



Accounting Research Journal

Disclosure quality and earnings management: evidence from Jordan
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Article information:

To cite this document:

Ebraheem Saleem Salem Alzoubi, (2016) "Disclosure quality and earnings management: evidence from Jordan", Accounting Research Journal, Vol. 29 Issue: 4, pp.429-456, <https://doi.org/10.1108/ARJ-04-2014-0041>

Permanent link to this document:

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Disclosure quality and earnings management: evidence from Jordan

Quality and earnings management

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Received 19 April 2014
Revised 13 November 2014
Accepted 1 December 2014

Abstract

Purpose – The purpose of this paper is to extend previous research by empirically investigating the effect of the disclosure quality (DQ) on the magnitude of the earnings management (EM) among Jordanian companies listed in Amman Stock Exchange.

Design/methodology/approach – This study uses the cross-sectional version of the modified Jones model, where discretionary accruals are used for the EM proxy. Generalized least square regression is used to examine the influence of the DQ on EM for a sample of 86 industrial companies in the period of the years from 2007 to 2010.

Findings – The result produces evidence on the negative association between DQ and EM. The result also evidences the view that as the level of the disclosure is high, the magnitude of the EM reduces and, in turn, increases the financial reporting quality.

Originality/value – As there are relatively few researches conducted in this area specifically among Jordanian firms, the study broadens the scope by providing empirical evidence of the relationship between DQ and EM. This paper is the first empirical study to investigate the impact of the DQ on EM among Jordanian companies.

Keywords Disclosure quality, Financial reporting quality, Earnings management

Paper type Research paper

1. Introduction

Several business scandals and globalization have resulted in the demand for disclosure quality (DQ) of both financial and non-financial information (Archambault and Archambault, 2003; Ghofar and Saraswati, 2009). Financial statements are a major communication device between companies and investors. The capital market requires unobvious financial reporting processes to improve the confidence of investors (Jaffar *et al.*, 2007; Shaw, 2003).

Comprehensive, transparent and timely information is essential to ensure reduced asymmetric information and agency costs between management and shareholders (Healy and Palepu, 2001). The firm's ownership and control separation, reduction of agency cost and information asymmetry have provided a motivation for perfect reporting pursuits. Financial statements disclose how resources of companies have been



The author gratefully acknowledges the helpful comments and suggestions received from the two anonymous reviewers. M. Azizul Islam and Liz Marsland provided excellent editorial support. All the remaining errors are the sole responsibility of the author.

managed. Nevertheless, a perfect financial reporting procedure should not be expected only to financial information; non-financial information is also relevant to investors' decisions (Jaffar *et al.*, 2007). Consequently, this study measures DQ by using a scoring index of disclosure themes as adopted from Beattie *et al.* (2004).

Voluntary information needs a particular attention, as managers have discretion on the type and quantity of information disclosed. Reported earnings are also within the management' discretion, as managers may use specific accounting procedures acceptable under generally accepted accounting principles (GAAP) such as the assets write-off, exceptional items rating and recognizing discretionary accruals. These applications are recognized as earnings management (EM) activities (Jaffar *et al.*, 2007; Stolowy and Lebas, 2002). Such practices could diminish financial reporting quality (FRQ) and, in turn, decrease investors' faith in financial reports. Hence, firms volunteer additional information to investors. The mandatory financial information alongside voluntary information is deemed an FRQ indicator.

Jordan provides an unusual setting to test the relationship between DQ and EM. While Jordan is different from the USA in economic accretion and capital market expansion, currently DQ has attracted the attention of the Jordanian regulators and policy makers. In Jordan, the Shamayleh Gate crisis cost Jordanian banks over US\$1bn, drawing attention to the significance of corporate governance (JFED, 2003). The Jordanian Code of Corporate Governance (JCGC) (2007, p. 18) recommends that:

[...] the organization should voluntarily disclose a balanced assessment of the organization's position, prospects, and in timely manner all information that may have a material impact on the decisions of its shareholders and stakeholders.

As Jordan is one of the countries in which users rely on financial accounting numbers for generating decrees, it is of value to consider EM practices (Al-Khabash and Al-Thuneibat, 2009).

Research on factors that determine FRQ, particularly in Jordan are scanty. This research investigates whether DQ affects EM (FRQ proxy). This topic deserves special attention; given the predictive ability of the DQ to limit EM, it has not been investigated in Jordan. It is imperative to examine the two variables simultaneously, as they are within the management's discretion (Ball and Shivakumar, 2005). Intrinsically, the emphasis of this research is understand whether DQ is effective in constraining EM among Jordanian companies. This research also proposes to extend further evidence that rejects or supports previous studies' results in developed countries and to ascertain whether results can be generalized in Jordan. Moreover, the previous literature neglected corporate governance mechanisms when examining the link between DQ and EM (Jo and Kim, 2007; Lapointe-Antunes *et al.*, 2006; Latridis and Kadorinis, 2009; Riahi and Arab, 2011; Lobo and Zhou, 2001). Hence, corporate governance is expected to reduce information asymmetry because the agent provides high-quality information to the principal when conflict of interest is low, reducing managers' incentives to manage earnings (Arcot *et al.*, 2010; Cormier and Martinez, 2006; Davidson *et al.*, 2004; Holm and Scholer, 2010; Hope and Thomas, 2008; Kanagaretnam *et al.*, 2007; Katmun, 2012; Klein, 2002; Xie *et al.*, 2003).

This research examines the association between DQ and EM. The sample comprises 86 companies listed in Amman Stock Exchange (ASE) during 2007-2010. Similar to prior studies, the results show that DQ is negatively related to EM. The result is consistent with the view that as the DQ level is higher, EM is less likely.

Findings from this study could benefit corporate governance bodies that consider reforms of best practices. In particular, this study finds that the corporate governance mechanisms appear to be negatively related to EM. Regulators and policy makers in Jordan and other countries may find these result useful. Findings from this study are also beneficial to the shareholders, management and public members who are concerned about the harmful effects the EM. In the light of the latest corporate scandals, the findings from this study stress the significance of companies providing sufficient monitoring information to investors and analysts. This study is useful for researchers who investigate the implications of the DQ in deterring EM. Moreover, this study considers a comprehensive governance mechanism in the model while investigating the relationship between DQ and EM.

The remainder of this paper is organized as follows. The next section discusses the legal framework in Jordan. Section 3 discusses the pertinent literature on issues relating to EM and DQ, leading to the hypothesis development. Section 4 describes the research method followed by discussion of the results in Section 5. The paper ends with a conclusion of this study.

2. Disclosure legal framework in Jordan

The Companies Act in 1964 is the initial legislation concerning firms in Jordan and was later re-enacted in 1989. Nevertheless, neither Act revealed any particular requirements concerned financial statements disclosure. The Income Tax Law No. 57 of 1985 specified restricted disclosure requirements (income measure and asset evaluation techniques). Likewise, the Audit Law, 2003 restricted influences on the requirements of the disclosure in Jordan and presents the Jordanian Association of Certified Public Accountants role and its authority in imposing the International Accounting Standards (IAS) and auditing standards (Omar and Simon, 2011).

The Amman Financial Market issued the Securities Law in 1997, which was main provenience for mandatory disclosure. The significant characteristics of the Law were, first, the establishment of ASE. second, the Directives of Disclosure, Auditing and Accounting Standards that are deemed to represent, as well IAS, the disclosure requirements channel and, third, the IAS's adoption in 1998. The 2002 Securities Law implicated little alteration to the 1997 Law, and there were no major variances (disclosure requirements) between the two laws (Omar and Simon, 2011).

Jordan's latest economic amendments, generating privatization, enforced the Jordanian government to establish corporate governance framework. Integrated in the Company Law 1997 and the Securities Law 2002, its framework emphasizes the shareholders' rights and accountability of the board of directors. Furthermore, these laws required the application and adoption of the IAS and International Financial Reporting Standards, improving the DQ of the Jordanian firms (Al-Akra *et al.*, 2009; ASE, 2007). Therefore, the ASE has become one of the biggest equity markets in the area, legal shareholders' prevention has significantly enhanced, firms display a sturdy partiality to equity financing and the DQ has enhanced significantly (Al-Akra *et al.*, 2009; ROSC, 2005).

3. Literature review and hypothesis development

3.1 Earning management

Previous studies used various definitions of the EM. [Schipper \(1989, p. 92\)](#) observed that:

[...] by earnings management I really mean disclosure management in the sense of a purposeful intervention in the external financial reporting process, with a view to obtaining private gain for shareholders or managers.

[Healy and Wahlen \(1999, p. 368\)](#) defined EM as:

[...] 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.

The observation of [Fields *et al.* \(2001, p. 16\)](#) is concerned with accounting choice:

[...] although not all accounting choices involve earnings management, and the term earnings management extends beyond accounting choice, the implications of accounting choice to achieve a goal are consistent with the idea of earnings management.

[Scott \(2003, p. 369, as cited in Ronen and Yaari, 2008, p. 26\)](#) defined EM as “the choice by a manager of accounting policies so as to achieve specific objective[s]”. [Phillips *et al.* \(2003, p. 493\)](#) stated that EM “is accomplished through managerial discretion over accounting choices and operating cash flows”. [Giroux \(2004, p. 2\)](#) stated that “[...] earnings management includes the whole spectrum, from conservative accounting through fraud, a huge range for accounting judgment, given the incentives of management”. [Ronen and Yaari \(2008, p. 25\)](#) classified the EM definitions as:

White: EM is taking advantage of the flexibility in the choice of accounting treatment to signal the manager’s private information in future cash flows; Grey: EM is choosing an accounting treatment that is either opportunistic (maximizing the utility of management only) or economically efficient; Black: EM is the practice of using tricks to misrepresent or reduce transparency of the financial reports.

The above definitions suggest that EM is risky rather than beneficial, and this study follows the definition of [Healy and Wahlen \(1999\)](#). This definition is in line with the agency theory assumption that EM is an agency cost detrimental to shareholders and EM is an opportunistic behavior of managers.

Prior researchers have found that managers manipulate earnings to hype the stock price during initial public offerings ([Friedlan, 1994](#)), seasoned equity offering ([DuCharme *et al.*, 2004](#); [Jo and Kim, 2007](#)), avoid reporting losses ([Burgstahler and Dichev, 1997](#); [Charoenwong and Jiraporn, 2009](#)), smooth earnings volatility ([Cormier *et al.*, 2000](#)), personal benefit and remuneration ([Baker *et al.*, 2009](#)), avoid debt agreement violation ([DeFond and Jiambalvo, 1994](#)), influence contractual outcomes ([Jones, 1991](#)), forecasting activities ([Burgstahler and Eames, 2006](#); [Cormier and Martinez, 2006](#); [Hunton *et al.*, 2006](#)) and meet the earnings forecasts of financial analysts ([Dhaliwal *et al.*, 2004](#); [Latridis and Kadorinis, 2009](#)).

3.2 Disclosure quality

Prior studies identify several important key words in describing disclosure such as completeness, accuracy, reliability, precision and timeliness. It is also argued that definitions are derived from underlying theoretical assumptions used in research, so it is

not necessarily true that one size fits all. Singhvi and Desai (1971, p. 131) defined DQ as “completeness, accuracy and reliability”. Gibbins *et al.* (1990, p. 122) stated that “the release by a firm of information, which may be financial or non-financial; qualitative or quantitative; mandatory or voluntary; disseminated through formal or informal channels”. Brown *et al.* (2004, p. 5) defined DQ as “the precision, timeliness, and quantity of information provided”. Gray and Skogsvik (2004, p. 122) described that “voluntary disclosure supposedly provides information which goes beyond the requirements inherent in company law and the prevailing accounting standards”. The definition of Gibbins *et al.* (1990) is general and vague; defining DQ is complicated and inadequate. In the same way, Gray and Skogsvik (2004) definition is unclear in the difference between mandatory and voluntary disclosure.

Kent and Stewart (2008, p. 651) argued that “more extensive disclosures are likely to be more informative than brief disclosures and are, an indicator of greater transparency”. In the same vein, Beretta and Bozzolan (2008, p. 335) claimed that “the extent of disclosure (i.e. quantity) is an adequate measure of the quality of disclosure”. For this study, the researcher followed the definition of DQ from Singhvi and Desai (1971). In protecting shareholders’ value, agency theory and signaling theory suggest that a complete, accurate and reliable disclosure should be provided to reduce information asymmetry, solve agency problems and reduce agency cost.

DQ benefits companies in several ways: ability to increase stock liquidity (Brown *et al.*, 2004); decreasing the capital cost (Botosan and Plumlee, 2002; Kim and Shi, 2011); improving a firm’s share price (Dedman *et al.*, 2008; Jo and Kim, 2007; Lang and Lundholm, 2000); rewarded by the capital market (Healy *et al.*, 1999); reducing the cost of debt (Sengupta, 1998); increasing institutional ownership, analyst following and stock liquidity (Healy *et al.*, 1999); improving their reputation (Espinosa and Trombetta, 2004); enhancing their performance (Lang and Lundholm, 2000); avoiding crisis failure (Tadesse, 2006); and reducing uncertainty of future earnings (Lundholm and Myers, 2002).

3.3 Disclosure quality and earnings management

DQ is a monitoring mechanism, which applies by enhancing investors’ comprehension about how management prioritizes resources and firm’s decisions. DQ bridges the information gap between principal and agent. Shareholders are not able to control management performance when deprived of particular company specific information. DQ is one of the controlling devices that monitor management’s opportunistic performance (Bushman and Smith, 2001). Consequently, DQ is efficient in decreasing agency cost (Healy and Palepu, 2001).

Previous studies on DQ and EM are quite limited, particularly from the settings external to the USA. Some of the past studies concentrated on the US market (Hunton *et al.*, 2006; Jo and Kim, 2007; Lobo and Zhou, 2001), others used the UK setting (Latridis and Kadorinis, 2009; Katmun, 2012), Swiss context (Lapointe-Antunes *et al.*, 2006), Canadian sample (Bauer and Boritz, 2013) and Tunisia companies (Riahi and Arab, 2011). In another international research among 48 countries, Shen and Chih (2005) concentrated on the relationship between EM and corporate governance through controlling for the disclosure index. Previous studies revealed findings relevant to the role of disclosure in restraining EM.

Within the agency theory framework, EM has been observed as an agency cost, given that it produces asymmetry of the information and diminishes principals' comprehension of a company's performance that affects their investing decisions (Davidson *et al.*, 2004). EM behavior can be defined as "residual loss" (Jensen and Meckling, 1976, p. 308). Earnings manipulation throughout accruals is an indication of conflict of interest in management decision-making (Christie and Zimmerman, 1994). Furthermore, certain studies have confirmed that asymmetry of the information is positively related to EM practices (Richardson, 2000; Trueman and Titman, 1988). Such indication points out that the higher the information asymmetry level, the greater the likelihood of the practice of EM. However, wherever asymmetry of the information is comparatively low, EM practices are lower. Kim and Verrecchia (1994) report that information asymmetry among principal and agent is reduced through voluntary disclosure. Hence, enhanced disclosure is a potential solution for the EM problem. Generally, as Davidson *et al.* (2004) observe EM as one shape of the agency cost, as well as Jensen and Meckling (1976) regard DQ as one of the mechanisms alleviating agency cost, this study uses agency theory to clarify the negative association among DQ and EM. High level of DQ will enhance investors' ability to detect EM, thus decreasing management motives to manage earnings. In line with the agency theory frame, which presumes that higher DQ level diminishes asymmetric information and permit investors to identify EM activity, this study hypothesizes that:

H1. There is a negative relationship between DQ and EM among Jordanian listed companies.

4. Research design

4.1 Sample

The study examines 94 industrial companies listed in ASE for the period 2007-2010. This period was selected as recommended by the ROSC (2005) to investigate the mechanisms that can improve FRQ. Moreover, the JCGC (2007, p. 18) recommended that "an organization should disclose clear, holistic, and complete information about its operations to achieve transparency". The final sample included 86 (344 firm-year observation) for the years selected after excluding firms that did not meet particular criteria. Firms that do not have entire financial data, entire information on disclosure index or whose annual reports are unobtainable were omitted. Financial data and data concerning disclosure index were collected using the firm's annual report as disclosed in ASE website.

4.2 Earning management measures

Accruals have been shown to be the most popular method of the EM (Fields *et al.*, 2001; Goncharov, 2005; Habbash, 2010; Hsu and Koh, 2005; Katmun, 2012). Particularly, discretionary accrual was estimated using the modified Jones model (1995), as prior authors suggested that this is the most powerful model for estimating discretionary accruals (Dechow *et al.*, 1995; Guay *et al.*, 1996). Moreover, the cross-sectional model performs its time-series equivalent in perceiving EM (Bartov *et al.*, 2000; Cornett *et al.*, 2008; Mouselli *et al.*, 2012; Rajgopal and Venkatachalam, 2011).

Total accruals were calculated as follows (Hribar and Collins, 2002):

$$TA = NI - NCF \quad (1)$$

Where, TA is the total accruals, NI is the net income after extraordinary items and NCF is the net cash flow from operations.

The equation for the non-discretionary accruals according to the modified Jones model is:

$$NDA_{it}/A_{it-1} = \beta_1 (1/A_{it-1}) + \beta_2 (\Delta REV_{it}/A_{it-1}) + \beta_3 (PPE_{it}/A_{it-1}) + e_{it} \quad (2)$$

Where, NDA is the non-discretionary accruals, A is the lagged total assets, ΔREV (change in operating revenues), ΔREC (change in net receivables), PPE (gross property, plant and equipment).

To calculate NDA , it is necessary to estimate the coefficient: β_1 , β_2 and β_3 for the model using ordinary least square (OLS) regression equation (3):

$$TA_{it}/A_{it-1} = \beta_1 (1/A_{it-1}) + \beta_2 (\Delta REV_{it} - \Delta REC_{it}/A_{it-1}) + \beta_3 (PPE_{it}/A_{it-1}) + e_{it} \quad (3)$$

The discretionary accrual proxy was calculated using the equation below:

$$DAC_{it} = TA_{it}/A_{it-1} - NDA_{it}/A_{it-1} \quad (4)$$

where, DAC is the absolute value of discretionary accruals.

4.3 Disclosure quality measurement

Previous research has used various techniques to measure DQ containing subjective classifications, disclosure indicators and thematic content. The current study uses a modified disclosure theme proposed by Beattie *et al.* (2004), as their themes are deemed supplementary inclusive contrasted to others (Jaffar *et al.*, 2007). Beattie *et al.* (2004) suggested nine major themes that have 79 items as in Appendix. A score of 1 is given if the item is disclosed and 0 otherwise. Therefore, the maximum disclosure constitutes the total probable score and is equal to 79 items. Disclosure Index (DI) score is computed and derived from the actual disclosure number contrasted to maximum disclosure as follows:

$$DI = TD/MD \quad (5)$$

where, TD is the total disclosure, MD is the maximum disclosure.

4.4 Control variables

While investigating the relationship between DQ and EM, 14 control variables were included to capture the effect of the EM.

Agency theory views the corporate governance mechanisms as one of the classical solutions to reduce conflicts of interest and information asymmetry and in turn EM (Arcot *et al.*, 2010; Bebachuk and Hamdani, 2009; Brennan, 2006; Brick *et al.*, 2012; Brown *et al.*, 2011; Cornett *et al.*, 2008; Donnelly and Mulcahy, 2008; Holm and Schøler, 2010; Ronen and Yaari, 2008).

Independent directors on the board are supposed to make a credible judgment on a firm's financial decisions and reduce the conflict of interest, hence, resulting in lower EM (Bedard *et al.*, 2004; Habbash, 2010; Kent *et al.*, 2010; Klein, 2002; Lanis and Richardson, 2011; Xie *et al.*, 2003). The board independence (BRDIND) is the portion of independent

directors (non-executive) in the board. Finance is one of the three areas that every director should know (Xie *et al.*, 2003). This suggests that directors with financial background are more likely to prevent EM (Bedard *et al.*, 2004; Park and Shin, 2004). The board financial expert (BRDFINEXP) is the portion of directors with financial expertise on the board. A satisfactory number of the board members are favorable, as it may enable them to offer greater monitoring functions, and in turn constrain EM (Coles *et al.*, 2008; Hoitash *et al.*, 2009; Kiel and Nicholson, 2003; Linck *et al.*, 2008; Loderer and Peyer, 2002; Xie *et al.*, 2003). Board size (BRDSIZE) is the total number of board members.

An independent audit committee plays a significant role in preventing and detecting any irregularities in financial reporting (Kao and Chen, 2004; Xie *et al.*, 2003). Audit committee independence (ACIND) is the percentage of the independent directors sitting on the audit committee. Prior studies suggested that having audit committee with relevant financial expertise is helpful in mitigating financial misstatement and is able to constrain managers' EM behavior (Abbott *et al.*, 2004; Dhaliwal *et al.*, 2010; Xie *et al.*, 2003). An audit committee financial expertise (ACFINEXP) is a dummy variable, taking a value of 1 if at least one member with financial expertise sits on the audit committee and 0 otherwise. The number of the members in audit committee is used as an indicator of resources to this committee (Jensen, 1993). Lin and Hwang (2010) and Lin *et al.* (2006) found significant and negative association between size of the audit committee and EM. Audit committee size (ACSIZE) is the number of the members in audit committee.

The company ownership structure can be important to the quality and comprehensiveness of oversight (Habbash, 2010; Pergola, 2005; Song and Windram, 2004). Agency theory proposes that a higher proportion of management ownership indicates company value, as the shareholders and management goals are closely aligned (Jensen and Meckling, 1976). Prior studies found significant and negative relationship between managerial ownership and EM (Gul *et al.*, 2003; Klein, 2002; Warfield *et al.*, 1995; Wright *et al.*, 2006). Managerial ownership (MNGOWNSHP) is the proportion of the total shares held through executive directors divided by the total shares. Institutional ownership is deemed to be fundamental monitoring mechanism and capable to monitor managers. Previous studies show a negative association between institutional ownership and EM (Charitou *et al.*, 2007; Cheng and Reitenga, 2009; Hsu and Koh, 2005; Yu, 2008). Institutional ownership (INSTITUTNL) is the percentage of shares owned by institutional investors (social security institution). Outside block-holders have more motives to control managers' activities as controlling is an additional cost-efficient measure for external block-holders and in turn reduces agency costs (Cronqvist and Fahlenbrach, 2009; Jensen and Meckling, 1976; Persons, 2006; Shleifer and Vishny, 1997). Previous studies reported a negative relationship between EM and block-holder (Dechow *et al.*, 1995; Klein, 2002; Wang, 2006). Block-holders ownership (EBH) is the percentage of the shares held by the individual block-holders (5 per cent or more).

Firm size can be negatively related to EM because large firms are under high scrutiny from investors, and this may reduce managers' propensity to manipulate earnings (Lobo and Zhou, 2006). However, a firm's size can also positively relate to EM. Managers in large firms have greater incentives to engage in EM, given that the nature of their business operations is much more complicated than small firms, and this can lead to less detectable EM. Complexity of the information increases information asymmetry, hence

reducing the monitoring functions of the investors (Lobo and Zhou, 2006; Jo and Kim, 2007). Firm size (FRMSIZE) is the natural logarithm of the total assets at year end.

This study also includes lagged return on assets as proxy for profitability, as earnings have been viewed as a measure of ultimate performance by outsiders (Ronen and Yaari, 2008). In this regard, Skinner (2003) claimed that it is important to control the firms' performance when EM is considered, given that it is connected to the investment opportunity. In positive accounting theory, political cost hypothesis predicts that firms with high profits tend to choose an accounting method that can reduce their earnings to mitigate political pressure (Jo and Kim, 2007; Meyer *et al.*, 2000; Watts and Zimmerman, 1990). However, high profitability can also be negatively related to EM, given that companies making high profits are supposed to make no EM effort to reach their earnings threshold (Ashbaugh *et al.*, 2003; Habbash, 2010; Katmun, 2012; Skinner, 2003). Profitability (ROA) is the net income divided by total asset.

Debt hypothesis argues that highly leveraged firms may aggressively manipulate earnings to mitigate and alleviate their large debt in the eyes of the shareholders (Chen *et al.*, 2006; Habbash, 2010; Jelinek, 2007; Jo and Kim, 2007; Katmun, 2012; Velury, 2003; Watts and Zimmerman, 1990). Leverage (LEV) ratio is the total debt divided by total assets.

Firms with strong operations cash flow (CFO) performance are less probable to use income increasing discretionary accruals to boost earnings, as these firms are already doing well (Lobo and Zhou, 2006). Prior studies found negative relationship between net CFO and EM (Gul *et al.*, 2009; Habbash, 2010; Katmun, 2012; Lobo and Zhou, 2006). CFO is dividing net cash flow from operations with lagged total assets.

Auditing process, carried out by independent and credible audit firms, is able to hamper aggressively potential opportunistic reporting of accruals, reducing managers' incentives to manipulate earnings (Francis *et al.*, 1999). This underlying assumption illustrates the inverse relationship between audit quality and EM as documented in prior studies (Becker *et al.*, 1998; Balsam *et al.*, 2002; Davidson *et al.*, 2004; Hashim and Devi, 2008; Kent *et al.*, 2010). BIG4 is a dummy variable, taking a score of 1 if the company is audited by Big4 audit firm and 0 otherwise.

4.5 Regression model

This study uses the following regression model to assess the association between DQ and EM:

$$\begin{aligned}
 DAC = & \beta_0 + \beta_1(DQ_{it}) + \beta_2(BRDIND_{it}) + \beta_3(BRDFIEXP_{it}) + \beta_4(BRDSIZE_{it}) \\
 & + \beta_5(ACIND_{it}) + \beta_6(ACFINEXP_{it}) + \beta_7(ACSIZE_{it}) \\
 & + \beta_8(MNGOWNSHP_{it}) + \beta_9(INSTITUTNL_{it}) + \beta_{10}(EBH_{it}) \\
 & + \beta_{11}(FRMSIZE_{it}) + \beta_{12}(ROA_{it}) + \beta_{13}(LEV_{it}) + \beta_{14}(CFO_{it}) \\
 & + \beta_{15}(BIG4_{it}) + \varepsilon_{it}
 \end{aligned} \tag{6}$$

where *DAC* is the discretionary accruals (absolute value), deliberated by the modified Jones model (1995). Other variables (independent and control) are already outlined.

5. Findings

5.1 Descriptive statistics

The descriptive statistics of the sample variables are shown in Table I. The absolute value of the companies' DAC has a small mean value of 0.093 while the minimum value is closer to 0 (0.0001). These results are consistent with Klein (2002), where a minimum value of DAC was 0.00002 and the average value was 0.11 among US companies. Rahman and Ali (2006) found mean of the extent absolute value of DAC was 0.04 and the minimum value close to 0 (0.0001) among Malaysian companies. Furthermore, Habbash (2010) found that the absolute value of DAC was 0.05 and the minimum value were also closer to 0 (0.0001) for UK firms. Katmun (2012) also tested UK companies and found the mean absolute value of DAC was 0.060 and ranged from 0.0005 to 0.478. Contingent on the presumption that DAC represents the discretion of managers over accruals, this presumption is validated through the significant variances between the DAC means. Intrinsically, the analysis affords evidence that on average, the Jordanian industrial companies manage their reported earnings.

Table I displays the average level of DQ, that is 0.719 (57 items) and ranges from 0.452 (36 items) to 0.855 (67 items). This result indicates that, in general, the level of the DQ among Jordanian companies is good, where many companies disclose information as the recommendations of the JCGC.

Table I presents that the boards of Jordanian companies are mostly described through the existence of independent directors (non-executive) on an average of 52 per cent that could affect the decisions of board. Moreover, on an average, 49 per cent of the sample boards have financial experts. The number of directors in the board ranges from 3 to 14 with an average of 8. Regarding audit committee characteristics, the result displays that the average ratio of independence is 25 per cent, approximately 88 per cent of the members are financial experts, and the average number of size is 5. Ownership is, on an average, 38 per cent managerial, 24 per cent institutional and 12 per cent for external block-holder.

Variable	Mean	Minimum	Maximum	Median	SD	Skewedness	Kurtosis
DAC	0.093	0.0001	0.848	0.065	0.097	3.029	18.044
DQ	0.719	0.452	0.855	0.760	0.097	-1.154	3.346
BRDIND	0.518	0.000	1.000	0.556	0.277	-0.103	1.845
BRDFINEXP	0.493	0.002	0.921	0.523	0.249	-0.234	2.189
BRDSIZE	8.491	3.000	14.000	9.000	1.701	-0.119	4.245
ACIND	0.250	0.000	1.000	0.333	0.219	0.244	2.082
ACFINEXP	0.878	0.000	1.000	1.000	0.328	-2.309	6.330
ACSIZE	4.555	3.000	9.000	5.000	1.179	0.316	3.075
MNGOWNSHP	0.377	0.000	0.799	0.371	0.185	-0.116	2.389
INSTITUTNL	0.244	0.000	0.591	0.202	0.174	0.291	1.863
EBH	0.123	0.000	0.830	0.097	0.114	2.064	9.936
FRMSIZE	1.840	1014720	9.900	4.250	2.820	1.686	4.494
ROA	0.981	-7.105	9.840	0.192	2.251	1.673	7.786
LEV	0.048	0.000	0.410	0.000	0.079	1.598	4.713
CFO	0.403	-8.292	9.002	0.043	1.829	2.012	13.847
BIG4	0.520	0.000	1.000	1.000	0.500	-0.081	1.007

Table I.
Descriptive statistics
of variables
(*N* = 344)

The average company total assets (Table I) is JD 1.840m. Return on assets on an average is 9.8 per cent. Leverage on an average is 4.80 per cent of the company sampled in this study. Similarly, these companies produce slight amounts (4 per cent) of operations cash flow. Finally, the result shows that 52 per cent of Jordan companies (45) are audited by Big4 audit firms against 42 per cent (41 companies) audited by non-Big4 audit firms.

The correlation coefficients are tested for the existence of high collinearity among variables. Table II shows the Pearson correlations for this study model. From the correlation coefficients (Table II; no high correlation is seen between the variables. Consequently, collinearity does not seem to generate a menace to the clarification of the regression coefficients of the independent variables. Hair (2009) recommended 0.80 as the threshold at which multicollinearity concerns can menace the regression test. However, the highest coefficient is 0.484 between DQ and BRDFINEXP. This finding suggests that the board members with financial experts are interested to disclose more information about the company operations. Furthermore, variance inflation factors (VIF) was tested. The highest value is 1.77. Gujarati (2003) suggested that the value below 10 is conventional. Table III shows the VIF result.

5.2 Multivariate analysis

One of the greatest frequently used methods of multivariate analysis is the regression analysis. Generally, parametric tests are further sturdy once whole presumptions (normality, linearity, homoscedasticity and error terms independence) are met and once the elements below analysis are assessed on an interval scale (Gujarati, 2003; Habbash, 2010; Judge *et al.*, 1985). Nonetheless, whether any of the presumptions are violated through the data nature, non-parametric tests suit more aptly (Greene, 2007; Habbash, 2010).

Non-parametric statistical methods may be deemed as a substitute to the parametric methods to evade requirements for producing many presumptions, like the parametric methods situation. Non-parametric technique is deemed to be free distribution, as they assemble no presumption concern to the scores distribution in the sample. Moreover, non-parametric methods do not need the data measurement on an interval scale and face the strict normality presumption and variance homogeneity desired through the parametric technique (Habbash, 2010; Judge *et al.*, 1985; Zhang and Liu, 2009).

The parametric analysis presumption is examined using skewness-kurtosis to investigate for the presumption of normality (Habbash, 2010). In Table I, the skewness and kurtosis for several variables display high values. Data are deemed to be normally distributed whether the standard skewness is within ± 1.96 and standard kurtosis ± 2 (Keller and Warrack, 2003; Habbash, 2010; Rahman and Ali, 2006). Some of the variables are not normally distributed.

The absence of normality of the EM (dependent variable) is anticipated, as the current research intentionally does not remove the variable outliers, as companies with EM utmost values possibly produce the observations, which appear for great positive or negative discretionary accruals that can indeed constitute management discretion (Habbash, 2010; Rahman and Ali, 2006). Kao and Chen (2004) proposed that OLS regression is not appropriate when the EM absolute value is the dependent variable, which is restricted to positive values only.

Table II.
Correlation analysis
of variables

Variable	DAC	DQ	BRDIND	BRDFINEXP	BRDSIZE	ACIND	ACFINEXP	ACSIZE
DAC	1.000							
DQ	-0.430***	1.000						
BRDIND	-0.389***	0.411***	1.000					
BRDFINEXP	-0.431***	0.484***	0.469***	1.000				
BRDSIZE	-0.175*	0.214**	0.090	0.138	1.000			
ACIND	-0.375*	0.351***	0.277***	0.336***	0.079	1.000		
ACFINEXP	-0.266***	0.357***	0.167*	0.304***	0.145	0.114	1.000	
ACSIZE	-0.052	-0.203**	-0.074	-0.102	-0.122	0.020	-0.118	1.000
MNGOWNSHP	-0.153	-0.012	0.075	0.066	0.031	0.014	-0.118	0.152
INSTITUTNL	-0.395***	0.341***	0.364***	0.288***	0.068	0.341***	0.268***	-0.105
EBH	-0.276***	0.189*	0.141	0.180*	0.038	0.260***	0.104	0.070
FRMSIZE	-0.288***	0.260***	0.198**	0.258***	0.030	0.213**	0.169*	-0.063
ROA	-0.096	-0.040	-0.040	0.195*	0.096	-0.087	0.101	-0.009
LEV	0.258***	-0.164	0.011	-0.031	-0.006	-0.052	-0.009	-0.133
CFO	-0.112	0.053	-0.031	0.013	-0.097	0.009	-0.139	-0.006
BIG4	-0.411***	0.337***	0.262***	0.375***	0.134	0.306***	0.300***	0.058
MNGOWNSHP	1.000							
INSTITUTNL	-0.035	1.000						
EBH	-0.002	0.238**	1.000					
FRMSIZE	-0.063	0.277***	0.126	1.000				
ROA	-0.004	-0.052	0.130	0.034	1.000			
LEV	-0.025	-0.148	-0.158	-0.104	0.082	1.000		
CFO	0.098	-0.012	0.063	0.040	0.061	-0.055	1.000	
BIG4	0.094	0.272***	0.105	0.208**	0.086	-0.148	-0.034	1.000

Notes: *** Significant at 0.01 level; ** significant at 0.05 level; * significant at 0.10 level

DAC	Predicted sign	Coefficient	Z	P > Z	P > t	VIF
DQ	–	–0.097	–1.79	0.073	*	1.77
BRDIND	–	–0.051	–2.92	0.003	***	1.49
BRDFINEXP	–	–0.038	–1.79	0.073	*	1.74
BRDSIZE	–	–0.005	–1.90	0.057	*	1.09
ACIND	–	–0.056	–2.62	0.009	***	1.38
ACFINEXP	–	–0.025	–1.81	0.070	*	1.33
ACSIZE	–	–0.006	–1.79	0.073	*	1.15
MNGOWNSHP	–	–0.060	–2.69	0.007	***	1.08
INSTITUTNL	–	–0.071	–2.64	0.008	***	1.41
EBH	–	–0.062	–1.66	0.096	*	1.18
FRMSIZE	–	–2.830	–1.87	0.062	*	1.17
ROA	–	–0.003	–1.65	0.099	*	1.17
LEV	+	0.198	3.71	0.000	***	1.14
CFO	–	–0.005	–2.43	0.015	**	1.07
BIG4	–	–0.025	–2.66	0.008	***	1.38
-cons		0.374	8.50	0.000	***	
Adjusted $R^2 = 0.453$						
Wald chi-squared (14) = 0.000						

Table III.
GLS regression
(random effects)
($N = 344$)

Notes: *** Significant at 0.01 level; ** significant at 0.05 level; * significant at 0.10 level

The Hausman (1978) check eases to the difference among fixed and random effects through checking for correlation among the x variables and the individual random effects ϵ_i . Hausman analysis examine for stringent exogeneity. If no correlation is predicated, random effects should be used and otherwise fixed effects. Consequently, a vital presumption for choosing the estimation of the random effects is that the hidden heterogeneity would not be correlative with the independent variables. The Hausman analysis is used to examine this presumption and to examine the suitability of using the estimation of random effects (Habbash, 2010; McKnight and Weir, 2009). No significant finding acquired from Hausman analysis χ^2 of 13.09 ($p = 0.217$) displays that the presumptions for the estimation of random effects are not contravene.

When the number of time series data is small and the number of cross-sectional units is great, the statistical deduction is subject to the perceived cross-sectional units (Habbash, 2010; Judge *et al.*, 1985). Therefore, the random effects method option is preferred. The current research embraces time series data of four years and has a comparatively great number of cross-sectional units that assembles the random-effects method further applicable. Furthermore, the fixed effects method uses a dummy variable to recognize companies. This, sequentially, would produce a huge parameter number relative to the observations number. Accordingly, the model power would be enfeebled because of the leakage of freedom degrees. Hence, a pooled cross-sectional generalized least square (random-effects) model is used to examine the proposed hypothesis. Statistical data test is accomplished using the computer software package, STATA.

Based on the statistical test revealed in Table III, the adjusted R^2 value for the model was 45.3 per cent. This shows that there are other variables that clarify the difference in the EM level. This study's adjusted R^2 result is higher than previous studies

(Dimitropoulos and Asteriou, 2010; Habbash, 2010; Rahman and Ali, 2006), while lower than the study found by Katmun (2012). The constant is found significantly positive ($p < 0.01$).

The study hypothesizes a negative relationship between DQ and EM, and the results also concur, indicating that there is significantly negative association between DQ and DAC. Therefore, *H1* is upheld. It can be concluded that high DQ is effective in reducing managers' propensity to manipulate earnings, especially in control for corporate governance mechanisms. This negative and significant result between the two variables is consistent with prior studies result (Bauer and Boritz, 2013; Hunton *et al.*, 2006; Jo and Kim, 2007; Katmun, 2012; Riahi and Arab, 2011).

Among the control variables, BRDIND is significantly negative related to EM. The result suggests that the higher the non-executive directors on the board, the lower the magnitude of discretionary accruals. This is consistent with previous studies finding (Bedard *et al.*, 2004; Habbash, 2010; Klein, 2002; Xie *et al.*, 2003). The result is also indicating a significant and negative relationship between BRDFINEXP and EM confirming the previous studies result (Bedard *et al.*, 2004; Park and Shin, 2004). This proposes that the independent directors with corporate and financial background are stringent to deter EM. Moreover, a negative and significant relationship between BRDSIZE and EM indicates that the BRDSIZE is effective in monitoring the financial reporting and, in turn, reduce EM. Prior studies too found the same result (Hoitash *et al.*, 2009; Linck *et al.*, 2008; Xie *et al.*, 2003).

This study result shows that ACIND is negative and significantly associated with EM. The result is agreement with the previous studies (Kao and Chen, 2004; Xie *et al.*, 2003) and suggests that the ACIND plays a significant role in preventing and detecting any manipulation in financial reporting. The study also indicates that ACFINEXP is negative and significantly related to EM activity and suggests that having audit committee with relevant financial expertise enables to constrain the managers' behavior and, in turn, reduce EM. Abbott *et al.* (2004) and Dhaliwal *et al.* (2010) found similar result. ACSIZE is significantly negative associated with EM, suggesting that the ACSIZE affects EM activity. Lin *et al.* (2006) found the similar result.

Consistent with the alignment of the interest hypothesis, MNGOWNRSHP is significantly negative related to EM. This proposes that the higher the MNGOWNRSHP, the lower the level of DAC, confirming the findings of Gul *et al.* (2003) and Klein (2002). INSTITUTNL is significant and negatively associated with EM, suggesting that INSTITUTNL are effective in constraining managerial behavior of the EM. Similar evidence is found in previous studies (Charitou *et al.*, 2007; Cheng and Reitenga, 2009; Yu, 2008). A negative and significant relationship between EBH and DAC suggests that the portion of EBH has influence on EM. Previous studies found a similar relationship (Klein, 2002; Wang, 2006).

FRMSIZE is associated with lower EM to decrease the profitability of adverse influence from political exposure. Lobo and Zhou (2006) found a negative relationship. ROA is negative and significantly associated with EM, given that companies making high profits are supposed to make no EM efforts to reach their earnings threshold (Habbash, 2010; Katmun, 2012). LEV is significant and positive, providing indicator that an increase in LEV induces managers to manage earnings to evade debt covenant violation. The same result was found in prior studies (Chen *et al.*, 2006; Jelinek, 2007; Jo and Kim, 2007). CFO is negative and significantly associated with EM, suggesting that

companies with strong CFO are less probable involvement in EM (Gul *et al.*, 2009; Lobo and Zhou, 2006). Previous researches have shown that companies hiring Big4 audit firms reported lower magnitude of EM (Davidson *et al.*, 2004; Hashim and Devi, 2008; Kent *et al.*, 2010).

5.3 Sensitivity analyses

One of the prime presumptions of the OLS regression is the homogeneity of variance of the residuals. If the model is fully fitted, there must be no type to the residuals marked opposed to the fitted values. If the residuals variance is not constant subsequently the variance of residual is heteroscedastic. One prevalent technique to heteroscedasticity correction is the employment of robust standard error (RSE). RSE address the errors problem, which are non-independent and similarly distributed. The RSE use will not alter the coefficient estimations generated through OLS; however, they alter the standard errors and significant analyses. Thus, RSE OLS regression is further reliable in the heteroscedasticity existence.

A parametric test using RSE OLS (fixed-effects) is adopted as a robustness test for the major results (Dimitropoulos and Asteriou, 2010). Table IV displays that there are no variances among the major test employing the non-parametric analysis and the findings of the parametric analysis of the model. The findings display the similar significance level, and the coefficient displays the similar directions for whole variables only adjusted R^2 that dropped from 45.3 to 42.8 per cent. The finding displays that using various pertinent statistical methods assures these findings of the current study's results are robust.

DAC	Predicted sign	Coefficient	Z	P > Z	P > t
DQ	–	–0.097	–1.79	0.073	*
BRDIND	–	–0.051	–2.92	0.004	***
BRDFINEXP	–	–0.038	–1.79	0.074	*
BRDSIZE	–	–0.005	–1.90	0.058	*
ACIND	–	–0.056	–2.62	0.009	***
ACFINEXP	–	–0.025	–1.81	0.071	*
ACSIZE	–	–0.006	–1.79	0.074	*
MNGOWNSHP	–	–0.060	–2.69	0.008	***
INSTITUTNL	–	–0.071	–2.64	0.009	***
EBH	–	–0.062	–1.66	0.097	*
FRMSIZE	–	–2.830	–1.87	0.063	*
ROA	–	–0.003	–1.65	0.100	*
LEV	+	0.198	3.71	0.000	***
CFO	–	–0.005	–2.43	0.016	**
BIG4	–	–0.025	–2.66	0.008	***
-cons		0.374	8.50	0.000	***

Adjusted $R^2 = 0.428$

$F(15, 328) = 18.110$

Prob. > $F = 0.000$

Table IV.
OLS regression (fixed effects) ($N = 344$)

Notes: *** Significant at 0.01 level; ** significant at 0.05 level; * significant at 0.10 level

Generally, EM studies use models of the single-equation regression; latest studies have proposed that a concurrent equations method could be suitable, as the models that encompassing variables of the corporate governance suffer from endogeneity (Coles *et al.*, 2008; McKnight and Weir, 2009). This research uses an instrumental variable with two-stage regression (2SLS) method test and uses the endogenous variables lagged values for tools. Hausman analysis is used to examine whether there is some endogeneity bias for the independent variable (Greene, 2007). Hausman analysis displays non-significant indication of an endogeneity bias at 0.05 level ($w^2 \frac{1}{4} 2.493, p = 0.198$) that has due significant implications. First, same findings must be acquired using either 2SLS or OLS, and second, the lagged independent variable is probable to be valid tool variable since passing Hausman analysis. The findings of 2SLS are presented in Table V. The 2SLS findings are consistent with the OLS findings stated previously (Table IV). Hence, endogeneity does not exert excessive impact on the findings of this research.

6. Summary and conclusions

The study analyzes DQ of 86 Jordanian companies. It inspects the association between DQ and EM that has obviously practical sequels ever after the preface of novel rules on limpidity, impartiality, corporate governance and FRQ. Contemporary financial accounting scandals and enactments emphasize the stringent role of DQ in FRQ.

The current study appends to increasing international literature of the associations between various governance mechanisms and FRQ. From a practical view, this research provides DQ evidence in what manner they could enhance and generate FRQ. Management in industrial sector would persist to exploit in the DQ to improve the financial reporting precision and dependability. Superintendents and investors would request more

DAC	Predicted sign	Coefficient	Z	P > Z	P > t
DQ	-	-0.097	-1.79	0.074	*
BRDIND	-	-0.051	-2.92	0.004	***
BRDFINEXP	-	-0.038	-1.79	0.074	*
BRDSIZE	-	-0.005	-1.90	0.058	*
ACIND	-	-0.056	-2.62	0.009	***
ACFINEXP	-	-0.025	-1.81	0.071	*
ACSIZE	-	-0.006	-1.79	0.074	*
MNGOWNSHP	-	-0.060	-2.69	0.008	***
INSTITUTNL	-	-0.071	-2.64	0.009	***
EBH	-	-0.062	-1.66	0.097	*
FRMSIZE	-	-2.830	-1.87	0.063	*
ROA	-	-0.003	-1.65	0.100	*
LEV	+	0.198	3.71	0.000	***
CFO	-	-0.005	-2.43	0.016	**
BIG4	-	-0.025	-2.66	0.008	***
-cons		0.374	8.50	0.000	***

Adjusted $R^2 = 0.428$

$F(15, 328) = 15.800$

Prob. > $F = 0.000$

Table V.
Instrumental
variables (2SLS)
regression ($N = 344$)

Notes: *** Significant at 0.01 level; ** significant at 0.05 level; * significant at 0.10 level

information to assure utmost financial reporting transparency and consistency. In this meaning, the recent financial scandals emphasize the necessity for financial improvement to restore constancy for financial method and secure and safe guard from futuristic scandals. From a theoretical view, the research assists to reinforce the models of corporate governance that comprise DQ, as sturdy governance participation for FRQ. Hence, DQ is a vital mechanism of corporate governance that affects FRQ.

Focusing on particular features of the empirical evidence, the result shows that as the level of the DQ increases, the EM reduces, consequently decreasing the agency cost and increasing the further disclosure in the annual reports. Previous studies had comparable findings (Bauer and Boritz, 2013; Hunton *et al.*, 2006; Latridis and Kadorinis, 2009; Jo and Kim, 2007; Katmun, 2012; Lapointe-Antunes *et al.*, 2006; Riahi and Arab, 2011). This research appends empirical confirmation for the theoretical framework, achieving its unique objective.

This study's results are consistent with the agency theory framework, that assumes that high DQ reduces information asymmetry and enable investors to detect EM activity. Consequently, DQ influences EM negatively and accordingly improves FRQ. Moreover, the results also reveal lower level of the EM when board (independence, financial expert members and large size), audit committee (independence, at best one member with financial expertise and larger size), ownership (managerial, institutional and external block-holders are high) and the firm size is high, ROA is connected to investment opportunity, high CFO, hire Big4 audit firms and higher EM when the leverage is high.

The findings of this study make the following contributions. First, this study is the premier study in Jordan that investigates the relationship between DQ and EM. The results will provide additional evidence on the association among the two variables. Second, the study contributes to the disclosure index expansion for Jordanian firms. This study evaluates the appropriateness of the Beattie *et al.* (2004) themes to the Jordanian companies reporting practices. The study findings assort particular reliable insights for the decision-making and policy makers, in addition to the investors about the corporate governance role in enhancing FRQ. The findings of this study will be largely beneficial to the shareholders, management and members of the public who are concerned about the detrimental effects of the EM. In general, this study is useful for researchers who are investigating the implications of DQ in deterring EM. Moreover, limited studies consider a comprehensive set of governance variables in the control variables, when examining the relationship between DQ and the EM.

This study results are subject to numerous limitations. One of the limitations in this study is measurement error which is decisive problem for EM studies. Thus, this study inherits all the limitations of the modified Jones model (1995). Further research may be carried out to concentrating on other countries or another DQ measurement like Global Reporting Initiatives.

References

- Abbott, L.J., Parker, S. and Peters, G.F. (2004), "Audit committee characteristics and restatements", *Auditing: A Journal of Practice & Theory*, Vol. 23 No. 1, pp. 69-87.
- Al-Akra, M., Ali, M.J. and Marshdeh, O. (2009), "Development of accounting regulation in Jordan", *The International Journal of Accounting*, Vol. 44 No. 2, pp. 163-186.

- Al-khabash, A.A. and Al-Thuneibat, A.A. (2009), "Earnings management practices from the perspective of external and internal auditors: evidence from Jordan", *Managerial Auditing Journal*, Vol. 24 No. 1, pp. 58-80.
- Archambault, J.J. and Archambault, M.E. (2003), "A multinational test of determinants of corporate disclosure", *The International Journal of Accounting*, Vol. 38 No. 2, pp. 173-194.
- Arcot, S., Bruno, V. and Faure-Grimaud, A. (2010), "Corporate governance in the UK: is the comply or explain approach working?", *International Review of Law and Economics*, Vol. 30 No. 2, pp. 193-201.
- ASE (2007), "Amman stock exchange", available at: www.ammanstockex.com.jo
- Ashbaugh, H., LaFond, R. and Mayhew, B.W. (2003), "Do non-audit services compromise auditor independence? Further evidence", *The Accounting Review*, Vol. 78 No. 3, pp. 611-639.
- Baker, T.A., Collins, D.L. and Reitenga, A.L. (2009), "Incentives and opportunities to manage earnings around option grants", *Contemporary Accounting Research*, Vol. 26 No. 3, pp. 649-672.
- Ball, R. and Shivakumar, L. (2005), "Earnings quality in UK private firms: comparative loss recognition timeliness", *Journal of Accounting and Economics*, Vol. 39 No. 1, pp. 83-128.
- Balsam, S., Bartov, E. and Marquardt, C. (2002), "Accruals management, investor sophistication, and equity valuation: evidence from 10-Q filings", *Journal of Accounting Research*, Vol. 40 No. 4, pp. 987-1012.
- Bartov, E., Radhakrishnan, S. and Krinsky, I. (2000), "Investor sophistication and patterns in stock returns after earnings announcements timeliness of earnings", *Journal of Accounting and Economics*, Vol. 24 No. 1, pp. 3-37.
- Bauer, T. and Boritz, J.E. (2013), "Corporate reporting awards and financial reporting quality", Working paper, available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1534598
- Beattie, V., McInnes, B. and Fearnley, S. (2004), "A methodology for analysing and evaluating narratives in annual reports: a comprehensive descriptive profile and metrics for disclosure quality attributes", *Accounting Forum*, Vol. 28 No. 3, pp. 205-236.
- Bebchuk, L.A. and Hamdani, A. (2009), "The elusive quest for global governance standards", *University of Pennsylvania Law Review*, Vol. 157, pp. 1263-1317.
- Becker, C.L., DeFond, M.L., Jiambalvo, J. and Subramanyam, K. (1998), "The effect of audit quality on earnings management", *Contemporary Accounting Research*, Vol. 15 No. 1, pp. 1-24.
- Bedard, J., Chtourou, S.M. and Courteau, L. (2004), "The effect of audit committee expertise, independence, and activity on aggressive earnings management", *Auditing: A Journal of Practice & Theory*, Vol. 23 No. 2, pp. 13-35.
- Beretta, S. and Bozzolan, S. (2008), "Quality versus quantity: the case of forward-looking disclosure", *Journal of Accounting, Auditing & Finance*, Vol. 23 No. 3, pp. 333-376.
- Botosan, C.A. and Plumlee, M.A. (2002), "A re-examination of disclosure level and the expected cost of equity capital", *Journal of Accounting Research*, Vol. 40 No. 1, pp. 21-40.
- Brennan, N. (2006), "Boards of directors and firm performance: is there an expectations gap?", *Corporate Governance: An International Review*, Vol. 14 No. 6, pp. 577-593.
- Brick, I.E., Chidambaram, N. and Tuckman, H. (2012), "Corporate director independence, actions and ethics: a survey", *Accounting and Finance Research*, Vol. 1 No. 1, pp. 116-133.
- Brown, P., Beekes, W. and Verhoeven, P. (2011), "Corporate governance, accounting and finance: a review", *Accounting & Finance*, Vol. 51 No. 1, pp. 96-172.
- Brown, S., Hillegeist, S.A. and Lo, K. (2004), "Conference calls and information asymmetry", *Journal of Accounting and Economics*, Vol. 37 No. 3, pp. 343-366.

- Burgstahler, D. and Dichev, I. (1997), "Earnings management to avoid earnings decreases and losses", *Journal of Accounting and Economics*, Vol. 24 No. 1, pp. 99-126.
- Burgstahler, D. and Eames, M. (2006), "Management of earnings and analysts' forecasts to achieve zero and small positive earnings surprises", *Journal of Business Finance & Accounting*, Vol. 33 Nos 5/6, pp. 633-652.
- Bushman, R.M. and Smith, A.J. (2001), "Financial accounting information and corporate governance", *Journal of Accounting and Economics*, Vol. 32 No. 1, pp. 237-333.
- Charitou, A., Lambertides, N. and Trigeorgis, L. (2007), "Earnings behavior of financially distressed firms: the role of institutional ownership", *ABACUS*, Vol. 43 No. 3, pp. 271-296.
- Charoenwong, C. and Jiraporn, P. (2009), "Earnings management to exceed thresholds: evidence from Singapore and Thailand", *Journal of Multinational Financial Management*, Vol. 19 No. 3, pp. 221-236.
- Cheng, C.A. and Reitenga, A. (2009), "Characteristics of institutional investors and discretionary accruals", *International Journal of Accounting and Information Management*, Vol. 17 No. 1, pp. 5-26.
- Chen, G., Firth, M., Gao, D.N. and Rui, O.M. (2006), "Ownership structure, corporate governance, and fraud: evidence from China", *Journal of Corporate Finance*, Vol. 12 No. 3, pp. 424-448.
- Christie, A.A. and Zimmerman, J.L. (1994), "Efficient and opportunistic choices of accounting procedures: corporate control contests", *The Accounting Review*, Vol. 69 No. 4, pp. 539-566.
- Coles, J.L., Daniel, N.D. and Naveen, L. (2008), "Boards: does one size fit all?", *Journal of Financial Economics*, Vol. 87 No. 2, pp. 329-356.
- Cormier, D. and Martinez, I. (2006), "The association between management earnings forecasts, earnings management, and stock market valuation: evidence from French IPOs", *The International Journal of Accounting*, Vol. 41 No. 3, pp. 209-236.
- Cormier, D., Magnan, M. and Morard, B. (2000), "The contractual and value relevance of reported earnings in a dividend-focused environment", *European Accounting Review*, Vol. 9 No. 3, pp. 387-417.
- Cornett, M.M., Marcus, A.J. and Tehranian, H. (2008), "Corporate governance and pay-for-performance: the impact of earnings management", *Journal of Financial Economics*, Vol. 87 No. 2, pp. 357-373.
- Cronqvist, H. and Fahlenbrach, R. (2009), "Large shareholders and corporate policies", *Review of Financial Studies*, Vol. 22 No. 10, pp. 3941-3976.
- Davidson, W.N., Jiraporn, P., Kim, Y.S. and Nemecek, C. (2004), "Earnings management following duality-creating successions: ethnostatistics, impression management, and agency theory", *Academy of Management Journal*, Vol. 47 No. 2, pp. 267-275.
- Dechow, P.M., Sloan, R.G. and Sweeney, A.P. (1995), "Detecting earnings management", *The Accounting Review*, Vol. 70 No. 2, pp. 193-225.
- Dedman, E., Lin, S.W.J., Prakash, A.J. and Chang, C.H. (2008), "Voluntary disclosure and its impact on share prices: evidence from the UK biotechnology sector", *Journal of Accounting and Public Policy*, Vol. 27 No. 3, pp. 195-216.
- DeFond, M.L. and Jiambalvo, J. (1994), "Debt covenant violation and manipulation of accruals", *Journal of Accounting and Economics*, Vol. 17 No. 1, pp. 145-176.
- Dhaliwal, D.S., Gleason, C.A. and Mills, L.F. (2004), "Last-chance earnings management: using the tax expense to meet analysts' forecasts", *Contemporary Accounting Research*, Vol. 21 No. 2, pp. 431-459.

- Dhaliwal, D., Naiker, V. and Navissi, F. (2010), "The association between accruals quality and the characteristics of accounting experts and mix of expertise on audit committees", *Contemporary Accounting Research*, Vol. 27 No. 3, pp. 787-827.
- Dimitropoulos, P.E. and Asteriou, D. (2010), "The effect of board composition on the informativeness and quality of annual earnings: empirical evidence from Greece", *Research in International Business and Finance*, Vol. 24 No. 2, pp. 190-205.
- Donnelly, R. and Mulcahy, M. (2008), "Board structure, ownership, and voluntary disclosure in Ireland", *Corporate Governance: An International Review*, Vol. 16 No. 5, pp. 416-429.
- DuCharme, L.L., Malatesta, P.H. and Sefcik, S.E. (2004), "Earnings management, stock issues, and shareholder lawsuits", *Journal of Financial Economics*, Vol. 71 No. 1, pp. 27-49.
- Espinosa, B.M. and Trombetta, M. (2004), "The reputational consequences of disclosure", IVIE Working Paper No. EC, 2004-2010, available at SSRN: <http://ssrn.com/abstract=511682> or <http://dx.doi.org/10.2139/ssrn.511682>
- Fields, T.D., Lys, T.Z. and Vincent, L. (2001), "Empirical research on accounting choice", *Journal of Accounting and Economics*, Vol. 31 No. 1, pp. 255-307.
- Francis, J.R., Maydew, E.L. and Sparks, H.C. (1999), "The role of Big 6 auditors in the credible reporting of accruals", *Auditing: A Journal of Practice & Theory*, Vol. 18 No. 2, pp. 17-34.
- Friedlan, J.M. (1994), "Accounting choices of issuers of initial public offerings", *Contemporary Accounting Research*, Vol. 11 No. 1, pp. 1-31.
- Ghofar, A. and Saraswati, E. (2009), "Problems in financial reporting: the analysis of quality of disclosure and the measurement system of the traditional accounting", available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1802916
- Gibbins, M., Richardson, A. and Waterhouse, J. (1990), "The management of corporate financial disclosure: opportunism, ritualism, policies, and processes", *Journal of Accounting Research*, Vol. 28 No. 1, pp. 121-143.
- Giroux, G.A. (2004), *Detecting Earnings Management*, Wiley, New York, NY.
- Goncharov, I. (2005), *Earnings Management and its Determinants: Closing Gaps in Empirical Accounting Research*, Peter Lang, New York, NY.
- Gray, S.J. and Skogsvik, K. (2004), "Voluntary disclosures of quoted pharmaceutical companies in Sweden and the UK: the development over the period 1984-1998", *European Accounting Review*, Vol. 13 No. 4, pp. 787-805.
- Greene, W. (2007), *Functional Form and Heterogeneity in Models for Count Data*, Now Publishers, London.
- Guay, W.R., Kothari, S. and Watts, R.L. (1996), "A market-based evaluation of discretionary accrual models", *Journal of Accounting Research*, Vol. 34 No. 1, pp. 83-105.
- Gujarati, D.N. (2003), *Basic Econometrics*, 4th ed., McGraw-Hill, New York, NY.
- Gul, F.A., Chen, C.J. and Tsui, J.S. (2003), "Discretionary accounting accruals, managers' incentives, and audit fees", *Contemporary Accounting Research*, Vol. 20 No. 3, pp. 441-464.
- Gul, F.A., Fung, S.Y.K. and Jaggi, B. (2009), "Earnings quality: some evidence on the role of auditor tenure and auditors' industry expertise", *Journal of Accounting and Economics*, Vol. 47 No. 3, pp. 265-287.
- Habbash, M. (2010), *The Effectiveness of Corporate Governance and External Audit on Constraining Earnings Management Practice in the UK*, Durham University, Durham.
- Hair, J.F. (2009), *Multivariate Data Analysis*, Prentice-Hall, Engelwood Cliffs, NJ.

- Hashim, H.A. and Devi, S. (2008), "Board characteristics, ownership structure and earnings quality: Malaysian evidence", *Research in Accounting in Emerging Economies*, Vol. 8 No. 1, pp. 97-123.
- Hausman, J.A. (1978), "Specification tests in econometrics", *Econometrica: Journal of the Econometric Society*, pp. 1251-1271.
- Healy, P.M. and Palepu, K.G. (2001), "Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature", *Journal of Accounting and Economics*, Vol. 31 No. 1, pp. 405-440.
- Healy, P.M. and Wahlen, J.M. (1999), "A review of the earnings management literature and its implications for standard setting", *Accounting Horizons*, Vol. 13 No. 4, pp. 365-383.
- Healy, P.M., Hutton, A.P. and Palepu, K.G. (1999), "Stock performance and intermediation changes surrounding sustained increases in disclosure", *Contemporary Accounting Research*, Vol. 16 No. 3, pp. 485-520.
- Hoitash, U., Hoitash, R. and Bedard, J.C. (2009), "Corporate governance and internal control over financial reporting: A comparison of regulatory regimes", *The Accounting Review*, Vol. 84 No. 3, pp. 839-867.
- Holm, C. and Schøler, F. (2010), "Reduction of asymmetric information through corporate governance mechanisms—the importance of ownership dispersion and exposure toward the international capital market", *Corporate Governance: An International Review*, Vol. 18 No. 1, pp. 32-47.
- Hope, O.K. and Thomas, W.B. (2008), "Managerial empire building and firm disclosure", *Journal of Accounting Research*, Vol. 46 No. 3, pp. 591-626.
- Hribar, P. and Collins, D.W. (2002), "Errors in estimating accruals: Implications for empirical research", *Journal of Accounting Research*, Vol. 40 No. 1, pp. 105-134.
- Hsu, G.C.M. and Koh, P.S. (2005), "Does the presence of institutional investors influence accruals management? Evidence from Australia", *Corporate Governance: An International Review*, Vol. 13 No. 6, pp. 809-823.
- Hunton, J.E., Libby, R. and Mazza, C.L. (2006), "Financial reporting transparency and earnings management", *The Accounting Review*, Vol. 81 No. 1, pp. 135-157.
- Jaffar, R., Jamaludin, S. and Rahman, M. (2007), "Determinant factors affecting quality of reporting in annual report of Malaysian companies", *Malaysian Accounting Review*, Vol. 6 No. 2, pp. 19-42.
- JCGC (2007), "Corporate governance code for shareholding companies listed on the Amman Stock Exchange (JCGC)", available at: www.jsc.gov.jo/Public/english.aspx?Lang=1&Page_Id=225&Menu_ID2=257
- Jelinek, K. (2007), "The effect of leverage increases on earnings management", *Journal of Business & Economic Studies*, Vol. 13 No. 2, pp. 24-46.
- Jensen, M.C. (1993), "The modern industrial revolution, exit, and the failure of internal control systems", *The Journal of Finance*, Vol. 48 No. 3, pp. 831-880.
- Jensen, M.C. and Meckling, W.H. (1976), "Theory of the firm: managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, Vol. 3 No. 4, pp. 305-360.
- JFED (2003), "The state of corporate governance in Jordan", *The Economic Policy Dialogue*, Vol. 1 No. 1, pp. 1-6.
- Jo, H. and Kim, Y. (2007), "Disclosure frequency and earnings management", *Journal of Financial Economics*, Vol. 84 No. 2, pp. 561-590.

- Jones, J.J. (1991), "Earnings management during import relief investigations", *Journal of Accounting Research*, Vol. 29 No. 2, pp. 193-228.
- Judge, G.G., Griffiths, W.E., Hill, R.C., Lütkepohl, H. and Lee, T.C. (1985), *The Theory and Practice of Econometrics*, Wiley, New York, NY.
- Kanagaretnam, K., Lobo, G.J. and Whalen, D.J. (2007), "Does good corporate governance reduce information asymmetry around quarterly earnings announcements?", *Journal of Accounting and Public Policy*, Vol. 26 No. 4, pp. 497-522.
- Kao, L. and Chen, A. (2004), "The effects of board characteristics on earnings management", *Corporate Ownership & Control*, Vol. 1 No. 3, pp. 96-107.
- Katmun, N. (2012), *Disclosure Quality Determinants and Consequences*, Durham University, Durham.
- Keller, G. and Warrack, B. (2003), *Statistics for Management and Economics*, Thomson, Stamford.
- Kent, P. and Stewart, J. (2008), "Corporate governance and disclosures on the transition to international financial reporting standards", *Accounting & Finance*, Vol. 48 No. 4, pp. 649-671.
- Kent, P., Routledge, J. and Stewart, J. (2010), "Innate and discretionary accruals quality and corporate governance", *Accounting & Finance*, Vol. 50 No. 1, pp. 171-195.
- Kiel, G.C. and Nicholson, G.J. (2003), "Board composition and corporate performance: how the Australian experience informs contrasting theories of corporate governance", *Corporate Governance: An International Review*, Vol. 11 No. 3, pp. 189-205.
- Kim, J.W. and Shi, Y. (2011), "Voluntary disclosure and the cost of equity capital: evidence from management earnings forecasts", *Journal of Accounting and Public Policy*, Vol. 30 No. 4, pp. 348-366.
- Kim, O. and Verrecchia, R.E. (1994), "Market liquidity and volume around earnings announcements", *Journal of Accounting and Economics*, Vol. 17 No. 1, pp. 41-67.
- Klein, A. (2002), "Audit committee, board of director characteristics, and earnings management", *Journal of Accounting and Economics*, Vol. 33 No. 3, pp. 375-400.
- Lang, M.H. and Lundholm, R.J. (2000), "Voluntary disclosure and equity offerings: reducing information asymmetry or hyping the Stock?", *Contemporary Accounting Research*, Vol. 17 No. 4, pp. 623-662.
- Lanis, R. and Richardson, G. (2011), "The effect of board of director composition on corporate tax aggressiveness", *Journal of Accounting and Public Policy*, Vol. 30 No. 1, pp. 50-70.
- Lapointe-Antunes, P., Cormier, D., Magnan, M. and Gay-Angers, S. (2006), "On the relationship between voluntary disclosure, earnings smoothing and the value-relevance of earnings: the case of Switzerland", *European Accounting Review*, Vol. 15 No. 4, pp. 465-505.
- Latridis, G. and Kadorinis, G. (2009), "Earnings management and firm financial motives: a financial investigation of UK listed firms", *International Review of Financial Analysis*, Vol. 18 No. 4, pp. 164-179.
- Lin, J.W. and Hwang, M.I. (2010), "Audit quality, corporate governance, and earnings management: a meta-analysis", *International Journal of Auditing*, Vol. 14 No. 1, pp. 57-77.
- Lin, J.W., Li, J.F. and Yang, J.S. (2006), "The effect of audit committee performance on earnings quality", *Managerial Auditing Journal*, Vol. 21 No. 9, pp. 921-933.
- Linck, J.S., Netter, J.M. and Yang, T. (2008), "The determinants of board structure", *Journal of Financial Economics*, Vol. 87 No. 2, pp. 308-328.
- Lobo, G.J. and Zhou, J. (2001), "Disclosure quality and earnings management", *Asia-Pacific Journal of Accounting & Economics*, Vol. 8 No. 1, pp. 1-20.

- Lobo, G.J. and Zhou, J. (2006), "Did conservatism in financial reporting increase after the Sarbanes-Oxley Act? Initial evidence", *Accounting Horizons*, Vol. 20 No. 1, pp. 57-73.
- Loderer, C. and Peyer, U. (2002), "Board overlap, seat accumulation and share prices", *European Financial Management*, Vol. 8 No. 2, pp. 165-192.
- Lundholm, R. and Myers, L.A. (2002), "Bringing the future forward: the effect of disclosure on the returns-earnings relation", *Journal of Accounting Research*, Vol. 40 No. 3, pp. 809-839.
- McKnight, P.J. and Weir, C. (2009), "Agency costs, corporate governance mechanisms and ownership structure in large UK publicly quoted companies: a panel data analysis", *The Quarterly Review of Economics and Finance*, Vol. 49 No. 2, pp. 139-158.
- Meyer, M.J., Karim, K.E. and Gara, S. (2000), "Political costs and accounting method choice: the pharmaceutical industry", *The Mid-Atlantic Journal of Business*, Vol. 36 No. 4, pp. 193-215.
- Mouselli, S., Jaafar, A. and Hussainey, K. (2012), "Accruals quality vis-à-vis disclosure quality: substitutes or complements?", *The British Accounting Review*, Vol. 44 No. 1, pp. 36-46.
- Omar, B. and Simon, J. (2011), "Corporate aggregate disclosure practices in Jordan", *Advances in Accounting*, Vol. 27 No. 1, pp. 166-186.
- Park, Y.W. and Shin, H.H. (2004), "Board composition and earnings management in Canada", *Journal of Corporate Finance*, Vol. 10 No. 3, pp. 431-457.
- Pergola, T.M. (2005), "Management entrenchment: can it negate the effectiveness of recently legislated governance reform", *The Journal of American Academy of Business Cambridge*, Vol. 6 No. 2, pp. 177-183.
- Persons, O.S. (2006), "Corporate governance and non-financial reporting fraud", *The Journal of Business and Economic Studies*, Vol. 12 No. 1, pp. 27-40.
- Phillips, J., Pincus, M. and Rego, S.O. (2003), "Earnings management: new evidence based on deferred tax expense", *The Accounting Review*, Vol. 78 No. 2, pp. 491-521.
- Rahman, R.A. and Ali, F.H.M. (2006), "Board, audit committee, culture and earnings management: Malaysian evidence", *Managerial Auditing Journal*, Vol. 21 No. 7, pp. 783-804.
- Rajgopal, S. and Venkatachalam, M. (2011), "Financial reporting quality and idiosyncratic return volatility", *Journal of Accounting and Economics*, Vol. 51 No. 1, pp. 1-20.
- Riahi, Y. and Arab, M.B. (2011), "Disclosure frequency and earnings management: an analysis in the Tunisian context", *Journal of Accounting and Taxation*, Vol. 3 No. 3, pp. 47-59.
- Richardson, V.J. (2000), "Information asymmetry and earnings management: some evidence", *Review of Quantitative Finance and Accounting*, Vol. 15 No. 4, pp. 325-347.
- Ronen, J. and Yaari, V. (2008), *Earnings Management: Emerging Insights in Theory, Practice, and Research*, Springer, New York, NY.
- ROSC (2005), "'Report on the observance of standards and codes', Corporate Governance Country Assessment", electronic version, published Feb 3, 2005, by the joint World Bank-IMF program of reports on the observance of standards and codes, Jordan, <jor_rosc_cg.pdf>.
- Schipper, K. (1989), "Commentary on earnings management", *Accounting Horizons*, Vol. 3 No. 4, pp. 91-102.
- Scott, W.R. (2003), *Financial Accounting Theory*, Prentice Hall, Upper Saddle River, NJ.
- Sengupta, P. (1998), "Corporate disclosure quality and the cost of debt", *The Accounting Review*, Vol. 73 No. 4, pp. 459-474.
- Shaw, K.W. (2003), "Corporate disclosure quality, earnings smoothing, and earnings' timeliness", *Journal of Business Research*, Vol. 56 No. 12, pp. 1043-1050.

- Shen, C.H. and Chih, H.L. (2005), "Investor protection, prospect theory, and earnings management: an international comparison of the banking industry", *Journal of Banking & Finance*, Vol. 29 No. 10, pp. 2675-2697.
- Shleifer, A. and Vishny, R.W. (1997), "A survey of corporate governance", *The Journal of Finance*, Vol. 52 No. 2, pp. 737-783.
- Singhvi, S.S. and Desai, H.B. (1971), "An empirical analysis of the quality of corporate financial disclosure", *The Accounting Review*, Vol. 46 No. 1, pp. 129-138.
- Skinner, D.J. (2003), "Should firms disclose everything to everybody? A discussion of open vs. closed conference calls: the determinants and effects of broadening access to disclosure", *Journal of Accounting and Economics*, Vol. 34 No. 1, pp. 181-187.
- Song, J. and Windram, B. (2004), "Benchmarking audit committee effectiveness in financial reporting", *International Journal of Auditing*, Vol. 8 No. 3, pp. 195-205.
- Stolowy, H. and Lebas, M. (2002), *Corporate Financial Reporting: A Global Perspective*, Thomson Learning, Boston.
- Tadesse, S. (2006), "The economic value of regulated disclosure: evidence from the banking sector", *Journal of Accounting and Public Policy*, Vol. 25 No. 1, pp. 32-70.
- Trueman, B. and Titman, S. (1988), "An explanation for accounting income smoothing", *Journal of Accounting Research*, Vol. 26 No. 4, pp. 127-139.
- Velury, U. (2003), "The association between auditor industry specialization and earnings management", *Research in Accounting Regulation*, Vol. 16 No. 1, pp. 171-184.
- Wang, D. (2006), "Founding family ownership and earnings quality", *Journal of Accounting Research*, Vol. 44 No. 3, pp. 619-656.
- Warfield, T.D., Wild, J.J. and Wild, K.L. (1995), "Managerial ownership, accounting choices, and informativeness of earnings", *Journal of Accounting and Economics*, Vol. 20 No. 1, pp. 61-91.
- Watts, R.L. and Zimmerman, J. (1990), "Positive accounting theory: a ten-year perspective", *The Accounting Review*, Vol. 60 No. 1, pp. 131-156.
- Wright, C.J., Shaw, J.R. and Guan, L. (2006), "Corporate governance and investor protection: earnings management in the UK and US", *Journal of International Accounting Research*, Vol. 5 No. 1, pp. 25-40.
- Xie, B., Davidson, W.N. and DaDalt, P.J. (2003), "Earnings management and corporate governance: the role of the board and the audit committee", *Journal of Corporate Finance*, Vol. 9 No. 3, pp. 295-316.
- Yu, F.F. (2008), "Analyst coverage and earnings management", *Journal of Financial Economics*, Vol. 88 No. 2, pp. 245-271.
- Zhang, Y. and Liu, Y. (2009), "Comparison of parametric and nonparametric techniques for non-peak traffic forecasting", *World Academy of Science, Engineering and Technology*, Vol. 51 No. 27, pp. 8-14.

Further reading

- Brown, S. and Hillegeist, S.A. (2007), "How disclosure quality affects the level of information asymmetry", *Review of Accounting Studies*, Vol. 12 Nos 2/3, pp. 443-477.
- Heitzman, S., Wasley, C. and Zimmerman, J. (2010), "The joint effects of materiality thresholds and voluntary disclosure incentives on firms' disclosure decisions", *Journal of Accounting and Economics*, Vol. 49 No. 1, pp. 109-132.

-
- Huang, P. and Zhang, Y. (2011), "Does enhanced disclosure really reduce agency costs? Evidence from the diversion of corporate resources", *The Accounting Review*, Vol. 87 No. 1, pp. 199-229.
- Jiraporn, P., Miller, G.A., Yoon, S.S. and Kim, Y.S. (2008), "Is earnings management opportunistic or beneficial? An agency theory perspective", *International Review of Financial Analysis*, Vol. 17 No. 3, pp. 622-634.
- Junker, L. (2005), *Equity Carveouts, Agency Costs, and Firm Value*, Gabler edition Wissenschaft, Springer, DE.
- Peasnell, K.V., Pope, P.F. and Young, S. (2000), "Detecting earnings management using cross-sectional abnormal accruals models", *Accounting and Business Research*, Vol. 30 No. 4, pp. 313-326.
- Petersen, C. and Plenborg, T. (2006), "Voluntary disclosure and information asymmetry in Denmark", *Journal of International Accounting, Auditing and Taxation*, Vol. 15 No. 2, pp. 127-149.

No.	Code	Description
	<i>BD</i>	<i>Business description</i>
1	BUS	General development of business
2	PROD	Principal products/services
3	MKT	Principal markets and market segments
4	PRO	Processes
5	MAC	Types of macroeconomic activity that management believes are closely correlated with business revenues or expenses
6	PAT	Description of important patents, trademarks licenses, franchises etc.
7	PROPS	Location, nature, capacity and utilization of physical properties
8	RELA	Major contractual relationships
9	INP	Key inputs
10	REG	Existing and proposed laws and regulations that could impact business significantly
11	DIST	Distribution and delivery methods
12	IND	Industry
13	SEAS	Seasonality and cyclicity
	<i>MS</i>	<i>Financial information</i>
14	PROF	Profit and profitability measures, including EPS
15	SAL	Sales
16	CF	Cash flow
17	OTH	Other
18	DEBT	Debt
19	GEAR	Gearing
20	INT	Interest
21	TAX	Tax
22	CAPEX	Capital expenditure
23	WC	Working capital
24	INTCOV	Interest cover
25	DIV	Dividends
26	PENS	Pensions
	<i>MA</i>	<i>Management analysis</i>
27	MKT	Reasons for change in market acceptance
28	PROF	Reasons for change in profitability
29	MAC	Identity and past effect of key macroeconomic trends
30	OTH	Reasons for change—other
31	UNU	Identity, effect of unusual or nonrecurring transactions and events
32	RAT	Reasons for change in ratios
33	LIQ	Reasons for change in liquidity and financial flexibility
34	REG	Identity and past effect of key regulatory trends
35	FPOS	Reasons for change in financial position
36	INN	Reasons for change in innovation
37	SOC	Identity and past effect of key social trends
38	TECH	Identity and past effect of key technological trends
39	POL	Identity and past effect of key political trends
40	DEM	Identity and past effect of key demographic trends

Table AI.
Disclosure index

(continued)

No.	Code	Description
	<i>MS</i>	<i>Management and shareholder information</i>
41	SHAREHOLDER	Identity and background of directors and executive management
42	SHAREHOLDER	Identity and number of shares owned by major owners; number of shares owned by directors, management and employees, each as a group
43	RELA	Transactions and relationships among related parties
44	COMP	Types and amount of director and executive management compensation and methods of computation
45	DIS	Nature of disagreements with former business advisors
	<i>OP</i>	<i>Operating data</i>
46	REV	Revenues, e.g. level and changes in units and prices, market share
47	COST	Costs, e.g. number of employees, average compensation per employee
48	EMP	Employee involvement and fulfillment, e.g. level and changes in employee satisfaction
49	PRODY	Productivity, e.g. input/output ratio
50	RES	Amount and quality of key resources, including human resources, e.g. average age
51	MAT	Volume and prices of materials used
52	QUAL	Quality, e.g. customer satisfaction, % defects, backlog
53	INN	Innovation, e.g. % current production designed in period
54	TIME	Time required to perform key activities, e.g. production, delivery, new product development
55	OUT	Outlets
	<i>FL</i>	<i>Forward looking information</i>
56	PLAN	Activities and plans to meet broad objectives and business strategy
57	RISK	Nature and cause of risks
58	OPP	Nature and cause of opportunities
59	FACINT	Factors that management believes must be present, occurring within the business
60	OTH	Non-specific evaluation of future outcomes/performance
61	FACEXT	Factors that management believes must be present, occurring outside the business
62	DIFF	Identity of major differences between actual business performance and previously disclosed opportunities, risks and management plans
63	EFF	Effects of opportunities and risks on future core earnings and cash flows
	<i>NOT</i>	<i>Not Jenkins</i>
64	EMP	Employees
65	OTHLINK	Link to another part of the annual report or other source
66	COM	Business and local community
67	STD	Accounting standards and impact
68	ENV	Environmental
69	CUS	Customers
70	OTHTH	Thanks to/recognition of support of/expression of appreciation of stakeholder group/directors
71	POL	Accounting policies and impact
72	CHYE	Change in financial year-end
73	SUP	Suppliers

(continued)

Table AI.

No.	Code	Description
	<i>BOS</i>	<i>Broad objectives and strategy</i>
74	OBJ	Broad objectives, quantified where practical
75	STRAT	Principal strategies to achieve objectives
76	CON SIS	Discussion of consistency of strategy with key trends
	<i>IS</i>	<i>Industry structure</i>
77	COMP	Intensity of industry competition, dispersion of competitors and identity of major competitors; measures of intensity of competition, e.g. relative price changes, customer switches
78	CUS	Bargaining power of customers, extent of dispersion, including concentration measure identity of dominant customers; measures of relative bargaining power, e.g. recent price changes
79	SUP	Bargaining power of resource providers; identity of types of major resource and related suppliers; for each type, availability of supply; measures of relative bargaining power, e.g. recent price changes

Table AI.

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