Board Characteristics, Audit Committee Characteristics and Abnormal Accruals

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ABSTRACT

This paper examines the relation between governance (as measured by board and audit committee characteristics) and accounting quality (as measured by abnormal accruals) in a setting where there is no a priori reason to suspect systematic management of earnings. Using data from Singapore and Malaysia, we find both board size and audit committee independence are related to lower abnormal working capital accruals. Furthermore, the relation between audit committee independence and higher quality accounting exists only when the abnormal accruals are income increasing. This suggests that audit committees are effective in the financial reporting process by reducing the level of income increasing abnormal accruals. The results also indicate that audit committees are effective only when all members are independent directors.

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(1) INTRODUCTION

This paper examines the relation between abnormal accruals and corporate governance. Accruals-based earnings are used in the firm's contracts and by investors in valuing the firm and monitoring its performance. Accruals-based earnings also involve management discretion in the form of accounting choices, estimates and disclosures. Given that such discretion exists, even within GAAP, we examine whether higher quality corporate governance (board characteristics) results in lower abnormal accruals (a proxy for higher quality financial reporting).

Prior research examines the relation between board characteristics and financial reporting violations, relating to fraud (e.g., Beasley 1996, Dechow et al. 1996, McMullen and Raghunandan 1996) and earnings restatements (e.g., DeFond and Jiambalvo 1994, Teoh et al. 1998). Our paper examines the relation between board characteristics and abnormal accruals for a sample of firms where there is no *a priori* reason to suspect systematic management of earnings.

Our paper is similar to Klein (2002), Peasnell et al. (2000) and Davidson et al. (2005). The contribution that we add to these studies is that we examine the relation between abnormal accruals and board characteristics in an institutional environment where there is both considerable accounting discretion and fewer governance regulations (i.e., Singapore and Malaysia). More accounting discretion within GAAP, provides a more powerful research setting in which to test of the effectiveness of the role of boards and audit committees as mechanisms to enhance financial reporting.

We expect a negative relation between the proportion of independent directors and the level of abnormal accruals. We find that audit committees containing more independent directors, and in particular those that comprise only independent directors, are associated with a lower level of abnormal accruals. Furthermore, the negative relation between audit committee and abnormal accruals exists only when abnormal accruals are income increasing.

The paper proceeds as follows. The next section discusses the institutional setting of our study. Sections three and four develop the hypotheses and describe the research design. Sections five and six present the results and additional tests. Section seven provides a summary and conclusion.

(2) INSTITUTIONAL SETTING

This paper examines the relation between abnormal accruals and governance using a sample of firms from Singapore and Malaysia. The accounting standards for Singapore and Malaysia are based on International Accounting Standards, which are less stringent than US GAAP. Bhattacharya et al. (2003) compare earnings management across countries in terms of increasing earnings, negative earnings avoidance and earnings smoothing. From their data, Singapore and Malaysia are

similar in terms of "earnings opacity" but different from countries that have been used in prior research (US, UK and Australia).

The composition of boards and audit committees is also less regulated for Singapore and Malaysian firms compared to those in more developed economies. Audit committees are mandatory for firms listed on the NYSE and NASDAQ exchanges and must comprise at least three independent directors. In Singapore, Section 201B of the Companies Act requires firms to appoint an audit committee of at least three members, a majority of whom are independent directors. Thus the audit committee may contain executive directors (including the CEO) and non-independent outside (i.e., affiliated) directors. The Singaporean requirement is similar to that imposed on Malaysian firms by the Kuala Lumpur Stock Exchange. Mak (2001) reports that the average proportion of executive directors on audit committees is 21% in Singapore and 22% in Malaysia. In contrast, the NYSE and NASDAQ disallow directors from serving on the audit committee if they are current, or have been recent, employees.

The institutional environment of this study has both considerable accounting discretion and fewer governance regulations and therefore provides a more powerful test of the relation between of governance characteristics and abnormal accruals.

(3) HYPOTHESIS DEVELOPMENT

3.1 Background

Prior research examines the relation between earnings management and auditor quality in terms of Big 6 auditors (Becker et al.1998, Francis et al.1999) and auditor industry specialisation (Krishnan 2003). Another strand of this research examines the role of board composition and its impact on the quality of financial statements. Beasley (1996) finds that the proportion of outside directors on the board is lower for firms experiencing financial statement fraud. Dechow et al. (1996) report similar findings when studying the governance structures of firms that are the subject of SEC enforcement actions. They find that firms that violate GAAP and overstate earnings are more likely to have boards with more inside directors and a CEO who serves as the board chair.

Prior research has also found that the existence and composition of the audit committee has an impact on financial reporting. McMullen and Raghunandan (1996) find that 67% of firms that experience an SEC enforcement action or material restatement of quarterly earnings have audit committees composed entirely of outside directors. In contrast, 86% of firms with no SEC enforcement actions have audit committees of only outside directors. Similarly, Dechow et al. (1996) find that firms that face enforcement actions by the SEC are less likely to have an audit committee. DeFond and Jiambalvo (1991) report that the overstatement of earnings is less likely among firms with audit committees. However, Beasley (1996) discerns no statistical link

between the presence of an audit committee and the likelihood of financial statement fraud.

Klein (2002) examines the relation between earnings management, and board and audit committee independence for a sample of 687 large, publicly traded U.S. firms. She finds that earnings management is less pronounced in firms that have audit committees comprising a majority of independent directors. She also finds a negative association between abnormal accruals and the proportion of independent directors. There is a negative relation between a wholly independent audit committee and the level of earnings management.

Peasnell et al. (2005) also focus on the relation between earnings management and corporate governance. They differ from Klein (2002) in that they employ UK data and compare pre-managed earnings with earnings thresholds (either zero earnings or last year's reported earnings). The results show that firms with a higher proportion of outside directors have less income-increasing accruals when earnings fall below the threshold. However, when earnings exceed the threshold, there is strong evidence of income-decreasing accruals. This evidence is consistent with outside directors being more concerned with constraining income-increasing accruals. Davidson et al. (2005) find that, for a sample of 434 Australian firms, having a majority of non-executive directors on the board and on the audit committee is associated with a lower likelihood of earnings management.

Overall, prior research supports the notion that board independence and audit committee independence is associated with accruals. The remainder of this section develops hypotheses concerning the relation between higher quality financial reports (in the form of lower abnormal accruals) and board of director characteristics. The particular board characteristics we are concerned with are board leadership, board size, board independence, and audit committee independence.[1]

3.2 Board Leadership

The role of the board chair is to monitor the CEO (Jensen, 1993). There is likely to be a lack of independence between management and the board, if the CEO is also the board chair. Dechow et al. (1996) finds a positive relation between firms that violate GAAP and firms that have a CEO who serves as the board chair. Therefore:

H1: There is a positive relation between the Chair/CEO dual role and abnormal accruals.

[1] Activity (i.e., the number of meetings) and directors qualifications are also audit committee characteristics that have been examined in prior research (see Menon and Williams 1994, Collier 1999, Beasley and Salterio 2001). These characteristics could not be tested, as such data is not consistently reported by the firms in our sample

3.3 Board Size

Jensen (1993) argues that large boards are less effective due to coordination and processing problems. Yermack (1996) finds an inverse relationship between board size and the likelihood of CEO dismissal. This indicates that small boards are likely to be more efficient in monitoring management. Therefore:

H2: There is a positive relation between board size and abnormal accruals.

3.4 Independent Directors

Where the firm has widespread ownership, the control function is delegated by the residual claimants to the board of directors (Fama and Jensen 1983). Inside and affiliated directors have expertise and specialized knowledge of the firm's activities (Williamson 1975, Fama and Jensen 1983). Independent directors provide a larger role in monitoring management than inside board members (Fama 1980; Fama and Jensen 1983).

Several corporate reform proposals have concluded that independent directors and audit committees of independent directors will enhance the audit process (e.g., *Treadway Commission* 1987; *American Law Institute* 1994; *Blue Ribbon Committee* 1999). Prior research (e.g., Brickley and James, 1987; Brickley et al., 1994; Weisbach, 1988; Shivadasani, 1993) find evidence that supports the decision to have independent directors. Therefore:

H3: There is a negative relation between the proportion of independent directors on the board and abnormal accruals.

We use the Singapore *Companies Act 1990* definition of "independence". That is, an independent director cannot be executive director related or elated corporation, a spouse or family members, or any person, in the opinion of the directors, having a relationship that would interfere with the exercise of independent judgment. In the assessment of "independence" we relied on, wherever possible, descriptions in annual reports.

3.5 Independent Audit Committees

The audit committee is a sub-committee of the board of directors that, has the oversight responsibility for the firm's financial reporting process. The audit committee provides a formal communication channel between the board, the internal monitoring system, and the external auditor. Its primary purpose is to enhance the credibility of audited financial statements. In this capacity, it can act as an arbiter between management and the auditors. Legitimate differences in the interpretation and application of GAAP can exist between management and the external auditors (Dye 1988, Antle and Nalebuff 1991). Hence, reported accounting numbers are the result of negotiation between auditors and management. Empirical evidence is

consistent with this view. Kinney and Martin (1994) and Nelson et al. (2002) show that auditors detect and reduce overstatements of earnings and assets.

The 1999 *Blue Ribbon Committee* sought to strengthen the role of audit committees, as overseers of the financial reporting process, for NYSE and NASDAQ firms. The committee recommends that all members on the audit committee should be independent. DeFond and Jiambalvo (1991) find that the overstatement of earnings is less likely among firms with audit committees, while Klein (2002) provides evidence that there is a significant negative relation between audit committee independence and abnormal accruals. Therefore:

H4: There is a negative relation between the proportion of independent directors on the audit committee and abnormal accruals.

We note that it is possible to argue that firms with high agency costs that can be reduced by external reporting also have incentives to increase the quality of financial reporting. This suggests a positive relation between governance (board and audit committee characteristics) and accruals. This *ex ante* hypothesis is most likely to provide a reason for the formation (or change in composition) of the board of directors or audit committee. However, our study is a cross-sectional test in which the audit committee and board are typically in place at the beginning of the year, well before earnings are reported. Thus, we argue that in a cross-sectional setting the governance mechanisms interact with the financial reporting process to reduce abnormal accruals.[2] This is consistent with the *ex post* negotiation process of reporting earnings observed by Kinney and Martin (1994) and Nelson et al. (2002)

3.6 Control Variables

Prior research shows that several variables might influence the governance process or impact the generation of abnormal accruals. We examine a set of control variables relating to ownership, agency costs, and past earnings.

Shivdasani (1993) finds that large unaffiliated shareholders (i.e., blockholders) increase the likelihood of hostile control contests. Shleifer and Vishny (1986) suggest that blockholders have the incentive and power to ensure their interests are being met. Rajgopal et al.(1999) find that greater institutional ownership reduces the incidence of absolute discretionary accruals and income increasing accruals. This suggests that blockholders and institutional owners will play an active role in monitoring management. On the other hand, Warfield et al. (1995) find a negative relation between absolute accrual adjustments and managerial ownership. We include control variables for blockholder, institutional, and managerial ownership.

[2] It might also be argued that on an *ex ante* basis higher quality governance is required for firms with high total accruals. Whereas the *ex post* negotiation scenario is concerned with abnormal accruals.

Smith and Watts (1992) hypothesize that managerial discretion is greater for high growth firms. This will result in high growth firms adopting mechanisms that control for these potential agency problems, through appropriate corporate policies (Smith and Watts, 1992; Gaver and Gaver, 1993). DeFond and Jiambalvo (1994) report that managers of highly leveraged firms have incentives to make income-increasing discretionary accruals, to avoid breaching debt covenants. Firm size is also used in most earnings management studies to control for many factors (e.g., political costs, economies of scale, and analysts' following). Following Klein (2002), we use a past loss variable to capture the diminished value relevance of earnings for firms reporting losses. We also include market to book ratio, leverage ratio, firm size and a past loss dummy as control variables.

(4) RESEARCH DESIGN

4.1 Sample Selection

The sample for this study comprises firms listed on the Singapore and the Kuala Lumpur Stock Exchanges. The data-sampling period is for the year 2000 and resulted in an initial sample of 271 Singaporean and 279 Malaysian firms. All financial (54), mining (4) and property (47) firms are excluded because these industries are regulated and have fundamentally different financial structures, cash flow and accrual processes. Board composition, ownership data are hand collected from annual reports and company handbooks. Financial and accounting data needed to compute the discretionary accrual models are obtained from Datastream. Firms with insufficient data (193) to compute accruals are also eliminated. The final sample comprises 139 firms from Singapore and 113 firms from Malaysia.

The results of the sample selection process are reported in Table 1. Panel B of Table 1 compares the impact of sample selection with the population by industry. All industries are well represented. The sampled firms are larger than the non-sampled firms, although a Mann-Whitney U test confirms this difference is not statistically significant at the 10%.

4.2 The Model

The test of the association between the explanatory variables and abnormal accruals is estimated by the following OLS regression:

$$\begin{aligned} \text{ACCRUALS} = {} & \alpha_0 + \alpha_1 \text{ BDCHAIR} + \alpha_2 \text{ BDSIZE} + \alpha_3 \text{ BDIND} + \alpha_4 \text{ ACIND} \\ & + \alpha_5 \text{ BLKOWN} + \alpha_6 \text{ INOWN} + \alpha_7 \text{ MGROWN} + \alpha_8 \text{ LEV} + \alpha_9 \text{ SIZE} \\ & + \alpha_{10} \text{MTB} + \alpha_{11} \text{ LOSS} + \varepsilon \end{aligned} \quad (1)$$

Table 1
Sample selection

Panel A: Sample criteria (observations)			
Singapore Exchange data		271	
KL Exchange data		279	
		550	
Industries excluded			
Financial	54		
Mining	4		
Property	47	105	
		445	
Missing data		193	
Final sample		252	

Panel B: Comparison of final sample from population by industry	Final Sample	Population	
Commerce/trading	47	86	54.7%
Consumer	23	41	56.1%
Construction	23	48	47.9%
Hotel/services	5	15	33.3%
Industrial/manufacturing	111	187	59.4%
Multi-industries	9	15	60.0%
Plantation	11	20	55.0%
Services	12	16	75.0%
Transport and storage	11	17	64.7%
	252	445	56.6%

where:

ACCRUALS = a measure of abnormal accruals,[3]
BDCHAIR = 1 if CEO is also board chair and 0 otherwise,
BDSIZE = the number of directors on the board,
BDIND = the proportion of independent directors on the board,
ACIND = the proportion of independent directors on the audit committee,
BLKOWN = 1 if blockholder ownership > 50% and 0 otherwise,
INOWN = the proportion of institutional ownership,
MGROWN = 1 if the proportion of managerial (i.e., executive director ownership) > 50% and 0 otherwise,
LEV = total debt / total assets,
SIZE = total assets,
MTB = ratio of market to book equity, and
LOSS = 1 if the firm had a loss in the prior year and 0 otherwise.

[3] See the next section for a discussion of alternative estimation procedures used to measure abnormal accruals.

4.3 Measurement of Accruals

As earnings quality is unobservable, many empirical definitions exist.[4] We use accrual measures as proxies for earnings quality because other measures have considerable data requirements, such as long time series of earnings or cash flows (e.g., smoothing and predictability) or stock prices (e.g., persistence, value relevance and timeliness). A cross-sectional accruals approach, despite well documented weaknesses (e.g., Dechow et al. 1994), is widely used in research as a measure of earnings quality. Furthermore, because accruals are a visible component of financial statements, there is a direct relation between the accruals (proxying for earnings quality) and governance characteristics (e.g., audit committee functions).

Early studies (i.e., Healy 1985; DeAngelo 1986) use total accruals as a measure of management's discretion over earnings. In contrast, McNichols and Wilson (1988) examine a specific accrual (i.e., change in bad debt reserves). The more frequently used Jones model (Jones 1991) and modified Jones model (Dechow et al. 1995) decompose total accruals into normal and abnormal components. The abnormal components are considered to proxy for the discretionary component of total accruals.

Beneish (1998) argues that modeling the working capital component of total accruals is appealing because earnings management via the depreciation accrual is limited, as any change in the useful life or depreciation method has to be disclosed in the financial statements. Furthermore, it is more difficult for managers to manage earnings through depreciation by timing capital expenditures.[5] Therefore, we focus on the abnormal component of working capital accruals.

The working capital accrual is defined as:

$$WCA_t = (\Delta CA_t - \Delta CL_t - \Delta Cash_t) / TA_{t-1} \quad (2)$$

where,

WCA_t = working capital accrual in year t,
ΔCA_t = change in current assets in year t,
ΔCL_t = change in current liabilities in year t,
$\Delta Cash_t$ = change in cash in year t, and
TA_{t-1} = total assets in year t-1.

The expected working capital accrual is estimated from the following model:

$$WCA_{it} = \beta_{1it}(1/TA_{it-1}) + \beta_{2it}[(\Delta REV_{it} - \Delta REC_{it}) / TA_{it-1}] + \Sigma IDUM_{jt} + e_{it} \quad (3)$$

[4] See Schipper and Vincent (2003) for a discussion of various measures of earnings quality and Francis *et al.* (2004), for the combination of multiple intrinsic (or innate) factors of earnings attributes.

[5] There is evidence that management time asset sales to manage earnings (e.g., Bartov 1993). However, this evidence is from the US environment, whereas in Singapore and Malaysia asset revaluations are allowed.

where,

ΔREV_{it} = change in revenue for firm i in year t,
ΔREC_{it} = change in receivables for firm i in year t,
$IDUM_{jt}$ = the industry dummy for industry j in year t,
$e_{i,t}$ = the error term for firm i in year t, and
the other variables are previously defined.

Abnormal working capital accrual (AWCA) is estimated as the difference between actual working capital accrual (from Equation 2) and expected accrual based on a fitted OLS model (from Equation 3). Thus the error term from the OLS model is the unexplained or abnormal accrual.

In estimating abnormal accruals, Subramanyam (1996) reports that the intra-industry cross-sectional model is better specified and generates a larger number of observations than the firm-specific time-series counterpart. We employ a variation on the cross-sectional approach. Given the small number of companies within some industries in our sample, we pool all firms in the regression and include industry dummy variables. We use separate dummy variables for each Singapore and Malaysian industry sector.

Table 2 reports descriptive statistics on total accruals, working capital accruals, abnormal accruals and absolute abnormal accruals. The mean (median) abnormal working capital accrual (AWCA) is 0.000 (0.015). Following Klein (2002), Becker et al. (1998) and others we use the absolute value of the abnormal working capital accrual (AAWCA). The mean (median) value for AAWCA is 0.051 (0.041). Panel B of Table 2 reports the regression statistics for equation 3, the accruals model.

Table 2
Descriptive statistics on accruals and abnormal accruals

Panel A: Accrual measures	Mean	Minimum	Q1	Median	Q3	Maximum
Total accrual	-0.016	-0.220	-0.062	-0.018	0.036	0.286
Working capital accrual (WCA)	-0.002	-0.220	-0.043	0.001	0.043	0.274
Abnormal accrual (AWCA)	0.000	-2.597	-0.580	0.015	0.627	3.570
Absolute abnormal accrual (AAWCA)	0.051	0.000	0.016	0.041	0.079	0.196

Panel B: Summary of abnormal accrual regression (Equation 3)	
F statistic	1.731
p-value	0.050
Adjusted R	0.039

The sample is for 252 firms from Singapore and Malaysia in 2000.

(5) RESULTS

5.1 Descriptive Statistics

In Table 3 we report the mean, median, minimum, maximum and standard deviation for each (untransformed) explanatory and control variable. In 15.9% of the cases the CEO is also the Board chair. The median board size is 7 directors, of which one third are non-executive or independent. This compares to 60% outside directors reported in Klein (2002). The audit committee comprises 66.7% of independent directors, which compares to 80% in Klein (2002). The mean institutional ownership is small at 2.5%. There are substantial blockholders (61.1%) and managerial shareholders (25%) with more than a 50% holding. Firm size is right skewed and we log this variable to normalize it for multivariate analysis.

Table 3
Descriptive statistics for explanatory and control variables

	Hypothesis	Mean	Median	Minimum	Maximum	Std. Deviation
BCHAIR	H1	0.159	0	0	1	
BDSIZE	H2	7.302	7	4	14	1.734
BDIND	H3	0.346	0.333	0.143	0.857	0.121
ACIND	H4	0.697	0.667	0.250	1.000	0.104
BLKOWN		0.611	1.0	0.0	1.0	
INOWN		0.025	0.000	0.000	0.518	0.072
MGROWN		0.250	0	0	1	
LEV		0.234	0.214	0.000	0.839	0.170
SIZE		948	185	10	38372	3179
MTB		2.051	1.430	-5.550	21.430	2.511
LOSS		0.202	0	0	1	

[a] Means and standard deviations are not reported for indicator variables.
The sample comprises 252 firms from Singapore and Malaysia in the year 2000.
BCHAIR = 1 is CEO is Board chair, 0 otherwise.
BDSIZE is the number of directors on the board.
BDIND is the proportion of independent directors on the board.
ACIND is proportion of independent directors on the audit committee.
BLKOWN = 1 if blockholder ownership of shares is greater than 50%
INOWN is the proportion of institutional ownership.
MGROWN = 1 if inside ownership is greater than 51%.
LEV is leverage measures as total debt / total assets.
SIZE is total assets in prior year.
MTB is ratio of market value of equity / book amount of equity.
LOSS = 1 when prior year's income was negative.

5.2 Multivariate Results

Table 4 presents the multivariate results of equation 1 using absolute abnormal working capital accruals as the dependent variable. Model 1 contains the hypothesized board characteristic variables, of which only board size is significant at the 10% level. In Model 1 we do not include both board independence (BDIND) and audit committee independence (ACIND) as explanatory variables in the same regression, as the audit committee is a sub-committee of the board and therefore the variables are not independent.

Table 4
The dependent variable is the absolute abnormal working capital accruals (AAWCA). (One-tailed coefficient p-values are reported in parenthesis).

	Hypothesized Sign	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept		0.079	0.105	0.074	0.081	0.090
		(0.000)	(0.000)	(0.004)	(0.002)	(0.005)
Experimental variables						
BDCHAIR	+	-0.004	-0.004	-0.004	-0.004	-0.003
		(0.301)	(0.304)	(0.289)	(0.314)	(0.327)
BDSIZE	-	-0.003	-0.004	-0.004	-0.003	-0.003
		(0.092)	(0.015)	(0.013)	(0.020)	(0.020)
BDIND	-	0.021				
		(0.267)				
ACIND	-		-0.045			
			(0.049)			
ACIND100	-			-0.021		
				(0.020)		
ACIND67	-				-0.004	
					(0.287)	
ACIND51	-					-0.005
						(0.416)
Control variables						
BLKOWN		0.009	0.011	0.011	0.010	0.010
		(0.065)	(0.034)	(0.039)	(0.048)	(0.054)
INOWN		0.158	0.156	0.161	0.157	0.156
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Table 4 (continued)

	Hypothesized Sign	Model 1	Model 2	Model 3	Model 4	Model 5
MGROWN		-0.010	-0.010	-0.011	-0.010	-0.010
		(0.077)	(0.063)	(0.053)	(0.064)	(0.070)
LEV		0.040	0.039	0.040	0.039	0.040
		(0.012)	(0.013)	(0.015)	(0.013)	(0.012)
LogSIZE		-0.003	-0.001	-0.001	-0.002	-0.002
		(0.113)	(0.316)	(0.341)	(0.233)	(0.172)
MTB		0.000	0.000	0.000	0.000	0.000
		(0.413)	(0.499)	(0.495)	(0.477)	(0.460)
LOSS		0.003	0.003	0.002	0.003	0.003
		(0.015)	(0.342)	(0.398)	(0.349)	(0.348)
F statistic		3.041	3.282	3.446	3.007	2.977
P value		(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Adjusted R^2		0.075	0.083	0.089	0.074	0.073

The sample comprises 252 firms from Singapore and Malaysia in the year 2000. Where ACIND100 is 1 where an audit committee comprises 100% independent directors and 0 otherwise; ACIND 67 is an audit committee that comprises at least two-thirds independent directors, and ACIND51 is an audit committee that comprises at least one-half independent directors. The other variables are described at the foot of Table 3.

In Model 2 we replace the board independence variable with audit committee independence variable. The proportion of independent directors on the audit committee is significant (at the 5% level) and negatively related to abnormal accruals. Board size (BDSIZE) also increases in significance.[6]

Thus for our sample of firms, it is not the proportion of independent directors on the board but the proportion of independent directors on the audit committee that is related to lower abnormal accruals. To examine this issue further we test several policy recommendations concerning the proportion of outside directors on audit committees. ACIND100 is a dummy variable equal to 1 for firms that have a 100 percent independent audit committee. ACIND67 is a dummy variable equal to 1 for firms where two-thirds of the directors on the audit committee are independent. ACIND51 is a dummy variable equal to 1 for firms where more than one-half of

[6] Including both BDIND and ACIND in the same regression increases the significance of both variables, but does not change the interpretation of the reported results.

the directors on the audit committee are independent. ACIND100, ACIND67 and ACIND51 are used in Table 4, Models 3, 4 and 5 respectively. Of these three policy variables only ACIND100 (in Model 1) is significant at the 10% level.

The coefficients for the control variables are robust across all five models in Table 4. Institutional (INOWN) and blockholder (BLKOWN) ownership positively relate to abnormal working capital accruals, whereas for managerial ownership (MGROWN) the relation is negative. Leverage (LEV) is the positively related to abnormal accruals.

5.3 Discussion

The results in table 4 have important policy implications. Bradbury (1980) refers to audit committee formation as having high "image value" as a means of forestalling regulation. He finds that the formation of an audit committee in a pure voluntary environment is not directed towards increasing the quality of financial statements. Menon and Williams (1994) suggest that audit committee composition (i.e., independence) and activity (i.e., number of meetings) are better measures of an audit committee's effectiveness as a control mechanism. We find evidence that supports the role of independent directors in audit committees. Carcello and Neal (2000) show that the greater the percentage of affiliated directors on the audit committee, the lower the probability the auditor will issue a going concern report. They conclude that these results support regulators' concerns about financial reporting quality and calls for more independent audit committees. The policy implications of our results in Table 4 are unequivocal. If large abnormal accruals proxy for (negative) earnings quality then only audit committees comprising all independents directors will increase accounting quality.

(6) ADDITIONAL ANALYSIS

6.1 Income Increasing and Decreasing Accruals

In the previous analysis we have used absolute values of abnormal accruals. While this measures the magnitude of the accruals, it loses information on the sign of the accruals. We therefore run separate regressions on whether the abnormal working capital accruals (AWCA) are positive or negative. The result of this analysis is reported in Table 5. Models 1 and 2 are the regression results for positive abnormal working capital accruals and Models 3 and 4 are negative abnormal working capital accruals.

In Table 5, board independence (BDIND), consistent with Table 4, is not significant in either model. However, audit committee independence (AC100) is negatively related to positive abnormal working capital accruals (i.e., income increasing accruals), but not negative (i.e., income decreasing) accruals. Surprisingly, BDCHAIR is weakly related (at the 10% level) to lower positive abnormal accruals. As in Table 4, board

Table 5

The dependent variable is the abnormal working capital accruals (AWCA). (One-tailed coefficient p-values are reported in parenthesis).

	Model 1 AWCA>0	Model 2 AWCA>0	Model 3 AWCA<0	Model 4 AWCA<0
Intercept	0.106	0.090	0.030	0.038
	(0.004)	(0.009)	(0.249)	(0.192)
Experimental variables				
BDCHAIR	-0.015	-0.015	0.013	0.012
	(0.082)	(0.075)	(0.123)	(0.142)
BDSIZE	-0.002	-0.003	-0.004	-0.005
	(0.259)	(0.096)	(0.076)	(0.014)
BDIND	0.021		0.030	
	(0.292)		(0.206)	
ACIND100		-0.030		-0.011
		(0.013)		(0.243)
Control variables				
BLKOWN	0.009	0.011	0.006	0.006
	(0.157)	(0.089)	(0.261)	(0.241)
INOWN	0.165	0.180	0.157	0.150
	(0.000)	(0.000)	(0.055)	(0.007)
MGROWN	-0.013	-0.013	-0.002	-0.003
	(0.086)	(0.082)	(0.416)	(0.374)
LEV	-0.004	-0.007	0.085	0.085
	(0.446)	(0.399)	(0.000)	(0.000)
LogSIZE	-0.004	-0.002	0.001	0.002
	(0.072)	(0.277)	(0.338)	(0.281)
MTB	-0.001	-0.000	0.001	0.001
	(0.326)	(0.411)	(0.346)	(0.294)
LOSS	0.024	0.023	-0.017	-0.018
	(0.031)	(0.016)	(0.061)	(0.049)
F statistic	2.459	3.035	2.359	2.336
	(0.011)	(0.002)	(0.014)	(0.015)
Adjusted R^2	0.103	0.138	0.173	0.098
N	128	128	124	124

size becomes significant when the audit committee variable is also included in the model, but not when board independence is included.

In terms of the ownership variables, institutional ownership (INOWN) is positively related, at conventional significance levels, to both positive and negative abnormal

working capital accruals. Managerial ownership (MGROWN) and blockholder ownership (BLKOWN) are only significant in the case of positive abnormal working capital accruals. For the other control variables, leverage is only significant in the case of negative abnormal accruals. Also, the prior year loss variable (LOSS), which is not significant in Table 4, becomes significant in all models in Table 5. A prior year loss is related positively to income increasing accruals and negatively to income decreasing accruals.

6.2 Adjusted Accruals

To test the robustness of the results to the definition of abnormal accruals, we also estimate adjusted absolute abnormal working capital accruals (AAAWCA), similar to the matched-portfolio method in Kasnik (1999):

$$AAAWCA_i = AAWCA_i - \text{Median } (AAWCA)_j \quad (4)$$

where:

$AAWCA_i$ = the absolute abnormal working capital accrual for firm i (as employed in section 6), and

Median $(AAWCA)_j$ = the absolute abnormal working capital accrual for industry j.

The results of this analysis (Models 1, 2, and 3) are reported in Table 6. Board independence (BDIND) is not significance in Model 1 and board size (BDSIZE) is weakly significant at the 10% level. In Model 2 board size is significant at the 1% level and audit committee independence (ACIND) is weakly significant at the 10% level. The significance of audit committee independence increases when ACIND is replaced with ACIND100, which is a dummy variable indicating an audit committee that comprises wholly independent directors. The results in Table 5 are consistent with the abnormal accrual models (Models 1, 2, and 3) in Table 4.

(7) SUMMARY AND CONCLUSION

This study examines the relation between accounting quality (as measured by abnormal working capital accruals) and governance (as measured by board and audit committee characteristics). The institutional setting for the study is Singapore and Malaysia. This is a powerful experimental setting, because it has fewer requirements for corporate governance and accounting standards than the US, where most prior research on governance and accounting quality has been undertaken.

The production of financial statements can be characterized as a negotiation process between management and auditors (Antle and Nalebuff 1991). This view is also consistent with the evidence provided by research into financial statement errors and audit adjustments (e.g., Kinney and Martin 1994, Nelson et al. 2002). Given this characterization, we hypothesize that effective corporate governance will produce

Table 6
The dependent variable is the adjusted absolute abnormal working capital accruals (AAAWCA). (One-tailed coefficient p-values are reported in parenthesis).

	Model 1	Model 2	Model 3
Intercept	0.077	0.105	0.075
	(0.005)	(0.000)	(0.055)
Experimental variables			
BDCHAIR	-0.004	-0.004	-0.004
	(0.293)	(0.305)	(0.289)
BDSIZE	-0.003	-0.004	-0.004
	(0.088)	(0.010)	(0.009)
BDIND	0.028		
	(0.154)		
ACIND		-0.042	
		(0.067)	
ACIND100			-0.022
			(0.022)
Control variables			
BLKOWN	0.007	0.009	0.008
	(0.150)	(0.088)	(0.096)
INOWN	0.154	0.152	0.157
	(0.000)	(0.000)	(0.000)
MGROWN	-0.008	-0.009	-0.009
	(0.116)	(0.103)	(0.088)
LEV	0.037	0.036	0.037
	(0.022)	(0.025)	(0.025)
LogSIZE	-0.002	-0.001	-0.001
	(0.157)	(0.364)	(0.405)
MTB	0.000	0.000	0.000
	(0.420)	(0.480)	(0.401)
LOSS	0.003	0.003	0.002
	(0.359)	(0.357)	(0.412)
F statistic	2.782	2.916	3.200
	(0.003)	(0.002)	(0.000)
Adjusted R^2	0.066	0.071	0.088
N	252	252	252

higher quality financial statements. We use board characteristics and audit committee independence as proxies for effective corporate governance. We use abnormal working capital accruals as proxies for the quality of financial statements.

We find no relation between board independence or where the CEO is also the board chair and abnormal accruals. We find that both board size and audit committee independence are related to abnormal accruals. However, the relation between audit committee independence and lower abnormal accruals only exists when all the audit committee members are independent. This is consistent with regulators' calls for more independent audit committees. Furthermore, relation between audit committee independence and lower abnormal accruals only exists when the abnormal accruals are income increasing. This suggests that audit committees are effective in the financial reporting process by reducing income increasing abnormal accruals.

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