

The Effect Of Debt Level And Audit Quality On Earning Management Empirical Evidence From Libya

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Abstract: The objective of this study is to examine empirically the effect of debt level (as proxied by debt to equity ratio) on earnings management of Libyan companies. The other objective is to provide empirical evidence about the effect of audit quality (as proxied by auditor's brand name and auditor industry specialization) on the level of earnings management of Libyan companies. Based on positive accounting theory and debt covenant hypothesis, this study propose hypothesis that debt level positively affects earnings management. This study also proposes hypotheses that auditor brand name and industry specialization negatively affect earnings management. The sample of this research covers 36 observations of nine banks in the Libya for period 2006 until 2009. The independent variables are debt to equity ratio, auditor brand name, and auditor industry specialization. Dependent variable is earnings management proxied by total accrual. Regression analysis is statistical tools used to solve the research problems. Result of this study showed that debt level positively affects earnings management. This finding supports positive accounting theory, especially debt covenant hypothesis. Sample of Libyan banks of this study engage in income increasing accruals in order to fulfil debt covenant. Hypotheses that auditor brand name and auditor industry specialization negatively affect earnings management are not supported by empirical evidence. These findings showed that Big 4 auditors and specialist auditor cannot detect and constrain client's earnings management. This finding shows empirical evidence about the low of audit quality in Libya. Therefore, it is important for regulators to enhance the audit quality in Libya.

[Ali Mohamed Ahmed Abushernta, Mahmood Mohamed Omar Dali. **The Effect Of Debt Level And Audit Quality On Earning Management Empirical Evidence From Libya.** *N Y Sci J* 2017;10(1):53-67]. ISSN 1554-0200 (print); ISSN 2375-723X (online). <http://www.sciencepub.net/newyork>. 9. doi:[10.7537/marsnys100117.09](https://doi.org/10.7537/marsnys100117.09).

Key words: debt covenant hypothesis, earnings management, debt to equity ratio, audit quality.

1. Introduction

1.1 Background

Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen, 1999). According to positive accounting theory, earnings management practice can be explained by three motivations: (i) bonus plan, (ii) debt covenant, and (iii) political cost (Watts and Zimmerman, 1986).

Most earnings management studies have concentrated on the Anglo-American world. These studies have tried to examine earnings management in particular contexts. They investigated incentives provided by management-compensation plans (Healy, 1985; Roychowdhury, 2006), debt contracts (DeFond and Jiambalvo, 1994; Roychowdhury, 2006), regulatory cases (Jones, 1991; Cohen et al., 2008), and stock price motives such as stock offering (Cohen and Zarowin, 2010). However, little attention has been focused on earnings-management motives in Libya's case. Shareia (2010, p. 18) argues that one of the significant accounting profession problems in Libya is accounting/audit firms help companies to evade

paying income tax and to fabricate financial lists. This means that Libyan auditors help their clients to engage earnings management practice. Therefore, it is an important research issue to examine the determinants of earnings management practice in Libya.

On the one hand, previous studies show that debt is positively associated with income-increasing earnings management when firms want to reduce the probability of debt covenant violations and improve the firm's bargaining power during debt negotiation (e.g. DeFond and Jiambalvo (1994), Sweeney (1994), Klein (2002), Roychowdhury, 2006). On the other hand, some studies have shown a negative relation between debt and earnings management (Zhong et al., 2007; Lee et al., 2007), suggesting that managers in leveraged firms may face control from debt-holders, making it difficult for them to engage in earnings management. Because of the inconclusive findings of previous research, this study will examine the effect of debt level on earnings management.

The role of auditing in ensuring the quality of corporate earnings has come under considerable scrutiny due to recent earnings restatements and the collapse of Enron (Browning and Weil, 2002). Audit quality can be defined as the probability that an error or irregularity is detected and the willingness to report any material manipulation or misstatements that will

increase the material uncertainties or/and going concern problems (DeAngelo, 1981). In other words, high audit quality is associated with the absence of material omissions or misstatements in financial statements (Palmrose, 1988). A number of studies have examined whether audit quality is negatively associated with earnings management. Because audit quality is multidimensional and unobservable construct, there is no single auditor characteristic that can be used to proxy for it. Auditor's brand name and industry specialization were two proxies commonly used in previous audit quality research (Balsam et al., 2003).

Becker et al. (1998) and Reynolds and Francis (2000) argue that high-quality auditors (in their case Big 6 auditors) are able to detect earnings management because of their superior knowledge, and act to curb opportunistic earnings management to protect their reputation Becker et al. (1998), Francis, Maydew, and Sparks (1999), and Reynolds and Francis (2000) all found that clients of Big 6 auditors have lower discretionary accruals than clients of non-Big 6 auditors. In sum, this literature supports the hypothesis that audit quality is negatively associated with earnings management. Whether these results can be generalized able in the Libyan case is still an empirical question. Libya can be categorized as an emerging economic country. An emerging economic country is different from developed one in a number of respects, for instance: transparency, liquidity, level of corruption, volatility, governance, taxes and transaction costs.

In contrast to developed country, Libya is characterized by the following economic factors (Shareia, 2010): (i) heavy dependence on oil revenue in funding various economic activities; (ii) predominance of state ownership of economic activities; (iii) inefficiency of economic activities associated with dominant state ownership, (iv) ineffectiveness of the accounting profession, professional standards that are poorly regulated under state laws; and (v) a stock exchange that has only been established in a short time. Despite above differences between Libya, as an emerging economy, and UK and the US, as developed countries, Libya has adopted UK and US accounting and auditing systems (Shareia, 2010). This means that to a large extent, accounting principles, auditing standards, accounting education and the institution of an accounting profession have been adopted from outside of Libya and applied without a thorough consideration of local environmental factors. This practice is problematic, since it is widely acknowledged that in developing or emerging economies, it is not possible, or even advisable, to impose western accounting systems without an understanding of the unique political,

economic, social and religious dynamics of those economies (Shareia, 2010). The uniqueness of the Libyan context makes an important research issue whether the results of audit quality previous research can be generalized able into the Libyan case. Therefore, this study will examine the relationship between audit quality and earnings management in Libya's case.

1.2 Statement of the Problems

In order to obtain funds at favorable conditions, Watts and Zimmerman (1986) suggest that managers in highly leveraged firms may artificially increase reported earnings to improve the firm's bargaining power during debt negotiation. This is known in the accounting literature as the debt covenant hypothesis, which predicts a positive association between the debt/equity ratio and the level of earnings management. However, empirical studies that test the debt covenant hypothesis still provide inconclusive findings (Rodriguez Perez and van Hemmen, 2010). Some studies supported this hypothesis but the others document negative relationship between debt level and earnings management. Because of these inconclusive findings, this study will test the relationship between debt level and earnings management.

Auditors play an important role in assuring the production and issue of high-quality financial reporting. The question, whether the auditors effectively play this role in ensuring credible accounting information has received an episodic attention over time. The spate of collapses in the early millennium years exemplified by the Enron bankruptcy in 2001 and the related collapse of Arthur Andersen in 2002 triggered a spate of criticism of Big 4 audit firms, their processes and the quality of the audits being performed by them (Francis, 2004). These criticisms were particularly intensive, given the traditional perceptions of the high quality of audits performed by the large firms (Lam and Chang, 1994). Previous studies had documented empirical evidence that audit quality is negatively associated with earnings management (Balsam et al., 2003). Whether these results can be generalized able in the Libyan case is still an empirical question due different context. The uniqueness of the Libyan context makes an important research issue whether the results of audit quality of previous research can be generalized able into the Libyan case. Therefore, this study will examine the relationship between audit quality and earnings management in Libya's case.

1.3 Research Questions

This study addresses three research questions:

- a. Does firm's debt level (as proxied by debt to equity ratio) affect earnings management?

b. Does audit quality (as proxied by auditor's brand name) affect earnings management?

c. Does audit quality (as proxied by auditor's industry specialization) affect earnings management?

1.4 Objectives of the Study

The objectives of this study are to examine empirically the effect of debt level (as proxied by debt to equity ratio) on earnings management of Libyan companies. The other objective is to provide empirical evidence about the effect of audit quality (as proxied by auditor's brand name and industry specialization) on the level of earnings management of Libyan companies.

1.5 Contributions of the Study

This study contributes in two areas as follows:

a. For Accounting Literature.

This study contributes to accounting literature, especially positive accounting theory studies, by examining empirically debt covenant hypothesis. Previous empirical studies that test the debt covenant hypothesis still provide inconclusive findings (Rodriquez-Perez and van Hemmen, 2010). This study will contribute in explaining these inconclusive findings. Moreover, this study also contributes to test the generalized ability of debt covenant hypothesis into unique Libyan setting. This research also contributes to audit quality literature by examining another proxy of audit quality. Mostly, previous audit quality studies used auditor's brand name as proxy for audit quality services (e.g. Palmrose, 1988; Teoh and Wong 1993; Becker et al., 1998; Krishnan, 2003a; Inten, 2004). Another proxy of audit quality proposed in this study is auditor's industry specialist which was adapted from Krishnan (2003b). This proxy is still rarely used in audit quality research.

b. For Policy and Practice

After Enron and Arthur Andersen scandal, there is a big question whether the auditors effectively play their role in ensuring client's credible accounting information. These scandals triggered a spate of criticism on the quality of audit performed by auditors, especially Big 6 auditors. Sarbanes Oxley Act (SOX) 2002 was issued to emphasize the importance of auditor to detect client's earnings management. This study contributes to evaluate the quality of Libyan auditors in detecting client's earnings management and accounting standards setter. The results of this study can be a recommendation to Libyan accounting and auditing regulator about the policy that must be issued to enhance the quality of Libyan auditor's.

2. Literature Review

2.1 Positive Accounting Theory and Debt Covenant Hypothesis

Positive Accounting Theory (PAT) was originally proposed by Watts and Zimmerman (1986). Scott (2000, p. 236) PAT as: "concerned with predicting such actions as the choices of accounting policies by firms and how firms will respond to proposed new accounting standards." PAT uses the theory to predict the choices that management will make regarding their choice of accounting policies. This theory is introduced as a way to merge efficient securities markets with economic consequences.

Managers have flexibility to choose from a set of accounting policies, and these options let them choose the policies that are the most beneficial to them (Scott, 2000). The most favorable accounting policies are a balance of minimal costs, and flexibility to give management the option of changing policies in response to changes in their external environment firms, and different industries.

Positive accounting theory is organized into three hypotheses:

- a. The bonus plan hypothesis
- b. The debt covenant hypothesis
- c. The political cost hypothesis

These three hypotheses form the cornerstone of Positive Accounting Theory. They all lead to empirical accounting research. This study will focus on the debt covenant hypothesis. This study develops hypothesis based on debt covenant theory, that manager will make high earnings management in hindering debt contract violations.

2.2 Agency Theory

This study also uses the agency theory, proposed by Jensen and Meckling (1976), as a theoretical foundation. Agency theory is a theory concerning the relationship between a principal (shareholder) and an agent of the principal (management). Jensen and Payne (2003) defined agency relationship as a contract under which one or more persons (the principals) engage another person (the agents) to perform some service on their behalf that involves delegating some decision-making authority to the agent.

Agency theory states that separation of ownership and control can make information asymmetry that managers could use to exploit shareholders. In the view of agency theory, independent audit is a monitoring tool used to constrain management opportunistic behavior (i.e. earnings management). Thus, agency theory support the argument that better audit quality should result in better quality financial reporting, including lower earnings management (Balsam, 2003).

Audit is an agency cost; a type of internal cost that arises from, or must be paid to, an agent acting on behalf of a principal (Jensen and Meckling, 1976). Agency costs arise because of core problems such as

conflicts of interest between shareholders and management. Shareholders wish for management to run the company in a way that increases shareholder value. However, management may wish to grow the company in ways that maximize their wealth that may not be aligned with the interests of shareholders. Hiring independent auditor is a mechanism used to align the interests of the agent with those of the principal.

2.3 Earnings Management

Schipper (1989) defines earnings management as “a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain” (p.92). The definition offered by Schipper includes management of any of the components of earnings in terms of related measurements and disclosures included in the financial reporting process. She observed that an extension of the definition would include earnings management “accomplished by timing investment or financing decisions to alter reported earnings, or some subset of it” (p. 92).

In a similar vein, Healy and Wahlen (1999) used the following definition of earnings management: “Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers. (p. 368)” Both definitions state that earnings management involve the intentional manipulation of accounting information and imply that managers have incentives for doing so. Both definitions describe earnings management such that it can occur in the measurements and disclosures found in the financial reporting process, as well as in the structuring of transactions to influence financial reports. Earnings management hides the “true” performance of the firm from shareholders and others, such that earnings become a less reliable measure of firm performance.

2.4 Debt Level

There is extensive previous literature (Sweeney, 1994, DeFond and Jiambalvo, 1994, Watts and Zimmerman, 1986 and 1990) on the effect of debt level on earnings management. The findings have been consistent with the view that for firms with high levels of debt, greater income increasing accruals are undertaken in the years in which the debt constraints are likely to be binding and income decreasing accruals are undertaken in other years. An appealing explanation is that the managers’ perceived cost of technical default of debt covenants is higher than the perceived loss in value resulting from managing the discretionary accruals. Therefore, they engage in

income increasing accruals when the debt covenants are likely to be binding and in income decreasing accruals to ‘bank’ some of the income for future periods of possible binding debt constraints. If this is true, in a pooled cross-sectional analysis, irrespective of whether the debt constraints are binding or not, the magnitude of discretionary accruals must be significantly higher for firms with a more debt than for firms with a lesser debt.

Previous studies commonly used debt to equity ratio as proxy to measure firm’s debt level (Perez and van Hemmen, 2010). Therefore, this study uses debt to equity ratio as proxy for firm’s debt level.

2.5 Audit Quality

One common definition of audit quality is provided by DeAngelo (1981). She defined audit quality as “the market-assessed joint probability that a given auditor will both (a) discover a breach in the client’s accounting system, and (b) report the breach.” The probability that the auditor will report the detected misstatements is defined by DeAngelo (1981) as auditor independence. Therefore, according to DeAngelo’s (1981) definition, audit quality is an increasing function of an auditor’s ability to detect accounting misstatements and auditor independence as assessed by the market. DeAngelo’s (1981) definition refers to “market-assessed” or perceived audit quality.

Because audit quality is multidimensional and unobservable construct, there is no single auditor characteristic that can be used to proxy for it. Most previous work has used auditor brand name to proxy for audit quality and examined the association between brand name and earnings quality (Becker et al. 1998; Reynolds and Francis 2000). Other researchers (Craswell et al. 1995; Balsam et al., 2003) have hypothesized that, in addition to brand name, an auditor’s industry specialization contributes positively to the credibility offered by the auditor. Some evidence of industry specialists producing more effective audits is provided by Owoso et al. (2002), as quoted by Balsam et al. (2003). Recent structural shifts by audit firms in the direction of greater industry focus also suggest that industry specialization may play an increasingly important role in audit quality (Hogan and Jeter 1999; Solomon et al. 1999) as quoted by Balsam et al. (2003).

Balsam et al. (2003) stated that audit quality is positively associated to earnings quality. Moreover, Myers et al. (2003) stated that when audit quality is high, auditor constrain the extreme choices that management would like to make in presenting financial position of the firm. When it is low, auditors do not constrain the extreme choices and, that in some cases, auditors may even aid management in ‘pushing the boundaries’ of generally accepted accounting

principles. As stated in the previous paragraph, previous audit quality studies commonly used two components/proxies: (i) auditor’s brand name, and (ii) auditor industry specialization (Balsam et al., 2003). This study will also use both of two proxies to measure audit quality. Auditor brand name will be measured by dummy variable; whether auditor is Big 4 or not. Big 4 auditors are Price Waterhouse Coopers (PWC), Ernst and Young, Delloitte, and KPMG. Auditor industry specialization will be measured by Balsam et al. (2003) approach.

2.6 Review of the Previous Studies

Previous research on the relation between debt and earnings management offers mixed results. On the one hand, some studies have shown a negative relation between debt and income-increasing discretionary accrual (Chung et al., 2005; Zhong et al., 2007; Lee et al., 2007), suggesting that managers in leveraged firms may face control from debt-holders, making it difficult for them to engage in earnings management. On the other hand, other studies show that debt is positively associated with income-increasing earnings management when firms want to

reduce the probability of debt covenant violations and improve the firm’s bargaining power during debt negotiation (DeFond and Jiambalvo (1994), Sweeney (1994), Klein (2002), and Othman and Zhegal (2006) for French firms, but not for Canadian firms). In conclusion, these studies support debt covenant hypothesis.

Previous studies have documented that audit quality (as measured by auditor brand name and auditor industry specialization) negatively affect client’s earnings management. For example, Francis et al. (1999), Reynolds and Francis (2000), and Chen et al. (2005) all found that clients of Big 4 auditors have earnings management (indicated by lower discretionary accruals) than clients of non-Big 4 auditors. These studies indicate that Big 4 auditors provide higher quality audit service than do non-Big 4 auditors. Previous studies also have documented that auditor industry specialization negatively affects client’s earnings management (For example, Krishnan, 2003b, Balsam et al, 2003). Review of previous research is summarized in Table 1.

Table 1. Review of Previous Research

| Researcher | Variables* | Findings |
|--|--|---|
| DeFond and Jiambalvo (1994) | IV=debt to equity ratio, leverage DV=abnormal accrual | Both of independent variables positively affect abnormal accrual. This finding supports debt covenant hypothesis |
| Zhong et al. (2007) | IV=debt to equity ratio DV=discretionary accrual | Debt to equity ratio negatively affects discretionary accrual. This finding doesn’t support debt covenant hypothesis |
| Francis et al. (1999), Reynolds and Francis (2000), and Chen et al. (2005) | IV=auditor brand name (dummy variable for Big 6/5 or not) DV= discretionary accrual (proxy for earnings management). | Auditor brand name negatively affects discretionary accrual. Clients of Big 6/5 auditors have lower earnings management than clients of non-Big 4 auditors |
| Krishnan (2003b) Balsam et al. (2003) | IV=auditor industry specialization (proxy by market share and portfolio share) DV= discretionary accrual (proxy for earnings management). | Auditor industry specialization negatively affects discretionary accrual. Clients of specialist auditors have lower earnings management than clients of non-specialist auditors |

Source: from some researches

Note: IV: Independent Variables, DV=Dependent Variable

2.7 Theoretical Model

Hypotheses proposed by this study can be summarized into theoretical model as follows:

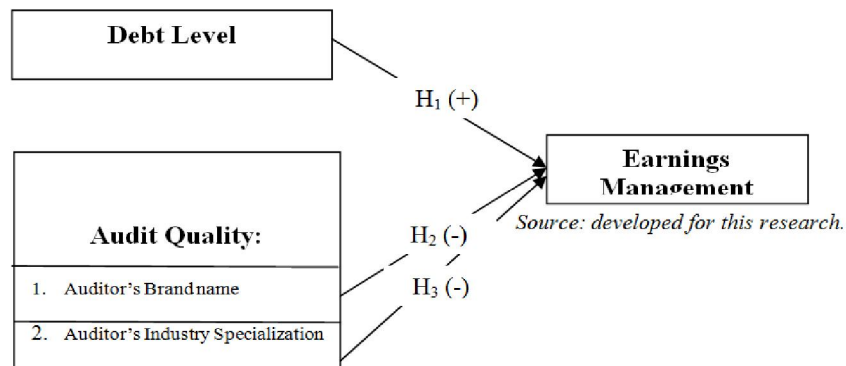


Figure 1: Theoretical Model

2.8 Hypotheses Development

2.8.1 The Effect of Debt Level on Earnings Management

According to debt covenant hypothesis, one incentive to do earnings management is the firm's closeness to violating its debt contract restrictions. Watts and Zimmerman (1986) argue that the closer a firm is to compromising their debt contract, the more likely management is to use accounting policies that shift reported earnings from future periods to the current period. In other words, the higher the firm's debt ratio, the higher the earnings management. This is because higher net earnings will reduce the probability of technical default on the debts. Furthermore, bankers and lenders rely extensively on financial statements for the evaluation of a firm's financial standing and credit rating. Therefore, managers of firms that need the continuous support of their lenders and in order to avoid an increase in the cost of capital, incentives have to opt for income-increasing accruals that enhance their firm's level of profitability (DeFond and Jiambalvo, 1994). The higher the debt-to-equity ratio, the more likely managers are to choose income-increasing accruals. Previous studies have documented empirical evidence about the positive relationship between firm's debt level and earnings management. For example, DeFond and Jiambalvo (1994) and Sweeney (1994) found that managers of firms reporting debt covenant violations in their annual report adopt income-increasing accounting choices in the years prior to the violation.

Similar with debt covenant hypothesis, agency theory states that contracts are not only held in term of principal (owner) and agent (management). It is also been signed between agent (management) and debt holders (creditor). Even, managers of healthy firms still have an incentive to avoid debt covenant violations. Because the consequences of violation are worse when firm is in economic difficulty, the benefit of avoiding violation increased as well. Thus, it is more likely that manager will attempt to manage reported numbers to avoid violations as their firm's financial performance deteriorates (Dichev and Skinner, 2002). To avoid debt covenant violation, managers of highly leveraged firms have incentives to make income-increasing discretionary accruals (Becker et al. 1998). DeFond and Jiambalvo (1994) suggested that companies with higher debt levels have greater incentives to use accruals to increase earnings due to closeness to debt covenant constraint. Their finding provides evidence that managers use abnormal accruals to avoid debt covenant constraint.

Based on debt covenant hypothesis, agency theory, and empirical evidences provided by previous studies, it can be argued that there is a positive relation between debt level and earnings management.

Therefore, this study proposes formal hypothesis (stated in the alternative form):

Hypothesis 1: Debt level (as proxied by debt to equity ratio) positively affects earnings management.

2.8.2 The Effect of Auditor's Brand Name on Earnings Management

Audit quality can be defined as the probability that an error or irregularity is detected and the willingness to report any material manipulation or misstatements (DeAngelo, 1981). In other words, high audit quality is associated with the absence of material omissions or misstatements in financial statements (Palmrose, 1988).

Within the extant of the literature on the subject, it is commonplace to view audit firm size as a surrogate for audit quality. It has often been assumed that the larger audit firms incur costs to earn a reputation for adding value to the audit and are better able to detect and reveal management's errors or irregularities in financial reporting (DeFond and Jiambalvo, 1993). DeAngelo (1981) suggested that large auditors have more reasons to issue accurate reports because they have more valuable reputation and the auditor has greater reputation losses if their clients misreport. This theme was later developed as the 'at risk quasi rent' explanation, pursuant to which the more extensive potential economic loss exposures faced by the large audit firms provide a strong motivational framework for quality assurance and enhancement.

DeAngelo (1981) analytically demonstrates that auditor size is positively related to audit quality. In her study, auditor size was measured by number of clients. She argued that since auditors earn client-specific quasi-rents, auditors with more clients have more to lose by failing to report discovered misstatements (including earnings management) in financial statements. Based on DeAngelo's (1981) analytical results, many studies use auditor size, specifically Big 8/6/5/4 vs. non-Big 8/6/5/4¹, to differentiate audit quality levels (e.g., Reynolds and Francis, 2000; 2003; Balsam et al., 2003). Krishnan, Auditor size (Big 8/6/5/4 vs. non-Big 8/6/5/4) is the most commonly used audit quality measure. This proxy is known as auditor brand name.

A number of studies have examined whether audit quality, measured by auditor brand name, is associated with lower earnings management. Auditor brand name commonly measured by dummy variable (1=Big 4 auditors, 0=others). Becker et al. (1998) and Reynolds and Francis (2000) argued that high-quality auditors (in their case Big 4 auditors) are able to detect earnings management because of their superior

¹ This study uses Big 4 vs. Non Big 4 to measure auditor brand name.

knowledge, and act to curb opportunistic earnings management to protect their reputation. Becker et al. (1998), Francis et al. (1999), and Reynolds and Francis (2000) all found that clients of Big 4 auditors have earnings management (indicated by lower discretionary accruals) than clients of non-Big 4 auditors. These studies indicate that Big 4 auditors provide higher quality audit service than do non-Big 4 auditors. In sum, this studies supports the hypothesis that auditor brand name is associated with lower earnings management. Large audit firms (Big 4) are able to detect earnings management because of their advanced knowledge and act to control opportunistic earnings management to protect their reputation. Based on the above arguments, this study proposes the following hypothesis:

Hypothesis 2: Auditor brand name negatively affects client's earnings management.

2.8.3 The Effect of Auditor's Industry Specialization on Earnings Management

A recent stream of literature argues that, in addition to brand name, audit quality can be measured by auditor's industry specialization. Solomon et al. (1999) defined an industry specialist auditor as a person whose training and practice experience are largely in a particular industry. Their research provided evidence that industry specialist auditor have more accurate non-error frequency knowledge than non-industry specialist. Balsam et al. (2003) argued that an industry specialist auditor offers a higher level of assurance than does a non-specialist. Auditors with an in-depth understanding of an industry will be better able to recognize and deal with potential problems and issues involving clients in the industry (O'Reilly et al., 2002). Balsam et al. (2003) also argued that audit firm with industry expertise can better assess the reasonable of clients' estimates and other financial representations, thereby reducing the clients' discretion in applying accounting principles, and enhance audit quality. Industry specialist auditors are also likely to develop database detailing industry-specific best practices, industry specific errors, and unusual transactions. All of these serve to enhance overall audit effectiveness (Krishnan, 2003b). Thus, auditor's industry specialization, leads to a higher quality audits through improvements in audit effectiveness (Krishnan, 2003b, Balsam et al, 2003).

Previous studies have documented that auditor's industry specialization was a valid proxy for audit quality. Owhoso et al. (2002) argued that industry-experienced auditors are better able to detect errors within their industry specialization than outside their specialization. O'Keefe et al. (1994) reported

significantly greater compliance with auditing standards for auditor's industry specialists than non-specialists. Meanwhile, Carcello and Nagy (2002) provided evidence that clients of specialists are less likely to be associated with SEC enforcement actions. Dunn et al. (2000), as quoted by Balsam et al. (2003), found that clients of industry-specialist audit firms are ranked higher in terms of disclosure quality by financial analysts than clients of non-specialists. O'Reilly et al. (2002) argued that industry specialization also leads to enhanced audit efficiency via economies of scale. By learning to recognize various risks and problem areas within an industry, as well as gaining a more thorough understanding of the accounting rules and reporting requirements of the industry, auditors can develop unique skill sets that can be used across audit engagements in that industry.

In conclusion, because auditor's industry specialization is a valid proxy for audit quality, then it should be negatively associated with client's earnings management. It seems likely that a specialist's knowledge of the industry will yield a greater ability to detect and curb client's earnings management and minimize unintentional errors. Industry specialist auditor who owned greater expertise rather than non-industry specialist auditor is expected to better able in detecting error, misstatement and aggressive earnings management contained on client's financial reporting. Therefore, this study hypothesizes that the auditor's industry specialization to be negatively associated with client's earnings management.

Hypothesis 3: Auditor's industry specialization negatively affects client's earnings management.

3. Research Methodology

3.1 Research Design

Research design is defined as a plan for selecting the sources and types of information used to answer research question(s) (Sekaran, 2003). The purpose of this study can be categorized as hypothesis testing study because its purpose is to explain the nature of certain relationship between two or more factors/variables in a situation (Sekaran, 2003). Type of investigation is a causal study, the study in which the researcher want to delineate the cause of one or more problems (i.e. the cause of earnings management). Unit of analysis of this study is organization (firms). This study can be categorized as a cross-sectional study because the data are gathered just once in order to answer a research question.

3.2 Variables

The definition and measurement of research variables are summarized in Table 2 below:

Table 2. Definition and Measurement of Variables

| Dependent Variable | Definition | Measurement | Scale |
|-----------------------|---|--|---------|
| Earnings Management | The alteration of a firm's reported economic performance by insiders to either mislead some stakeholders or to influence contractual outcomes (Healy and Wahlen, 1999). | Measured by total accruals (TA), a proxy for the magnitude of earnings management estimated using the Healy (1985) and Jones model (1991). | Ratio |
| Independent Variables | Definition | Measurement | Scale |
| Debt level | The level of firm's total debt. | Measured by proxy Debt to Equity Ratio; ratio of total debt to total equity of firm i in the year t . | Ratio |
| Audit Quality | The market-assessed joint probability that a given auditor will both discover a breach in the client's accounting system, and report the breach (DeAngelo, 1981). | Measured by two proxies: (i) Auditor's brand name (ABM). This proxy will be measured using dummy variable (1= Big 4 auditor, 0=otherwise). Big 4 auditors are Price Waterhouse Coopers, Ernst & Young, Deloitte, and KPMG. | Nominal |
| | | (ii) Auditor's industry specialization (AIS). This proxy will be measured by market share approaches developed by Balsam et al. (2003). | Nominal |

Source: developed for this research.

The Estimation of Total Accruals (TA)

Earnings management is measured by Total Accruals (TA) which is estimated using the Healy (1985) and Jones model (1991) as follows:

$$TA_t = (\Delta CA_t - \Delta CL_t - \Delta Cash_t + \Delta STD_t - Dep_t) / (A_{t-1}) \tag{1}$$

Where:

- TA = total accrual
- ΔCA = change in current assets;
- ΔCL = change in current liabilities;
- $\Delta Cash$ = change in cash and cash equivalents;
- ΔSTD = change in debt included in current liabilities;
- Dep = depreciation and amortization expense; and
- A = Total Assets.

The Measurement of Auditor's Industry Specialization (Spec)

Because the auditor's industry specialization is not directly observed, this study will use several proxies to measure it. Following Balsam et al. (2003), auditor's industry specialization is defined in this study as "the largest supplier in each industry". This study will use two proxies to measure auditor's industry specialization (Balsam, 2003):

a. Auditor Industry Specialization 1, measured by the actual market share (number of clients) in industry; and

b. Auditor Industry Specialization 2, measured by dummy variable which is coded 1 if the audit firm has the most clients in the industry, 0 otherwise.

3.3 Population and Sample

The population of this study is Libyan banks for the period 2006-2009. This study chooses banks because they have complete annual report needed to measure the research variables. Moreover, banking is

a regulated industry for which audit is an important mechanism in public monitoring function.

Sample firms are selected by purposive sampling technique. Final samples have to fulfill the following criteria:

a. The data of these companies are available for four years observations.

b. The selected companies must employ the financial years from January to December because changing the financial year would raise a problem in estimating the total accruals.

3.4 Data Collection Method

This research employs secondary data documented in the post-audit annual reports of Libyan companies. The annual report of data was obtained from Central Bank of Libya's website (www.cbl.ly) and sample companies' websites.

3.5 Data Analysis

This study uses regression model to analyze data and test the hypotheses. The multiple regression equation as follows:

$$TA_{it} = a_0 + b_1 DER_{it} + b_2 ABM_{it} + b_3 AIS_{-1it} + b_4 AIS_{-2it} + e_{it} \tag{2}$$

Where:

TA_{it} = total accruals of firm i in year t , a proxy for the magnitude of earnings management estimated using the Healy (1985) and Jones model (1991).

DER_{it} = debt to equity ratio of firm i in the year t

ABM_{it} = dummy variable for auditor's brand name, 1=Big 4 auditors, 0=otherwise. Big 4 auditors are Price Waterhouse Coopers, Ernst & Young, Deloitte, and KPMG

AIS_{1it} = auditor's industry specialization proxy 1, measured by the actual market share (number of clients) in industry.

AIS_{2it} = auditor's industry specialization proxy 2, measured by measured by dummy variable which is coded 1 if the audit firm has the most clients in the industry and 0 if otherwise from.

Rule of decision in hypothesis testing:

a. Hypothesis 1 will be supported if the coefficient of b_1 in equation (2) is positive and statistically significant.

b. Hypothesis 2 will be supported if the coefficient of b_2 in equation (2) is negative and statistically significant.

c. Hypothesis 3 will be supported if the coefficients of b_3 and b_4 in equation (2) are negative and statistically significant.

To test the hypotheses, *Ordinary Least Squares* (OLS) regression model is used in this study. OLS regression is the technique used to estimate a line that will minimize the error or residual (Hair et al., 1998). Residual is the difference between the predicted and the actual values of dependent variable (Y). OLS regression has assumptions that must be examined before the researcher tests the hypotheses. These assumptions are Classical Regression Assumptions (CRA) that include (Hair et al., 1998):

4. Results and Discussions

4.1 Final Sample

The population of this study is Libyan banks for the period 2006-2009. This study chooses banks because they have complete annual report needed to measure the research variables. Moreover, banking is a regulated industry for which audit is an important mechanism in monitoring function. There were 17 banks in Libya for the period 2006-2009. Sample firms were selected by purposive sampling technique as mentioned in Section 3. Final sample consists of 9 banks as shown in Table 3 Six of them (66.67%) are banks that listed in the Libyan Stock Market. There are four years observations for each sample (2006-2009); therefore, the final samples consists of 36 firms-years observation (9 banks x4 years).

Table 3. List of Final Sample

| No | Company Name | Type* | Observation Period |
|----|-------------------------------|------------|--------------------|
| 1 | Commerce and Development Bank | Listed | 2006-2009 |
| 2 | Libyan Foreign Bank | Not Listed | 2006-2009 |
| 3 | Alejma'a Alarabi Bank | Not Listed | 2006-2009 |
| 4 | Gomhouria bank | Listed | 2006-2009 |
| 5 | Sahara Bank | Listed | 2006-2009 |
| 6 | Wahda Bank | Listed | 2006-2009 |
| 7 | National Commercial Bank | Listed | 2006-2009 |
| 8 | Assaray Bank | Listed | 2006-2009 |
| 9 | Al Motawaset Bank | Not Listed | 2006-2009 |

Note: * Listed in the Libyan Stock Market or not

Source: *Secondary data processed*

4.2 Descriptive Statistics

Table 3 presents descriptive statistics of research variables. Research variables are earnings management (proxy by total accrual), debt level (proxy by debt to equity ratio), auditor brand name (measured by dummy variable, 1= big 4 auditor, 0= otherwise), and auditor industry specialization (measured by two proxies). Mean of total accrual is 0.2838 with standard deviation 0.088. The mean of positive total accrual shows that sample banks using type of earnings management of income increasing

accrual (Scott, 2003). Mean of debt to equity ratio is 4.993 with standard deviation 1.196. This means that sample using almost 5:1 for debt equity structure.

There is also only one Big 4 auditor (KPMG Hazem Hassan) that audited sample banks. The others are local audit firms. Mean of auditor specialization proxy 1 (measured by number of clients in industry) is 1.75. This descriptive statistic means that in average each audit firm has two clients in banking industry. Minimum of auditor specialization proxy 1 is 1. This means that auditor at least has one client in the Libyan

banking industry. Maximum of auditor specialization proxy 1 is 3. This means that the most specialist auditor has three clients in the Libyan banking industry. In addition, Table 4 shows that skewness for all variables is near zero. The skewness is 0.241,

0.714, 0.612, 0.498, and 0.738 for total accrual, debt to equity ratio, auditor brand name, auditor industry specialization 1, and auditor industry specialization 2 respectively. This means that data for all of four variables is normally distributed.

Table 4. Descriptive Statistics

| | | Total Accrual | Debt to Equity Ratio | Auditor Brand Name | Auditor Industry Specialization_1 | Auditor Industry Specialization_2 |
|----------------|------------|---------------|----------------------|--------------------|-----------------------------------|-----------------------------------|
| N | Statistic | 36 | 36 | 36 | 36 | 36 |
| Minimum | Statistic | -.0882 | .4832 | 0 | 1.00 | .00 |
| Maximum | Statistic | 1.1265 | 20.7664 | 1 | 3.00 | 1.00 |
| Mean | Statistic | .283869 | 4.993681 | .19 | 1.7500 | .3333 |
| Std. Deviation | Statistic | .0881079 | 1.1968732 | .401 | .80623 | .17809 |
| Skewness | Statistic | .241 | .714 | .612 | .498 | .738 |
| | Std. Error | .393 | .393 | .393 | .393 | .393 |
| Kurtosis | Statistic | .934 | .428 | .631 | .272 | .544 |
| | Std. Error | .768 | .768 | .768 | .768 | .768 |

Source: Output of SPSS (processed)

The following section presents the results of model quality using classical assumptions test.

4.3 Classical Assumption Test

This section presents the results of classical assumption test for the equation:

$$TA_{it} = a_0 + b_1 DER_{it} + b_2 ABM_{it} + b_3 AIS_{1it} + b_4 AIS_{2it} + e_{it}$$

Where:

TA_{it} = total accruals of firm i in year t , a proxy for the magnitude of earnings management estimated using the Healy (1985) and Jones model (1991).

DER_{it} = debt to equity ratio of firm i in the year t

ABM_{it} = dummy variable for auditor’s brand name, 1=Big 4 auditors, 0=otherwise. Big 4 auditors are Price Waterhouse Coopers, Ernst & Young, Deloitte, and KPMG

AIS_{1it} = auditor’s industry specialization proxy 1, measured by the actual market share (number of clients) in industry.

AIS_{2it} = auditor’s industry specialization proxy 2, measured by measured by dummy variable which is coded 1 if the audit firm has the most clients in the industry and 0 if otherwise from.

Classical assumption test conducted in this study including multicollinearity, heterocedasticity, autocorrelation, and normality of residuals.

a. Normality

OLS regression also assumes that residuals are normally distributed (Gujarati, 2003). To test this

assumption, this study uses Kolmogorov-Smirnov test. Hypotheses are:

H_0 : Residuals are normally distributed.

H_1 : Residuals are not normally distributed.

H_1 will be rejected and H_0 cannot be rejected if the significant value is greater than 0.05 (Sig > 0.05). The results of normality residuals test reported in Table 5 show that Sig= 0.151 (> 0.05); therefore, H_0 cannot be rejected. In conclusion, residuals are normally distributed assumption has been fulfilled in the model.

In conclusion, the results presented above show that there are no problems in classical assumptions for the regression model. The following section reports the results of hypotheses testing.

b. Multicollinearity

Multicollinearity means that there is a perfect correlation among independent variables (Gujarati, 2003). OLS regression assumes that the correlation among independent variables should not be high. To examine multicollinearity problem, this study uses Variance Inflation Factor (VIF) analysis. VIF score must be less than 10 for regression model that does not have multicollinearity problem (Gujarati, 2003). Results of multicollinearity test in Table 6 show that VIF is less than 10 for all independent variables. VIF

score is 1.193, 1.004, 2.105, and 1.852 for debt to equity ratio, auditor brand name, auditor industry specialization 1, and auditor industry specialization 2,

respectively. Therefore, it can be concluded that there is no multicollinearity problem in the regression model of this study.

Table 5. Result of Normality of Residuals Test

One-Sample Kolmogorov-Smirnov Test

| | | | Unstandardized Residual |
|--------------------------|-----|----------------|-------------------------|
| N | | | 36 |
| Normal Parameters | a,b | Mean | .0000000 |
| | | Std. Deviation | .19877080 |
| Most Extreme Differences | | Absolute | .189 |
| | | Positive | .095 |
| | | Negative | -.189 |
| Kolmogorov-Smirnov Z | | | 1.137 |
| Asymp. Sig. (2-tailed) | | | .151 |

a. Test distribution is Normal.

b. Calculated from data.

Source: Output of SPSS (processed)

Table 6. Result of Multicollinearity Test

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|-------|-----------------------------------|-----------------------------|------------|---------------------------|-------|------|-------------------------|-------|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | .080 | .120 | | .665 | .511 | | |
| | Debt to Equity Ratio | .038 | .008 | .691 | 5.108 | .000 | .838 | 1.193 |
| | Auditor Brand Name | .092 | .089 | .128 | 1.028 | .312 | .996 | 1.004 |
| | Auditor Industry Specialization_1 | -.026 | .064 | -.074 | -.409 | .685 | .475 | 2.105 |
| | Auditor Industry Specialization_2 | .123 | .102 | .204 | 1.213 | .234 | .540 | 1.852 |

a. Dependent Variable: Total Accrual

Source: Output of SPSS (processed)

c. Heterocedasticity

Regression model assumes that homoscedasticity is the variance of the error is constant for all values of independent variable (X_i). In other words, regression model assumes that there is no heterocedasticity (Gujarati, 2003). This study uses Glejser method to examine heterocedasticity problem in which independent variables are regressed on absolute residual as dependent variable. Rule of decision is there is no heterocedasticity problem if there is no independent variables significantly affect absolute residual as dependent variable. The result shows that regression coefficients of all independent variables do not significantly affect absolute residual. Significance value of all independent variables is greater than 0.05. In conclusion, there is no homodecedasticity problem in this study.

d. Autocorrelation

OLS regression also assumes that there is no autocorrelation in the model. No autocorellation means that the residuals are uncorrelated. To examine no autocorellation assumption, this study uses Durbin-Watson (DW) test which compares DW score with DW table. Rule of decision: there is no indication of autocorrelation problem if the results of regression show DW score is located in $DU < DW < 4-DU$ region (Gujarati, 2003). With sample 36 ($n = 36$), four independent variables ($k = 4$), DW table shows that DL is 1.236 and DU is 1.724. DW score resulted from regression analysis is 1.900 as shown in Table 8 DW score (1.900) is located in $DU < DW < 4-DU$ region ($1.724 < 1.900 < 2.276$). In conclusion, there is no indication of autocorrelation problem in this study.

Table 7. Result of Heterocedasticity Test

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|-----------------------------------|-----------------------------|------------|---------------------------|-------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .023 | .067 | | .345 | .732 |
| | Debt to Equity Ratio | .020 | .034 | .692 | .588 | .394 |
| | Auditor Brand Name | -.033 | .050 | -.087 | -.660 | .514 |
| | Auditor Industry Specialization_1 | .006 | .036 | .034 | .179 | .859 |
| | Auditor Industry Specialization_2 | -.005 | .057 | -.016 | -.089 | .930 |

a. Dependent Variable: Absolute of Residuals

Source: Output of SPSS (processed)

Table 8. Result of Autocorrelation Test

Model Summary^b

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1 | .724 ^a | .524 | .463 | .2112058 | 1.900 |

a. Predictors: (Constant), Auditor Industry Specialization_2, Auditor Brand Name, Debt to Equity Ratio, Auditor Industry Specialization_1

b. Dependent Variable: Total Accrual

Source: Output of SPSS (processed)

4.4 Results of Hypotheses Testing

This section presents the results of hypotheses testing. There are three hypotheses proposed in this study. The results of hypotheses testing is reported in Table 9. Table 9 shows that F Statistics is 8.532 with probability of Sig. is 0.000 (< 0.05). It means that regression model can be used to predict Total Accrual (proxy for earning management). The significant value of F as shown in Table 9 shows the goodness of

fitness of regression model of this study. Adjusted R Square is 0.4623(46.23%). It means that the variation of Total Accrual can be explained 46.23% by variation in Debt to Equity Ratio, Auditor Brand Name, Auditor Industry Specialization 1, and Auditor Industry Specialization 2. The rest (100%- 46.23% =53.77%) is explained by other factors besides four independent variables of this study.

Table 9. Results of Hypotheses Testing

| Independent Variables | Expected Sign | Coefficient | t-statistics | Sig. |
|-----------------------------------|---------------|--------------|--------------|-------|
| Constant | | 0.080 | 0.665 | 0.511 |
| Debt to Equity Ratio | + | 0.038 | 5.108 | 0.000 |
| Auditor Brand Name | - | 0.092 | 1.028 | 0.312 |
| Auditor Industry Specialization 1 | - | -0.026 | -0.409 | 0.685 |
| Auditor Industry Specialization 2 | - | 0.123 | 1.213 | 0.234 |
| Adjusted R Square | | 0.463 | | |
| F Statistics | | 8.532 | | |
| Sig. F | | 0.000 | | |

Source: Output of SPSS (processed)

Hypothesis 1 states that debt level positively affects earnings management. The results of Table 9 show that regression coefficient of Debt to Equity

Ratio (proxy for debt level) is positive (0.038) with t-statistic 5.108 and significant at 0.000 (< 0.05). This result means that Debt to Equity Ratio positively and

significantly affects Total Accrual (proxy for earnings management). Therefore, **hypothesis 1 is supported by empirical evidence of this study.**

Hypothesis 2 states that auditor brand name negatively affects earnings management. The results of Table 9 show that regression coefficient of Auditor Brand Name is positive (0.092) with t-statistic 1.028 and insignificant at 0.312(> 0.05). This result means that Auditor Brand Name does not negatively and significantly affect Total Accrual (proxy for earnings management). **Thus, hypothesis 2 is not supported by empirical evidence of this study.**

Hypothesis 3 states that auditor specialization industry negatively affects earnings management. The results of Table 9 show that regression coefficient of Auditor Industry Specialization 1 is negative (- 0.026) with t-statistic - 0.409 and insignificant at 0.685(> 0.05). Meanwhile, the regression coefficient of Auditor Industry Specialization 2 is positive (0.123) with t-statistic 1.213 and insignificant at 0.234(> 0.05). Both of Auditor Industry Specialization proxy doesn't negatively affect Total Accrual. These results show that Auditor Industry Specialization does not negatively and significantly affect Total Accrual (proxy for earnings management). **Therefore, Hypothesis 3 is not supported by empirical evidence of this study.**

4.5 Discussion of Findings

The objective of this study is to examine the effect of debt level on earnings management. Based on positive accounting theory (especially debt covenant hypothesis), this study proposed hypothesis that debt level positively affects earnings management. The result of this study supports the hypothesis that debt level positively affects earnings management. This finding supports previous studies that have examined the effect of debt on earnings management (for example Sweeney, 1994, DeFond and Jiambalvo, 1994, and Perez and van Hemmen, 2010). The finding of this study also supports positive accounting theory, especially debt covenant hypothesis. The finding of this study supports debt covenant hypothesis that the closer a firm is to compromising their debt covenants, the more likely management is to use accounting policies to increase firm's earnings. This action will reduce the probability of technical default on the debts. Banks sample of this study engage in income increasing accruals in order to fulfill debt covenant.

This study proposes the hypothesis that auditor brand name negatively affects client's earnings management. Clients of Big 4 auditor exhibit lower earning management than those of other audit firm clients. Large audit firms (Big 4) is hypothesized to be able to detect client's earnings management because of their advanced knowledge and to control

opportunistic earnings management to protect their reputation. However, this hypothesis is not supported by empirical evidence. This finding is not consistent with the finding of Becker et al. (1998), Francis et al. (1999), Reynolds and Francis (2000), and Chen et al. (2005). In case of Libya, this study provides empirical evidence that Big 4 auditors did not provide higher quality audit service than did non-Big 4 auditors. This finding may be due to restricted economic environment in the Libyan case. Moreover, this finding may be due to the fact that there is only one Big 4 auditor (KPMG Hazem Hassan) documented in this study. Moreover, the Libyan auditing profession only adopted model from the US and the UK (Ritchie and Korwatt, 2007). This adopted model of auditing profession may not be appropriate for the Libyan context which has different characteristics than UK and US.

This study also proposed the hypothesis that auditor's industry specialization was negatively associated with client's earnings management. It seems likely that a specialist's knowledge of the industry will yield a greater ability to detect and curb client's earnings management and minimize unintentional errors. However, this hypothesis is not supported by this study. Specialist auditor cannot detect and constrain client's earnings management. The finding of this study is not consistent with the findings of Krishnan (2003b) and Balsam et al. (2003). However, this finding is consistent with Chen et al. (2005). This finding may be due to limited companies in the banking industry (there are only 9 banks) that make auditors become difficult to get experience in this industry. Chen et al. (2005) argued that small audit market made audit firms become difficult to get expertise and experience in the industry.

Previous empirical studies that test the debt covenant hypothesis still provide inconclusive findings (Rodriguez Perez and van Hemmen, 2010). This study will contribute in explaining these inconclusive findings. Based-on this research finding, this study implied that debt covenant hypothesis is generalized able into unique Libyan setting. This research also contributes to audit quality literature by examining another proxy of audit quality. This proxy is still rarely used in audit quality research.

This study contributes to evaluate the quality of Libyan auditors in detecting client's earnings management and accounting standards setter. The results of this study can be a recommendation to the Libyan accounting and auditing regulator about the policy that must be issued to enhance the quality of Libyan auditor's. Auditor cannot detect and constrain earnings management. Therefore, it is important for regulator to issue policy such as intensive training for

auditor to get more expertise and experience in detecting client's earnings management.

5.1 Conclusions

The conclusions of this research are as follows:

a. Hypothesis that debt level positively affects earnings management is supported by empirical evidence. Libyan banks sample engage in income increasing accruals in order to fulfill debt covenant. This finding supports debt covenant hypothesis (Watts and Zimmerman, 1986).

b. Hypothesis that auditor brand name negatively affect earnings management is not supported. In case of Libya, Big 4 auditors can not detect and constrain client's earnings management.

c. Hypothesis that auditor industry specialization negatively affects earnings management is not supported by empirical evidence. Clients of industry specialist auditors did not exhibit lower earning management than those of non-specialist auditors.

5.2 Implications

The implications of this research are as follows.

a. Libyan banks engage earnings management practice in order to avoid debt covenant violations. Therefore, it is important for regulators, especially the Central Bank of Libya, to enhance monitoring function in constraining earnings management practice.

b. The results of this study suggest that audit quality in the Libyan case cannot detect and constrain client's earnings management practice. This finding shows the empirical evidence about the low of audit quality in Libya. Therefore, it is important for regulators to enhance the audit quality in Libya.

5.3 Limitations and Future Research Agenda

The limitations and suggestions for future research are as follows:

a. Sample size of this study is limited due to many companies did not have complete annual report. Moreover, this study focuses on banking industry. If the data is available, future research can use more sample companies. In addition, future research can use samples from different industries.

b. Measurement of audit quality in this study is limited only to using two proxies: (i) auditor brand name, and (ii) auditor industry specialization. Future research can consider other proxies to measure audit quality.

c. This study did not examine control variables in hypotheses testing equation. Future research can use control variables such as firm size and profitability.

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