

**The Role of Nonexecutive Members of the Board of  
Directors in the Auditor Choice: Evidence from Saudi  
Arabia**

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# **The Role of Nonexecutive Members of the Board of Directors in the Auditor Choice: Evidence from Saudi Arabia**

## **Abstract**

This study empirically examines the effect of greater proportion of nonexecutive board directors on the firm's choice of the external auditor in Saudi Arabia. Using logit regression estimates, the study shows that the presence of more nonexecutive directors has no effect on the choice of auditors in Saudi Arabia. Moreover, the study provides empirical evidence that large firms are more likely to appoint a Big 4 auditor, while highly leveraged firms are less likely to appoint a Big 4 auditor. This study has implications for Saudi Arabia's capital market regulators. The evidence provided by this study will help regulators in their deliberations on corporate governance enhancements in order to ensure that nonexecutive directors exercise their oversight role effectively.

## دور أعضاء مجلس إدارة الشركة غير التنفيذيين في اختيار المراجع الخارجي : دليل من المملكة العربية السعودية

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**ملخص البحث:** يهدف هذا البحث إلى دراسة العلاقة بين نسبة وجود الأعضاء غير التنفيذيين في مجالس إدارة الشركات المساهمة السعودية وبين اختيار المراجع الخارجي. حيث بيّنت نتائج البحث أن وجود نسبة أكبر من الأعضاء غير التنفيذيين في مجلس الإدارة ليس له تأثير على اختيار مراجعي الحسابات. كما بيّنت نتائج البحث التطبيقية أيضاً أن الشركات المساهمة السعودية كبيرة الحجم تميل إلى تعيين ما يسمى بـ "مكاتب المراجعة الأربعة الكبيرة (Big 4)" ، في حين أن الشركات ذات المديونية العالية هي أقل ميلاً لتعيين هذه المكاتب. وتسهم نتائج هذا البحث في مساعدة الجهات القائمة على سوق الأوراق المالية في المملكة في مداولاتها الخاصة بتحسين أنظمة حوكمة الشركات، لضمان قيام الأعضاء غير التنفيذيين في مجالس إدارة الشركات المساهمة بممارسة دورهم الرقابي على نحو فعال.

## **Introduction**

This study aims to investigate the role of nonexecutive (outside) members of the board of directors in the choice of the external auditor in Saudi Arabia. Extant literature suggests that increased nonexecutive representation in the board of directors is associated with high quality audits (e.g. Beasley and Petroni, 2001; Ireland and Lennox, 2002; Lennox, 2005). This study contributes to this line of literature by providing empirical evidence in the context of an emerging market. No prior study has attempted to empirically measure this relationship in Saudi Arabia.

Examining whether the presence of more nonexecutive directors induces firms to contract for a high quality audit will provide regulators with useful insights. The role of the nonexecutive directors in corporate governance is a subject of increasing interest in Saudi Arabia. The Saudi Capital Market Authority (CMA, thereafter) has recently issued a directive making it mandatory on all publicly listed firms to form their board of directors from a majority of nonexecutive members. The findings provided by this study should be relevant to the CMA, amongst other regulators, in their deliberations of corporate governance reform relating to strengthening nonexecutive directors' stewardship.

Moreover, the motivation for this study, at a general level, is based on the economic significance of Saudi Arabia, which is rated among the 20<sup>th</sup> largest economies in the world. The Saudi stock market is very significant among emerging markets, and is the largest in the Arab world. Its market capitalization reached 924.525 billion Saudi Riyals (US\$ 246.540 billion) as of December 31, 2008. Nevertheless, the literature providing empirical evidence on corporate governance in the Saudi context is very

scant. This study attempts to fill a void in this literature with regard to the role of nonexecutive directors in the auditor choice in Saudi Arabia.

The remainder of the paper is organized as follows: Section 2 provides short background to Saudi regulations on directors' representation in companies' boards. Section 3 discusses relevant prior literature and generates the study's hypothesis. This is followed by a discussion of the data and research methodology and results in the fourth and fifth sections. The study closes with a conclusion.

### **Background to Saudi Regulations on Directors' Representation in Companies' Boards**

The CMA is the government body that regulates the Saudi Arabian Capital Market. The CMA issued the Corporate Governance Regulations in the year 2006 with the aim of ensuring compliance of publicly listed firms with governance practices for the sake of protecting shareholders' rights.

Paragraph (c) of Article 12 of the Corporate Governance Regulations issued in the year 2006 states that the majority of the members of the board of directors shall be nonexecutive members. Later, the Board of the CMA issued resolution number (1-36-2008) dated 10/11/2008 making it mandatory on all listed firms, effective from the year 2009, to have a majority of nonexecutive directors in their boards of directors. Before the issuance of this resolution, firms had had the option as to what percentage nonexecutives may represent in the boards. Many firms, however, had adopted this rule prior to being mandatory.

Article 2 of the Corporate Governance Regulations (2006) identifies nonexecutive directors as those who do not have full-time management positions at the firm, or who do not receive a monthly or yearly salary. This definition is consistent with what is used in literature (e.g., Beasley and Petroni, 2001).

In addition to requiring that the majority of the members of the board of directors shall be nonexecutive members, the Corporate Governance Regulations also stipulate that the independent members of the board of directors shall not be less than two members, or one-third of the members, whichever is greater (Paragraph (e) of Article 12, 2006). The Regulations identify the independent board member as the member who enjoys complete independence (Article 2, 2006). The Regulations provide examples that constitute an infringement of such independence, which include holding a controlling interest in the firm or having previous employment relationship with the firm (Article 2, 2006).

In addition, all listed firms must be audited by a certified external auditor. External auditors are appointed by the firm's general assembly upon a recommendation of the board of directors (Article 130, Company Act, 1965).<sup>1</sup> There are 124 auditing firms certified by the Ministry of Commerce and Industry which practice the profession in Saudi Arabia (SOCPA, 2008).

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<sup>1</sup> Article 14 of the Corporate Governance Regulations states that listed firms to set up audit committees whose duties include providing recommendations to the board of directors on the appointment of external auditors (2006). Executive board members are not eligible for audit committee membership. The Board of the CMA issued resolution number (1-36-2008) dated 10/11/2008 making it mandatory on all listed firms, effective from the year 2009, to implement Article 14.

## **Prior literature and Hypothesis Development**

### ***Nonexecutive directors***

Agency theory suggests that firms should use monitoring mechanisms in order to mitigate the conflict of interests among managers, shareholders and bondholders. Corporate governance mechanisms such as the monitoring by nonexecutive board directors are among mechanisms applied to mitigate this conflict of interests (Fama, 1980; Fama and Jensen, 1983).

Prior research argues that nonexecutive directors are generally of high reputation and that they bear reputational risk similar to that of executive directors (Fama and Jensen, 1983; Romano, 1993). Prior research also provides evidence that external labor market rewards and punishes nonexecutive directors for their performance (Gilson, 1990; Kaplan and Reishus, 1990). As a result, nonexecutive directors have an incentive to protect their reputation for high quality decision making. They are likely to seek mechanisms that will reduce informational asymmetries that exist between them and executive (inside) directors or management (e.g., Beasley and Petroni, 2001; Carcello, Hermanson, Neal and Riley, 2002; O'sullivan, 2000; Pincus, Rusbarsky and Wong, 1989). Nonexecutive directors' decisions are considered to be more objective than those of the executive directors (Beasley and Petroni, 2001; Lennox, 2005). The presence of nonexecutives in the board of directors would ensure that the executive directors are taking decisions consistent with shareholders' interests (Fama, 1980).

Prior literature provides empirical support of positive impact of nonexecutive directors on firms' performance. For example, Rosenstein and Wyatt (1990) find positive market reaction, as evidenced by a

positive abnormal stock return, to the announcements of the appointment of additional nonexecutive directors. In another study, Rosenstein and Wyatt (1997) find that the announcements of the appointment of additional executive directors have no significant market reaction. Beasley (1996) finds an inverse relationship between the percentage of nonexecutive directors and the likelihood that a firm experiences management fraud. Dechow, Sloan, and Sweeney (1996) find that firms subject to the SEC enforcement actions related to earnings overstatements are more likely to have a board dominated by executive directors. In addition, Shivdasani and Yermack (1999) report a positive market reaction to the announcements of the nonexecutive director appointments if the CEO is not involved in director selection versus a negative reaction if the CEO is. Beasley and Petroni (2001) note that the board governance research suggests that a higher percentage of nonexecutive directors in boards will make those boards higher quality monitors of management. In sum, this line of literature suggests that nonexecutive directors enhance the board's effectiveness in discharging its monitoring responsibilities.

### ***Auditor quality***

Prior literature suggests that auditors are of different quality levels. Auditor quality defined as the probability an auditor will both discover and report a breach in the client's accounting system (DeAngelo, 1981). Because both aspects of the probability are unobserved, researchers look at indicators of audit quality. An important indicator is the brand name reputation of the audit firms. Simunic and Stein (1987) posit that name of the audit firm is used by outsiders to differentiate the quality levels. DeAngelo (1981) argues that the Big N (8/6/5/4) auditors are perceived to



provide higher quality audits as they have more reputational and legal risk.<sup>2</sup>

Prior literature provides evidence, indicative of the Big N's audit quality (e.g., Beatty, 1989; Carcello et al., 2002; Chan, Ezzamel and Gwilliam, 1993; DeFond and Jiambalvo, 1993; Fan and Wong, 2005; Francis, Maydew, and Sparks, 1999; Francis and Simon, 1987; Knechel and Vanstraelen, 2007; Krishnan and Schauer, 2000; O'sullivan, 2000; Teoh and Wong, 1993). As a result, prior work has used Big N to proxy for audit quality. DeFond (1992) finds that the Big N's name brand is a good substitute for more complex measures used for audit quality such as size, expertise and independence.<sup>3</sup>

***The predicted association between the role of nonexecutive directors and auditor choice in Saudi Arabia***

The present study examines whether nonexecutive directors are likely to influence the auditor choice in Saudi Arabia. As mentioned earlier, nonexecutive directors are likely to seek mechanisms that reduce informational asymmetries that exist between them and management. Auditing is an important type of monitoring mechanisms (Jensen and Meckling, 1976). Carcello et al. (2002) predict that a board of directors that wants to discharge its monitoring responsibilities is likely to be supportive of the audit function.

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<sup>2</sup> The term “Big-N” is used to refer to the major audit firms, whose numbers have decreased from eight to four over the years.

<sup>3</sup> One important stream of literature proxies for audit quality using audit fees. The present study does not use this proxy as audit fees are not disclosed for the Saudi publicly listed firms.

Prior literature shows that monitoring by boards consisting of more nonexecutive directors is associated with the company's choice of auditors. For example, Beasley and Petroni (2001) find that employing a higher quality auditor is increasing with the percentage of nonexecutive directors for a sample of US insurance firms. Ireland and Lennox (2002) also find that firms with boards consisting of more nonexecutive directors are more likely to appoint large audit firms. Lennox (2005) provides UK evidence that nonexecutive directors influence the board decision to choose a higher quality auditor. Adjaoud, Mamoghli, and Siala (2008) find a similar result in their sample of Canadian firms listed on the Toronto Stock Exchange.

Nonexecutive directors have incentives to seek a high quality auditor as a way to help reduce informational asymmetries with executive directors. In Saudi Arabia, as in many other countries, nonexecutive directors in general are important decision makers, as they hold important positions in public and private entities. In fact, many of the nonexecutive directors serving on the Saudi listed companies' boards are high-ranking governmental officials. They represent government's shareholdings in the listed firms. Thus, it is in directors' interests to select a high quality auditor as a signal of their own reputation and integrity. In addition, the incentive to seek a higher quality auditor in Saudi Arabia, at least in part, may be attributed to the relatively stringent liability regulations exercised by the CMA. Directors, outsiders and insiders, who fail to exercise reasonable care in fulfilling their monitoring roles are subject to severe sanctions.<sup>4</sup>

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<sup>4</sup> For example, the CMA's Committee for the Resolution of Securities Disputes sanctioned a trader to prison term, among other punishments, on insider trading transactions (see Resolution dated 2/6/2009).

The foregoing discussion thus leads to the following hypothesis:

Ha: Boards of directors of Saudi publicly listed firms, which have higher percentage of nonexecutive directors, are more likely to be associated with higher quality auditors than boards with lower percentage of nonexecutive directors.

## **Data and Research Methodology**

### ***Sample***

The hypothesis is tested in the whole population of Saudi publicly listed firms for the year 2008. Data for this study have been collected by reviewing annual reports of the 127 listed firms for the year 2008 available in the official website of the stock exchange, Tadawul. Data were obtained for all listed firms except one firm, whose data are not available due to its temporary delisting, leading to a sample of 126 firms.

### ***Variables***

Consistent with prior research, this study captures auditor quality using a dummy variable (*AUD*) that indicates whether the firm is one of the Big 4 auditors. The present study, as in Beasley and Petroni (2001), defines nonexecutive directors as those who are not currently part of the company's management. This definition is also consistent with that adopted by the CMA as mentioned earlier. Consistent with Beasley and Petroni (2001), the model estimated in the current study includes (*NEX*) to represent the percentage of nonexecutive directors in the board of directors.

In addition to the variable of interest (i.e. *NEX*), the present study also uses a set of variables to control for other factors that may affect the auditor choice. The selection and specification of control variables

closely follows extant research on audit choice models. Variables representing firms' size, leverage, complexity, industry regulations, new equity issues, and profitability (*SIZ*, *LVG*, *CPX*, *REG*, *EQT*, *ROE*) are included as covariates to control for their effects on the demand for Big 4 auditors.

Extant literature finds that client firm size is associated with auditor choice. DeFond (1992) argues that larger firms face more severe agency problems. Hence, there is more demand for a monitoring mechanism like that of a high quality audit. Abbott and Parker (2000); Firth and Smith (1992), Francis and Wilson (1988), Healy and Lys (1986), Johnson and Lys (1990), and Simunic and Stein (1987) find a positive association between firm size and the selection of higher quality auditors. Consistent with prior literature, this study includes size as an explanatory variable in the model estimated. The present study proxies for firm size with the natural logarithm of total assets in millions of Saudi Riyals (*SIZ*).

This current study also controls for leverage. The evidence for the association between leverage and demand for higher quality audits is mixed. DeFond (1992), Eichenseher and Shields (1989), Firth and Smith (1992) and Francis and Wilson (1988) find positive association between leverage and the demand for higher quality auditors. They argue that lenders require a high level of monitoring. To enhance their ability to monitor firms with high levels of debt, lenders require a high quality auditor.

In contrast, other studies argue that high debt firms choose lesser quality auditors as they are nearing financial distress. For example, Francis and Wilson (1988) and Simunic and Stein (1987) find a negative association between leverage and brand name auditors. Healy and Lys (1986) and

Johnson and Lys (1990) shows that highly leveraged firms are more likely to switch to a lower quality auditor. Consistent with prior research, this study measures leverage with the ratio of long term debt to total assets (*LVG*).<sup>5</sup>

Corporate complexity has been deemed as affecting the auditor choice. Prior literature argues that firms with complex operations are likely to have numerous complex transactions. Such transactions include related-party transactions and intra-group transactions, which could complicate the required accounting process. This in turn could require more auditing expertise that may lead to hiring a higher quality auditor. Abdel-Khalik (1993), Hay and Davis (2004) and Simunic and Stein (1987) show that complex firms are more likely to hire higher quality auditors. Consistent with prior literature (e.g., Carcello et al., 2002; Craswell, Francis, and Taylor, 1995; Francis and Simon 1987; and Simon and Francis 1988), the present study uses the square root of the number of consolidated subsidiaries, associates and joint ventures to proxy for complexity (*CPX*).

Francis, Maydew, and Sparks (1999) predict that firms in regulated industries are more likely to retain higher quality auditors. A dummy variable (*REG*) is included in the model that takes the value of 1 if the firm is in an industry regulated by a government agency (i.e. banks, insurance, telecommunication and electricity companies) and 0, otherwise.

Prior research also finds that firms issuing new securities are more likely to hire a higher quality auditor to signal their quality (e.g. DeFond, 1992;

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<sup>5</sup> For data availability reasons, I use total liabilities to total assets ratio for banks and insurance firms, as they do not disclose the current versus long term liabilities.

Francis and Wilson, 1988; Knechel, Niemi, Sundgren, 2008). In line with prior research, this study includes a dummy variable (*EQT*) in the model that takes the value of 1 if the firm raises equity during the year, and 0 otherwise.

Extant auditor choice studies also include profitability as an explanatory variable. It is argued that a more profitable firm is more likely to pay the fee premium required by a high quality auditor. Johnson and Lys (1990) and Abbott and Parker (2000) predict that profitability, measured by the return on assets (ROA), is associated with auditor choice. Consistent with the literature, the present study includes *ROE* as a control variable in the model estimated, which is measured as the ratio of net income to total assets.

### ***Model***

Based on the pervious discussions, the following model is to be estimated using logit regression to examine the relationship hypothesized:

$$AUD_i = \beta_0 + \beta_1 NEX_i + \beta_2 SIZ_i + \beta_3 LVG_i + \beta_4 CPX_i + \beta_5 REG_i + \beta_6 EQT_i + \beta_7 ROE_i + \varepsilon$$

where *i* is a firm index, and: *i* = firm 1 through 126 for the year 2008;

*AUD<sub>i</sub>* = auditor choice, being 1 if auditor is a Big 4 (Deloitte and Touche, Ernst and Young, KPMG , PriceWaterhouseCoopers in the year 2008) ; and 0, otherwise.

*NEX<sub>i</sub>* = the percentage of nonexecutive directors in the board of directors;

$SIZ_i$  = firm size, measured by the natural logarithm of total assets at year-end;

$LVG_i$  = firm leverage, measured by the ratio of long term debt to total assets at year-end;

$CPX_i$  = firm complexity, measured by the square root of the number of consolidated subsidiaries, associates and joint ventures $\square$ ;

$REG_i$  = regulated firms, being 1 if the firm's operations are regulated by a government agency (i.e. banks, insurance, telecommunication and electricity companies); and 0, otherwise;

$EQT_i$  = issuance of new securities, being 1 if the firm raised equity during the year, and 0, otherwise;

$ROE_i$  = firm profitability, measured by the ratio of net income to total assets at year-end;

$\varepsilon$  = Error term.

## **Research Results**

### ***Descriptive statistics***

Table 1 presents the sample descriptive statistics. The data reveal a wide size range with a minimum value of assets of SR 77.955 million and a maximum of SR 271,759.989 million. The sample has an average asset value of SR 16,240.346 million and a median of SR 1,591.192 million. The relatively high median asset value implies that the Saudi publicly listed firms are of large size in general.

Insert Table 1 about here

Table 1 also shows that the leverage ratio ( $LVG$ ) has a mean (median) of 0.20 (0.07) which indicates that the sample firms are not highly financially leveraged on average. Within the sample, banks have the

highest leverage ratio (not tabulated). This is expected, given that banks inherently have a highly leveraged financial structure.

Table 1 reveals that the mean (median) number of consolidated subsidiaries, associates and joint ventures is 3.60 (3). This finding implies that Saudi publicly listed firms have complex operations on average. Moreover, 73% of the observations in the sample (not tabulated) have positive net income leading to an average ROE of 0.03.

Table 1 also shows that the median number of the board members is 9 persons. Moreover, the nonexecutive members constitute an average (*NEX*) of 80% of the total number of directors in the board with a minimum number of nonexecutives of 2 members and a maximum of 11 members. The average percentage of nonexecutive directors shows that the board of directors composition, voluntarily exceeds the mandated majority of nonexecutive directors required by the CMA to be effective from the year 2009, as referred to earlier. In addition, the percentage of independent members in the board of directors (*NDP*) is 62%.

Table 2 presents descriptive statistics for the primary continuous variables for firms audited by Big 4 and firms audited by non-Big 4. Table 2 shows that Big 4 audited 91 (72%) out of the 126 sample firms, indicating that a majority of the Saudi listed firms are audited by Big 4. The average number of board members is significantly higher at the 1% level for Big 4 auditees than non-Big 4 auditees with a *t*-statistic for the mean difference of -3.16. However, the percentage of nonexecutive directors (*NEX*) in firms audited by Big 4 is not significantly different at conventional levels from that in non-Big 4 audited firms.



Insert Table 2 about here

Table 2 also shows that the average value of assets of SR 22,010.070 million for firms audited by Big 4 is statistically different from that of firms audited by non-Big 4 (SR1,239.066 million), with a *t*-statistic for the mean difference of -2.53. This indicates that the firms audited by Big 4 in the sample tend to be larger than firms audited by non-Big 4. This may reflect the notion that larger firms seek Big 4 auditors to mitigate the more severe agency problems that they usually face (DeFond, 1992). This also may reflect the notion that larger firms appoint Big 4 auditors as they afford the premium that Big 4 usually charge.

Moreover, Table 2 shows that firms audited by non-Big 4 are more highly leveraged (*LVG*) than firms audited by Big 4. The leverage ratio is 0.33 for firms audited by non-Big 4 versus 0.15 for those audited by Big 4, with a *t*-statistic for the mean difference of 3.53. This finding might reflect the notion that highly leveraged firms may hire lesser quality auditors that subject them to less scrutiny as they might be nearing financial distress (Fransic and Wilson, 1988; and Simunic and Stein, 1987). The finding may also be related to Big 4's reluctance to audit highly leveraged clients that are usually riskier than less leveraged clients (Aksu, Onder and Saatcioglu, 2007).

Table 2 shows that the means for other variables of the firms audited by Big 4 are not significantly different from those of the firms audited by non-Big 4 according to the *t*-test of the mean difference. This implies some consistency between Big 4 auditees and non-Big 4 auditees in the sample period.

### ***Empirical results***

Table 3 contains the results from the regression model used to empirically test the study hypothesis. The coefficient on percentage of nonexecutive (*NEX*) is not statistically significant at conventional levels with a *t*-statistic of -0.245. This finding does not support the hypothesis suggesting that firms with higher levels of nonexecutive representation in the board are not more likely to retain Big 4 auditors. This finding shows no association between the presence of nonexecutive directors in the board and the auditor choice. This suggests that the mere increased representation of nonexecutives in the board alone may not be enough to ensure their exercising oversight over an important corporate governance decision, being the auditor selection decision. This finding may appeal to regulators as it could imply that there might be a need to focus on factors that strengthen nonexecutive's stewardship. For example, regulators might require nonexecutive directors to possess certain key skills, knowledge and experience to play their oversight role effectively.

Insert Table 3 about here

Table 3 also shows that the coefficient on size (*SIZ*) is positive and significant at the 1 % level with a *t*-statistic of 4.369, showing that large firms are more likely to hire Big 4 auditors. This is consistent with the recent findings of Hay and Davis (2004), Fan and Wong (2005), and Lennox (2005).

Table 3 also reveals that the coefficient on leverage (*LVG*) is negative and significant at the 1 % level implying that highly leveraged firms are less likely to appoint Big 4 auditors. This finding is consistent with that of Simunic and Stein (1987); Francic and Wilson (1988); Healy and Lys

(1986); and Johnson and Lys (1990). Coefficients on the other variables in the model (*CPX*, *REG*, *EQT*, *ROE*) are not statistically significant at the 5% level or below.

To examine whether the presence of independent directors will have an effect on the auditor choice, the model is re-estimated using the percentage of independent members in the board of directors (*NDP*) in place of the percentage of nonexecutive directors (*NEX*). Table 4 presents the results of this estimation. The coefficient on (*NDP*) is not statistically significant with a *t*-statistic of -1.196. This finding indicates that the presence of independent directors in the board is not relevant to the auditor choice as well. Other results revealed in Table 4 are consistent with those reported in Table 3.

Insert Table 4 about here

## **Conclusion**

This study examines the effect of predominance of nonexecutive members in the board of directors on the firm's choice of the external auditor in Saudi Arabia. Using logit regression estimates, the results indicate that the presence of more nonexecutive directors in the board has no effect on the auditor choice. However, the study provides empirical evidence of the effect of firm size and leverage on the auditor choice. The findings show that large firms are more likely to hire Big 4 auditors, whereas highly leveraged firms are less likely to appoint Big 4 auditors.

These findings should appeal to regulatory bodies. The CMA has recently required that the majority of the members of the board of directors shall be nonexecutives. The CMA, amongst others, should be interested in the

empirical evidence provided by this study as it sheds light on an important aspect, (i.e. the auditor choice) relating to the nonexecutives' role in the board's decision making. The findings of this study suggest that a greater proportion of nonexecutive directors in the board may not be enough in its own right to ensure their influence on an important corporate governance decision, being the auditor selection decision. This could induce regulators to examine the need to focus on factors that would ensure that nonexecutive directors undertake their oversight role effectively. For example, regulators could require nonexecutive directors to maintain certain key skills, knowledge and experience prerequisite for active stewardship.

A limitation of this study relates to the possibility that it might have omitted some other variables that influence the auditor choice. The current study sheds light on the relation between the proportion of nonexecutive directors and the firm's choice of the auditor. However, future research could examine the demographic characteristics of board members that may affect auditor choice.

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**Table 1**  
**Descriptive statistics for the primary variables for sample firms** (Number of observations = 126)

	<i>SIZE</i>	<i>LVG</i>	<i>COMPLX</i>	<i>ROE</i>	<i>N-BRD</i>	<i>N-NEX</i>	<i>NEX</i>	<i>N-NDP</i>	<i>NDP</i>
Mean	16,240.346	0.2	3.60	0.03	8.52	6.78	0.80	5.31	0.62
Median	1,591.192	0.07	3	0.03	9	7	0.86	5	0.60
Minimum	77.955	0	0	-0.59	4	2	0.29	1	0.14
Maximum	271,759.989	0.91	10	0.43	12	11	1.00	11	1.00
Percentiles: 25	443.558	0.02	0	-0.01	7	5	0.71	3	0.40
50	1,591.192	0.07	3	0.03	9	7	0.86	5	0.60
75	5,703.734	0.26	6	0.10	10	8	0.90	7	0.86

*SIZE* is the total assets at year-end in millions of Saudi Riyals ; *LVG* is the ratio of long term debt to total assets at year-end; *COMPLX* is the number of consolidated subsidiaries, associates and joint ventures□; and *ROE* is the ratio of net income to total assets at year-end; *N-BRD* is the number of board members; *N-NEX* is the number of nonexecutive directors in the board of directors, *NEX* is the percentage of nonexecutive directors in the board of directors; *N-NDP* the number of independent members in the board of directors; *NDP* the percentage of independent members in the board of directors

**Table 2**  
**Descriptive statistics for the primary variables for firms audited by Big 4 versus firms audited by non-Big 4**

	Firms audited by	# obs	Mean	Std. Deviation	Std. Error Mean	t-statistic for mean difference	Sig.
<i>N-BRD</i>	Non-Big 4	35	7.80	1.73	0.29	-3.16	0.00
	Big 4	91	8.80	1.54	0.16		
<i>N-NEX</i>	Non-Big 4	35	6.23	1.93	0.33	-1.94	0.06
	Big 4	91	6.99	1.99	0.21		
<i>NEX</i>	Non-Big 4	35	0.80	0.17	0.03	0.05	0.96
	Big 4	91	0.80	0.18	0.02		
<i>N-NDP</i>	Non-Big 4	35	5.29	2.20	0.37	-0.07	0.95
	Big 4	91	5.32	2.45	0.26		
<i>NDP</i>	Non-Big 4	35	0.68	0.23	0.04	1.67	0.10
	Big 4	91	0.60	0.25	0.03		
<i>SIZE</i>	Non-Big 4	35	1,239.066	1,638.480	276.954	-2.53	0.01
	Big 4	91	22,010.070	48,455.270	5,079.493		
<i>LVG</i>	Non-Big 4	35	0.33	0.35	0.06	3.53	0.00
	Big 4	91	0.15	0.21	0.02		
<i>COMPLX</i>	Non-Big 4	35	3.74	3.26	0.55	0.29	0.78
	Big 4	91	3.55	3.46	0.36		
<i>ROE</i>	Non-Big 4	35	0.06	0.08	0.01	1.64	0.10
	Big 4	91	0.02	0.13	0.01		

*N-BRD* is the number of board members; *N-NEX* is the number of nonexecutive directors in the board of directors, *NEX* is the percentage of nonexecutive directors in the board of directors; *N-NDP* the number of independent members in the board of directors; *NDP* the percentage of independent members in the board of directors; *SIZE* is the total assets at year-end in millions of Saudi Riyals ; *LVG* is the ratio of long term debt to total assets at year-end; *COMPLX* is the number of consolidated subsidiaries, associates and joint ventures□; and *ROE* is the ratio of net income to total assets at year-end.

**Table 3**  
**Logit Regression Results for Auditor Choice** (Number of observations = 126)

$$AUD_i = \beta_0 + \beta_1 NEX_i + \beta_2 SIZ_i + \beta_3 LVG_i + \beta_4 CPX_i + \beta_5 REG_i + \beta_6 EQT_i + \beta_7 ROE_i + \varepsilon$$

	Coefficient	t statistic	Sig.	Adj. $R^2$
<i>Intercept</i>	-0.364	-1.331	0.186	0.260
<i>NEX</i>	-0.049	-0.245	0.807	
<i>SIZ</i>	0.084	4.369	0.000	
<i>LVG</i>	-0.566	-3.871	0.000	
<i>CPX</i>	0.002	0.040	0.969	
<i>REG</i>	0.134	1.523	0.131	
<i>EQT</i>	0.081	0.674	0.502	
<i>ROE</i>	-0.601	-1.800	0.074	

*AUD<sub>i</sub>* = auditor choice, being 1 if auditor is a Big 4 and 0, otherwise; *NEX<sub>i</sub>* = the percentage of nonexecutive directors on the board of directors; *SIZ<sub>i</sub>* = firm size, measured by the natural logarithm of total assets at year-end; *LVG<sub>i</sub>* = firm leverage, measured by the ratio of long term debt to total assets at year-end; *CPX<sub>i</sub>* = firm complexity, measured by the square root of the number of consolidated subsidiaries, associates and joint ventures; *REG<sub>i</sub>* = regulated firms, being 1 if the firm's operations are regulated by a government agency and 0, otherwise; *EQT<sub>i</sub>* = issuance new securities, being 1 if the firm raised equity during the year, and 0, otherwise; *ROE<sub>i</sub>* = firm profitability, measured by the ratio of net income to total assets at year-end.

**Table 4**  
**Logit Regression Results for Auditor Choice- Substitution of *NDP* for *NEX*** (Number of observations = 126)

$$AUD\ i = \beta\ 0 + \beta\ 1\ NDP\ i + \beta\ 2\ SIZ\ i + \beta\ 3\ LVG\ i + \beta\ 4\ CPX\ i + \beta\ 5\ REG\ i + \beta\ 6\ EQT\ i + \beta\ 7\ ROE\ i + \varepsilon$$

	Coefficient	<i>t</i> statistic	Sig.	Adj. <i>R</i> <sup>2</sup>
<i>Intercept</i>	-0.275	-1.042	0.300	0.269
<i>NDP</i>	-0.174	-1.196	0.234	
<i>SIZ</i>	0.082	4.383	0.000	
<i>LVG</i>	-0.572	-3.951	0.000	
<i>CPX</i>	0.004	0.099	0.921	
<i>REG</i>	0.136	1.553	0.123	
<i>EQT</i>	0.053	0.441	0.660	
<i>ROE</i>	-0.544	-1.621	0.108	

*AUDI* = auditor choice, being 1 if auditor is a Big 4 and 0, otherwise; *NDP i* = the percentage of independent directors on the board of directors; *SIZi* = firm size, measured by the natural logarithm of total assets at year-end; *LVG i* = firm leverage, measured by the ratio of long term debt to total assets at year-end; *CPX i* = firm complexity, measured by the square root of the number of consolidated subsidiaries, associates and joint ventures; *REG i* = regulated firms, being 1 if the firm's operations are regulated by a government agency and 0, otherwise; *EQT i* = issuance new securities, being 1 if the firm raised equity during the year, and 0, otherwise; *ROE i* = firm profitability, measured by the ratio of net income to total assets at year-end.