and AIC.

Regression relationships: There were relatively few significant regression relationships observed in the data. The three significant relationships observed for Accrual1 (measuring abnormal accruals) included Accrual1 \leftarrow BDIND ($\beta = .405$); Accrual1 \leftarrow MFREQ ($\beta = .112$); and Accrual1 \leftarrow LogSIZE ($\beta = .303$). These relationships were all positive. The significant relationships for ROA included ROA \leftarrow INST ($\beta = .142$); ROA \leftarrow FAM ($\beta = .178$); ROA \leftarrow LogSIZE ($\beta = .265$); and ROA \leftarrow Accrual1 ($\beta = -.433$). (Please see Table 2.)

Mediating effects: The DE/TE and IE/TE ratios show that there were three relationships that had high indirect effects through Accruals1, including ROA \leftarrow BSIZE (IE Ratio = 2.250), ROA \leftarrow BDIND (IE Ratio = 3.646), and ROA \leftarrow DUAL (IE Ratio = -5.000). Thus, the relationships of ROA and BSIZE, BDIND, and DUAL can be said to be fully mediated, while the relationships of ROA and GD, MFREQ, INST, CONC, and FAM are partially mediated. The mediation effect on INST and FAM is very small (IE/TE ratio of $< .200$), and thus these variables were minimally mediated. (Please see Table 3.)

Table 2
Summary of regression relationships (ROA)

Relationship	Unstandardized			Standardized	p
	Estimate	S.E.	C.R.	Estimate	
Accrual1 ← BSIZE	-346.834	196.309	-1.767	-.126	.077
Accrual1 ← BDIND	2043.488	365.111	5.597	.405	***
Accrual1 ← DUAL	374.646	866.511	.432	.022	.665
Accrual1 ← GD	-313.608	232.255	-1.350	-.074	.177
Accrual1 ← MFREQ	180.293	88.131	2.046	.112	.041
Accrual1 ← INST	7.597	14.800	.513	.033	.608
Accrual1 ← CONC	-14.550	21.498	-.677	-.037	.499
Accrual1 ← FAM	16.173	18.464	.876	.055	.381
Accrual1 ← LogSIZE	3179.431	706.796	4.498	.303	***
Accrual1 ← LogLEV	13.281	258.815	.051	.003	.959
Accrual1 ← BIG4	-1131.068	788.600	-1.434	-.081	.151
Accrual1 ← AGE	-34.483	26.032	-1.325	-.070	.185
ROA ← BSIZE	-.165	.424	-.391	-.031	.696
ROA ← BDIND	1.255	.830	1.512	.127	.130
ROA ← DUAL	.388	1.859	.209	.012	.835
ROA ← GD	.590	.500	1.179	.071	.238
ROA ← MFREQ	-.346	.191	-1.815	-.110	.070
ROA ← INST	.065	.032	2.042	.142	.041
ROA ← CONC	-.034	.046	-.735	-.044	.462
ROA ← FAM	.103	.040	2.601	.178	.009
ROA ← LogSIZE	5.450	1.575	3.461	.265	***
ROA ← LogLEV	-.994	.555	-1.790	-.108	.073
ROA ← BIG4	.256	1.698	.151	.009	.880
ROA ← AGE	.039	.056	.693	.040	.488
ROA ← Accrual1	-.001	.000	-6.329	-.433	***

Table 3
Summary of standardized direct and indirect effects (ROA)

	Direct Effects	Indirect Effects	Total Effects	DE/TE Ratio	IE/TE Ratio
ROA Accrual1	-.433	.000	-.433	1.00	.000
BSIZE	-.032	.054	.024	-1.333	2.250
BDIND	.127	-.175	-.048	-2.646	3.646
DUAL	.012	-.010	.002	6.000	-5.000
GD	.071	.032	.103	0.689	0.311
MFREQ	-.110	-.049	-.159	0.692	0.308
INST	.142	-.014	.128	1.109	-0.109
CONC	-.044	.016	-.028	1.571	-0.571
FAM	.178	-.024	.155	1.148	-0.155
LogSIZE	.265	-.131	.134	1.978	-0.978
LogLEV	-.108	-.001	-.109	0.991	0.009
BIG4	.009	.035	.044	0.205	0.795
AGE	.040	.030	.070	0.571	0.429

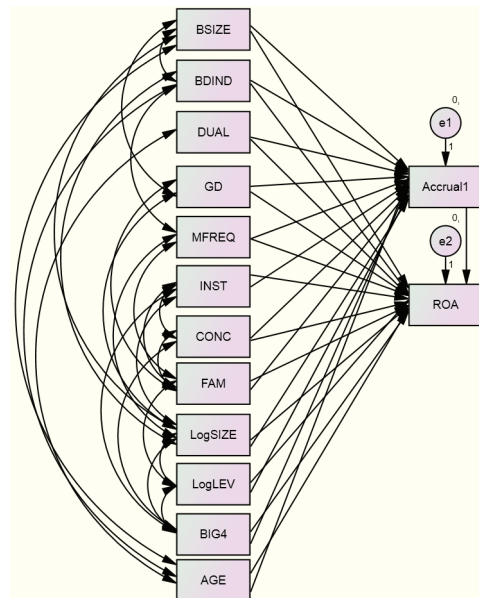


Figure 2: Firm performance by ROA: Measurement model

Table 4
Summary of regression relationships (ROE)

	Standardized		Unstandardized		p
	Estimate	S.E.	C.R.	Estimate	
Accrual1 ← BSIZE	-346.834	196.309	-1.767	-.126	.077
Accrual1 ← BDIND	2043.488	365.111	5.597	.405	***
Accrual1 ← DUAL	374.646	866.511	.432	.022	.665
Accrual1 ← GD	-313.608	232.255	-1.350	-.074	.177
Accrual1 ← MFREQ	180.293	88.131	2.046	.112	.041
Accrual1 ← INST	7.597	14.800	.513	.033	.608
Accrual1 ← CONC	-14.550	21.498	-.677	-.037	.499
Accrual1 ← FAM	16.173	18.464	.876	.055	.381
Accrual1 ← LogSIZE	3179.431	706.796	4.498	.303	***
Accrual1 ← LogLEV	13.281	258.815	.051	.003	.959
Accrual1 ← BIG4	-1131.068	788.600	-1.434	-.081	.151
Accrual1 ← AGE	-34.483	26.032	-1.325	-.070	.185
ROE ← BSIZE	-.114	1.208	-.094	-.008	.925
ROE ← BDIND	1.306	2.365	.552	.049	.581
ROE ← DUAL	-.163	5.301	-.031	-.002	.976
ROE ← GD	-.298	1.425	-.209	-.013	.835
ROE ← MFREQ	-.116	.543	-.214	-.014	.830
ROE ← INST	.146	.091	1.609	.117	.108
ROE ← CONC	-.065	.132	-.496	-.031	.620
ROE ← FAM	.260	.113	2.301	.166	.021
ROE ← LogSIZE	11.763	4.490	2.620	.211	.009
ROE ← LogLEV	-2.001	1.583	-1.264	-.080	.206
ROE ← BIG4	1.729	4.842	.357	.023	.721
ROE ← AGE	.171	.160	1.072	.065	.284
ROE ← Accrual1	-.002	.000	-4.846	-.349	***

Firm Performance (ROE)

Goodness of fit: The chi-square measure does not pass the absolute goodness of fit test ($p = .000$). However, the RMSEA (0.060) and CFI (.938) values indicate that the goodness of fit of this model is adequate, if not exceptional.

Regression relationships: The regression analysis showed that several of the firm characteristics had a significant relationship to Accrual1, including Accrual1 ← BDIND ($\beta = .405, p < .001$), Accrual1 ← MFREQ ($\beta = .112, p = .041$), and Accrual1 ← LogSIZE ($\beta = .303, p < .001$). However, none of the board structure characteristics had a significant effect on ROE. The only significant effects observed for ROE included ROE ← FAM ($\beta = .166, p = .021$), ROE ← LogSIZE ($\beta = .211, p = .009$), and ROE ← Accrual1 ($\beta = -.349, p < .001$). (Please see Table 4.)

Mediating effects: The effects within the model (Table 5) shows that Accrual1 partially mediated most of the measured variables, although according to the IE/TE ratio, mediation effects on the ROE ← INST and ROE ← FAM relationships were small (under .200). Relationships including ROE ← BSIZE, ROE ← BDIND, and ROE ← GD were large (IE/TE ratio > 1.000). Thus, Accruals did serve as a partial or full mediator for most of the board structure characteristics and ownership characteristics.

Hypothesis Outcomes

Hypothesis outcomes were based on regression t-test significance ($p < .05$) or IE/TE ratio. Hypotheses H1, H2, H3, H4, H5, and H7 were rejected. H6 was partially accepted, while H8, H9, and H10 were accepted.

Table 5
Summary of standardized direct and indirect effects (ROA)

		<i>Direct Effects</i>	<i>Indirect Effects</i>	<i>Total Effects</i>	<i>DE/TE Ratio</i>	<i>IE/TE Ratio</i>
ROE	Accrual1	0.349	.000	-.349	1.000	.000
	BSIZE	-.008	.044	.036	-0.222	1.222
	BDIND	.049	-.141	-.093	-0.527	1.516
	DUAL	-.002	-.008	-.010	0.200	0.800
	GD	-.013	.026	.013	-1.000	2.000
	MFREQ	-.014	-.039	-.053	0.264	0.736
	INST	.117	-.011	.106	1.104	-0.104
	CONC	-.031	.013	-.018	1.722	-0.722
	FAM	.166	-.019	.147	1.129	-0.129
	LogSIZE	.211	-.106	.105	2.010	-1.010
	LogLEV	-.080	-.001	-.081	0.988	0.012
	BIG4	.023	.028	.051	0.451	0.549
	AGE	.065	.024	.090	0.722	0.267

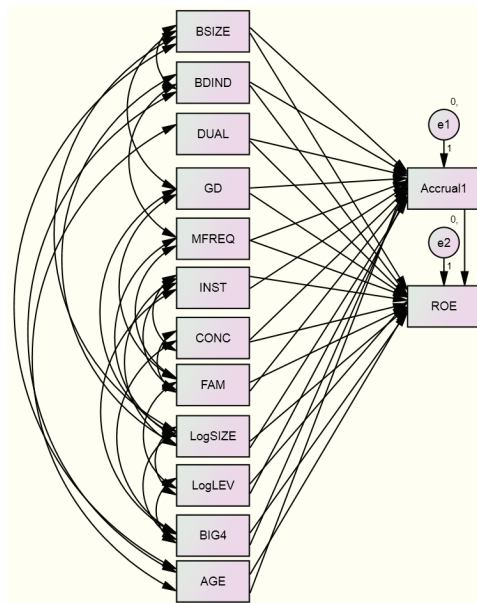


Figure 3: Default model of firm performance measured by ROE

5. DISCUSSION AND CONCLUSION

There were five board structure characteristics that were examined for effects on firm performance, using measures of ROA and ROE. These characteristics included board size, board independence, CEO duality, gender diversity, and board meeting frequency. None of these five board structure characteristics were found to have a significant effect on ROA or ROE. The effects observed could also

be dependent on firm-specific factors, based on previous findings related to R&D intensity, board independence, family control and so on (Coles, Daniel, & Naveen, 2008; Joecks, Pull, & Vetter, 2013; Ramdani & Witteloostuijn, 2010). The second set of corporate governance characteristics studied here related to the firm’s ownership structure, including institutional ownership, ownership concentration, and family ownership. The findings showed that family ownership had a positive effect on firm performance, while ownership concentration did not. Institutional ownership positively affected performance as measured by ROA but not by ROE. This could be because of non-linear effects or differences in ownership classes (Heugens, van Essen, & van Oosterhout, 2009; Hu & Izumida, 2008; Lee, 2008). Thus, this study had limited success in identifying the effects of board structure or ownership characteristics on the firm’s financial performance. Its main success was in demonstrating the mediating effect of earnings quality on the relationship between these classes of firm oversight and ownership.

In conclusion, the role of earnings quality may be more important than previously thought in the firm’s financial performance. As these findings have shown, earnings quality plays an intervening role between some of the firm’s corporate governance and ownership mechanisms and its financial performance. This may not be because of the fact of earnings quality, but because of its information value: earnings quality serves as a visible proxy for invisible oversight mechanisms used within the firm. Although this role has been proposed previously, it has not been explored in detail.

This finding leads to interesting areas for further research. One of these areas is examination of the role of earnings quality as a mediating variable in firm activities or institutional structures and the firm’s financial performance. This type of research could confirm or eliminate earnings quality as a visible proxy that mediates between the firm’s control and ownership mechanisms and its financial performance. Another opportunity addresses the limitations of this study, including the use of a short-term cross-sectional dataset. There is the possibility that these findings do not reflect change over time and may suffer from survivorship bias, and they do not measure time-based changes. Thus, using a time series

approach could help to deepen the findings of this study and evaluate the long-term effects of earnings quality in the firm's financial performance.

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