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## Reply to "Response: Board composition and firm performance: Evidence from Bangladesh - a sceptical view"

Afzalur Rashid

*University of Southern Queensland, mar558@uow.edu.au*

Anura De Zoysa

*University of Wollongong, anura@uow.edu.au*

Sudhir Lodh

*University of Wollongong, slodh@uow.edu.au*

Kathleen Rudkin

*University of Wollongong, krudkin@uow.edu.au*

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## Reply to "Response: Board composition and firm performance: Evidence from Bangladesh - a sceptical view"

### Abstract

This paper replies to Chowdhury's (2010) response to the paper "Board Composition and Firm Performance: Evidence from Bangladesh" (2010). It challenges the strength of the criticisms, arguing that the factors discussed in Chowdhury (2010) do not necessarily impair the outcome of the research. The authors elucidate issues raised, and in so doing, reproduce the results incorporating the commentator's suggestions

### Keywords

firm, performance, evidence, bangladesh, reply, sceptical, response, view, board, composition

### Disciplines

Business | Social and Behavioral Sciences

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**REPLY TO “RESPONSE: BOARD COMPOSITION AND FIRM  
PERFORMANCE: EVIDENCE FROM BANGLADESH A  
SCEPTICAL VIEW”**

**Afzalur Rashid\***

**Anura De Zoysa\*\***

**Sudhir C. Lodh\*\***

**and**

**Kathy Rudkin\*\***

\* University of Southern Queensland, [afzalur.rashid@usq.edu.au](mailto:afzalur.rashid@usq.edu.au)

\*\* University of Wollongong, [anura@uow.edu.au](mailto:anura@uow.edu.au)

**Keywords:** board composition, independent directors, firm performance, Bangladesh.

**JEL:** G34, G39

# **REPLY TO “RESPONSE: BOARD COMPOSITION AND FIRM PERFORMANCE: EVIDENCE FROM BANGLADESH A SCEPTICAL VIEW”**

## **1. INTRODUCTION**

We thank the commentator (Chowdhury, 2010) for recognising the contribution of our study, and providing specific recommendations for our research. In this response, the authors elucidate issues raised, and in doing, reproduce the results incorporating the commentator’s suggestions. We recognise Chowdhury has an economic discipline’s perspective on the accounting study, and argue that the contextual factors discussed in his reply do not necessarily impair the outcome of the Rashid *et al* (2010) paper.

## **2. POINTS OF CLARIFICATION**

### **2.1 Focus of the paper**

Chowdhury (2010) identifies the results of Rashid *et al* (2010) as complementing the findings of Bhuiyan and Biswas (2007), that the age and size of the board of directors do not have significant impact on corporate governance disclosures. However, the authors clarify that a comparison of the findings cannot be drawn, because the focus of our research is examining a different aspect. Rather than examining the impact of governance attributes on *disclosure*, Rashid *et al* (2010) examine the effect of *board composition* on *firm performance*.

### **2.2 Limitation of Literature Review**

Chowdhury (2010), in acknowledging the comprehensive nature of the literature review, suggests that inclusion of studies on South Asian countries would improve the contribution of the study. The authors concur. Regrettably, there is a dearth of published empirical studies on the impact of corporate governance on firm performance in South Asia in general, and specifically on the impact of corporate board composition and its effects on firm performance. Our research did not discover any directly comparable literature for South Asia. However, there are limited more general studies such as Shah *et al* (2009), who investigate the earnings management motives of independent directors in Pakistan. This is recognised as an area for further research.

### **2.3 Sample Size**

The authors thank the commentator for his observation in his first footnote, of inconsistent terminology regarding sample size. We confirm that the sample size on page 77 of our paper should be 274 firm-years, consistent with page 76 and Table 1 on page 83.

### **2.4 The model: theoretical underpinnings.**

Rashid *et al* (2010) make reference to established research on board composition and firm performance, premised on the tenets of agency theory. These studies provide theoretical justification for the explanators of the model used in our study that targets the Bangladeshi context. In this respect we refute the allegation our model is ad hoc with no theoretical underpinnings.

### **2.5 The model: discussion of variables**

Chowdhury (2010) argues the regression model of Rashid *et al* (2010) may be misspecified, as it leaves out some important variables such as retained earnings and R&D expenditure, and that this will result in omitted variable bias (p. 104). Further, he suggests that the explanators used only capture the managerial aspects of the firm, and ignore demand-supply, innovation and technological aspects which also contribute to profit (Chowdhury 2010 p.105).

The authors acknowledge these points. In any linear regression model, many variables may be included. However, any study must put a limit to the number of variables, and make choices as to their relevance. There is inevitably inherent bias as not all explanatory variables are known or can be incorporated. The authors chose the explanatory variables based upon those identified in the findings of previous literature (Rashid *et al* 2010 pp.84-85). The authors' aim was to limit the independent variables within the corporate governance attributes, subject to availability of data. For example, while R&D is a recognised explanatory variable, many listed firms in Bangladesh do not appropriately disclose R&D expenditure in their disclosure documents, despite adopting a process of convergence with international accounting standards in 1999 (see for example Mir and Rahman, 2005).

Chowdhury (2010) suggests the Hausman test or Ramsy's RESET (Regression Specification Error Test) be run (p.108) to justify the appropriateness of the variables in the model. The authors conducted the Ramsay's RESET by using E-Views to determine if additional variables could be fitted within the regression model (see Table 1). The results suggest while additional variables could be fitted within the Tobin's Q model, this is not so for the ROA model. It is worthy to note that Ramsay's RESET does not suggest which variable(s) should be included and the inclusion of another variable into the model may even increase the bias.

Acknowledging these limitations, we also conducted the 'omitted variable-likelihood ratio' test to determine whether the omitted variables 'retained profit' (as suggested Chowdhury 2010), 'firms growth' and 'firms risk' (measured as Standard Deviation of movement of stock price per month or stock price volatility) play an important role in the Rashid *et al* (2010) model. From the results of the test in Table 1, the authors notice that, except for risk in ROA model,

inclusion of all of these variables did not play an important role in either of the models. Asteriou and Hall (2007 p.344) while mentioning the advantages of ‘panel data’ noted that, "the basic idea behind panel data analysis comes from the notion that the individual relationship will all have same parameters. This is sometimes known as pooling assumptions". They maintain that, if the pooling assumption is correct, the problem of omitted variables which may cause biased estimates in a single individual regression may not occur in a panel context. Because we have already conducted Ramsey's RESET and 'omitted variable-likelihood ratio', the CUSUM and CUSUM Square Test would be repetition and thus is not conducted. The preference for a dynamic model is contestable.

**Table 1: Diagnostics**

	Model	F- Statistics	P- Value	
Ramsey RESET	ROA	1.5227	0.2183	
	Tobin's Q	9.8009	0.0000	***
Ramsey RESET [after including Growth, Risk, and Retained Profit]	ROA	9.865109	0.0019	
	Tobin's Q	18.4319	0.0000	***
Omitted Variable-likelihood Ratio (Growth)	ROA	0.040859	0.8400	
	Tobin's Q	0.029430	0.8639	***
Omitted Variable-likelihood Ratio (Risk)	ROA	20.07498	0.0000	***
	Tobin's Q	39.62854	0.0000	***
Omitted Variable-likelihood Ratio (Retained Profit)	ROA	2.237619	0.1359	
	Tobin's Q	48.03429	0.0000	***

\* p < 0.10; \*\* p < 0.010; \*\*\* p < 0.001.

## 2.6 Relationship between firm age and performance

Chowdhury (2010) questions the inclusion of firm age as a control variable within Rashid *et al's* (2010) model, arguing a “a non-monotonic relationship is implied between age of the firm and firm’s profitability” (p.105); “it may be misleading to relate profitability with the age of the firm” arguing that “older firms suffer from inertia and a failure to innovate and thus they degenerate into oblivion” (p.106). He further argues that the “over-concentration of family ownership control is the surest sign of a non-monotonic relationship between firm-age and profitability. For instance, the death of a family patriarch and/or falling-out among feuding family members often leads to disintegration within the firm management and adversely affects the profitability and viability of the firm” (pp.105-106). He subsequently mentions the examples Quasem Group of Companies, Ilias Brothers and the Partex Group of firms which experienced such a disintegration and/or division.

The authors note that the relationship between firm age and performance has been clearly established in the literature (for example, Eisenberg *et al.* 1998; Majumdar and Chhibber 1999; Ang *et al.* 2000; Tian and Lau 2001; Harjoto, and Hoje 2008; Loderer and Waelchli 2009). Because of the possible influences of firm age on firm performance, many of these studies have included it as a control variable in their models. In his commentary on the relationship between firm age and firm performance, Chowdhury neglects to not distinguish between different corporate forms. Chowdhury’s (2010) arguments are based upon Private Limited Companies (which are not listed on any stock exchanges) and as such have a fundamentally different

governance structure and legal requirements to the firms included in the Rashid *et al* study, which is based on public limited companies listed on Bangladesh stock exchanges. Private Limited Companies are not required to appoint outside independent directors, while publically listed companies are required to have outside independent directors. These companies have a formal accountability structure (have a formal board and management), hold annual general meetings, and prepare disclosure documents (subject to financial audit and scrutinized by the regulatory body Securities and Exchange Commission Bangladesh). A listed company and a private company have different ownership and oversight and an equivalent non-monotonic relationship cannot be inferred. Furthermore, the minimum firm age in Rashid *et al* (2010) is 8 years (antilog of 2.079 from minimum LOGAGE in the descriptive statistics in p. 86). This indicates our sample firms have survived competition. There is insufficient evidence to support Chowdhury's (2010) argument for the impact of rent extraction. Even if rent extraction by newer firms from older firms was occurring, the authors argue it cannot be inferred that there is no relationship between firm age and performance.

We have not provided the theoretical or statistical justification for transforming some variables into logarithms. We have done so to neutralize the variability in data and we have not proved the explanation as we assumed that readers will be aware of such practice. Rashid *et al*'s (2010) results are presented in Table 5.

## 2.7 Composition of Error Term

Chowdhury (2010) questions how homogeneity and independence are possible for firms in different industry groups in the sample (p.106). We have acknowledged this limitation within our paper (Rashid *et al* 2010 p.89). In this regard we again quote from Asteriou and Hall (2007):

The basic idea behind panel data analysis comes from the notion that the individual relationship will all have same parameters. This is sometimes known as pooling assumptions as we are in effect pooling all the individual together into one dataset and imposing a common set of parameters across them (p.344).

They further maintain that, if the pooling assumption is not correct, the panel is often referred to as a heterogeneous panel (as the parameters are different across the individuals). Even if this is the case, (except certain circumstances) it is normally expected the panel data estimator to give some representative estimate of the individual parameters. The only problem we have in our data is the violation of pooling assumptions, as we have used an unbalanced panel (as there are not 90 firms in all years) that may lead to 'unobserved heterogeneity'.

In response to the reviewer regarding the issue of variation across the firms and within a firm (or firm specific characteristics) the authors carried out further analysis using a panel data model. First, a Hausman Specification Test using E-Views was done to test the significance of the difference between the fixed effect estimates and the random effect estimates. The Chi Square ( $\chi^2$ ) statistics and corresponding p- values of both the ROA and Tobin's Q model rejects the null hypothesis that random effects are consistent (see Table 2). As such the authors have now run the regression with a 'fixed effect model' (to capture the firm specific characteristics) under both ROA and Tobin's Q models. The results of the ROA model are consistent with the

conclusion of the Rashid *et al* (2010) paper, that is, there is no significant relationship between board composition and firm economic performance in Bangladesh. However, the results of the Tobin's Q model in this test show that there is a significant negative relationship between board composition and firm performance. This additional analysis strengthens our original finding that independent directors do not add potential economic value, by now suggesting that independent directors may even reduce potential economic value to firms in Bangladesh.

**Table 2: Board composition and firm performance**

This table presents the summary results of the board composition and firm performance under different performance measures. Column (a) and (b) represent the coefficients of performance measures. The *t*-statistics are presented in parentheses.

	Dependent Variables (Before capturing firm specific characteristics)			Dependent Variables (After capturing firm specific characteristics)		
	(a) ROA		(b) Tobin's Q	(a) ROA		(b) Tobin's Q
Intercept	-0.078 (-1.061)		-1.798 (-5.855) ***	-0.206 (-0.602)		-7.896 (-7.646) ***
BDCOMP	0.144 (1.560)		0.418 (1.088)	-0.152 (-0.890)		-1.195 (-2.312) **
DIROWN	0.039 (1.087)		0.020 (0.132)	0.154 (0.723)		-0.451 (-0.701)
LOGBDSIZE	-0.042 (-1.724) *		0.384 (3.765) ***	0.014 (0.204)		0.286 (1.345)
CEOD	0.011 (0.757)		-0.110 (-1.842) *	-0.026 (-0.672)		0.035 (0.301)
DEBT	-0.080 (-6.356) ***		0.886 (16.966) ***	-0.103 (-3.417) ***		1.123 (12.346) ***
LOGSIZE	0.020 (6.237) ***		0.049 (3.731) ***	-0.027 (-2.922) **		0.024 (0.888)
LOGAGE	0.045 (1.934) *		0.492 (5.096) ***	0.148 (1.283)		2.785 (8.000) ***
Adjusted R <sup>2</sup>	0.302		0.586	0.585		0.888
F-Statistic	17.468 ***		54.887 ***	5.000 ***		23.554 ***
Hausman Test ( $\chi^2$ )				27.3409		48.1144
P-value				0.0003 ***		0.0000 ***

\* p < 0.10; \*\* p < 0.010; \*\*\* p < 0.001.

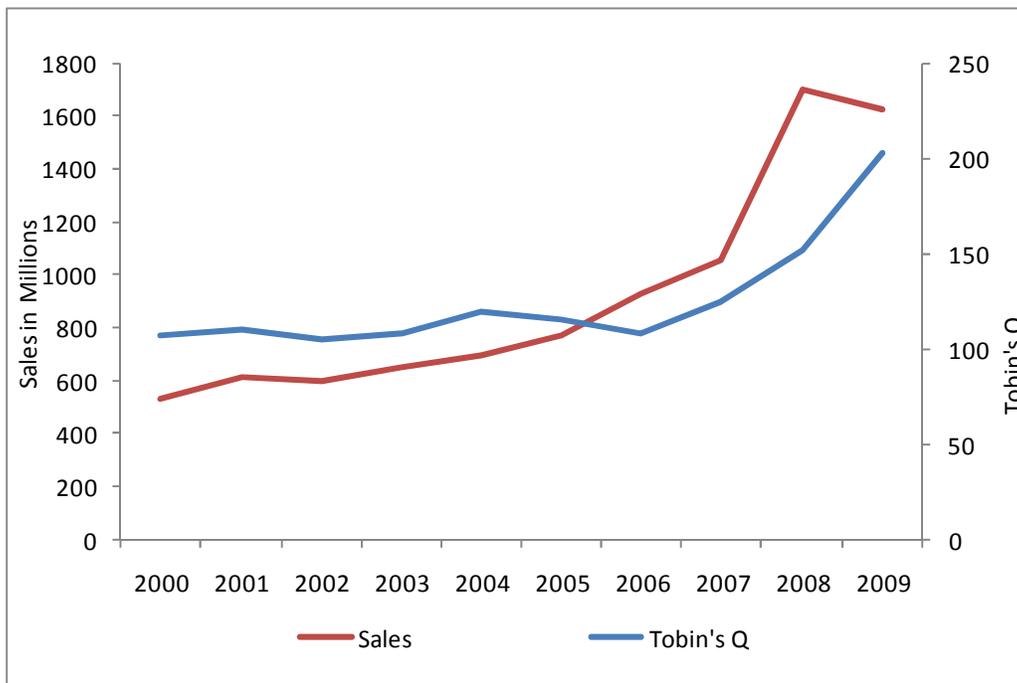
## 2.8 Sample Period

Chowdhury (2010 p.107) questions the inclusion of the years 2007 and 2008 in our sample. He identifies them as being 'abnormal' years for the Bangladesh economy and politics, because in 2007 there was both a Bangladesh military coup which established a military-backed caretaker government, and a severe flood followed by the devastating cyclone Sidr.

The authors are perplexed as to why Chowdhury identifies these factors as significant, but then provides contradictory evidence to this argument in his selection of a quotation from the Bangladesh Ministry of Finance (2009) which states "The economy of Bangladesh continue[s] to

demonstrate considerable resilience during FY 2008-09 despite the twin shocks arising from global recessions and the adverse effects of the consecutive floods and the cyclone-Sidr” (as cited in Chowdhury 2010 p.107). Floods and cyclones are very common in Bangladesh, and it is questionable whether such natural disasters have an abnormal impact on overall business activity. Furthermore, while Chowdhury (2010 p.107) contends “business confidence was low and many businessmen ‘sat on their hands’ until the term of the caretaker government was over” he offers no evidence supporting his conclusion that business activity was in the doldrums. Indeed, this observation also is directly contradictory to evidence he later quotes referring to the FY 2008-09 “The economy is estimated to have grown at a rate of 5.9 percent, slightly below the growth rate (6.2 percent) of FY2007-08”. The two performance indicators (sales and Tobin’s Q) of the sample firms over 2008-09 also indicate that the overall performance is not abnormally low during the “abnormal” 2007-08 period. Refer Figure 1 below.

**Figure 1: Average Sample Firm Performance 2000-2009**



Institutional context is pivotal to the variables and sample size selected. Mandatory corporate governance disclosures were introduced in 2006 by Bangladesh’s Securities and Exchange Commission. A period of 2005-09 was selected for this study to capture the possible impact over the period of this specific regulatory change. This point was missed by the commentator.

Chowdhury (2010) argues that the Corporate Governance Notification 2006 (CGN) for the appointment of outside independent directors was issued on 20 January 2006 and its effect will only be known after a lag. In the Rashid *et al* (2010) sample, 10 firms have outside directors even before the CGN 2006 was issued. All other firms in the sample acknowledged their obligation, which is evident from their disclosure documents by their respective year end. It is contended the period is sufficient to capture any lag. The firms whose financial years end on 30 January had almost 6 months lag, while the firms whose years end on 31 December had almost

one year lag. Furthermore, although the condition of such appointment was not mandatory, non-compliance requires mandatory disclosure in the Director’s Report as per schedule 5.00 of the CGN 2006, by order of the Securities and Exchange Commission of Bangladesh.

## 2.9 Results

Chowdhury (2010 p.108) contends an emphasis is placed on the statistical significance of the coefficient in arriving at the conclusions, while ignoring its magnitude. The study found the coefficient BDCOMP was positive but not statistically significant. Contrary to Chowdhury positing that “the magnitude of the estimated coefficient of BDCOMP is substantial (0.144 and 0.418 respectively)”, the impact of an increase in this variable on firm performance is minute (an increase of 0.118 (one standard deviation) in this variable is associated with mere 0.0118 increase in ROA and 0.0343 on Tobin’s Q. Therefore, the coefficient of BDCOMP in our results is neither statistically significant (i.e. not provide sufficient evidence to conclude that there is a relationship between board composition and firm performance) nor practically significant.

Chowdhury (2010) also suggests running a diagnostic test for heteroscedasticity, and a Jarque-Bera Test for normality. A Breusch–Pagan-Godfrey (BPG) test was conducted through E-Views. This test confirms the presence of heteroscedasticity. It is noted that heteroscedasticity is very common in panel data (Asteriou and Hall 2007). Wrigley (1977 p.13) states “heteroscedasticity does not result in biased parameter estimates, but it does result in a loss of efficiency”. Despite heteroscedasticity, OLS estimators are linear, unbiased and are (under general conditions) in large samples, normally distributed (Gujarati 2003 p.427). It is argued that "heteroscedasticity has never been a reason to throw out an otherwise good model" (Mankiw 1990 p.1648); "unequal error variance is worth correcting only when the problem is severe" (Fox 1997 p.306); and "unless heteroscedasticity is very severe, one may not abandon OLS in favour of GLS or WLS" (Gujarati 2003 p.400). Despite these considerations, we ran the regressions by using the correction techniques of White (1980) for unknown heteroscedasticity. The results show a change for the ROA performance measure, significant only at the 10% level. Refer Table 3 below.

**Table 3:** Board composition and firm performance under different performance measures

This table presents the summary results of the board composition and firm performance under different performance measures. Column (a) and (b) represent the coefficients of performance measures. The *t*-statistics are presented in parentheses.

	Dependent Variables (Before correcting for heteroscedasticity)		Dependent Variables (After correcting for heteroscedasticity)	
	(a) ROA	(b) Tobin's Q	(a) ROA	(b) Tobin's Q
Intercept	-0.078 (-1.061)	-1.798 (-5.855) ***	-0.102 (-1.070)	-1.824 (-6.265) ***
BDCOMP	0.144 (1.560)	0.418 (1.088)	0.146 1.883 *	0.414 1.306
DIROWN	0.039 (1.087)	0.020 (0.132)	0.031 0.798	0.008 0.048
LOGBDSIZE	-0.042 * (-1.724)	0.384 (3.765) ***	-0.029 (-0.829)	0.415 4.301 ***
CEOD	0.011 (0.757)	-0.110 (-1.842) *	0.008 0.689	-0.117 (-2.187) **
DEBT	-0.080 *** (-6.356)	0.886 (16.966) ***	-0.065 (-1.285)	0.914 21.396 ***

LOGSIZE	0.020 (6.237)	***	0.049 (3.731)	***	0.018 5.884	***	0.046 3.882	***
LOGAGE	0.045 (1.934)	*	0.492 (5.096)	***	0.046 2.795	**	0.483 4.460	***
Adjusted R <sup>2</sup>	0.302		0.586		0.286		0.641	
F-Statistic	17.468	***	54.887	***	16.636	***	70.761	***

\* p < 0.10; \*\* p < 0.010; \*\*\* p < 0.001.

The normality assumption requires that observations should be normally distributed in the population. Coakes and Steed (2001) argue that the violations of this assumption are of little concern, when the sample size is large (greater than 30). There were 90 firms in the sample and the assumption of normality is confirmed through a Normal Q-Q Plot. The Residual Test/Histogram-Normality Test of all equations produced a 'bell shape'. Normality was also checked by using Kolmogorov-Smirnov and Shapiro-Wilk tests. Both tests do not reject the null hypothesis of normality (at  $p < 0.001$ ). Also carried out was the Jarque-Bera test (Table 4), using E-Views. It also does not reject the null hypothesis of normality (as  $p < 0.001$  in most cases).

**Table 4:** Descriptive Statistics of the Sample

<i>Variables</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Std. Deviation</i>	<i>Skewness</i>	<i>Kurtosis</i>	<i>Jarque-Bera</i>	<i>Probability</i>
ROA	0.057	-1.494	0.287	0.132	-6.278	69.833	55270.08	0.000
Tobin's Q	1.290	0.335	6.226	0.769	2.566	9.873	1372.42	0.000
BDCOMP	0.109	0.000	0.333	0.082	-0.077	-0.751	8.126	0.017
DIROWN	0.423	0.000	0.960	0.190	0.069	0.423	2.065	0.356
LOGBDSIZE	1.857	1.099	2.485	0.304	-0.269	-0.102	3.530	0.171
CEOD	0.416	0.000	1.000	0.494	0.344	-1.896	45.921	0.000
DEBT	0.774	0.073	5.619	0.629	4.061	22.483	6266.395	0.000
SIZE	5.459	-4.200	10.724	2.398	-0.937	1.132	53.172	0.000
AGE	2.858	2.079	3.466	0.312	-0.082	-0.836	8.686	0.012

Although it is not mentioned in Chowdhury (2010), we would like to address the possible presence of endogeneity (the relationship between the independent variable with the error term) in our model. In the presence of endogeneity OLS estimates can be biased and inconsistent. While the endogeneity is an important factor, it is not fatal in doing empirical corporate governance research (Denis 2001 p.198). Despite this consideration, we have checked the possible presence of endogeneity in our model by carrying out a Hausman test. The output of the Hausman test suggests that both the OLS and IVs are consistent.

### 3. DISCUSSION AND CONCLUSION

Rashid *et al* (2010 p.88) concluded that there is no statistically significant relationship between board composition in the form of representation of outside independent directors and firm performance, implying that the outside independent directors did not add potential

economic value to the firm in Bangladesh. This conclusion is based upon the results shown in Table 5 (p.88). Although BDCOMP coefficient found in Rashid *et al* (2010) is not statistically significant, its positive sign is consistent with the literature presented (pp.77-82) which demonstrates independent directors positively contribute to performance through good monitoring of management.

Chowdhury (2010 p.108) argued that “I am not sure how the authors can claim that external independent directors are ‘good monitors’ as this has not been tested in this paper”. However, in referring to our results he states “design of the  $\beta_1$  is POSITIVE indicating the independent directors’ positive contribution to profitability; however, this substantial positive contribution of independent directors is rejected by the authors on the grounds of its statistical significance”. In Chowdhury’s own admission, we have tested the relationship between board independence and firm performance, a well recognised indicator of good monitoring in corporate governance literature (Zahra and Pearce II, 1989; Bathala and Rao, 1995; Luan and Tang, 2007; Nicholson and Kiel, 2007; Kaymak and Bektas, 2008).

While acknowledging the potential contribution of a “properly specified econometric model” (Chowdhury 2010 p.108), the authors contend studies in the accounting discipline are artefacts of temporal contextual and social processes (Hines 1988). Acknowledging the limitations of a modelling tool, the authors see the contribution of this study as an exploration of the circumstance of a developing economy. In a practical sense generalisability in the form of a specified model is neither sought nor possible.

Based on the above analytical presentation, we question the strengths of Chowdhury (2010) criticisms and argue that the factors discussed in Chowdhury (2010) do not necessarily impair the outcome of Rashid *et al* (2010) paper. This study seeks to contribute to the increasing literature by recognizing the interests of readers to gain more insight and understanding of empirical corporate governance research, with special reference to the Bangladesh context.

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