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Audit committee effectiveness and financial reporting timeliness: The case of Tunisian listed companies

1. Introduction

Timeliness has long been recognized as one of the important aspects of financial reporting (IASB, 2010; FASB, 2010; Sultana, Singh and Van der Zahn, 2015, Ika and Ghazali, 2012; Abbott, Parker and Peters, 2012; Nelson and Shukeri, 2011). This qualitative attribute suggests that an audit report “must be made available before it loses its ability to influence the decision makers” (Delaney, Epstein, Adler and Foran, 1997, p. 24). In the emerging capital markets, financial reporting is the primary source of information available to shareholders (Al-Ajmi, 2008). It follows that timely publication of the audited financial statements in the annual report affects its decision-making utility (Piot, 2008) and reduces information asymmetry among stakeholders in the capital market (Owusu-Ansah and Leventis, 2006). However, the timely publication of corporate financial information depends on the time taken by the external auditor to complete the audit process (Leventis, Caramanis, and Weetman, 2005; Van Beest, Braam and Boelens, 2009). Consequently, there is pressure on the external auditor to issue the audit report without undue delay.

Academic research and regulatory bodies have become increasingly concerned with the varying factors influencing audit delay as well as the development of effective corporate governance and financial reporting quality. Prior studies have investigated a number of factors associated with the time taken by the external auditor to issue the audit report (e.g., Hassan, 2016; Baatwah, Salleh and Ahmad, 2015; Sultana *et al.*, 2015; Ettredge, Li and Sun, 2006; Sengupta, 2004) but little research has investigated the association between audit committee characteristics and financial reporting timeliness. Moreover, empirical studies examining the role of the audit committee in audit report timeliness remain scant and are largely limited to developed countries where corporate governance quality is generally much higher.

Sultana *et al.* (2015) and Bédard and Gendron (2010) highlight the need to study the linkage between audit committee effectiveness and external audit delay. As such, research examining the influence of audit committee characteristics on audit delay certainly requires in-depth investigation and provides the motivation for this study.

Against this background, we document that current corporate governance reforms and new legislation introduced globally have made the relationship between the audit committee and financial reporting timeliness particularly important because the audit committee members are charged with monitoring the audit engagement (Abernathy, Beyer, Masli and Stefaniak, 2014; Nelson and Shukeri, 2011). Sultana *et al.* (2015, p.72) contend that the “emergence of the audit committee’s importance is likely to directly influence the actions and activities of the external auditor, including time taken to issue the audit report”.

Therefore, this study aims to investigate the association between external audit delay and audit committee attributes found in prior studies that most significantly affect audit committee effectiveness. The audit committee attributes examined in this study are audit committee authority, audit committee member financial expertise, audit committee member independence, audit committee size, and audit committee diligence as explanatory independent variables. We conduct our analysis using data obtained through a survey of chief audit executives for a sample of 54 Tunisian listed firms over the period 2011–13. Our findings suggest that audit committee financial expertise contributes to audit committee effectiveness and, in turn, may be able to significantly reduce external audit delay.

Tunisia provides an interesting setting for examining the audit committee's importance in ensuring that reported financial information is timely and reliable for two reasons. First, with regard to worldwide endeavors to combat corporate fraud, regulators and policy makers in Tunisia have introduced several corporate governance reforms which provide particular guidelines and recommendations to enhance the audit committee's effectiveness (i.e., The Best-Governance Practices Handbook, 2012; The Law No. 2005-96 of October 18th, 2005; The Central Bank of Tunisia Circular No. 2011-06).

Second, the Tunisian regulatory requirements regarding the time for submission of the annual report for all listed companies remain more flexible (120 days), especially, compared to those applied in developed countries (90 days in the USA). It therefore appears that this wide latitude may play a critical role in increasing audit delay by allowing managers discretion.

Furthermore, the Tunisian market reactions to the announcements of interim publications exhibit significantly different characteristics from those observed for quarterly releases in the US stock market. In Tunisia, the interim reports are only half-yearly. Thus, interim and annual announcements do not have the same value for the shareholders in the Tunisian market compared with developed economies. According to this logic, annual net income is seen by shareholders as the most important (Gajewski and Quéré, 2001, p.679).

Overall, our study is particularly relevant and makes several key contributions. This study fills a gap in the literature where empirical evidence of how audit committee attributes impact external audit timeliness remains scant. Moreover, our findings highlight the impact of audit committee characteristics on reporting timeliness and this has direct implications for the management of firms. Results lend credence to the belief that effective audit committees enhance the quality of internal controls, reduce audit business risk, and consequently lead to shorter audit delay.

This study is organized as follows. The next section discusses audit committee regulations for listed companies in Tunisia. Section 3 presents a review of prior relevant studies and is followed by the development of this study's hypotheses. Section 4 explains the data and research methodology. Findings and analysis are then discussed. The final section summarizes findings and implications from our results, identifies limitations and makes suggestions for future research.

2. Audit committee regulations in Tunisia

Since 2001, regulators in Tunisia have required recognized the creation of an audit committee for credit institutions; however, the application of this law was made mandatory in 2005 with the introduction of the Tunisian Financial Security Act promulgated in October 2005. According to Ahmadi and Bouri (2016, p.2), "this Act was created to modernize the legislation and for ensuring the market's reaction, by the higher level and transparency of financial disclosure". Rules enacted by the Tunisian Financial Security Act stressed the importance of an audit committee in reinforcing security of financial relations. Furthermore, the Financial Security Act (2005) required companies making public offerings and parent companies, where the total of the balance sheet for the consolidated financial statements exceeds 50 million Tunisian dinars, to maintain an audit committee (Decree No. 2006 – 1546, article 6).

According to this law, the audit committee is composed of at least three members appointed by the board of directors, and they cannot include the CEO.

The audit committee "monitors the financial statements and any document of accounting and financial information before it is made public, provides oversight of the system of internal controls, monitors the works of the company's supervisory bodies, proposes the appointment of external auditors and approves the designation of the internal auditors" (Tunisia Company

Laws and Regulations Handbook, 2015, p.141). Moreover, the Financial Security Act (2005) prohibited the chief executive officer to be a member of the committee and stated that audit committee members are paid according to the procedure of attendance fees.

Recently the Tunisian Corporate Governance Code, updated in 2012, recommends that the audit committee be composed of at least one independent member. Moreover, the code suggests that audit committee meetings be held at least four times a year. However, these rules are neither compulsory nor enforceable. Additionally, we should note that the regulatory framework which governs the composition, the activity and the nature of the work of audit committees in credit institutions is more detailed.

Furthermore, with regard to the international regulatory framework, the Tunisian regulatory requirements remain limited. For example, section 404 of SOX (2002) mandates that managers evaluate and report on the effectiveness of the company's internal control over its financial reporting. However, Tunisian legislation does not give stakeholders the opportunity to follow the work of audit committees, which raises doubts about their effectiveness (Klibi, 2015).

3. Background and hypothesis development

Audit report lag represents “the number of calendar days from fiscal year-end to the audit report date” (Ashton *et al.*, 1987, p.657). The majority of research on the determinants of audit delay has focused on client firm-level characteristics (Ashton and Wright, 1989; Ettredge *et al.*, 2006; Munsif, Raghunandan and Dasaratha, 2012; Blankley, Hurtt and MacGregor, 2014) and auditor specific attributes (Bamber, Bamber and Schoderbek, 1993; Jaggi and Tsui, 1999; Lee, Mande and Son, 2009; Tanyi, Raghunandan and Barua, 2010; Knechel and Sharma, 2012).

Despite prior studies linking the audit committee characteristics to major financial accounting issues (e.g., earnings management, conservatism, external audit opinion), research of its influence on audit delay is lacking (Sultana *et al.*, 2015; Ika and Ghazali, 2012; Bédard and Gendron, 2010). Scholars and regulators have increasingly promoted the role of the audit committee in the corporate governance process as many of the audit committee's roles and responsibilities are directed towards improving financial reporting quality (DeZoort Hermanson, Archambeault and Reed, 2002; Klein, 2002; Cadbury Report, 1992; Blue Ribbon Committee, 1999; Sarbanes-Oxley Act, 2002; Tunisian Financial Security Act, 2005).

This study draws mainly on agency theory proposed by Jensen and Meckling (1976) and Fama and Jensen (1983). In fact, from an agency perspective, the audit committee is considered to be a monitoring mechanism in the area of the financial reporting process that attempts to reduce the principal-agent problem. The timely presentation of financial information is also considered another component of good corporate governance practices (Al-Ajmi, 2008; Nelson and Shukeri, 2011) as it serves to reduce asymmetric information risk. Thus, we predict that audit committee effectiveness will contribute significantly to the reduction of the time required to complete financial statement audit.

Furthermore, five audit committee attributes, thought to affect audit committee effectiveness, and which have been the focus of most of the prior works are: (1) audit committee independence; (2) audit committee financial expertise; (3) audit committee size; (4) audit committee diligence; and (5) audit committee authority (DeZoort *et al.*, 2002; Lin, Li and Yang, 2006; Ika and Ghazali, 2012). Generally, prior literature suggests that the presence of an effective audit committee will increase the oversight of internal control systems and reduce the incidence of misreporting which may lead to timely presentation of the reported financial statements

3.1. Audit committee characteristics and audit report timeliness

3.1.1. Audit committee independence

Prior literature contended that the ability of an audit committee to function effectively is dependent, in part, on the extent to which the committee is independent (Davidson *et al.*, 2005, Abbott, Park and Parker, 2000; BRC, 1999).

Furthermore, reformists, regulators and researchers suggest a more independent audit committee is likely to be better able to enhance the financial reporting process (Klein, 2002; Davidson, Goodwin and Kent, 2005; Bédard, Chtourou and Courteau, 2004).

Empirical findings generally argue the perception that an audit committee with a higher proportion of outside directors is more effective in reducing aggressive earnings management (Janin and Piot, 2008; Bédard *et al.*, 2004) and fraudulent and misleading financial reporting (Abbott *et al.*, 2000; Abbott, Parker and Peter, 2004).

Meanwhile, prior studies suggest that audit committees comprised solely of nonrelated or outside directors are more likely to improve the financial reporting quality of firms by hiring industry specialist auditors, reducing the probability of companies receiving a qualified audit report (Pucheta-Martinez and Fuentes, 2007) and engaging in higher levels of accounting conservatism (Goodwin, 2003). For instance, Zgarni, Hlioui and Zehri (2016) provided evidence that the independence of the audit committee members increases their role in ensuring the quality of reported financial statements by Tunisian listed companies. Overall, the activity and roles of a more independent audit committee are therefore likely to reduce the time taken to issue the audit report. This leads to the following hypothesis: **H1**: There is a negative association between audit committee independence and audit delay.

3.1.2. Audit committee financial expertise

Given the explicit role that the audit committee plays in the financial reporting process, prior research, policy makers, and regulators highlight the need for sub-committee members to be “financial experts” (SEC, 2002; DeZoort, 1998; Beasley and Salterio, 2001). According to the agency theory, the presence of members with financial expertise enhances committee effectiveness in performing oversight duties.

Additionally, financial experts are expected to ensure the external auditor’s work is effectively undertaken (Salleh and Stewart, 2012), to comprehend audit judgments and to ask questions that challenge management and external auditors, and consequently, improve financial reporting quality by reducing audit report lag (Hashim et Abdul-Rahman, 2011; Puasa, Md Salleh and Ahmad, 2014). Initial research found support for the assertion that financial expertise is positively associated with the quality of financial reporting (Bédard *et al.*, 2004; Farber, 2005; DeFond, Hann and Hu, 2005).

In a sample of East Asian companies, Woidtke and Yeh (2013) found that earnings informativeness is strengthened by both fully independent audit committees and audit committees with a majority of independent directors with financial expertise. Abernathy *et al.* (2014) found that expertise gained from public accounting experience is associated with timelier financial reporting. Cohen *et al.*’s (2013) results suggest that industry expertise, when combined with accounting expertise, can improve the effectiveness of the audit committee in monitoring the financial reporting process. Similarly, Sultana *et al.* (2015) documented that audit committee members with financial expertise, prior audit committee experience and those who are independent are associated with shorter audit delay.

Additionally, Dhaliwal, Naiker and Navissi (2010) found that having at least one member of the audit committee with accounting and financial experience was more likely to increase the

level of accounting conservatism. More recently, Badolato, Donelson and Ege (2014) showed that audit committees' members with both financial expertise and high relative status reduce the level of earnings management. Therefore, we expect that audit committee accounting and financial expertise may have some association with the quality of financial reporting.

This leads to the following hypothesis: **H2**: There is a negative association between audit committee members with accounting and financial expertise and audit delay.

3.1.3. Audit committee size

In order to be effective, an audit committee must have an adequate number of committee members to perform its job (DeZoort *et al.*, 2002; Vafeas, 2000). Encouraged by the Tunisian Financial Security Act (2005), the Tunis stock exchange mandates that audit committees consist of a minimum of three directors. Empirical studies provide mixed findings relating to the impact of audit committee size on financial reporting quality. Prior research documented that audit committee size has an insignificant association with earnings management (Bédard *et al.*, 2004), the level of interim financial disclosure (Mangena and Pike, 2005), and audit delay (Sultana *et al.*, 2015).

Further studies argue that control and monitoring functions will be enhanced by a smaller audit committee (Collier and Gregory, 1999; Hillman and Dalziel, 2003). Others (Pucheta-Martinez and De Fuentes, 2007; Rahman and Ali, 2006; Jensen and Tang, 1993) suggest that a larger audit committee is likely to be less effective because of coordination and process problems. Hence, the larger the audit committee, the more difficult it would be for managers to put pressure on directors, making it harder to resist the adjustments proposed by external auditors.

Conversely, other studies support that a larger audit committee will enable the subcommittee to better assess the work performed by the external auditor and address the issues faced by the company (Turley and Zaman, 2007; Rahmat, Iskandar and Saleh, 2009; Pucheta-Martinez and Fuentes, 2007). According to Anderson *et al.* (2004), the wider set of views offered by a larger committee will enable the audit committee to better assess the role, responsibilities and work performed by the external auditor (DeZoort *et al.*, 2002; Turley and Zaman, 2007).

As such, a larger audit committee will enable the subcommittee to draw on a wider set of skills to better enable mediation efforts to resolve conflicts raised in the audit report (DeZoort, Hermanson and Houston, 2003). This is supported by Mohamed-Naimi, Rohmani and Wan-Hussin (2010) and Nelson and Shukeri (2011) who document that companies with larger audit committees are more likely to produce audit reports in a timely manner. Recently, Ika and Ghazli (2012) provided evidence that audit committee effectiveness is negatively associated with audit report lag for Indonesian listed companies.

Given that the influence of audit committee size on audit delay is mixed in terms of directionality, we propose the following hypothesis: **H3**: There is a significant association between audit committee size and audit delay.

3.1.4. Audit committee diligence

Best practice guidelines and prior academic studies have highlighted that an audit committee can only fulfill its functions through frequent meetings (BRC, 1999; Bédard *et al.*, 2004; Abbott *et al.*, 2004). The Tunisian Corporate Governance Code (2012) suggests that audit committees meet a minimum of four times during the firm's financial period.

Past research also provides evidence that a more active audit committee is better equipped to detect and prevent fraudulent and misleading statements, opportunistic earnings management

and internal control weaknesses (Allegrini and Greco, 2013; Krishnan and Visvanathan, 2007; Farber, 2005; Bédard *et al.*, 2004; Stewart and Munro, 2007).

Khelif and Samaha (2014) sampled 86 Egyptian listed companies from 2007 through 2010 and found that the number of audit committee meetings is negatively associated with the management reporting lag. More recently, Khelif and Samaha (2016) documented that audit committee meetings enhance internal control quality. Overall, a more diligent audit committee is therefore likely to reduce audit delay. This leads to the following hypothesis: **H4**: There is a negative association between audit committee diligence and audit delay.

3.1.5. Audit committee authority

According to Cohen *et al.* (2004), regulators have traditionally focused on the composition, authority and resources dimensions in trying to strengthen the role of audit committee in the corporate governance process. The audit committee authority refers to its responsibilities to review the effectiveness of the company's internal control, to select or to recommend audit firms, to ask the auditors questions and to have access to relevant documents (DeZoort *et al.*, 2002). Previous studies related to the association between audit committee authority and the effectiveness of audit committees in assessing financial reporting quality are few (DeZoort *et al.*, 2002; Ika and Ghazli, 2012). The scope of the committee's responsibilities and how it carries out those responsibilities are generally stated in a formal written charter. Bédard *et al.* (2004) suggest that this charter does not only provide guidance to members as to their responsibilities, but that it is also a source of power for the audit committee.

Therefore, the charter provides legitimate capacity to intervene (Kalbers and Fogarty, 1993) and facilitates stakeholders in assessing the role and responsibilities of the audit committee members (DeZoort *et al.*, 2002; Abbott, Parker, Peters and Rama, 2007). Empirical evidence (Bédard *et al.*, 2004, p.13) shows that aggressive earnings management is negatively associated with the existence of a clear mandate defining the responsibilities of the audit committee.

Therefore, based on the above discussion, it is expected that the authority dimension of audit committee effectiveness will lead to a shorter audit delay. This leads to the following hypothesis: **H5**: There is a negative association between audit committee authority and audit delay.

4. Research design

The following section provides details of the data and sample measurements for all the variables in this study and specifies the model.

4.1. Data and sample

A survey of Tunisian listed companies was conducted and data on audit committees collected via the questionnaire were complemented by details about the external audit timeliness appearing in annual reports of the responding firms. The survey was sent to Chief Audit Executives (CAEs). There were 71 companies listed on the Tunis Stock Exchange as of 31 December 2013. However, we excluded 13 companies because of non-responses to the survey and we also eliminated four companies due to missing audit committee information or incomplete response. Consequently, the final sample consists of 54 companies. Given the limited number of listed companies in Tunisia, we preferred to use balanced panel data of 162 firm-year observations spanning a three-year period (2011-2013). To avoid any bias related to non-response, we used late responders as a proxy for non-respondents. We found no significant differences after a comparison of the variables in our model with respect to CAEs

responding to the initial mailing and those responding to the follow-up. Table 1 presents details about the sample selection and Table 2 provides an industry breakdown of the final sample.

4.2. Measurement of variables

4.2.1. Dependent variable: Audit delay

Consistent with prior literature (Hassan, 2016; Pizzini, Lin, Vargus, and Ziegenfuss, 2015; Abbott, Parker, and Peters, 2012; Piot, 2008), audit delay (denoted AD) is calculated by taking the number of days between a firm's fiscal year end and the audit report signature date.

4.2.2. Independent variables

Following prior studies (Ika and Ghazali, 2012; Nelson and Shukeri, 2011; Mohamed-Naimi *et al.*, 2010; Lin *et al.*, 2006; DeZoort *et al.*, 2002), we use five audit committee variables best proxying audit committee effectiveness for analysis. We define the financial expertise of the audit committee (F_EXP) as the proportion of audit committee members possessing professional accounting qualifications among the total number of audit committee members. In the case of audit committee independence, the variable denoted (INDEP) is defined as the proportion of non-executive directors among the total number of directors.

In relation to audit committee size, the variable denoted (AC_SIZE) is measured as the number of members of the audit committee of firm i in time period t . In the case of audit committee diligence, the variable denoted (MEETING) is defined as the number of audit committee meetings held during the year. Finally, the variable denoted (AC_AUT) is a dummy variable coded as 1 if the company adopts a charter for its audit committee and 0 if otherwise.

4.2.3. Control variables

We include a number of control variables to capture the impact of important determinants of audit delay. The motivation for the control variables is as follows. We include firm size (F_SIZE) because several studies in both developed and developing countries have found that company size could be negatively related to the extent of audit delay. Larger companies may be hypothesized to complete the audit of their financial reports earlier than smaller companies (Afify, 2009; Ettredge *et al.*, 2006; Carslaw and Kaplan, 1991; Ashton *et al.*, 1987). We include the log of the entity sales to control for the effect of size¹.

To control for the impact of auditor industry expertise, we include (SPEC). Prior research (Ashton and Wright, 1989) suggests that specialist audit firms have greater expertise to draw upon, and are therefore associated with shorter audit reporting delays. The variable *Auditor Specialist* is scored one if the statutory auditor (or at least one of them in case of joint-auditing²) is an industry specialist. The number of audits is used in calculating audit firm market share. Consistent with prior studies (Piot, 2005; Chen *et al.*, 2005), a cut-off level of 10 per cent is used to determine the specialist audit firm respectively in financial and non-financial industries given the limited number of listed companies in non-financial industries.

Qualified audit opinion is also thought to influence external audit delay. Meanwhile, this variable (Qual_R) is scored one if the company received a qualified audit opinion and 0 if otherwise. To control for the firm's strength in profitability, we include the return on assets (ROA) ratio because there is evidence that audit delay is longer for companies that perform poorly on the ROA (Pizzini *et al.*, 2014).

A similar relationship is expected when companies change their auditor. The new auditor is likely to spend more time on audit work in order to study and understand their new clients compared with existing clients. We include (A_CHG) as a dichotomous variable indicating whether the company changed auditors in the last year (yes = 1, no = 0).

This study also controls for ownership concentration. In this regard, several studies have shown that ownership structure may have relevant corporate governance implications (Afify, 2009; Pucheta-Martinez and Fuentes, 2007).

The extent to which the client's shares are widely held is one of the factors related to audit business risk (Bamber *et al.*, 1993; Brumfield, Elliott and Jacobson, 1983). The more widely held the client's shares, the greater the number of individual investors that rely on the client's financial statements. Thus, greater reliance on the client's financial statements by diverse individual investors increases the auditor's exposure to litigation and adverse publicity, thereby increasing auditor business risk (Afify, 2009). Conversely, this risk, and hence the effect on audit delay, is expected to decline as the ownership of the client's shares (O_CONC) becomes more concentrated (Bamber *et al.*, 1993; Afify, 2009).

We also control for firms with political connections. According to Faccio (2006, p.369), a company is defined as politically connected if "at least one of its large shareholders (anyone controlling at least 10 percent of voting shares) or one of its top officers is a member of parliament, a minister, or is closely related to a top politician or party."

Prior studies (Johl, Subramaniam and Cooper, 2013; Faccio, 2010) show that firms that are politically connected are negatively associated with good corporate governance practice. Such influence can extend to the issuance of the audit report. For instance, this political connection is likely to prompt an auditor to undertake greater care and checks that contribute to longer audit delays. The variable (POL) is a dummy variable taking a value of 1 if the firm is politically connected and 0 if otherwise.

Finally, (FININD) is a dummy variable for companies in the financial services industry (Pizzini *et al.*, 2014; Abbott *et al.*, 2012a). Firm *i* is scored 1 if the entity is defined as being within the financial services industry; and 0 if otherwise.

4.3. The model

In order to assess the validity of our hypotheses, we estimate a panel data model with balanced data. Thus, we use a model which regresses audit delay on a set of audit committee characteristics and control variables. The regression model is estimated by the following equation:

$$AD_{it} = \beta_0 + \beta_1 INDEP_{it} + \beta_2 F_EXP_{it} + \beta_3 AC_SIZE_{it} + \beta_4 AC_AUT_{it} + \beta_5 MEETING_{it} + \beta_6 Qual_R_{it} + \beta_7 O_CONC_{it} + \beta_8 ROA_{it} + \beta_9 SPEC_{it} + \beta_{10} FININD_{it} + \beta_{11} A_CHG_{it} + \beta_{12} F_SIZE_{it} + \beta_{13} POL_{it} + \epsilon_{it}$$

Where:

- AD_{it} = the number of days from the end of financial year of firm *i* in period *t* to the day the external auditor signs the audit report.
- $INDEP_{it}$ = the proportion of non-executive directors in the total number of directors.
- F_EXP_{it} = the proportion of audit committee members possessing professional accounting qualifications in the total number of audit committee members.
- AC_SIZE_{it} = the number of audit committee members.
- AC_AUT_{it} = indicator variable that takes the value of one if the company adopts a charter for its audit committee and 0 if otherwise.
- $MEETING_{it}$ = the number of audit committee meetings held during the financial year.

| | |
|--------------------|---|
| $Qual_R_{it}$ | = indicator variable is scored one if the audit report for the financial statements of firm i for period t is qualified; and zero if otherwise. |
| O_CONC_{it} | = the percentage of capital held by major shareholders. |
| ROA_{it} | = return on assets measured by net income divided by the total assets of firm i in time period t . |
| $SPEC_{it}$ | = indicator variable is scored one if the firm is audited by at least one specialist industry auditor; and zero if otherwise. |
| $FININD_{it}$ | = indicator variable is scored one if firm i is defined as being within a financial industry sector and zero if otherwise. |
| A_CHG_{it} | = indicator variable is scored one if firm i changed auditors during the year t and zero if otherwise. |
| F_Size_{it} | = natural logarithm of the entity's sales. |
| POL_{it} | = indicator variable is scored one if at least one of its large shareholders or one of its top officers is a member of parliament, a minister, or is closely related to a top politician or party; and zero if otherwise. |
| ε_{it} | = Error term. |

5. Empirical results

5.1. Descriptive statistics and correlations

Table 3 presents descriptive statistics for the 162 firm-year observations. The mean AD_{it} value of 136 days (126 days) is slightly higher than prior audit report lag studies using Tunisian data (Hachicha-El Fouzi and Zarai, 2008). Relative to international research, findings highlight that the audit delay in Tunisia is higher than other emerging market countries (Malaysia, Indonesia, Bahrain and Palestine) and developed economies (i.e., France, Australia, US, Canada, New Zealand and the UK) (Ika and Ghazali, 2012; Sultana *et al.*, 2015; Piot, 2008; Ashton *et al.*, 1987; Schwartz and Soo, 1996). Minimum and maximum AD_{it} values are 75 days and 286 days respectively. This result reflects high variations among our sample firms. We also find that 54.32 per cent (88 firm-year observations) are late reporters where the other 45.68 per cent (74 firm-year observations) are on-time reporters (Table 4). While the Tunisian Financial Market Board required that the filing of the audited financial statements must be completed within 120 days, there are no explicit sanctions for companies that fail to comply with this rule. Therefore, most reports are filed after the regulatory deadline.

On average, nearly two individuals (i.e. 71%) of audit committee members are financial experts. Across the sample, 92.6% of the sampled firms have at least one individual on the audit committee with financial expertise and the maximum on any single audit committee is three members. Consistent with prior international studies, the average audit committee size exceeds three (i.e., 3.27) (Sultana *et al.*, 2015; Goodwin, 2003) with the maximum number of individuals on any given audit committee being four. Overall, 15% of the pooled sample had an audit committee in excess of the minimum of three members recommended by the Tunis Stock Exchange regulations.

On average, 1.68 persons or (56%) of audit committee members were independent. During the reporting period, audit committees met on average 4.23 times. The minimum number of annual meetings is two and the maximum is six. Finally, across the sample, 82% of firms adopted a formal charter for their audit committees.

As for control variables, 65% of the sampled companies engaged at least one specialist audit firm and 39% changed external auditors in the last year. Meanwhile, less than a fifth (i.e., 19%) of the sampled companies received qualified audit reports. Additionally, the majority of companies (i.e., 88%) are not politically connected. The mean turnover (measured by natural log of total turnover) for firms in our sample is 18.03 TND (the mean turnover for our sample is almost €27 million) suggesting that our sample primarily comprises large companies. Finally, descriptive statistics related to the sample firms reveal that 42 % of the sampled companies are in the financial services industry.

Correlation analysis using a Pearson correlation matrix is performed to identify pairwise univariate associations and to detect possible multicollinearity problems (Kervin, 1992; Gujarati, 2003). The correlation analysis is shown in Table 5. With respect to the audit committee characteristics examined, Table 5 reveals a number of significant pairwise correlations involving independent and control variables. Results show that audit delay is negatively and significantly correlated with audit committee size, accounting expertise, auditor type, audit opinion of firms' performance and size. However, none of the highest pairwise correlations for any variable examined exceed the critical threshold of 0.70 that would raise multicollinearity concerns (Kervin, 1992).

5.2. Main results

We examine the impact of audit committee characteristics on audit delay of Tunisian listed companies using balanced panel data of 162 firm-year observations spanning from 2011 to 2013. In order to test our empirical model, we do not consider a fixed effects model because our sample included time invariant variables (i.e. industry and political connections). Then we perform Breusch and Pagan's (1980) LM test to decide between a random effects regression and a simple OLS regression (Torres-Reyna, 2007). Results reject the null hypothesis and conclude that a random effects model is appropriate (Table 6).

To test for heteroscedasticity, we perform a Breusch-Pagan test and we find evidence for heteroscedasticity. Finally, in order to control for serial correlation, we adopt the Wooldridge (2002) test and conclude that data does not have first-order autocorrelation. Thus, we add the option 'robust' to correct for the presence of heteroscedasticity (Baltagi, 2005).

Table 7 shows the multivariate analysis. In terms of individual audit committee characteristics, we find that audit committee independence (INDEP) and audit committee authority (AC_AUT) are negative but not significantly associated with audit delay. These results might be addressed in light of the specific features of the Tunisian listed companies' modes of governance and legal and institutional context. These factors could explain the differing extent of involvement of the independent directors in the reporting process. Furthermore, results show that the coefficients on AC_SIZE and MEETING are positive but insignificant. These findings are consistent with Sultana *et al.* (2015) but contradict Nelson and Shukeri (2011).

Results also show that the coefficient of audit committee financial expertise (F_EXP) is negative and statistically significant ($p < 0.01$). Consistent with H2, we find that higher proportions of financial experts on audit committees are significantly negatively associated with audit delay, which suggests that financial experts understand the audit process, its risks, and the auditing procedures that are meant to address these risks better than members without such credentials.

To evaluate the economic significance of this finding, we compared the effect of financial experts on the audit committee in those sample companies with delay at the 75th percentile or higher (149 days) to those with delays at the 25th percentile or less (115 days).

The shortest delay in our study was 75 days, and the 25th and 75th percentiles are separated by 34 days. We assess the marginal effect of the proportion of financial experts on the audit committee by multiplying the (F_EXP) coefficient (-41.052) by the interquartile range of (F_EXP) (0.0834) and we find a reduction of approximately 3.5 days which corresponds to 25 percent of the 34-day period that separates firms in the 25th and 75th percentiles, respectively. Consequently, the proportion of financial experts on the audit committee may provide the necessary checks needed to enhance corporate financial reporting by reducing significant errors and irregularities, thus lowering the amount of audit work required (Cohen *et al.*, 2014; Afify, 2009).

Across the control variables, the regression results indicate that company size (F_SIZE) is significant in influencing timeliness of reporting. This result is consistent with prior related corporate governance empirical research (e.g., Sultana *et al.*, 2015; Piot, 2008; Ashton *et al.*, 1989) implying that larger firms may be able to assert greater pressure on audit firms to complete the required audit work faster or have greater resources to enable the completion of a swifter audit. Results also show that firms audited by industry experts have a shorter audit delay, thus report earlier to the public. Prior studies suggest that the possible reason is that more experienced auditors enable the audit process to be completed within a shorter period of time.

The (A_CHG) coefficient is negative but not statistically significant. The negative coefficient of this variable on timely reporting is inconsistent with the prediction in the literature implying that auditor changes are one of the determinants of reporting lags (Schwartz and Soo, 1996).

In contrast, findings provide evidence that audit opinion (Qual_R) is significantly associated with audit delay. This result is consistent with prior studies such as Soltani (2002), Afify (2009) and Nelson and Shukeri (2011). It seems that the auditor may need additional time to complete the audit work for companies that receive qualified audit opinions, and thus may increase the audit delay. The firm financial performance (ROA) is also significantly associated with timeliness of reporting (also at the 1 per cent level). This result suggests that companies with good news (experiencing a profit) report faster than companies with bad news (reporting a loss).

The findings are consistent with Ashton *et al.* (1989), Afify (2009) and Ismail and Chandler (2004) who documented that companies with higher profitability may wish to complete the audit of their accounts as early as possible in order to quickly release their audited annual reports to the public. We find also that the political connection (POL) and ownership concentration (O_CONC) are not significant in influencing audit delay. Finally, the coefficient on the industry category for the financial services industry (FININD) is statistically insignificant. Such findings contradict Al-Ajmi (2008) but seem to be consistent with Owusu-Ansah and Leventis (2006) who found that none of the coefficients on the industry categories are statistically significant.

5.3. Robustness and sensitivity tests

Several sensitivity analyses were undertaken to examine the robustness of our main results. In the case of the dependent variable, the robustness test is conducted using abnormal audit delay which is proxied by a dummy variable: 1 if a firm is a late reporter, 0 if otherwise (Table 7, Model 2). Consistent with the main results presented in Table 7 (Model 1), findings reported

in Table 7 (Model 2) using the alternative variable measure continue to show a significant negative association between abnormal audit delay and the presence of audit committee members with accounting and financial expertise.

To further validate the main findings, we re-run the main regression using the natural logarithm of audit delay (Jaggi and Tsui, 1999) instead of the number of days between a company's financial year-end and the day on which the external auditor signs the audit report. Regression analysis performed again using this alternative proxy measure (Table 7, Model 3) remains consistent with the main results reported in Table 7 (Model 1).

In the case of the independent variable, as Table 5 shows that several of the audit committee effectiveness variables are correlated, we investigate the sensitivity of their results to including the audit committee variables separately in the model (Table 7, Panel B). The findings reported in Table 7 (Panel B) show that only higher proportions of financial experts on audit committees (Model 5) remains significantly, negatively associated with audit delay with a z -statistic accounting for -2.31^{**} ($p = 0.019$).

6. Conclusion

The purpose of this study is to investigate the impact of audit committee characteristics on audit delay of Tunisian listed firms. Analyses examined five key audit committee characteristics: financial expertise, independence, size, diligence and authority. Using balanced panel data of 162 firm-year observations drawn from Tunisian listed companies during 2011-2013, findings of this study reveal that a higher proportion of directors with financial expertise on audit committees, auditor opinion, firm size and auditor specialization are associated with timelier financial reporting of Tunisian listed companies. However, audit committee independence, authority, meeting frequency and size do not appear to have a significant impact on audit delay.

This study makes several important contributions. Our analysis fills a gap in the extant literature where very little research has examined how the audit committee influences audit report lag in an emerging market criticized for the lack of maturity of its corporate governance system (Klibi, 2015; Fitch Ratings, 2009). Findings are consistent with the agency theory, suggesting that audit committee members' increased technical expertise enhances financial reporting quality.

Our results also have an application for managers and policy makers. With regard to managers, findings from our study emphasize that audit committee financial accounting expertise improves the external auditors' reliance on internal audit work and this consequently reduces audit delay. With respect to policy makers, our results highlight that the presence of financial experts on audit committees contribute significantly to the enhancement of financial reporting quality through timely disclosure.

Despite the contributions and the implications of our findings, there are some limitations to this study. Firstly, our definition of financial expertise is perhaps too broad and encompasses skills that may not necessarily contribute to audit committee effectiveness. Hence, future research may differentiate between financial experts (e.g., experts that have certification or experience in accounting or auditing) and supervisory experts (e.g., financial experts that only have work experience in finance positions, as an investment banker, Chief Executive Officer or company president) and then investigate their association with audit delay.

Secondly, whilst control variables included in the regression model are all validated by prior archival research, there may exist other factors influencing audit delay that were not addressed in the present study. Future research may consider other corporate governance mechanisms in order to provide an in-depth explanation to examine the overall influence of corporate governance on external audit report timeliness, such as audit committee chair

financial expertise, audit committee gender and audit committee busyness, board meetings and proportion of board ownership and internal auditors.

Furthermore, the same methodology adopted in this study can be applied to other emerging capital markets where there is a lack of evidence regarding the effect of audit committee characteristics on external audit timeliness.

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Notes

¹ Sales revenue was used as the proxy for size. A variety of measures can be used to proxy for firm size; however, measures such as sales, total assets and profits are typically found to be highly correlated (Deegan and Gordon, 1996).

² Pursuant to the Tunisian commercial code amended in 2005, joint audits are required for: listed banks, insurance companies, companies preparing consolidated financial statements, and companies whose liabilities exceed 25 million TND.

Table 1. Sample selection

| | |
|--|-----------|
| Number of companies listed on Tunis Stock Exchange as at 31/12/2013 : | 71 |
| Companies excluded because of non-responses to the survey | 13 |
| Companies with missing audit committee data or incomplete response | 4 |
| Usable sample companies | 54 |

Table 2. Sample firm break down by industry

| Industry | No. firm-year observations | % sample |
|----------------------------|-----------------------------------|-----------------|
| Consumer staples | 30 | 18.51% |
| Industrials | 21 | 12.96% |
| Materials | 12 | 7.40% |
| Oil and gas | 3 | 1.85% |
| Health care | 6 | 3.70% |
| Consumers discretionary | 18 | 11.11% |
| Telecommunication services | 3 | 1.85% |
| Financial services | 69 | 42.57% |
| Total | 162 | 100% |

Table 3. Descriptive statistics**Panel A. Descriptive statistics for continuous variables**

| Variable | Obs | Mean | Std.Dev. | Min | Max | 25th Percentile | 75th Percentile |
|-----------------|------------|-------------|-----------------|------------|------------|------------------------|------------------------|
| AD | 162 | 136.142 | 37.153 | 75 | 286 | 115 | 149 |
| INDEP | 162 | .56069 | .161146 | .25 | .75 | .5 | .6666 |
| F_EXP | 162 | .71862 | .167914 | .25 | 1 | .6666 | .75 |
| AC_SIZE | 162 | 3.2777 | .592394 | 3 | 4 | 3 | 4 |
| MEETING | 162 | 4.2037 | .746644 | 2 | 6 | 4 | 5 |
| F_SIZE | 162 | 18.0328 | 1.28482 | 14.406 | 20.968 | 17.07 | 19.26 |
| ROA | 162 | .045748 | .063003 | -.095 | .20 | .0075 | 0.09 |
| O_CONC | 162 | .316353 | .161809 | .0747 | .6132 | .17 | .46 |

Panel B. Descriptive statistics for dummy control variables

| Variable | Min | Max | Percentage |
|-----------------|------------|------------|-------------------|
| AC_AUT | 0 | 1 | 82.098 |
| SPEC | 0 | 1 | 43.209 |
| Qual_R | 0 | 1 | 19.135 |
| A_CHG | 0 | 1 | 38.88 |
| POL | 0 | 1 | 22.222 |
| FININD | 0 | 1 | 42.574 |

Table 4. Number of days to release financial statement

| Days to release financial statement | Frequency | percentage | Cumulative percentage |
|--|------------------|-------------------|------------------------------|
| 71 -80 | 2 | 1,234 | 1.234 |
| 81-90 | 6 | 3,70 | 4.934 |
| 91-100 | 8 | 4,938 | 9.872 |
| 101- 110 | 14 | 8,641 | 18.513 |
| 111- 120 (regulatory deadline) | 46 | 28,395 | 46.908 |
| 121- 130 | 19 | 11,728 | 58.636 |
| 131- 140 | 20 | 12,345 | 70.981 |
| 141- 150 | 8 | 4,938 | 75.919 |
| 151- 160 | 6 | 3,703 | 79.622 |
| 161- 170 | 10 | 6,172 | 85.794 |
| 171- 180 | 7 | 4,320 | 90.114 |
| 181- 190 | 4 | 2,469 | 92.583 |
| 191- 200 | 1 | 0,617 | 93.2 |
| 201 -210 | 2 | 1,234 | 94.434 |
| 211- 220 | 2 | 1,234 | 95.668 |
| 231- 240 | 3 | 1,851 | 97.519 |
| 241- 250 | 1 | 0,617 | 98.136 |
| 251- 260 | 1 | 0,617 | 98.753 |
| 261- 270 | 1 | 0,617 | 99.383 |
| 281- 290 | 1 | 0,617 | 100 |

Table 5. Pearson correlation analysis

| | AD | INDEP | F_EXP | AC_SIZE | AC_AUT | MEETIN | Qual_R | O_CON | ROA | SPEC | FINND | A_CHG | F_SIZ | POL |
|---------|-----------|-----------|----------|----------|----------|----------|----------|----------|---------|---------|---------|---------|--------|--------|
| AD | 1.0000 | | | | | | | | | | | | | |
| INDEP | -0.0359 | 1.0000 | | | | | | | | | | | | |
| F_EXP | -0.3006** | 0.3161** | 1.0000 | | | | | | | | | | | |
| AC_SIZE | 0.0843** | 0.3428** | 0.1406 | 1.0000 | | | | | | | | | | |
| AC_AUT | -0.2295 | 0.3769** | 0.3598** | 0.3014 | 1.0000 | | | | | | | | | |
| MEETING | 0.0237 | 0.3969** | 0.3326** | 0.5187 | 0.3738** | 1.0000 | | | | | | | | |
| Qual_R | 0.5072** | 0.0278 | -0.1118 | 0.0635 | -0.223** | -0.0052 | 1.0000 | | | | | | | |
| O_CONC | -0.1193 | 0.0860 | 0.2833** | -0.0135 | 0.1303 | 0.0074 | 0.0811 | 1.0000 | | | | | | |
| ROA | -0.4663** | 0.1506 | 0.2266** | -0.0570 | 0.3270** | -0.1109 | -0.325** | 0.0577 | 1.0000 | | | | | |
| SPEC | -0.3064** | 0.0863 | 0.1537 | 0.0953 | 0.2489** | 0.2993** | -0.284** | -0.0925 | 0.178* | 1.0000 | | | | |
| FININD | -0.0766 | -0.2314** | 0.0813 | -0.166* | -0.174* | -0.5152 | 0.0065 | 0.2086** | 0.29** | -0.31** | 1.0000 | | | |
| A_CHG | 0.0192 | -0.0058 | -0.0016 | 0.0322 | 0.1083 | 0.1096 | -0.0018 | 0.0196 | -0.0357 | 0.0512 | -0.0811 | 1.0000 | | |
| F_SIZE | -0.3952** | 0.1948* | 0.0235 | 0.2921** | 0.1878* | 0.2744** | 0.3014** | -0.0737 | -0.193 | 0.1359 | -0.21** | 0.0862 | 1.0000 | |
| POL | 0.0177 | -0.0094 | -0.0031 | -0.1760 | 0.0172 | -0.0524 | -0.1845* | -0.0710 | -0.0212 | -0.0583 | 0.1001 | -0.0000 | 0.0313 | 1.0000 |

ADit = The number of days from the end of financial year of firm *i* in period *t* to the day the external auditor signs the audit report; **INDEPit** = The proportion of non-executive directors to the total number of directors; **F_EXPit** = The proportion of audit committee members possessing professional accounting qualifications to the total number of audit committee members; **AC_SIZEit** = Total number of audit committee members; **AC_AUTit** = Indicator variable that takes the value of one if the majority of the audit committee of firm *i* in time period *t* are independent directors; and zero otherwise; **MEETINGit** = The number of audit committee meetings held during the financial year; **Qual_Rit** = Indicator variable is scored one if the audit report for the financial statements of firm *i* for period *t* is qualified; and zero otherwise; **O_CONCit** = the percentage of capital held by the major shareholder; **ROA_{it}** = Return on assets of firm *i* in time period *t*; **SPECit** = Indicator variable is scored one if the firm is audited by at least one industry expert; and zero otherwise; **FININDit** = Indicator variable is scored one if firm *i* is defined as being within an financial industry sector; and zero otherwise; **A_CHG it** = Indicator variable is scored one if the firm *i* changed auditors during the year *t*; and zero otherwise; **F_Sizeit** = Natural logarithm of the turnover of firm *i* at end of time period *t*; **POLit** = Indicator variable is scored one if the firm is politically connected; and zero otherwise;.

Table 6. Statistical test

| |
|--|
| Breusch-Pagan Lagrangian Multiplier Test for Random Effects chibar2 (01) = 6.25 Prob > chibar2 = 0.0062 |
| Breusch-Pagan Test for Heteroskedasticity F(13, 148) = 23914.87 Prob > F = 0.0000 |
| Modified Wald test for groupwise heteroscedasticity chi2 (54) = 38132.28 Prob > chi2 = 0.0000 |
| Wooldridge Test for Autocorrelation F(1, 53) = 1.252 Prob > F = 0.2682 |

Table 7. Main results and sensitivity tests

Panel A

| Variable | Exp. sign | Model 1 (Audit delay) | | Model 2 (Abnormal audit delay) | | Model 3 (Log audit delay) | |
|---------------|-----------|---|-------------|---|-------------|---|-------------|
| | | Coef. | z-statistic | Coef. | z-statistic | Coef. | z-statistic |
| INDEP | - | -13.514 | (-0.57) | -1.307 | (-0.55) | -.0027 | (-0.02) |
| F_EXP | - | -41.052 | (-3.08)*** | -3.853 | (-1.93)** | -.270 | (-2.72)*** |
| AC_SIZE | - | 4.42 | (0.76) | -.4282 | (-0.73) | .0160 | (0.43) |
| AC_AUT | - | -6.967 | (-0.84) | -.3021 | (-0.32) | -.0380 | (-0.75) |
| MEETING | - | 1.016 | (0.43) | .3473 | (0.91) | .0171 | (0.98) |
| Qual_R | + | 27.874 | (2.79)*** | 2.541 | (2.25)** | .1913 | (3.04)*** |
| O_CONC | + | -13.671 | (-1.19) | -2.666 | (-1.54) | -.1150 | (-1.42) |
| ROA | - | -102.604 | (-1.91)** | -23.668 | (-2.85)*** | -.7313 | (-2.12)** |
| SPEC | - | -9.945 | (-2.40)** | -.4706 | (-0.71) | -.0759 | (-2.69)*** |
| FININD | - | 3.038 | (0.40) | 1.912 | (2.16)** | .02790 | (0.59) |
| A_CHG | + | -0.2642 | (-0.07) | -.1572 | (-0.33) | -.0024 | (-0.09) |
| F_SIZE | - | -7.553 | (-3.47)*** | -.5926 | (-2.19)** | -.05182 | (-4.02)*** |
| POL | + | 2.092 | (0.30) | .4803 | (0.69) | .02815 | (0.66) |
| Constant | | 18.081 | (0.52) | -7.520 | (-1.60) | 4.1225 | (18.49) |
| Nb of observ. | | 162 | | 162 | | 162 | |
| R-sq | | within = 0.0505 between = 0.6727 overall = 0.5379 | | Log likelihood = -75.567 | | within = 0.0432 between = 0.6970 overall = 0.5294 | |
| Wald chi2 | | Wald chi2(13) = 61.48 Prob > chi2 = 0.0000 | | LR chi2(13) = 21.10 Prob > chi2 = 0.0709 | | Wald chi2(13) = 94.86 Prob > chi2 = 0.0000 | |

Note: Significant at: **0.05 and ***0.01 levels

Panel B

| | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|---------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | Coef. z-statistic | Coef. z-statistic | Coef. z-statistic | Coef. z-statistic | Coef. z-statistic |
| INDEP | -.7930064 (-0.05) | | | | |
| F_EXP | | -32.22157 (-2.31**) | | | |
| AC_SIZE | | | 1.331678 (0.32) | | |
| AC_AUT | | | | -7.461954 (-1.03) | |
| MEETING | | | | | -.3015007 (0.13) |
| Qual_R | 30.41819 (4.32***) | 30.20006 (4.39***) | 30.38452 (4.32***) | 29.49307 (4.18***) | 30.42739 (4.33***) |
| O_CONC | -24.83243 (-1.59) | -16.33085 (-1.06) | -25.01317 (-1.62) | -22.08866 (-1.41) | -24.73909 (-1.59) |
| ROA | -126.5713 (-2.86***) | -115.4173 (-2.69***) | -126.8376 (-2.92***) | -112.52 (-2.47**) | -126.8269 (-2.91***) |
| SPEC | -11.56137 (-2.26**) | -10.21938 (-2.01**) | -11.6701 (-2.27**) | -11.05519 (-2.15**) | -11.44002 (-2.19**) |
| FININD | 1.33779 (0.20) | 1.644303 (0.26) | 1.548829 (0.24) | .0523972 (0.01) | 1.151607 (0.17) |
| A_CHG | -.5113463 (-0.15) | -.719417 (-0.21) | -.4740428 (-0.14) | -.1286889 (-0.04) | -.4864938 (-0.14) |
| F_SIZE | -7.847528 (-3.45***) | -7.879585 (-3.60***) | -7.699498 (-3.35***) | -8.276599 (-3.61***) | -7.864914 (-3.46***) |
| POL | .8302268 (0.12) | 1.113725 (0.16) | 1.135255 (0.16) | 1.069542 (0.15) | .8296972 (0.12) |
| Constant | 11.97932 (0.29) | 29.09222 (0.71) | 9.7987 (0.23) | 8.529404 (0.21) | 12.47983 (0.30) |
| Nb of observ. | 162 | 162 | 162 | 162 | 162 |
| R-sq : | | | | | |
| within | 0.0218 | 0.0342 | 0.0226 | 0.0253 | 0.0223 |
| between | 0.6734 | 0.6998 | 0.6707 | 0.6715 | 0.6731 |
| overall | 0.5216 | 0.5455 | 0.5205 | 0.5231 | 0.5214 |
| Wald chi2(9) | 81.69 | 94.12 | 81.60 | 83.21 | 81.80 |
| Prob > chi2 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Note: Significant at: **0.05 and ***0.01 levels

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