

Corporate Governance Quality and the Information Content of Discretionary Accruals: Evidence from Saudi Arabia

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Abstract

The aim of this paper was to examine whether corporate governance (CG) quality affects the information content of discretionary accruals in Saudi Arabia. To approach the concept of CG, which covers such dimensions as the board of directors, its committees, and ownership structure, Data Envelopment Analysis (DEA) was applied to a sample of 124 Saudi firms for the period 2012 to 2016. The findings indicate that the association between stock return and discretionary accruals is greater for firms with a good CG structure. However, this paper was restricted to firms in Saudi Arabia. Future research should cover other CG countries and compare the results among these countries or examine other moderating variables, such as foreign ownership.

Keywords: Corporate governance; Data envelopment analysis; Information content; Discretionary accruals

Introduction

The aim of this paper was to examine whether corporate governance quality affects the information content of discretionary accruals in Saudi Arabia non-financial firms. CG is defined as “a set of mechanisms through which outside investors protect themselves against expropriation by the insiders” [1]. Its reason is the minimization of agency costs between agents and principal. One of the most important functions of CG is to ensure the quality of the financial reporting process. It is also expected that CG builds credibility, ensures transparency and accountability and maintains the effective channel of information disclosure that provides good corporate performance [2]. The issue of CG has become more important due to the highly publicized financial reporting frauds at Enron, Worldcom, Adelphia and Parmalat, in particular, and a very high level of earnings restatements [3]. Prior academic research found that corporate control and monitoring forces, such as quality of external auditing, internal auditing, independent board, and audit committee, were found to be effective in restraining managerial opportunism. For example Becker et al. [4] documented that the level of discretionary accruals was significantly lower for Big 6 than for non-Big 6 clients. Peasnell et al. [5] and Bedard et al. [6] predicted that board independence is also likely to be associated with a reduction in management earnings. While Peasnell et al. [5] found empirical support for their prediction with respect to UK firms. Bedard et al. [6] failed to find an association between earnings management and board independence for a sample of US firms. For the US market, Klein [7] found that firm with a majority of independent board/audit committee members had a lower level of discretionary accruals. This suggests that independent boards and audit committees are effective in monitoring the corporate financial reporting process and deterring opportunistic earnings management.

Abed et al. [8] founded a negative association between corporate governments' mechanism and earnings management. Liu et al. [9] reported that the frequency of meetings, independence of audit committee, and the presence of nomination committee reduces the management earnings. Swastika [10] has found a significant and negative relationship between audit quality and firm size, on the one hand, and earnings management, on the other. He also revealed a significant and positive relationship between board of director and earnings management. Iraya et al. [11] founded that ownership concentration, board size and board independence reduce

management earnings. Patrick et al. [12] results showed a significant and negative relationship between CG practices such as the board size, firm size, board independence, and strength of the audit committee and management practices. However, For Saudi context, Ali Abedalqader et al. [13] shows that the overall effect of CG on earnings management is statistically insignificant.

The existent literature shows a direct link between governance mechanisms and Earnings informativeness. Warfield et al. [14] proved that managerial ownership was positively associated with earnings information content. Fan and Wong [15] reported that the presence of concentrated ownership, pyramidal ownership structures, and cross-holdings affect earnings have become less informative for East Asian corporations. Similarly for American context, Francis et al. [16] provided evidence suggesting that a separation of voting rights and cash flow rights in US firms with dual class stock was associated with lower earnings informativeness. Finally, several researchers studied the effect of CG on ERCs (earnings response coefficients) by focusing on the board or audit committee [17,18]. The papers written by Wild indicated that earnings were more informative for firms that voluntarily established audit committees during the 1966-1980 periods. Vafeas studied 350 large firms during the 1990-1994 periods and found that earnings informativeness was unrelated to board independence but increased as board size decreases.

Wild [17] investigated the association of an audit committee formation and the earnings quality. He found that stock price increase was significantly greater in the presence of audit committees (relative to absence of audit committees). However, their focus is not on identifying whether the discretionary component of earnings is value-relevant and affected by the structure of ownership. Furthermore, Krishnan [19] examined whether there is a linkage between audit quality and the

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pricing of discretionary accruals for the American context. He found that the association between stock return and discretionary accruals is greater for firms audited by big 6 auditors than for firms audited by non-big 6 auditors. Further, discretionary accruals of firms audited by big six auditors had a greater association with future profitability than discretionary accruals of client of non-big 6 auditors. Consistent with the US evidence, Chung et al. [20] founded that the Japanese capital market which values the discretionary accruals enhance the relevance of reported earnings.

Overall, the empirical research has documented a direct link between governance mechanisms and the financial reporting reliability. The literature review allows us to determine that prior studies examined the individual impact of every CG mechanism on the level of discretionary accruals like the board of directors, its composition, the managers' compensation, the ownership structure, the shareholders activism and takeovers mechanisms.

Extending on existing literature, the purpose of this paper was to test the effect of CG quality on the information content (pricing) of discretionary accruals in Saudi Arabia. Saudi Arabia was a subject of several reforms in governance. In 2000, Saudi standard-setters issued internal control standards. Saudi companies were required to design their internal control system based on these internal control standards. In 2006, CG codes were also issued and became compulsory for all Saudi listed companies in 2010 [21].

This study relied on the signaling theory [22], this perspective assumes that managers with superior insider information can improve the information content of earnings by communicating their private information about the future profitability of the firm via discretionary accounting choices. A credible signal would reduce information asymmetry and result in more efficient contracting [23,24]. To appreciate the information content (pricing) of discretionary accruals we use an association study.

Our sample consists of 620 firm-year observations for the years 2012 through 2016. For our main test, the net income was decomposed into cash flows from operations, nondiscretionary accruals, and discretionary accruals, and regressed the stock returns on the three components, a dummy variable that captures the governance structure, and the interaction of governance structure with discretionary accruals. To approach the concept of CG that covers several measurements: the board of directors, its committees and ownership structure, a CG efficiency score was developed using the Data Envelopment Analysis (DEA) methodology. The basic idea of DEA is to determine a production possibility frontier. This approach is a nonparametric application of the linear programming techniques estimates the border of efficiency, by a convex polyhedron enveloping the set of observations; the efficient firms are on the border. As a nonparametric technique, the DEA does not require an explicit specification of the underlying input-output relationship. It allows determining efficiency scores of CG and classifying the firms according to the efficiency of their CG structure. Overall, in the American context consistent with evidence reported in Subramanyam [24] and Dechow [23], we find that the association between discretionary accruals and stock return is stronger for firms with more efficient corporate governance. We also find evidence that the association between discretionary accruals and future profitability is greater for firms having more efficient CG structure. This is obvious for strong CG quality firms, which are able to improve their ability of discretionary accruals in order to predict future profitability.

Review of Literature

Rating corporate governance

Gompers et al. [25] created a CG index for 1500 US companies consisting of 24, anti-takeover provisions and shareholders' rights compiled by the Investor Responsibility Research Centre that can be objectively assessed. The Governance Index (GI) is constructed as follows: for every firm, Gompers et al. [25] add one point for every provision that restricts the shareholder rights (increases managerial power). In summary, the GI is simply the sum of one point for the presence (or absence) of each provision. They also compute a sub-index for each provision category. While this index does not accurately reflect the relative impacts of the various provisions, it has the advantage of being transparent and easily reproducible. The index does not require any judgments about the efficiency or wealth effects of any of these provisions; they computed only the impact on the balance of power. Many accountants have used Gompers et al. [25] CG index and finance studies to represent governance even though it is an anti-takeover protection index, not a broad index of CG [26]. For example, Cremers and Nair [26] study showed that the interaction between the GI and institutional ownership affects stock returns. Klock et al. [27] studied how the GI affects a firm's cost of debt. Fahlenbrach and Sandas [28] investigated how the GI affects CEO compensation. Chi [29] showed that lowering the GI (i.e., granting shareholder more rights) can help constrain the agency costs of free cash flow. Bédard et al. [6] use a subset of six provisions from the 24 employed by Gompers et al. (2003) as an "entrenchment index." Gillan et al. [30] construct their own governance index, which shares a large set of common components with Gompers et al.'s [25]. Brown and Caylor [31] developed a CG score (referred to as Gov-Score) to examine whether firms with weaker CG performed more poorly than firms with stronger corporate governance. The Gov-Score is a composite index consisting of 51 internal and external characteristics that are individual measures of governance. Using the Gov-Score, they found that better-governed firms are relatively more profitable, more valuable, and pay out more cash to their shareholders. Khanchel [32] investigated on the determinants of good governance in the US firms. The empirical results found statistically significant and positive associations between each governance index (except for the board index) and firm size, investment opportunities, intangible assets and directors and officers ownership. Furthermore, institutional ownership and external financing needs are positively related to each governance index considered. However, growth opportunities and performance had no significant effect on governance quality. Jiang et al. [33] used the Governance index [31] as a CG measure. After controlling the effect of auditor independence, firm size, auditor tenure and size, financial health (as measured by operating cash flow and financial leverage), investor expectations (as measured by market to book ratio), firm risk (as measured by volatility in cash flows) and litigation risk, they found that there is a significant inverse relation between level of discretionary accruals and corporate governance. In particular, higher levels of CG were associated with lower absolute values of discretionary accruals. Consistent with prior research, these results indicated that higher levels of CG improved the earnings quality. Furthermore, they found evidence that firms with strong CG showed a considerably greater reduction in discretionary accruals compared to other firms with medium or weak governance.

Sample Selection and Methodology

Sample selection

This study explored a sample of 124 companies from the Saudi

stock exchange database (TADAWUL). The firms used in the sample were selected according to: Data availability in the period of 2012 to 2016, and Data obtainability from the Saudi stock exchange database. Table 1 show the companies included in the sample by sector for the period (2012-2016). The firms belonged to fourteen different sectors. About 13.70% of the firms were from the Building and Construction sector. The Cement, Agriculture and Food Industries, Industrial Investment, Petrochemical Industries and Retail were the most present sectors in the sample. However, Energy and Utilities, Hotel and Tourism internet, Telecommunication and Information Technology, Media and Publishing and Multi-investment were the less present in the final sample.

Accruals measurement

We used the cross-sectional version of the modified-Jones model [34] to compute discretionary accruals. Under this model, the level of discretionary accruals for a particular firm is calculated as the difference between the firm's total accruals and its non-discretionary accruals (NDAC). In a first step, the cross-sectional modified Jones [34] model was estimated shown below:

$$TAC_{it}/A_{it-1} = \alpha_1 [1/A_{it-1}] + \beta_1 [\Delta REV_i - \Delta REC_{it}]/A_{it-1} + \beta_2 [PPE_{it}/A_{it-1}] + \epsilon_{it} \quad (1)$$

Where, TAC_{it} : Total accruals for firm i in year t; ΔREV_{it} : Change in

revenue for firm i between year t-1 and t; PPE_{it} : Gross property, plant and equipment for firm i in year t; A_{it-1} : Total assets for firm i at the end of the previous year; ΔREC_{it} : The change in receivables for firm i between year t-1 and t.

The coefficient estimates from Equation 1 were then used to estimate the firm-specific normal accruals for our sample firms. The abnormal accruals were estimated as the difference between the total accruals and the fitted normal ones (Table 2).

Results Analysis

Descriptive statistics

Table 3 summarizes the descriptive statistics of the CG variables (variables are defined on Table 2). The sample meets on average the criteria of good CG mechanism. Indeed, Table 3 reports that the boards in our sample have, on average, 84% independent directors. This percentage of independent directors is high compared to prior studies from developing and developed countries, such as Hong Kong (35%), Singapore (57%), Malaysia (45%) and the UK (41%). Globally, the results show that the audit committee and nomination committees are characterized by a concentration of independent board members (94% and 85%) and that the average number of independent members was three. These results are compatible to the requirement of the Saudi code of CG, which requires that the majority of an audit committee is independent and that such a committee should consist of at least three members.

Measuring efficiency

The determination of the frontier represented by the best practices allows evaluating the CG firms' efficiency. The proposed Governance index is an efficiency score which reflects the distance that separates each firm from an efficiency frontier expressing CG best practices. After calculating the efficiency score, we got the results shown in Table 4.

According to this table, we can notice a neat increase of the efficiency index over time. The increase occurring between 2012 and 2016 can be explained by the importance given to CG in Saudi Arabia. Indeed, most of the bankruptcies occurring in the US (Enron and WorldCom) are attributed to a system's governance weakness and precisely to a dangerous management strategy adopted by fraudulent managers. Concerning the number of efficient firms, we noted that

	Study population	%	Total observations
Agriculture and food industries	16	12,90	80
Building and construction	17	13,70	85
Cement	14	11,29	70
Energy and utilities	2	1,61	10
Hotel and tourism internet	4	3,22	20
Industrial investment	15	12,09	75
Media and publishing	3	2,42	15
Multi-investment	7	5,65	35
Petrochemical industries	14	11,29	70
Real estate development	8	6,45	40
Retail	15	12,09	75
Telecommunication and information technology	4	3,22	20
Transport	5	4,03	25
Total	124	100,00	620

Table 1: Description of sample.

Separate chair dummy	Indicator variable with value of 1 if the same person holds the roles of chair and CEO
Board size	Total number of directors
% Outside directors	Ratio of outside directors to total members of board
Audit quality	Indicator variable with value of 1 if the auditor is a Big 4
Audit committee size	Size of the audit committee
% Outside directors	Ratio of outside directors to total members of audit committee
Nominating committee size	Size of the nominating committee
% Outside directors	Ratio of outside directors to total members of nominating committee
Nominating committee meetings	Number of the nominating committee meeting
Remuneration committee size	Size of remuneration committee
% Outside directors	Ratio of outside directors to total members of remuneration committee
Government ownership (%)	Measured as the percentage of the Saudi government's equity shares in listed companies
DAC	Discretionary accruals calculated from the modified-Jones model
NDAC	Non-discretionary accruals calculated from the modified-Jones model
CF	Cash flows from operation
CG	Indicator variable with value of 1 if the governance index is 1(calculated with DEA method)
RET	Where Re is the stock return calculated over a twelvemonth period ending three months after the fiscal year end for year t

Table 2: Description of variables.

Panel A descriptive statistics for quantitative variables				
	N	Minimum	Maximum	Mean
Board size		4	13	8.43
Outside directors		2	12	7.07
% Outside directors		40	100	84
Family members on the board		0	6	1.13
Directors of family members (%)		0	100	13.33
Size of audit committee		2	6	3.20
Independent audit committee members		0	6	2.99
% Independent members of audit committee		40	100	94.41
Government ownership (%)		0	81	11.81
Size nomination committee		0	6	3.1
Independent nomination committee members		0	6	2.85
% Independent members nomination committee		30	100	85
Panel B descriptive statistics for qualitative variables				
	Mean	SD		
Chairman/CEO separation	1	0		
Auditing quality	0.662	4.74		

*Sample of 124 Saudi Arabia firms for 2012-2016.

Table 3: Descriptive statistics of corporate governance^a.

	Number of efficient firms (index=1)	Proportion of efficient firms	Maximum	Minimum
2012	81	65	1	0
2013	82	66,15	1	0
2014	86	70	1	0
2015	93	75	1	0
2016	100	80,06	1	0

Table 4: Governance index.

it also increased during the study period. Indeed, in 2012, we had 81 efficient firms while in 2016 the number increased considerably to 100 firms. According to these results, we can argue that companies have become increasingly aware of the role of governance quality nowadays and therefore they have tried to improve it.

Corporate governance quality and the pricing of discretionary accruals

Subramanyam [24] found that the stock market has attached value to discretionary accruals. His findings are consistent with the notion that discretionary accruals, which reflect the firms' private discrete information, improved the ability to reflect the firms' genuine economic value. We build upon Subramanyam's model that decomposes earnings into three components namely operating cash flows, nondiscretionary accruals, and discretionary accruals, and including corporate governance quality:

$$RET_{it} = B_0 + B_1 CF_{it} + B_2 NDAC_{it} + B_3 DAC_{it} + B_4 CG_{it} + B_5 DAC_{it} * CG_{it} + \epsilon_{it} \quad (2)$$

The following variables were defined as follows. First, RET, the dependent variable, is the stock return calculated over a twelve-month period ending three months after the fiscal year end for year t. The independent variables are: CF is the cash flows from operations divided by total assets at the beginning of the year; NDAC is the nondiscretionary accruals; DAC is the discretionary accruals; NDAC and DAC are determined using the cross sectional modified Jones's model [34]. CG equals 1 if the efficiency index calculated with DEA is 1 and 0 otherwise.

The estimates of model 2 are shown in Table 5. The coefficients of CF, NDAC represent the information content of cash flows and non-discretionary accruals are significant and positive for the Saudi Arabian context. This result is consistent with Dechow [23] and Subramanyam

Variables ^a	Expected sign	Coeff. estimate	p-value
Intercept	?	0,020	** 7,02
CF	+	0,235	** 2,44
NDAC	+	0,038	** 6,11
DAC	+	0,235	* 2,07
CG	?	0,057	** 8,33
DAC _t × CG	+	0,125	** 6,11
Number of observations		620	
Adjusted R ² %		7%	
F		13,120	

*Significant at the 5%; **Significant at 1% level respectively; +: Expected sign is positive; ?: No expected sign.

^aSample of 124 Saudi Arabia firms for 2012-2016.

Table 5: Regression of stock return on operating cash flows, nondiscretionary accruals, and discretionary accruals conditioned on corporate governance quality^a.

[24] findings indicating that the two components of the result have information content. Thus, observing B₅>0 is consistent with the notion whose CG quality influences the pricing of discretionary accruals and the association between discretionary accruals and stock return is greater for firms having a good CG structure. Overall, the results indicate that while discretionary accruals of firms having a good CG structure are associated with stock return, the magnitude of association is greater for firms having a good CG structure.

Corporate governance quality and the association between future profitability and current discretionary accruals

In the next step of our study, we examined whether governance quality would enhance the association between current discretionary accruals and future profitability for the Saudi Arabian context. The model to estimate is written as follows:

$$NI_{t+1} = B_0 + B_1 CF_{it} + B_2 NDAC_{it} + B_3 DAC_{it} + B_4 CG_{it} + B_5 DAC_{it} \times CG_{it} + \epsilon_{it} \quad (3)$$

Where, NI_{t+1} is net income before extraordinary items and discontinued operations for year t+1 deflated by total assets at the beginning of year t. The other variables are the same as previously defined. We also estimated the model where the dependent variable is NI_{t+2} . Similarly, we estimated the model with CF_{t+1} or CF_{t+2} as the dependent variable.

In line with Subramanyam [24], we find that all the three current components of earnings are associated with future level of earnings and cash flows from operations. Second, once again, the magnitude of association is greater for firms having a good CG structure. This is consistent with good CG structure, which could improve the ability of discretionary accruals and, consequently, improve the future level of profitability. These findings are consistent with the information value of discretionary accruals i.e., managers using discretionary accruals to communicate their private knowledge about future profitability. In brief, the market participants assign a high value to discretionary accruals for firms having a good CG structure because of their greater association with future level of profitability. However, Xie et al. [35] found that discretionary accruals were not associated with future profitability which might be due to the fact that he used a different sample and a different time period (the sample consists of 7,506 firms and 56,692 firm-year observations from 1971 to 1992) in his research work (Table 6).

PANNEL A : One- year ahead cash flows			
Variables ^a	Expected sign	Coeff. estimate	p-value
Intercept	?	0.079*	2.50
CF	+	0.359**	16.71
NDAC	+	0.372	0.38
DAC	+	0.188**	3.60
CG	?	0.838*	2.09
DAC _t × CG	+	0.585**	4.11
Number of observations		894	
Adjusted R ² %		29%	
F		59.800	
PANNEL B : Two-year ahead cash flows			
Variables ^a	Expected sign	Coeff. estimate	p-value
Intercept	?	0.086**	18.21
CF	+	0.294**	7.96
NDAC	+	0.071	0.71
DAC	+	0.924	1.03
CG	?	0.203**	4.05
DAC _t × CG	+	0.190	0.13
Number of observations		894	
Adjusted R ² %		11.5	
F		15.188	

*Significant at the 5%; **Significant at 1% level respectively; +: Expected sign is positive; ?: No expected sign.

^aSample of 124 Saudi Arabia firms for 2012-2016.

Table 6: Regression of future operating cash-flow on operating cash flows, nondiscretionary accruals, and discretionary accruals conditioned on corporate governance quality^a.

Conclusion

The objective of the study was to examine whether CG quality affects the information content of discretionary accruals (which is a proxy for the market's perception of financial reporting quality) in Saudi Arabia. The main contributions of the study lie in the methodological front while measuring the efficient governance structure with DEA.

As such, this study highlighted the potential of applying tools and methods developed in the operational research field to analyze a non-conventional set of problems. Our analysis shows that there is a neat increase of CG quality over the time. This increase occurred between 2012 and 2016 and can be explained by the growing importance given by Saudi Arabian governance to CG Regulations that provide a universal guideline of rules, regulation and practice for those companies listed in TADAWUL. Our findings indicate that the association between stock return and discretionary accruals is greater for firms having a good CG structure. These results lead to forward that the quality of CG mechanism affects the informational content of discretionary accruals. Therefore, the different Saoudian firms are recommended to apply a good CG complying to the established Saoudian code 2006 so as to improve the information quality and benefits of the firms. However, the current study has some limitations that have to be considered as potential avenues for future research. Future studies might cover other CG countries and compare the results among these countries or examine other moderating variables, such as foreign ownership.

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