

The impact of flexible corporate governance disclosures on value relevance. Empirical evidence from South Africa

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Abstract:

Purpose: Considering that the Johannesburg Stock Exchange (JSE) has enacted in its Listings Requirements, compliance of listed firms to International Financial Reporting Standards (IFRS) and King Code of Good Corporate Governance, this study aims to investigate the impact of internal corporate governance attributes on the value relevance of accounting information in South Africa.

Design/methodology/approach: The fixed effect generalised least squares regression is used for the period from 2002 to 2014. Proxies for internal corporate governance are the size of the board, leadership structure, board activity, staggered board, boardroom independence, presence of key committees and board gender diversity. Value relevance is measured using the adjusted R^2 derived from a regression of stock price on earnings and equity book values by following Ohlson's accounting-based valuation framework.

Finding: The findings suggest that the net asset value per share is value-relevant in South African listed firms and also when the boardroom is largely independent. The value of earnings per share (EPS) is more robust when corporate governance structures, such as separating the roles of chief executive officer and chairperson, proportion of board-independent board members and presence of board committees, are in place. This suggests that EPS favours agency and resource dependence theories.

Practical implications: The value relevance of accounting information in the South African financial market underscores the importance of requisite rules and supervision regarding financial reporting to allow asset owners and managers in the allocation of capital decisions. This study supports the view that corporate governance plays a key role in ensuring, amongst others, credible financial reporting. The outcome of this study could inform the JSE

to enforce, even stricter, compliance with IFRS and corporate governance to improve the value relevance of financial information.

Social implications: Significant corporate governance reforms around the world suggest that regulators and policy makers consider corporate governance as a pertinent tonic in ensuring, amongst others, credible financial reporting. The implications of the study might assure users of financial information of how compliance to corporate governance practices may influence the value of the firm. This paper provides empirical evidence in the South African context that EPS, unlike net asset value per share, is driven by corporate governance structures.

Originality/value: The period of this study is unique, because it covers a relatively stable economic period before the financial crisis, a challenging and unstable period of time when the financial crisis materialised, and the aftermath of the financial crisis. In addition, the examination period of the study also covers the two corporate governance reforms in South Africa, King II in 2002 and King III in 2009, as well as the new Companies Act No. 71 of 2008. These exogenous factors may influence the results.

Keywords:

Governance, Management, Corporate governance, Disclosure, Compliance, Value relevance, Investors, Non-executive directors

Introduction

An accounting amount is defined as value-relevant if it has a predicted relationship with equity market values (Barth *et al.*, 2001). The primary objective of value relevance research is to investigate whether the financial statements that firms produce provide investors and other users both high-quality and valuable accounting information that enables them to make informed decisions (Alfaraih and Alanezi, 2011). Relevance is one of the four principal qualitative characteristics that financial information should possess to enable decision-making (IASB, 2008). Accordingly, financial statement information is relevant when it provides useful information for shareholders to make investment decisions (Abu-Abbas and Al-Abdullah, 2012).

It is envisaged that the quality of accounting information is captured in the share prices of firms (Omokhudu and Ibadin, 2015). Cohen *et al.* (2004) and Fiador (2013) assert that one of the most important functions of internal corporate governance is to ensure the quality of the accounting information. Corporate governance mainly seeks to improve the value of accounting information by enforcing compliance to appropriate standards (de Almeida *et al.*, 2009). As such, and as revealed in the studies by Alfaraih and Alanezi (2015), Habib and Azim, (2008), Malik and Shah (2014), Mungly *et al.* (2016) and Tshipa and Mokoaleli-Mokoteli (2015), the market value of corporate governance-compliant firms is higher than those of firms that do not comply to corporate governance practices.

Corporate governance is particularly relevant in developing economies, where the injection of foreign investment is essential to economic growth (Vaughn and Ryan, 2006). According to Chen *et al.* (2009), institutional investors from around the world are willing to pay a price premium for shares in companies with good corporate governance practices, especially when the companies are in countries with weak legal protection of investors. Consequently, corporate governance increasingly contributes to the economy of any country. To this end, South Africa has to take stock of its corporate governance culture to attract inward investment (Malherbe and Segal, 2001; Tshipa *et al.*, 2018).

Because of the positive externalities of corporate governance, policymakers grapple with the idea of enacting voluntary or mandatory corporate governance. After all, some mandatory minimum disclosure rules could increase firm market values (Ararat *et al.*, 2017). South Africa, like the UK, Australia, Romania and Canada, has a flexible approach to corporate governance, where South African listed companies are required by King III to apply or explain non-compliance, whereas in the USA and Sri Lanka, corporate governance is mandatory (Cuomo *et al.*, 2016; Tshipa and Mokoaleli-Mokoteli, 2015).

Armstrong *et al.* (2005) argue that it may be premature to talk about corporate governance regulations in much of Africa, where the private sector is relatively very small and capital markets are poorly developed. South Africa, though, has kept abreast with international best standards by constantly reviewing its corporate governance practices. The most recent one being King IV, which was commissioned in 2016. As a result, South Africa, as an African emerging market, offers an interesting research context in which the corporate governance and value relevance nexus can be empirically examined. Unlike many African countries, South Africa is ahead of most African emerging markets in the implementation and enforcement of corporate governance standards (African Corporate Governance Network, 2016). With regards to the stock exchange, the Johannesburg Stock Exchange (JSE) continues to dominate the sub-Saharan Africa (SSA) region, representing 38 per cent of all listed companies and 83 per cent of total market capitalisation in the region in 2012 (World Bank, 2013). In fact, 68 of SSA's 100 largest companies in terms of market capitalisation are listed on the JSE, including the five largest companies in Africa (African Business Magazine, 2013). Apart from being the most advanced stock exchange in the region, the JSE is also among the global top 20 of exchanges in terms of market capitalisation and turnover. With a market capitalisation of 159 per cent of gross domestic product in 2012, South Africa also has one of the largest equity markets in the world relative to the size of its economy (African Corporate Governance Network, 2016).

In addition, South Africa is one of the first countries in Africa to require public companies to comply with International Financial Reporting Standards (IFRS). This requirement was enacted by JSE in January 2015. As predicted by Verriest *et al.* (2013), better governed firms disclose more information and comply more fully to IFRS. Formalised corporate governance principles were introduced in South Africa in 1994 with the publication of the first King Report. Three subsequent reports were published in 2002, 2009 and 2016. These reports provide corporate governance guidelines to companies listed on the JSE. Although the King Reports are not legally binding, the JSE Listings Requirements oblige listed firms to disclose the extent of their compliance with the King Report guidelines in their annual reports. In the

case of non-compliance, reasons should be provided through reporting in the Annual Report (King III, 2009, Report on Corporate Governance for South Africa).

As a result, South Africa, and its stock exchange, are the natural choice for this study. Consequently, the purpose of this study is to contribute to the empirical literature of value relevance by investigating the extent to which accounting information is associated with corporate governance, from an African emerging market context. Even with the vast corporate governance developments, the impact of corporate governance on the value relevance of accounting information in South Africa remains fully unexplored. To the best of our knowledge, there is only one related study that was conducted in South Africa. Ntim *et al.* (2012) investigated the impact of disclosing good corporate governance practices on firm value. However, their study used the often-criticised weighted corporate governance indices. Further, their study covers only a short period and is not being representative of the JSE listed firms.

With recent developments in terms of the implementation of the Companies Act of 2008 and King III, Ntim *et al.*'s (2012) study has been overtaken by corporate governance events; hence, their findings are not current anymore. Other global studies such as Fiador (2013), Habib and Azim (2008) and Shan (2013) are peripheral to South Africa and thus do not take into account exogenous factors that are peculiar to South Africa.

This study addresses the shortfall of previous studies in many ways. Firstly, the study covers the period from 2002 to 2014 to accommodate key corporate governance initiatives in South Africa such as King II, Companies Act of 2008 and King III. Secondly, as per recent studies by Alfaraih and Alanezi (2011), Fiador (2013), Mungly *et al.* (2016), Omokhudu and Ibadin (2015) and Vijitha and Nimalathan (2014), this study uses Ohlson valuation model with a panel data set, using pooled regression analysis with random effects. Thirdly, this study seeks to ascertain whether the relevance of accounting information has increased over time since the inception of King II in 2002 and the adoption of IFRS in 2005. Fourthly, and distinct from prior studies such as Chandrapala (2013) and Menike and Prabath (2014), this study uses multiple fundamental theories of corporate governance to explain the relationship between value relevance and corporate governance. The choice to use multiple theoretical perspectives is further motivated by the complementary nature of each theory. For instance, Cohen *et al.* (2008) and Nelson *et al.* (2013) state that the agency theory on corporate governance should be complemented by additional perspectives such as the resource dependence theory and stewardship theory.

Against the preceding backdrop, this study adds to the previous literature and tries to fill the identified gap in the literature by studying the association between value relevance and corporate governance over the period from 2002 to 2014. The 13-year period is unique as it covers the pre-crisis (2005-2007), during crisis (2008-2010) and post-crisis (2011-2013) periods (Afrifa and Taurigana, 2015).

In doing so, the study adds several novelties to the existing literature. Firstly, to make the data set a representative sample of South African companies, the empirical analysis focuses on five major industries constituting 93 per cent of the market capitalisation. Secondly, the study departs from the conventional system of prior studies of related literature and instead

of focusing on a single-measure framework, the study uses a range of measures of corporate governance, including board size, board independence, board activity, presence of key board committees, leadership structure and board diversity (in terms of race and gender).

The findings of the study significantly contribute towards a better understanding of international diversity in corporate governance by providing empirical evidence from the African emerging markets before, during and after the global financial crisis. The relationship between corporate governance and performance is contingent on economic periods (Tshipa *et al.*, 2018). Therefore, the period of this study is unique, as it covers a relatively stable economic period before the financial crisis, a challenging and unstable period of time when the financial crisis materialised and the aftermath of the financial crisis.

Tshipa *et al.* (2018) posit that the impact of corporate governance on performance is also driven by exogenous factors such as reforms. For that reason, the examination period of the study also covers the two corporate governance reforms in South Africa, King II in 2002 and King III in 2009, as well as the new Companies Act No. 71 of 2008.

Theory and hypothesis

This section provides a review of the literature by first identifying three major theories in corporate governance literature. The section culminates in the development of hypotheses.

Agency theory and corporate governance

Agency theory-based research focuses largely on the relationship between board structure, control over management behaviour and strategic decision-making (Hafsi and Turgut, 2013). Agency theorists use the term *corporate governance* to interrogate the role of agents (managers) in fulfilling part of their contractual agreement with the principal (investor). The rudimentary view held by agency theorists of corporate governance is that at any given time, managers have self-interest and may not act to maximise shareholder returns unless appropriate internal governance structures and controls (to monitor costs) are put in place to protect the interests of shareholders (Jensen and Meckling, 1976). Rebeiz (2015) describes the monitoring mechanisms as internal corporate governance structures.

Stewardship theory and corporate governance

Corporate governance under the stewardship model is premised on the logic that managers work diligently to maximise shareholders' returns by virtue of being good stewards of corporate assets (Donaldson, 1990). Therefore, this view leads to the assumption that management performance is not necessarily influenced by self-interest, but is more likely to be affected by the governance structural impediments that inhibit effective action (Davis *et al.*, 1997). Hence, the stewardship theory seeks to underscore the importance of combining the chief executive officer (CEO) and chairman roles to attain financial performance for the company.

Resource dependence theory and corporate governance

As stated by Hung (1998), companies depend on one another for access to valued resources. The resource dependence theory posits that companies are interrelated and depend on the external environment for survival. According to Pfeffer (1972), the board of directors could be seen as the requisite link between the company and the external environment. A board's ability to fulfil this function is linked to a director's connections to other entities, i.e. the board interlocks as the latter is frequently regarded as a conduit between companies (Shropshire, 2010). When a member of a board of directors also sits on other boards of directors, a director interlock is created. Hence, Hung (1998) states that there are indeed benefits to director interlocking. This could impact firm value positively.

Internal corporate governance structures

Drawing from King Code of Governance Principles, Clause 3.84 of the JSE Listings Requirements specifies that listed firms should disclose compliance of corporate governance variables in their annual report. These variables include, in no order of importance:

- staggered boards;
- board gender diversity;
- board size;
- leadership structure;
- proportion of independent non-executive directors (INEDs);
- board activity; and
- the presence of key internal board committees (namely, audit, nomination and remuneration committees).

The measurements of these variables are reported in Table I.

Table 1 Description of variables used in the study

Abbreviation Variables		Definitions of variables	Source
<i>Corporate governance variable</i>			
BS	Board size	The total number of directors sitting on the board	Annual report
BI	Board independence	% of INEDs	Annual report
BC	Board committees	A dummy variable that takes a value of 1 if the firm has nominations, remuneration and audit committees, otherwise 0	Annual report
BA	Board activity	The number of times the board of directors meets in a financial year	Annual report
BD	Board diversity	% of non-white females on a board	Annual report
LS	Leadership structure	A dummy variable that takes the value of 1 if the positions of CEO and chairman are held by two different persons, otherwise 0	Annual report
SB	Staggered board	A dummy variable that takes the value of 1 if the board rotates members every three years, otherwise 0	Annual report

Notes:

Table reports description of variables in the study. Column 1 presents the abbreviation used in equations (1)-(3). Column 2 reports the variables in full, and Column 3 defines the variables. Column 4 provides the data source

Source: INET BFA (2016)

Staggered boards

Advocates of shareholder empowerment view staggered boards as a classic corporate governance failure. In their view, insulating non-executive directors from market discipline diminishes director accountability and encourages self-serving behaviours by incumbents such as shirking, empire building and private benefits extraction (Bebchuk and Cohen, 2005; Bebchuk *et al.*, 2009). On the contrary, defendants of staggered boards view staggered boards as an instrument to preserve board stability and strengthen long-term commitments to value creation (Duru *et al.*, 2013; Guo *et al.*, 2008; Koppes *et al.*, 1999; Lipton *et al.*, 2012).

Board gender diversity

Interestingly, diversity in terms of gender is glaringly lacking in South Africa. The representation of female directors in the boardroom falls far behind (Farrell and Hersch, 2005). In a study conducted between 2002 and 2011, Tshipa and Mokoaleli-Mokoteli (2015) reported that females constituted only 13 per cent of boards of South African listed companies in 2011, and Swartz and Firer (2005) reported that the board of an average South

African listed firm was only 6 per cent female in 2003. There are mixed theoretical propositions on the impact of board diversity on firm performance: those who argue for more diversity in boardrooms and those who are in favour of corporate monoculture and boardroom uniformity. Some studies found positive links between increased board diversity and firm value (Ayadi *et al.*, 2015; Julizaerma and Sori, 2012; Kim *et al.*, 2013; Lückerath-Rovers, 2013; Nielsen and Nielsen, 2013; Taljaard *et al.*, 2015; Zhang, 2012), and others found no relationship (Jhunhunwala and Mishra, 2012; Mahadeo *et al.*, 2012). Moreover, others indicated that increased levels of diversity could be detrimental to firm value (Akpan and Amran, 2014; Carter *et al.*, 2010).

Board size

The issue of board size as a corporate governance mechanism has received considerable attention in recent years from academics, regulators and market participants. It continues to receive attention because empirical evidence of the impact of board size on firm value is inconclusive (Johl *et al.*, 2015; Uadiale, 2010). Empirically, the nexus between board size and firm performance in the extant literature is inconclusive. There are three streams of research findings, those that report a positive impact (Arora and Sharma, 2016; Zakaria *et al.*, 2014), those that record a negative relationship (Garanina and Kaikova, 2016; Samuel, 2013) and those that report no association (Wintoki *et al.*, 2012).

Leadership structure

Leadership structure is defined as CEO duality if one person occupies both the position of CEO and chairman and is defined as CEO non-duality if the positions are separated (Yasser and Al Mamun, 2015). The evidence of the relationship between CEO duality and financial performance is mixed (Gill and Mathur, 2011; Moscu, 2013). The agency theory states that CEO duality is bad for firm performance as it compromises the monitoring and control of the CEO. However, in the past few years, many companies have converted from the dual CEO leadership structure to a non-dual structure, while a much smaller number of companies converted in the opposite direction (Moscu, 2013). Hence the problem of separating the roles of CEO and chairman of the board still seems unresolved. Interestingly, Yang and Zhao (2014) report that duality companies outperform non-duality companies by 3-4 per cent, which underscores the benefits of CEO duality in saving information costs and making speedy decisions.

Proportion of independent non-executive directors

There are a few South African studies pertaining to the relationship between INEDs and firm performance. Some of the few studies conducted in South Africa on the subject are those by Meyer and De Wet (2013), Muchemwa *et al.* (2016), Ntim (2011), Pamburai *et al.* (2015) and Tshipa and Mokoaleli-Mokoteli (2015). Consistent with the conflicting nature of the theoretical literature on INEDs, empirical evidence of the relationship between the percentage of INEDs and financial firm performance is mixed. In fact, there are three streams of research: the first stream of research posits a positive correlation between proportion of outside directors and firm performance (Gupta and Fields, 2009; Lin and Chang, 2014; Ntim, 2011; Pamburai *et al.*, 2015), the second stream of research reports no

correlation between compositional independence and firm performance (Burton, 2000; Wintoki *et al.*, 2012) and the third stream of research highlights an inverse relationship (Vintilă and Gherghina, 2013; Wahba, 2015).

Board activity

Board activity is defined as the frequency of board meetings in a year (Pamburai *et al.*, 2015). One aspect in relation to the board internal structure is board activity (Arosa *et al.*, 2013). Following Jackling and Johl (2009) and Pamburai *et al.* (2015), one way to measure the board activity is the frequency of board meetings. The frequency of meetings can be a factor that may help to establish if the board of directors is an active or a passive board. Notwithstanding, there is limited evidence of the relationship between the frequency of board meetings and financial performance. Secondly, the limited evidence is also conflicting, which makes the frequency of board meetings and financial performance association a ripe area for further research.

Presence of key internal board committees

The establishment of board sub-committees has been strongly recommended as a suitable mechanism for improving corporate governance by delegating specific tasks from the main board to a smaller group and harnessing the contribution of non-executive directors (Spira and Bender, 2004). In the UK, the Cadbury Committee proposals focus on audit committees, whereas the Greenbury study group advocates remuneration committees. In South Africa, King III and JSE Listings Requirements require the establishment of audit, remuneration and nomination committees.

Financial reporting standards and value relevance

Advocates of the agency theory support the view that better internal corporate governance structure should result in better quality financial reporting in the marketplace (Habib and Azim, 2008). Internal corporate governance structures are presumed to confine management opportunistic earnings behaviour and, consequently, to make accounting information more credible and relevant to shareholders.

Dontoh *et al.* (2004) and Ibadin and Oladipupo (2015) assert that financial statements have lost their value relevance because of a shift from a traditional capital-intensive economy to a high-technology, service-oriented economy. However, there are contradictory inferences on the direction of change in relevance and its source. Olugbenga and Atanda (2014) demonstrate that even though the financial accounting information in Nigeria does not follow a particular trend, it is highly value-relevant to market values of quoted firms. Collins *et al.* (1997) highlight an increasing trend in value relevance. Dontoh *et al.* (2004) and Khanna (2014) find evidence of declining value relevance of accounting information. This leaves the question of declining value relevance, an empirical matter, demanding new empirical evidence and insights, from a location different from previous studies.

King Code and the JSE Listings Requirements task South African listed companies to apply or explain non-compliance. This implies that King III expects compliance to corporate

governance practices as recommended by the King Code to impact positively on firm value. In the context of the foregoing, the hypothesis is as follows:

Hypotheses

H1. Corporate governance is positively associated with value relevance of accounting information.

Methods

This section details the sample, data sources and model for the study. It also discusses the conceptual framework on which the econometric model is built.

Sample and data collection procedures

The study period is from 2002, the year that the King II Report became effective, until 2014, the most recent year when the study was conducted. For the sake of consistency, the recommendations of the King II Report are applied for the entire study period. The data were manually collated from the published financial statements using INET BFA database as a source. To be included in the final sample, a firm has to have at least 12-year annual reports from 2002 up to and including 2014, with its corresponding financial data. The population consists of all JSE-listed firms for the period from 2002 to 2014.

A combination of judgement and convenience sampling is used to draw a sample from nine JSE industries. The considered industries are basic material, consumer goods, consumer services, financials, health care, industrials, oil and gas, technology and telecommunications. However, because of the small number of observations in four industries, namely, telecommunications, technology, oil and gas and health care with two, ten, two and three listed firms, respectively, the firms were excluded from the final sample. The excluded industries together account for a meagre 9 per cent of the total 186 sampled firms. This is consistent with the composition of the natural population. In total, 90 firms complied with the selection criteria, forming approximately 31 per cent of the total 3,835 annual reports obtained (295 companies over 13 years). These companies constitute 30.7 per cent of the total market capitalisation of the JSE listed firms and as such represent a wide spectrum of stakeholders' interest and shareholders' wealth.

The exclusion of delisted firms can tilt the results of a study, as it is assumed that firms that remain listed are often financially more successful than the ones that are delisted. Another form of sampling bias can result from the exclusion of small firms from the sample. Previous corporate governance researchers in South Africa tended to focus on large listed firms. In an attempt to reduce survivorship and sampling bias, all firms (small, medium and large) are included. Only firms that had more than one annual report missing are excluded. The decision to exclude firms with more than one annual report missing was based on the fact that part of this study is to examine consistent compliance levels of firms over time.

Variables and measures

In the light of results which vary because of value-relevance proxies and consistent with recent studies of Alfraih and Alanezi (2015), Fallatah and Dickins (2012), Malik and Shah (2014) and Mungly *et al.* (2016), stock price is regressed on earnings and equity book-values to determine the association between accounting information and share price. This level specification is justified as it determines whether accounting variables reflect information used to price shares over all periods up to a specific point of time. Proxies of firm value are earnings reported by a firm and the net asset value. This is on the assumption that, *ceteris paribus*, accounting records of value should ultimately be linked to the market valuation of shares.

Therefore, in line with the preceding, the model for the study is given as:

$$P_{(it)} = \beta_0 + \beta_1 EPS_{it} + \beta_2 NAV_{it} + \beta_3 BS_{it}^2 + \beta_4 LS_{it} + \beta_5 BA_{it} + \beta_6 SB_{it} + \beta_7 BD_{it} + \beta_8 BC_{it} + \beta_9 BI_{it} + \epsilon_{it}$$

[1]

$$P_{(it)} = \beta_0 + \beta_1 EPS_{it} + \beta_2 NAV_{it} + \beta_3 BS_{it}^2 + \beta_4 LS_{it} + \beta_5 BA_{it} + \beta_6 SB_{it} + \beta_7 BD_{it} + \beta_8 BC_{it} + \beta_9 BI_{it} + \beta_{10} BS_{it}^2 \times EPS_{it} + \beta_{11} LS_{it} \times EPS_{it} + \beta_{12} BA_{it} \times EPS_{it} + \beta_{13} SB_{it} \times EPS_{it} + \beta_{14} BD_{it} \times EPS_{it} + \beta_{15} BC_{it} \times EPS_{it} \times Year + \beta_{16} BI_{it} \times EPS_{it} + \epsilon_{it}$$

[2]

$$P_{(it)} = \beta_0 + \beta_1 EPS_{it} + \beta_2 NAV_{it} + \beta_3 BS_{it}^2 + \beta_4 LS_{it} + \beta_5 BA_{it} + \beta_6 SB_{it} + \beta_7 BD_{it} + \beta_8 BC_{it} + \beta_9 BI_{it} + \beta_{10} BS_{it}^2 \times NAV_{it} + \beta_{11} LS_{it} \times NAV_{it} + \beta_{12} BA_{it} \times NAV_{it} + \beta_{13} SB_{it} \times NAV_{it} + \beta_{14} BD_{it} \times NAV_{it} + \beta_{15} BI_{it} \times NAV_{it} + \beta_{16} BC_{it} \times NAV_{it} + \epsilon_{it}$$

[3]

where $P_{(it)}$ is the price of a share of firm i at financial year-end; $EPS_{(it)}$ is the reported net profit after tax but before abnormal items per share of firm i for year t . Net asset value per share (NAV_{it}), which is defined as total assets minus total liabilities of firm i in period t divided by the number of shares outstanding. Although it is common in value-relevance research to use stock price after the release of the financial statements, post-year events could add noise to the measurement process.

As this study uses a sample of 186 listed firms, of which some are larger firms which should be closely followed by analysts, it is expected that financial statement information reaches public domain well before the financial statements are released, after the fiscal year end. Furthermore, the disclosure of half-yearly results allows shareholders to gauge the likely annual numbers to be reported. Therefore, the current study uses stock price at the end of the fiscal year as the dependent variable, as per the study of Habib and Azim (2008).

To ensure standardisation and as per Fiador (2013), price and net asset value per share were logged, whereas board size (BS) is squared to capture its posited non-linear behaviour (Fiador, 2013).

Analysis and results

In keeping with previous studies on the value relevance of accounting information, this study uses regression analysis to test the hypotheses raised. Value relevance is determined

by the estimated regression coefficients of accounting variables included in the model and R^2 . The analysis is based on the Ohlson (1995) valuation model, which states that the firm value is a linear function of book values of owners' equity and earnings.

This section provides the analysis and findings of the study, through descriptive statistics, Spearman's correlation and regressions. The latter is based upon the work of Ohlson (1995).

Table II shows that the average share price on the JSE is R1,909.985, with some prices as low as R10 and others as high as R123,219.180. With respect to earnings per share (EPS), the figures ranged from negative R1,267 to positive R57,717,473, recording an average of R49,398 with the net asset value over the 13-year period averaging R1,262,413, with a minimum of R1 and maximum of R5,880,513,941.

Table II Descriptive statistics

Variables	Symbol	Observation	Mean	SD	Minimum	Maximum
Share price	P	1,183	1,909.985	5.31	10	123,219.180
Earnings per share	EPS	1,183	49,398.24	1,678,077	(1,267.44)	57,717,473
Net asset value per share	NAV	1,183	1,262,413	6.41	1	5,880,513,941
Board size	BS	1,183	12	10	3	31
Leadership structure	LS	1,183	0.925	0.264	0	1
Board activity	BA	1,183	5	1.71	0	18
Staggered board	SB	1,183	0.965	0.183	0	1
Board gender diversity	BD	1,183	0.153	0.147	0	0.800
Presence of key board committees	BC	1,183	0.652	0.477	0	1
Board independence	BI	1,183	0.434	0.223	0	1.833

Notes:

Table presents descriptive statistics of all variables based on a sample of 1,170 firm-year observations for South African listed companies. The variables are as defined in Table I

The average board size is 12 members with about 43 per cent being INEDs and 65 per cent of listed firms having all key board committees. As many as 93 per cent of the corporate boards of listed firms have positions of CEO and chairperson held by different persons.

As per Table III, share prices, EPS and net asset value are significantly positively correlated with one another and also with all corporate governance variables. With regards to the interaction between corporate governance variables and other variables, board diversity, leadership structure and the presence of board committee are also all significantly correlated with all variables. However, board size, the proportion of independent board members and frequency of board meetings are significantly positively correlated with all variables, except the staggered board.

Table III Correlation matrix of study variables

	Price	EPS	NAV	BS	BI	BA	BD	SB	LS	BC
Price	1.0000	(0.8094) ***	(0.7373) ***	(0.5363) ***	(0.3042) ***	(0.2626) ***	(0.2849) ***	(0.0694) **	(0.1638) ***	(0.3459) ***
EPS	(0.809) **	1.0000	(0.6886) ***	(0.4373) ***	(0.1881) ***	(0.1588) ***	(0.2835) ***	(0.0940) ***	(0.2010) ***	(0.2046) ***
NAV	(0.727) **	(0.6886) ***	1.0000	(0.3998) ***	(0.2574) ***	(0.2419) ***	(0.2495) ***	(0.0893) ***	(0.1269) ***	(0.2908) ***
BS	(0.536) **	(0.4373) ***	(0.3998) ***	1.0000	(0.2828) ***	(0.3573) ***	(0.3388) ***	(0.0205) ***	(0.2670) ***	(0.4203) ***
BI	(0.304) **	(0.1881) ***	(0.2574) ***	(0.2828) ***	1.0000	(0.2719) ***	(0.2466) ***	(-0.0471) **	(0.0626) **	(0.3099) ***
BA	(0.262) **	(0.1588) ***	(0.2419) ***	(0.3573) ***	(0.2719) ***	1.0000	(0.1697) ***	(-0.0090) **	(0.1114) ***	(0.2463) ***
BD	(0.284) **	(0.2835) ***	(0.2495) ***	(0.3388) ***	(0.2466) ***	(0.1697) ***	1.0000	(0.2281) ***	(0.1823) ***	(0.2929) ***
SB	(0.069) *	(0.0940) ***	(0.0893) ***	(0.0205) **	(-0.0471) **	(-0.0090) **	(0.2281) ***	1.0000	(0.1911) ***	(0.0753) ***
LS	(0.1911) ***	(0.2010) ***	(0.1269) ***	(0.2670) ***	(0.0626) **	(0.1114) ***	(0.1823) ***	(0.1911) ***	1.0000	(0.1757) ***
BC	(0.345) **	(0.2046) ***	(0.2908) ***	(0.4203) ***	(0.3099) ***	(0.2463) ***	(0.2929) ***	(0.0753) ***	(0.1757) ***	1.0000

Notes:

Coefficients are in parentheses.

*** $p < 0.01$;

** $p < 0.05$; Table III presents pair-wise correlation coefficients, which are based on a sample of 1,170 firm-year observations for South African listed companies. The abbreviations and definitions of the independent variables presented in this table are tabulated in Table I

Table IV provides the regression results. The value of R^2 is reasonably high in all equations, revealing that almost more than 60 per cent of the total variation in dependent variable is explained by independent variables. The Durbin–Watson statistic is hovering slightly above 2 in all regressions, indicating that there is no autocorrelation in the models.

Table IV Regression results

Variable	Regression 1	Regression 2	Regression 3
EPS	-0.0000000116 (0.0000)***	0.009175 (0.0000)***	-0.000000011 (0.0001)***
LNAV	0.517801 (0.0000)***	0.375725 (0.0000)***	0.568598 (0.0026)***
BS squared	0.002935 (0.0000)***	0.002846 (0.0000)***	0.019366 (0.0000)***
LS	0.187241 (0.1003)	-0.064606 (0.6355)	-0.583208 (0.2592)
BA	0.030902 (0.0940)*	0.095632 (0.0000)***	0.096296 (0.4945)
SB	-0.127511 (0.3307)	-0.190571 (0.2444)	-1.421006 (0.1881)
BD	0.076095 (0.0053)**	0.613988 (0.0582)**	1.745752 (0.1536)
BC	0.241883 (0.001)***	0.205175 (0.0030)***	-0.681524 (0.2382)
BI	0.598329 (0.0003)***	-0.126114 (0.4400)	-1.881424 (0.1698)
BS squared × EPS		-0.0000000481 (0.4988)	
LS × EPS		0.000574 (0.0585)**	
BA × EPS		-0.000136 (0.0000)***	
SB × EPS		0.000524 (0.2311)	
BD × EPS		-0.000534 (0.4147)	
BC × EPS		0.000314 (0.0000)***	
BI × EPS		0.001786 (0.0000)***	
BS squared × NAV			-0.002106 (0.0001)***
LS × NAV			0.093378 (0.1828)
BA × NAV			-0.007610 (0.6743)
SB × NAV			0.222836 (0.1437)
BD × NAV			-0.149670 (0.3723)
BI × NAV			0.357524 (0.0800)*
BC × NAV			0.125938 (0.1343)
Durbin–Watson statistic	2.230219	2.203649	2.077142
Overall R^2	0.5973	0.6887	0.6429
Wald χ^2 , probability	123.76 (0.0000)	116.63 (0.0000)	94.94 (0.0000)

Notes:

Coefficients are in parentheses;

*** $p < 0.01$;

** $p < 0.05$;

* $p < 0.10$; Table presents the regression output. Column 1 presents the variables. Column 2 reports results based equation (1). Column 3 reports results based on equation (2) and Column 3 presents results based on equation (3); reports the regression output for this study

The overall performance of the model is satisfactory, as reflected in the values of *F*-statistics. In terms of unit root test, individual industries are stationary with no unit root. The regression output provides strong evidence for the value relevance of accounting information in favour of both net asset value per share and EPS. However, even though the latter is relevant, it has a negative influence on the share price, as highlighted in equations (1) and (3).

Corporate governance variables, such as board size, CEO duality, frequency of board meetings, staggered board, board demographics diversity, CEO share ownership, presence of board committees and the presence of independent non-executive director, were included in regression equations (2) and (3) on the premise that compliance ultimately yields a higher market valuation of shares (Bai *et al.*, 2004).

The coefficient for the square of the board size was positively and significantly related at 1 per cent to share price across all three regression models. This finding provides evidence that larger boards bring diversity in terms of skill, expertise and efficacy (Dalton *et al.*, 1999), thus resulting in favourable performance and ultimately market valuation. Theoretically, this indicates that the market perceives larger boards to be more effective than smaller boards. This is because if the board is bloated, the chances of board interlocks are higher, thus creating a virtual link to other entities or external resources (Shropshire, 2010), which may generate positive returns for the company (Mace, 1971).

The presence of independent non-executive director is insignificant in regression equations (2) and (3) and highly positively related at 1 per cent to share price in equation one. The relative insignificance of the study is interesting, given that listed firms in South Africa, as per the regulations for listing, are encouraged to have more INEDs on their board. It would appear that the compliance of listed firms with this requirement holds relatively no value for the investing community. However, the findings are in agreement with the stewardship theory, which states that INEDs often command less knowledge about the business and find it difficult to understand the complexities of the company (Weir and Laing, 2000).

Long-term incentive in the form of share allocation to the CEO is positively significant in all regression models. King III suggests that the performance-related elements of directors' remuneration (such as stock options) should constitute a substantial portion of their total remuneration package to align their interests with those of shareholders. It should also be designed to provide incentives for directors to perform at the highest operational levels. This finding favours a King III recommendation and agency theorists who expect director share ownership to have a positive impact on financial performance.

It is interesting that the separation of the roles of chairman and CEO do not have any bearing on the value of the firm, which is inconsistent with the agency theory. It also did not lend empirical support to the recommendations of King III that the roles of board chairman and CEO should be split. However, the findings are in agreement with the stewardship theory, which states that the benefits of separating the chairman and CEO roles are not so clear cut. The stewardship theory argues that having clear and unambiguous authority concentrated in one person is essential for effective management. Perhaps, the separation

of the roles is not envisaged to yield better share price but rather solely to ensure segregation of duties.

Similar to CEO duality, the rest of the corporate governance variables such as staggered board, frequency of board meeting, presence of board committees and board demographic diversity were all not significant and relevant to share price. With respect to regression output, which incorporates the interaction terms between corporate governance variables and the accounting measures of value, EPS become value-relevant and positive when the roles of CEO and chairperson are separated, when there is a presence of all board committees and when the majority of board members are INEDs. This finding seems to suggest that in South Africa, there is a higher market valuation of shares when the EPS reported also tie with presence of board committees, presence of independent non-executive director and role separation of the chairperson and the CEO. This could mean that agency and resource dependence theories play a critical role in determining value relevance in terms of EPS.

The third regression also incorporates the collaborative terms between the governance variables and net asset value per share. The findings suggest that the net asset value is negatively correlated to share prices as the board gets larger, providing more evidence in favour of smaller boards, thus contradicting agency and resource dependence theories. Staggered board, frequency of board meetings, separation of CEO-chairperson roles, board demographics diversity and presence of board committees do not help the value relevance of the book value of equity in any way, as they are insignificant.

Conclusion and implications for policy

From the findings of the study, it may be posited that accounting proxies of value, in particular net asset value per share, are important for explaining the share prices for South African listed firms. However, EPS is more relevant in the presence of corporate governance structures. This is expected as EPS is a measurement of profit commonly used in South Africa. Essentially, compliance to corporate governance yields higher market valuation. The findings underscore the importance of establishing and maintaining adequate monitoring and enforcement mechanisms to ensure compliance with accounting standards and corporate governance. The outcome of this study could inform the JSE to enforce stricter compliance with IFRS to improve the value relevance of financial information. This study concluded that corporate governance plays a key role in ensuring, amongst others, credible financial reporting. The findings support the study by Cohen *et al.* (2004) and Fiador (2013) that one of the most important functions of corporate governance is to ensure the quality of the accounting information.

Notwithstanding, like any other study, the study has limitations which presents opportunities for further research. First, future studies could stagger the analysis into pre-IFRS and post-IFRS to observe improvement in the relationship between corporate governance and value relevance, following the adoption of IFRS in 2005. Secondly, a comparative study across Africa on the impact of corporate governance on value relevance should be considered. Thirdly, the study used the model developed by Ohlson (1995) for

value relevance of accounting information. Further studies may use different value relevance models to triangulate the results.

Finally, the study examined the impact of internal corporate governance disclosure, such as staggered board, board gender diversity, board size, leadership structure, proportion of independent non-executive director, board activity and presence of key internal board committees, on firm value. These corporate governance variables were cued from Clause 3.84 of the JSE Listings Requirements. However, prior studies posit that ownership type has an influence on the level of disclosure and firm value (Al-Najjar, 2010; Rouf, 2011; Lishengal and Mbaka, 2015; Elvin and Hamid, 2016). Therefore, a beckoning question is whether and how ownership structure influences disclosure and firm value of South African listed companies. To this end, further research may study the impact of ownership structure such as family, government, institutional, foreign, managerial and concentrated, amongst others, on the level of disclosure and market value of South African listed companies.

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