

*Full Length Research Paper*

# Corporate governance and firm performance and value in Saudi Arabia

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**This study investigates the relationship between corporate governance characteristics and firm performance and value of Saudi-listed firms using an index intended to capture the combined effect of firms' corporate governance characteristics. Saudi Arabia's importance as an international market for investment is growing. Influenced by the recency of governance initiatives and large percentages of insider ownership, among other things, we predict and found that corporate governance and firm performance (measured as return on assets) are unrelated, but corporate governance and firm value (measured as Tobin's Q and market value of equity) are positively related.**

**Key words:** Corporate governance, Saudi Arabia, governance index, performance, value.

## INTRODUCTION

This study investigates the relationship between corporate governance characteristics and firm performance and value in Saudi Arabia. Corporate governance has received considerable attention both in practice and academia due to a series of scandals and corporate failures. In reaction, several reports have been published and laws enacted (Blue Ribbon Committee, 1999; Ramsay Report, 2001; Sarbanes-Oxley Act, 2002). Additionally, the recent financial crises have reshaped the global economy and have led to increased attention locally and internationally to corporate governance (Joh, 2003). Strong corporate governance is presumed to enhance firm performance and maximize investors' returns, and weak governance allows managers to misuse firms' assets (Ahmed and Duellman, 2007). Accordingly, significant attention has been placed on investigating the benefits of corporate governance to shareholders and other stakeholders (Gompers et al., 2003; Asian Development Bank, 2000) using data of firms in developed countries such as United States and United Kingdom, and in developing countries including China, India, and Russia. While several studies have

examined the influence of individual corporate governance characteristics on Saudi firms (Al-Moataz and Hussainey, 2012; Al-Hussain and Johnson, 2009; Al-Abbas, 2009), we are unaware of any studies that have directly investigated the relationship between collective corporate governance characteristics (this study's methodology) and firm performance and value in Saudi Arabia, a market of growing international importance.

Saudi Arabia is a member of G20 and is the largest oil producer in the world. It is the largest economy in the Gulf region with a gross domestic product (GDP) in 2009 of \$376 billion<sup>1</sup>. Over the past two decades, due to the reformation of the economy (for example, increased privatization, development of six economic cities, introduction of foreign investments, and improving credit risk), it has shown remarkable growth (Abraham et al., 2001). Saudi has the largest stock market in the Gulf region with a market value at December 31, 2010 of \$202.5 billion<sup>2</sup>. At December 31, 2008, the Saudi market ranked 23 worldwide in size, and comprised 44% of the

<sup>1</sup>World Bank data. Available at [http://www.google.com/publicdata?ds=wb-wdiandmet\\_y=ny\\_gdp\\_mktp\\_cdanddim=country:SAUanddl=enandhl=enandq=saudi+arabia+gross+domestic+product](http://www.google.com/publicdata?ds=wb-wdiandmet_y=ny_gdp_mktp_cdanddim=country:SAUanddl=enandhl=enandq=saudi+arabia+gross+domestic+product).

<sup>2</sup>Exchange rate at December 31, 2010 Available at [http://www.tadawul.com.sa/Resources/Reports/Yearly\\_en.html](http://www.tadawul.com.sa/Resources/Reports/Yearly_en.html). , \$1 US = 3.75 Riyal.

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Gulf Cooperation Council (GCC)'s countries<sup>3</sup> total market capitalization<sup>4</sup>. It is one of the biggest emerging stockmarkets in the world (Lee, 2006).

The Saudi model of corporate governance has been influenced by the Anglo-American model, generally referred to as a "market model" or "shareholder model," which focuses on maximizing owners' wealth. It is a one-tier system where a shareholder-elected board of directors is the highest governing body. In such a system, individual shareholders do not directly affect the direction of the firm (Keasey and Wright, 1993), therefore the role of independent outside directors, ownership structure, and the distinction between the chief executive officer (CEO) and the chairman of the board (COB), among other things, are important elements in monitoring management's performance. Singapore is another example of a developing market influenced by the Anglo-American model (Robertson, 2009).

In contrast, the developing markets of Turkey and Korea, among others, have been described as more influenced by the German-Japan model of corporate governance (Robertson, 2009; Jordan and Lubriano, 2006) which serves the interests of a wider range of stakeholders including shareholders, employees, creditors, and the community at large. The German-Japan model is a two-tiered system. A board of supervisors defines the interests of stakeholders and appoints a management board charged with conducting the day-to-day operations of the firm. Overlapping responsibilities of the boards are prohibited; hence, members of the board of supervisors must be independent of management and CEO duality is prohibited. While corporate governance characteristics have been found to be positively associated with firm performance and value under both models, individual corporate governance characteristics have varying degrees of importance under the Anglo-American and German-Japan models. For example, Robertson (2009) finds variation in the level of corporate social responsibility, and Jordan and Lubriano (2006) find differences in the effectiveness of ex post (judicial) rules.

We assess the influence of corporate governance on Saudi-listed firms' performance and value by developing an index intended to capture the combined effect of firms' corporate governance characteristics. According to Boehren and Oedegaard (2003), "relating corporate performance to a particular aspect of corporate governance may not capture the true relationship unless that specific aspect is controlled for other aspects of governance." This argument inspired several researchers to construct governance indices as a scorecard intended to measure firms' corporate governance over several

dimensions. Governance indices have been constructed for developed markets (Gompers et al., 2003; Bauer et al., 2004) and for some emerging markets (Balasubramanian et al., 2010; Black et al., 2006; Klapper and Love, 2004), but not for Saudi Arabia. Hence, the study's contributions include both the development of a Saudi-specific corporate governance index and examining the influence of that index on Saudi firms' performance and value.

Using this methodology, and controlling for industry-related fixed effects and year-specific fixed effects, we find a significantly positive association between corporate governance characteristics and firm and value, measured as Tobin's Q and the market value of firm equity, but not between corporate governance and firm performance, measured as return on assets.

The remainder of this paper is organized as follows; background and development of the study's hypotheses; description of the study's methodology; results and conclusions; opportunities for future research.

## BACKGROUND AND HYPOTHESIS DEVELOPMENT

The Saudi stock market had its beginnings in the mid-1930s with the establishment of the first joint stock company, Arab Automobile<sup>5</sup>. Since then, the number of joint stock companies has gradually increased. As of December 31, 2009, 145 companies were listed on the Saudi stock market exchange<sup>6</sup>. The history of corporate governance in Saudi Arabia can be traced back to 1965 with the introduction of The Companies Law. The Companies Law established rules concerning the formation of companies (public and private), governance, and bankruptcy. In terms of governance, provisions under The Companies Law primarily impose restrictions on foreign ownership and management of Saudi companies.

In 2006, the Saudi stock market dropped significantly losing 980 points in one day (February 26, 2006). Two months later it dropped by 968 points in one day (April 10, 2006), collectively losing 48% of its total market value. As a result of this and other events causing a loss of investor confidence, additional corporate reforms were demanded (Ramady, 2006; Editor, 2007). In response, the capital market authority (CMA), responsible for operating the stock market, adopted the Code of Corporate Governance (CCG), adherence to certain provisions of which are now required by all Saudi-listed companies (Samba Financial Group, 2009).

Consistent with the principles of the Organization for Economic Co-operation and Development (OECD, 2004), of all Islamic economic and the primary emphasis activity,

<sup>3</sup> GCC countries include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.

<sup>4</sup> Available at [http://www.photius.com/rankings/-economy/market\\_-value\\_of\\_publicly\\_traded\\_shares\\_2011\\_0.html](http://www.photius.com/rankings/-economy/market_-value_of_publicly_traded_shares_2011_0.html).

<sup>5</sup> Available at [http://www.tadawul.com.sa/-wps/portal/!ut/p/c1/04\\_SB8K8-xLLM9MSSzPy8xBz9CP0os3g\\_A-ewIE8TiwODYFMD-A08Tn7AQZx93Y-wN3I\\_3gxCL9gmxHRQCI\\_IsB/](http://www.tadawul.com.sa/-wps/portal/!ut/p/c1/04_SB8K8-xLLM9MSSzPy8xBz9CP0os3g_A-ewIE8TiwODYFMD-A08Tn7AQZx93Y-wN3I_3gxCL9gmxHRQCI_IsB/).

<sup>6</sup> Available at [http://www.tadawul.com.sa/-Resources/Reports/-Yearly\\_en.html](http://www.tadawul.com.sa/-Resources/Reports/-Yearly_en.html).

the CCG's provisions are concerned with providing just, honest, and fair treatment of all parties (Abu-Tapanjeh, 2009). The CCG includes Preliminary Provisions, Rights of Shareholders and the General Assembly, Disclosure and Transparency, Board of Directors, and Closing Provisions. Under Board of Directors section, the CCG describes the main functions of the board, responsibilities of the board, formation of the board, committees of the board, audit committee, nomination and remuneration committee, meetings of the board, remuneration and indemnification of board members, and conflict of interest within the board. Key provisions relevant to this study, each of which became mandatory after November 10, 2008, include: separation of COB and CEO, independence of board members (majority classified as non-executive, and at least one-third classified as independent), establishment of an audit committee composed solely of non-executive members, and establishment of a nominating and remuneration committee. Most provisions of the CCG must be in place by January 1, 2011.

In the neoclassical theory of the firm, ubiquitous across geography and culture, managers are expected to maximize profits and shareholder wealth, but conflicts between the self-interests of managers and shareholders may occur (Jensen and Meckling, 1976). That is, managers may engage in value-decreasing behaviors (for example, deferring investments) in order to maximize their own wealth (for example, earn bonuses based on current period earnings). Governance mechanisms such as independent members of the board of directors, managerial ownership policies, and fully independent audit committees, facilitate monitoring of managers activities and may therefore reduce conflicts among shareholders and managers (Ahmed and Duellman, 2007). Results of research on the relationship between specific aspects of corporate governance and firm performance are mixed. For example, using data of firms in developed markets, board member independence and firm performance have been found to be positively related (Klein, 1998; Daily and Dalton, 1994), and unrelated (Bhagat and Black, 2002; Hermalin and Weisbach, 1991). CEO duality has been found to both improve performance (Rechner and Dalton, 1991), and hinder performance (Donaldson and Davis, 1991). Examining data of firms in developing markets, Rahman and Haniffa (2005) report that Malaysian companies with CEO duality do not perform as well as firms without duality. Management ownership concentration has also been found to be both negatively related to firm performance in Korea (Joh, 2003), and positively related in Slovenia (Smith et al., 1997) and Czech Republic (Claessens and Djankov, 1999).

The relationship between corporate governance characteristics and firm value has also been studied in developed and developing markets. For example, using U.S. data, Yermack (1996) and Eisenberg et al. (1998)

find board size and firm value are negatively related, supporting the proposition that smaller boards experience fewer communication and coordination problems. Management ownership and firm value have also been found to be positively related in both developed in U.S (Morck et al., 1988), in Japan (Hiraki et al., 2003) and developing in Czech and Slovak Republics (Claessens, 1997) markets. Somewhat in contrast, studying Korean firms, Baek et al. (2004) found firms with higher management ownership concentration experienced larger equity losses during the 1997 Korean financial crisis.

These mixed results may, in part, be explained by the likely interrelationship of governance attributes. In some cases, governance characteristics substitute for each other, and in other cases they may complement each other. Consequently, and consistent with the notion that corporate governance is a collection of attributes which contribute to firms being described more like a dictatorship or a democracy, there are a growing number of studies that measure corporate governance as an index of characteristics. For example, Gompers et al. (2003) report a positive relationship between their "G-Index" and profitability and sales growth in U.S. firms; and Black et al. (2006) and Balasubramanian et al. (2010) report a positive relationship between a corporate governance index and firm value for Russian and Indian firms, respectively. Results of a cross-sectional analysis of emerging market firms suggest strong corporate governance and firm performance and value are positively related (Klapper and Love, 2004).

In this study, we assess the relationship between Saudi firms' performance and value and corporate governance, using an index. In light of the afore-mentioned theoretical underpinnings and results of prior research we might expect the Saudi market to perform in a manner similar to other developing markets. The Saudi stock market is analogous in many ways to other developing markets in that it lacks significant equity research, institutional investors, professional analysts, and direct foreign investment (Lee, 2006; Al-Razeen and Karbhari, 2004); however, it has at least two characteristics that make it unique compared to other emerging markets: it adjusts more quickly to information - generally in less than three weeks (Eltony and Babiker, 2005), and it has higher liquidity (Al-Suhaibani and Kryzanowski, 2000), factors which may, in part, be related to large percentages (relative to other markets) of insider holdings. It has also historically had a higher capitalization than the stock markets of Brazil, Russia, India, China, and Korea (Lee, 2006).

Further, country-specific factors are important determinant of stock price and firm value (Bai and Green, 2011). For example, while most developing countries rely heavily on debt and equity markets to finance long-term projects (Singh, 1995), indicating the significance of governance characteristics that protect both independent shareholders and debtholders, Saudi companies tend to

rely more on internal sources of financing – a characteristic of more developed markets. This may explain why many developing countries adopt the German-Japan model of governance – or a mixed model – and the Saudi model of corporate governance more closely resembles the Anglo-American model.

Yet another country-specific factor influencing Saudi's commerce and corporate governance is its basis in Islam. Firms and their managers must abide by Islamic Shariah (the way to live life) which promotes a certain code of behavior described by the Holy Quran (Divine Books revealed to Prophet Muhammad) and Sunnah (the authentic saying and tradition of the prophet Muhammad) (Karim, 1995). Shariah and its principle of Shura (distributive or social justice (Hasan, 2009); participation with others in making a decision that concerns them (Osman, 2001:11) create unique features and characteristics when compared to both the Anglo-American and German-Japan models of governance (Hasan, 2009; Choudhury and Hoque, 2006). For example, the corporate goal in the Anglo-American model might be described as maximizing shareholders' wealth, and in the German-Japan model as maximizing stakeholders' wealth. In Islamic cultures, the goal of maximizing shareholders' wealth must be balanced with Shariah and Shura.

Collectively, these differences between the Saudi market and the markets of other developed and developing markets suggest the possibility that corporate governance characteristics may not have the same level of influence on firm performance and value as they have been found to have in prior studies. Particular to income-based measures of performance (for example, return on assets), the relative recency of emphasis on corporate governance, large insider holdings, and unique features of Islam, suggest corporate governance and performance may be unrelated. Al-Hussain and Johnson (2009) discover that among nine Saudi banks, blockholders are influential in the efficiency of corporate governance structures.

They also find that using some, but not all, measures of corporate governance, corporate governance and firm performance are positively related. In contrast, Al-Abbas (2009) finds that individual corporate governance measures are not effective in reducing earnings management among Saudi-listed companies. In light of these findings, and our use of a corporate governance index – as opposed to individual governance measures, we hypothesize:

**Hypothesis 1:** There is no relationship between the corporate governance characteristics (measured as an index) of Saudi firms and performance.

In contrast, in terms of value-based measures (for example, Tobin's Q and market value of shares), modeling the Anglo-American model of corporate governance, adherence to the principles of Shariah and

Shura, and the recency of governance mandates which create variation among firms, suggest corporate governance and value may be related. Somewhat in support of this notion, Al-Hussain and Johnson (2009) find a weak positive relationship between Saudi banks' corporate governance measures and firm value. Accordingly, we hypothesize:

**Hypothesis 2:** The relationship between the corporate governance characteristics (measured as an index) of Saudi firms and firm value is positive.

## METHODOLOGY

Using hand-gathered data of Saudi-listed firms from the years 2006 to 2009, we construct a corporate governance index (CG Index) using nine corporate governance characteristics: (1) board size (more than three and fewer than nine – when a board has more than seven or eight directors, the directors are less likely to function effectively, are more easily controlled by the CEO, suffer more coordination problems, and find it more difficult to reach consensus - Jensen, 1993), (2) separation of COB and CEO, (3) majority of independent directors, (4) existence of an audit committee composed solely of independent members, (5) existence of a nominating and remuneration committee comprised solely of independent members, (6) frequent board meetings (at least four meetings in a single year), (7) presence of policies governing board member stock ownership requirements, (8) presence of policies governing executive stock ownership restrictions, and (9) collective insider (board member and top management) ownership of more than ten percent. These governance characteristics are selected based on the findings of prior research discussed above or on their implementation becoming mandatory under the CCG beginning in periods following our analyses, subject to availability of data.

Each characteristic is specified using an indicator variable. In order to be included in the study's sample, data for each of the corporate governance characteristics must be available. This restriction results in a final sample of 94 unique firms, representing 292 firm observations, of which 78 pertain to 2009, 80 pertain to 2008, 80 pertain to 2007, and 54 pertain to 2006. The number of observations across 14 industry categorization<sup>7</sup> ranges from five to 42.

Descriptive statistics provided in Table 1 depict the average number of board members of Saudi-listed firms' is 8.39, of which, an average of 5.77 members (76%) are independent. Of the sample firm observations, 48% have an optimal board size, defined as more than three members and fewer than nine, 65% separate the roles of the CEO and COB, 93% have an independent audit committee, 46% have an independent nominating and remuneration committee, 80% hold at least four board meetings each year, and in 79% of the sample firms, insiders collectively hold at least 10% of the outstanding common stock. Only 24% of the sample firm observations have director (executive) stock ownership guidelines (requirements).

In terms of these governance characteristics, Saudi firms generally compare favorably to U.S. firms. For example, results of prior research using data during the SOX transition period (Larcker et al., 2007) suggest U.S. firms averaged 8.78 board members, 80% of which were considered to be independent of management. Approximately 90% had fully-independent audit committees, and 84% had fully independent compensation committees. Particularly

<sup>7</sup>The Saudi market has 15 categorizations. Insurance firms are not included in the study due to data limitations.

**Table 1.** Descriptive statistics of corporate governance characteristics (n = 292).

| Variable   | Minimum | Maximum | Mean | Standard deviation |
|--|---------|---------|------|--------------------|
| Board size   | 4       | 13      | 8.39 | 1.80               |
| Number of independent directors                                  | 0       | 12      | 5.77 | 2.52               |
| Optimal board size (BOD_SIZE)                                    | 0       | 1       | 0.48 | 0.50               |
| Separation of COB and CEO (CEO_COB)                              | 0       | 1       | 0.65 | 0.48               |
| Independent board (IND_BOD)                                      | 0       | 1       | 0.75 | 0.43               |
| Independent audit committee (IND_AC)                             | 0       | 1       | 0.93 | 0.25               |
| Independent nominating and remuneration committee (IND_COMP_NOM) | 0       | 1       | 0.46 | 0.50               |
| At least four board meetings (FOUR_MEET)                         | 0       | 1       | 0.80 | 0.40               |
| Director stock ownership guidelines (DO_GUIDES)                  | 0       | 1       | 0.24 | 0.42               |
| Executive stock ownership restrictions (EO_RESTS)                | 0       | 1       | 0.02 | 0.15               |
| Insider ownership of at least ten percent (INSIDE_OWN)           | 0       | 1       | 0.79 | 0.41               |

**Table 2.** PCA rotated component matrix<sup>a</sup>.

| Variable     | Component        |                   |                      |                 |
|--------------|------------------|-------------------|----------------------|-----------------|
|              | CEO Independence | Insider ownership | Ownership monitoring | Audit committee |
| CEO_COB      | 0.87             |                   |                      |                 |
| IND_COMP_NOM | 0.70             |                   |                      |                 |
| FOUR_MEET    |                  | 0.80              |                      |                 |
| INSIDE_OWN   |                  | 0.77              |                      |                 |
| DO_GUIDES    |                  |                   | 0.79                 |                 |
| EO_RESTS     |                  |                   | 0.77                 |                 |
| IND_AC       |                  |                   |                      | 0.94            |

a. Varimax with Kaiser Normalization rotation converged in 5 iterations. IND\_COMP\_NOM is an indicator variable equal to one if the firm has fully independent compensation and nominating committees, otherwise equal to zero. CEO\_COB is an indicator variable equal to one if the firm's CEO also serves as COB, otherwise equal to zero. DO\_GUIDES is an indicator variable equal to one if the firm has policies governing board member stock ownership requirements, otherwise equal to zero. EO\_RESTS is an indicator variable equal to one if the firm has policies governing executive stock ownership restrictions, otherwise equal to zero. IND\_AC is an indicator variable equal to one if the firm has a fully independent audit committee, otherwise equal to zero. BOD\_SIZE is an indicator variable equal to one if the firm's board has more than three and fewer than nine members, otherwise equal to zero. FOUR\_MEET is an indicator variable equal to one if the firm's board met at least four times in a single year, otherwise equal to zero.

favorable to Saudi firms, Larcker et al. (2007) report only 23% of U.S. firms separate the role of the CEO and COB. Saudi firms also compare favorably to at least some developing markets. For example, Balasubramanian et al. (2010) report Indian firms have an average of 4.35 board members, of which 71% meet the Indian independence criteria of having at least 33% of their members independent of management. Approximately 98% of Indian firms hold at least four board meetings each year, and approximately 50% separate the COB and CEO roles.

Our corporate governance index (CG Index) is measured using a methodology similar to Strydom et al. (2009) and Larcker et al. (2007), where each governance characteristic is weighted using principal components analysis (PCA). PCA is a data reduction technique that identifies associated variables and classifies them as components which capture a significant portion of the total variance of all the variables of interest. In calculating CG Index, two corporate governance variables are removed: optimal board size (BOD\_SIZE), due to its failure to load well on a single component; and board member independence (BOD\_IND), due to its significant

negative correlation with separation of the COB and CEO roles (CEO\_COB,  $r = -0.20$ ,  $p < 0.001$ ) – majority of the independent boards are more likely to combine the roles of the COB and CEO.

Table 2 presents the results of PCA which suggest the presence of four corporate governance dimensions that may be described as: COB independence, insider ownership, ownership monitoring, and audit committee independence (KMO = 0.52; Chi-square = 111.04,  $p < 0.001$ ). Collectively, these components explain 70.97% of the variation of the collective corporate governance characteristics.

The observation-specific CG Index scores are calculated by applying the variable weights to each sample observations' governance characteristic, summing the component score, applying the percentage of the amount of variation explained by the component, then summing each component. For the sample observations, CG Index ranges from 0.00 to 1.23, averages 0.70 and has a standard deviation of 0.26. Approximately 48% of the sample observations have a CG Index greater than the mean, and hence may be described as having governance more similar to a democracy than to a dictatorship.

**Table 3.** Comparison of CG index between years (n = 292).

| CG Index (n) | Min  | Max  | Mean | Difference | t-test of differences | p-value |
|--------------|------|------|------|------------|-----------------------|---------|
| 2006 (54)    | 0.20 | 1.01 | 0.58 |            |                       |         |
| 2007 (80)    | 0.23 | 1.23 | 0.76 | 0.18       | 4.59                  | < 0.001 |
| 2008 (80)    | 0.00 | 1.22 | 0.72 | -0.04      | -0.86                 | 0.39    |
| 2009 (78)    | 0.00 | 1.22 | 0.71 | -0.01      | -0.12                 | 0.91    |

**Table 4.** Estimation of equations 1 and 2 – CG index (n = 292).

| Independent variable | Dependent variable - coefficient (t-value, p-value) <sup>a</sup> |                          |                          |
|----------------------|--|--------------------------|--------------------------|
|                      | ROA  | LN_Q                     | LN_MVE                   |
| CG index             | 0.03 (1.22, 0.22)  | 0.33 (2.14, 0.03)*       | 0.44 (2.45, 0.01)**      |
| Size                 | 0.01 (2.12, 0.03)*   | -1.38 (-4.04, <0.001)*** | -0.14 (-3.68, <0.001)*** |
| Lev                  | -0.02 (-2.71, 0.01)**  | 0.01 (0.13, 0.89)        | 0.10 (2.17, 0.03)*       |
| ROA                  |  | 0.23 (0.62, 0.53)        | 0.30 (0.71, 0.48)        |
| Intercept            | 0.01 (0.23, 0.82)  | 1.66 (4.17, <0.001)***   | 1.73 (3.79, <0.001)***   |
| Adj-R <sup>2</sup>   | 0.22   | 0.24                     | 0.22                     |

<sup>a</sup>Coefficients on Year (an indicator variable denoting one of the four years used in the study's analyses) and Industry (an indicator variables denoting membership in one of the 15 industry classifications used by the Saudi stock exchange) variables are not presented for ease of interpretation. \*, \*\*, \*\*\* Significant at p < 0.05, 0.01, and 0.001, respectively. ROA is net income of firm i at t, divided by its firm i's assets at t. LN\_Q is the log of the ratio of the market value of firm i's assets (market value of stock, plus book value of debt) at t, to the replacement cost of its assets at t. LN\_MVE is the log of ratio of the price of firm i's equity at t, to the book value of its equity at t. Size is the log of total assets of firm i at the end of period t. Lev is the ratio of debt to equity of firm i at the end of period t.

Use of panel data creates statistical issues related to the possibility of firm heterogeneity. For example, if each of our sample firms had the same CG Index in each of the study's years, results of estimation of the study's equations may mis-specify the value of CG Index on firm performance and value. Given the developing nature of the Saudi market and the relatively recent emphasis on matters of corporate governance, these risks are somewhat mitigated. In support of this assertion, we compare CG Index across the years of the study. Results of the comparison are presented in Table 3 which suggests the mean of CG index ranges from a low of 0.58 in 2006, to a high of 0.76 in 2007. CG index varies significantly comparing 2006 to 2007 (t = 4.59, p < 0.001), but not comparing other years. Accordingly, in addition to controlling for systematic factors unique to industry membership and years of the analyses (as would be described), to determine the influence of firm-specific heterogeneity on the study's results, we later run separate annual estimations of equations used to evaluate the study's hypotheses.

To test hypothesis 1, firm performance is measured using return on assets (ROA). ROA is the net income or loss of firm i at t, divided by firm i's assets at t. Performance is then regressed on CG Index and variables intended to control for firm size, leverage, industry-related fixed effects, and year-specific fixed effects, all previously found to be associated with firm performance (Aggarwal and Knoeber, 1996; Chaplinsky and Niehaus, 1993; Oswald and Jahera, 1991; Dickins and Houmes, 2009; Coles et al., 2001), using the following equation:

$$\text{Performance}_{it} = \alpha_0 + \alpha_1 \text{CG Index}_{it} + \alpha_2 \text{Size}_{it} + \alpha_3 \text{Lev}_{it} + \alpha_4 \text{Industry}_{it} + \alpha_5 \text{Year}_{it} + \epsilon_{it} \quad (1)$$

Size is measured as the log of total assets of firm i at the end of period t. Lev is measured as the ratio of debt to equity of firm i at the end of period t. Industry and Year are indicator variables denoting membership in one of the 14 industry classifications

(excluding insurance) used by the Saudi stock exchange and one of the four years covered by the study, respectively, to allow the intercept to vary across account for industry-related and year-specific effects.

To test hypothesis 2, firm value is measured as (1) the log of the ratio of the market value of firm i's equity at t, to the book value of its equity at t (LN\_MVE), and as (2) the log of Tobin's Q (LN\_Q). Consistent with the methodology described by Chung and Pruitt (1994), Q is the ratio of the market value of firm i's assets (market value of stock, plus the book value of debt) at t, to the replacement cost of its assets at t, based on the assumption that if a firm is worth more than it would cost to replace it, then excess profits are being earned<sup>8</sup>. Measures of firm value are regressed on CG Index and variables intended to control firm size, leverage, performance – proxied as return on assets, industry-specific, and year-related effects, using the following equation:

$$\text{Value}_{it} = \alpha_0 + \alpha_1 \text{CG Index}_{it} + \alpha_2 \text{Size}_{it} + \alpha_3 \text{Lev}_{it} + \alpha_4 \text{ROA}_{it} + \alpha_5 \text{Industry}_{it} + \alpha_6 \text{Year}_{it} + \epsilon_{it} \quad (2)$$

## RESULTS

Results of the estimation of Equations 1 and 2 are presented in Table 4. As hypothesized, measuring corporate governance as a continuous, weighted index, results suggest corporate governance is positively related to value using LN\_Q and LN\_MVE as proxies (t = 2.14 and 2.45, respectively, p-value = 0.03 and 0.01,

<sup>8</sup>Since replacement cost is difficult to obtain, consistent with other studies, we substitute book value for replacement cost in determining Q.

respectively), but not to firm performance measured as ROA ( $t = 1.22$ ,  $p = 0.22$ ). Black et al. (2006) find similar results using Russian firms, a variety of corporate governance indices, Tobin's Q, and other market value-based measures. In the firm performance model, the coefficient on the control variable intended to control the size (leverage) is significantly positive (negative), suggesting that larger and less-leveraged firms outperform their smaller, more-leveraged counterparts. In the firm value equations, similar to the results of other developing markets (Black et al., 2006), the coefficient on the control variable intended to control for size is significantly negatively, suggesting that larger firms suffer lower value than their smaller counterparts.

Coefficients on each of the Year (three) and Industry (13) control variables are not presented in the tables that follow for ease of interpretation. Untabulated results suggest the coefficients on the indicator variable designating the years, 2006, 2008 and 2009, are significantly negative across equations. This finding is consistent with global economic turmoil and stock market volatility during these periods. No industry indicator variables have significant coefficients consistently across the study's measures of firm performance and value; however, the coefficient on the cement industry indicator variable in the firm performance equation was significantly positive ( $p = 0.05$ ).

This finding is consistent with a boom in the Saudi cement industry (2002 through 2010) created by both growth in internal demand and exports to neighboring countries (Al-Nagadi, 2010).

Sensitivity analyses - In light of the variability in prior studies' measures of corporate governance, sensitivity of results to alternative measures of governance is important (Carcello et al., 2011). As previously discussed, our weighted CG Index omits consideration of the variables, BOD\_SIZE and BOD\_IND. As a test of the internal validity of CG index and the robustness of the study's results, we determine the significance of the impact of an alternative measure of CG index on the study's measures of firm performance and value. Using PCA we calculate an alternative index that includes the variable, BOD\_SIZE, excludes the variable, INSIDE\_OWN, and retains adequate factor loadings and model statistics. The exclusion of INSIDE\_OWN is consistent with our presumption that large blocks of insider ownership may contribute to a lack of association between governance and firm performance (hypothesis 1), and do not contribute to the relationship between governance and firm value (hypothesis 2).

The resulting (un-tabulated) rotated component matrix includes proxies for seven corporate governance characteristics with loadings ranging from 0.70 to 0.93, on four distinct components which explain 67.72% of the variation of the collective corporate governance characteristics (KMO = 0.53; Chi-square = 88.36,  $p < 0.001$ ). For the sample observations, CG Index-alternate ranges from 0.16 to 1.38, averages 0.69 and has a

standard deviation of 0.22. CG index and CG Index-alternate have a correlation of 0.83 ( $p < 0.001$ ).

Using CG Index-alternate as the proxy for strength of corporate governance in Equations 1 and 2 (un-tabulated), the coefficient on CG index-alternate remains insignificant measuring firm performance as ROA ( $t = 0.44$ ,  $p = 0.66$ ), and is significant measuring firm value as LN\_Q or LN\_MVE ( $t = 2.89$  and  $3.21$ , respectively;  $p < 0.01$  and  $p < 0.001$ , respectively). These findings provide additional support for hypotheses 1 and 2.

Many studies examining the relationship between corporate governance and firm performance and value use an unweighted index (Chung et al., 2010). To determine whether our results are sensitive to our weighting methodology, we replace CG index with an unweighted, sum of the nine corporate governance characteristics of interest in Equations 1 and 2. As each characteristic is weighted uniformly, in any one year a firm's CG index-unweighted can measure from zero to nine. For the sample observations, CG index-unweighted ranges from one to eight, averages 4.66, and has a standard deviation of 1.29. CG index and CG index-unweighted have a correlation of 0.88 ( $p < 0.001$ ).

As presented in Table 5, corporate governance measured using an unweighted continuous measure is positively related to firm value measured as LN\_MVE ( $t = 2.00$ ,  $p = 0.05$ ), but not to LN\_Q ( $t = 1.47$ ,  $p = 0.14$ ), and is unrelated to firm performance measured as ROA ( $t = 1.19$ ,  $p = 0.24$ ).

Consistent with our presumptions about insider ownership and performance and value, we also construct an alternative unweighted index that excludes INSIDE\_OWN.

The resulting CG index-unweighted-alternate ranges from one to eight, averages 4.35 and has a standard deviation of 1.14. CG index-alternate and CG index-unweighted-alternate have a correlation of 0.89 ( $p < 0.001$ ). Using CG index-unweighted-alternate as the proxy for strength of corporate governance in Equations 1 and 2 (un-tabulated), the coefficient on CG index-unweighted-alternate remains insignificant measuring firm performance as ROA ( $t = 0.65$ ,  $p = 0.52$ ), is moderately significant measuring firm value as LN\_Q and LN\_MVE ( $t = 2.07$  and  $2.34$ , respectively, both  $p < 0.05$ ), providing additional support for hypotheses 1 and 2.

In light of results which vary dependent upon the measure of corporate governance, we perform a supplemental analysis to evaluate the value relevance of our various measures of corporate governance on Saudi firms' market values using the following Ohlson (1995)-like equation:

$$MVE_{it} = BV_{it} + Earnings_{it} + CG\ Index_{it} + Industry + Year + \epsilon_{it}$$

where MVE is the log of the market value of firm  $i$ 's equity at  $t$ , BV is the book value of firm  $i$ 's net assets at  $t$ ,



**Table 5.** Estimation of equations 1 and 2 – CG index-unweighted (n = 292).

| Independent variable | Dependent variable - coefficient (t-value, p-value) <sup>a</sup> |                          |                          |
|----------------------|--|--------------------------|--------------------------|
|                      | ROA  | LN_Q                     | LN_MVE                   |
| CG index             | 0.01 (1.19, 0.24)  | 0.05 (1.47, 0.14)        | 0.07 (2.00, 0.05)*       |
| Size                 | 0.01 (2.49, 0.01)***   | -0.12 (-3.73, <0.001)*** | -0.13 (-3.36, <0.001)*** |
| Lev                  | -0.02 (-2.73, 0.01)***   | 0.01 (0.09, 0.92)        | 0.10 (2.12, 0.03)*       |
| ROA                  |  | 0.25 (0.67, 0.50)        | 0.31 (0.74, 0.46)        |
| Intercept            | -0.001 (-0.01, 0.99)   | 1.52 (3.78, <0.001)***   | 1.53 (3.31, <0.001)***   |
| Adj-R <sup>2</sup>   | 0.22   | 0.23                     | 0.22                     |

<sup>a</sup>Coefficients on Year (an indicator variable denoting one of the four years used in the study's analyses) and Industry (an indicator variables denoting membership in one of the 15 industry classifications used by the Saudi stock exchange) variables are not presented for ease of interpretation. \*, \*\*, \*\*\* Significant at p < 0.05, 0.01, and 0.001, respectively. ROA is net income of firm *i* at *t*, divided by its firm *i*'s assets at *t*. LN\_Q is the log of the ratio of the market value of firm *i*'s assets (market value of stock, plus book value of debt) at *t*, to the replacement cost of its assets at *t*. LN\_MVE is the log of ratio of the price of firm *i*'s equity at *t*, to the book value of its equity at *t*. Size is the log of total assets of firm *i* at the end of period *t*. Lev is the ratio of debt to equity of firm *i* at the end of period *t*.

deflated by total assets of firm *i* at *t*, earnings is net income of firm *i* at *t*, deflated by total assets of firm *i* at *t*, CG index is one of the four afore-mentioned measures of corporate governance, and the variables industry, and Year, that were previously described.

Excluding any measure of corporate governance, Adj-R<sup>2</sup> of the afore-mentioned equation is 0.52. When CG index is included in the equation, the coefficient on CG index is significant (t = 4.94, p < 0.001) and Adj-R<sup>2</sup> increases to 0.55. When CG index-alternate is included in the equation, the coefficient on CG index-alternate is also significant (t = 3.96, p < 0.001) and Adj-R<sup>2</sup> increases to 0.54. When CG index-unweighted is included in the equation, the coefficient on CG index-unweighted is significant (t = 2.92, p = 0.01) and Adj-R<sup>2</sup> does not change. When CG index-unweighted is included in the equation, the coefficient on CG index-unweighted-alternate is significant (t = 2.79, p = 0.01) and Adj-R<sup>2</sup> increases to 0.53. These supplemental findings suggest unweighted indices of corporate governance may be inferior measures of the collective impact of corporate governance characteristics and provide support for the study's primary weighted measure of corporate governance.

Robustness checks - As discussed earlier, firm-specific heterogeneity issues associated with CG index may influence the study's results and unduly influence our conclusions about the relationship between corporate governance and firm performance and value in Saudi Arabian firms (that is, some firms may have unique economic events that may impact the study's results). To test this possibility, we estimate Equation 2 separately for each year of the analyses (2006 to 2009)<sup>9</sup>. Because doing so severely restricts sample sizes (n = 54 to 80), and the coefficients on the industry indicator variables are inconsistent across the estimation results, industry

variables are removed from the re-estimation process to reduce the required number of degrees of freedom. Results of these analyses suggest corporate governance is not associated with firm value in 2006 or 2007. In 2008, CG index is significantly related to LN\_Q and LN\_MVE (both p < 0.05); and in 2009, CG index is significantly associated with LN\_MVE (p < 0.05), and is moderately associated with LN\_Q (p = 0.07). These results are not unexpected in light of our expected influence of the recency of corporate governance mandates on firm value, and our previous report of the significance of year effects.

Although we believe corporate governance is most appropriately measured as an index as doing so helps to account for the interrelationship of individual corporate governance characteristics, to provide comparisons to the results of prior research and for the consideration of future research, as a final supplemental analysis we separately include the study's nine corporate governance characteristics in the firm value equation. Untabulated results suggest that firm value is significantly positively associated with the individual corporate governance characteristics optimal board size, meeting frequency, and director stock ownership guidelines and firm value is negatively associated with board independence, and executive stock ownership restrictions.

## CONCLUSIONS AND OPPORTUNITIES FOR FUTURE RESEARCH

In this study we examined the relationship between a weighted index of corporate governance characteristics and firm performance and value of Saudi-listed firms. Influenced by the recency of governance initiatives and large percentages of insider ownership, among other things, we predicted and found that corporate governance and firm performance (measured as return on assets) are unrelated, but corporate governance and firm value

<sup>9</sup>Equation 1 is not re-estimated due to our consistent lack of finding any relationship between corporate governance and firm performance.



(measured as Tobin's Q and market value of equity) are positively related. Our results are similar to the findings of other studies using constructed corporate governance indices in developing markets. Governance and firm value are found to be positively related and robust to two different weighted indices, but are not robust using an unweighted measure of corporate governance that considers the influence of insider ownership. While we believe weighting is the most theoretically appropriate way to model the interrelationships between specific corporate governance characteristics and supplemental analyses support this view, our results are measurement-specific.

As hypothesized, our inability to detect an association between our weighted CG index and performance measured as ROA may be attributed to Saudi country-specific or market-specific factors. In Saudi Arabia, higher levels of capitalization, lower reliance on external sources of financing, and relatively high levels of insider ownership may contribute to the strength of the relationship between corporate governance and firm performance. When firms require fewer sources of external debt and equity financing and are more closely-held, comparative performance and monitoring mechanisms are less important, even though external investors may attribute higher values to firms with strong corporate governance. It may also be that firm performance is less important in Saudi Arabia in light of Islamic principles that require firms to balance the goal of maximizing wealth with Shariah and Shura. Future research could more directly investigate this possibility by comparing the relationship between governance characteristics and performance of developing markets (for example, Saudi Arabia and Russia).

The study's results offer insights to managers and overseers (directors and policy makers) of Saudi firms interested in enhancing the legitimacy of corporate governance. Supplemental analyses suggestion of the nine governance characteristics used in the study's analyses, proxies for policies for board size, director ownership guidelines, and board meeting frequency are individually the most influential. Each is positively related to firm value, after controlling for firm size, leverage, performance, industry membership, and events unique to each year included in the analyses. As such, CCG initiatives to require these types of policies will likely be viewed favorably by the market. CCG mandates in January 2011 provide a unique opportunity to assess the market's response to changes in corporate governance of Saudi firms. Although not part of the current CCG mandates, firms may consider adopting policies that require at least four board meetings each year as a signal of strong corporate governance.

While we attempted to control some of the non-causal for explanations for the association between corporate governance and firm value by incorporating year- and industry-indicator values in our estimation equations, and

by controlling for firm-specific size, leverage, and performance, our analyses do not permit the ruling out of reverse causality or other unobserved sources of variation in firm value. It may be that firms with high market values create strong governance structures. Future studies may choose to investigate this possibility.

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## REFERENCES

- Abu-Tapanjeh AM (2009). Corporate governance from the Islamic perspective, a comparative analysis with OECD principles. *Crit. Perspect. Account.* 20(5):566-567.
- Abraham A, Seyyed F, Al-Elg A (2001). Analysis of diversification benefits of investing in the emerging Gulf equity markets. *Manag. Fin.* 27(10):47-57.
- Ahmed AS, Duellmant S (2007). Accounting conservatism and board of director characteristics, an empirical analysis. *J. Account. Econ.* 43:411-437.
- Aggarwal A, Knoeber CR (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *J. Financ. Quant. Anal.* 31(3):377-97.
- Al-Abbas MA (2009). Corporate governance and earnings management: an empirical study of the Saudi Market. *J. Am. Acad. Bus. Cambridge* 15(1):301-310.
- Al-Hussain AH, Johnson RL (2009). Relationship between corporate governance efficiency and Saudi banks' performance. *Bus. Rev. Cambridge* 14(1):111-117.
- Al-Moataz E, Hussainey K (2012). Determinants of corporate governance disclosure in Saudi companies. *J. Econ. Manag.* (forthcoming).
- Al-Nagadi M (2010). Saudi Arabia – concrete construction industry – cement based materials and civil infrastructure. Presentation at CBM-CI International Workshop, Karachi, Pakistan. Available at [http://enpub.fulton.asu.edu/cement/cbm\\_CI/CBMI\\_Separate\\_Articles/Article%2010.pdf](http://enpub.fulton.asu.edu/cement/cbm_CI/CBMI_Separate_Articles/Article%2010.pdf).
- Al-Razeen A, Karbhari Y (2004). Interaction between compulsory and voluntary disclosure in Saudi Arabian corporate annual reports. *Manag. Audit. J.* 19(3):351-360.
- Al-Suhaibani M, Kryzanowski L (2000). An exploratory analysis of the order book and order flow and execution on the Saudi Stock market. *J. Banking Fin.* 24(8):1323-1357.
- Asian Development Bank (2000). Corporate governance and finance in East Asia. Asian Development Bank, Manila, Philippines.
- Bai Y, Green CJ (2011). Determinants of cross-sectional stock return variations in emerging markets. *Empirical Econ.* 41(1):81-102.
- Baek J, Kang J, Park KS (2004). Corporate governance and firm value, evidence from the Korean financial crisis. *J. Financ. Econ.* 71(2):265-313.
- Balasubramanian N, Black BS, Khanna V (2010). The relations between firm-level corporate governance and market value, a case of India. *Emerg. Mark. Rev.* 11(4):319-340.
- Bauer R, Guenster N, Otten R (2004). Empirical evidence on corporate governance in Europe, the effect on stock returns, firm value and performance. *J. Asset Manag.* 5:91-104.
- Bhagat S, Black B (2002). The non-correlation between board

- independence and long term firm performance. *J. Corporation Law* 27:231–274.
- Black BS, Love I, Rachinsky A (2006). Corporate governance indices and firms' market values, Time series evidence from Russia. *Emerging Markets Rev.* 7(4):361-379.
- Blue Ribbon Committee (1999). Report and Recommendations of the Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees. New York, New York Stock Exchange and National Association of Securities Dealers.
- Boehren O, Oedegaard B (2003). Governance and performance revisited. Working Paper No. 28/2003. European Corporate Governance Institute.
- Carcello JV, Hermansen DR, Zhongxia Y (2011). Corporate governance research in accounting and auditing: Insights, practice implications, and future research directions. *Auditing: A J. Practice Theor.* 30(3):1-30.
- Chaplinsky S, Niehaus G (1993). Do inside ownership and leverage share common determinants?, *Q. J. Bus. Econ.* 32(4):51-65.
- Chung KH, Elder J, Kim JC (2010). Corporate governance and liquidity. *J. Financ. Quant. Analysis*, 45: 265–291.
- Chung KH, Pruitt SW (1994). A simple approximation of Tobin's *q*. *Financ. Manage.* 23:70–74.
- Claessens S (1997). Corporate governance and equity prices, Evidence from the Czech and Slovak Republics. *J. Fin.*, 52 (4): 1641-1658.
- Claessens S, Djankov S (1999). Ownership concentration and corporate performance, Evidence from the Czech Republic. *J. Compar. Econ.* 27:498-513.
- Coles JW, McWilliams VB, Sen N (2001). An examination of the relationship of governance mechanisms to performance. *J. Manage.* 27: 23-50.
- Choudhury MA, Hoque MZ (2006). Corporate governance in Islamic Perspective. *Corp. Gov.*, 6 (2): 116-128.
- Daily CM, Dalton DR (1994). Corporate governance and the bankrupt firm, An empirical assessment. *Strategic Manage. J.*, 15 (6): 643-56.
- Dickins D, Houmes R (2009). Revisiting the Relationship between Insider Ownership and Performance. *J. Bus. Econ. Studies*, 15 (2): 32-43.
- Donaldson L, Davis JH (1991). Stewardship theory and agency theory, CEO governance and shareholder returns. *Australian J. Manage.* 16(1):49-63.
- Editor (2007). Saudi stock market crash a cause for concern. AMEinfo.com (May 31). Available at <http://www.ameinfo.com/86438.html>.
- Eisenberg T, Sundgren S, Wells MT (1998). Larger board size and decreasing firm value in small firms. *J. Financ. Econ.* 48(1):35-54.
- Eltony M, Babiker M (2005). Arab Capital Market Development and Institutions. *J. Econ. Admin. Sci.* 21:42-63.
- Gompers P, Ishi J., Metrick A (2003). Corporate governance and equity prices. *Q. J. Econ.* (Feb):107-55.
- Hassan Z (2009). Corporate Governance, Western and Islamic Perspectives. *Int. Rev. Bus. Res. Papers* 5(1):277-293.
- Hermalin BE, Weisbach MS (1991). The effects of board composition and direct incentives on firm performance. *Financ. Manage.* (Winter):101-112.
- Hiraki T, Inoue H, Ito A, Kuroki F, Masuda H (2003). Corporate governance and firm value in Japan, Evidence from 1985 to 1998. *Pacific-Basin Fin. J.* 11:239-265.
- Jensen M (1993). The modern industrial revolution, exit and the failure of internal control systems. *J. Fin.* 48:831-880.
- Jensen MC, Meckling WH (1976). Theory of the firm, managerial behavior, agency costs and ownership structure. *J. Financ. Econ.* 3:305-360.
- Joh SW (2003). Corporate governance and firm profitability, Evidence from Korea before the economic crisis. *J. Financ. Econ.* 68(2):287–322.
- Jordan C, Lubrano M (2006). Corporate governance and emerging markets, lessons from the field. University of Melbourne Law School Australia. Working paper, available at <http://cclsr.law.unimelb.edu.au/files/jordanlubranoemergingmakspaperaugust62008.pdf>.
- Keasey K, Wright M (1993). Issues in corporate accountability and governance, an editorial. *Acct. Bus. Res.* 23(91A):291-303.
- Karim RA (1995). The nature and rationale of a conceptual framework for financial reporting by Islamic banks. *Acct. Bus. Res.* 25(100):285-300.
- Klapper LF, Love I (2004). Corporate governance, investor protection, and performance in emerging markets. *J. Corp. Fin.* 10:703-728.
- Klein A (1998). Firm performance and board committee structure. *J. Law Econ.* 41(1):275-303.
- Larcker DF, Richardson SA, Tuna I (2007). Corporate governance, accounting outcomes and organizational performance. *Acct. Rev.* 82(4):963-1008.
- Lee P (2006). Stock market crash obscures Saudi boom. *Euromoney*. London, pp. 1-9.
- Morck R, Shleifer A, Vishny R (1988). Management ownership and market valuation. *J. Financ. Econ.* 20:293-315.
- Ohlson J. (1995). Earnings, book values, and dividends in equity valuation. *Contemp. Acct. Res.* 11:661-688.
- Organization for Economic Co-operation and Development (OECD), (2004). Principles of corporate governance. Available at <http://www.oecd.org/dataoecd/32/18/31557724.pdf>.
- Osman F (2001). Islam in a modern state, democracy and the concept of shura. Occasional Papers Series. Available at [http://www12.georgetown.edu/sfs/docs/Dr\\_Fathi\\_Osman\\_Islam\\_in\\_a\\_Modern\\_State\\_Democracy\\_and\\_the\\_Concept\\_of\\_Shura\\_2001.pdf](http://www12.georgetown.edu/sfs/docs/Dr_Fathi_Osman_Islam_in_a_Modern_State_Democracy_and_the_Concept_of_Shura_2001.pdf).
- Oswald SL, Jahera JS (1991). The influence of ownership on performance, an empirical study. *Strateg. Manag. J.* 12(4):321-326.
- Rechner PL, Dalton DR (1991). CEO duality and organisational performance, a longitudinal analysis. *Strateg. Manag. J.* 12:155-60.
- Rahman AR, Haniffa R (2005). The effect of role duality on corporate performance in Malaysia. *Int. Sci. Corp. Own. Control* 2(2):40-7.
- Ramady MA (2006). After the stock market crash – Real estate next? Arab News (Nov 6). Available at <http://archive.arabnews.com/?page=6andsection=0andarticle=77762andd=6andm=11andy=2006>.
- Ramsay Report (2001). Independence of Australian company auditors, review of current Australian requirements and proposals for reform. Available at <http://www.treasury.gov.au>.
- Robertson DC (2009). Corporate social responsibility and different stages of economic development, Singapore, Turkey, and Ethiopia. *J. Bus. Ethics* 88(Supplement):617-633.
- Samba Financial Group (2009). The Saudi stock market: structural issues, recent performance and outlook. Available at [http://www.samba.com/GblDocs/Saudi\\_Stock\\_Market\\_Eng.pdf](http://www.samba.com/GblDocs/Saudi_Stock_Market_Eng.pdf).
- Sarbanes-Oxley Act (2002). Public Law 107-204 [H. R. 3763]. Washington D.C., Government Printing Office.
- Singh A (1995). Corporate financing patterns in industrializing economies: a comparative international study. IFC Technical Paper, 2. Washington: International Finance Corporation.
- Smith S, Cin B, Vodopivec M (1997). Privatization incidence, ownership forms and firm performance, evidence from Slovenia. *J. Comp. Econ.* 25:158-79.
- Strydom M, Navissi F, Skully M., Veeraraghavan M (2009). Corporate governance and information risk post Sarbanes Oxley. Working paper, available at <http://www.efmaefm.org/0EFMAMEETINGS/EFMA%20ANNUAL%20MEETINGS/2009-milan/111.pdf>.
- Yermack D (1996). Higher market valuation of companies with a small board of directors. *J. Financ. Econ.* 40(2):185-213.