Corporate Governance, Corporate Health Accounting and Firm Value: The Case of HIV/AIDS Disclosures in Sub-Saharan Africa

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Abstract

Sub-Saharan Africa (SSA) has the highest prevalence rate of HIV/AIDS in the world with negative effects on productivity, profitability, economic growth and development. The social responsibility role of public companies in contributing towards reducing the negative effects of HIV/AIDS is priceless. This paper investigates the impact of corporate governance (CG) on social and environmental accounting (SEA) with specific focus on corporate health accounting (CHA) and consequently, examines whether CG can moderate the link between CHA and firm value (FV) with particular focus on HIV/AIDS disclosures. First, employing one of the most extensive data on CG, CHA and FV from a sample of listed SSA companies to-date, our results suggest that companies that are better-governed tend to engage in increased CHA disclosures. Second, we find that the combined effect of CG and CHA on FV is stronger than CHA alone, meaning that the quality of firm-level CG moderates the link between CHA and FV. Our econometric specifications are robust to different traditional firm-level characteristics, endogeneities and alternative CG (corporate board and shareholding structure variables), FV and CHA proxies. We interpret our findings within a framework that attempts to combine Suchman's (1995) legitimacy theoretical perspective with Ashforth and Gibbs' (1990) substantive and symbolic legitimacy management strategies.

1. Introduction

In this paper, we respond to recent calls/debates within the broader social and environmental accounting (SEA) literature (e.g., Barbu et al., 2014a, b; Filatotchev & Nakajima, 2014; Van Cranenburgh & Arenas, 2014; Wilkins, 2014; Crifo & Forget, 2015) to make two new contributions to the extant literature by: (i) assessing the impact of corporate governance (CG) on corporate health accounting (CHA)[1]; and (ii) examining the extent to which CG can moderate the link between CHA and firm value (FV) with particular focus on HIV/AIDS in Sub-Saharan Africa (SSA). The HIV/AIDS epidemic has been widely acknowledged as one of the world's most serious health crises of this century (Dickinson, 2004; Fig 2005; Dickinson & Stevens, 2005; Lawrence and Samkin, 2005; Du Bryn & Venter, 2006; Soobaroyen & Ntim, 2013; UNAIDS, 2014). At the extreme, the disease has reduced average life expectancy in SSA countries by about 20 to 30 years (Visser, 2002; Mahajan et al., 2007; UNAIDS, 2014). More importantly, however, is that HIV/AIDS has had adverse effects on both national and corporate productivity and profitability in SSA countries (Lawrence & Samkin, 2005; Mitchell & Hill, 2009; Machuki & Oketch, 2013; Van Cranenburgh et al., 2013). At the national level, negative effects of decreasing number of active labour force (Rahaman et al., 2010; Saguier, 2007), shrinking real GDP and tax revenues, but increasing health-care costs (Fig, 2005; Du Bruyn, 2008; UNAIDS, 2014), and loss of foreign direct investments due to high costs of doing business (Barako et al., 2010; Rampersad, 2010), are easily observable in SSA countries. At the corporate level, higher absenteeism, shortages of skilled employees and higher human resource management costs often associated with HIV/AIDS can have direct negative effect on FV (Flanagan & Whiteman, 2007; Du Bruyn, 2008; Dawkins & Ngunjiri, 2008; Bird, 2009; Rein & Stott, 2009; Van Cranenburgh & Arena, 2014). However, of the estimated 33m people currently living with HIV/AIDS in the world, about 23m (about 70%) of them live in SSA (Whellams, 2008; Rampersad, 2010, p.2269; Soobaroyen & Ntim, 2013, p.98).

At the same time and similar to other countries around the world, a number of SSA countries have pursued voluntary ('comply or explain') CG and CHA policy reforms (Aguilera & Cuervo-Cazurra, 2009), albeit at different time-periods, ranging from South Africa in 1994 to Ghana in 2010. However, due to major socio-economic challenges (e.g., widespread poverty and high unemployment), CG reforms that have been embarked

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[1]As 'CHA' is a subset of the broader 'SEA' literature, interchangeability between the use of the term 'SEA' and 'CHA' is assumed throughout this study.

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upon in SSA nations have put particular importance on improving CG practices for all corporate stakeholders (i.e., both shareholders and other stakeholders) (Mangena & Chamisa, 2008; Ntim et al., 2012a, b). For example, the King Reports on CG (1994, 2002, 2010) of South Africa, as well as those relating to Ghana (2010), Kenya (2002), and Nigeria (2003) are inherently inclusive in orientation. However, despite pursuing inclusive CG reforms, efforts at addressing the HIV/AIDS epidemic have often been hampered by lack of decisive leadership and policies, corruption, political indifference, and cynicism on the part of SSA national politicians and governments (Dickinson, 2004; Fig, 2005; Mahajan et al., 2007; Barako et al., 2010; Rampersad, 2010). Thus, the role of large public corporations in combating the HIV/AIDS menace in SSA is invaluable. As will be discussed further, one credible way by which corporations can demonstrate their commitment towards addressing the HIV/AIDS challenge is to voluntarily adopt the 2003 GRI's reporting guidance on HIV/AIDS and disclose their activities aimed at addressing the HIV/AIDS menace (Fig, 2005; Dickinson & Stevens, 2005; Rampersad, 2010; Soobaroyen & Ntim, 2013).

Meanwhile, some previous studies have assessed the impact of CG on FV (Gompers et al., 2003; Beiner et al., 2006; Henry, 2008; Renders et al., 2010; Bozec & Bozec, 2012; Ntim et al., 2012a). Others have investigated the connections among traditional SEA practices, CG, and FV (McGuire et al., 1988; Harjoto & Jo, 2011; Jo & Harjoto, 2011; Cai et al., 2012; Dam & Scholtens, 2012; Jo & Harjoto, 2012; Michelon & Parbonetti, 2012; Fifka, 2013; Ntim & Soobaroyen, 2013a, b). In contrast, previous research examining the connection between CG and CHA practices relating to a major global health crisis (e.g., alzheimer's, cancer, dementia, "ebola", HIV/AIDS, malaria, and tuberculosis) (Flanagan & Whiteman, 2007; Vass, 2008; Rein & Stott, 2009; Machuki & Oketch, 2013; Soobaroyen & Ntim, 2013) and/or how a corporation's internal CG structures might potentially moderate the link between CHA and FV (Barako & Brown, 2008; Barako et al., 2010; Rampersad, 2010), are very rare. Hence, this study distinctively examines the crucial policy questions of why and how public corporations' governance arrangements might influence their CHA disclosures, and consequently, investigates why and how the link between CHA and FV might be moderated by CG in SSA countries.

Theoretically and although a CHA agenda may be embarked upon for a variety of important reasons (Friedman, 1970; Aguilera et al., 2007; McWilliams et al., 2006; Orlitzky et al., 2003, 2011), demonstrating the legitimate right of a corporation to exist to its various constituents remains prominent (Gray et al., 1995; Deegan,

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2002; Parker, 2005; Chen & Roberts, 2010). In this case, Suchman (1995) suggests that legitimacy is a critical resource that all corporations depend on for their existence, whilst Ashforth and Gibbs (1990) indicate that corporations will often adopt both substantive and symbolic management strategies to gain (extend), maintain, and repair (defend) it. We, therefore, rely on legitimacy theory as the central reason underlying why corporations and managers may voluntarily engage in and disclose their CHA activities. First and for managers, exhibiting greater commitment to CHA via high CHA disclosures can enhance their legitimacy (right to manage corporate resources) by improving the flow of information between company executives and stakeholders (Jensen & Meckling, 1976; Jensen, 1993, 2002), and thus minimising agency conflicts and improving FV. Second, prior studies indicate that engaging in greater CHA practices can help bring harmony between corporate goals/norms and those of the larger society (DiMaggio & Powell, 1983; Scott, 1987; Elkington, 2006; Mackinzie, 2007; Lattermann et al., 2009) by legitimising company operations and improving firm reputation and image. Third, it has been suggested that committing to increased CHA disclosure can be a useful way of gaining the support of influential stakeholders of corporations, such as labour unions, shareholders, and national governments (Freeman & Reed, 1983; Freeman, 1984; Donaldson & Preston, 1995), who are critical in terms of the ability of the corporation to run profitable and sustainable operations (Chen & Roberts, 2010). Fourth, other studies indicate that showing greater commitment to CHA through increased CHA disclosures can facilitate access to crucial resources, such as capital and business contracts, by minimising health, safety and political costs through improved firm reputation, legitimacy and goodwill (Pfeffer & Salancik, 1978; Branco & Rodrigues, 2006).

Consequently, the extant literature has explored the determinants of, and motivations for, corporate commitment to SEA practices (Roberts, 1992; Gray et al., 1995; Unerman, 2000; Deegan, 2002; Newson & Deegan, 2002; Campbell et al., 2003; Freedman & Jaggi, 2005; Parker, 2005; Campbell et al., 2006; De Villiers & Van Staden, 2006; Brammer & Pavelin, 2008; Branco & Rodrigues, 2008; Islam & Deegan, 2008; Reverte, 2009; Fifka, 2013; Barbu et al., 2014a). However, the current literature seems to have a number of weaknesses. First, the prior literature has generally analysed how traditional company-specific features (e.g., industry, growth and size) determine SEA practices (Deegan & Gordon, 1996; Gamble et al., 1996; Williams, 1999; Williams & Pei, 1999; Adams, 2002; Fifka, 2013), as well as the financial effects of engaging in SEA practices (Bird et al., 2007; Callado-Munoz & Ultrero-Gonzalez, 2011). In contrast, existing research that examines the connection

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between internal governance structures and SEA practices are generally limited (Aguilera et al., 2006; Dam & Scholtens, 2012), and particularly acute in emerging countries (Barako & Brown, 2008; Jamali et al., 2008). Second, and more importantly, the limited prior studies that explicitly investigate the link between CG and SEA practices have also focused primarily on traditional SEA practices to the neglect of social responsibilities relating to the need to address major global corporate health crisis (i.e., CHA) (Harjoto & Jo, 2011; Jo & Harjoto, 2011; Cai et al., 2012; Dam & Scholtens, 2012; Jo & Harjoto, 2012; Michelon & Parbonetti, 2012; Fifka, 2013; Ntim & Soobaroyen, 2013a, b). Finally, and with specific respect to existing HIV/AIDS studies, they are mainly normative instead of empirical in orientation (Dickinson, 2004; Fig, 2005; Saguier, 2007; Whellams, 2008), descriptive/qualitative instead of quantitative in nature (Dawkins & Ngunjiri, 2008; Rahaman et al., 2010), one year cross-sectional rather than longitudinal data analyses (Barako & Brown, 2008; Barako et al., 2010), and single-country instead of cross-country focused (Lawrence & Samkin, 2005; Du Bruyn & Venter, 2006; Du Bruyn, 2008; Soobaroyen & Ntim, 2013). Arguably, these weaknesses within the extant literature limit current international understanding of why and how a corporation's internal CG arrangements might enhance or hinder its CHA orientation, and whether CG can moderate the CHA-FV nexus (e.g., Barbu et al., 2014a, b; Filatotchev & Nakajima, 2014; Wilkins, 2014; Crifo & Forget, 2015).

Thus, this study seeks to build on, as well as make a number of new contributions to the existing international CG, CHA and FV research by addressing the limitations of prior studies. First, we examine how and why a company's internal governance mechanisms may determine its CHA practices in SSA countries. Specifically, employing a composite CG index, we investigate whether companies with better governance arrangements tend to demonstrate greater commitment towards CHA through increased CHA disclosures. This is distinct from most previous evidence, which examines the link between traditional firm-level features (e.g., firm size) and SEA practices. Our proposition is based on current theoretical and empirical evidence, which suggests that firm-level decisions, such as the extent of SEA engagement are often a function of CG (Haniffa & Cooke, 2005; Elkington, 2006; Jo & Harjoto, 2012; Michelon & Parbonetti, 2012; Ntim & Soobaroyen, 2013a, b). This stems from the suggestion (Mallin, 2002; Beekes & Brown, 2006) that in a competitive, but imperfect information market, well-governed firms may be able to distinguish themselves by sending clear signals to the

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market about their better internal CG credentials. Thus, engaging in high CHA disclosures may be one way by which well-governed firms can distinguish themselves from their poorly-governed counterparts.

Second, a large number of studies that have investigated the association between SEA practices and FV report mixed findings (McGuire et al., 1988; Mahoney & Roberts, 2007; Lo & Sheu, 2007; Becchetti & Ciciretti, 2009; Dam & Scholtens, 2012; Jo & Harjoto, 2012; Fifka, 2013). The mixed findings of prior research has been attributed mainly to methodological limitations and potential endogeneity problems (McWilliams & Siegel, 2000; Orlitzky et al., 2003, 2011), but recent evidence that sufficiently addresses such problems still generally reports similar conflicting findings (Scholtens, 2007, 2008; Nelling & Webb, 2009). However, past studies suggest that SEA engagement is often decided by corporate boards and senior executives (Haniffa & Cooke, 2005; Michelon & Parbonetti, 2012). Therefore, our prediction is that the association between SEA practices and FV may be moderated by the quality of internal CG arrangements. This conjecture is also based on emerging theoretical literature and the findings of previous studies that indicate that whilst the stock market values both CG and SEA practices, CG practices are priced higher in comparison to SEA practices (Starks, 2009; Arora & Dharwadkar, 2011; Harjoto & Jo, 2011; Jo & Harjoto, 2011; Cai et al., 2012). Thus, the theoretical and empirical implication is that the SEA-FV nexus may be enhanced when SEA is combined with CG than SEA alone (Ntim et al., 2012a; Ntim & Soobaroyen, 2013a). However, existing studies examining the effect of SEA on FV have crucially ignored the potential moderating role that CG can have on the SEA-FV association. Hence, this study contributes to the extant research by distinctively investigating the moderating effect of CG on the relationship between CHA and FV - an extension to prior studies that have examined the link between traditional SEA practices (i.e., general social and environmental responsibilities) and FV (Harjoto & Jo, 2011; Dam & Scholtens, 2012; Jo & Harjoto, 2012; Michelon & Parbonetti, 2012; Ntim & Soobaroyen, 2013a, b; Filatotchev & Nakajima, 2014).

Our findings are two-fold. First and using one of the largest dataset on CG, CHA and FV to-date on large SSA listed firms, our results suggest that firms with good CG arrangements tend to show greater commitment to CHA activities through increased CHA disclosures. Second, our results indicate that the positive impact of CHA on FV when combined with CG is stronger than CHA on its own, meaning that the quality of firm-level CG has a positive moderating effect on the CHA-FV nexus. Overall, our econometric specifications are robust to different kinds of endogeneity problems, as well as alternative CG, CHA and FV proxies.

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The rest of the paper is structured as follows. Section 2 discusses HIV/AIDS, CG, CHA policy reforms and the SSA corporate setting. Section 3 outlines the legitimacy theoretical framework for CHA disclosures. Section 4 reviews the CHA, CG and FV literature. Section 5 presents the research design. Section 6 reports the empirical analyses, results and discussion, whilst Section 7 contains a brief summary and conclusion.

2. HIV/AIDS, CG, CHA policy reforms and the Sub-Saharan Africa corporate setting

HIV/AIDS is currently among the globe's biggest health catastrophes (Dickinson, 2004; Soobaroyen and Ntim, 2013). Across the globe, prevalence rate is on the increase and its negative effects on corporate and national productivity are increasingly becoming more visible (Du Bruyn, 2008; Vass, 2008; Barako et al., 2010). However, and since high levels of poverty and migration contribute to the degree of infection (Dickinson, 2004; Fig, 2005), the disease is apparently more prevalent in developing countries (Barac & Otter, 2001; Mahajan et al., 2007). Of the globe's affected poor sub-continents, SSA occupies the epicentre of the HIV/AIDS epidemic (Dickinson, 2004; Rampersad, 2010). For example, available figures indicate that approximately 33m individuals are infected with the AIDS virus globally, but close to 23m (i.e., about 70%) are SSA nationals (Rampersad, 2010, p.2269; Soobaroyen & Ntim, 2013, p.98). For example, an estimated 6m of the 49m (i.e., over 12%) South Africans are infected with the virus (Dickinson & Stevens, 2005; Lawrence & Samkin, 2005; UNAIDS, 2014). Similar high levels of prevalence rate have been reported for most SSA countries, such as Botswana, Ghana, Kenya, Malawi, Namibia, Nigeria, Zambia, Uganda and Zimbabwe (UNAIDS, 2014).

At the extreme, the disease has reduced average life expectancy in SSA countries by about 20 to 30 years (UNAIDS, 2014). More importantly, however, is that HIV/AIDS has had adverse effects on both national and corporate productivity and profitability in SSA countries (Lawrence & Samkin, 2005; Mitchell & Hill, 2009). For instance, decreasing number of active labour force (Barako et al., 2010), shrinking real GDP and tax revenues, but increasing health-care costs (Fig, 2005; Du Bruyn, 2008; UNAIDS, 2014), and loss of foreign direct investments due to high costs of doing business (Barako et al., 2010; Rampersad, 2010), are easily observable in SSA countries. Corporations operating in SSA countries have also been affected negatively in a number of ways by the AIDS pandemic (Rampersad, 2010; Soobaroyen & Ntim, 2013). These include higher absenteeism, increased employee turnover, low staff morale and productivity, shortage of skilled expertise, and

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increased human resource management costs relating to recruitment, training, funeral, and payment of pension/next-of-king benefits (Fig, 2005; Mahajan et al., 2007). The above negative consequences appeared to have not only impaired the competitiveness of SSA corporations, but also impacted negatively on their capacity to maintain long-term profitable and sustainable operations (Dickinson, 2004; Fig, 2005; Rampersad, 2010).

Observably, efforts at addressing the HIV/AIDS epidemic have also been hampered by lack of decisive leadership and policies, corruption, political indifference, and cynicism on the part of SSA national politicians and governments (Dickinson, 2004; Fig, 2005; Mahajan et al., 2007; Barako et al., 2010; Rampersad, 2010). In South Africa, for example, political leaders have not only publicly and persistently challenged the scientific causes of HIV/AIDS (e.g., by suggesting that HIV/AIDS is caused by poverty rather than its identified major cause of having unprotected sex), but also raised important doubts with respect to the efficacy of anti-retroviral drugs, and thus, have explicitly refused to administer such drugs to HIV/AIDS patients (e.g., Dickinson & Stevens, 2005; Soobaroyen & Ntim, 2013). Similarly, in Ghana, Kenya, Malawi, Nigeria, Uganda, Zambia and Zimbabwe, corruption and poor administrative practices have undermined HIV/AIDS policy implementation, such as public education, awareness, and prevention campaigns (De Villiers and Van Staden 2006; Mahajan et al., 2007; Vass, 2008; Barako et al., 2010; Rahaman et al., 2010).

Consequently, we argue that the lack of effective leadership and policies by national governments coupled with the direct negative implications of the HIV/AIDS epidemic for corporate sustainability should give corporations, especially large ones operating in SSA countries, a greater impetus to pursue a more socially responsible agenda with regard to how they report their commitments towards addressing the HIV/AIDS pandemic. One credible way by which corporations can demonstrate their commitment towards addressing the HIV/AIDS challenge is to adopt the 2003 Global Reporting Initiative (GRI)'s reporting guidance on HIV/AIDS (Dickinson, 2004; Fig, 2005; Dickinson & Stevens, 2005; Lawrence & Samkin, 2005; Rampersad, 2010; Soobaroyen & Ntim, 2013). The GRI's framework, which was developed and tested in South Africa, contains 16 'performance indicators', covering four broad areas of sustainable HIV/AIDS policy development and implementation: (i) good governance; (ii) measuring, monitoring and evaluation; (iii) workplace conditions and HIV/AIDS management; and (iv) depth, quality and sustainability of programmes.

Coincidentally, and similar to European and American countries, a number of SSA countries have pursued voluntary ('comply or explain') CG and CHA policy reforms (Aguilera & Cuervo-Cazurra, 2009; Cicon et al., 2012), albeit at different time-periods, ranging from as early as 1994 for South Africa to as late as 2010 for Ghana. However, due to major socio-economic challenges (e.g., widespread poverty and high unemployment), CG reforms that have been embarked upon in SSA nations have put particular importance on improving CG practices for all corporate stakeholders (i.e., both shareholders and other stakeholders) (Mangena & Chamisa, 2008; Ntim et al., 2012a, b). For example, the King Reports on CG (1994, 2002, 2010) of South Africa, which is also used in other SSA countries, such as Botswana, Namibia and Zimbabwe, are inherently inclusive in orientation. The 'inclusive' CG framework explicitly mandates companies to not only pursue sound financial management, but also to directly address a number of identified concerns of other corporate stakeholders, such as those regarding affirmative action, environment, health, HIV/AIDS[2], safety and social investment (King Committee, 1994, 2002, 2010). Similar to South Africa, CG reforms that have been pursued in other SSA countries, such as Ghana (SEC CG Code, 2010), Kenya (PSCGT CG Code, 2002), and Nigeria (SEC CG Code, 2003), have observably been generally inclusive in nature.

In addition to pursuing 'inclusive' CG reforms ("combined CG and CHA reforms"), the SSA corporate context is characterised by concentrated ownership structures (Mangena & Chamisa, 2008; Ntim et al., 2012a, b). In South Africa, ownership concentration arises primarily from the development of corporate pyramids and cross ownerships (King Committee, 2002). In other SSA countries, such as Ghana, Kenya, Nigeria, and Zimbabwe, ownership concentration takes the form of strategic government holdings, often leading to cronyism, favouritism, and tribalism in board appointments. Further, activism by shareholders is noticeably not strong, as well as observable poor record when it comes to the implementation and enforcement of company rules, often resulting in ineffective top executive talent (labour), corporate control, capital, product and service markets (King Committee, 2002; Ntim & Soobaroyen, 2013a, b). This raises concerns as to whether pursuing voluntary CG compliance reforms in SSA countries can be effective in improving CG and CHA disclosures. Thus, this constitutes an ideal research setting in which the connections among CG, CHA and FV can be examined. Hence,

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[2]Noticeably, the King Reports encourage firms to voluntary comply with the GRI (2003)'s guidance on HIV/AIDS.

the central aim of this study is to examine the impact of CG on CHA, and consequently, to ascertain whether the CHA-FV nexus can be moderated by CG.

3. A legitimacy theoretical framework for CHA disclosures

Although a number of theories (e.g., agency, institutional, stakeholder and resource dependence theories) have been employed by previous studies in explaining why corporations may voluntarily engage in CHA activities, legitimacy theory remains the dominant one (Gray et al., 1995; Deegan, 2002; Parker, 2005 Reverte, 2009; Chen & Roberts, 2010; Cho et al., 2012a, b), and therefore legitimacy theory as proposed by Suchman (1995) is combined with Ashforth and Gibbs (1990) substantive and symbolic management in interpreting our findings. Suchman (1995, p.574) defines legitimacy as "*a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions*." In this case, legitimacy theory indicates that a corporation's right to exist becomes legitimised (i.e., gain credibility, stability and continuity by seeking active and/or passive support) if its value system is in congruence with the value system (i.e., norms, beliefs, definitions and rules) of the larger society, but becomes endangered when there is actual or perceived differences between the corporate and societal value systems. Suchman (1995), thus, presents legitimacy as a strategic resource that every organisation does not only need in order to survive, but also gain competitive advantage by winning the support of its powerful stakeholders (e.g., creditors, customers, national governments, shareholders, and employees/unions).

Discernibly, Suchman (1995, p.577) outlines three different types of legitimacy (i.e., pragmatic, moral and cognitive); all of which operate under the common assumption that corporate activities "*are desirable, proper, or appropriate within socially constructed system of norms, values, beliefs, and definitions*", albeit with somewhat different behavioural dynamic. Briefly, Suchman (1995) explains that pragmatic legitimacy is where organisations receive support ('legitimacy') for their activities by offering something to their stakeholders ('quid-pro-quo'), which may involve direct (exchange legitimacy) contributions (e.g., social or financial support), offering positions (e.g., board appointments) of influence (influence legitimacy) and displaying a positive (dispositional legitimacy) disposition (e.g., demonstrating to constituents that it is a caring, trustworthy, honest and decent organisation) towards stakeholders. Unlike pragmatic legitimacy in which an organisation provides

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something (literally a 'bribe') to its stakeholders, especially the powerful ones (e.g., creditors, customers, national governments, shareholders and employees/unions) in direct exchange for their support, moral legitimacy is not based on assessing the direct benefits that organisational stakeholders will receive, but their normative judgement as to whether an organisation's activities, actions, inactions, values, beliefs and norms are right or wrong. This may involve judgments by stakeholders as to whether an organisation's outputs and consequences (consequential legitimacy), techniques and procedures (procedural legitimacy), categories and structures (structural legitimacy), and leaders and representatives actions (personal legitimacy) are in congruence (right) with those of the larger society or not (wrong). Finally, cognitive legitimacy does not rest on the pursuance of stakeholder's self-interests (pragmatic legitimacy) or positive/negative self-evaluation (moral legitimacy), but simply on cognition (learning), often involving the ability of a stakeholder to understand (comprehensibility legitimacy) the activities and actions of an organisation, but also the acceptance that the existence of an organisation is inevitable/unavoidable (taken-for-granted legitimacy) and thus, by extension, the organisation's existence and activities are proper/legitimate. Suchman (1995) suggests that corporations usually employ a number of strategies in order to: (i) gain (e.g., by conforming, selecting and manipulating the environment); (ii) maintain (e.g., by perceiving or pre-empting future changes and protecting past achievements); and (iii) repair (e.g., by offering normalised accounts, restructuring and not 'panicking') their legitimacy.

Whilst Suchman (1995) argues that depending upon the threat to or the state of an organisation's legitimacy, it may employ a mixture of strategies in order to gain, maintain and repair its legitimacy, Ashforth and Gibbs (1990) have perfectly classified such legitimacy seeking strategies broadly into two: (i) substantive ('efficiency'); and (ii) symbolic ('impression') management. Substantive management "*involves real, material change in organizational goals, structures, and processes or socially institutionalized practices*" (Ashforth & Gibbs, 1990, p.178). Substantive management, therefore, involves: (i) meeting actual performance expectations of its powerful stakeholders (e.g., providing a good return on equity to shareholders, producing safe and high quality products at affordable prices, and offering equitable pay and job security for employees); (ii) using coercive isomorphism (e.g., by conforming to the values, norms and expectations of its stakeholders, such as voluntarily complying with a CG or CHA code like the GRI's HIV/AIDS guidance); (iii) altering resource dependencies upon its influential stakeholders (e.g., by developing long-term contracts and alternative supplier

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or customer base); (iv) altering socially institutionalised practices into conformity with its ends or means (e.g., by engaging in intensive lobbying against legislation, litigating against and negotiating with regulators and building a credible scientific knowledge base on which negative claims can be refuted through commissioning and funding of scientific research).

By contrast, Ashforth and Gibbs (1990, p.180) suggest that symbolic management means that "*Rather than actually change its ways, the organization might simply portray – or symbolically manage – them so as to appear consistent with social values and expectations*". Symbolic management, thus, consists of: (i) merely espousing socially acceptable goals while actually pursuing less acceptable ones (e.g., by formulating and publicising ethics policies, but does not monitor actual compliance and enforcement); (ii) denial and concealment (e.g., by suppressing information regarding activities or outcomes likely to undermine legitimacy); (iii) redefining means and ends (e.g., by retrospectively reframing an issue in terms of other values instead of the original values – means and ends – that are seen as legitimate); (iv) offering accounts (e.g., by offering excuses, justifications and explanations aimed at minimising liability and guilt, including attribution to external forces); (v) offering apologies [(e.g., by at least acknowledging some level of partial responsibility for a negative incident and expression of regret, often aimed at (a) conveying management's concerns regarding the effects of the negative incident, (b) gaining support and sympathy from stakeholders, (c) reaffirming to stakeholders that management is in control and serious in addressing the negative incident and (d) maintaining some level of managerial credibility)]; and (vi) ceremonial conformity (e.g., by adopting highly visible practices that are in line with social expectations, whilst leaving the key organisational structure intact. For example, setting up a health and safety committee to study industrial accidents to merely create the impression that management cares about reducing employee fatalities, but no improvements are made to safety gadgets, tools and procedures). Similar to Suchman (1995), Ashsforth and Gibbs (1990) suggest that organisations may select and implement a mixture of these strategies to extend (gain), maintain and defend (repair) their legitimacy and may alter their strategy depending on the objective or severity of the legitimacy threat (high or low) and level of stakeholder scrutiny (high or low). For example, corporations are more likely to adopt substantive (i.e., proactive measures taken in order to gain legitimacy) strategies when the threat to their legitimacy is high (problematic – gaining legitimacy) and stakeholder scrutiny is high, but will employ symbolic (i.e., reactive, routinesed and defensive measures

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taken in order to maintain or repair legitimacy) when the threat to their legitimacy is low (non-problematic –
maintaining or repairing legitimacy) and stakeholder scrutiny is low.

In conclusion, Suchman's (1995) legitimacy framework combined with Ashforth and Gibbs' (1990)
substantive versus symbolic management strategies reflect legitimacy issues posed by the HIV/AIDS pandemic
for corporations operating in SSA countries. For example, and whilst perhaps in the short-term, the disease
might have appeared less important (low threat to legitimacy and stakeholder scrutiny) to the ability of
corporations to conduct sustainable operations and therefore, symbolic management responses might have been
appropriate, as the negative effects (i.e., high levels of absenteeism, employee-turnover, skilled-labour loses and
medical/entitlement payment costs) of the disease became more apparent with direct negative consequences for
the survival of corporations (including the financial bottom line) in the long-term, substantive management
strategies would be expected to be implemented.   In this case, we contend that the voluntary adoption,
compliance with, and disclosure of, good practice recommendations contained in the national codes of CG (e.g.,
Kenya, 2002; Nigeria, 2003; Ghana, 2010; South Africa, 2010) and the 2003 GRI guidance on HIV/AIDS
among corporations operating in SSA countries will be a reflection of Suchman's (1995) pragmatic (i.e.,
exchange, influence, and dispositional legitimacy), moral (i.e., consequential, procedural, structural and personal
legitimacy) and cognitive (i.e., comprehensibility and taken-for-granted legitimacy) legitimation approaches, for
which they may elect to engage substantively and/or symbolically with, as advanced by Ashforth and Gibbs
(1990). We, therefore, apply this framework to develop our hypotheses and interpret the findings.

4. Literature review: Past studies on CHA, CG, and FV and hypotheses development

4.1. Prior evidence on the relationship between quality CG indices and CHA disclosures

A good number of studies have investigated the link between CG and voluntary disclosures (Chau &
Gray, 2002; Eng & Mak, 2003; Barako et. al., 2006; Collett & Hrasky, 2005; Beekes & Brown, 2006; Cheng &
Courtenay, 2006; Holm & Laursen, 2007; Ntim et al., 2012b, 2013), as well as CG and FV (Gompers et al., 2003;
Beiner et al., 2006; Bozec & Bozec, 2012; Ntim et al., 2012a; Ntim, 2015). Other studies have investigated how
traditional corporate features (e.g., leverage and profitability) impact on SEA practices (Adams, 2002; Reverte,
2009; Fifka, 2013; Barbu et al., 2014a; Crifo & Forget, 2015), whereas some authors have investigated the links

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among CG, shareholding structure, board variables and SEA practices (Hillman et al., 2001; Haniffa & Cooke, 2005; Lattemann et al., 2009; Harjoto & Jo, 2011; Jo & Harjoto, 2011, 2012). However, studies examining how a composite internal quality CG index impacts on CHA disclosures, and consequently whether CG can moderate the CHA-FV nexus, are rare. We, therefore, seek to examine the above strands of the extant literature to identify potential internal CG structures that can affect CHA practices. Specifically, we examine: (i) how the quality of a corporation's a composite internal CG index impacts on its CHA disclosures; and (ii) consequently whether CG can moderate the link between CHA disclosures and FV.

4.2. The quality of composite internal CG indices and CHA disclosures

The findings of a good number of past studies indicate a positive link between CG and FV (Gompers et al., 2003; Beiner et al., 2006; Renders et al., 2010; Bozec & Bozec, 2012). On the other hand, studies that examine whether better-governed firms engage in good SEA practices are comparatively limited (Jamali et al., 2008; Michelon & Parbonetti, 2012), but particularly acute when it comes specifically to CHA practices (Barako & Brown, 2008; Soobaroyen & Ntim, 2013). Theoretically, however, a positive link between good governance and CHA disclosures can be expected because high managerial monitoring is often an observable characteristic of well-governed firms (Arora & Dharwadkar, 2011), with increased substantive and/or symbolic CHA disclosures helping to improve corporate legitimacy (i.e., pragmatic, moral and/or cognitive legitimacy) by reducing information asymmetry between managers and powerful stakeholders, such as employees and shareholders. In a similar vein, complying (i.e., substantively and/or symbolically) with good CG rules (procedural legitimacy – pragmatic), such as national CG codes and 2003 GRI guidance on HIV/AIDS by committing to increased CHA disclosures may help enhance legitimacy of company operations by improving company image and goodwill (i.e., consequential legitimacy – moral and comprehensibility/taken-for-granted legitimacy - cognitive) (Scott, 1987; Suchman, 1995), as well as gain access to critical resources through gaining the backing of influential stakeholders (i.e., exchange and influence legitimacy – pragmatic), such as customers and government (Pfeffer & Salancik, 1978; Freeman, 1984), which can impact positively on FV. Consequently, good governance has been generally theorised as being a part of CHA practices (Jamali et al., 2008), and thereby suggesting potentially a stronger link between good CG and CHA disclosures (Elkington, 2006; Beekes &

Brown, 2006). Additionally, the CG-CHA disclosure link is usually rendered apparent when CG is defined from a stakeholder perspective, which indicates that good governance does not only entail sound financial management for shareholders, but also good social, environmental, ethical, health and safety practices for all other corporate stakeholders (e.g., creditors, local communities and unions) (Jamali et al., 2008).

Empirically, whilst the link between individual shareholding/board mechanisms and SEA disclosures have been investigated by a small number of scholars (Aguilera et al., 2006; Barako & Brown, 2008; Dam & Scholtens, 2012), there is an acute dearth of past studies that make use of quality CG indices. Similar to previous research (Gibson & O'Donovan, 2007; Jamali et al., 2008; Lattermann et al., 2009), and distinctively employing Gompers et al.'s (2003) broad composite CG index, Arora and Dharwadkar (2011) report a positive CG index-SEA nexus. Similar recent US (Jo & Harjoto, 2011, 2012; Cai et al., 2012) and South African (Ntim & Soobaroyen, 2013b) studies report a positive effect of broad composite quality CG indices on SEA disclosures. As previously discussed, and with respect to the SSA corporate setting, the "inclusive" CG approach requires corporations to govern not only in the best interests of shareholders, but also other stakeholders by addressing a number of pressing CHA issues, such as safety, Health (i.e., HIV/Aids), environment and social investment. It can be inferred from our discussions above that good governance is likely to have a positive effect on CHA disclosures, and hence, the first hypothesis to be tested is:

H1. *Ceteris paribus, there is a statistically significant positive relationship between the quality of internal CG, as proxied by a broad composite CG index and the level of CHA disclosures.*

4.3 The CHA-FV nexus: The moderating impact of CG

Two major opposing ideas exist when it comes to the impact of CHA disclosures on FV. A major, but albeit a less dominant strand of the theoretical literature indicates that firms that show greater commitment to CHA activities tend to incur extra expenses that make them less profitable than their counterparts that depict less commitment to CHA activities (Friedman, 1970; McGuire et al., 1988), and hence, an inverse link between CHA disclosures and FV can be expected. Such expenses and costs may be in the form of: (i) direct financial investments in CHA activities; (ii) agency costs arising from excessive managerial discretion; and (iii) competitive/strategic advantage costs that may relate to ethical decisions with respect to avoiding competitive investments in certain geographic locations, products and services. An opposing theoretical conjecture to the

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negative one is that firms that show greater commitment to CHA activities can receive higher market valuation than their counterparts that display less commitment to CHA practices in several ways. First, it can be argued that engaging in CHA activities can enhance FV by minimising managerial opportunism through the improvement in the flow of information between managers and shareholders (Jensen & Meckling, 1976; Reverte, 2009). Second, others indicate that engaging in increased CHA (i.e., substantively and/or symbolically) disclosures may not only help enhance FV by legitimising the activities and operations of the corporation (i.e., moral and cognitive legitimacy), but also provide opportunities to obtain vital corporate assets (i.e., pragmatic legitimacy) (e.g., tax exemptions, cheap capital, and high quality labour) by enhancing company image, goodwill and reputation (Pfeffer & Salancik, 1978; DiMaggio & Powell, 1983; Suchman, 1995). Third, other scholars suggest that meeting the demands of influential stakeholders (e.g., trade unions, customers, politicians, and local communities) for increased commitment to CHA activities and disclosures may improve corporate legitimacy and FV by minimising potential costs often associated with politics (e.g., nationalisation threats, legislation, strikes by labour unions and uprisings by local communities) (Freeman, 1984; Donaldson & Preston, 1995).

In line with the mixed theoretical expectations, a number of prior papers that have investigated the relationship between SEA practices and FV report conflicting evidence (McGuire et al., 1988; Nelling & Webb, 2009; Callado-Munoz & Ultrero-Gonzalez, 2011; Jo & Harjoto, 2011, 2012). Existing studies which have focused almost exclusively on traditional SEA practices (to the neglect of CHA practices) are also limited to a small number of advanced economies that tend to depict some level of similarities in national government effectiveness, the quality of national public health infrastructure and delivery effectiveness, regulatory and other institutional research settings (Becchetti & Ciciretti, 2009; Cai et al., 2012; Fifka, 2013; Crifo & Forget, 2015). In addition, whereas research design limitations relating to potential missing and endogenous variables have been cited as the main cause of the conflicting findings of prior studies (McWilliams & Siegel, 2000; Orlitzky et al., 2003), the results of latest authors who adequately resolve such methodological challenges remain equally inconsistent (Bird et al., 2007; Lo & Sheu, 2007; Scholtens, 2007, 2008; Harjoto & Jo, 2011).

By contrast, large evidence exists that indicates a positive link between CG and FV (see Gompers et al., 2003; Beiner et al., 2006; Henry, 2008; Renders et al., 2010; Bozec & Bozec, 2012). Thus, as the decision to show greater commitment to CHA activities is normally initiated by top management, our conjecture is that CG

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may have a moderating impact on the link between CHA disclosures and FV. Our intuition is informed by a small, but gradually growing strand of studies that indicate that despite the fact that CG practices and SEA disclosures are both valued by the capital markets, CG is valued more highly than SEA disclosures (Jamali et al., 2008; Starks, 2009; Arora & Dharwadkar, 2011; Ntim et al., 2012a; Ntim & Soobaroyen, 2013a). This means that whilst firms with good CG structures tend to have higher market valuation, such firms are also more likely to engage in good SEA practices, and thus the higher market valuation is mainly due to good CG practices instead of good SEA practices per se. However, the main limitation of the current literature is that they have examined direct effect of SEA disclosures on FV without considering the possible moderating role of CG on the association between SEA and FV. Additionally, existing studies have examined these issues by focusing mainly on traditional SEA practices to the neglect of CHA practices, resulting in an acute lack of understanding of how and why CHA might affect FV and consequently, whether CG can moderate the connection between CHA and FV. As a result, our objective is to contribute to the extant international CG and CHA literature by distinctively investigating the CHA-FV nexus, and thus, the final hypotheses to be tested are:

> **H2a.** *Ceteris paribus, there is a positive, but weak direct relationship between CHA disclosures and FV.*

> **H2b.** *Ceteris paribus, the higher (lower) the CG quality, the more (less) positive is the link between CHA disclosures and FV.*

5. Research design

5.1. Data and sample considerations

Our sample is based on all 573: 24, 45, 156, 291, and 57 non-financial[3] corporations listed on the national stock exchanges of Ghana, Kenya, Nigeria, South Africa, and Zimbabwe, respectively, with complete data for 2005, 2007, 2009, 2011, and 2013 years, chosen from five industrial sectors: basic materials/oil & gas;

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[3]Our sample excludes financials and utilities because they tend to be: (i) tightly regulated; and (ii) heavily leveraged – two features which can have a different effect on their FV, CHA and CG mechanisms, and should, thus, be analysed separately (Eng & Mak, 2003; Collett & Hrasky 2005; Mangena & Chamisa, 2008; Ntim et al., 2012b). Moreover, excluding the two industries may make it easier to make comparisons with the results of prior authors (Roberts, 1992; Gray et al., 1995; Deegan & Gordon, 1996; Gamble et al., 1996; Williams, 1999; Williams & Pei, 1999; Newson & Deegan, 2002; Campbell et al., 2003; Freedman & Jaggi, 2005), who also did not include financials and utilities in their sample. Hence, in line with prior papers (Barako et al., 2006; Beekes & Brown, 2006; Branco & Rodrigues, 2008; Reverte, 2009; Holm & Laursen, 2007; Flatotchev & Nakajima, 2014), we restrict our sample to non-financials with the following breakdown: (i) Ghana - 24 out of a total of 35 listed firms; (ii) Kenya - 45 out of a total of 60 listed firms; (iii) Nigeria - 156 out of a total of 223 listed firms; (iv) South Africa - 291 out of a total of 402 listed firms; and (i) Zimbabwe - 57 out of a total of 81 listed firms. The sample starts in 2005 due to fact that it was the earliest year for which the required data was systematically available across the five countries and ends in 2013 due to the fact that: (i) it was the most recent financial year in which the required data was accessible in the *Perfect Information Database* and *DataStream*, and (ii) it also permitted longitudinal analyses. However, because CG and CHA variables tend to be sticky, we sample every other year instead of every consecutive year from 2005 to 2013. The complete data required were obtained for 24, 36, 101, 169, and 40, respectively, for Ghanaian, Kenyan, Nigerian, South African, and Zimbabwean listed non-financial firms. Collecting the CG and CHA data manually involved a considerable amount of labour hours and thus, we restricted our final sample to 20 firms from each of the 5 sampled SSA countries (consisting of 10 small and 10 large firms with 2 small and 2 large firms each from the 5 industries) with full data available for the 5 years examined (i.e., 2005, 2007, 2009, 2011, and 2013).

consumer goods; consumer services; industrials; and technology/telecoms as at 31 December 2013. The results of prior authors indicate that the type of industry and size of the firm tend to affect CG and SEA disclosures (Chau & Gray, 2002; Eng & Mak, 2003; Collett & Hrasky, 2005; Barako et al., 2006; Beekes & Brown, 2006; Cheng & Courtenay, 2006; Holm & Laursen, 2007; Fifka, 2013; Barbu et al., 2014; Crifo & Forget, 2015), and therefore we selected the largest 10 (i.e., 2 each from the 5 industries) and smallest 10 (i.e., 2 each from the 5 industries) companies from each of the 5 selected SSA countries using their share capitalisation with a view to accounting adequately for industrial sectors and company size. Hence, the final sample was made up of 100 listed firms over a period of 5 years, resulting in a total sum of 500 financial year observations from 5 SSA countries and industrial sectors for our empirical investigation.[4] The CHA and CG measures were collected from the sampled firms' published annual reports, including 69 stand-alone sustainability reports, which were obtained from the *Perfect Information Database* (and supplemented with company websites where annual reports are not found in *Perfect Information*), whilst the financial and stock market variables were collected from *DataStream*.

5.2. Variables and measures

Our measures and proxies are grouped into 6 different kinds with the Appendices (1, 2 and 3) and Table 1 presenting detailed information regarding how each variable was operationalised. First, in testing *H1*, our central dependent variable is the total CHA disclosure scores - *CHADW* (*CHADI*), that seeks to measure the quantity by word count (*CHADW*) and quality by a disclosure index (*CHADI* – containing 50 disclosure items) of CHA disclosures covering four broad areas as set out by 2003 GRI's reporting guidance on HIV/AIDS, consisting of: (i) 15 disclosure items on good governance (*GOVDW or GOVDI*); (ii) 9 disclosure items on measurement, monitoring and evaluation (*MMEDW or MMEDI*); (iii) 6 disclosure items on workplace conditions and HIV/AIDS management (*WCHDW or WCHDI*); and (iv) 20 disclosure items on depth, quality

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[4]The following factors influenced the criteria for selecting our final sample. In the first place, we focused on Ghana, Kenya, Nigeria, South Africa, and Zimbabwe because they are the largest and most active stock markets in SSA with comparatively sufficient data available in *Perfect Information Database* and *DataStream* to permit serious empirical analyses. For example, together, the five countries account for over 80% of both SSA stock market capitalisation and GDP. Second, the five countries share a number a common characteristics: (i) they are all Anglo-American countries with similar accounting (e.g., the central objective of accounting is to address the micro/firm aim of maximising shareholder value compared with addressing the macro objective of improving economic growth and national development), auditing, CG (e.g., South African and Zimbabwean listed firms use the same King Reports of CG), and legal (common law) systems; (ii) they all require listed firms to prepare their financial statements in accordance with international accounting standards; and (iii) they have similar corporate law and ownership structures; and thereby permitting comparability of CG and CHA disclosures among firms and across countries. Second, following prior studies (Henry, 2008; Ntim & Soobaroyen, 2013a, b), the criteria helped in meeting the requirements for balanced panel analysis. Advantages for employing panel data consist of limited multi-collinearities and more observations along both cross-sectional and time series dimensions (Gujarati, 2003; Wooldridge, 2010). The final reason is that employing a 5-year panel data with both time series and cross-sectional dimensions can be useful in determining whether cross-sectional associations among CG, CHA and FV measures hold over-time.

and sustainability of programmes (*DQSDW or DQSDI*) of CHA disclosures. This constitutes one of the largest datasets to be employed on CHA disclosures to-date. Appendix 1 contains all 50 items scored.

The widely used content analysis technique of coding narratives, graphs, pictures and numbers into different themes and patterns was employed in collecting the SEA data (Krippendorff, 1980, 2004; Marston & Shrives, 1991; Hackston & Milne, 1996; Unerman, 2000; Deegan, 2002; Parker, 2005). Two main issues needed to be addressed in order to use the content analysis technique to accurately code the CHA disclosures. First, there are two main measurement approaches – quantitative measures, such as word, sentence, paragraph and page counts (which seek to measure the volume of CHA disclosures) and qualitative measures, such as disclosure indices (which seek to measure either only the volume of information disclosed – binary/unweighted indices and/or both volume and quality of information disclosed – weighted indices) (Wiseman, 1982; Milne & Adler, 1999; Tom, 2002; Beattie et al., 2004; Beattie & Thomson, 2007; Beck et al., 2010; Hooks & Van Staden, 2011). Advantages for using quantitative measures (e.g., word counts) include ability to measure CHA disclosures: (i) in greater detail; and (ii) with high levels of objectivity and reliability (accuracy and stability, reproducibility), but quantitative measures are often criticised for increased possibility of capturing non CHA disclosures (Milne & Adler, 1999; Unerman, 2000; Beattie et al., 2004). By contrast, qualitative measures (e.g., weighted indices) have the capacity to accurately measure the volume, quality and meaningful CHA information, but usually criticised for their high levels of subjectivity involved and labour intensive nature (Marston & Shrives, 1991; Beattie & Thomson, 2007; Hooks & Van Staden, 2011). Therefore, and given the limitations of quantitative and qualitative disclosure proxies articulated above, both word count (quantity measure) and disclosure index (quality measure) are employed as a way of checking the sensitivity of the results. With respect to our quality index, and as binary/unweighted indices are unable to capture differences in disclosure quality (i.e., similar limitation to word counts, but word counts can be measured more accurately and in greater detail than binary/unweighted indices), we adopted a weighted disclosure index approach.[5] Several weighted disclosure approaches have been articulated in the literature, often with three-scale scoring levels (no, qualitative and

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[5]However, to be certain and based also on the recommendations of an anonymous reviewer, we re-coded 40 (8 each from the 5 industries consisting of 4 large and 4 small firms) annual reports by using a simple binary/unweighted CHA index (i.e., 1 if present, 0 otherwise). The correlation between the binary CHA scores and the corresponding seven-level weighted CHA scores were fairly high at 0.69, but the statistical properties (e.g., standard deviation, skewness and kurtosis) of the distribution of the weighted index were better than the binary index. Therefore, and given the highly labour intensive nature of manual collection, we limited our main analysis to our weighted quality CHA disclosure index and quantitative CHA measure (word counts).

quantitative information) (Marston & Shrives, 1991; Wiseman, 1982; Beattie et al., 2004; Beattie & Thomson, 2007; Hooks & Van Staden, 2011), but sometimes higher levels, such as six-scale scoring levels (no, qualitative, quantitative, monetary, explanation and comparison of information) (Tom, 2002; Beck et al., 2010). The main problem with these weighted indices is that they are usually not consistent with the use of descriptors [(e.g., although both Tom (2002) and Beck et al. (2010) use six-scale scoring levels, their descriptors of the scoring levels are completely different)], and as such, are often not repeated by any other researcher, and thereby bringing the reliability and validity of such measurement into question. We, therefore, adopted a seven-scale scoring level approach whose reliability and validity has consistently been demonstrated by repeat adoptions, especially in measuring corporate risk disclosures (Beretta & Bozzolan, 2004; Cabedo & Tirado, 2004; Linsley & Shrives, 2006; Abraham & Cox, 2007; Ntim et al., 2013). Thus and specifically, the CHA (HIV/AIDS) disclosure sentences (see Appendix 1 for detailed information on the 4 categories, 50 sub-categories and the seven-scale scoring procedure) were coded on a scale of '0' to '6', whereby '0' referred to 'no HIV/AIDS disclosure information is contained' and '6' implied 'complete CHA (HIV/AIDS) disclosure information', containing all seven possible dimensions of CHA (HIV/AIDS) disclosure. The total scores were then expressed as a percentage, ranging from the lowest ('0 x 50 = 0') (0%) to the highest ('6 x 50 = 300') (100%). Appendix 3 contains specific examples of CHA (HIV/AIDS) disclosures and how they were classified and coded.

The second issue that we address is the reliability of our self-constructed CHA disclosure index. Two main approaches to achieving reliability have been articulated in the literature (Marston & Shrives, 1991; Milne & Adler, 1999; Beattie et al., 2004; Beattie & Thomson, 2007; Hooks & Van Staden, 2011). One way of achieving reliability is to use multiple coders and either demonstrating few errors/discrepancies, which have been resolved through further testing among coders. The alternative approach is to use a single coder, but reliability is achieved through the completion of an initial pilot sample and resolving any discrepancies. In this study, the second approach was adopted in which a single coder performed the content analysis. However, to ensure consistency and reliability, an initial sample of 10 annual reports (2 from each industry consisting of 1 large and 1 small firm each) were coded independently by two coders. In the first stage of pre-testing or piloting, each coder coded 5 annual reports (i.e., 10 annual reports between the two coders). Noticeably, no major differences emerged with the coefficient of agreement between the two coders sufficiently high at 0.85, noting

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that the cut-off level for acceptability ranges from 0.70 to 0.80 (Krippendorff, 1980, 2004; Marston & Shrives, 1991; Milne & Adler, 1999; Beattie et al., 2004; Beattie & Thomson, 2007). Minor differences that emerged from stage 1 were, therefore, discussed and agreed on, with no differences emerging in the subsequent (second stage) pre-testing of the coding instrument on the remaining 10 annual reports between the two coders.

Insert Table 1 about here

Second, in testing *H1*, the key explanatory measure that we employ is a simple dichotomous (i.e., binary/unweighted – 1 if present, 0 otherwise) composite CG index (*CGI*), consisting of 88 common CG items compiled from the national codes of CG used by Ghanaian (SEC CG Code, 2010), Kenyan (PSCGT CG Code, 2002), Nigerian (SEC CG Code, 2003) and South African/Zimbabwean (King Report, 2010) listed firms containing 4 major parts: (i) directors and boards; (ii) accounting, auditing, disclosure and transparency; (iii) internal audit, risk management and control; and (iv) compliance, shareholder rights, and enforcement. Appendix 2 contains the details of the full 88 CG items and how they were scored. Unlike the CHA (HIV/AIDS) disclosures, we adopted a simple binary approach in constructing our CG index. This is because whilst most of the CHA disclosures require some level of judgement regarding their quality, a majority of the CG items involve a straightforward present or absent disclosures. For example, the roles of the chairperson and CEO/MD are split ('1') or not ('0'), the chairperson of the board is an independent non-executive director ('1') or not ('0'), a nomination committee has been established ('1') or not ('0') and the nomination committee is chaired by an independent director ('1') or not ('0'), amongst others. This leaves no or limited opportunities to qualitatively discriminate among disclosure levels, such as meaningfully differentiating between firms that provide a quantification of the information disclosed or not, and thus using ordinal instead of binary coding will be less appropriate.

Third, and to test *H1* and *H2*, we collect data on corporate shareholdings relating to block shareholding (*BSHARE*), government shareholding (*GSHARE*) and institutional shareholding (*ISHARE*), and board variables relating to board size (*BSIZE*), independent non-executive directors (*INED*) and gender diversity within the board of directors (*GDIV*). As several studies show that these variables can impact on CHA disclosures (Hillman et al., 2001; Haniffa & Cooke, 2005; Barako & Brown, 2008; Jamali et al., 2008; Arora & Dharwadkar, 2011; Harjoto & Jo, 2011; Jo & Harjoto, 2011; Cai et al., 2012; Dam & Scholtens, 2012; Jo & Harjoto, 2012;

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Michelon & Parbonetti, 2012; Ntim & Soobaroyen, 2013a, b), we include them as our first set of control variables (as alternative CG mechanisms to the our composite CG index).

Fourth, and to test *H2a* and *b*, Tobin's Q (*TBQ*) is used as the key variable for FV. However, operating return on assets (O*ROA*) and total returns on a company's listed share (*TRS*) are also employed, respectively, as alternative financial accounting– and stock market–related FV measures. Fifth, and to ascertain whether CG can moderate the CHA-FV link (*H2b*), the *CGI* and *CHA* are interacted (i.e., multiplied) to create a new variable as: *CGI* and *CHADI* (*M*CG1*). Finally, and to address potential problems relating to omitted variables (Gujarati, 2003; Wooldridge, 2010), we include a second set of control variables, consisting of a number of traditional firm-level characteristics, namely the size of the audit firm (*AFSIZ*), the amount of expenditure on capital items or investments (*CAPEX*), dual-listing (*DLIST*), the size of the firm (*FSIZE*), gearing *(GEAR)*, whether a CG committee has been established (*GOVCO*), growth in annual sales revenues (*GROTH*), the level of risk (*RISK*), whether a SEA committee has been set up (*SEACO*), dummy variables for industry (*DIND*), country dummies (*COUD*) and dummy variables for the year of operation (*DYED*). To save space, specific hypotheses relating to the control measures on the on the hand, and CG, CHA and FV on the other hand, are not explicitly developed, but a rigorously established theoretical literature and empirical studies exist that indicate that the above set of control variables have the capacity to influence CG, CHA and FV (McGuire et al., 1988; Beiner et al., 2006; Henry, 2008; Reverte, 2009; Fifka, 2013; Crifo & Forget, 2015).

6. Empirical analyses and discussion

6.1. Univariate statistics and bivariate regression analyses

Tables 2 and 3 present univariate statistics of the variables for the pooled sample and each of the five SSA countries, respectively. For brevity, we do not discuss the univariate statistics in detail, but in the main they indicate that the quality (*CHADI%* - CHA disclosure index) and quantity (*CHADW*- CHA word count disclosures) CHA variables show wide variations. In Table 2, for instance, *CHADW* (*CHADI*) spans from a minimum of 4 (1.33%) to a maximum of 10,984 (83.33%) with a mean of 1,987 (55.63%) word counts (CHA disclosure index score). Hence, indicating that a large amount of variability exists when it comes to the significance that SSA listed firms' accord HIV/AIDs practices. Similarly, the measures relating to the four

categories that make up the summary CHA (*CHADW or CHADI*), namely: (i) depth, quality and sustainability of programmes disclosures (*DQSDW* – word counts or *DQSDI* – disclosure index); (ii) good governance disclosures (*GOVDW* – word counts or *GOVDI* – disclosure index); (iii) measurement, monitoring and evaluation disclosures (*MMEDW* – word counts or *MMEDI* – disclosure index); and (iv) workplace conditions and HIV/AIDS management disclosures (*WCHDW* – word counts or *WCHDI* – disclosure index), exhibit wide spreads in their distributions. It is discernible that *DQSDW* shows the highest HIV/AIDS word count disclosures, spanning from the lowest of 4 words to the highest of 5,786 and an average of 1,310 words. On the other hand, *WCHDW* shows the smallest number of HIV/AIDS word count disclosures, spanning from a lowest of 6 to the highest of 1,638 words, with the median firm disclosing 298 words on workplace conditions and HIV/AIDS management disclosures (*WCHDW*).

In addition the: (i) CG index (*CGI*); (ii) alternative CG (control) variables – block shareholding (*BSHARE*), board size (*BSIZE*), gender diversity within the board of directors (*GDIV*), government shareholding (*GSHARE*), independent non-executive directors (*INED*), and institutional shareholding (*ISHARE*); (iii) firm value (FV) measures - (operating return on assets - *OROA*, Tobin's Q - *TBQ*, and total returns on a company's listed shares - *TRS*); and (iv) traditional firm-level control variables – audit firm size (*AFSIZ*), capital expenditure (*CAPEX*), dual-listing (*DLIST*), firm size (*FSIZE*), gearing (*GEAR*), growth in annual sales revenues (*GROTH*), risk (*RISK*), and SEA committee (*SEACO*) variables, all depict sufficient variabilities in their distributions. For example, the distribution of the CG index (*CGI*) spans from the lowest of 4.55% to the highest of 97.72% with the mean firm disclosing 62.50% of the 88 CG items, whilst the median board size (*BSIZE*) is 10 with the smallest board having only 3 members and the largest board having 29 members. This appears to indicate SSA sampled firms were sufficiently chosen, and hence reduces the likelihood of any serious bias relating to the selected final sample that has arguably been the feature of a good number of previous studies.

Insert Table 2 about here

Further, Table 3 reports univariate statistics for the same set of measures, but at the country level, with the variables depicting similar wide spreads in their distributional properties. For example, *CHADW* – word count disclosures (*CHADI%* – disclosure index) for Zimbabwe ranges from a minimum of 6 (2.00%) to a maximum of 8,658 (83.33%) with an average of 1,396 (58.52%) words. Similar distributional properties can be

observed in the variables relating to Ghana, Kenya, Nigeria and South Africa. Observably, HIV/AIDS disclosures are lowest in Ghana, having a mean *CHADW – word count disclosures (CHADI% – disclosure index)* of 360 words (32.46%), but highest in South Africa with an average *CHADW (CHADI%)* of 2,195 words (63.42%). In terms of the CG variables, average board size (*BSIZE*) is discernibly larger in Nigeria with 12 directors, but smallest in Kenya with 9 directors. On average, board gender diversity (*GDIV*) is highest in South Africa with 33.50% (i.e., about 3 women out of every 10 directors), but lowest in Kenya with 24.63% (i.e., about 2 women out of every 10 directors), whilst the average block shareholding (*BSHARE*) is highest in Zimbabwe with 61.85% (28.57%), but lowest in Ghana with 48.63% (19.42%). South Africa has the highest average CG index (*CGI*) score of 68.40%, independent NEDs (*INED*) of 48.65%, institutional shareholding (*ISHARE*) of 65.52%, and *Q* of 1.78, whilst Ghana has the lowest comparable scores for all four variables.

Insert Table 3 about here

Table 4 reports the correlation matrix for the variables to test for multicollinearity. To determine the robustness of our findings, we report both the Pearson's parametric and Spearman's non-parametric coefficients and, discernibly, the direction and magnitude of both coefficients are generally similar and hence, suggesting that any remaining non-normalities may not pose a serious problem. Discernibly, the bivariate correlations among the variables are also averagely low and hence, indicating that any remaining multicollinearity problems may not be harmful. Interestingly and as expected, the CG index (*CGI*), board size (*BSIZE*), board gender diversity (*GDIV*), government shareholding (*GSHARE*), and independent NEDs (*INED*) have a statistically significant relationship with the CHA disclosure index (*CHADI*), whilst block shareholding (*BSHARE*) has a positive relationship with the CHA disclosure index (*CHADI*). By contrast, the significant negative association between institutional shareholding (*ISHARE*) and the CHA disclosure index (*CHADI*) is not consistent with our expectations. In addition, there exist significant associations among the CHA, CG, FV and the control measures employed. For example, audit firm size (*AFSIZ*), dual-listing (*DLIST*), firm size (*FSIZE*), CG committee (*GOVCO*), risk (*RISK*) and SEA committee (*SEACO*) have a positive association with the CHA disclosure index (*CHADI*), whilst capital expenditure (*CAPEX*) and gearing (*GEAR*) have a negative, but statistically insignificant connection with the CHA disclosure index (*CHADI*).

Insert Table 4 about here

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6.2. Multivariate regression analyses

Public companies normally differ in the opportunities and challenges that they may experience in their life-time (Larcker & Rusticus, 2010), which may result in a situation in which CG and CHA disclosures may be vigorously determined by undetectable company-level hetereogeneities (e.g., managerial ability, firm complexity, and company culture) (Henry, 2008; Guest, 2009), and thus rendering less powerful estimation methods, such as ordinary least squares, incapable of detecting them (Gujarati, 2003; Wooldridge, 2010). Thus, in line with prior research that use balanced panel data (Henry, 2008; Guest, 2009; Ntim et al., 2012a), the empirical investigation is carried out by employing fixed-effects estimation method that is appropriate for panel data with the aim of addressing possible endogeneity problems, which can arise from unidentifiable firm-level differences. As a result, the empirical examination starts with the estimation of a basic fixed-effects model in the following form:

$$CHA_{it} = \alpha_0 + \beta_1 CGI_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \gamma_i + \varepsilon_{it} \qquad (1)$$

in which *CHA* refers to the quantity (*CHADW* – number of HIV/AIDS words counted) or quality (*CHADI* - CHA disclosure index) CHA disclosure measure, *CGI* is our composite CG index and *CONTROLS* refers to the traditional firm-level control variables, namely audit firm size (*AFSIZ*), capital expenditure (*CAPEX*), dual-listing (*DLIST*), firm size (*FSIZE*), CG committee (*GOVCO*), gearing (*GEAR*), growth in annual sales revenues (*GROTH*), risk (*RISK*), SEA committee (*SEACO*), industry dummies (*DIND*), country dummies (*COUD*), and year dummies (*DYED*) in which *γ* is defined as company level fixed-effects containing a vector of the differences in the means of the time variant measures.[6]

Table 5 reports the findings of estimating the relationship between CG and CHA disclosures using the quality CHA disclosure index (*CHADI*) proxy. We start by examining whether the CG index (*CGI*) affects the CHA disclosure index (*CHADI*). The coefficient of the CHA disclosure index (*CHADI*) on the CG index (*CGI*) in Model 1 of Table 5 is discernibly significant and positive, implying that hypothesis 1 (*H1)* is empirically supported. The policy implication is that firms with good CG arrangements tend to show greater commitment to CHA activities (i.e., using substantive and/or symbolic legitimacy management strategies) through increased HIV/AIDS disclosures. Theoretically, the results are in line with the expectations of our legitimacy theoretical

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[6]The decision to use fixed-effects method was also influenced by the rejection of the random-effects alternative in favour of fixed-effects approach by the Hausman specification test, which we conducted.

framework. Moral and cognitive legitimacy perspectives suggest that engaging in good CHA practices (i.e., substantively and/or symbolically) can help minimise agency problems (dispositional legitimacy – pragmatic and personal legitimacy – moral) and enhance corporate legitimacy (i.e., reputation and image: comprehensibility and taken-for-granted legitimacy - cognitive) by improving the flow of information (procedural and structural legitimacy – moral) between managers and other corporate stakeholders (e.g., shareholders and employees) (Mallin, 2002; Beekes & Brown, 2006), whilst moral and pragmatic legitimacy indicate that complying with good CG rules (procedural legitimacy – moral) through greater CHA activities (exchange legitimacy – pragmatic) cannot only improve the legitimacy of corporate activities (Scott, 1987; Suchman, 1995), but also offer opportunities to secure important corporate assets by gaining the support of influential stakeholders (exchange and influence legitimacy – pragmatic) (Pfeffer & Salancik, 1978; Freeman, 1984). With reference to the empirical literature, our finding is consistent with the recommendations of the sampled SSA countries' national codes of CG and the similar findings of the few previous SEA studies (Jamali et al., 2008; Stark, 2009; Arora & Dharwadkar, 2011; Harjoto & Jo, 2011; Jo & Harjoto, 2011; Cai et al., 2012; Jo & Harjoto, 2012; Michelon & Parbonetti, 2012; Ntim & Soobaroyen, 2013b).

Insert Table 5 about here

Secondly, a number of previous studies (Hillman et al., 2001; Haniffa & Cooke, 2005; Barako & Brown, 2008; Lattermann et al., 2009; Harjoto & Jo, 2011; Oh et al., 2011; Jo & Harjoto, 2011, 2012; Michelon & Parbonetti, 2012; Kan et al., 2012; Ntim & Soobaroyen, 20013a, b) suggest that shareholding and board structures can impact on SEA disclosures. Therefore, and in order to determine whether the shareholding and board variables, as control variables, affect CHA disclosures, equation (1) is re-estimated by substituting the *CGI* with the three shareholding (block shareholding – *BSHARE*, government shareholding – *GSHARE*, and institutional shareholding – *ISHARE*) and three board (board size – *BSIZE*, board gender diversity – *GDIV*, and independent NEDs – *INED*) variables, respectively, in Models 2 and 3 of Table 5. The findings in Models 2 and 3 of Table 5 indicate that board size (*BSIZE*), board gender diversity (*GDIV*), government shareholding (*GSHARE*), and independent NEDs (*INED*) are positively related to the CHA disclosure index (*CHADI*), but block shareholding (*BSHARE*) and institutional shareholding (*ISHARE*) are negatively associated with the CHA disclosure index (*CHADI*). However, and as a robustness check, we include the CG index (*CGI*) together with

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the shareholding variables only in Model 4 of Table 5, and the CG index (*CGI*) with both the shareholding and board variables in Model 5 of Table 5, but the central tenor of our results remains generally the same.

Together, the findings also seem to provide support for our legitimacy theoretical explanations. For example, the negative connection between block shareholding (*BSHARE*) and CHA disclosure index (*CHADI*) offers support for similar past SEA evidence (Brammer & Pavelin, 2008; Reverte, 2009; Barnea and Rubin, 2010; Arora and Dharwadkar, 2011; Oh et al., 2011; Kan et al., 2012; Ntim & Soobaroyen, 20013a, b), as well as pragmatic and moral legitimacy suggestions that greater monitoring associated with block shareholding (*BSHARE*) reduces the requirement for corporate executives to commit to increased CHA activities (exchange legitimacy – pragmatic) as a way of communicating and justifying (comprehensibility and taken-for-granted legitimacy – cognitive) corporate CHA strategic choices, to owners, as powerful stakeholders (influence legitimacy – pragmatic). By contrast, the negative link between the CHA disclosure index (*CHADI*) and institutional shareholding (*ISHARE*) is in line with the results of prior SEA evidence, which suggested similar negative findings (Barnea & Rubin, 2010; Ntim & Soobaroyen, 2013a, b), but inconsistent with other past SEA evidence that reports a positive CG-SEA association (Aguilera et al., 2006; of Harjoto & Jo, 2011, Jo & Harjoto, 2011, 2012; Oh et al., 2011) or insignificant link between the two variables (Dam & Scholtens, 2012). As block shareholdings are widespread in the SSA research setting (Ntim et al., 2012a, b, 2013; Ntim & Soobaroyen, a, b; also see Tables 2 and 3), the negative block shareholding (*ISHARE*)-CHA disclosure index (*CHADI*) link seems to indicate that in the SSA setting, institutional owners tend to be holders of blocks of shares who may also not need to rely on corporate annual reports for information, but can source such information directly from managers. The positive nexus between block shareholding (*BSHARE)* and institutional shareholding (*ISHARE*) in Table 4 appears to be consistent with our interpretation.

The positive government shareholding (*GSHARE*)-CHA disclosure index (*CHADI*) association is not in line with the negative result of Dam and Scholtens (2012); the results are, however, consistent with the findings of Enk and Mak (2003), Tagesson et al. (2009), Khan et al. (2012), and Ntim and Soobaroyen (2013a, b), as well as pragmatic, moral and cognitive legitimacy theoretical predictions, which indicate that corporations may strive to win the support of the relevant SSA governments, as powerful stakeholders (influence legitimacy – pragmatic),

by engaging in CHA disclosures to signal their congruence with government initiatives (procedural and consequential legitimacy – moral), which can facilitate access to resources (exchange legitimacy – pragmatic).

The positive connection between board gender diversity (*GDIV*) and CHA disclosure index (*CHADI*) provides support for past SEA evidence (Haniffa & Cooke, 2005; Barako & Brown, 2008; Ntim & Soobaroyen, 2013a, b), which suggests that increased executive monitoring is associated with corporate boards possessing greater gender diversity (structural legitimacy - moral), but also offer better stakeholder representation (influence legitimacy - pragmatic), gain resources (exchange legitimacy - pragmatic) and enhance corporate legitimacy (comprehensibility legitimacy – cognitive and dispositional legitimacy - pragmatic). Finally, the positive effect of board size (*BSIZE*) on CHA disclosure index (*CHADI*) is consistent with the results of Mackenzie (2007), and Ntim and Soobaroyen (2013a, b), whilst the positive link between CHA disclosure index (*CHADI*) and independent NEDs (*INED*) is also consistent with recent SEA evidence (Hillman et al., 2001; Eng & Mak, 2003; Haniffa & Cooke, 2005; Barako & Brown, 2008; Brammer & Pavelin, 2008; Lattermann et al., 2009; Harjoto & Jo, 2011; Jo & Harjoto, 2011, 2012; Michelon & Parbonetti, 2012; Ntim & Soobaroyen, 2013a, b). Theoretically, larger boards have greater capacity to monitor managers (structural and personal legitimacy - moral), as well as very rich with respect to experience and skills (exchange legitimacy - pragmatic). In addition, larger boards have better capacity at representing stakeholder interests (influence legitimacy – pragmatic) and espousing good corporate democracy (consequential legitimacy – moral) that can enhance company image, goodwill and thus, organisational legitimacy (comprehensibility and taken-for-granted legitimacy – cognitive). Also, pragmatic legitimacy (influence) indicates that the high level of independence usually associated with independent NEDs (*INED*) puts them in a better position to pressurise company executives to commit to increased CHA activities without fear or favour (i.e., being victimised by top management).

Thirdly, the results indicate that the CG variables can in the main explain variations in the *CHADI*. However, the summary CHA disclosure index (*CHADI*) contains 4 CHA sub-categories such that it is likely for variations to exist in their relationships with the CG variables. Therefore, we investigate how each of the 4 CHA sub-categories are related to the CG structures by using the depth, quality and sustainability of programmes disclosure index (*DQSDI*), good governance disclosure index (*GOVDI*), measurement, monitoring and evaluation disclosure index (*MMEDI*) or work place conditions disclosure index (*WCHDI*) instead of the

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summary CHA disclosure index (*CHADI*). The findings are reported for the 4 CHA sub-categories in Models 6 to 9 of Table 5, respectively. Apart from the CG index (*CGI*)-depth, quality and sustainability of programmes disclosure index (*DQSDI*), block shareholding (*BSHARE*)-depth, quality and sustainability of programmes disclosure index (*DQSDI*) and block shareholding (*BSHARE*)-good governance disclosure index (*GOVDI*) relationships that are not significant, the results are mainly in line with the earlier findings that firms with: (i) better CG standards; (ii) higher shareholdings by government (*GSHARE*); (iii) larger boards (*BSIZE*); (iv) higher board gender diversity (*GDIV*); and (v) more independent boards (*INED*) tend to show greater commitment to CHA activities through increased CHA disclosures compared with firms with higher shareholdings by: (i) blockholders (*BSHARE*) and (ii) institutional owners (*ISHARE*).

Further, to test the sensitivity of our findings in Table 5, we substitute the *CHADI* (i.e., quality CHA disclosure index) with the *CHADW* (i.e., quantity disclosure measure based on number of words counted). Table 6 contains the findings. With the exception of the CG index (*CGI*)-measurement, monitoring and evaluation word count disclosures (*MMEDW*), block shareholding (*BSHARE*)-depth, quality and sustainability word count disclosures (*DQSDW*), block shareholding (*BSHARE*)-measuring, monitoring and evaluation word count disclosures (*MMEDW*), government shareholding (*GSHARE*)-depth, quality and sustainability word count disclosures (*DQSDW*), institutional shareholding (*ISHARE*)-depth, quality and sustainability word count disclosures (*DQSDW*), institutional shareholding (*ISHARE*)-depth, quality and sustainability word count disclosures (*DQSDW*), and board size (*BSIZE*)-depth, quality and sustainability word count disclosures (*DQSDW*) associations that are not significant in Models 1 to 9 of Table 6, the findings bear close similarities with those presented in Models 1 to 9 of Table 5. This implies that the previous reported results are generally not sensitive to whether the *CHADI* (CHA quality-oriented disclosure index) or *CHADW* (CHA word count quantity-oriented disclosures) CHA proxy is employed.

Insert Table 6 about here

Finally, and to examine whether CHA disclosures drive FV, a simple fixed-effects equation of the following form is estimated:

$$FV_{it} = \alpha_0 + \beta_1 CHA_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \gamma_i + \varepsilon_{it} \tag{2}$$

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in which *FV* is the firm value measure (i.e., *OROA*, *TBQ*, and *TRS*), and *CHA* is either our quality (*CHADI* –
CHA disclosure index) or quantity (*CHADW* – CHA word count disclosures) CHA measure, whilst the control
variables are similar to those contained in equation (1).

Table 7 contains the findings relating to the relationship between the CHA disclosures and FV. Prior
research has generally run the CHA disclosures alone on FV, and thus, our empirical investigation starts with a
simple fixed-effects regression of the CHA disclosure index (*CHADI*) on Tobin's Q (*TBQ*) taking into
consideration the control variables. A positive CHA disclosure index (*CHADI*)-Tobin's Q (*TBQ*) nexus is
noticeable in Model 1 of Table 7. To determine whether our finding may be sensitive to the CHA disclosure
proxy employed, the *CHADI* (i.e., the quality-oriented disclosure index) is substituted with the *CHADW* (i.e., the
quantity-oriented measure based on the number of HIV/AIDS words counted) in equation (2). Discernibly, the
finding in Model 2 of Table 7 show a positive CHA word count disclosures (*CHADW*)-FV link, but similarly not
statistically significant. Our finding implies that hypothesis 2a (*H2a*), which suggests that there is a positive, but
weak association between CHA and FV is empirically supported (McGuire et al., 1988; Nelling & Webb, 2009;
Callado-Munoz & Ultrero-Gonzalez, 2011).

Although the finding that the link between the CHA disclosures and FV is positive, but weak is
generally in line with those of prior SEA studies (McWilliams & Siegel, 2000; Nelling & Webb, 2009), our
suggestion is that CG could be the missing variable when estimating the CHA-FV relationship. This prediction is
influenced by current literature that suggests a strong CG-FV nexus (Gompers et al., 2003; Renders et al., 2010,
also see Bozec & Bozec, 2012). This view is also informed by a small, but gradually growing theoretical
literature and empirical studies (Jamali et al., 2008; Stark, 2009; Arora & Dharwadkar, 2011; Harjoto & Jo, 2011;
Jo & Harjoto, 2011; Jo & Harjoto, 2011, 2012; Cai et al., 2012; Ntim et al., 2012a; Ntim & Soobaroyen, 2013b),
which indicate that the stock market values CG disclosures more highly than SEA ones. Thus, to determine the
potential moderating effect of CG on the CHA-FV nexus, equation (2) is re-regressed with an inclusion of
M*CGI measure (i.e., a moderation term obtained through an interaction of the CHA disclosure index (*CHADI*)
and CG index (*CGI*) variables. Observably, the coefficient of FV (*TBQ*) on the CHA disclosure index (*CHADI*)
and CHA disclosure index interacted with the CG index (*M*CGI*) in Model 3 of Table 7 is positive and
statistically significant. This implies that hypothesis 2b (i.e., *H2b*), which suggests that CG has a moderating

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effect on the link between CHA disclosures and FV is empirically supported, and thus making a new important contribution to the prior international CG and CHA literature.

Observably (albeit not the main focus of the study), the traditional control variables also have significant relationships with the dependent variables, as expected. For example and as expected, audit firm size (*AFSIZ*), CG committee (*GOVCO*), dual-listing (*DLIST*), firm size (*FSIZE*), and social and SEA committee (*SEACO*) are positively related to CHA disclosure index (*CHADI*) in Table 5 or CHA word count disclosures (*CHADW*) in Table 6. Similarly, audit firm size (*AFSIZ*), dual-listing (*DLIST*), risk (*RISK*) and sales growth (*GROTH*) are positively related to the FV proxies (*TBQ*, *OROA* and *TRS*), whereas firm size (*FSIZE*) is negatively associated with the FV proxies (*TBQ*, *OROA* and *TRS*) in Table 7. In addition and although not reported for brevity (but available on request), our industry (*DIND*), year (*DYED*) and country (*COUD*) dummies suggest discernible differences in the CHA disclosures (Tables 5 and 6) and FV (Table 7) across industries, years and countries. For example, the coefficients on the country (industry) dummies indicate that CHA disclosures or FV are highest in South Africa (basic materials/oil & gas industry), but lowest in Ghana (technology/telecoms industry). Finally, the coefficients on the year dummies also suggest that CHA disclosures were lowest in 2005, but highest (peaked) in 2009, whilst FV was highest in 2005, but lowest in 2007.[7]

Insert Table 7 about here

6.3. Extra sensitivity checks

Additional empirical investigations are conducted in order to determine the sensitivity of our findings. In the first place, in order to ascertain whether the capacity of our CG index (*CGI*) to influence the association between the CHA disclosures and FV may change if the board (i.e., board size – *BSIZE*, board gender diversity – *GDIV* and independent NEDs – *INED*) and shareholding (i.e., block shareholding - *BSHARE*, government shareholding - *GSHARE* and institutional shareholding – *ISHARE*) variables are present, we re-estimate equation (2) by

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[7]We will like to clarify that our objective is not to necessarily examine how changes in CG policy reforms impact on CHA disclosures and FV. Our objective is to ascertain whether CG can explain observable cross-sectional differences in CHA disclosures in a sample of listed firms in SSA countries and consequently, examine whether CG can moderate the CHA-FV nexus. One reason is that the CG reforms that have been pursued in SSA countries occurred at different time-periods. For example, CG and CHA disclosure reforms began in South Africa as early as 1994, but as late as 2010 in Ghana, and thereby making it difficult to examine the effect of CG reform changes on CHA disclosures along specific time-limes within a cross country study of this nature. As presented in subsection 6.3, we have strived to ascertain how robust our reported cross-sectional associations are by estimating a lagged CHA-FV structure in addition to running an instrumental variable model, with the findings of both suggesting that our results are not necessarily spurious. However, and similar to most of the cross-sectional studies that we review in this study (Hillman et al., 2001; Haniffa & Cooke, 2005; Arora & Dharwadkar, 2011; Harjoto & Jo, 2011; Jo & Harjoto, 2011; Cai et al., 2012; Dam & Scholtens, 2012; Jo & Harjoto, 2012; Michelon & Parbonetti, 2012), we admit that finding evidence of cross-sectional associations among CG, CHA and FV cannot necessarily be inferred as identifying causality relationships among these variables. We discuss these as part of the study's limitations in the summary and conclusion section.

including moderation terms for both sets of variables, respectively, in Models 4 and 5 of Table 7. The results reported in both models are essentially similar to those contained in Model 3 of Table 7. Observably, CHA disclosure index interacted with board gender diversity (*M*GDIV*), CHA disclosure index interacted with government shareholding (*M*GSHARE*), and CHA disclosure index interacted with independent NEDs (*M*INED*) are positively and significantly related to FV, additional new evidence that board gender diversity, government shareholding, and independent non-executive directors also have a moderating influence on the link between the CHA disclosures and FV.

Secondly, in line with the suggestions of Larcker and Rusticus (2010), two extra methods of resolving possible endogeneity problems are implemented: (i) lagged CHA-FV form; and (ii) instrumental variables model. We estimate a lagged CHA-FV connection in order to resolve the existence of potential simultaneous relationship between the CHA disclosures and FV. Thus, in line with prior studies (McGuire et al., 1988; Ntim & Soobaroyen, 2013a), equation (2) is re-estimated in the following lagged form:

$$FV_{it} = \alpha_0 + \beta_1 CHA_{it-1} + \sum_{i=1}^{n} \beta_i CONTROLS_{it-1} + \gamma_i + \varepsilon_{it-1} \qquad (3)$$

in which every specification is unchanged as in equation (2), but we introduce 1 year lag between the CHA disclosures and FV. In the main, the findings presented in Model 6 of Table 7 bear close similarities with those contained in Models 3 to 5 of Table 7, and thus implying that the findings are insensitive to running the CHA-FV nexus in a lagged form.

To address possible omitted variables endogeneity problem, the popular instrumental variable estimation technique is employed (Beiner et al., 2006; Henry, 2008). To make sure that the instrumental variable approach is suitable, the Durbin-Wu-Hausman exogeneity test (Beiner et al., 2006; Henry, 2008) is employed to determine whether Tobin's Q (*TBQ*) is endogenously related to the CHA disclosure index (*CHADI*). Thus, we employ the test to equation (2) with the results suggesting that there is an endogenous relationship between the CHA disclosure index (*CHADI*) and Tobin's Q (*TBQ*), meaning that the instrumental variable approach seems proper, and thereby casting some doubts over our previous results obtained from the fixed-effects estimations. The instrumental variable approach consists of two stages. In stage 1, informed by prior theoretical and empirical studies (Gray et al., 1995; Adam, 2002; Fifka, 2013; Harjoto & Jo, 2011), we predict that the CHA

disclosure index (*CHADI*) is likely to be determined by the 7 CG (i.e., block shareholding – *BSHARE,* board size – *BSIZE,* CG index – *CGI,* board gender diversity – *GDIV,* government shareholding – *GSHARE,* independent NEDs – *INED,* and institutional shareholding – *ISHARE*) and 12 control variables (i.e., audit firm size – *AFSIZ,* capital expenditure – *CAPEX,* country dummies – *COUD,* industry dummies – *DIND,* year dummies – *DYED,* dual-listing – *DLIST,* firm size – *FSIZE,* gearing – *GEAR,* CG committee – *GOVCO,* sales growth – *GROTH,* risk – *RISK,* and social and environmental accounting committee – *SEACO*). In stage 2, the predicted part of the CHA disclosure index (*P_CHADI*) is used as an instrument for the CHA disclosure index (*CHADI*) with equation (2) re-run in the following form:

$$FV_{it} = \alpha_0 + \hat{\beta_1} CHA_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \gamma_i + \varepsilon_{it} \tag{4}$$

in which every specification is unchanged as in equation (2), apart from using the predicted CHA disclosure index (*P_CHADI*) obtained from the stage 1 estimation to replace the CHA disclosure index (*CHADI*) in equation (4). The findings contained in Model 7 of Table 7 relating to the predicted CHA disclosure index (*P_CHADI*) and CHA disclosure index interacted with the CG index (*M*CGI*) indicate that the CHA disclosure index (*CHADI*) remains positively and significantly related to FV (*TBQ*), implying that our evidence appears not to be sensitive to possible endogeneity problems that may be due to omitted variables.

Finally, to ascertain whether our findings are sensitive to the FV proxy used, operating return on assets (*OROA* – financial accounting-related measure) and the total return of a company's listed share (*TRS* – a stock market-related proxy) are used in re-estimating equation (2). The findings contained in Models 8 and 9 of Table 7 for *OROA* and *TRS,* respectively, are in the main, similar to those reported in Models 3 to 7 of the same table, implying that our evidence appears not to be sensitive to the type of FV proxy used. In sum, our extra empirical investigations make us reasonably confident that the findings do not suffer from any major endogeneity problems, as well as not sensitive to alternative CG, CHA and FV proxies.

7. Summary and conclusions

The effect of corporate governance (CG) on firm value (FV) has been investigated by a number of past studies (Gompers et al., 2003; Beiner et al., 2006; Renders et al., 2010; Bozec & Bozec, 2012; Ntim et al.,

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2012a). Some have also investigated the impact of traditional social and environmental accounting (SEA) practices on FV (McGuire et al., 1988; McWilliams & Siegel, 2000; Orlitzky et al., 2003; Cai et al., 2012; Dam & Scholtens, 2012), whilst others have explored the relationship between a number of traditional firm-level factors (e.g., company size, profitability, and industrial sector) and SEA disclosures (Roberts, 1992; Gray et al., 1995; Williams, 1999; Williams & Pei, 1999; Branco & Rodrigues, 2008; Reverte, 2009; Fifka, 2013; Barbu et al., 2014). However, despite theoretical suggestions that the decision to engage in SEA practices is often driven by corporate boards and top management, prior evidence on how and why CG can drive a firm's corporate health accounting (CHA) practices, and consequently, how and why CG might moderate the CHA-FV nexus is rare (Filatotchev & Nakajima, 2014; Crifo & Forget, 2015). Further, the few existing studies that have examined the connections among SEA, CG, and FV have also focused mainly on conventional SEA disclosures (Harjoto & Jo, 2011; Jo & Harjoto, 2011, 2012; Ntim & Soobaroyen, 2013b), with virtually no evidence on CHA relating to major global health crisis, such as alzheimer's, cancer, dementia, "ebola", HIV/AIDs, malaria and tuberculosis. As a result, current international understanding of how and why a corporation's governance mechanisms may influence its CHA orientation and consequently, how and why CG might moderate the FV-CHA nexus is limited. This study, thus, investigates the important subject of how and why a corporation's internal governance structures may be related to its CHA disclosures, and consequently, whether CG can moderate the association between the CHA practices and FV with specific focus on the Global Reporting Initiative's (GRI) 2003 guidance on HIV/AIDS disclosures in Sub-Saharan Africa (SSA), where HIV/AIDS prevalence rate is comparatively high and thus, serving as a significant challenge to corporate profitability, economic growth and development.

Aside articulating and applying a legitimacy theoretical framework that can be used to interpret CHA practices generally, the results of this study make new contributions to the international CG and SEA literature in a several ways. Employing one of the largest datasets to be used in recent times on CHA, CG and FV, our study offers new evidence, which indicates that firms with good CG arrangements tend to show greater commitment to good CHA practices through increased CHA disclosures. Noticeably, there are some limited, but observable differences in the link between the summary CHA disclosure measure and CG on the one hand, and the sub CHA disclosure categories and CG on the other hand, suggesting that firms may attach different importance to different CHA activities. Our study, thus, contributes to a small, but gradually growing literature that examines

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the link between quality CG indices and SEA practices (e.g., Arora & Dharwadkar, 2011; Harjoto & Jo, 2011, 2012; Jo & Harjoto, 2011; Ntim & Soobaroyen, 2013b). Second (although not the central focus of the study), our findings contribute to the literature by suggesting that firms with high shareholding by block-holders and institutions disclose less on their CHA practices, but companies with high shareholding by government, high number of women directors, large number of directors, and more independent non-executive directors disclose more on their CHA practices. These results are mainly in line with the expectations of our conceptual framework that attempts to combine Suchman's (1995) legitimacy framework with Ashforth and Gibbs' (1990) substantive versus symbolic legitimacy management strategies.

Third, although the results of a good number of previous research that directly investigated the CHA-FV nexus have been mixed, efforts at explaining how and why this might be the case are limited. Therefore, the current study makes a new and distinctive contribution to the international literature by showing that a firm's internal governance structures have a significant moderating impact on the association between CHA and FV. The theoretical and methodological implication of our evidence is that the effect of CHA on FV is stronger when it is combined with CG than on its own. Empirically, our evidence offers a new important insight on, and expansion of, the efforts at explaining the conflicting results of previous research that has investigated direct links between CHA and FV. The central tenor of our results remains insensitive to a number of potential endogeneity problems and different CHA, CG and FV measures.

Fourth, the results have important policy, practitioner and regulatory implications, particularly for managers of large public corporations, national governments, and transnational/supranational bodies, such as the World Health Organisation, who are interested in eradicating major global health challenges, such as those relating to the global fight against alzheimer's, cancer, dementia, "ebola", malaria and tuberculosis. In terms of national regulatory bodies, governments and transnational/supranational bodies, our evidence provides them with strong impetus to embark upon CG policy reforms alongside initiatives that will improve corporate CHA practices. In particular, efforts at improving financial aspects of CG relating to corporate boards and directors' behaviour, sound financial management and accountability for holders of corporate shares can be embarked on jointly with attempts at resolving pressing issues of relevance to other stakeholders (e.g., labour unions, consumers and local communities) relating to the environment, health and safety, and ethics. With specific

reference to companies, since our evidence indicates that CG and CHA practices can have joint positive effect on FV, it offers senior corporate managers the motivation to capture CHA as an important part of their corporations' broader CG practices by paying attention to pressing CHA issues of their stakeholders.

Finally, whereas our findings are relevant and robust, some caveats are in order. First, the CHA and CG data was manually collected, which required a lot of commitments in terms of time and thus, limited our focus to a sample of SSA companies and HIV/AIDS, respectively. Future studies may utilise our theoretical framework to analyse how corporations can, for example, contribute towards addressing other major global health challenges, such as alzheimer's, cancer and dementia, that are more prevalent in Europe, North America and other developed countries or "ebola" that is endemic in SSA countries, but has recently become a major global health crisis. Second, in line with previous studies, firms in the utility and financial industries were excluded from the final sample; fresh views can be gained by examining such unique corporations. Third, although our CHA indices are quality oriented/weighted, we also employ binary indices and word counts as our proxies for CHA and CG with well-articulated limitations (e.g., Unerman, 2000; Deegan, 2002; Parker, 2005; Hooks & Van Staden, 2011). Whilst the findings obtained by using the quality- and quantity-oriented CHA proxies appear to be largely the same, in the future, researchers may improve their analysis by employing alternative CHA and CG proxies (e.g., number of pages/sentences counted and weighted CG indices). Fourth, as a result of data constraints, the empirical investigation is limited to internal governance structures. In the future, researchers may be able to offer new insights by examining how and why external governance mechanisms, including the law, national culture, politics, and market forces (i.e., for managers and corporations) might influence the CHA practices. Finally, our variables used as proxies for CG, CHA and FV may or may not capture how corporate boards, managers and owners behave in practice. For example, and in line with similar previous SEA studies (Hillman et al., 2001; Haniffa & Cooke, 2005; Arora & Dharwadkar, 2011; Harjoto & Jo, 2011; Jo & Harjoto, 2011; Cai et al., 2012; Dam & Scholtens, 2012; Jo & Harjoto, 2012; Michelon & Parbonetti, 2012), we have assumed that CHA disclosures ('what firms say they do') may be a good proxy for their CHA performance ('what firms actually do'). However, several prior studies suggest that SEA disclosures often tend to be different from SEA performance (Wiseman, 1982; Rockness, 1985; Beattie & Jones, 2000; Tom, 2002; Adams, 2004; Beck et al., 2010; Berthelot et al., 2003; Cho et al., 2012a, b; Cho et al., 2013). For example, and using a cross-

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sectional sample of 92 US firms, Cho et al. (2012a) report that firms with poor environmental performance engage in increased voluntary environmental disclosures. They also report that firms with poor environmental performance tended to have high environmental reputation and were often members of the Dow Jones Sustainability Index, suggesting that such firms use voluntary environmental disclosures to mediate the effect of their poor environmental performance. Like all prior archival studies, our reported cross-sectional associations should, therefore, be interpreted with some level of caution, especially without necessarily assuming or inferring the presence of causality relationships. As suggested by our anonymous reviewers, one way of addressing this is to conduct in-depth interviews with corporate decision-makers, such as senior managers, directors and owners. Thus, useful insights may be offered by future studies by conducting in-depth interviews with corporate managers, directors and owners regarding these issues.

Appendices

Appendix 1: Corporate health accounting disclosure index

Corporate health accounting (CHA) practice disclosure index based on the 2003 GRI reporting guidance of HIV/AIDS			
GRI CHA theme	**Global Reporting Initiative (GRI) CHA item: Information on or reference to**	**Range of scores**	**Total score per theme**
(i). Good governance.	1. Is there a disclosure of, and reference to, the organisation's HIV/AIDS policy? (Policy).	0-6	90
	2. Disclosure of information on policy meeting codes of conduct and laws.	0-6	
	3. Information on partnerships beyond the workplace (with specific stakeholders).	0-6	
	4. Is there reference to an overall strategy for managing the HIV/AIDS risk? (Strategy).	0-6	
	5. Disclosure and elaboration of internal and/or external risks.	0-6	
	6. Disclosure of additional explanation on how the policy/strategies are communicated.	0-6	
	7. Is there disclosure of the extent of preparedness and contingency planning in anticipation of expected HIV/AIDS impacts? (Contingency).	0-6	
	8. Disclosure of information on contingency plan for employees/labour.	0-6	
	9. Disclosure of information on contingency plans for markets and/or suppliers	0-6	
	10. Is there a disclosure that mentions that the organisation monitors its progress and reports in terms of meeting strategies, policies or targets set out from 1-3 above? (Monitoring).	0-6	
	11. Disclosure of information on how the policy, strategy and targets are reviewed or evaluated.	0-6	
	12. Disclosure of external bodies/constituencies to whom the company reports.	0-6	
	13. Is there a disclosure that mentions that the organisation involves stakeholders in the formulation of policy, strategy and implementation? (Stakeholder).	0-6	
	14. Disclosure of specific stakeholder groups (and representative).	0-6	
	15. Disclosure of information on how stakeholders are involved in HIV/AIDs supported structures and budget setting.	0-6	
(ii). Measurement,	16. Disclosure of current (or most recent) HIV/AIDS prevalence and/or incidence rates amongst relevant populations (e.g., at employee level). (Prevalence).	0-6	
	17. Disclosure of evidence to enable an assessment of the reliability of	0-6	

Monitoring and evaluation.	prevalence rates.		
	18. Disclosure of information on future (projections) prevalence and/or incidence rates.	0-6	54
	19. Disclosure of information on current HIV/AIDS-associated costs & losses (Current costs).	0-6	
	20. Disclosure of the methods and/or assumptions used to calculate current costs/losses.	0-6	
	21. Disclosure of the break-down of costs and losses.	0-6	
	22. Disclosure of the total assumed future HIV/AIDS-associated costs and losses. (Future costs).	0-6	
	23. Disclosure of the models and/or assumptions used to calculate future costs/losses.	0-6	
	24. Disclosure of the break-down of future costs and losses.	0-6	
(iii). Workplace conditions and HIV/AIDS management.	25. Disclosure of a workplace or workplace-related HIV/AIDS programmes and interventions. (Programme).	0-6	36
	26. Disclosure of explicit assurance regarding confidentiality and non-discrimination.	0-6	
	27. Disclosure of grievance and discrimination procedures available to employees.	0-6	
	28. Report total allocated budget dedicated to HIV/AIDS programmes per annum. (Budget).	0-6	
	29. Disclosure of the breakdown of budget per programme.	0-6	
	30. Disclosure of further information on the budget / funding sources for the programmes.	0-6	
(iv). Depth, quality, and sustainability of programmes.	31. Disclosure of the organisation's Voluntary Counselling and Testing (VCT) programme.	0-6	120
	32. Disclosure of informaion on how programme is administered to preserve confidentiality and ensure non-discrimination. (VCT).	0-6	
	33. Disclosure of proportion of staff utilising VCT programmes (and/or any quantitative measure of VCT outcomes).	0-6	
	34. Disclosure of other support and counselling programmes for affected groups. (Support).	0-6	
	35. Disclosure of the details of the available support groups.	0-6	
	36. Disclosure of the quality of support (e.g., trained counsellors and peer educators).	0-6	
	37. Disclosure of the organisation's HIV/AIDS education and training programmes. (Education).	0-6	
	38. Detailed disclosure of the nature of the educational programmes.	0-6	
	39. Disclosure of how education and training is assessed for effectiveness.	0-6	
	40. Disclosure of the organisation's condom and femidom distribution programmes. (contraception).	0-6	
	41. Disclosure of educational programmes and/or communications used to encourage the use of contraception.	0-6	
	42. Disclosure of practical actions on making contraception available to workers.	0-6	
	43. Disclosure of the organisation's general health care and wellness provision for employees and/or their families. (Health care).	0-6	
	44. Disclosure of the nature of health care provision (provider and provision of anti-retroviral treatment - ART).	0-6	
	45. Disclosure of preventative measures - including STD treatment.	0-6	
	46. Disclosure of care provision made available to families.	0-6	
	47. Disclosure of proportion of employees receiving anti-retroviral therapy (ART).	0-6	
	48. Disclosure of additional benefits and support for employees sick, dying or deceased from AIDS-related conditions. (Benefits).	0-6	
	49. Disclosure of benefits (retirement and work re-deployment) to employee.	0-6	
	50. Disclosure of available family support (financial and offering work or other).	0-6	
Total	**50 CHA disclosure items**		**300**

Scoring Procedure

0: No disclosure.

1: Disclosure focusing on only past/backward looking information.

2: Disclosure focusing on past/backward looking and future/forward looking information.

3: Disclosure focusing on past/backward looking, future/forward looking, and bad/negative news information.

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4: Disclosure focusing on past/backward looking, future/forward looking, bad/negative and good/positive news information.
5: Disclosure focusing on past, future/forward looking, bad/negative, good/positive and qualitative/non-monetary information.
6: Disclosure focusing on past/historical, future, bad/negative, good/positive, qualitative and quantitative/monetary information.

Appendix 2: Corporate governance (CG) disclosure index			
CG theme	**CG provision: Information on or reference to**	**Range of scores**	**Total score per theme**
(i). Director and board	1. Whether the roles of chairperson and CEO/MD are split.	0-1	
	2. Whether the chairperson of the board is an independent non-executive director.	0-1	
	3. Whether the board is composed by a majority of non-executive directors (NEDs).	0-1	
	4. Whether the board meets at least four times in a year.	0-1	
	5. Whether individual directors' meetings record is disclosed.	0-1	
	6. Whether the remit of the board of directors is disclosed.	0-1	
	7. Whether directors are clearly classified into executive, NED, and independent.	0-1	
	8. Whether chairperson's performance and effectiveness is evaluated and disclosed.	0-1	
	9. Whether CEO/MD's performance and effectiveness is appraised and disclosed.	0-1	
	10. Whether the board's performance and effectiveness is evaluated and disclosed.	0-1	
	11. Whether directors' biography, experience and responsibilities are disclosed.	0-1	
	12. Whether a narrative on relating to policy on achieving sufficient diversity and size of the board is disclosed.	0-1	
	13. The existence of the well-resourced office of company secretary held by suitably qualified and competent professional person.	0-1	
	14. Whether a nomination committee has been established.	0-1	
	15. Whether the nomination committee consists of a majority independent NEDs.	0-1	
	16. Whether performance of the nomination committee is evaluated and disclosed.	0-1	
	17. Whether the remit of the nomination committee is disclosed.	0-1	
	18. Whether the chairperson of the nomination committee is an independent NED.	0-1	
	19. Whether the membership of the nomination committee is disclosed.	0-1	37
	20. Whether the nomination committee's members' meetings attendance record is disclosed.	0-1	
	21. Whether a remuneration committee has been established.	0-1	
	22. Whether the remuneration committee is constituted entirely by independent NEDs.	0-1	
	23. Whether the remit of the remuneration committee is disclosed.	0-1	
	24. Whether the chairperson of the remuneration committee is an independent NED.	0-1	
	25. Whether the remuneration committee performance is evaluated and disclosed.	0-1	
	26. Whether the membership of the remuneration committee is disclosed.	0-1	
	27. Whether the remuneration committee's members' meetings attendance record is disclosed.	0-1	
	28. Whether the remuneration committee meets at least 4 times in a year.	0-1	
	29. Whether the nomination committee meets at least 4 times in a year.	0-1	
	30. Whether directors' have access to free independent professional legal advice.	0-1	
	31. Whether a narrative stating the commitment to ensuring that the board and its committees have appropriate balance of skills,	0-1	

		experience, independence and knowledge of the company is disclosed.		
	32.	Whether a narrative on the board charter/remit, roles and responsibilities in discharging its fiduciary and leadership duties is disclosed.	0-1	
	33.	Whether a narrative relating to director induction, training and continuous personal development plans is disclosed.	0-1	
	34.	Whether the performance of the company secretary is evaluated and disclosed.	0-1	
	35.	Whether the performance of individual board members or directors is evaluated and disclosed.	0-1	
	36.	Whether a policy on the staggered appointment and rotation of directors is disclosed.	0-1	
	37.	Whether a policy of multiple and alternate directorships of board members is disclosed.	0-1	
(ii). Accounting, auditing, disclosure and transparency	38.	Whether the audit committee is constituted by at least 2 independent NEDs.	0-1	
	39.	Whether a narrative on the existence and implementation of a well-developed code of ethics and conduct is disclosed.	0-1	
	40.	Whether a narrative on a robust whistle-blowing process and protection to whistle-blowers is disclosed.	0-1	
	41.	Whether company financial statement and performance is properly prepared, presented and reported.	0-1	
	42.	Whether the policy on the appointment and rotation of auditors is disclosed.	0-1	
	43.	Whether a narrative on annual evaluation of the effectiveness of the risk management and governance strategy and policy is disclosed.	0-1	
	44.	Whether a narrative on annual evaluation of the effectiveness of management and governance of internal control and audit systems is disclosed.	0-1	
	45.	Whether a policy on ensuring timely and balanced disclosure of all material information concerning the company is disclosed.	0-1	
	46.			
	47.	Whether the chairperson of the audit committee is an independent NED.	0-1	26
	48.	Whether the remit of the audit committee is disclosed.		
	49.	Whether the membership of the audit committee is disclosed.	0-1	
	50.	Whether the audit committee's members' meetings attendance record is disclosed.	0-1	
	51.	Whether a board statement on the going-concern status of the firm is disclosed.	0-1	
	52.	Whether share ownership by all insiders, including directors, officers, employees and employees' trust is less than 50% of the total company shareholdings.	0-1	
	53.	Whether the audit committee has at least one member with relevant financial training and experience.	0-1	
	54.	Whether the audit committee performance is evaluated and disclosed.	0-1	
	55.	Whether an audit committee has been established.	0-1	
	56.	Whether directors' remuneration, interests, and share options are disclosed.	0-1	
	57.	Whether director remuneration philosophy and procedure is disclosed.	0-1	
	58.	Whether a narrative on related party transactions are disclosed.	0-1	
	59.	Whether a policy that prohibits directors, officers and employees (insider) share dealings around the release of price sensitive information is disclosed.	0-1	
	60.	Whether the audit committee meets at least 4 times in a year.	0-1	
	61.	Whether a narrative regarding the existence of adequate procedures, policies and processes of appointing and disengaging external auditors disclosed.	0-1	
	62.	Whether a narrative relating to annual financial performance is	0-1	

		disclosed.	
	63. Whether a narrative relating to the review of corporate operations is disclosed.	0-1	
(iii). Internal audit, risk management, and control	64. Whether the risk committee's members' meetings attendance record is disclosed.	0-1	12
	65. Whether membership of the risk committee is disclosed.	0-1	
	66. Whether the remit of the risk committee is disclosed.	0-1	
	67. Whether a narrative on both actual and potential future systematic and non-systematic risks is disclosed.	0-1	
	68. Whether a narrative on existing internal control systems (including internal audit) is disclosed.	0-1	
	69. Whether a narrative on how current and future assessed company risks will be managed is disclosed.	0-1	
	70. Whether a risk management committee has been established.	0-1	
	71. Whether risk management committee meets at least 4 times in a year.	0-1	
	72. Whether the risk management committee's membership consist of executive, non-executive and independent non-executive directors.	0-1	
	73. Whether a narrative relating to risk management and governance strategy and policy is disclosed.	0-1	
	74. Whether a narrative relating to management and governance internal control and audit systems is disclosed.	0-1	
	75. Whether narrative relating to IT governance is disclosed.	0-1	
(iv). Compliance shareholder rights, and enforcement	76. Whether a narrative on how a firm is contributing towards the development of financial journalism is disclosed.	0-1	13
	77. Whether a narrative on what a firm is doing to encourage shareholder activism, like having investor relations department and proxy voting is disclosed.	0-1	
	78. Whether a positive statement on the compliance or non-compliance with the relevant national code of corporate governance is disclosed.	0-1	
	79. Whether a narrative on one-share-one vote is disclosed.	0-1	
	80. Whether a narrative on shareholders right to attend and vote at annual general meetings.	0-1	
	81. Whether a narrative on shareholders right to have say-on-pay is disclosed.	0-1	
	82. Whether a narrative on shareholders right to receive copy of annual reports and relevant company reports and communications is disclosed.	0-1	
	83. Whether a narrative on shareholders right to receive dividends and residual income arising from any liquidation is disclosed.	0-1	
	84. Whether a narrative on ensuring that all shareholders are treated equally is disclosed.	0-1	
	85. Whether a narrative on whether shareholders have the right to receive relevant and timely information concerning the date, location and agenda of the annual general meetings is disclosed.	0-1	
	86. Whether a narrative of the right of shareholders to call extra ordinary meetings is disclosed.	0-1	
	87. Whether a narrative regarding the use of modern means of communication such as websites, e-mails, teleconferencing, and videoconferencing to communicate effectively and timely with shareholders is disclosed.	0-1	
	88. Whether a narrative relating to shareholders right to a secure method of sale, transfer and registration of share ownership is disclosed.	0-1	
Total	**88 CG provisions**		**88**
Scoring procedure			
0: Not disclosed or absent.			
1: Disclosed or present.			

Appendix 3: Specific examples of corporate health accounting disclosures in corporate annual reports and application of the coding rules

Firm name	Examples of HIV/AIDs disclosures in corporate annual reports	HIV disclosure category/major	HIV disclosure sub-category(ies)	Classification /Coding
Turnall Holdings (Zimbabwe)	"The Group employs policies appropriate to the business and markets meant to attract, retain and motivate the quality of staff through training, development, information sharing and progressive cooperation. The Group provides equal opportunities, without discriminating against gender, race, physical ability or HIV/AIDS status. The Group continues to enhance and apply its HIV/AIDS policy adopted in 2010. Our HIV/AIDS policy commits the Group to maintain confidentiality over status, provide education and awareness, provide counselling, prevent spreading and promote safe sex". (Turnall Holdings, 2013, p.29).	Good governance.	Policy/confidentiality/non-discrimination	Past/qualitative/non-monetary
Nampak (South Africa)	"The South African operations have adopted a comprehensive HIV and AIDS awareness programme. Altogether 94% of employees underwent training in South Africa, 100% in both Namibia and Swaziland. As a result of this training, 85% of employees attended voluntary counselling and testing sessions on site (up from 68.5% in 2008) and 99% in both Swaziland and Namibia. The current prevalence rate is below that reported by other manufacturing companies and employees are continuously encouraged to come forward for testing and counselling". (Nampak, 2009, p.49).	Measurement, monitoring and evaluation.	Prevalence/assessment/support/VCT	Past/positive/qualitative/quantitative/non-monetary
Bamburi Cement (Kenya)	"Efforts in developing partnerships for developing health at work and in the community received accolades in Uganda, where Hima Cement won an award from the USAID sponsored Health initiative for the private sector (HIPS) for having a comprehensive medical scheme, a health and HIV policy, a successful peer education program and an outstanding sensitization program on HIV/AIDS, family Planning, Malaria and Sexually Transmitted Infections. …In August 2011 Hima Cement held its monthly outreach sensitization project at Nyakakindo whose goal was to educate the community on safe male circumcision. The stakeholder team also held a community health outreach day at Rugendabara to address issues couples face in HIV/ AIDS. In both campaigns the company provided free counseling & testing, male circumcision and education on family planning. …USAID Award - comprehensive medical scheme, health & HIV policy, successful peer education and health promotional programs". (Bamburi, 2011, pp.23, 25, and 27).	Depth, quality, and sustainability of programmes.	Peer education/policy/ support groups/VCT	Past/positive/qualitative/non-monetary
Accra Brewery (Ghana)	"On world Aids Day, 1st December 2009, voluntary counselling and testing was provided for employees. Holy Trinity Health Centre was the service provider. ABL joined the Ghana Business Coalition against HIV/Aids in the 2008/2009 financial year. The Ghana Business Coalition against HIV/Aids (GhBCA) has amongst its mandate the following: facilitate workplace programs by providing guidelines, strategies and technical resources; coordinate the implementation of workplace HIV/AIDS programs and policies among companies; enroll and mobilize companies to join the Coalition; mobilize resources for the business sector response to HIV/AIDS; build capacity of businesses through research, training & mentoring, monitoring, and evaluation; create a platform for sharing best practices and knowledge; create a database of workplace HIV/AIDS programs and policies; and advocate workplace HIV/AIDS related issues and contribute to the achievement of national HIV/AIDS response targets. ABL has so far benefited from several training programmes organised by the GhBCA for peer educators". (Accra Brewery, 2009, p.6).	Depth, quality, and sustainability of programmes.	Partnership/montoring/stakeholder/training/VCT	Past/qualitative/positive/non-monetary
UAC (Nigeria)	"Our company works to ensure a safe healthy working environment by providing basic HIV/AIDS training to inform, educate and train all employees about HIV /Aids prevention, care and control. We do not discriminate against or dismiss any employee on the basis of his or her HIV status. The HIV status and medical records of any individual will be considered and kept as strictly confidential. As much as possible care will be taken to support such individuals by providing counselling and medical support services". (UAC, 2011, p.50).	Workplace conditions and HIV/AIDS management.	Programme/non discrimination/ support/VCT	Past/qualitative/non-monetary
Anglo-Gold Ashanti (South Africa)	"It is estimated that the HIV/AIDS prevalence levels among employees at the South African operations in 2007 remained stable at around 30% of the workforce. Key objectives of the group HIV/AIDS programme are to minimise the risk of HIV/AIDS on the company and its employees by reducing and ultimately eliminating new infections, efficiently managing those infected and supporting those with advanced AIDS. The programme focuses on prevention of HIV, by means of various workplace initiatives, including voluntary counselling and testing (VCT). Assuming single testing, around 102% of the South African workforce were tested in 2007 (2006: 75%). Treatment programmes, which involve the clinical care of those infected by the virus, including the use of antiretroviral therapy (ART). ART is available to all employees at all our operations in Africa, either directly from company facilities, through company-sponsored or –funded facilities, or from state facilities. Support for the AIDS-ill requiring separation from the company and palliative care, including support for various community initiatives. Total expenditure on the company's HIV/AIDS programme in South Africa amounted to approximately R25.2 million ($3.6 million) in 2007 (2006: R21.5 million; $3.2 million). …Not only does the disease result in death, illness and absenteeism among employees, but it is a major cause of death in young children and pregnant women, with an obvious effect on employees' families and communities". (AngloGold Ashanti, 2007, pp.51-52).	Depth, quality, and sustainability of programmes.	Awareness/ART/budget/costs/health care/monitoring/prevalence/risk/support/stakeholders/VCT	Past/future/positive/negative /qualitative/quantitative/non-monetary/monetary

Appendix 3 (Continuation): Specific examples of corporate health accounting disclosures in corporate annual reports and application of the coding rules

Firm name	Examples of HIV/AIDs disclosures in corporate annual reports	HIV disclosure category/major	HIV disclosure sub-category(ies)	Classification/Coding
Gold Fields (South Africa	"…Approximately 30 per cent of employees in the South Africa Region are HIV positive. This is a significant concern as it negatively impacts on life, safety and productivity. Gold Fields has an extensive and well developed programme to manage all aspects of HIV and AIDS amongst its employees. A central part of this programme is the provision of anti-retroviral treatment (ART) to employees with AIDS. During 2009, 941 new employees started treatment, which brings the total number of employees on the programme to 2,235. Only 6 per cent of employees enrolled on the programme have been forced to withdraw due to non-adherence to the programme. …The deaths in service due to medical reasons (of which HIV is one) has decreased from 10 per 1,000 in 2006 to 5.61 per 1,000 for F2009, pointing to improvements in the accessibility of healthcare services to more employees. In addition, ill health retirements have increased from 25 per 1,000 in F2008 to 29 per 1,000 in F2009. …Informed, Consent, Voluntary Counselling and Testing (ICVCT) is a core part of the HIV/Aids programme, and a significant contributor to the prevention of HIV infection. A total of 39 per cent of all employees in the South Africa Region have been tested. Southern Africa HIV therapeutic vaccine project - Gold Fields has contributed US$600,000 towards the Southern African HIV Therapeutic Vaccine Project. This collaborative strategic HIV/Aids health initiative is aimed at advancing therapeutic vaccine clinical trials within Southern Africa. The Virax vaccine technology and the related project proposal have been extensively discussed with leading HIV experts in South Africa and are favourably regarded due to the potential for the vaccine to provide an effective early therapeutic intervention, potentially delaying the requirement to start ART by some years. The research project has received final South African Medicines Control Council approval and the clinical trial commenced in October 2008. The trial involves recruiting 140 HIV positive participants from four well established HIV/Aids clinics across four provinces in South Africa. Progress has been good with the number of participants enrolled rising to 58 as at June 2009". (Gold Fields, 2009, pp.63-64, 73-74, 84-85).	Depth, quality, and sustainability of programmes.	Awareness/ART/budget/costs/assessment/monitoring/prevalence/support/stakeholders/strategy/treatment	Past/future/positive/negative/qualitative/quantitative/non-monetary/monetary
Guinness Ghana (Ghana)	"Your company has continued to engage employees around HIV/AIDS awareness and this year the Human Resources department as well as the Corporate department continued to play a key role in supporting the Ghana Business Coalition Against HIV/Aids (GBCA) in spreading our best practice of an HIV/Aids work program to other companies in Ghana". (Guinness Ghana Breweries, 2009, p.20).	Workplace conditions and HIV/AIDS management.	Awareness/education/support/stakeholder	Past/qualitative/non-monetary
Kenya Power (Kenya)	"The Company has a comprehensive HIV/Aids policy and supports HIV/Aids patients and their families with free anti-retroviral drugs and counselling. Further, the Company supports the prevention of mother to child transmission of HIV/Aids through its appointed medical care givers. More than 1,150 staff underwent HIV/Aids awareness training during the year under review, and more than 450 were trained on drug and substance abuse". (Kenya Power and Lighting, 2011, p.31).	Good governance	Policy/prevention/support	Past/positive/qualitative/non-monetary
Dairi-bord Holdings (Zimba-bwe)	"…The Group is strategically positioned to deal with HIV and AIDS issues through the HIV and AIDS policy and the implementation of programmes under the policy such as enhanced appreciation to know one's status, greater access to medication as well as support structures for the affected employees. …The Group provided medical aid cover, medical, recreational and nutritional facilities in a wellness programme designed to have a healthy workforce for enhanced productivity. The Group is committed to building a healthy workforce operating in a hazard free environment …by carrying out awareness training programs on HIV/Aids targeted at all employees". (Dairibord Holdings, 2011, p.5, 21-22).	Good governance	Awareness/policy/support	Past/qualitative/positive/non-monetary
Cadbury (Nigeria)	"…Examples of this direct CSR involvement have been mostly in education and health awareness activities, especially HIV/AIDS. HIV/AIDS - we have a robust work place programme for ensuring that employees are fully informed about the scourge of this disease, including causes and prevention. Our documented policy statement is widely circulated among employees, guaranteeing absolute confidentiality and forbidding any form of discrimination. Disclosures may only be made with the consent of the employee, and hotlines are provided for those who desire more counseling in complete anonymity. …The trained volunteer steering committee members organize frequent activities. Slogans designed by employees and reminders through various means, including prints on monthly pay slips, are used to keep HIV/AIDS awareness level top of mind. …As part of our community engagement programme, we are working with the local community to design communication and awareness programmes. In this we are glad to note that the national prevalence rate has dropped from 5.8% to 4.4% due to the collaborative efforts of government and the business community". (Cadbury Nigeria, 2005, pp.6, 24, 33).	Workplace conditions and HIV/AIDS management.	Awareness/educated/communication/prevalence/prevention/programme/confidentiality/non-discrimination/support/stakeholders	Past/qualitative/quantitative/non-monetary
Barlo-world (South Africa)	"Our employees in southern Africa are encouraged to know their HIV status through confidential VCT. People living with HIV/Aids can access ART medication from their medical aid, company sponsored programme or the state. In South Africa, approximately 6 500 employees participated in "Know your Status" campaigns at 80 sites during the past 18 months, with an 85% response rate. 6.1% of these participants are HIV positive. The prevalence amongst our employees in other southern African countries varies between 5% and 20% as determined by anonymous testing or "Know your Status" campaigns. R2 million has been spent during the past two years on prevention initiatives, anonymous testing and "Know your Status" campaigns. Twenty-five employees were placed on ill-health retirement or died as a result of Aids-related conditions. There were no cases in the managerial, executive or professional category, seven in the skilled category, 16 in the semi-skilled category and two in the unskilled category. This equates to a staff turnover of 0.35% of employees per annum, down from 0.56% in 2004. This reduction is attributed to the greater use of ART medication". (Barloworld, 2005, p.50).	Measurement, monitoring and evaluation.	Awareness/ART/benefits/communication/prevalence/prevention/testing/support/treatment/stakeholders/VCT	Past/positive/negative/qualitative/quantitative/non-monetary/monetary

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Table 1
Summary of measures and variables

Corporate health accounting (CHA) variables – Quantity measure (Word count)	
CHADW	is the total word count of corporate health accounting (*CHA*) disclosure proxy covering 4 broad areas as set out by 2003 GRI's reporting guidance on HIV/AIDS, consisting of: (i) good governance (*GOVDW*); (ii) measurement, monitoring & evaluation (*MMEDW*); (iii) workplace conditions & HIV/AIDS management (*WCHDW*); and (iv) depth, quality & sustainability of programmes (*DQSDW*) of CHA practices, that is normalised by taking a natural log.
OTHERS	Is the total word count of CHA disclosures relating to: (i) good governance (*GOVDW*); (ii) measurement, monitoring and evaluation (*MMEDW*); (iii) workplace conditions & HIV/AIDS management (*WCHDW*); and (iv) depth, quality & sustainability of programmes (*DQSDW*) of CHA practices, which is normalised by taking a natural log.
Corporate health accounting (CHA) variables – Qualitative measure (Disclosure index)	
CHADI	A CHA practice disclosure index covering four broad areas as set out by 2003 GRI's reporting guidance on HIV/AIDS, consisting of: (i) good governance (*GOVDI*); (ii) measurement, monitoring & evaluation (*MMEDI*); (iii) workplace conditions & HIV/AIDS management (*WCHDI*); and (iv) depth, quality & sustainability of programmes (*DQSDI*) of CHA practices. All 50 items have a score ranging from 0 to 6 (i.e., 0 – no disclosure; 1 - past or historical disclosures; 2 - past & future or forward looking disclosures; 3 - past, future & bad or negative disclosures; 4 - past, future, negative & good or positive disclosures; 5 – past, future, negative, positive, & non-monetary/qualitative disclosures; and 6 – past, future, negative, positive, non-monetary/qualitative, & quantitative/monetary disclosures). This weighted scoring procedure can result in a total potential score of 300; scaled to a value between 0% and 100%. These CHA items and the scoring procedure are contained in Appendix 1. Appendix 3 also contains specific CHA disclosures and how they were classified and scored.
Firm value (FV) variables	
OROA	Operating profit to total assets, which is expressed as a percentage.
TBQ	Ratio of total assets minus book value of equity plus market value of equity to total assets.
TRS	Total returns on a company's listed share made up of capital gain and dividend yield, which is expressed as a percentage.
Corporate governance (CG)/Alternative CG variables	
CGI	CG index containing 88 common CG items drawn from the national CG codes of Ghana (SEC CG Code, 2010), Kenyan (PSCGT CG Code, 2002), Nigeria (SEC CG Code, 2003), South Africa (King Report, 2010) and Zimbabwe (King Report, 2010) that takes a value of 1 if each of the 88 CG items is disclosed in the annual report, 0 otherwise; scaled to a value between 0% and 100%. These CG items are contained in Appendix 2.
BSIZE	Natural log of the total number of directors on the board of a company.
BSHARE	The number of ordinary shares held by shareholders with at least 5% of the total number of company ordinary shareholdings, which is expressed as percentage.
GDIV	The number female directors to the total number of directors on the board of a firm, which is expressed as a percentage.
GSHARE	The number of ordinary shares held by government to total number of company ordinary shareholdings, which is expressed as a percentage.
INED	The number of independent non-executive directors to the total number of directors on the board of a firm, which is expressed as a percentage.
ISHARE	The number of ordinary shares held by institutional shareholders to the number of company ordinary shareholdings, which is expressed as a percentage.
Moderation variables	
M*CGI	Moderation variables are created between *CGI* and *CHADI* by interacting them (i.e., multiplying by each other). Similar moderation variables were created for the shareholding and board variables (*M*BSHARE*, *M*BSIZE*, *M*GDIV*, *M*GSHARE*, *M*INED*, and *M*ISHARE*) CG mechanisms as part of our sensitivity analysis.
Control variables	
AFSIZ	1, if a company is audited by a big four audit firms (PricewaterhouseCoopers, Deloitte & Touche, Ernst & Young, and KPMG), 0 otherwise.
CAPEX	Total capital expenditure to total assets, which is expressed as a percentage.
DLIST	1, if a firm is listed on a foreign stock market, 0 otherwise.
FSIZE	Natural log of total assets.
GOVCO	1, if a firm has established a corporate governance committee, 0 otherwise
GEAR	Total debt to total assets, which is expressed as a percentage.
GROTH	Current year's sales minus previous year's sales to previous year's sales, which is expressed as a percentage.
RISK	Standard deviation of the FV measure (i.e., *TBQ/OROA/TRS*).
SEACO	1, if a firm has established a social, health and environmental accounting committee, 0 otherwise.
COUD	Dummies for each of the five countries: Ghana; Kenya; Nigeria; South Africa; and Zimbabwe.
DIND	Dummies for each of the five main industries: basic material & oil gas; consumer goods, consumer services & health care; industrials; and technology & telecoms firms.
DYED	Dummies for each of the 5 years of 2005, 2007, 2009, 2011 and 2013.

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Table 2

Summary descriptive statistics of all variables for all 500 firm years

Variable	Mean	Median	Std. Dev.	Maximum	Minimum
Panel A: Corporate health accounting (CHA) variables – Quantity measures (Word count)					
CHRDW	1,986.65	1,843.50	2,787.28	10,984.00	4.00
DQSDW	1,310.40	1,296.00	1,032.20	5,786.00	4.00
GOVDW	697.89	685.00	820.07	2,452.00	6.00
MMEDW	987.16	854.60	948.63	3,318.00	6.00
WCHDW	305.21	298.00	415.14	1,638.00	6.00
Panel B: Corporate health accounting (CHA) variables – Quality measures (Disclosure index)					
CHRDI (%)	55.63	56.66	18.81	83.33	1.33
DQSDI (%)	59.72	57.75	16.06	81.48	3.70
GOVDI(%)	60.53	61.11	17.90	86.67	4.44
MMEDI (%)	64.44	63.89	17.54	91.17	2.78
WCHDI (%)	53.48	54.17	18.05	83.33	3.33
Panel C: Corporate governance (CG)/Alternative CG variables					
CGI (%)	61.24	62.50	15.56	97.72	4.55
BSHARE (%)	56.43	54.25	18.50	100.00	5.32
BSIZE	11.26	10.00	5.08	28.00	3.00
GDIV (%)	29.52	25.35	17.35	88.41	0.00
GSHARE (%)	25.32	20.42	17.03	89.46	0.00
INED (%)	42.68	41.36	16.69	90.45	4.65
ISHARE (%)	58.73	56.59	17.16	96.52	2.98
Panel D: Firm value (FV)/Alternative FV variables					
OROA (%)	10.31	11.65	14.23	94.46	-20.75
TBQ	1.52	1.34	0.89	7.84	0.25
TRS (%)	33.49	30.70	51.65	286.32	-80.53
Panel E: Control variables – Firm-level characteristics					
AFSIZ (%)	79.52	100.00	38.31	100.00	0.00
CAPEX (%)	5.41	5.28	6.98	72.64	0.00
GOVCO (%)	38.43	0.00	43.85	100.00	0.00
DLIST (%)	35.25	0.00	39.58	100.00	0.00
GEAR (%)	45.90	44.53	18.83	94.75	1.28
FSIZE	3.93	3.80	0.98	6.42	0.65
RISK (%)	36.42	20.96	47.66	412.47	1.43
GROTH (%)	9.68	11.32	32.42	96.52	-98.76
SEACO	32.89	0.00	45.80	100.00	0.00

Notes: Table 1 fully defines all the variables used.

Table 3
Summary descriptive statistics of all variables for all 500 firm years for the five SSA countries

Variable	All firms	Ghana	Kenya	Nigeria	South Africa	Zimbabwe
Panel A: Corporate health accounting (CHA) variables – Quantity measures (Word count)						
CHADW						
Mean	1,986.65	359.74	418.65	764.92	2,195.84	1,396.32
Std. Dev.	2,878.28	798.62	964.51	1487.46	2853.78	2,248.73
Min	4.00	4.00	4.00	6.00	6.00	6.00
Max.	10,984.00	3,043.41	3,645.00	5,687.00	10,984.00	8,658.00
Panel B: Corporate health accounting (CHA) variables – Quality measures (Disclosure index)						
CHADI (%)						
Mean	55.63	32.46	45.76	49.65	63.42	58.52
Std. Dev.	18.81	16.94	17.23	16.78	18.96	17.80
Min	1.33	1.33	2.00	2.67	1.33	2.00
Max.	83.33	78.33	80.00	78.33	83.33	83.33
Panel C: Corporate governance (CG)/Alternative CG variables						
CGI (%)						
Mean	61.24	42.36	56.87	59.93	68.40	64.64
Std. Dev.	15.56	13.85	14.38	14.65	15.05	14.85
Min	4.55	4.55	4.55	4.55	6.82	6.82
Max.	97.72	91.09	93.18	93.18	97.72	95.45
GDIV (%)						
Mean	29.52	30.31	24.63	26.92	33.50	31.28
Std. Dev.	17.35	12.86	11.47	12.23	17.75	14.94
Min	0.00	0.00	0.00	0.00	0.00	0.00
Max.	88.41	63.42	53.78	59.85	88.41	82.42
BSIZE						
Mean	11.26	9.43	9.32	12.00	11.63	9.85
Std. Dev.	5.08	3.45	4.06	4.78	4.34	4.59
Min	3.00	3.00	3.00	4.00	4.00	4.00
Max.	28.00	18.00	20.00	28.00	21.00	28.00
BSHARE (%)						
Mean	56.43	48.63	49.65	60.48	57.43	61.85
Std. Dev.	18.50	16.42	15.30	16.75	17.35	18.03
Min	5.32	5.32	7.63	5.39	5.41	5.62
Max.	100.00	90.31	93.54	96.40	100.00	100.00
GSHARE (%)						
Mean	25.32	19.42	22.86	29.53	26.48	28.57
Std. Dev.	17.03	10.55	12.87	14.15	16.14	17.34
Min	0.00	0.00	0.00	0.00	0.00	0.00
Max.	89.46	55.42	67.62	74.31	84.78	89.46
INED (%)						
Mean	42.68	36.54	38.46	44.13	48.65	40.30
Std. Dev.	16.69	15.65	14.98	15.56	16.22	15.89
Min	4.65	4.93	4.65	4.55	6.92	5.23
Max.	90.45	88.64	73.42	80.20	90.45	86.30
ISHARE (%)						
Mean	58.73	38.65	45.68	62.64	65.52	60.31
Std. Dev.	17.16	12.43	12.96	13.72	16.78	14.24
Min	2.98	2.98	3.40	4.28	3.76	3.27
Max.	96.52	65.74	72.63	79.44	96.52	79.65
Panel D: Firm value (FV)/Alternative FV variables						
TBQ						
Mean	1.52	1.25	1.31	1.43	1.78	1.67
Std. Dev.	0.89	0.67	0.69	0.80	0.76	0.85
Min	0.25	0.23	0.25	0.53	0.69	0.58
Max.	7.84	6.32	6.76	7.84	7.25	9.42

Notes: Table 1 fully defines all the variables used.

Table 4
Pearson's and Spearman's correlation matrices of the variables for all 500 firm years

Variable	CHADI	CGI	GDIV	BSHARE	BSIZE	GSHARE	INED	ISHARE	TBQ	AFSIZ	CAPEX	GOVCO	DLIST	SEACO	GEAR	FSIZE	RISK	GROTH
CHADI		.442***	.123***	-.184***	.120***	.190***	.194***	-.111***	.077*	.310***	-.040	.380***	.460***	.418***	-.032	.230***	.180***	.042
CGI	.490***		.126***	-.190***	.146***	.148***	.099**	-.038	.262***	.329***	-.036	.550***	.192***	.204***	-.044	.167***	.184***	.089**
GDIV	.120***	.116**		-.052	.430***	.126***	.130***	.045	-.117***	.119***	.080*	.003	-.039	-.048	.011	.370***	-.099**	.130***
BSHARE	-.130***	-.163***	-.028		-.030	-.238***	-.175***	.240***	-.050	.037	.118***	.014	-.068	-.088*	.090**	-.032	.124***	-.098**
BSIZE	.125***	.140***	.347***	-.009		.322***	.038	.146***	-.096**	.060	.136***	-.111**	.105**	.008	-.160***	.587***	-.060	.034
GSHARE	.175***	.190***	.095**	-.215***	.212***		.240***	.275***	.010	.009	.098**	.132***	.190***	.210***	-.325***	.510***	.098**	.040
INED	.192***	.183***	.135***	-.140***	.001	.116***		.050	.044	-.060	-.020	.108**	.118**	.010	-.210***	.210***	.040	.111***
ISHARE	-.163***	-.040	.011	.360***	.130***	.175***	.060		-.197***	-.050	.158***	-.013	-.040	-.054	.001	.198***	-.119***	.007
TBQ	.079*	.235***	-.078*	-.111**	-.080*	.001	.089*	.280***		.042	-.086*	.218***	.142***	.240***	-.010	.020	.410***	-.003
AFSIZ	.314***	.341***	.118***	.036	.098**	.032	-.058	-.004	.099**		.089*	.243***	.230***	.046	-.086*	.003	.020	-.001
CAPEX	-.001	-.030	.104**	.105**	.109**	.108**	-.030	.117***	-.050	.098**		.030	-.001	.002	-.130***	.312***	-.002	.001
GOVCO	.380***	.542***	.010	.012	-.060	.090*	.112**	-.030	.211***	.240***	.040		.253***	.175***	-.190***	.040	.150***	.060
DLIST	.470***	.210***	-.050	-.044	.085*	.160***	.110**	.006	.125***	.240***	.001	.274***		.310***	-.040	.198***	.118***	.032
SEACO	.382***	.213***	-.083*	-.052	.002	.136***	.030	-.090**	.210***	.038	.119**	.168***	.296***		.001	.190***	.176***	.003
GEAR	-.020	-.028	.025	.080*	-.099**	-.125***	-.242***	-.002	-.001	-.043	-.149***	-.208***	.025	.010		-.220***	-.010	-.022
FSIZE	.208***	.180***	.250**	-.088*	.542***	.386***	.238***	.167***	.001	.004	-.270***	.089*	.190***	.260***	-.220***		.032	.060
RISK	.210***	.162***	-.088*	.116**	-.035	.108**	.020	-.215***	.548***	.054	-.052	.178***	.088*	.243***	-.026	-.001		-.027
GROTH	.025	.118**	.143***	-.116**	.120***	.068	.098**	-.001	.017	-.003	.110**	.094**	.013	.072	-.020	.165***	-.032	

Notes: The bottom left half of the table reports Pearson's parametric correlation coefficients, whilst the upper right half of the table presents Spearman's non-parametric correlation coefficients. ***, **, and * indicate correlation is significant at the 1%, 5% and 10% level, respectively (two-tailed tests). Table 1 contains full definitions of all the variables employed.

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Table 5
The impact of corporate governance on corporate health accounting disclosures based on disclosure indices

	Dependent variables								
Indep. variables (*Model*)	CHADI (1)	CHADI (2)	CHADI (3)	CHADI (4)	CHADI (5)	DQSDI (6)	GOVDI (7)	MMEDI (8)	WCHDI (9)
Corporate governance index:									
CGI	0.190***	-	-	0.149***	0.145***	0.060	0.131***	0.120**	0.118**
	(0.000)	-	-	(0.000)	(0.000)	(0.224)	(0.000)	(0.018)	(0.022)
Alternative CG variables as controls - Shareholding variables:									
BSHARE	-	-0.166***	-	-0.120*	-0.141***	-0.040	-0.022	-0.140***	-0.128**
	-	(0.000)	-	(0.052)	(0.000)	(0.408)	(0.598)	(0.000)	(0.043)
GSHARE	-	0.178***	-	0.150***	0.089**	0.083*	0.156***	0.090**	0.138***
	-	(0.000)	-	(0.000)	(0.021)	(0.076)	(0.000)	(0.023)	(0.000)
ISHARE	-	-0.137**	-	-0.120**	-0.177***	-0.121**	-0.168***	-0.152***	-0.111**
	-	(0.021)	-	(0.044)	(0.000)	(0.042)	(0.000)	(0.000)	(0.046)
Alternative CG variables as controls - Board variables:									
GDIV	-		0.135***	-	0.158***	0.199***	0.123**	0.108**	0.078*
	-	-	(0.000)	-	(0.000)	(0.000)	(0.021)	(0.029)	(0.070)
BSIZE	-	-	0.098**	-	0.109**	0.094**	0.080**	0.110***	0.164***
	-	-	(0.014)	-	(0.017)	(0.015)	(0.085)	(0.008)	(0.000)
INED	-	-	0.052*	-	0.147***	0.058*	0.130***	0.065*	0.069*
	-	-	(0.091)	-	(0.000)	(0.087)	(0.000)	(0.069)	(0.054)
Control variables - Firm-level characteristics									
AFSIZ	0.260***	0.286***	0.182**	0.118**	0.119**	0.210***	0.147**	0.340***	0.225***
	(0.000)	(0.000)	(0.016)	(0.043)	(0.040)	(0.000)	(0.018)	(0.000)	(0.000)
CAPEX	-0.031	-0.036	-0.023	-0.025	-0.035	-0.030	-0.018	-0.045	-0.038
	(0.290)	(0.279)	(0.410)	(0.406)	(0.275)	(0.302)	(0.630)	(0.218)	(0.317)
GOVCO	0.168***	0.290***	0.186***	0.213***	0.440***	0.083*	0.256***	0.314***	0.198**
	(0.010)	(0.000)	(0.000)	(0.000)	(0.000)	(0.079)	(0.000)	(0.000)	(0.035)
DLIST	0.353***	0.350***	0.337***	0.380***	0.290***	0.188**	0.329***	0.269***	0.341***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.015)	(0.000)	(0.000)	(0.000)
GEAR	-0.010	-0.026	-0.025	-0.040	-0.054	-0.006	-0.037	-0.044	-0.052
	(0.705)	(0.408)	(0.416)	(0.353)	(0.310)	(0.805)	(0.374)	(0.340)	(0.318)
FSIZE	0.209***	0.240***	0.236***	0.232***	0.226***	0.238***	0.209***	0.260***	0.255***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
RISK	0.027	0.030	0.029	0.023	0.057	0.026	0.019	0.060	0.030
	(0.450)	(0.372)	(0.385)	(0.476)	(0.275)	(0.451)	(0.686)	(0.243)	(0.382)
GROTH	0.006	0.026	0.024	0.020	0.030	0.048	0.035	0.046	0.040
	(0.732)	(0.480)	(0.516)	(0.525)	(0.463)	(0.360)	(0.361)	(0.332)	(0.341)
SEACO	0.278***	0.346***	0.310***	0.208***	0.323***	0.280***	0.230***	0.310***	0.297***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
DIND	YES	YES	YES	YES	YES	YES	YES	YES	YES
DYED	YES	YES	YES	YES	YES	YES	YES	YES	YES
COUD	YES	YES	YES	YES	YES	YES	YES	YES	YES
Constant	0.752***	0.765***	0.756***	0.880***	0.909***	0.683***	0.695***	0.788***	0.709***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Durbin-W.	2.060	2.072	2.093	2.061	2. 127	1.790	1.893	1.995	1.970
F-value	8.245***	8.693***	8.422***	8.937***	9.546***	5.362***	6.984***	8.083***	7.689***
Adj. R^2	0.410	0.425	0.418	0.441	0.467	0.359	0.360	0.432	0.378
N	500	500	500	500	500	500	500	500	500

Notes: P-values are in parentheses. Following Petersen (2009), the coefficients are estimated by using the robust *Clustered Standard Errors* technique. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively. Table 1 contains full definitions of all the variables employed.

Table 6
The impact of corporate governance on corporate health accounting disclosures based on word counts

Indep. Variables (*Model*)	CHADW (1)	CHADW (2)	CHRDW (3)	CHADW (4)	CHADW (5)	DQSDW (6)	GOVDW (7)	MMEDW (8)	WCHDW (9)
Corporate governance (CG) index:									
CGI	0.210***	-	-	0.175***	0.156***	0.149***	0.140***	0.066	0.124**
	(0.000)	-	-	(0.000)	(0.000)	(0.000)	(0.000)	(0.238)	(0.017)
Alternative CG variables as controls - Shareholding variables:									
BSHARE	-	-0.171***	-	-0.152***	-0.147***	-0.067	-0.159***	-0.076	-0.142***
	-	(0.000)	-	(0.000)	(0.000)	(0.353)	(0.000)	(0.230)	(0.000)
GSHARE	-	0.185***	-	0.153***	0.167***	0.065	0.169***	0.140***	0.146***
	-	(0.000)	-	(0.000)	(0.000)	(0.200)	(0.000)	(0.000)	(0.000)
ISHARE	-	-0.118**	-	-0.176***	-0.123**	-0.060	-0.126**	-0.138**	-0.170***
	-	(0.045)	-	(0.000)	(0.025)	(0.187)	(0.030)	(0.014)	(0.000)
Alternative CG variables as controls - Board variables:									
GDIV	-	-	0.142***	-	0.066	0.160***	0.165***	0.149***	0.152***
	-	-	(0.000)	-	(0.188)	(0.000)	(0.000)	(0.000)	(0.000)
BSIZE	-	-	0.106*	-	0.160***	0.048	0.136***	0.162***	0.134***
	-	-	(0.063)	-	(0.000)	(0.354)	(0.000)	(0.000)	(0.008)
INED	-	-	0.099*	-	0.127**	0.109*	0.125**	0.108*	0.124**
	-	-	(0.065)	-	(0.033)	(0.056)	(0.040)	(0.059)	(0.047)
Control variables - Firm-level characteristics:									
AFSIZ	0.262***	0.300***	0.196***	0.140***	0.138***	0.218***	0.198***	0.294***	0.265***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAPEX	-0.040	-0.049	-0.030	-0.038	-0.042	-0.035	-0.027	-0.059	-0.040
	(0.310)	(0.283)	(0.440)	(0.432)	(0.275)	(0.487)	(0.532)	(0.172)	(0.423)
GOVCO	0.170***	0.210***	0.198***	0.219***	0.260***	0.118**	0.260***	0.310***	0.206***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.040)	(0.000)	(0.000)	(0.000)
DLIST	0.430***	0.420***	0.427***	0.440***	0.343***	0.396***	0.344***	0.360***	0.432***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GEAR	-0.033	-0.046	-0.036	-0.058	-0.069	-0.014	-0.050	-0.072	-0.078
	(0.650)	(0.380)	(0.468)	(0.186)	(0.130)	(0.587)	(0.290)	(0.198)	(0.167)
FSIZE	0.238***	0.246***	0.240***	0.230***	0.236***	0.249***	0.250***	0.246***	0.249***
	(0.000)	(0.000)	(0.000)	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
RISK	0.039	0.056	0.040	0.030	0.064	0.027	0.023	0.069	0.050
	(0.453)	(0.350)	(0.365)	(0.403)	(0.355)	(0.426)	(0.480)	(0.365)	(0.380)
GROTH	0.019	0.038	0.029	0.021	0.036	0.051	0.049	0.060	0.045
	(0.639)	(0.443)	(0.470)	(0.503)	(0.435)	(0.340)	(0.353)	(0.310)	(0.363)
SEACO	0.289***	0.345***	0.311***	0.374***	0.320***	0.292***	0.220***	0.377***	0.390***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
DIND	YES	YES	YES	YES	YES	YES	YES	YES	YES
DYED	YES	YES	YES	YES	YES	YES	YES	YES	YES
COUD	YES	YES	YES	YES	YES	YES	YES	YES	YES
Constant	0.678***	0.686***	0.734***	0.769***	0.873***	0.793***	0.786***	0.802***	0.856***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Durbin-W.	2.076	2.095	2.021	2.089	2. 198	2.065	2.082	2.076	2.087
F-value	8.300***	8.785***	8.976***	9.065***	9.684***	8.761***	9.698***	8.986***	9.590***
Adj. R^2	0.426	0.438	0.434	0.458	0.473	0.434	0.430	0.430	0.450
N	500	500	500	500	500	500	500	500	500

Notes: P-values are in parentheses. Following Petersen (2009), the coefficients are estimated by using the robust *Clustered Standard Errors* technique. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively. Table 1 contains full definitions of all the variables employed.

Table 7
The impact of corporate health accounting disclosures on firm value

Indep. variables (*Model*)	Dependent variables								
	TBQ (1)	TBQ (2)	TBQ (3)	TBQ (4)	TBQ (5)	Lagged(TBQ) (6)	IV(TBQ) (7)	OROA (8)	TRS (9)
Corporate health accounting (CHA) variables:									
CHADI	0.028	-	0.123**	0.144***	0.137***	0.126***	-	0.153***	0.130***
	(0.195)	-	(0.015)	(0.000)	(0.000)	(0.000)	-	(0.000)	(0.000)
CHADW	-	0.032	-	-	-	-	-	-	-
	-	(0.182)	-	-	-	-	-	-	-
P_CHADI	-	-	-	-	-	-	0.165***	-	-
	-	-	-	-	-	-	(0.000)	-	-
Moderation variables:									
Corporate governance index:									
M*CGI	-	-	0.180***	-	0.186***	0.160***	0.198***	0.193***	0.136***
	-	-	(0.000)	-	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Alternative CG variables - Shareholding variables:									
M*BSHARE	-	-	-	-0.045	-0.019	-0.040	-	-0.065	-0.030
	-	-	-	(0.308)	(0.406)	(0.318)	-	(0.124)	(0.353)
M*GSHARE	-	-	-	0.175***	0.186***	0.166***	-	0.133***	0.129***
	-	-	-	(0.000)	(0.000)	(0.000)	-	(0.000)	(0.010)
M*ISHARE	-	-	-	-0.043	-0.035	-0.030	-	-0.054	-0.037
	-	-	-	(0.297)	(0.367)	(0.416)	-	(0.235)	(0.380)
Alternative CG variables - Board variables:									
M*GDIV	-	-	-	0.180***	0.188***	0.160***	-	0.182***	0.147***
	-	-	-	(0.000)	(0.000)	(0.000)	-	(0.000)	(0.000)
M*BSIZE	-	-	-	0.044	0.049	0.035	-	0.060	0.030
	-	-	-	(0.280)	(0.253)	(0.340)	-	(0.192)	(0.385)
M*INED	-	-	-	0.123***	0.128***	0.108**	-	0.140***	0.146***
	-	-	-	(0.000)	(0.000)	(0.036)	-	(0.000)	(0.000)
Control variables – Firm-level characteristics:									
AFSIZ	0.175***	0.183***	0.176***	0.160***	0.178***	0.163***	0.192***	0.004	0.125**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.889)	(0.014)
CAPEX	-0.043	-0.027	-0.046	-0.025	-0.058	-0.026	-0.058	-0.160***	-0.024
	(0.200)	(0.440)	(0.218)	(0.468)	(0.197)	(0.480)	(0.180)	(0.000)	(0.480)
GOVCO	0.030	0.045	0.038	0.059	0.048	0.045	0.062	0.020	0.031
	(0.410)	(0.198)	(0.367)	(0.197)	(0.200)	(0.214)	(0.176)	(0.380)	(0.392)
DLIST	0.156***	0.148***	0.162***	0.175***	0.183***	0.169***	0.200***	0.041	0.157***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.295)	(0.000)
GEAR	-0.030	-0.026	-0.025	-0.030	-0.042	-0.023	-0.054	-0.148***	-0.026
	(0.332)	(0.445)	(0.466)	(0.403)	(0.292)	(0.473)	(0.261)	(0.000)	(0.470)
FSIZE	-0.146***	-0.168***	-0.198***	-0.179***	-0.185***	-0.160***	-0.216***	-0.292***	-0.146***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
RISK	0.163***	0.125***	0.167***	0.130***	0.147***	0.138***	0.187***	0.198***	0.135***
	(0.000)	(0.003)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROTH	0.230***	0.209***	0.218***	0.197***	0.216***	0.178***	0.234***	0.160***	0.167
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Own/Board	-	-	CGI	Own/Board	YES	YES	CGI	YES	YES
DIND	YES	YES	YES	YES	YES	YES	YES	YES	YES
DYED	YES	YES	YES	YES	YES	YES	YES	YES	YES
COUD	YES	YES	YES	YES	YES	YES	YES	YES	YES
Constant	0.728***	0.789***	0.726***	0.597***	0.580***	0.549***	0.746***	0.754***	-.096
	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.986)
Durbin-W.	2.018	2.020	2.185	2.197	2.218	2.194	2.014	2.210	2.013
F-value	8.302***	8.343***	8.786***	9.264***	9.790***	8.887***	8.974***	9.548***	7.894***
Adj. R^2	0.465	0.470	0.475	0.483	0.506	0.478	0.479	0.494	0.418
N	500	500	500	500	500	400	500	500	500

Notes: P-values are in parentheses. Following Petersen (2009), the coefficients are estimated by using the robust *Clustered Standard Errors* technique. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively. Table 1 contains full definitions of all the variables employed.