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Ntim, Collins G.

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Collins G. Ntim*

Accounting and Finance, Business School
University of Glasgow
Glasgow, UK

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*Address for correspondence: Accounting and Finance, Business School, University of Glasgow, West Quadrangle, Gilbert Scott Building, Glasgow, G12 8QQ, UK. Tel: +44 (0) 141 330 7677. Fax: +44 (0) 141 330 4442. E-mail: Collins.Ntim@glasgow.ac.uk.

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Abstract

South Africa (SA) has pursued corporate governance reforms in the form of the 1994 and 2002 King Reports. This paper examines the association between the presence of independent non-executive directors (INEDs) and market valuation of a sample of 169 firms listed on the Johannesburg Stock Exchange (JSE) in SA from 2002 to 2007. Our results suggest a statistically significant and positive relationship between the presence of INEDs and firm valuation. By contrast, we find no statistically significant association between the presence of non-executive directors (NEDs) and firm valuation. Our findings are robust across a number of econometric models that control for different types of endogeneity problems, non-linear associations and firm valuation proxies. Our findings have important policy and regulatory implications. Whereas our evidence that more independent corporate boards' impacts positively on firm valuation provides support for the recommendations of the King Reports, it shows that to be meaningful, director independence has to be more carefully and strictly defined.

Keywords King reports, Corporate governance, Firm valuation, Independent non-executive directors, Johannesburg stock exchange, South Africa, Endogeneity

1. Introduction

In this paper, we investigate the effect of the presence of independent non-executive directors (*INEDs*) on market valuation of firms listed on the Johannesburg Stock Exchange (JSE) in South Africa (SA). Close to two decades of corporate governance (CG) reforms have been embarked on in SA, primarily in the form of the 1994 and 2002 King Reports. A broader objective of the King Reports has been to raise CG standards in SA firms (Armstrong *et al*., 2006; Ntim *et al*., 2011a). A more specific aim of the reforms, however, has been to improve firm valuation by enhancing the independence and monitoring capacity of SA boards of directors (Kakabadse and Korac-Kakabadse, 2002; Ntim *et al*., 2011b). A major proxy for corporate boards' independence and monitoring capacity is the proportion of outside directors (*INEDs*) (Fama, 1980; Fama and Jensen, 1983a, b; Lipton and Lorsch, 1992; Jensen, 1993). In fact, the ongoing extensive public policy (Pfeffer, 1973; Fama, 1980; Lipton and Lorsch, 1992; Jensen, 1993) and academic (Baysinger and Butler, 1985; Baysinger and Hoskisson, 1990; Dalton *et al.*, 1998; Nicholson and Kiel, 2003; Al-Najjar and Hussainey, 2009) debate on the role and effectiveness of *INEDs* suggests that the presence of *INEDs* on corporate boards may influence firm value.

However, and whereas there is a theoretical agreement that *INEDs* perform crucial roles in improving corporate monitoring and valuation (Fama, 1980; Jensen, 1993; McDonald *et al*., 2008), the empirical evidence on the effect of the presence of *INEDs* on firm valuation is mixed. A number of reasons, however, have been suggested that may account for the conflicting results of prior studies. Firstly, there is the issue of clearly defining who constitutes an *INED*, with most past studies simply classifying all outside directors as non-executive directors (*NEDs*) (Hermalin and Weisbach, 1991; Weir and Laing, 2000). However, some outside directors may have significant interests or

connections with corporate executives (Zahra and Stanton, 1988; Bozec, 2005; Gupta and Fields, 2009), which can impair their independence, and thereby their ability to effectively advise, monitor and discipline management (Vafeas and Theodorou, 1998; Jiraporn *et al*., 2009). This suggests that a much subtle and stricter definition of who is an *INED* has to be introduced if her/his independence and monitoring capacity is not to be compromised.

Secondly, past studies have been criticised for potential methodological deficiencies, with most of them mainly using ordinary least square regressions (OLS), in addition to not sufficiently accounting for endogeneity problems (El Mehdi, 2007; Kyereboah *et al*., 2006; Sunday, 2008; Sanda *et al*., 2010), and thereby leading to spurious results. Thirdly, it has been argued that the association between *INEDs* and firm valuation may not just differ by company-level features, but also by differences in country-level CG and institutional characteristics (Ho and Williams, 2003; Haniffa and Hudaib, 2006; Mangena and Tauringana, 2008; Sanda *et al*., 2010). Despite this development, existing studies examining the effect of the presence of *INEDs* on firm valuation are mainly concentrated in a few developed countries that exhibit relatively similar institutional settings (Baysinger and Butler, 1985; Baysinger & Hoskisson, 1990; Rosenstein and Wyatt, 1990; Bhagat and Black, 2002; Kiel and Nicholson, 2003; Ben-Amar and Zeghal, 2011).

With respect to the African setting, a number of studies have analysed the impact of CG structures on a number of issues, such as financing decisions of firms (Kyereboah-Coleman and Biekpe, 2006a; Abor, 2007; Abor and Biekpe, 2007), incidences of listing suspensions (Mangena and Chamisa, 2008) and dividend performance (Bokpin, 2011). A limited number of studies have also investigated the effects of different CG mechanisms, such as the frequency of board meetings (El Mehdi, 2007; Ntim and Osei, 2011), ownership structure (Mangena and Tauringana, 2008; Sand *et al*., 2010), board size (Ho and Williams,

2003; Kyereboah-Coleman *et al*., 2006) and board composition (Kyereboah-Coleman and Biekpe, 2006b; Sunday, 2008) on corporate performance with equally inconclusive results. Apart from apparent conflicting findings and methodological weaknesses that have been highlighted, an additional problem with these studies is the excessive use of limited samples of firms[1], and thereby making generalisation of findings difficult.

However, it is reasonable to argue that in developing economies with different CG practices and institutional settings (as will be further elaborated), the effectiveness of *INEDs* may vary, and therefore the relationship between *INEDs* and firm valuation can be expected to be different from what has been found in the more advanced economies. Thus, an investigation of the effect of the presence of *INEDs* on firm value in emerging African markets, where there is a severe absence of reliable empirical evidence will be crucial in offering a more complete insights on the impact of *INEDs* on firm valuation (Ho and Williams, 2003; Haniffa and Hudaib, 2006; Mangena and Tauringana, 2008).

Therefore, and in this paper, we examine the association between the presence of *INEDs* and firm valuation for a sample of SA listed firms. The country offers an interesting setting to investigate the effect of *INEDs* on firm valuation. In line with other Anglo-Saxon economies, SA has carried out CG reforms, mainly in the shape of the King Reports with the key aim of improving the independence and monitoring capacity of corporate boards (Kakabadse and Korac-Kakabadse, 2002; Ntim, 2009; West, 2009; Ntim *et al*., 2011a). As will be further elaborated, and with particular respect to the composition of SA corporate boards, the 2002 King Report sets a much clearer and stricter test for classifying directors into executives, *NEDs* and *INEDs* for listed firms to comply with.

The SA corporate setting, however, has unique features, including high institutional ownership, widespread block ownership, including government ones, but weak compliance

with corporate regulations and shareholder activism (Bar *et al*., 1995; Ntim and Osei, 2011). High block ownership, for example, can impair the efficacy of the market for corporate control (Arstmtrong *et al*., 2006; Ntim *et al*., 2011a, b). This can arguably have adverse implications on whether companies will voluntarily comply with and disclose CG rules, including those relating to the appointment of *INEDs*, and thereby potentially limiting the ability of a voluntary code to enhance CG standards by improving the independence and monitoring capacity of SA corporate boards. Our contention, therefore, is that the rich research setting in terms of variations with matured economies, the recent CG reforms pursued and the acute lack of prior evidence provides a strong justification to investigate the association between the presence of *INEDs* and market valuation of SA listed firms.

We contribute to the existing literature in many ways. Firstly, using a sample of 169 SA listed firms from 2002 to 2007, we offer evidence on the association between the presence of *INEDs* and firm valuation. As far as we are aware, it represents one of the first attempts at quantifying the effect of the presence of *INEDs* on corporate boards on firm valuation within an African setting, with specific regard to SA, and therefore critically extends the literature to that continent. It also contributes to the largely matured economies-based literature on the relationship between the presence of *NEDs* and firm valuation. Secondly, and innovatively, we show that *INEDs* who meet a much stricter independence test positively influence firm valuation. Thirdly, we distinctively investigate the existence of potential non-linear relationship between *INEDs* and firm valuation. Fourthly, and different from most past studies, we rely on econometric techniques that adequately account for different types of endogeneity problems, including fixed-effects, as well as use different proxies of firm valuation.

Our findings suggest a statistically significant and positive association between the presence of *INEDs* and firm valuation. In contrast, we find no statistically significant relationship between the presence of *NEDs* and firm valuation. Our results are robust across a raft of econometric models that address different kinds of endogeneity problems and firm valuation proxies. Our results provide empirical support for agency theory, which indicates that greater independence reduces agency problems by improving the ability of corporate boards to effectively advise, monitor and discipline corporate executives, and thereby enhancing market valuation.

The remainder of the paper is organised as follows. Section 2 offers a brief overview of the CG reforms contained in the King Reports, *INEDs* and the SA corporate setting. Section 3 reviews the prior theoretical and empirical literature on the effect of the presence of *INEDs* on firm valuation. Section 4 presents the research design. Section 5 reports empirical analyses, whereas section 6 contains concluding remarks.

2. The King reports, INEDs and the SA corporate setting

There is a consensus that the introduction of the King Reports explicitly institutionalised CG practices in SA (West, 2009; Ntim *et al*., 2011a). This began with the publication of the first King Report (King I) in 1994 (King Report, 2002; Ntim *et al*., 2011b). The recommendations of King I were mainly influenced by those of the UK's Cadbury Report of 1992 (Mangena and Chamisa, 2008; Ntim and Osei, 2011). For instance, and in line with the Cadbury Report, King I recommended an Anglo-Saxon style single-tier board of directors, consisting of executive directors and *NEDs*, operating within a voluntary CG compliance framework (King Report, 2002; Armstrong *et al*., 2006). With particular respect to *NEDs*, and similar to the Cadbury Report, it emphasised the special importance of *NEDs* in setting and maintaining high standards of CG (King Report, 1994; Ntim, 2009).

Unlike Cadbury, however, it recommended that SA corporate boards should have at least two rather than three *NEDs* of adequate calibre and independence.

Also, and unlike the Cadbury Report, which specified that at least two of the *NEDs* should be independent, King I did not clearly define who constitutes independent director or the number of independent *NEDs* (*INEDs*) that SA corporate boards should have (West, 2009; Ntim, 2009). King I also failed to insist on a truly *INED* to chair SA corporate boards (King Report, 2002; Kakabadse and Korac-Kakabadse, 2002). Arguably, these deviations from the Cadbury Report also increased potential conflicts of interests and impaired board independence and monitoring (King Report, 2002; Ntim *et al*., 2011a, b). As a result, King I was revised and replaced with a second King Report (King II) in 2002 with the aim of overcoming some of the weaknesses that have been outlined with King I.

King II proposed several changes with regard to board composition. Firstly, and unlike King I, King II provided a clear classification of directors into executives, *NEDs* and *INEDs* with a stricter definition[2] of director independence (King Report, 2002; Kakabadse and Korac-Kakabase, 2002; Ntim, 2009). Second, and instead of two *NEDs*, King II recommended that the board should preferably consist of a majority of *NEDs* (Armstrong *et al.*, 2006; West, 2009). Thirdly, a majority of the *NEDs* should also be independent (i.e., *INEDs*) of management so that shareholders interests (including minority interests) can be better protected (King Report, 2002; Ntim *et al*., 2011b). Fourthly, and to ensure balance of power and authority in company decision-making, the chairman of the board should be an *INED* (King Report, 2002; Mangena and Chamisa, 2008). The SA corporate context is, however, uniquely characterised by high block and institutional ownerships, largely in the form of complicated cross-shareholdings and tall pyramidical structures, but weak shareholder activism and enforcement of corporate laws (Barr *et al*.,

1995; Ntim *et al*., 2011a). Consequently, critical concerns have been raised as to whether, given the SA corporate setting, a voluntary CG regime like King II will be effective in improving CG standards in the form of greater director independence and capacity to monitor corporate executives. Therefore, our objective is to examine whether King II recommendations relating to *INEDs* do influence firm valuation in SA.

3. INEDs and firm valuation: theory, evidence and hypothesis development

A CG mechanism that the theoretical literature suggests can be used in reducing agency and information asymmetry problems in modern corporations is the appointment of *INEDs* (Fama 1980; Fama and Jensen, 1983a, b; Lipton and Lorsch, 1992; Jensen, 1993). However, there are two main contrasting views with respect to *INEDs*: those who are in favour of more *INEDs* on corporate boards and those who prefer more executive directors (Yermack, 1996; Nicholson and Kiel, 2003). Those who support more *INEDs* on corporate boards usually base their arguments on a number of theories, including agency, resource independence, information asymmetry and reputation signaling (Pfeffer, 1973; Baysinger and Hoskisson, 1990; Al-Najjar and Hussainey, 2009). Agency theory suggests that boards dominated by executive directors (insiders) are less accountable (Fama, 1980; Fama and Jensen, 1983a, b; Sonnenfeld, 2002). In contrast, *INEDs* possess a number of features. First, they bring independent judgment to board decisions (Baysinger and Hoskisson, 1990; Ntim, 2009), which can impact positively on firm valuation. In particular, greater independence associated with *INEDs* grants them increased capacity to advise, monitor and discipline management to improve firm value by reducing managerial opportunism without fear or favour (Vafeas and Theodorou, 1998; Bhagat and Black, 2002; Jiraporn *et al*., 2009).

Second, they provide their firms' with resources in the form of experience, expertise, business contacts and reputation (Nicholson and Kiel, 2003; Haniffa and Hudaib, 2006),

which can enhance firm valuation. Third, the existence of competitive and efficient managerial labour markets both within and outside the firm ensures that *INEDs* inherently perform their monitoring function more effectively (Fama, 1980; Fama and Jensen, 1983a), and thereby improve firm value. Fama (1980) and Fama and Jensen (1983a, b) argue that once top internal management gains control of a corporate board, they are more likely to connive and collude among themselves to engage in opportunistic activities, including expropriating shareholders' wealth. On the other hand, it has been suggested that the possibility of such internal managerial connivance might be reduced, and the viability of the board as a market-induced mechanism for low-cost transfer of control might be enhanced, by the addition of *INEDs* (Fama, 1980, Fama, 1983a; Gupta and Fields, 2009).

Finally, it has been argued that the appointment of *INEDs* helps in reducing information asymmetry by credibly signalling insiders' intent to treat outside or potential shareholders fairly, and by implication, guaranteeing the safety of their investment (Hermalin and Weisbach, 1991; Al-Najjar and Hussainey, 2009). It also signals to investors insiders' intent to rely on expert advice, as well as their appreciation of the importance of separating the decision-making and control functions (Fama, 1980; Fama and Jensen, 1983a, b; Jensen, 1993; Dalton *et al*., 1998), which can impact positively on firm valuation.

However, relying on stewardship theory, opponents argue that corporate boards dominated by *INEDs* may impact negatively on firm value (Baysinger and Hoskisson, 1990; Weir and Laing, 2000; Bozec, 2005). Weir and Laing (2000) contend that *INEDs* often command less knowledge about the business and find it too difficult to understand the complexities of the company. This problem is exacerbated by the fact that *INEDs* are usually part-timers who normally also sit on boards of other companies (Bozec, 2005; Jiraporn *et al.*, 2009), which leaves them with too little time to devote to their advisory,

monitoring and disciplining duties (Lipton and Lorsch, 1992; Weir *et al*., 2002). By contrast, high levels of executive directorships are associated with high access to information that leads to high quality decision-making (Zahra and Stanton, 1988; Weir *et al*., 2002; Nicholson and Kiel, 2003), with positive consequences firm valuation. Further, it has been argued that corporate boards dominated by *INEDs* tend to stifle managerial initiative and strategic actions (Pfeffer, 1973; Baysinger and Butler, 1985; McDonald *et al*., 2008), which arise from excessive managerial supervision (Baysinger and Hoskisson, 1990; Haniffa and Hudaib, 2006), and thereby leading to lower market valuation.

Consistent with the conflicting nature of the theoretical literature on *INEDs*, prior empirical evidence regarding the relationship between the presence of *INEDs* and firm valuation is mixed (Baysinger & Hoskisson, 1990; Rosenstein and Wyatt, 1990; Yermack, 1996; Kiel and Nicholson, 2003; Sunday, 2008). A strand of the empirical literature reports that boards dominated by *INEDs* are associated with higher market valuation (Kiel and Nicholson, 2003; Gupta and Fields, 2009). Using a sample of 311 UK listed firms from 1994 to 1996, Weir *et al*. (2002) report a positive relationship between the percentage of *INEDs* and firm value. Gupta and Fields (2009) examine a US sample of 744 *INED* resignations from 1990 to 2003 to ascertain the value that the market places on board independence. They report that, on average, the announcement of *INED* resignations result in 1.22% loss in a firm's market value. This suggests that investors value board independence as independent boards are associated with greater monitoring of managerial behaviour (Fama, 1980; Fama and Jensen, 1983a, b; Jensen, 1993).

Of close importance to this study, Ho and Williams (2003) find a statistically significant and positive link between the presence of *INEDs* and a firm's physical and intellectual capital performance in 84 SA listed firms in 1998. Consistent with the evidence

of Ho and Williams (2003), Mangena and Chamisa (2008) report a negative association between the presence of INEDs and the incidences of firm suspensions from the JSE in a sample of 81 firms from 1999 to 2005. This suggests that SA listed firms with a higher presence of *INEDs* are less likely to be suspended from the stock exchange. Abor (2007) and Abor and Biekpe (2007) report a positive link between *INEDs* and financing decisions for a sample of Ghanaian listed firms. Similarly, Kyereboah-Coleman (2006b) and Kyereboah-Coleman *et al*. (2006) find a positive association between *INEDs* and firm value for a sample of Ghanaian listed firms. Further, El Mhendi (2007) and Mangena and Tauringana (2008) report evidence, which is entirely consistent with prior research that boards dominated by *INEDs* are highly valued for a sample of Tunisian and Zimbabwean listed firms, respectively.

By contrast, a group of researchers reports that the presence of *INEDs* is negatively correlated with firm valuation (e.g., Yermack, 1996; Agrawal and Knoeber, 1996; Laing and Weir, 1999; Bozec, 2005; Kyereboah-Coleman, 2007). In a sample of 25 Canadian firms from 1976 to 2005, Bozec (2005) finds that the relationship between the presence of *INEDs* and firm valuation is negative. Using a sample of 47 Kenyan listed firms over the 1999-2003 period, Kyereboah-Coleman and Biekpe (2006a) find that the presence of *INEDs* is negatively related to a firms' financing decisions. Similarly, Sanda *et al*. (2010) report that Nigerian firms with a low percentage of *INEDs* were valued higher than those with more *INEDs*. This suggests that whilst *INEDs* can bring independence, objectivity and experience to bear upon board decisions (Gupta and Fields, 2009; Ben-Amar and Zeghal, 2011), they may also stifle managerial initiative through excessive monitoring (Haniffa and Hudaib, 2006; Kyereboah-Coleman, 2007).

A third stream of empirical studies (Vefeas and Theodorou, 1998; Weir and Laing, 2000; Haniffa and Hudaib, 2006; Bokpin, 2011), indicates that the presence of *INEDs* has no impact on firm value. For example, Hermalin and Weisbach (1991) report no link between *INEDs* and firm valuation for a sample of 142 US listed firms. UK studies by Vafeas and Theodorou (1998) and Weir and Laing (2000) find that the wealth effects of *INEDs* are statistically insignificant. Similarly, Haniffa and Hudaib (2006) report a statistically insignificant relationship between the presence of *INEDs* and firm valuation for a sample of 347 Malaysian listed firms. Further, Bokpin (2011) finds no significant link between the presence of *INEDs* and dividend performance for a sample of 23 Ghanaian listed firms from 2002 to 2007.

With specific reference to SA, the 1973 Companies Act requires every public company to appoint at least two *INEDs*. King II and the JSE Listings Rules also require SA corporate boards of directors to consist of a majority of *NEDs*. King II further requires that the majority of the *NEDs* be independent (*INEDs*) of management to ensure that minority interests are adequately protected. This suggests that King II expects that firms with more *INEDs* on their boards to be valued higher than those with less *INEDs*. As has been previously discussed, the past SA evidence (albeit it indirect) also indicates that a greater percentage of *INEDs* on corporate boards may be associated with higher firm valuation (Ho and Williams, 2003; Mangena and Chamisa, 2008). However, given the mixed international evidence, we predict a statistically significant association between the presence of *INEDs* and firm valuation without being specific about the direction of the sign. Therefore, the main hypothesis tested in this study is that:

H_1: There is either a statistically significant negative or positive relationship between the presence of *NEDs* or *INEDs* and firm valuation.

4. Research design

4.1 Sample and data

A total of 402 firms from ten industries (i.e., basic materials, consumer goods, consumer services, financials, health care, industrials, oil & gas, technology, telecoms, and utilities) were listed on the JSE as at 31/12/2007. For regulatory and capital structure reasons, we excluded 111 financials and utilities, leaving us with 291 firms from eight non-financial industries to be sampled. We required data on CG and financial variables to examine the link between *INEDs* and firm value. The CG variables were collected from the sampled companies' annual reports. The annual reports were downloaded from the Perfect Information Database. We collected the financial data from DataStream. The companies in our final sample had to meet two criteria: the availability of a firm's full five-year annual reports from 2002 to 2006; and the accessibility to a firm's corresponding financial data from 2003 to 2007[3].

The criteria were set for a number of reasons. First, and similar to previous studies (Haniffa and Hudaib, 2006; Henry, 2008; Beiner *et al*., 2006), the criteria enabled use to meet the requirements for a balanced panel data analysis. Some of the advantages that can be obtained for the use of panel data include having both time-series and cross-sectional observations, more degrees of freedom and less multi-collinearity among the variables (Wooldridge, 2002; Gujarati, 2003). Second, an examination of five-year data with both cross-sectional and time-series characteristics may help in discovering whether the observed cross-sectional association between the presence of *INEDs* and firm valuation is robust over-time (Agrawal and Knoeber, 1996; Ntim *et al*., 2011b). This can facilitate direct comparisons to be drawn with the results of past studies (Laing and Weir, 1999; Bozec, 2005; Kyereboah-Coleman, 2007). Applying our selection criteria, we obtained the

full data required for a total of 169 firms over five-firm years and 8 industries for our empirical analysis.

4.2 Dependent, independent and control variables

This subsection discusses all the three main types of variables that we employ in our investigation, and Table 1 presents their full definitions. Firstly, we utilise two main independent variables for our regression analysis: the presence of *NEDs* and *INEDs*. Secondly, our main dependent variable or proxy for firm valuation is the widely used Tobin's Q (*Q*). However, we use return on assets (*ROA*) and total share return (*TSR*) to check the sensitivity of our findings to alternative accounting and market-based firm value proxies, respectively. Finally, and similar to previous studies (Bozec, 2005; Kyereboah-Coleman, 2007), we add below a number of control variables. First, firms with higher investment opportunities tend to grow faster (Henry 2008; Ntim and Osei, 2011), and are more likely to be highly valued by the stock market. Thus, our expectation is that sales growth (*GROWTH*) will be positively associated with market valuation. Second, firms with greater investment in research and development can gain competitive advantages (Baysinger and Hoskisson, 1990; Gupta and Fields, 2009), and therefore may be highly valued by the stock market. In contrast, research and development is capital intensive activity (Vafeas and Theodorou, 1998; Weir and Laing, 2000), and thus, may have a negative influence on market valuation.

Insert Table 1 about here

Similarly, higher debt usage can enhance firm value by effectively reducing managerial capacity to expropriate 'free cash flows' (Jensen 1986; Jiraporn *et al*., 2009). By contrast, higher use of debt can increase the risk of financial distress, and impact negatively on firm value by reducing the capacity of firms to exploit growth opportunities

(Jensen, 1986; Ntim *et al*., 2011a). Also, and due to greater agency problems, bigger firms can be expected to have good CG structures (Agrawal and Knoeber, 1996; Beiner *et al*., 2006), and as such may be more highly valued by the stock market. On the other hand, smaller firms tend to have higher investment and growth opportunities (Weir *et al*., 2002; Guest, 2009), and thus, may receive higher market valuation. Due to the mixed theoretical predictions, we hypothesise that gearing (*GEAR*), capital expenditure (*CAPEX*) and firm size (*LNTA*) will correlate either negatively or positively to firm value. Third, firms that are cross-listed on international stock markets are more likely to have greater access to funds and investment opportunities (Ntim, 2009; Ntim *et al*., 2011b), and therefore may be valued more highly by the stock market. Thus, our prediction is that cross-listing (*CROSLIST*) will correlate positively to firm value. Fourth, it has been suggested that audit firm size is positively associated with auditor independence and audit quality (DeAngelo (1981; Ntim and Osei, 2011), and as such firms audited by large audit firms may have a positive association with firm value. Hence, our prediction is that audit firm size (*BIG4*) will correlate positively to firm value.

Fifth, as government ownership provides access to critical resources, such as finance and profitable government contracts (Armstrong *et al*., 2006; Ntim *et al*., 2011a), we predict that government ownership (*GOVOWN*) will be positively associated with market valuation. Sixth, firms that voluntarily establish CG committee to specifically monitor CG standards may have greater ability to minimise managerial capacity to extract corporate assets (Ntim *et al*., 2011b; Ntim and Osei, 2011), and therefore may receive higher market valuation. Therefore, our expectation is that the presence of a CG committee (*CGCOM*) will correlate positively to firm value. Finally, following prior studies (Haniffa and Hudaib, 2006; Henry, 2008; Guest, 2009), we predict that firm will vary across

different industries and financial years. As such, we add industry (*INDUST*) dummies for the 5 remaining industries[4]: basic materials and oil & gas; consumer goods; consumer services and health care; industrials; and technology & telecoms; and year (*YD*) dummies for the financial years 2003 to 2007.

5. Empirical analyses

5.1 Descriptive statistics

Table 2 contains descriptive statistics of all variables that we use in conducting our fixed-effects regressions. All values generally suggest a wide spread. For instance, and consistent with the findings of Beiner *et al*. (2006), Henry (2008) and Guest (2009), *Q* ranges from a minimum of 0.58 and a maximum of 3.58 with mean of 1.52, depicting wide variation. In terms of the CG variables in Panel *B* of Table 2, it is observable that irrespective of the statistics used, more SA firms have higher percentage of their board members as *NEDs* than *INEDs*. For example, whilst the average SA firm has 57% of its board members as *NEDs*, the corresponding figure for *INEDs* is only 28%. Although our evidence is consistent with the reported results of previous studies for the percentage of *NEDs* (Yermack, 1996; Ho and Williams, 2003; Kyereboah-Coleman, 2007) and *INEDs* (Agrawal and Knoeber, 1996; Gupta and Fields, 2009; Mangena and Chamisa, 2008), it appears to suggests that more firms find it difficult to meet the new strict director independence test introduced by King II. The alternative firm value measures (i.e., *ROA* and *TSR*), as well as the control variables (i.e., *BIG4*, *CAPEX*, *CGCOM*, *CROSLIST*, *GEAR*, *GOVOWN*, and *GROWTH*) suggest wide variations, an indication that our sample has been adequately selected to achieve sufficient variation, and therefore avoids any possibilities of sample selection bias.

Insert Table 2 about here

We also tested linear regression assumptions of multicollinearity, autocorrelation, normality, homoscedasticity, and linearity. We tested the multicollinearity assumption by implementing the Spearman non-parametric and Pearson parametric bivariate correlation tests among the variables. The findings, which to save space are not reported, but available on request, indicated that no serious non-normalities and multicollinearities existed among the variables. Additionally, we investigated scatter, *P-P* and *Q-Q* plots, studentised residuals, Cook's distances and Durbin-Watson statistics of the variables, and the tests also suggested no significant breach of the linear regression assumptions of homoscedasticity, linearity, normality and autocorrelation, indicating that it is appropriate to conduct multivariable regression analyses.

5.2 Multivariate regression analyses

Firms tend to vary in the threats and opportunities that they face over time (Henry, 2008; Ntim *et al*., 2011b). This can result in scenario whereby *NEDs* or *INEDs* and *Q* are jointly and dynamically influenced by firm-specific variations, such as corporate culture, complexity and executive talent (Guest, 2009; Ntim, 2009), which simple OLS regressions may be unable to detect (Wooldridge, 2002; Gujarati, 2003), and thereby leading to spurious findings (Agrawal and Knoeber, 1996; Beiner *et al*., 2006). Therefore, given the panel nature of our data, as well as following previous studies (Henry, 2008; Guest, 2009; Ntim *et al*., 2011b), we conduct fixed-effects regressions[5] in order to account for possible unobserved firm-specific heterogeneities. We begin our analysis with basic fixed-effects regression specified as follows:

$$Q_{it} = \alpha_0 + \beta_1 INEDs_{it-1} + \sum_{i=1}^{n} \beta_i CONTROLS_{it-1} + \delta_{it-1} + \varepsilon_{it-1} \quad (1)$$

where: *Q* is the main dependent variable, *INEDs/NEDs* are the main independent variables,

CONTROLS refers to the control variables, including *BIG4*, *CAPEX*, *CGCOM*, *CROSLIST*, *GEAR*, GOVOWN, *GROWTH*, *INDUST* and *YD*, and δ refers to the firm-level fixed-effects, made up of a vector of 168 year dummies to represent the 169 sampled firms.

Table 3 presents fixed-effects regressions results of the effect of the presence of *NEDs* or *INEDs* on *Q*. First, to ascertain whether the presence of *NEDs* influences *Q*, we run *Q* on the *NEDs* alone excluding the control variables using equation (1). Statistically insignificant and positive impact of *NEDs* on *Q* is noticeable in Model 1 of Table 3. However, the coefficient on the constant term in Model 1 of Table 3 is statistically significant and appears to indicate that the model may be suffering from omitted variables bias. Therefore, to check whether our finding is not spuriously caused by omitted variables bias, we include the control variables in Model 2 to account for potential omitted variables bias. Again, positive, but statistically insignificant effect of *NEDs* on *Q* is clearly observable in Model 2 of Table 3, and thereby failing to provide support for H_1, but consistent with the findings of prior studies that report insignificant association between *NEDs* and firm valuation (Hermalin and Weisbach, 1991; Vefeas and Theodorou, 1998; Weir and Laing, 2000). A possible explanation is that some *NEDs* tend to have significant interests or close connections with corporate management (Zahra and Stanton, 1988; Gupta and Fields, 2009). This can impede their independence, and consequently their capacity to effectively monitor and discipline executives (Jensen, 1993; Jiraporn *et al*., 2009).

Insert Table 3 about here

Second, and given our evidence of statistically insignificant effect of the presence of *NEDs* on *Q*, we re-run equation (1) by replacing *NEDs* with *INEDs* with and without the control variables, which provides a more subtle and strict definition of director independence and monitoring capacity. Statistically significant and positive of effect of

INEDs on *Q* is noticeable in Model 3 of Table 3. However, the coefficient on the constant term is statistically significant, indicating that there may be omitted variables bias. Therefore, to ascertain whether our evidence is not falsely driven by omitted variables bias, we re-estimate Model 3 by adding the control variables. The coefficient of *INEDs* on *Q* in Model 4 of Table 3 is statistically significant and positive, and thereby providing support for H_1, as well as the recommendations of King II[6]. Our evidence also provides support for the results of past studies (Kiel and Nicholson, 2003; Kyereboah-Coleman *et al*., 2006; Gupta and Fields, 2009) that report a positive association between *INEDs* and firm valuation, but inconsistent with those that report a negative (Yermack, 1996; Laing and Weir, 1999; Bozec, 2005; Kyereboah-Coleman, 2007). Theoretically, our results are in line with agency theoretical predictions, which suggest that more independent corporate boards have greater capacity to effectively advise, monitor and discipline corporate executives (Fama, 1980; Lipton and Lorsch, 1992; Jensen, 1993), and thereby enhancing firm value.

Finally, and the coefficients on the control variables in Models 2 and 4 of Table 3 are generally consistent with our predictions. For example and as expected, the coefficients on *CAPEX*, *GEAR* and *LNTA* are statistically significant and negatively associated with *Q*, whilst *BIG4*, *CGCOM*, *CROSLIST*, *GOVOWN* and *GROWTH* are statistically significant and positively related to *Q*, in Models 2 and 4. Finally, the *F*-values in Models 2 to 4 of Table 3 consistently reject the null hypothesis that the coefficients on the main independent and the control variables are equal to zero. In line with the findings of past studies (Yermack, 1996; Bozec, 2005; Gupta and Fields, 2009), the adjusted R^2 is between 3% and 35%, suggesting that our fixed-effects estimations can explain significant variations in our sampled firms' *Q*.

5.3 Sensitivity analyses

Our fixed-effects estimations so far do not take into consideration the existence of possible non-linear relationships and alternative firm valuation proxies, as well as other potential endogeneity problems. This suggests that the evidence of a significant positive association between the presence of *INEDs* and firm valuation, for example, may be spurious. In this subsection, we examine how sensitive our results are to the presence of non-monotonic associations, alternative firm value measures and other endogeneities.

First, to investigate whether there is a non-linear association between *INEDs* and firm value, such that either the presence of a small or large number of *INEDs* has a positive effect on *Q*, as predicted by Jensen (1993), we re-estimate equation (1) using squared ($INEDs^2$) form of *INEDs*[7]. Positive, but statistically insignificant effect of $INEDs^2$ on *Q* is observable in Model 5 of Table 3, and thereby suggesting that our evidence of a positive impact of the presence of *INEDs* on *Q* is robust to this specification. Second and as previously explained, we examine the sensitivity of our results to two alternative firm valuation proxies: return on assets (*ROA* – an accounting based proxy) and total share returns (*TSR* – a market based measure). Models 6 and 7 of Table 3 present findings obtained by using *ROA* and *TSR*, respectively, instead of *Q*. Statistically significant and positive effect of *INEDs* on *ROA* and *TSR* in models 6 and 7 of Table 3, respectively, is noticeable, and thereby suggesting that our findings are insensitive to the use of either an accounting (*ROA*) or a market (*TSR*) based firm valuation proxy, instead of *Q*.

Third, to address potential extra endogeneity problems that may be caused by omitted variable bias, we implement the extensively used two-stage least squares (*2SLS*) technique (Beiner *et al*., 2006; Henry, 2008). However, to ensure that the *2SLS* methodology appropriate, and following Agrawal and Knoeber (1996) and Beiner *et al*.

(2006), we first conduct Durbin-Wu-Hausman exogeneity test (see Beiner *et al*., 2006, p. 267) to ascertain whether an endogenous relationship exists between *Q* and *INEDs*. Applied to equation (1), the test rejects the null hypothesis of exogeneity, and as such we conclude that the *2SLS* technique may be appropriate and that our earlier findings based on the fixed-effects estimations may be spurious. In the first stage, we assume that *INEDs* will be influenced by the ten control variables (i.e., as exogenous variables) specified in equation (1). In the second stage, we utilise the predicted portion of the *INEDs* (*PRE_INEDs*) as an instrument for the *INEDs* and re-run equation (1) as specified below:

$$Q_{it} = \alpha_0 + \hat{\beta}_1 INEDs_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \delta_{it} + \varepsilon_{it} \quad (2)$$

whereby everything remains the same as specified in equation (1)[8] except that we employ the predicted *INEDs* (*PRE_INEDs*) from the first-stage regression as an instrument for the *INEDs*. Statistically significant and positive effect of the *PRE_INEDs* on *Q* is clearly noticeably in Model 8 of Table 3, and thereby indicating that our evidence of a positive effect of *INEDs* on *Q* is not sensitive to endogeneity problems that may be caused by potential omitted variables. Overall, the sensitivity analyses suggest that our findings are fairly insensitive to different types of potential endogeneity problems, non-monotonic relationships and alternative firm valuation measures.

6. Summary and conclusion

This paper has attempted to examine the association between the presence of independent non-executive directors (*INEDs*) and firm valuation using a sample of 169 firms listed on the Johannesburg Stock Exchange (JSE) from 2002 to 2007 in South Africa (SA). This coincides with a period during which the SA authorities embarked upon corporate governance (CG) reforms that mainly focused on raising CG standards in SA

firms by enhancing the independence and monitoring capacity of corporate boards, primarily in the shape of the 1994 and 2002 King Reports.

Our findings suggest a positive, but statistically insignificant relationship between the presence of *NEDs* and firm valuation. In contrast, we find statistically significant and positive association between the presence of *INEDs* and firm valuation. Additionally, we examine the existence of potential non-linear relationship between *NEDs* or *INEDs* and firm valuation, whereby either a relatively small or large number of *NEDs* or *INEDs* positively influences firm valuation as suggested by Jensen (1993), but we do not find any such statistically significant non-monotonic links. Our findings are consistent across a raft of econometric models that take into consideration different types of endogeneity problems and firm valuation proxies. Overall, our results provide empirical support for agency theory, which suggests that more independent corporate boards tend to have increased capacity to effectively advise, monitor and discipline corporate executives, and thereby enhancing firm valuation.

Our evidence also has important implications for policy-makers and regulatory authorities. Whilst our evidence that more independent corporate boards' impacts positively on firm valuation provides support for the recommendations of the King Reports, it suggests that to be useful, director independence has to be more subtly and strictly defined. Further, and given that SA firms are far from having a majority of their board members being *INEDs* as recommended by the 2002 King Report, there is the need to strengthen compliance and enforcement. In this respect, establishing a "compliance and enforcement committee" to regularly check the levels of compliance among listed firms may help in improving CG standards.

Notes

1. For example, Sunday's (2008) study was based only on 20 Nigerian listed firms from 200 to 2006, whilst Kyereboah-Coleman and and Biekpe (2006a) used 47 Kenyan listed firms from 1999 to 2003. Samples used by other studies, such as Kyereboah-Coleman *et al*. (2006), Kyereboah and Biekpe (2006a), Abor (2007) and Bokpin (2011), amongst others, are well below 30 firms.
2. King II requires firms to clearly define and classify directors into three main types: executive, *NED* and *INED*. First, an executive director refers to an individual who is involved in the day-to-day management and/or is a full-time salaried employee of the company or its subsidiaries. Second, a *NED* is defined as an individual who is not involved in the day-to-day management and is not a full-time salaried employee of the company or its subsidiaries. Third, an *INED* is strictly defined as a *NED* who: (1) is not a representative of a shareholder; (2) has not been employed in any executive capacity for the preceding three financial years; (3) is not a member of the immediate family of an individual who is, or has not been employed by the company in an executive position in the past three financial years; (4) is not a professional advisor to the company; (5) is not a significant supplier to or customer of the company; (6) has no significant contractual relationship with the company; and (7) is free from any business or other relationship which could be seen to materially interfere with the individual's capacity to act in an independent manner (King Report, 2002, para. 2.4).
3. Corporate board decisions take time in order to be reflected in firm value (Haniffa and Hudaib, 2006; Ntim *et al*., 2011b; Ntim and Osei, 2011). Therefore, to avoid endogenous association between the presence of *INEDs* and firm valuation, we introduce a one year lag between *INEDs* and firm valuation such that this year's firm value depends on last year's governance structure (*INEDs*) similar to Weir *et al*. (2002) and Haniffa and Hudaib (2006), as specified in equation (1). The sample also starts from 2002 for two reasons. First, King II came into operation in 2002, and secondly, data coverage in *Perfect Information/DataStream* on SA listed firms is very limited until 2002. The sample ends in 2007 because it is the year for which data is available.
4. Due to insufficient number of observations in 3 industries, namely health care, oil and gas, and telecoms industries with three, one and three listed companies, respectively, were merged with the closest remaining five major industries. Consequently, the three *health care* companies were included in the *consumer services* industry, the one *oil and gas* firm was added to the *basic materials* industry, whilst the three *telecoms* firms were also shared out to the *technology* industry.
5. However, we note that our choice is between random and fixed-effects estimation techniques. Therefore, to ensure that fixed-effects model is appropriate, we first conduct Hausman (1978) specification test by estimating both fixed and random-effects models for the *NEDs or INEDs* separately using equation (1) and comparing their respective coefficients. Under the null hypothesis of consistent random unobserved firm-level heterogeneity (i.e., unobserved firm-specific effects or the regressions errors are uncorrelated with the independent variables), random-effects estimates will be both consistent and efficient, whilst fixed-effects coefficients will be consistent, but inefficient (Hausman, 1978; Woodridge, 2002). In contrast, if the null hypothesis is rejected, then the fixed-effects approach will provide both consistent and efficient estimates, whereas random-effects estimates will be both inconsistent and biased (Hausman, 1978; Gujarati, 2003). The test consistently rejects the null hypothesis of consistent random effects for both models at the 1% level, providing further empirical support for our decision to rely primarily on fixed-effects models.
6. As *NEDs* are statistically insignificant in our models, all our subsequent estimations and discussions will be based on *INEDs*, instead *NEDs*.
7. We conducted similar non-linear investigation for the *NEDs* proxy and found statistically insignificant non-monotonic link between the presence of *NEDs* and firm valuation. We also explored other forms of non-monotonic transformations, such as cubing the variables (i.e., *NEDs* or *INEDs*), but we found statistically insignificant association between the presence of *NEDs* or *INEDs* and firm valuation.
8. As estimating a lagged structure will invalidate the *Durbin-Wu-Hausman* test (Wooldridge, 2002; Gujarati, 2003), we estimate equation (2) as un-lagged structure. An additional advantage is that it allows us to ascertain the robustness of our results against estimating an un-lagged structure.

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Table 1. Summary of variables

Firm valuation/dependent variables	
Q	The ratio of total assets minus book value of equity plus market value of equity to total assets.
ROA	The percentage of operating profit to total assets.
TSR	The percentage of annualised total share returns made up of share price and dividends.
Corporate governance/independent variables	
NEDs	The percentage of all non-executive directors (all outside directors) to total number of directors on a corporate board.
INEDs	The percentage of *NEDs* who: are not representatives of a shareholder; have not been employed in any executive capacity for the preceding three financial years; are not members of the immediate family of an individual who is, or has not been employed by the company in an executive position in the past three financial years; are not professional advisors to the company; are not significant suppliers to or customers of the company; have no significant contractual relationship with the company; and are free from any business or other relationship which could be seen to materially interfere with the individual's capacity to act in an independent manner.
Control variables	
BIG4	A dummy variable that takes the value of 1, if a firm is audited by a big four audit firm (PricewaterhouseCoopers, Deloitte & Touché, Ernst & Young, and KPMG), 0 otherwise.
CAPEX	The percentage of total capital expenditure to total assets.
CROSLIST	A dummy variable that takes the value of 1, if a firm is cross-listed on a foreign stock market, 0 otherwise.
CGCOM	A dummy variable that takes the value of 1, if a firm has set up a corporate governance committee, 0 otherwise.
GEAR	The percentage of total debts to market value of equity.
GOVOWN	A dummy variable that takes the value of 1, if government ownership is at least 5%, 0 otherwise.
GROWTH	The percentage of the current year's sales minus last year's sales to last year's sales.
LNTA	The natural log of total assets.
INDUST	Industry dummies for the five main remaining industries.
YD	Year dummies from 2003 to 2007 inclusive.

Table 2. Descriptive statistics of all variables for all (845) firm years

Variable	Mean	Median	Std. dev.	Maximum	Minimum
Panel A: Firm valuation (Dependent) variables					
Q	1.52	1.33	0.69	3.58	0.58
ROA (%)	10.26	10.97	12.21	36.55	-23.19
TSR (%)	33.57	29.60	48.68	173.41	-55.20
Panel B: Corporate governance (Independent) variables					
NEDs (%)	57.39	60.00	17.20	00.00	100.00
INEDs (%)	28.43	28.57	23.24	00.00	83.33
Panel C: Control variables					
BIG4 (%)	73.25	100.00	44.29	100.00	0.00
CAPEX (%)	11.08	6.28	13.86	64.46	0.00
CGCOM (%)	35.80	0.00	48.00	100.00	0.00
CROSLIST (%)	21.66	0.00	41.21	100.00	0.00
GEAR (%)	34.78	14.63	55.02	270.65	0.00
GOVOWN (%)	38.00	0.00	49.00	100.00	0.00
GROWTH (%)	14.40	12.60	24.94	88.26	-41.88
LNTA	5.95	5.97	0.89	7.60	4.08

Notes: Variables are defined as follows: Tobin's Q (*Q*), measured as the ratio of total assets minus book value of equity plus market value of equity to total assets. Return on assets (*ROA*), defined as the ratio of operating profit to total assets. Total shareholder returns (*TSR*), calculated as annualised total share returns made up of share price and dividends. Non-executive directors (*NEDs*), measured as the percentage of all non-executive directors (all outside directors) to total number of directors on a board. Independent *NEDs* (*INEDs*), is strictly defined as a *NED* who: are not representatives of a shareholder; have not been employed in any executive capacity for the preceding three financial years; are not members of the immediate family of an individual who is, or has not been employed by the company in an executive position in the past three financial years; are not professional advisors to the company; are not significant suppliers to or customers of the company; have no significant contractual relationship with the company; and are free from any business or other relationship which could be seen to materially interfere with the individual's capacity to act in an independent manner. Audit firm size (*BIG4*), measured as a dummy variable that takes the value of 1, if a firm is audited by a big four audit firm (PricewaterhouseCoopers, Deloitte & Touché, Ernst & Young, and KPMG), 0 otherwise. Capital expenditure (*CAPEX*), calculated as the ratio of total capital expenditure to total assets. Cross-listing (*CROSLIST*), measured as a dummy variable that takes the value of 1, if a firm is cross-listed to a foreign stock market, 0 otherwise. The presence of a corporate governance committee (*CGCOM*), defined as a dummy variable that takes the value of 1, if a firm has set up a corporate governance committee, 0 otherwise. Gearing (*GEAR*), calculated as the ratio of total debts to market value of equity. Government ownership (*GOVOWN*), measured as a dummy variable that takes the value of 1, if government ownership is at least 5%, 0 otherwise. Sales growth (*GROWTH*), calculated as the current year's sales minus last year's sales to last year's sales. Firm size (*LNTA*), measured as the natural log of total assets.

Table 3. Fixed-effects regressions of the effect of independent non-executive directors on firm valuation

Dependent variables	*Q*	*Q*	*Q*	*Q*	*Q*	*ROA*	*TSR*	*2SLS (Q)*
Adjusted R^2	0.012	0.256	0.032	0.349	0.268	0.365	0.374	0.390
F-value	3.078***	7.263***	5.270***	9.780***	8.504***	10.290***	10.629***	11.152***
(*N*)	(845)	(845)	(845)	(845)	(845)	(845)	(845)	(845)
Constant	1.048	1.092	1.364	1.638	1.126	-0.160	2.587	2.056
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.530)	(0.000)***	(0.000)***
Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NEDs	0.004	0.002	-	-	-	-	-	-
	(0.269)	(0.298)	-	-	-	-	-	-
INEDs	-	-	0.049	0.045	-	0.534	0.604	-
	-	-	(0.000)***	(0.012)**	-	(0.000)***	(0.000)***	-
$INEDs^2$	-	-	-	-	0.005	-	-	-
	-	-	-	-	(0.237)	-	-	-
PRE_INEDs	-	-	-	-	-	-	-	0.068
	-	-	-	-	-	-	-	(0.000)***
Control variables								
BIG4	-	0.140	-	0.189	0.153	0.207	0.230	0.210
	-	(0.020)**	-	(0.000)***	(0.017)**	(0.000)***	(0.000)***	(0.000)***
CAPEX	-	-0.010	-	-0.008	-0.012	-0.058	-0.006	-0.016
	-	(0.000)***	-	(0.013)**	(0.000)***	(0.000)***	(0.020)**	(0.000)***
CGCOM	-	0.194	-	0.247	0.198	1.180	2.080	0.260
	-	(0.000)***	-	(0.000)***	(0.000)***	(0.020)**	(0.000)***	(0.000)***
CROSLIST	-	0.110	-	0.271	0.113	0.368	2.810	0.292
	-	(0.059)*	-	(0.000)***	(0.052)*	(0.039)**	(0.000)***	(0.000)***
GEAR	-	-0.018	-	-0.006	-0.024	-0.535	-0.005	-0.018***
	-	(0.000)***	-	(0.020)**	(0.000)***	(0.000)***	(0.063)*	(0.000)
GOVOWN	-	0.102	-	0.295	0.104	3.420	4.604	0.410***
	-	(0.018)**	-	(0.000)***	(0.023)**	(0.000)***	(0.000)***	(0.000)
GROWTH	-	0.124	-	0.180	0.127	0.264	0.320	0.196***
	-	(0.015)**	-	(0.000)***	(0.013)**	(0.000)***	(0.000)***	(0.000)
LNTA	-	-0.136	-	-0.294	-0.142	-2.830	-3.629***	-0.387***
	-	(0.019)**	-	(0.000)***	(0.011)**	(0.000)***	(0.000)	(0.000)
INDUST	-	Included	-	Included	Included	Included	Included	Included
YD	-	Included	-	Included	Included	Included	Included	Included

Notes: Coefficients are in front of parenthesis. ***, ** and * indicate that p-value is significant at the 1%, 5% and 10% level, respectively. Following Petersen (2009), coefficients are estimated by using the robust clustered standard errors technique. Variables are defined as follows: Tobin's (*Q*), return on assets (*ROA*), total share return (*TSR*), the percentage of non-executive directors (*NEDs*), the percentage of independent *NEDs* (*INEDs*), *INEDs* squared ($INEDs^2$), predicted *INEDs* (*PRE_INEDs*) – obtained by regressing *INEDs* on the control variables and used as an instrument for the *INEDs* in model 8, audit firm size (*BIG4*), capital expenditure (*CAPEX*), the presence of a corporate governance committee (*CGCOM*), cross-listing (*CROSLIST*), gearing (*GEAR*), government ownership (*GOVOWN*), firm size (*LNTA*), industry dummies (*INDUST*), and year dummies (*YD*). Tables I and II fully define all the variables used.