Corporate governance, affirmative action and firm value: evidence from post-apartheid South African firms

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Abstract

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Research Question/Issue: The post-Apartheid South African (SA) corporate governance (CG) model is a unique hybridisation of the traditional Anglo-American and Continental European-Asian CG models, distinctively requiring firms to explicitly comply with a number of affirmative action and stakeholder CG provisions, such as black empowerment and HIV/Aids. This paper examines the association between a broad CG index and firm value in this distinct corporate setting.

Research Findings/Insights: Using a sample of 169 post-Apartheid SA firms from 2002 to 2007, we find a significant positive association between a broad CG index and firm value, as proxied by Tobin's Q. Distinct from prior studies, but consistent with political cost, legitimacy and resource dependence theories, we find that compliance with affirmative action CG provisions impacts positively on firm value. The results are robust across a number of econometric models that control for different types of endogeneity, accounting and market-based firm valuation measures.

Theoretical/Academic Implications: The paper contributes to the literature on the association between compliance with codes of good governance and firm value by specifically modelling the relationship within a unique institutional, legal and CG environment. Distinctively, we contribute to the literature by showing how affirmative action and stakeholder CG provisions impact on firm value.

Practical/Policy Implications: The results have important policy implications for companies and regulators. They suggest that investors reward firms with better CG practices with higher market valuation, providing support to the efforts by various stakeholders at improving CG standards in SA companies. The results also suggest that SA companies who pay serious attention to complying with affirmative action and stakeholder CG provisions may reap benefits in the form of higher firm value.

Keywords: Corporate Governance, Affirmative Action, Firm Value, South Africa, Endogeneity

INTRODUCTION

Agency theory suggests a positive association between corporate governance (CG) and firm value (Jensen & Meckling, 1976), as good governance improves managerial monitoring and decision-making, as well as reduces managerial expropriation and wastage, and thereby enhances operating performance and market valuation (Renders, Gaeremynck, & Sercu 2010). However, while a number of prior studies (reviewed below) suggest a positive link between CG and firm value, most have been unable to conclusively indicate that good governance actually impacts positively on firm value. A number of reasons may explain the empirically weak association between CG and firm value. First, prior studies have been criticised for methodological weaknesses, with particular regard to inadequately addressing endogeneity problems (Guest, 2009; Larcker & Rusticus, 2010), as well as insufficient control for any potential interrelations between CG and other possible alternative CG mechanisms (Agrawal & Knoeber, 1996; Beiner, Drobetz, Schmid, & Zimmermann, 2006).

Second, due to the highly labour-intensive nature of collecting firm-level CG data directly from company annual reports (Beattie, McInnes, & Fearnley, 2004), prior studies have mostly used subjective analysts' CG ratings, often supplied by rating agencies, such as Credit Lyonnais Securities Asia (CLSA) (Klapper & Love, 2004; Durnev & Kim, 2005). Renders et al. (2010) show that the use of such subjective analysts' CG ratings leads to significant sample selection bias as they tend to be severely biased towards a few large firms. The associated econometric problems weaken statistical power and obscure the association between CG and firm value (Core, Guay, & Rusticus, 2006; Bhagat & Bolton, 2008). Thirdly, and crucially, the prior literature notes that CG structures and systems vary across different countries (Aguilera & Cuervo-Cazzura, 2009). However, past cross-country studies have not generally employed subjective analysts' CG ratings, which are standardised such that they fail to reflect unique institutional, cultural and contextual differences in CG mechanisms across different countries (Morey, Gottesman, Baker, & Godridge, 2009; Renders et al., 2010), but also such studies remain disproportionately concentrated in the developed countries of Europe and US with comparatively similar institutional settings (Gomper, Ishii, & Metrick, 2003; Baur, Gunster, & Otten, 2004; Cremers & Nair, 2005; Beiner et al., 2006; Bebchuk, Cohen, & Ferrell, 2009; Chen, Chung, Hsu, & Wu, 2010). However, the role and effectiveness of CG may arguably be different in developing countries, such as South Africa (SA), due to the different institutional, cultural, legal and CG environment (as discussed further below). As such the link between CG and firm value can be expected to be different from what has been reported in developed countries.

The current study attempts to address the above limitations by investigating the association between CG and firm value in a distinct post-Apartheid SA corporate context. Historically, South Africa's CG model has predominantly been Anglo-American (shareholding) in orientation, with firms primarily expected to serve the interests of shareholders. However, post-Apartheid CG reforms, especially the 2002 King Report (King II), distinctively require SA firms to explicitly comply with a number of affirmative action and stakeholder issues meant to address historical socio-economic inequalities between white and non-white South Africans. These include compliance with black economic empowerment, employment equity and HIV/Aids CG provisions. This compels SA firms to depict some of the key features of both the shareholding and stakeholding (Continental Europe-Asia) models of CG in their annual reports, and thus explicitly makes the South African CG model a hybrid and unique within the Anglo-American world (Andreasson, 2010).

Given this context, the crucial policy question, is whether the current hybrid South African CG framework is sufficiently robust to effectively achieve the contrasting objectives of maximising shareholder value and providing a meaningful protection of the interests of a larger stakeholder group (Kakabadse & Korac-Kakabadse, 2002). On the one hand, in order to effectively address affirmative action and stakeholder needs, post-Apartheid SA firms will invariably have to incur extra costs with a potential negative effect on shareholder value (LSE, 2007; Ntim, 2009). On the other hand, political cost, legitimacy and resource dependence theories (Malherbe & Segal, 2003; Andreasson, 2010) suggest that compliance with stakeholder CG provisions does not only help in reducing political costs, but also offers greater access to resources that can be translated into improved operating performance and market valuation. Resource dependence may be particularly important in SA, given that securing and renewing profitable government and mining contracts are usually linked to meeting affirmative action, such as black empowerment (Malherbe & Segal, 2003). Hence, we examine the link between CG and firm value within this arguably unique institutional setting, where there is also a conspicuous dearth of empirical evidence (Khanchel El Mehdi, 2007; Mangena & Chamisa, 2008). Importantly, and distinct from prior studies, we construct a broad CG index specifically for the South African setting that permits us to uniquely investigate how specific affirmative action and stakeholder issues, such as black empowerment and HIV/Aids, affect firm value.

In addition, we explicitly address methodological and econometric problems that have characterised most previous studies. To avoid sample selection bias, our sample is based on all the firms that are listed on the Johannesburg Stock Exchange (JSE) Ltd, with the CG data collected directly from company annual reports. We also address different types of endogeneity problems, including simultaneity and firm-level fixed effects, as well as control for potential interrelations between our broad CG index and four alternative CG mechanisms that we data on, including board size, leverage, block and institutional ownerships. In doing so, we make major contributions to the extant literature. First, using CG data collected from annual reports, we construct for the first time a broad CG index for a sample of 169 SA listed firms from 2002 to 2007, consisting of 50 CG provisions based on the 2002 King Report (King II) for SA firms. Second, we provide evidence for the first time on the association between CG and firm value for SA listed firms, extending the international evidence to the SA corporate context. Third, and distinct from prior studies, we provide evidence on how compliance with the SA context specific affirmative action and stakeholder CG provisions affects the market value of SA listed firms. Finally, and different from most previous studies, we explicitly address the problem of endogeneity, as well as control for possible complementary or substitution effects between different CG mechanisms using two-stage least squares (*2SLS*) estimation.

Our results show a statistically significant and positive association between our broad CG index and firm value, as proxied by Tobin's *Q*, implying that SA listed firms with better CG standards tend to be associated with higher market valuation. Our *2SLS* results show that there is also a reverse association between our broad CG index and Tobin's Q, emphasising the need for future research to adequately control for potential interrelations between possible alternative CG mechanisms and firm value for robust results. Distinct from prior studies, but consistent with political cost, legitimacy and resource dependence theories, we find a statistically significant and positive association between compliance with the SA context-specific affirmative action and stakeholder CG provisions and Tobin's Q. Our results are robust across a number of econometric models that control for different types of endogeneity, alternative CG weighting schemes, as well as different types of accounting and market-based firm valuations proxies.

The remainder of the paper is organised as follows. The next section examines the South African CG context, affirmative action and the prior literature. The following sections describe the data and research methodology, report the empirical results, and present a robustness analysis, with the concluding remarks containing a summary and a brief discussion of policy implications.

THE SA CG CONTEXT, AFFIRMATIVE ACTION AND THE PRIOR LITERATURE

SA is a particularly interesting African country to conduct a CG study. First, and unlike most African countries, SA possesses a relatively sound financial and regulatory structure, deep equity culture, and is the base for some of the world's largest multinationals, which attract substantial foreign direct investments (Maherbe & Segal, 2003). This means that unlike most African countries, any CG failures may have serious implications far beyond SA and Africa. Second, ownership of firms is relatively concentrated (Barr, Gerson, & Kanto, 1995), implying stronger managerial monitoring, but can lead to expropriation of minority wealth (Henry, 2008). Concentrated ownership also means that the market for managerial and corporate control may be less active (Haniffa & Hudaib, 2006). While SA firms tend to have high levels of institutional ownership, shareholder activism is weak (Maherbe & Segal, 2003), and although rigorous laws on insider trading and listing rules have been introduced (Insider Trading Act, 1998; JSE Listing Rules, 2007), their implementation and enforcement is weak (King Report, 2002; Ntim, 2009). In sum, these SA context-specific issues can result in managerial entrenchment, as well as expropriation of shareholder wealth, that can impact negatively on firm value.

Of greater relevance, however, is that CG seems to be fluidly developing in SA. A formal code of CG was first introduced in 1994 (King I) and revised in 2002 (King II) (Aguilera & Cuervo-Cazurra, 2009), coinciding with the collapse of Apartheid, the historic release of Nelson

Mandela from prison and the subsequent assumption to power by the African National Congress (ANC). While CG reforms pursued so far in SA are generally similar to those of other Anglo-American countries (see Sections 1 to 3 of the Appendix), the current South African CG model is distinct by its promotion of the 'inclusive' approach (Andreasson, 2010).

The SA 'inclusive' CG approach seeks to maintain and strengthen all the Anglo-American (shareholding) features, such as unitary boards, voluntary compliance, and majority outside directors, but it distinctively requires firms to explicitly comply with a number of affirmative action and stakeholder (stakeholding) laws passed by the ruling ANC on black economic empowerment, employment equity, environment and HIV/Aids (see Section 4 of the Appendix). As previously explained, these are aimed at addressing residual negative socio-economic legacies of Apartheid. For example, preferential procurement provisions of the 2003 Black Empowerment Act require SA corporations to as much as possible acquire their raw materials from a non-white supplier irrespective of costs. Additionally, SA companies are required to comply with positive discriminatory practices regarding board appointments, enterprise development, and equity ownership, amongst others. In sum, these affirmative action provisions may arguably impact differently on firm value, and as such the association between CG and firm value can be expected to be different from what has been reported in other Anglo-American countries.

The empirical literature on the association between CG and firm value is not only mixed, but also concentrated in Europe and the US. For example, Gompers et al. (2003), Cremers and Nair (2005) and Bebchuk et al. (2009) have examined the relationship between a broad CG index and firm value for sampleS of US firms, with the findings showing that CG impacts positively on firm value. In contrast, and after controlling for endogeneity, Core et al. (2006) and Bhagat and

Bolton (2008) find no evidence of an association between CG and firm value in samples of US firms, casting doubt on prior studies, as well as highlighting the relevance of adequately controlling for endogeneity. Previous European studies have also reported similar conflicting results. While Baur et al. (2004) report no evidence of a relationship between CG and firm value in a sample of European firms, Drobetz et al. (2004) and Beiner et al. (2006) find that CG is positively related to firm value in samples of German and Swiss firms, respectively. After controlling for both endogeneity and sample selection bias, Renders et al. (2010) also report positive association between CG and firm value in a sample of European firms, but find an insignificant or negative relationship if the two problems are not properly addressed, re-enforcing the need to sufficiently control for both sample selection bias and endogeneity for robust results.

Limited, but more consistent evidence has been reported for a number of emerging markets. Black (2001), Black et al. (2006), Black and Khanna (2007), Henry (2008), and Garay and González (2008) have investigated the association between a broad CG index and firm value, using samples of Russian, South Korean, Indian, Australian, and Venezuelan listed firms, respectively. Consistent with past cross-country studies in emerging markets (Klapper & Love, 2004; Durnev & Kim, 2005; Morey et al., 2009), the results of these studies indicate a positive relationship between CG and firm value. Of special note, despite increasing evidence that sample selection bias and endogeneity problems can confound research findings (Chen et al., 2010; Renders et al., 2010), a majority of the prior cross-country studies in emerging markets do not explicitly address these problems, casting doubt on the reliability of the results of these studies (Klapper & Love, 2004; Morey et al., 2009). For example, the CLSA 2000 subjective analysts' CG ratings used in previous cross-country studies by Klapper and Love (2004) and Durnev and

Kim (2005) include only nine[1] of the largest SA listed firms, and arguably limiting the generalisation of their findings for SA listed firms.

As previously explained, the current study on CG in SA attempts to address these weaknesses of prior studies in several ways. First, we use the entire usable sample of 169 SA listed firms over a five year period in our analysis, and unlike past cross-country studies (Klapper & Love, 2004; Durnev & Kim, 2005), we are able to ascertain the effects of both cross-sectional and time series changes in CG on firm value, as well as improve the generalisation of the results. Second, we construct a broad South African CG index (*SACGI*) based on the CG provisions of King II, which unlike subjective analysts' rankings (Durnev & Kim, 2005; Morey et al., 2009), has the advantage of ensuring that unique SA context-specific CG provisions, such as black empowerment and HIV/Aids are incorporated into the methodology. Third, and distinct from prior studies, we study how compliance with a sub-index of SA setting specific affirmative action and stakeholder CG provisions impact on our sampled firms' market value. Finally, to improve the reliability of the results, we explicitly address problems that may be posed by the presence of endogeneities, as well as possible interdependencies among alternative CG mechanisms.

DATA AND RESEARCH METHODOLOGY

Data: Sample Selection, Sources, and Description

Our sample is based on all 291 non-financial[2] firms listed on the JSE as at 31/12/2007 and Table 1 contains a summary of the sample selection procedure. Panels *A* and *B* of Table 1 show the industrial composition of all non-financial firms that were listed on the JSE, and the final sampled firms with full data, respectively.

Insert Table 1 about here

We use CG and financial performance data to investigate the relationship between CG and firm value. The CG variables were extracted from the annual reports of the sampled companies. The annual reports were obtained from the *Perfect Information Database*, while the financial performance data were collected from *DataStream*. The firms in our final sample had to meet two criteria: the availability of a company's full five year annual reports from 2002 to 2006 inclusive, and the availability of a company's corresponding financial data from 2003 to 2007 inclusive.[3] These criteria were imposed for several reasons. First, and in line with past research (Henry, 2008), the criteria helped in meeting the requirements for a balanced panel data analysis, and its associated advantages in terms of having both time series and cross-sectional observations, more degrees of freedom and less collinearity among variables (Gujarati, 2003).

A potential weakness is that it may introduce survivorship bias into the sample selection process. However, and as Table 1 indicates, the criteria still generated a much larger sample size than what has been used in prior SA studies (Klapper & Love, 2004; Morey et al., 2009), and therefore, generalisation of the results of our study should not be impaired by our sample selection criteria. Second, contrary to much of the existing literature that employs one-year cross-sectional data (Klapper & Love, 2004; Durnev & Kim, 2005), analysing five-year data with both cross-sectional and time series properties may help in ascertaining whether the observed cross-sectional association between CG and firm value also holds over time. Using the above criteria, and as detailed in *Panel B* of Table 1, the full data is collected for 169 out of the 291[4] firms over five firm years, giving a total of 845 firm-year observations from eight industries for our regression analysis.

Research Methodology: Definition of Variables and Model Specification

Our main independent variable is the constructed South African CG index (*SACGI*), which involves an aggregation of the 50 CG provisions contained in King II, based on five broad sections covering: (1) boards, directors and ownership, (2) accounting and auditing, (3) risk management, internal audit and control, (4) integrated sustainability reporting, and (5) compliance and enforcement. These are detailed in the Appendix. All companies listed on the JSE are required to comply with the CG provisions or give reasons for non-compliance, enabling us to conduct our analysis.

Our *SACGI* is distinct from CG variables used in prior research. First, unlike most previous studies that focus on specific aspects of CG in isolation, for instance, shareholder rights (Gompers et al., 2003), and board size (Guest, 2009), *SACGI* covers all aspects of CG. Second, in line with prior research (Beiner et al., 2006), the index covers conventional CG issues, such as board and ownership, but distinct from past research (Morey et al., 2009), it also covers SA context-specific affirmative action and stakeholder CG provisions. A sub-index defined as *Social*-*SACGI* that contains nine CG provisions of the *SACGI* is formed (see Section 4 of the Appendix), to cover specific aspects, such as black empowerment and HIV/Aids. The *SACGI* is constructed by awarding a value of '1' for each of the 50 CG provisions of King II if disclosed in the annual report or '0' otherwise. With this scheme, a company's total score in a particular firm-year can vary between zero (0%) to fifty (100%), with better-governed firms having higher index levels. Although this simple binary weighting scheme may fail to reflect the relative importance of different CG mechanisms (Gompers et al., 2003), we adopt it for a number of reasons.

First, there is a general lack of a rigorously developed theoretical basis on which weights can be accurately assigned to the various CG provisions (Black et al., 2006), and thus, using an unweighted coding scheme obviates a situation whereby the *SACGI* is unnecessarily dominated by a particular set of CG provisions. Second, an unweighted index is transparent and easy to replicate (Beiner et al., 2006). Third, prior studies suggest that the use of weighted and unweighted indices tend to give similar results (Beattie et al., 2004). Finally, an unweighted coding scheme is a well-established line of scoring CG information disclosed in annual reports (Gompers et al., 2003; Henry, 2008; Morey et al., 2009), and can also facilitate direct comparisons to be drawn with their results. Theoretically, better-governed firms can be expected to reduce agency costs and increase firm value (Jensen & Meckling, 1976), and hence, we hypothesise a positive relationship between our *SACGI* and firm value.

The measure of market valuation employed in our regression is the widely used Tobin's Q (*Q*)[5]. Following Chung & Pruitt (1994), *Q* denotes the market value of equity plus the book value of total assets minus the book value of equity scaled by the book value of total assets. It measures the market's valuation of the quality of a firm's CG mechanisms. A higher *Q* generally suggests greater effectiveness of a firm's CG structures, as well as a better perception of a company's financial performance by the market (Haniffa & Hudaib, 2006). To minimise potential omitted variables bias, we introduce below a number of control (exogenous) variables. Table 2 provides a summary of all variables employed, including the control (exogenous) variables, the four alternative CG mechanisms (board size, leverage, block, and institutional ownerships) and two alternative firm value measures (return on assets and total share returns) that will be used in conducting robustness tests in section five.

Insert Table 2 about here

First, we predict a positive association between *Q* and growth opportunities (*GROWTH*), because firms with higher investment opportunities tend to grow relatively faster (Durnev & Kim, 2005). Second, firms with greater investment in research and development can gain competitive advantages (Chen et al., 2010), and so may have higher *Q*. By contrast, research and development is capital intensive (Henry, 2008), and as such may impact negatively on current *Q*. Similarly, Jensen (1986) suggests that higher levels of gearing can increase performance by reducing agency conflicts associated with having 'free cash flows' by opportunistic managers. In contrast, greater financial distress associated with higher levels of gearing can inhibit the ability to exploit growth opportunities (Jensen, 1986). Also, due to greater agency problems, larger firms are likely to maintain better CG regime *Q* (Beiner et al., 2006), and may have higher. By contrast, smaller firms have greater opportunities to grow (Klapper & Love, 2004), and may have higher *Q*. Given the mixed literature, we predict that gearing (*GEAR*), capital expenditure (*CAPEX*) and firm size (*LNTA*) will relate either positively or negatively to *Q*. Third, firms that crosslist to foreign stock markets tend to have better CG structures, as they are subjected to additional CG rules (Black et al., 2006; Renders et al., 2010), and may have higher *Q*. Hence, we hypothesise a positive link between *Q* and crosslisting (*CROSLIST*).

Fourth, auditor independence and audit quality are positively associated with audit firm size (DeAngelo, 1981), implying that firms audited by large and reputable audit firms may have higher *Q*. Hence, we predict a positive association between *Q* and audit firm size. Fifth, to avoid endogeneity problems, we construct our regression model such that this year's firm value (Q_t) is associated with previous year's CG mechanisms, and as such we follow past studies (Haniffa & Hudaib, 2006; Renders et al., 2010) and include a lagged *Q* as part of our controls. We hypothesise that Q_{t-1} will correlate positively with Q_t. Finally, following prior research (Henry, 2008; Guest, 2009), we predict that *Q* will differ across different industries and financial years. As such, we introduce year (2003 to 2007) and industry dummies for the five remaining industries.[6] Assuming that all relationships are linear, our main OLS regression equation to be estimated is specified as:

$$Q_t = \alpha_0 + \beta_1 SACGI_{it-1} + \sum_{i=1}^{n} \beta_i CONTROLS_{it-1} + \varepsilon_{it-1} \tag{1}$$

where:

Q	- Tobin's Q, proxy for firm value.
α_0	- Constant term.
SACGI	- South African Corporate Governance Index.
CONTROLS	- Control variables for growth (*GROWTH*), capital expenditure (*CAPEX*), gearing (*GEAR*), firm size (*LNTA*), cross-listing (*CROSLIST*), audit firm size (*BIG4*), lagged *Q* (Q_{t-1}), industry and year dummies.
ε	- Error term.

2SLS, Alternative CG Mechanisms and Possible Interrelationships

Agrawal and Knoeber (1996) indicate that the existence of alternative CG mechanisms suggests that they may possibly need to interrelate to be effective. This implies that an OLS regression of *Q* on a single CG mechanism, as specified in (1), for instance, can lead to misleading results. We address this methodological criticism of past studies by introducing four alternative CG mechanisms that we have data on, in addition to our broad *SACGI* and *Q*, to develop a system of six simultaneous equations. The four alternative CG structures are board size (*BSIZE*), leverage (*LEV*), block (*BLKOWN*), and institutional (*INSOWN*) ownerships. We then estimate the six equations using *2SLS* to investigate the link between the CG mechanisms and *Q*. The analysis involves two stages. In the first stage, we estimate each of equations (2) to (6) specified below, and save the resulting predicted values (i.e., predicted part of each CG structure). In the second stage, we use the predicted parts as instruments for the CG mechanisms, and equation (7) specified below is estimated along with the control variables and their respective instruments using *2SLS* technique. The rationale is that the choice of any one mechanism may simultaneously depend on others to be able to impact positively on *Q*. We describe how our system of six equations is developed below.

The South African Corporate Governance Index (the SACGI). First, it is assumed that the *SACGI* is determined by the choices of the other four alternative CG mechanisms (*LEV*, *BLKOWN*, *INSOWN*, and *BSIZE*) and the exogenous variables, including growth (*GROWTH*), capital expenditure (*CAPEX*), gearing (*GEAR*), firm size (*LNTA*), audit firm size (*BIG4*), the presence of a CG committee (*CGCOM*), crosslisting (*CROSLIST*), industry (*INDUST*) and year dummies (*YD*). Labelling all nine exogenous variables simply as *EXOGENOUS*, the first equation in the system to be estimated is specified as:

$$\begin{aligned} SACGI_{it} = \alpha_0 + \beta_1 LEV_{it} + \beta_2 BLKOWN_{it} + \beta_3 INSOWN_{it} \\ + \beta_4 BSIZE_{it} + \beta_5 Q_{it} + \sum_{i=1}^{n} \beta_i EXOGENOUS_{it} + \varepsilon_{it} \end{aligned} \tag{2}$$

Leverage (LEV). Greater debt usage can reduce the agency costs of 'free cash flows' (Jensen, 1986). Therefore, the second dependent variable in our system is leverage (*LEV*). Bevan and Danbolt (2004) report that *LEV* is positively correlated with firm size, but negatively associated with profitability. Hence, we expect *LEV* to correlate positively with firm size (*LNTA*), but be negatively related to *Q*. Also, as debt increases credit risks and bankruptcy costs (Jensen, 1986), which may inhibit the capacity to exploit investment and growth opportunities, we expect growth (*GROWTH*) and investment (*CAPEX*) potential to be negatively associated with *LEV*. *LEV* is also expected to differ across industries (*INDUST*) and over time (*YD*). Naming all five exogenous variables simply as *EXOGENOUS*, the second equation in the system to be estimated is specified as:

$$
\begin{aligned}
LEV_{it} = \alpha_0 + \beta_1 SACGI_{it} + \beta_2 BLKOWN_{it} + \beta_3 INSOWN_{it} \\
+ \beta_4 BSIZE_{it} + \beta_5 Q_{it} + \sum_{i=1}^{n} \beta_i EXOGENOUS_{it} + \varepsilon_{it}
\end{aligned}
\tag{3}
$$

Block Ownership (BLKOWN). Greater managerial monitoring associated with block ownership can minimise agency costs and improve firm value (Jensen & Meckling, 1976). In contrast, block owners can connive with managers to engage in tunnelling at the expense of minority owners (Haniffa & Hudaib, 2006). Hence, the third dependent variable in our system is block ownership (*BLKOWN*). It costs more to buy a proportion of shares in larger firms (Beiner et al., 2006), and *BLKOWN* is expected to relate negatively to firm size (*LNTA*). Agrawal and Knoeber (1996) suggest that it is more attractive to hold shares in firms with greater growth and investment opportunities, and as such we predict that growth (*GROWTH*) and investment (*CAPEX*) potential will be positively related to *BLKOWN*. Also, gearing (*GEAR*) is expected to correlate negatively with *BLKOWN* as firms with *BLKOWN* are anticipated to use less debt (Bar et al., 1995; Ntim, 2009). *BLKOWN* is also expected to differ across industries (*INDUST*) and over time (*YD*). Calling all six exogenous variables simply as *EXOGENOUS*, the third equation to be estimated in the system is specified as:

$$
\begin{aligned}
BLKOWN_{it} = \alpha_0 + \beta_1 SACGI_{it} + \beta_2 LEV_{it} + \beta_3 INSOWN_{it} \\
+ \beta_4 BSIZE_{it} + \beta_5 Q_{it} + \sum_{i=1}^{n} \beta_i EXOGENOUS_{it} + \varepsilon_{it}
\end{aligned}
\tag{4}
$$

Institutional Ownership (INSOWN). Due to their relative financial clout, institutional shareholders can impact positively on CG structures and *Q* (Barr et al., 1995). Hence, the fourth dependent variable in our system is institutional ownership (*INSOWN*). It is more attractive to hold shares in larger firms with greater growth and investment potential (Agrawal & Knoeber, 1996), and as such, we expect growth (*GROWTH*), capital expenditure (*CAPEX*), firm size (*LNTA*) and the presence of a CG committee (*CGCOM*) to correlate positively with *INSOWN*.

Also, *INSOWN* is expected to differ across industries (*INDUST*) and over time (*YD*). Hence, referring to all six exogenous variables simply as *EXOGENOUS*, the fourth equation to be estimated in the system is specified as:

$$\begin{aligned} INSOWN_{it} = \alpha_0 + \beta_1 SACGI_{it} + \beta_2 LEV + \beta_3 BLKOWN_{it} \\ + \beta_4 BSIZE_{it} + \beta_5 Q_{it} + \sum_{i=1}^{n} \beta_i EXOGENOUS_{it} + \varepsilon_{it} \end{aligned} \quad (5)$$

Board Size (BSIZE). Larger boards are associated with increased monitoring and greater opportunities to secure critical business resources that can enhance firm value (Haniffa & Hudaib, 2006). By contrast, Guest (2009) suggests that larger boards tend to be associated with greater free-riding and lower *Q*. Therefore, the fifth dependent variable in our system is board size (*BSIZE*). Smaller firms have greater growth prospects (Chen et al., 2010), and as such, we expect capital expenditure (*CAPEX*) and growth (*GROWTH*) to relate negatively to *BSIZE*. Also, it is expected that firm size (*LNTA*), crosslisting (*CROSLIST*), audit firm size (*BIG4*), gearing (*GEAR*) and the presence of a CG committee (*CGCOM*) will relate positively to *BSIZE*. Board size is also expected to vary across industries (*INDUST*) and over time (*YD*). Calling all nine exogenous variables simply as *EXOGENOUS*, the fifth equation to be estimated in the system is specified as:

$$\begin{aligned} BSIZE_{it} = \alpha_0 + \beta_1 SACGI_{it} + \beta_2 LEV_{it} + \beta_3 BLKOWN_{it} \\ + \beta_4 INSOWN_{it} + \beta_5 Q_{it} + \sum_{i=1}^{n} \beta_i EXOGENOUS_{it} + \varepsilon_{it} \end{aligned} \quad (6)$$

Firm Value (Q). Finally, to examine the link between *Q* and the five CG mechanisms, the dependent variable in the last equation in our system is *Q*. All the control variables included in equation (1) are labelled simply as *CONTROLS*. Therefore, the final equation to be estimated in the system is specified as:

$$
\begin{aligned}
Q_{it} = \alpha_0 + \beta_1 SACGI_{it-1} + \beta_2 LEV_{it-1} + \beta_3 BLKOWN_{it-1} + \beta_4 INSOWN_{it-1} \\
+ \beta_5 BSIZE_{it-1} + \sum_{i=1}^{n} \beta_i CONTROLS_{it-1} + \varepsilon_{it-1}
\end{aligned} \tag{7}
$$

EMPIRICAL RESULTS

Empirical Results: Descriptive Statistics and Univariate Regression Analysis

Table 3 reports descriptive statistics of all variables included in our regression analysis. It shows that Tobin's *Q* ranges from a minimum of 0.72 to a maximum of 3.60[7] with an average of 1.56, indicating wide variation in market valuation among the sampled firms. Our alternative firm value proxies (*TSR* and *ROA*), as well as the *SACGI* and the Social-*SACGI* also show wide spreads. For example, the *SACGI* suggests that the scores range from a minimum of 6% (3 out of 50) to a maximum of 98% (49 out of 50) with the average firm complying with 61% of the 50 CG provisions analysed, an indication that a high degree of heterogeneity exists when it comes to the importance SA firms attach to CG.

Insert Table 3 about here

Table 3 also indicates that, on average, compliance with the *Social*-*SACGI* is higher than with the overall *SACGI*. For example, the median firm in our sample complied with 78% of the *Social*-*SACGI* compared with 64% for the *SACGI*, evidence (as discussed further below) that may be explained by political cost, legitimacy and resource independence theories. The alternative CG mechanisms (*LEV*, *BSIZE*, *BLKOWN* and *INSOWN*), as well as the exogenous variables, suggest wide spreads. This implies that the CG provisions and the sampled firms have been appropriated selected, and thus reduces the possibilities of sample selection bias that have arguably plagued much of the prior studies (Durnev & Kim, 2005; Renders et al., 2010).

OLS regression is used to test all our hypotheses, and OLS assumptions of multicollinearity, autocorrelation, normality, homoscedasticity, and linearity are tested. Table 4 contains the correlation matrix for all variables included in our analysis to test for multicollinearity, and as a robustness check, we report both the Pearson's parametric and Spearman's non-parametric coefficients. Both the magnitude and direction of the coefficients of the parametric and non-parametric correlations appear very similar, suggesting that no serious non-normality problems remain.

Insert Table 4 about here

Apart from the expected high significant correlation between the *SACGI* and its sub-index, the *Social*-*SACGI*, both matrices suggest that correlations among the variables are relatively low, indicating that no major multicollinearity problems exist. We further investigated (for brevity not reported here, but available upon request) scatter plots for *P-P* and *Q-Q*, studentised residuals, Cook's distances and Durbin-Watson statistics. The tests suggested no serious violation of the OLS assumptions of homoscedasticity, linearity, normality and autocorrelation, respectively. Of interest, and in line with prior studies (Klapper & Love, 2004; Morey et al., 2009), the *SACGI* is significant and positively related to *Q*, suggesting that better-governed firms tend to be associated with higher market valuation. Additionally, there are significant relationships between the alternative CG mechanisms. For example, block ownership correlates negatively with the *SACGI*, implying that it appears to serve as a substitute for better CG practices. In contrast, board size and institutional ownership correlate positively with the *SACGI*, indicating that the three CG mechanisms are complements.

Empirical Results: OLS (Multivariate) Regression Analysis

Table 5 reports OLS regression results of *Q* on the *SACGI*. Column 3 of Table 5 first presents the results of a simple regression of *Q* on the *SACGI* only, whilst columns 4 to 9 contain the results of a regression of *Q* on the *SACGI* and the control variables for the pooled[8] sample in addition to a regression for each of the 5 firm-years, respectively. As hypothesised, Column 3 of Table 5 shows that the *SACGI* is positive (0.003) and statistically significant (p<.001). However, the significant coefficient on the constant term in column 3 of Table 5 seems to suggest that there may be omitted variables bias. Therefore, the control variables are added to the regressions and reported in columns 4 to 9 of Table 5 to control for potential omitted variables bias.

Insert Table 5 about here

Consistent with our prediction, the coefficient on the *SACGI* remains statistically significant and positive over the entire sample period. This implies that investors reward SA listed firms that have better CG standards with higher market valuation. An economic implication of our finding is that a positive one standard deviation change in the average firm's *SACGI* score from 61% to 80%, can be expected to be associated with an increase in its average market valuation (*Q*) by about 6% (19 x 0.003) from 1.56 to 1.65, *ceteris paribus*. Our results generally provide support to those of prior studies (Black et al., 2006; Renders et al., 2010), but specifically to those of past cross-country studies whose samples include a small number of SA firms (Klapper & Love, 2004; Durnev & Kim, 2005; Morey et al., 2009).

The coefficients on the control variables in the lower part of Columns 4 to 9 of Table 5 generally show the predicted signs. For example, and as hypothesised, audit firm size, crosslisting, growth and Q_{t-1} are positive and significantly associated with Q_t, while the coefficient on firm size is negative and significantly related to *Q* over the entire sample period. In line with the results of Henry (2008), the coefficients on the year dummies are significant, indicating that *Q* differs over time, but the insignificant coefficients on the industry dummies, except for consumer services firms, do not support the results of Beiner et al. (2006) and Haniffa & Hudaib (2006).

As previously explained, the uniqueness of our *SACGI* is that it incorporates nine SA context-specific affirmative action and stakeholder CG provisions (see section four of the Appendix). These issues are of great importance within the SA corporate context, due to the on-going policy debate as to whether given the voluntary nature of the CG regime, SA firms will voluntarily comply with these CG provisions (Maherbe & Segal, 2003). However, there are mixed theoretical positions regarding the impact that compliance with stakeholder CG provisions will have on firm value. Stakeholder theory (Kakabadse & Korac-Kakabadse, 2002) suggests that compliance with stakeholder CG provisions imposes additional financial costs on SA firms. In contrast, political cost, legitimacy and resources dependence theories (Andreasson, 2010) indicate that compliance with stakeholder CG provisions does not only help in reducing political costs, such as the risk of nationalisation, but also offer greater access to resources, such as tax holidays and profitable government contracts. To investigate the impact of complying with affirmative action and stakeholder provisions on firm value, we run a separate regression of *Q* on the *Social-SACGI*. We hypothesise a significant association between the *Social-SACGI* and *Q*, but given the mixed literature, we do not specify the direction of the coefficient.

Table 6 contains OLS regression results of *Q* on the Social-*SACGI*. Column 3 of Table 6 first reports the results of a simple regression of *Q* on the *Social-SACGI* alone, whereas columns 4 to 9 present the results of a regression of *Q* on the *Social-SACGI* and the control variables for the full sample in addition to a regression for each of the 5 firm-years, respectively. Column 3 of Table 6 shows that the coefficient on the *Social-SACGI* is positive (0.002) and significant (p<.001). The coefficient on the constant term in column 3 of Table 6 is also, however, significant, which implies that there may be omitted variables bias. As a result, to test that whether the positive relationship between the *Social-SACGI* and *Q* is spuriously caused by some omitted variables, the control variables are added to the regressions in columns 4 to 9 of Table 6.

Insert Table 6 about here

The coefficient on the *Social-SACGI* remains significant and positive over the entire sample period, but the magnitude of the coefficient fluctuates between 0.001 and 0.008. This implies that, on average, firms that comply better with the *Social-SACGI* tend to be associated with higher market valuation. The results also offer empirical support to political cost, legitimacy and resource dependence theories. Within the SA context, apart from being part of King II and the JSE's listing rules, some of the stakeholder provisions, such as employment equity and black empowerment are backed by statutory legislation. This implies that listed firms, and especially large companies, are more likely to voluntarily comply with the *Social-SACGI* in order to minimise potential political costs and legitimise their operations. Indeed, the significant positive correlation between the *Social-SACGI* and firm size in Table 3 supports this hypothesis. Crucially, and of particular relevance to basic materials and technology firms, securing and renewing profitable government and mining contracts, for instance, are normally linked to meeting black empowerment and employment equity targets (Malherbe & Segal, 2003). This means that compliance with the *Social-SACGI* may be a major way by which firms can gain access to valuable resources that can facilitate growth and improve long-term market valuation. This seems to serve as a major additional motivation for firms to voluntarily comply with the *Social-SACGI*, and hence, appears to explain the positive link between the *Social-SACGI* and *Q*.

ROBUSTNESS ANALYSIS

Our regression analysis so far does not take into account the existence of alternative CG mechanisms, firm value proxies, CG weighting scheme, other estimation techniques and endogeneity. The positive association between the *SACGI* and firm value, for example, could consequently be misleading. In this section, we examine how sensitive our results are to the presence of alternative CG mechanisms and endogenous relationships (especially simultaneous endogeneity), firm value proxies, CG weighting scheme, and firm-level fixed effects.

Results from a 2SLS Estimation of Equations (2) to (7)

Our analysis proceeds in two steps. First, we use OLS to estimate equation (7), which permits the existence of all the alternative CG mechanisms, but does not allow for interdependencies. The rationale is to ascertain what happens to the *SACGI* in the presence of alternative CG structures. Of special note, the results (for brevity not reported here, but available upon request) indicate that the *SACGI* remains positive and significant ($p<.001$) in the presence of other CG structures. Also, the coefficients on board size and institutional ownership are both significant ($p<.05$) and positively associated with Q, whereas leverage and block ownership are insignificantly related to Q. Noticeably, the positive association between board size and Q supports the results of Beiner et al. (2006), but rejects those of Guest (2009). Second, and following Agrawal and Knoeber (1996), we estimate equation (7) along with equations (2) to (6) as a system of simultaneous equations, using *2SLS*[9]. Specifically, in the first stage, we estimate each of equations (2) to (6) specified above along with their respective control variables, and the resulting predicted values (i.e., predicted part of each CG structure) are saved. In the second stage, we use the predicted parts as instruments[10] for the CG mechanisms, and equation (7) is estimated along with the control variables and their respective instruments using the *2SLS* technique. As previously explained, this procedure considers firm value (*Q*) as endogenous along with the five CG structures, which allows each of the CG mechanisms to affect all the others in order to detect complementary or substitution effects, but also permits *Q* to affect the choice of each CG structure.

Table 7 contains the results of a *2SLS* estimation of equations (2) to (7). Most importantly, the coefficient on the *SACGI* in Column 8 of Table 7 remains positive and significant (p<.01), implying that our finding of a positive relationship between the *SACGI* and *Q* is robust to endogeneity and/or the introduction of alternative CG mechanisms into the analysis. It also provides further empirical support to the results of prior studies (Beiner et al., 2006; Morey et al., 2009) that better-governed firms tend to be associated with higher market valuation. Our *2SLS* results reported in Column 8 of Table 7 further indicate that the coefficients on board size and institutional ownership remain significant and positive, whereas those of leverage and block ownership are still insignificant. The positive association between *Q* and board size again supports the results of Beiner et al. (2006), but contradicts those of Guest (2009).

Insert Table 7 about here

Additionally, the results in Table 7 reveal significant interdependencies among the five CG structures and *Q*. First, our results presented in Column 3 show that the coefficient on *Q* is positive and significant (p<.001), implying that higher *SACGI* scores is not only associated with higher firm valuation, but that there is a reverse association (i.e., SA firms with higher *Q* values also appear to adopt better CG practices). Consistent with our hypothesis, the findings contained in Column 3 suggest that larger board size, higher institutional ownership and greater leverage usage are significantly associated with higher *SACGI* scores, but higher block ownership is significantly related to lower *SACGI* values. This suggests substitutability between the *SACGI* and block ownership, an indication that firms with poor CG structures can compensate that with a dominant block shareholder. It also supports the view that firms optimally choose CG structures, whereby a greater use of one CG mechanism may lead to a lesser use of others, resulting in equally good performance.

Second, our results reported in Column 4 of Table 7 indicate that block ownership is positively and significantly related to leverage, rejecting our hypothesis that SA firms with significant block ownership are likely to use less debt. The insignificant link between *Q* and leverage also does not support capital structure and Jensen's (1986) 'free cash flow' theories that greater leverage is associated with higher market valuation. Third, our results contained in Column 5 of Table 7 indicate that there is a significant reverse association between block ownership and the *SACGI*, supporting our hypothesis that the two are substitutes. Institutional ownership, leverage and board size have a significant and positive relationship with block ownership, but firms with higher block ownership do not necessarily receive lower market valuation. Fourth, consistent with our predictions, the results reported in Column 6 reveal that there is a significant complementary relationship between institutional ownership and the *SACGI*, and also between institutional and block ownerships. The results imply that due to greater financial strength, firms with greater institutional ownership tend to have better CG standards. Finally, the results presented in Column 7 of Table 7 show that firms with higher *SACGI* scores and institutional ownership tend to be significantly associated with larger boards, revealing that the three CG mechanisms are complements.

Alternative Firm Value Proxies, CG Weights and Firm-Level Fixed Effects

In this final subsection, we conduct three further sets of sensitivity analyses, specifically relating to alternative firm value proxies, CG weights and estimation techniques. First, we investigate how sensitive our results are to two alternative firm value proxies: total share returns (*TSR* – a market based measure) and return on assets (*ROA* – an accounting based proxy). As previously noted, these firm value measures have been used widely within the CG literature (Gompers et al., 2003; Renders et al., 2010). As with *Q*, better-governed firms are expected to be associated with higher ROA and TSR. Table 8 reports regression results based on the alternative firm value proxies, CG weights and estimation technique. Columns 3 and 4 contain OLS regression results of *TSR* on the *SACGI* without and with the control variables, respectively, while Columns 5 and 6 report similarly for the *ROA*. Our results show that the coefficients on the *SACGI* in Columns 3 to 6 remain positive and significant, at least at the 5% level. This indicates that our results are robust when a market (*TSR*) or an accounting (*ROA*) based measure of firm value is used instead of Tobin's *Q*.

Insert Table 8 about here

Second, and similar to Beiner et al. (2006), we examine whether our results depend on the weighting of the five sections of our *SACGI*. As previously noted, all 50 provisions forming the *SACGI* are equally weighted, but the number of provisions varies across the five sections. Thus, this simple equal weighting scheme results in different weights being assigned to each of the five sections: board, directors, and ownership (54%); accounting and auditing (12%), risk management, internal audit and control (10%); integrated sustainability reporting (18%); and compliance and enforcement (6%). To ascertain whether our results are sensitive to the weighting of the five sections, we construct an alternative *SACGI*, defined as *Weighted-SACGI*, in which each of the five sections is awarded equal weight of 20%. Our results reported in Columns 7 and 8 of Table 8 indicate that the coefficients of the *Weighted-SACGI* in the analysis of the cross-sectional variation in *Q* are positive and significant (*p*<.10), suggesting that our results are robust to this alternative weighting scheme.

Finally, as firms tend to differ in the opportunities and challenges that they encounter over time, this can result in a situation where CG and firm value are jointly and dynamically determined by unobserved firm-specific variables (Henry, 2008; Guest, 2009), which simple OLS regressions may be unable to detect. Thus, given the panel nature of our data and in line with Henry (2008) and Guest (2009), we estimate a fixed effects model to account for possible unobserved firm-level heterogeneity. This involves re-estimating equation (1), with the inclusion of 168 dummies to represent the 169 sampled firms. Our fixed effects results contained in Column 9 of Table 8 show that the coefficient on the *SACGI* remains positive and significant (*p*<.10), an indication that our results are robust to potential unobserved firm-level heterogeneity. Overall, the results from our robustness tests make us reasonably confident that our main evidence of a positive link between CG and firm value in SA is not falsely driven by any form of endogeneity.

SUMMARY AND CONCLUSIONS

The paper investigates the relationship between a broad corporate governance (CG) index and firm value using a sample of 169 post-Apartheid South African (SA) listed firms from 2002 to 2007 and 50 CG provisions based on the 2002 King Report (King II). SA is a particularly interesting country to analyse. Historically, it has a predominantly Anglo-American CG model, with firms expected to primarily promote the interests of shareholders. However, post-Apartheid CG reforms have attempted to distinctively superimpose substantial affirmative action and stakeholder demands aimed at addressing historical socio-economic inequalities between white and non-white South Africans, such as black empowerment and HIV/Aids CG provisions on listed firms to explicitly comply with. This makes the South African CG model unique and a hybrid of the traditional 'shareholding' and 'stakeholding' models of CG. The SA corporate context is further characterised by deep equity culture, concentrated ownership, high levels of institutional ownership and weak enforcement of corporate regulations, but conspicuously a dearth of empirical evidence.

First, our main conclusion is that we find a significant and positive association between good CG practices (*SACGI*) and Tobin's *Q* (*Q*), implying that better-governed SA firms tend to be associated with higher market valuation. Distinct from most prior studies, our evidence is robust to different forms of endogeneity, as well as different types of accounting and market-based firm value proxies. Second, the distinctive features of the South African CG framework allows us to uniquely analyse the relationship between complying with affirmative action and stakeholder CG provisions (*Social-SACGI*) and the market value of SA listed firms. Our results show that SA firms that comply better with the stakeholder CG provisions tend to be associated with higher market valuation. The results provide empirical support to political cost, legitimacy and resource dependence theories. Within the SA corporate context, compliance with stakeholder CG provisions appears to be a major way by which listed firms can reduce political costs, such as the risk of nationalisation, and also gain access to resources, such as profitable government contracts to facilitate growth and improve long-term firm value.

Third, different from most past studies, our results place emphasis on the need to account for possible interdependencies among alternative CG mechanisms (board size, leverage, block, and institutional ownerships) and *Q* using two-stage least squares (*2SLS*). The rationale is to ascertain whether our broad CG index (*SACGI*) is simultaneously and dynamically determined by firm value (*Q*), as well as the other four CG mechanisms. Most importantly, the *2SLS* results show that our *SACGI* remains positively and significantly related to *Q* in the presence of the other four CG mechanisms. However, the *2SLS* results also suggest that there is a reverse association between our broad CG index and *Q* (i.e., higher *SACGI* scores may not only be associated with higher *Q*, but also SA firms with higher *Q* appear to adopt better CG practices). We also find evidence of significant interdependencies among the five CG mechanisms, including a negative relationship between block ownership and the *SACGI*, implying that SA firms with poor CG structures can compensate for that with a dominant block shareholder without necessarily receiving lower market valuation. This re-enforces the need for future research to fully take into account possible alternative CG mechanisms in order to produce robust evidence.

Fourth, our results have important policy and regulatory implications. The prior literature suggests that a good CG framework is crucial to corporate success, and our results suggest that the market rewards firms with better CG practices with higher market valuation. As an emerging market, good CG practices are particularly important as this may not only help reduce corporate failures, but also assist companies to attract foreign direct investments, which may facilitate faster economic growth and development in SA. In this respect, efforts by the SA Institute of Directors, the Department of Trade and Industry, the King Committee, and the JSE at improving CG standards in SA companies is laudable. The significant positive link between the *Social-SACGI* and firm value implies that SA listed firms may need to pay serious attention to complying with the affirmative action and stakeholder provisions and also in preparing the integrated sustainability report.

Finally, whilst our findings are important and robust, some caveats are in order. We use a binary coding scheme which treats every CG mechanism as equally important. Whilst results based on our equally weighted *SACGI* and the alternatively weighted index are essentially similar, future studies may enrich their analysis by constructing weighted and un-weighted CG indices. Also, due to data limitations, we use only four alternative CG structures in our 2SLS analysis. As more data becomes available, future studies may need to introduce more mechanisms, such as data on the market for corporate control, in their analysis.

NOTES

1. The largest nine SA firms are: Anglo American, De Beers, Dimension Data, First Rand, M-Cell, NEDCOR, Old Mutual, South African Brewery, and Standard Bank Investment (CLSA, 2000: 63). Apart from being extremely large as the average firm size of the CLSA sample is $9.4bn (CLSA 2000: 9) compared to R6.2bn or $821m in our sample, four of the nine firms: Old Mutual, First Rand, NEDCOR, and Standard Bank Investment are financials (CLSA, 2000: 13). As noted below, due to regulatory and capital structure reasons, financial and utility firms are excluded from our sample.
2. For regulatory and capital structure reasons, as well as following prior studies (Henry, 2008; Chen et al., 2010), the financial and utilities industries, with a total 111 listed firms, were excluded, leaving us with eight industries and 291 listed firms to be sampled.
3. It takes time for the effects of governance mechanisms to reflect in firm value (Render et al., 2010). Hence, to avoid endogenous association between firm value and CG, we introduce a one year lag between CG and firm value such that a firm's value in any year (Q_t) depends on the previous year's governance structure (CG_{t-1}), similar to Haniffa and Hudaib (2006) and Renders et al. (2010). The sample begins from 2002 because data coverage in the *Perfect Information Database/DataStream* on SA listed firms is very limited until 2002 and also because King II came into operation in 2002.
4. As Panel *B* of Table 1 shows, for the 122 remaining firms, two or more years' financial data and annual reports were not available in the *DataStream/Perfect Information Database*. For the other 28 companies, both financial data and annual reports were not available.
5. For robust results, alternative accounting (return on assets - ROA) and market (total share returns - TSR) based measures of firm value for which data is available is introduced in Section five. These proxies measure the efficiency and effectiveness with which a firm uses its assets to generate accounting profits (ROA), as well as maximise market value (TSR). As with *Q*, firms with effective CG structures are expected to be related to higher ROA and TSR. Previous studies indicate that insiders (managers) and outsiders (investors) value CG differently (Black et al., 2006; Haniffa & Hudaib, 2006). As such, the accounting (ROA) and market (TSR) alternative firm value proxies attempt to measure the wealth effects of CG structures from the perspectives of insiders (managers) and outsiders (investors), respectively. As with *Q*, they have been used widely, and so their empirical validity is grounded in a rigorously established empirical literature (Klapper & Love, 2004; Guest, 2009).
6. For lack of sufficient number of observations in three industries, namely health care, oil & gas, and telecommunications industries with three, one and three listed firms, respectively, observations from these industries were merged with the closest remaining five major industries. As a result (see Panel *B* of Table 1), the three *health care* firms were added to the *consumer services* industry, the one *oil & gas* firm was

included in the *basic materials* industry, while the three *telecommunications* companies were included in the *technology firms*.

7. To minimise the effects of outliers, and following Renders et al. (2010), we winsorise all the variables at the conventional 1% and 99% levels. However, the whole regression analysis was first run with the outliers included, and the results were essentially the same. The main rationale for winsorising is to minimise potential serious violations of the OLS assumptions.
8. To ensure that the residuals of a given firm may not be correlated across different years (time-series dependence) or firms (cross-sectional dependence) within our five-year panel (Gujarati, 2003), and following Pertersen (2009), we apply the empirically robust *Clustered Standard Errors* technique to estimate the coefficients. Further, we estimate separate regressions for each of the five firm-years, in addition to estimating a firm-level fixed effects model to minimise potential residual dependence.
9. To ensure that the *2SLS* technique is appropriate, and following Beiner et al. (2006), we first carried out the *Durbin-Wu-Hausman* test (see Beiner et al., 2006: 267 for a detailed description of the procedure) to test for the endogeneity of the CG mechanisms and *Q*. Applied to equation 7, the *Durbin-Wu-Hausman* exogeneity test rejects the null hypothesis of no endogeneity at the 5% level. Thus, we conclude that *2SLS* technique is appropriate and that our OLS results may be misleading (i.e., biased and inconsistent).
10. The order-condition for identifying a system suggests that the number of exogenous variables excluded from any equation must be greater than or equal to the number of endogenous variables included minus one (Gujarati, 2003; Beiner et al., 2006). Our system of equations consists of nine exogenous and six endogenous variables. Hence, at least three of our exogenous variables must be excluded from any single equation to identify the system. However, following prior research (Beiner et al., 2006; Larcker & Rusticus, 2010), equations (2) to (7) are separately developed based on theory, logic and data availability without excessive regard to meeting the order-condition. As over-identification cannot jeopardise our system (Gujarati, 2003; Beiner et al., 2006), all our six equations are over-identified. Also, we carried out a Sargan test for instrument exogeneity, but could not be rejected (at least at the 10% level) for all six equations. We are, therefore, reasonably certain that our instruments are exogenous and our system is not misspecified.

APPENDIX

Full List of the South African Corporate Governance Index Provisions Based on King II

SECTION 1: BOARD, DIRECTORS AND OWNERSHIP

1. Whether the roles of chairperson and CEO/MD are split.
2. Whether the chairperson of the board is an independent non-executive director.
3. Whether the board is composed by a majority of non-executive directors (NEDs).
4. Whether the board meets at least four times in a year.
5. Whether individual directors' meetings record is disclosed.
6. Whether directors are clearly classified into executive, NED, and independent.
7. Whether chairperson's performance and effectiveness is evaluated and disclosed.
8. Whether CEO/MD's performance and effectiveness is appraised and disclosed.
9. Whether the board's performance and effectiveness is evaluated and disclosed.
10. Whether the board subcommittees' performance and effectiveness is evaluated.
11. Whether directors' biography, experience and responsibilities are disclosed.
12. Whether a policy that prohibits directors, officers and employees (insider) share dealings around the release of price sensitive information is disclosed.
13. The existence of the office of company secretary.
14. Whether a nomination committee has been established.
15. Whether the nomination committee consists of a majority independent NEDs.
16. Whether the chairperson of the nomination committee is an independent NED.
17. Whether the membership of the nomination committee is disclosed.
18. Whether the nomination committee's members' meetings attendance record is disclosed.
19. Whether a remuneration committee has been established.
20. Whether the remuneration committee is constituted entirely by independent NEDs.
21. Whether the chairperson of the remuneration committee is an independent NED.
22. Whether the membership of the remuneration committee is disclosed.
23. Whether the remuneration committee's members' meetings attendance record is disclosed.
24. Whether directors' remuneration, interests, and share options are disclosed.
25. Whether director remuneration philosophy and procedure is disclosed.
26. Whether directors' have access to free independent professional legal advice.
27. Whether share ownership by all insiders, including directors, officers, employees and employees' trust is less than 50% of the total company shareholdings.

SECTION 2: ACCOUNTING AND AUDITING

28. Whether an audit committee has been established.
29. Whether the audit committee is constituted by at least 2 independent NEDs with significant professional financial training and experience.
30. Whether the chairperson of the audit committee is an independent NED.
31. Whether the membership of the audit committee is disclosed.
32. Whether the audit committee's members' meetings attendance record is disclosed.
33. Whether a board statement on the going-concern status of the firm is disclosed.

SECTION 3: RISK MANAGEMENT, INTERNAL AUDIT AND CONTROL

34. Whether a risk management committee has been established.
35. Whether the risk committee's members' meetings attendance record is disclosed.
36. Whether a narrative on both actual and potential future systematic and non-systematic risks is disclosed.
37. Whether a narrative on existing internal control systems (including internal audit) is disclosed.
38. Whether a narrative on how current and future assessed company risks will be managed is disclosed.

SECTION 4: INTEGRATED SUSTAINABILITY REPORTING (NON-FINANCIALS)

39. Whether a narrative on how a firm is actually complying with and implementing the broad-based black economic empowerment and empowerment of women laws, including black equity ownership, preferential procurement, enterprise development, and executive management control is disclosed.
40. Whether a narrative on how a firm is actually complying with and implementing employment equity laws in terms of gender, age, ethnicity and disabilities is disclosed.
41. Whether a narrative on how a firm is addressing the threat posed by HIV/Aids pandemic in South Africa is disclosed.
42. Whether a narrative on the actual measures taken by a firm to address occupational health and safety of its employees is disclosed.
43. Whether a narrative on how a firm is actually complying with and implementing rules and regulations on the environment is disclosed.
44. Whether a narrative on the existence of a code of ethics is disclosed.
45. Whether a firm's board is formed by at least 1 white and 1 non-white (board diversity on the basis of ethnicity) person.
46. Whether a firm's board is formed by at least 1 male and 1 female (board diversity on the basis of gender) person.
47. Whether a narrative on the actual community support and other corporate social investments or responsibilities is disclosed.

SECTION 5: ENCOURAGING VOLUNTARY COMPLIANCE AND ENFORCEMENT

48. Whether a positive statement on the compliance or non-compliance with the corporate governance provisions of King II is disclosed.
49. Whether a narrative on how a firm is contributing towards the development of financial journalism is disclosed.
50. Whether a narrative on what a firm is doing to encourage shareholder activism, like having investor relations department and proxy voting is disclosed.

REFERENCES

Agrawal, A. & Knoeber, C. R. 1996. Firm performance and mechanisms to control agency problems between managers and shareholders. ***Journal of Financial & Quantitative Analysis***, 31: 377-389.

Aguilera, R. V. & Cuervo-Cazurra, A. 2009. Codes of good governance. ***Corporate Governance: An International Review***, 17: 376-387.

Andreasson, S. 2010. Understanding corporate governance reforms in South Africa: Anglo-American divergernce, the King reports and hybridization. ***Business & Society***, forthcoming.

Barr, G., Gerson, J., & Kanto, B. 1995. Shareholders as agents and principals: the case for South Africa's corporate governance system. ***Journal of Applied Corporate Finance***, 8: 18-31.

Baur, R. Gunster, N., & Otten, R. 2004. Empirical evidence on corporate governance in Europe: The effect on stock returns, firm value, and performance. ***Journal of Asset Management***, 5: 91-104.

Beattie, V., McInnes, B., & Fearnley, S. 2004. A methodology for analysing and evaluating narratives in annual reports: a comprehensive descriptive profile and metrics for disclosure quality attributes. ***Accounting Forum***, 28: 205-236.

Bebchuk, L., Cohen, A., & Ferrell, A. 2009. What matters in corporate governance?, ***Review of Financial Studies***, 22: 783-827.

Beiner, S., Drobetz, W., Schmid, M. M., & Zimmermann, H. 2006. An integrated framework of corporate governance and firm valuation. ***European Financial Management***, 12: 249-283.

Bevan, A. A. & Danbolt, J. 2004. Testing for inconsistencies in the estimation of UK capital structure determinants. ***Applied Financial Economic***, 14: 55-66.

Bhagat, S. & Bolton, B. 2008. Corporate governance and firm performance. ***Journal of Corporate Finance***, 14: 257-273.

Black, B. S. 2001. The corporate governance behaviour and market value of Russian firms. ***Emerging Markets Review***, 2: 89-108.

Black, B. S. & Khanna, V. S. 2007. Can corporate governance reforms increase firms' market values? Event study evidence from India. ***Journal of Empirical Legal Studies***, 4: 749-796.

Black, B. S., Jang, H., & Kim, W. 2006. Does corporate governance predict firm's market values? Evidence from Korea. ***Journal of Law, Economics & Organization***, 22: 366-413.

Chen, W.-P., Chung, H., Hsu, T.-L., & Wu, S. 2010. External financing needs, corporate governance, and firm value. ***Corporate Governance: An International Review***, 18: 234-249.

Chung, K. H. & Pruitt, S. W. 1994. A simple approximation of Tobin's Q. ***Financial Management***, 23: 70-74.

Credit Lyonnais Securities Asia (CLSA) 2000. ***The Tide's Gone Out: Who's Swimming Naked***?, Credit Lyonnais Securities Asia, Hong Kong.

Core, J. E., Guay, W. R., & Rusticus, T. O. 2006. Does weak governance cause weak stock returns? An examination of firm operating performance and analysts' expectations. ***Journal of Finance***, 61: 655-687.

Cremers, K. J. M. & Nair, V. B. 2005. Governance mechanisms and equity prices. ***Journal of Finance***, 60: 2859-2894.

DeAngelo, L. E. 1981. Auditor size and auditor quality. *Journal of Accounting and Economics*, 3: 181-199.

Drobetz, W., Schillhofer, A., & Zimmermann, H. 2004. Corporate governance and expected stock returns: evidence from Germany', ***European Financial Management***, 10: 267-293.

Durnev, A. & Kim, E. H. 2005. To steal or not to steal: firm attributes, legal environment, and valuation. ***Journal of Finance***, 60: 1461-1493.
Garay, U. & González, M. 2008. Corporate governance and firm value: the case of Venezuela. ***Corporate Governance: An International Review***, 16: 194-209.
Gompers, P., Ishii, J. & Metrick, A. 2003. Corporate governance and equity prices. ***Quarterly Journal of Economics***, 118: 107-155.
Guest, P. M. 2009. The impact of board size on firm performance: evidence from the UK. ***European Journal of Finance***, 15: 385-404.
Gujarati, D. N. 2003. ***Basic econometrics.*** New York: McGraw-Hill.
Haniffa, R. & Hudaib, M. 2006. Corporate governance structure and performance of Malaysian listed companies', ***Journal of Business, Finance & Accounting***, 33: 1034-1062.
Henry, D. 2008. Corporate governance structure and the valuation of Australian firms: is there value in ticking the boxes. ***Journal of Business Finance & Accounting***, 35: 912-942.
Khanchel El Mehdi, I. 2007. Empirical evidence on corporate governance and corporate performance in Tunisia. ***Corporate Governance: An International Review***, 15: 1429-1441.
King Committee. 1994 & 2002. ***King reports on corporate governance for South Africa.*** Johannesburg: Institute of Directors.
Jensen, M. C. 1986. Agency costs of free cash flow, corporate finance, and takeovers. ***American Economic Review***, 76: 323-329.
Jensen, M. C. & Meckling, W. H. 1976. Theory of the firm: managerial behaviour, agency costs and ownership structure. ***Journal of Financial Economics***, 3: 305-360.
Kakabadse, A. & Korac-Kakabadse, N. 2002. Corporate governance in South Africa: evaluating the King II report. ***Journal of Change Management***, 2: 305-317.
Klapper, L. F. & Love, I. 2004. Corporate governance, investor protection, and performance in emerging markets. ***Journal of Corporate Finance***, 10: 703-728.
Larcker, D. F. & Rusticus, T. O. 2010. On the use of instrumental variables in accounting research. ***Journal of Accounting and Economics***, 49: 186-205.
London Stock Exchange (LSE) 2007. Corporate governance update – CSR reporting is "excessive burden". ***Corporate Governance: An International Review***, 15: 96-100.
Malherbe, S. & Segal, N. 2003. South Africa: After Apartheid. In C. P. Oman (Eds.), ***Corporate governance in development, the experiences of Brazil, Chile, India, and South Africa*: 247-251.** Washington, OECD.
Mangena, M. & Chamisa, E. 2008. Corporate governance and incidences of listings suspension by the JSE Securities Exchange of South Africa: an empirical analysis. ***International Journal of Accounting***, 43: 28-44.
Morey, M., Gottesman, A., Baker, E. & Godridge, B. 2009. Does better corporate governance result in higher valuations in emerging markets? Another examination using a new data set. ***Journal of Banking and Finance***, 33, 254-262.
Ntim, C. G. 2009. ***Internal corporate governance and firm financial performance: evidence from South African listed firms.*** Unpublished doctoral thesis, Glasgow: University of Glasgow.
Petersen, M. A. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. ***Review of Financial Studies***, 22: 435-480.
Renders, A., Gaeremynck, A., & Sercu, P. 2010. Corporate-governance ratings and company performance: A cross-European study. ***Corporate Governance: An International Review***, 18: 87-106.

TABLE 1
Summary of the Sample Selection Procedure

Panel A: Industrial composition of firms listed on the JSE available to be sampled as at 31/12/2007		*No. in each industry*	*Percentage of sample*
Industrials		81	27.8
Basic materials		67	23.0
Consumer services		62	21.3
Consumer goods		36	12.4
Technology		31	10.7
Health care		7	2.4
Telecommunications		4	1.4
Oil and gas		3	1.0
Total firms available to be sampled		*291*	*100.0*
Less: Firms with no year's data available	28		
Firms with some years' data missing	94	122	41.9
Total sampled firms with full data		*169*	*58.1*

Panel B: Industrial composition of sampled firms with full data	*No. in each industry*	*Percentage of sample*
Industrials	51	30.2
Consumer services	35	20.7
Basic materials	33	19.5
Consumer Goods	24	14.2
Technology	19	11.2
Health care	3	1.8
Telecommunications	3	1.8
Oil and gas	1	0.6
Total sampled firms with full data	*169*	*100.0*

Source: The JSE Ltd.

TABLE 2
Summary of Variables

Firm Value/CG (Endogenous) Variables	
Q	Ratio of total assets (wc02999) minus book value of equity (wc03501 +wc03451) plus market value (mv) of equity to total assets (wc02999).
ROA (%)	Ratio of operating profit (wc01250) to total assets (wc02999).
TSR (%)	Total share returns made up of share price and dividends.
SACGI	Corporate governance (CG) index containing 50 provisions from King II that takes a value of 1 if each of the 50 CG provisions is disclosed, 0 otherwise; scaled to a value between 0% and 100%.
S-SACGI	Defined as Social-*SACGI*. It is a sub-index of the *SACGI* containing 9 SA context specific affirmative action and stakeholder CG provisions that form the *SACGI*.
BSIZE	Natural log of the total number of directors on the board of a company.
BLKOWN	Percentage of shares held by shareholders with at least 5% of the total company shareholdings.
INSOWN	Percentage of shares held by institutional shareholders.
LEV (%)	Ratio of total debt (wc03255) to total assets (wc02999).
Control (Exogenous) Variables	
CGCOM	1, if a firm has set up a corporate governance committee, 0 otherwise
BIG4	1, if a firm is audited by a big four audit firm (PricewaterhouseCoopers, Deloitte & Touche, Ernst & Young, and KPMG), 0 otherwise.
CAPEX (%)	Ratio of total capital expenditure (wc04601) to total assets (wc02999).
CROSLIST	1, if a firm is crosslisted to a foreign stock market, 0 otherwise.
GEAR (%)	Ratio of total debt (wc03255) to market value (mv) of equity.
GROWT (%)	Current year's sales (wc01001) minus last year's sales to last year's sales.
INDUSTRY	Dummies for each of the five main industries: basic material + oil gas; consumer goods, consumer services + health care; industrials; and technology + telecommunications firms.
LNTA	Natural log of total assets (wc02999).
YEAR	Dummies for each of the five years from 2003 to 2007 inclusive.

Notes: The codes in parentheses refer to DataStream codes for the respective accounting and market variables used in the analysis.

TABLE 3
Descriptive Statistics of all Variables for all (845) Firm Years

Variable	Mean	Median	Std. Dev.	Maximum	Minimum
Tobin's Q	1.56	1.34	0.67	3.60	0.72
Return on assets	0.11	0.12	0.14	0.38	-0.19
Total share returns	0.28	0.25	0.89	2.36	-0.48
SACGI	0.61	0.64	0.19	0.98	0.06
Social-SACGI	0.69	0.78	0.27	1.00	0.00
Board size	9.75	10.00	3.67	18.00	4.00
Block ownership	0.62	0.65	0.18	0.92	0.10
Institutional ownership	0.74	0.82	0.23	0.98	0.09
Leverage	0.18	0.16	0.14	0.56	0.05
Growth	0.12	0.14	0.26	0.89	-0.44
Capital expenditure	0.13	0.08	0.15	0.66	0.07
Gearing	0.32	0.19	0.31	0.78	0.01
Firm size	5.86	6.02	0.48	7.83	4.24
CG committee	0.32	0.00	0.47	1.00	0.00
Audit firm size	0.73	1.00	0.44	1.00	0.00
Crosslisting	0.22	0.00	0.41	1.00	0.00

Notes: Table 2 above provides the full definitions of all the variables used.

TABLE 4

Correlation Matrix of all Variables for all (845) Firm Years

Variable	Q	SACGI	S-SACGI	BSIZE	BLKOWN	INSOWN	LEV	GROWTH	CAPEX	LNTA	GEAR	BIG4	CROSLIST	CGCOM
Q		.38***	.26***	.17***	-.03	.20***	-.13***	.09*	-.39***	.12***	-.40***	.13***	.17***	.18***
SACGI	.34***		.75***	.56***	-.16***	.30***	.04	.01	-.12**	.59***	-.08†	.40***	.41***	.44***
S-SACGI	.24***	.73***		.55***	-.08†	.30***	.04	.10*	-.04	.52***	-.08†	.31***	.39***	.47***
BSIZE	.12***	.58***	.51***		-.10*	.31***	.17***	.10*	.07	.53***	.08†	.39***	.38***	.31***
BLKOWN	.04	-.18***	-.08†	-.07		.41***	.04	.02	.06	-.14***	.02	-.02	-.03	-.14**
INSOWN	.15***	.31***	.32***	.28***	.37***		.05	.07	-.07	.28***	-.05	.10*	.26***	.24***
LEV	-.12***	-.00	.03	.13***	.10*	.10*		-.07	.33***	.19***	.59***	.01	.09*	.16***
GROWTH	.08†	.04	.09*	.09*	.03	.05	-.09*		-.04	.13***	-.10*	.01	-.02	.03
CAPEX	-.31***	-.20***	-.12***	-.08†	.05	-.08†	.32***	-.06		.09*	.41***	.08†	.05	-.01
LNTA	.08†	.53***	.51***	.50***	-.18***	.26***	.13***	.12***	-.04		.10*	.43***	.44***	.40***
GEAR	-.30***	.23***	-.18***	-.08†	.05	-.08†	.57***	-.07	.39***	-.04		-.02	-.05	.06
BIG4	.14***	.41***	.31***	.37***	-.06	.13**	-.03	.02	-.01	.42***	-.08†		.25***	.28***
CROSLIST	.17***	.40***	.38***	.37***	-.04	.18***	.04	-.01	-.10*	.42***	-.10*	.26***		.44***
CGCOM	.19***	.42***	.47***	.31***	-.13**	.24***	.13***	.04	-.09*	.37***	-.14***	.28***	.45***	

Notes: The bottom left half of the table presents Pearson's parametric correlation coefficients, whilst the upper right half of the table reports Spearman's non-parametric correlation coefficients. ***, **, * and † denote correlation is significant at the .1%, 1%, 5% and 10% level, respectively (two-tailed tests). Variables are defined as follows: Tobin's Q (*Q*), the South African Corporate Governance Index (the *SACGI*), the Social-*SACGI* (*S-SACGI*), board size (*BSIZE*), block ownership (*BLKOWN*), institutional ownership (*INSOWN*), leverage (*LEV*), growth (*GROWTH*), capital expenditure (*CAPEX*), firm size (*LNTA*), gearing (*GEAR*), audit firm size (*BIG4*), crosslisting (*CROSLIST*), and the presence of a corporate governance committee (*CGCOM*). Table 2 above provides the full definitions of all the variables used.

TABLE 5

OLS Regression Results of Tobin's *Q* (*Q*) on the South African Corporate Governance Index (SACGI) and Control Variables

	Exp. Sign	All firm years	All firm years	2003	2004	2005	2006	2007
Adjusted R^2		.04	.38	.18	.25	.19	.16	.21
Standard error		.66	.47	.54	.49	.52	.58	.51
Durbin-Watson		1.98	2.45	2.06	2.20	2.13	2.01	2.16
F-value		9.15***	12.38***	5.97***	7.43***	6.74***	4.95***	6.83***
Sample size (*N*)		845	845	169	169	169	169	169
Constant		.86(.00)***	.67(.00)***	.43(.00)***	.44(.00)***	.62(.00)***	.56(.00)***	.58(.00)***
SACGI	+	.003(.00)***	.004(.00)***	.003(.01)**	.004(.02)*	.002(.01)**	.001(.09)†	.005(.01)**
Audit firm size	+	-	.11(.09)†	.10(.10)†	.24(.04)*	.38(.01)**	.12(.06)†	.14(.13)
Capital expenditure	-/+	-	-.08(.64)	-.07(.59)	-.03(.40)	-.08(.65)	-.07(.48)	-.12(.10)†
Crosslisting	+	-	.11(.01)**	.19(.01)**	.23(.00)***	.20(.05)*	.18(.05)*	.26(.00)***
Firm size	-/+	-	-.18(.00)***	-.12(.01)**	-.18(.00)***	-.13(.01)**	-.14(.03)*	-.06(.08)†
Gearing	-/+	-	-.04(.68)	-.01(.44)	-.05(.36)	-.04(.37)	-.02(.39)	-.05(.45)
Growth	+	-	.05(.00)***	.09(.08)†	.06(.04)*	.12(.01)**	.03(.08)†	.01(.10)†
Q_{t-1}	+	-	.29(.00)***	.38(.00)***	.26(.00)***	.31(.00)***	.22(.00)***	.34(.00)***
Basic materials		-	.05(.43)	.09(.42)	.01(.58)	.19(.23)	.09(.30)	.07(.32)
Consumer services		-	.49(.00)***	.43(.05)*	.46(.01)**	.53(.01)**	.25(.06)†	.54(.01)**
Industrials		-	.04(.51)	.04(.63)	.05(.64)	.03(.44)	.08(.45)	.09(.38)
Technology		-	.14(.38)	.15(.42)	.18(.27)	.21(.48)	.20(.20)	.22(.20)
Year 2004		-	.20(.05)*	-	-	-	-	-
Year 2005		-	.18(.01)**	-	-	-	-	-
Year 2006		-	.20(.03)*	-	-	-	-	-
Year 2007		-	.23(.00)***	-	-	-	-	-

Notes: Coefficients are in front of parenthesis. ***, **, * and † denote p-value is significant at the .1%, 1%, 5% and 10% level, respectively (two-tailed tests). The consumer goods industry and year 2003 are captured by the constant term in the pooled analysis. Table 2 above provides the full definitions of all the variables used.

TABLE 6

OLS Regression Results of Tobin's *Q* (*Q*) on the Social-SACGI and Control Variables

	Exp. Sign	All firm years	All firm years	2003	2004	2005	2006	2007
Adjusted R^2		.04	.36	.17	.22	.18	.15	.20
Standard error		.68	.53	.66	.58	.64	.68	.55
Durbin-Watson		1.90	2.23	2.08	2.15	2.02	2.10	2.14
F-value		8.80***	11.42***	4.98***	6.47***	4.91***	4.80***	6.12***
Sample size (*N*)		845	845	169	169	169	169	169
Constant		.60(.00)***	.56(.00)***	.28(.01)**	.47(.00)***	.48(.00)***	.25(.01)**	.39(.00)***
Social-SACGI	-/+	.002(.00)***	.008(.00)***	.003(.05)*	.003(.01)**	.001(.06)†	.001(.09)†	.004(.01)**
Audit firm size	+	-	.11(.10)†	.13(.05)*	.16(.03)*	.14(.07)†	.12(.06)†	.17(.01)**
Capital expenditure	-/+	-	-.04(.65)	-.03(.63)	-.07(.54)	-.08(.43)	-.06(.38)	-.14(.09)†
Crosslisting	+	-	.12(.01)**	.10(.08)†	.22(.00)***	.12(.07)†	.20(.01)**	.16(.01)**
Firm size	-/+	-	-.23(.01)**	-.18(.07)†	-.14(.09)†	-.20(.08)†	-.18(.10)†	-.13(.09)†
Gearing	-/+	-	-.08(.54)	-.02(.69)	-.06(.58)	-.09(.49)	-.10(.43)	-.09(.45)
Growth	+	-	.20(.01)**	.22(.01)**	.24(.01)**	.19(.01)**	.18(.01)**	.26(.01)**
Q_{t-1}	+	-	.28(.00)***	.33(.00)***	.39(.00)***	.20(.00)***	.36(.00)***	.24(.00)***
Basic materials		-	.07(.43)	.04(.47)	.06(.47)	.09(.33)	.04(.66)	.06(.48)
Consumer serv.		-	.36(.00)***	.19(.09)†	.23(.01)**	.18(.10)†	.24(.03)*	.19(.10)†
Industrials		-	.06(.44)	.08(.38)	.09(.29)	.05(.60)	.03(.49)	.07(.31)
Technology		-	.07(.38)	.15(.41)	.15(.42)	.11(.38)	.08(.41)	.19(.32)
Year 2004		-	.18(.05)*	-	-	-	-	-
Year 2005		-	.17(.01)**	-	-	-	-	-
Year 2006		-	.19(.01)**	-	-	-	-	-
Year 2007		-	.23(.01)**	-	-	-	-	-

Notes: Coefficients are in front of parenthesis. ***, ** , * and † denote p-value is significant at the .1%, 1%, 5% and 10% level, respectively (two-tailed tests). The consumer goods industry and year 2003 are captured by the constant term in the pooled analysis. Table 2 above provides the full definitions of all the variables used.

Table 7

Regression Results from a Two-Stage Least Squares Estimation of Equations (2) to (7)

Dependent variable (*Equation*)	Exp. Sign	SACGI (*2*)	Leverage (*3*)	Blk. ownership (*4*)	Inst. ownership (*5*)	Board size (*6*)	Tobin's *Q* (*7*)
Adjusted R^2		.42	.12	.20	.26	.40	.45
Standard error		.43	.71	.63	.50	.47	.40
Durbin-Watson		2.38	1.98	2.18	2.21	2.23	2.40
F-value		12.69***	4.84***	7.50***	8.61***	9.90***	11.66***
Sample size (*N*)		845	845	845	845	845	845
Constant		-.20(.00)***	-.08(.20)	-.54(.00)***	-.60(.00)***	-.98(.00)***	-.44(.00)***
SACGI	+	-	.01(.18)	-.06(.00)***	.08(.00)***	.09(.01)**	.006(.01)**
Leverage	-/+	.04(.05)*	-	.08(.01)**	.03(.63)	.01(.69)	.04(.48)
Block ownership	-/+	-.08(.06)†	.10(.07)†	-	.09(.00)***	.05(.31)	-.01(.33)
Institutional ownership	+	.06(.01)**	.05(.43)	.12(.01)**	-	.09(.05)*	.08(.01)**
Board size	-/+	.11(.00)***	.02(.17)	.10(.01)**	.07(.58)	-	.23(.01)**
Q_{t+1}	+	.13(.00)***	-.03(.50)	-.01(.28)	.04(.62)	.10(.18)	-
Q_{t-1}	+	-	-	-	-	-	.35(.00)***
CG committee	+	.14(.01)**	-	-	.06(.65)	.19(.07)†	-
Audit firm size	+	.17(.01)**	-	-	-	.10(.09)†	.09(.18)
Capital expenditure	-/+	.06(.54)	.12(.05)*	.10(.01)**	.05(.14)	-.08(.00)***	.08(.20)
Crosslisting	+	.13(.01)**	-	-	-	.10(.09)†	.26(.01)**
Firm size	-/+	.17(.00)***	.08(.05)*	-.22(.00)***	.18(.00)***	.96(.00)***	-.33.(00)***
Gearing	-/+	.01(.47)	-	.13(.00)***	-	-.08(.30)	.02(.46)
Growth	+	.06(.28)	.18(.01)**	.02(.27)	.01(.81)	.01(.65)	.18(.01)**
Basic materials		-.08(.33)	.22(.00)***	.08(.30)	.06(.43)	-.94(.00)***	-.13(.30)
Consumer services		.29(.05)*	-.07(.67)	-.04(.40)	.11(.01)**	-.30(.01)**	.22(.01)**
Industrials		.20(.10)†	.28(.00)***	-.01(.50)	.04(.42)	.65(.00)***	.06(.47)
Technology		.23(.09)†	.05(.76)	-.03(.48)	.09(.59)	-.12(.18)	.18(.30)
Year 2004		.38(.00)***	.14(.09)†	.20(.05)*	.11(.08)†	.22(.01)**	.34(.01)**
Year 2005		.47(.00)***	-.07(.71)	.09(.43)	-.04(.40)	-.14(.49)	.16(.08)†
Year 2006		.12(.05)*	.08(.65)	.07(.38)	-.06(.28)	-.20(.40)	.24(.00)***
Year 2007		.48(.00)***	.10(.43)	.10(.19)	-.08(.30)	-.24(.39)	.31(.00)***

Notes: Coefficients are in front of parenthesis. ***, **, * and † denote p-value is significant at the .1%, 1%, 5% and 10% level, respectively (two-tailed tests). The consumer goods industry and year 2003 are captured by the constant term in the pooled analysis. Table 2 above provides the full definitions of all the variables used.

TABLE 8

Regression Results Based on Alternative Firm Value Proxies, Weighted CG Index and Estimation Technique

		Alternative firm value proxies				Alternatively weighted *SACGI*		Fixed effects
	Exp. sign	Total share returns (*TSR*)		Return on assets (*ROA*)		Tobin's Q (*Q*)		Tobin's Q (*Q*)
Adjusted R^2		.05	.27	.03	.31	.02	.24	.49
Standard error		.66	.52	.65	.42	.69	.56	.43
Durbin-Watson		1.93	2.20	1.95	2.40	1.86	2.13	2.52
F-value		8.40***	6.50***	7.80***	7.46***	2.98***	4.78***	16.41***
Sample size (*N*)		845	845	845	845	845	845	845
Constant		.98(.00)	.87(.00)***	-.96(.15)	-.94(.13)	.08(.29)	.19(.48)	.24(.16)
SACGI	+	.10(.00)***	.03 (.01)**	.33(.00)***	.35(.00)***	-	-	.001(.09)†
Weighted-SACGI	+	-	-	-	-	.003(.04)*	.003(.07)†	-
Audit firm size	+	-	.02(.43)	-	-.04.36)	-	.16(.05)*	.07(.36)
Capital expendit.	-/+	-	-.08(.09)†	-	-.02(.64)	-	-.01(.53)	-.04(.21)
Crosslisting	+	-	.04(.61)	-	.16(.00)***	-	.13(.01)**	.14(.05)*
Firm size	-/+	-	-.13(.05)*	-	-.20(.00)***	-	-.34(.00)***	-.25(.00)***
Gearing	-/+	-	-.01(.68)	-	-.31(.00)***	-	-.05(.36)	-.06(.44)
Growth	+	-	.26(.00)***	-	.10(.04)*	-	.02(.25)	.12(.05)*
Q_{t-1}	+	-	-	-	-	-	.24(.00)***	.31(.00)***
ROA_{t-1}	+	-	-	-	.36(.00)***	-	-	-
TSR_{t-1}	+	-	.27(.00)***	-	-	-	-	-
Basic materials		-	-.02(.54)	-	-.34(.05)*	-	.04(.31)	.07(.15)
Consumer services		-	.07(.31)	-	.18(.09)†	-	.25(.05)*	.14(.08)†
Industrials		-	.41(.01)**	-	.03(.61)	-	.07(.38)	.05(.35)
Technology		-	-.14(.09)†	-	.04(.50)	-	.09(.29)	.09(.29)
Year 2004		-	.35(.01)**	-	.28(.08)†	-	.10(.14)	.32(.00)***
Year 2005		-	.30(.01)**	-	-.11(.13)	-	.23(.05)*	.43(.00)***
Year 2006		-	.28(.01)**	-	.10(.17)	-	.45(.00)***	.40(.00)***
Year 2007		-	.37(.01)**	-	.40(.00)**	-	.56(.00)***	.53(.00)***

Notes: Coefficients are in front of parenthesis. ***, **, * and † denote p-value is significant at the .1%, 1%, 5% and 10% level, respectively (two-tailed tests). The consumer goods industry and year 2003 are captured by the constant term in the pooled analysis. Table 2 above provides the full definitions of all the variables used.