Earnings management with the absence of income tax avoidance motivation: evidence from pre-, during, and post- global financial crisis

Received 27 April 2023
Revised 18 August 2023
3 October 2023
Accepted 4 March 2024

Osama Atayah and Hazem Marashdeh
Abu Dhabi University, Abu Dhabi, United Arab Emirates, and
Allam Hamdan
College of Business and Finance, Ahlia University, Manama, Bahrain and School of Business, The University of Jordan, Amman, Jordan

Abstract

Purpose – This study aims to examines both accrual and real-based earnings management (EM) behavior of listed corporations in tax-free countries during different economic situations. It also addresses the link between firm- and country-level determinants of accrual and real-based EM and explores economic conditions' influence on these determinants.

Design/methodology/approach – The study examines 1,608 firm-years, covers sixteen years (2004–2019), clustered into three periods according to the global financial crisis (GFC): four years prior (2004–2007), two years during (2008–2009), and ten years post the GFC (2010–2019). We employ the modified Jones model (performance-matched) developed by Kothari *et al.* (2005) to measure the accrual-based EM (positive and negative discretionary accrual EM) and the three levels model for Dechow *et al.* (1998) to measure the real-based EM (cash flow from operating, discretionary expenses and abnormal production cost).

Findings – The study finds a significant increase in EM practices in the listed corporations in tax-free countries during the economic downturn. These corporations are found to understate their earnings during the economic stress period. Simultaneously, the firm-level determinants of EM practices were at the same level of significance during different economic conditions in accrual-based EM. In contrast, the country-level EM determinants vary based on the economic conditions.

Originality/value – Financial reports' users gain a deep understanding of the quality of financial reports in the context of tax-free country. And, the study outcomes inspire policymakers to develop relevant legislation to mitigate financial reports' risk and adequately protect the financial reports' users.

Keywords Real earnings management, Accrual earnings management, Earnings quality, Tax-free countries, Investor protection, Global financial crisis

Paper type Research paper

1. Introduction

The robustness of users' economic decisions heavily relies on the accuracy and reliability of financial information (Dechow *et al.*, 2010). Industry point of view, Deloitte has collaborated with more than 100 organizations to identify the determinants of investors' economic decisions; the report revealed that 71% of investors ranked the corporations' earnings on the

Note: Supplementary materials that are included in the article are available online.

Asian Journal of Accounting Research
Vol. 9 No. 2, 2024
pp. 153-168
Emerald Publishing Limited
e-ISSN: 2443-4175
p-ISSN: 2459-9700
DOI 10.1108/AJAR-04-2023-0130

top of economic decisions determinants. Consistently, scholars pointed to the necessity of high-quality firms' income, cash flows and balance sheet accounts to reach robust users' economic decisions (Bhattacharya *et al.*, 2013). The most recognized wave of corporate failures due to financial information manipulations (e.g. Enron, Parmalat and Xerox) has dramatically eroded users' confidence in the integrity and fairness of the disclosed financial information (Cohen *et al.*, 2008). Economic globalization accelerates the interest of multinational corporation to set up offshore centers, aiming to achieve several advantages (Grossman and Rossi-hansberg, 2016). One of these advantages is the chance for tax avoidance that generally put forward as an essential driver toward this institutional trend. Indeed, many corporations have shifted their operation to tax haven countries (Guenther *et al.*, 2021). In compression, among several motivations for earnings management (EM) discussed in the literature review section, several scholars have documented that the income tax serves as one of the primary motivations to the EM practices aiming to achieve tax advantages through negative EM (Persakis and Iatridis, 2015). In this context, this study investigates the nature of EM practices in nine tax-free countries and goes beyond to assess the EM determinants in the context of these countries (Naz *et al.*, 2024). These aims have been investigated during different economic conditions, including three-period clusters, economic downturn, economic stress and economic growth. These periods are identified following the fact presented by Voskoboynikov (2017) that the consequences of financial crisis usually start before and continue following the end of the financial crisis. Therefore, the three periods have been developed based on position from the 2008 global financial crisis (GFC), economic downturn covers four years (2004–2007), economic stress that combines two years (2008–2009) and economic upturn that covers ten years (2010–2019); leading to cover sixteen years with 1,608 firm-years observations. Then we delve deeper to examine the firm- and country-levels EM determinants in the study context during the different identified economic conditions. This study offers unique contributions to existing literature in several ways. *Firstly*, it is the pioneering research to investigate EM practices in tax-free countries. *Secondly*, it comprehensively evaluates the determinants of EM in tax-free contexts at both micro and macro levels. The micro-level analysis encompasses firm-specific factors like profit margin (PM), return on assets (ROA), firm size and more, while the macro-level assessment includes economic growth and country governance. *Third*, the study covers three distinct economic periods: pre-GFC (economic downturn), GFC (economic stress) and post-GFC (economic growth). Notably, most of the previous studies had investigated the EM practices either before and during, or during and after the GFC, or before and after the GFC and ignored to have a period segment for the GFC. *Fourth*, we investigate both types of EM (accrual and real-based EM) and deploy the most robust and updated models to measure the EM practices. The paper enhances the ability of investors to assess their decisions' accuracy and place them in a better position to recognize the degree of financial reports reliability in the free-tax countries' financial markets, especially several businesses are shifting their operation to the low or free-tax countries (Beuselinck *et al.*, 2019). Moreover, it offers policymakers valid perceptions about EM behavior in different economic situations and positively affects their ability to develop an applicable mechanism to diminish EM practices, enhance financial reports quality and reduce information asymmetry during all economic conditions. The results show a significant increase in EM practices during the economic downturn. Precisely, the listed corporations in tax-free countries intend to understate their earnings during the economic stress period. However, the firm-level determinants of EM practices are at the same level of significance during the different economic conditions in accrual-based EM. By contrast, country-level EM determinants' significance level varies based on the economic conditions.

The study is structured as follows: Section 2 literature review and hypothesis development, section 3 study methodology, section 4 analysis and results. And the last section discusses the conclusion.

2. Literature review and hypothesis development

The extant literature has identified several incentives to manage firms' earnings by insiders. First, beating the benchmarks, several studies have concluded that insiders have a strong incentive to manage their earnings aiming to beat benchmarks (Kałdoński and Jewartowski, 2020). In this context, Brown and Caylor (2005) documented that firms' managers' attitude in EM has witnessed a shift in the mid-1990s from understating the income to avoid taxes toward meeting or beating the analyst expectations; targeting to overstate the firm valuation and to reduce the debts' cost. Also, the cost of capital is correlated with cash flow, which motivates firms to manage the earnings and reduce the risk premium required by investors and creditors (Kukreja and Gupa, 2019). Second, political cost motivation; Han and Wang (1998) documented that insiders have incentives to negatively manage their earnings to avoid any potential political cost. For instance, the oil firms understated their income during the gulf crisis in 1990; to avoid any potential political cost; this also agrees with the case of cable television in the USA (Key, 1997) and real estate companies in China (Chen *et al.*, 2011). Third, the managers' self-interest and job security; several studies have documented that insiders are motivated to manage firms' earnings, targeting to upward their compensation and enhancing their job security (Hashim *et al.*, 2020). Fourth, income tax avoidance; the income tax represents a pivotal motivation to manage earnings. In the mid-1990s the EM behavior and preferences have witnessed a dramatic shift toward understating income; to reduce the increased tax burden (Beuselinck *et al.*, 2019). Also, during the financial crisis period, the income tax has a higher influence to manage earnings through negatively managing earnings to reduce the cash outflow to tax authorities and to place pressure on the creditors to reschedule their debts or negotiate the interest rates (Beuselinck *et al.*, 2019). From another strand, the income tax relationship with EM goes beyond, and it could serve as an EM technique through manipulating the deferred tax expense (Githaiga, 2024). Four main theories underpin this study hypotheses: agency theory (Ross, 1973), stakeholder theory, the theory of institutional environment and prospect theory. The EM correlated with Schmalenbach's (1925) classic theory of dynamic accounting. Its main objective is to report firms' earnings accurately and fairly, inconsistent with the accrual principles. Schmalenbach does not declare that the reported annual earnings are universally true. However, the accumulated earnings over the years can be accurate and fair depending on the nature of using accounting estimates and accounting policies choices, which offers insiders discretion and opportunities to manage their earnings to serve their interest. This opportunity can be mitigated through consistently using the accounting estimates, policies and principles over the firm life (Loy, 2016). However, the agency theory offers an extra assurance for the reporting quality. Agency theory developed by Ross (1973), extended by Jensen and Meckling (1976), proposes that a relationship exists between two parties principals, who appoint another party (agent) and delegate him to work and develop decisions consistent with the principal's preference. This contractual relationship faces a conflict of interest between the managers (insiders) and principal (shareholders) (Sisaye, 2022). Thus, the agency theory is proposed to manage this contractual relationship by aligning both parties' interest and by developing a compensation contract based on the accounting earnings. Income tax incentives drive multinational corporations (MNCs to adopt strategies such as transfer pricing, income shifting and financing structure adjustments to minimize tax liabilities and enhance their financial performance, as evidenced in various studies. These practices can impact the reliability of financial reports, with MNCs seeking to optimize their income by manipulating transaction prices, reallocating income and expenses based on tax rates, and adjusting their financing decisions in response to tax considerations. Accordingly, studying EM practices in a tax-free environment provides valuable insights to the existing literature. Yet, prior research on EM practices during severe economic crises yields inconsistent results. While some studies suggest that EM practices should increase during financial crises due to

declining operational performance, leading firms to manipulate earnings upward or downward, contradictory findings exist (Filip and Raffournier, 2014). Adversely, other studies see that the financial crisis does not affect the EM practices; they justified their argument as in the economic downturn, the corporations are subject to more effective monitoring by auditors, policymakers, investors, lenders and governments (Yang *et al.*, 2022). The studies that believe in the positive relationship between the EM practice and the financial crises have identified two scenarios to manage earnings. The first studies group documented that firms upward the earnings to achieve many objectives; including: compensate earnings decline (Ahmad-Zaluki *et al.*, 2011), avoid shares price decline or high volatility (Charitou *et al.*, 2011), obtain financing from creditors, reduce the violation and non-compliance with rules and regulations (Najaf *et al.*, 2021), and achieve management self-interest through their compensation or job security (Habib *et al.*, 2013). Second, other researchers concluded that some corporations downward their earnings during the economic downturn; to convince lenders to restructure their debt or reduce the interest rates or delay the maturity date; receive tax advantages (Beuselinck and Deloof, 2014); receive government support (Ahmed *et al.*, 2008). As noted from the above literature, no studies have investigated the EM practices in tax-free countries. Also, the contradictory views of researchers concerning EM practices during the economic downturn have motivated us to carry the present study. Therefore, we build the following hypothesis:

H1. In tax-free countries, there are significant differences in EM practice in different economic situations.

Based on the theory of institutional environment, Multinational Corporation (MNCs) are targeting to minimize the cost of managing their earnings by establishing an operation in offshore financial centers. However, many of them used the country of registration and headquarters location to assess the quality of firms' financial reports and considered them as a direct influential factor. This also aligned with the Dyreng *et al.* (2012) study's outcomes, documenting a positive relationship between the rule of law and the quality of the financial reports. Remarkably, he found that US firms' financial reports have lower quality if they have subsidiaries in the weak rule of law and have practiced EM. Adversely, their financial reports' quality was higher if they have subsidiaries in the countries with a strict rule of law countries.

H2. In tax-free countries, the firm and country-level determinants of both EM types significantly changing in different economic situations.

3. Methodology

3.1 Datasets

This study uses year-end financial reports in the Bloomberg database for all nonfinancial corporation listed in tax-free countries, which are named in the Ernst & Young (EY) (2019) report, including the UAE, Bahrain, Bahamas, Bermuda, Cayman Islands, Guernsey, Isle of Man, Jersey, British Virgin Islands, and Turks and Caicos. Moreover, we excluded the listed corporation in the Maldives and Turks and Caicos due to data unavailability; also, we excluded the UAE and Bahrain energy and oil corporations because they are subject to special income tax regulations (EY, 2019). Covering sixteen years (2004–2019), this period identified to cover three periods, before, during and after the GFC, four years before the GFC (2004–2007), two years during the GFC (2008–2009) – Figure 2 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) presents the cut-off dates for the economic stress period, and ten years after the GFC (2009–2019). While the cut-off date identified to be before the COVID-19 pandemic, ensuring a focused exploration of the GFC's

impact without the potential influence of subsequent events. Four years before the GFC (2004–2007), two years during the GFC (2008–2009) and ten years after the GFC (2009–2019). Figure 1 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) shows the time series. The final data is 178 corporation representing 1,608 years of observation.

Figure 3 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) shows a general view about the attraction of tax-free countries to the Direct Foreign Investment (FDI). The World Bank ranked the tax incentives as one of the six most motives to the FDI, after political stability, legal and regulatory environment, large domestic market size, macroeconomic stability and available talent and labor skills.

3.2 Research models and variables' definition

The study uses specific models for testing the accrual and real-based EM; these models are justified in sections 4.2.1 and 4.2.2, respectively. Furthermore, the control variables are discussed in sections 4.2.3. Table 1 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) combines all variables' definitions for all models.

3.2.1 Discretionary accrual based EM. Dechow *et al.* (2010) carried a deep understanding of earning qualities and investigated the proxies and their consequences on EM measurement. They report that the modified Jones model 1995 measures the accrual EM more accurate than the Jones model 1991; since the modified Jones model 1995 was developed to reduce the error in classifying the normal and abnormal accruals, eliminate the conjectured tendency and considering the lagged assets to scales the model proxies reduce the heteroscedasticity (Kothari *et al.*, 2005). Among several discretionary accrual EM models, Kothari *et al.* (2005) documented that adding firm performance (ROA) helps to reach more reliable results in many ways. First, helps to override the misspecification matter used by Dechow *et al.* (1995). Second, provide additional control for the noneliminated heteroscedasticity by using the lagged assets. Third, reduce the stemming from omitted scale variables. Fourth, increase the symmetric of analyzed data and address more power of test issues. Thereby, based on the aforementioned arguments; this study uses the performance-matched model developed by Kothari *et al.* (2005), which is represented in equation (1). Moreover, and consistent with other studies (Ayedh *et al.*, 2019; Franceschini *et al.*, 2016)

$$\frac{TA_{it}}{Asset_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{Asset_{it-1}} + \beta_1 \frac{\Delta sales_{it} - \Delta AR_{it}}{Asset_{it-1}} + \beta_2 \frac{PPE_{it}}{Asset_{it-1}} + \beta_3 \frac{Profit_{it}}{Asset_{it-1}} + \varepsilon_{it} \quad (1)$$

3.2.2 Real-based EM. Roychowdhury (2006) identified three main models to measure the real-based EM, production costs model, cash flow from operating activities and discretionary expenses. We employed the model developed by Dechow *et al.* (1998) to measure real-based EM and estimate the normal and abnormal values of production cost, operating cash flow and discretionary expenses, presented in equations (2, 3, and 4), respectively.

Production cost model:

$$\frac{Prod_{it}}{Assets_{i,t-1}} = \alpha_0 + \alpha_{1t}\left(\frac{1}{Assets_{i,t-1}}\right) + \beta_1\left(\frac{Sales_{it}}{Assets_{i,t-1}}\right) + \beta_2\left(\frac{\Delta Sales_{it}}{Assets_{i,t-1}}\right) + \beta_3\left(\frac{\Delta Sales_{it-1}}{Assets_{i,t-1}}\right) + \varepsilon_{it} \quad (2)$$

Cash flow from operating activities model:

$$\frac{CFO_{it}}{Assets_{i,t-1}} = \alpha_0 + \alpha_{1t}\left(\frac{1}{Assets_{i,t-1}}\right) + \beta_2\left(\frac{Sales_{it}}{Assets_{i,t-1}}\right) + \beta_2\left(\frac{\Delta Sales_{it}}{Assets_{i,t-1}}\right) + \beta_3\left(\frac{\Delta Sales_{it-1}}{Assets_{i,t-1}}\right) + \varepsilon_{it} \quad (3)$$

Discretionary expenses:

$$\frac{DiscExp_{it}}{Assets_{i,t-1}} = \alpha_{1t}\left(\frac{1}{Assets_{i,t-1}}\right) + k_2\left(\frac{Sales_{it-1}}{Assets_{i,t-1}}\right) + \varepsilon_{it} \quad (4)$$

3.2.3 Control variables. The EM behavior is sensitive to many variables and characteristics (Filip and Raffournier, 2014), and recommended to use different control variables during investigating the EM practice (Ayedh *et al.*, 2019). Firm-level variables consist of eight variables; since the EM practice is affected by management incentives to meet analyst and shareholders' expectations, we decided to employ the common profitability parameters used in previous studies. Including the PM (Dhiaf *et al.*, 2022), ROA (Najaf *et al.*, 2022), return on equity (ROE) (Kolsi and Attayah, 2018), earning per share (EPS) (Marashdeh *et al.*, 2023), dividends per share (DPS) (Dhiaf *et al.*, 2021), financial leverage (Atayah *et al.*, 2022), firm size (Najaf *et al.*, 2023) and firm growth (Yiwei *et al.*, 2022). In the country-level variables, we include country governance and gross domestic product (GDP) growth. The tax-free countries are a preferred destination for foreign direct investment; hence, the country governance, legal and regulatory environment present a key determinant for the FDI attrition and retention (Almansour *et al.*, 2023). Hence, strong and efficient country governance (six proxies, including the voice and accountability; political stability and absence of violence/terrorism; government effectiveness; regulatory quality; the rule of law and control of corruption) reduces firms' management's incentive to conduct EM and enhance the financial reports stockholders' confidence (Kanagaretnam *et al.*, 2014). Moreover, to measure the severity implication of GFC in each country, this study includes GDP growth (Brown and Caylor, 2005). Table 1 present the variable definitions.

4. Analysis and results

4.1 Model validation techniques

The general linear model (GLM) was employed to test study models. Tests were conducted to assess data's adherence to linearity assumptions. Table 2 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) presents the use of the Shapiro–Wilk test for normal distribution approximation. All variable values were <0.05, indicating non-normality. Natural logarithm transformed data to normality. Given the time-series nature of this study, series stability is essential, considering nonstationarity (Gujarati and Dawn, 2003). Linear model strength relies on independent variable independence. All variance inflation factor (VIF) values (Table 2) were <10, signifying no collinearity issues. Autocorrelation was assessed using Durbin–Watson (D-W) test, revealing values within 1.5–2.5, denoting no autocorrelation. Regression models assume no heteroskedasticity. Breusch–Pagan test was considered if present. Table 2 indicates p-values (>0.05) for the three models, implying no heteroskedasticity concerns.

4.2 Hausman test

When time-series and cross-sectional data are merged, we get the panel data that gives more data information with more disparity, the less internal correlation between variables, more degrees of

freedom, and more efficiency. Panel regression models are divided into fixed-effect approach (FE) and random-effect approach (RE). To differentiate between the two approaches, we used the Hausman test where a null hypothesis assumes that capabilities of FE and RE are the same, but if a null hypothesis is rejected, then this indicates that the RE is inappropriate, and it is, therefore, preferable to use FE. Houseman-chi^2 for the study models shown in Table 2 are statistically insignificant, which mean that a capability of the FE is best representing the relationship between the variables.

4.3 Descriptive analysis

Table 3 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) presents the summary statistics for the full sample; the firm-level control variables show the mean for DPS and EPS are USD 0.439 and USD 0.788, respectively. While the EM is 21.8%, ROE 1.4% and ROA 1.7%. While the study sample firms highly leveraged at 56.7%, and have an annual growth of 9.1%. On the other hand, the country-level control variables show a big gap between countries in the aggregate legal and governance index as the minimum and maximum values were −5.284 and 9.837, respectively, with 2.285 mean and annual growth is 7.32%. Concerning discretionary accrual EM (DA), the mean indicates that the firms had a strategy to perform a negative EM by understating the income over the sixteen years (−0.008). Consistently, the results of real-based EM (model 2, 3 and 4) presented in EM_PROXY confirms the results of discretionary accrual EM, since the mean present (−0.225), specifically, the production cost (model 2) and discretionary expenses (model 4) were used to manage earnings negatively, as the mean 0.030 and − 0.218, respectively. At the same time, the cash flow from operating (model 3) was used to manage earnings positively.

Table 4 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) shows the correlation matrix between EM measures with control variables and study periods. Begin from the correlation between the EM measures and study periods; these finding highlights that a significant correlation coefficient between the economic stress (during the GFC) and the absolute discretionary accrual EM at 5% level, negative discretionary accrual EM at 1% level, and cash flow from operation model at 5% level. Adversely, all others identified EM measures have no significant correlation with both periods, before and after the GFC.

However, the correlation between EM measures and control variables revealed that positive discretionary accrual EM negatively correlate with the firm size (at 5% level). While, the absolute discretionary accrual EM has significant negative association with the DPS, EPS, ROE at 5% level and firm size at 1% level, while has a positive relationship with PM, firm growth at 1% level, and GDP growth at 5% level.

The negative discretionary accrual EM has significant negative relationship with the PM, firm growth, GDP growth at 1% level, and GDP growth at 5% level, while has a negative correlation with DPS, EPS, ROE at 5% level and positive relationship with ROE (at 5% level) and country governance at 1% level.

The real earning management models correlate with the control variables. The cash flow from operating (Model 3) has a positive relationship with DPS at (5% level), EPS, ROA, firm size and firm growth at (0.01% level). While the abnormal production cost (Model 2) negatively correlates with EPS, ROE, GDP growth at (1% level) and firm size at (0.01% level), while positively correlates with country governance at (5% level). On the other hand, the discretionary expenses (Model 4) and the real earning management model (average of model 2, 3 and 4) correlate negatively with DPS, EPS at 5% level, ROE and firm growth at (0.01% level).

4.4 Results of the regression models

This sub-section presents the results of ordinary least squares regression. Contestant with other studies, we deployed a robust standard errors test to control the heteroscedasticity (Türegün, 2018). Also, we winsorize the extreme observations by setting the bottom and top one percent (1–99) percentiles (Kothari *et al.*, 2005). However, we regress each model with three-period dummy variables (before, during and after) the GFC, before takes value 1 for years (2004–2007) and zero otherwise, while during takes 1 in (2008 and 2009) and zero otherwise, and after takes 1 value for years (2010–2019) and zero otherwise.

Ayedh *et al.* (2019) stated that measuring the positive, negative and absolute discretionary accrual EM offer better understanding to the EM behavior and practices; hence, this study regresses the periods with all possible types of discretionary accrual EM and all real earning management. The regression outcomes of models and periods are presented in Table 5 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true). Before the GFC, corporation used the discretionary expenses model and real earning management to manage their earnings. While during the GFC, the companies employed the negative discretionary accrual RM, which influenced the absolute discretionary accrual RM, also the use of discretionary expenses model and real earning management significantly increased during the GFC. After the GFC, the corporations did not use the discretionary accrual and significantly decreased the use of real earning management.

Figures 4 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) and 5 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) graphical illustrations of regression results over the study period, Figure 4 present the trend of negative, positive and absolute discretionary accrual EM the trend clearly present that corporations used the negative discretionary accrual during the GFC. As corporations understated their income during the GFC (2008 and 2009) hence, the absolute discretionary accrual EM also present a significant change during the GFC, the figure show increase in the absolute discretionary accrual EM due to the consideration of all year's observations at absolute values, which has been affected by the change in the negative discretionary accrual EM while the positive discretionary accrual EM was stable in all study periods.

Figure 5 shows an increase in the real EM during the GFC, indeed, due to a significant change in the discretionary expenses. While the real EM through using the cash flow from operating and abnormal production cost were stable over the period and did not present a significant relationship with the GFC.

This study results as shown in the regression results and the visualization of EM trend over study periods (discretionary accrual EM) are consistent with the argument suggestion that EM practice increase during the GFC, since our results shows an increase in EM practice during the GFC in comparison to before and after the GFC. Particularly, the discretionary accrual EM increased through downward the corporation earnings during the GFC, aiming to receive governmental support (Ahmed *et al.*, 2008) or restructure their debt (Asquith *et al.*, 1994), while we are excluding the tax advantage motivation, since our study investigates the tax-free counties. Consistently, the real based EM practice increased through deploying the discretionary expenses model while the abnormal production cost model and cash flow from the operating model were stable and did not affected, this justified by Enomoto *et al.* (2018) they investigated the EM practices across 48 countries, and concluded that countries with high governance and effective legislation bodies, managers manages their earnings through the discretionary expenses model as its more difficult to discovered and rely on accounting choices allowed by the accounting standards. Based on the aforementioned results and

discussion, we accept the first hypothesis. Tables 6 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) and 7 (available online at: https://docs.google.com/document/d/1fWQT6pT73skAZE0zoIOOtk1fd-Hak9Cl/edit?usp=drive_link&ouid=111644745289178613534&rtpof=true&sd=true) present the regression results of accrual-based EM activities determinants before, during and after the GFC, the determinants classified to firm-level and country level. PM negatively affects the negative discretionary accrual EM at (at 1% level) in all study periods. This means the decrease in companies PM lead managers to avoid understating their EM, this agrees with the results of Jansen *et al.* (2012) when they stated that the firms with poor performance attempting to manage their earnings upward. EPS has a positive relation at (1% level) on the cash flow from operating (model 3), while it negatively affected the abnormal production cost (model 2) at (5% level) in all study periods. EPS motives the management to manage firms earning through the cash flow from the operating method, this consistent with the result of Das and Zhang (2003), since they documented that management more likely to employ the cash flow from operating in managing their earnings to roundup the EPS; to meet analyst forecasts, sustain their performance on desired level and satisfy the shareholders.

While the ROE negatively affected the abnormal production cost at (1% level) and real EM (sum of models 2, 3 and 4) at (10% level). Moreover, positively affected the negative discretionary accrual EM at (1% level). On the other hand, the ROA positively affected the cash flow from operating (model 3) at (1% level) and at (at 5% level) for positive discretionary accrual EM and negatively affected the discretionary expenses (model 4) and real EM at (1% level) in all study periods. While the firm size positively affected the cash flow from operating and real EM at (5% level) and the discretionary expenses (model 4) at (1% level), while negatively affected the abnormal production cost and positive accrual-based EM at (5% level). The financial leverage positively affected the abnormal production cost at (10% level).

Many researchers have investigated the impact of firm performance on the EM practice (Yu *et al.*, 2006), have documented that the ROE is a significant motivation to the firms' manager to conduct the EM, but the case was in China and the firms managed their earnings (1994–2002) to meet the regulatory requirement of minimum 10% ROE to grant the rights of the issue during the period 1996–1998. By contrast, our study results show that ROE is a motivation to downturn the earnings; among the plausible explanations for these findings is that most of the listed corporation in tax-free countries are FDI and they are trying to reduce the risk of political cost, especially in the low counties governance average.

Firm growth negatively affected the negative discretionary accrual EM at (1% level), and positively affected the cash flow from operating at (10% level), and negatively regress with discretionary expenses and real EM at (1% level). AlNajjar and Riahi-Belkaoui (2001) documented that firms with a high growth rate may conduct a negative discretionary accrual EM to reduce the political cost and political risk. Adversely Al-Jaifi (2017), concluded that the high firm growth more likely to use the positive discretionary accruals AEM to meet the analyst estimations and offer self-interest to the management. Our results revealed that firms with high growth reduce their negative discretionary accrual EM for the same justifications of Eng *et al.* (2019).

The countries' governance has negatively affected the cash flow from operating (model 3) at (1% level) before and after the GFC and (5% level) during the GFC, on the other hand, the countries governance has a positive regress with the discretionary expenses and real EM at (1% level) during the GFC and at (5% level) post to the GFC. This result was expected, as the strong regulatory and legal system limits the ability of firms' manager to manage their earnings through using accrual EM, cash flow from operating and abnormal production cost, while this push them to manage the earnings through more robust tool (discretionary expenses) which is agreed with (Saona and Muro, 2018) results.

The GDP growth has negatively regressed with negative discretionary accrual EM during the Global Financial Crisis (GFC) at (5% level), while at (10% level) before and after the GFC. Also, negatively regressed to the cash flow from operating at (10% level) for the periods before and after the GFC and at (1% level) during the GFC. Also, negatively affected the abnormal production cost at (1% level) in all periods. This results is consistent with (Wasan and Mulchandani, 2020) argument, they stated that in the financial stress motives the managers to manage their earnings, to increase the demand on firm shares, compensate the decline in performance, stabilize their compensation and positions (Persakis and Iatridis, 2015). While the regression results agree to the second hypothesis "In tax-free countries, the country-level determinants of both EM types significantly changing in pre-,during, post-GFC". As the GDP growth and governance regress changes over the study periods.

5. Conclusion and recommendations

The present study was designed to achieve three aims, first, determine the influence of economic conditions on financial reports manipulations through analysis of EM practices in tax-free countries in three different economic conditions (leading, during and post of the GFC) over sixteen years (2004–2019). Second, identify the main determinants of EM on the country and firm-level through different economic conditions. Third, explore the trend of available academic literature on the topic of EM. The most prominent finding to emerge from this study is that EM practice increased in the GFC years (2008 and 2009). Interestingly, the discretionary accrual EM carried to decrease the earnings during the economic downturn. Moreover, firms did not employ the discretionary accrual before (2004–2007) and after (2010–2019) GFC. The real-based EM; particularly, the discretionary expenses model, has been used before, during and dropped remarkably after the GFC; the present finding also supports that EM practices increase during the economic downturn; since the real based EM practice has increased significantly during the economic downturn.

The finding provides evidence that firm-level EM determinants do not change during different economic conditions for both discretionary accrual and real based EM. By contrast, the country-level determinants have changed under different economic conditions for real based EM; specifically, the strong country governance guided the firms through applying the discretionary expenses EM during the GFC, since it is more difficult to be detected. While the country level determinants did not change concerning the discretionary accrual EM. These findings enhance our understanding of EM practice with the absence of tax avoidance motivation. We recommend the auditors and governmental bodies to pay more attention to the fairness of financial reports during economic stress situations. In addition, researchers have the potential in investigating the implication of the fourth industrial revolution on EM practice, such as blockchain, since it is expected to apply more control on the transactions verifications, so the firm only can record the real transaction as it needs the approval of the second party in the transaction, moreover, the use of big data may limit the ability of firms to manage their earning since the use of structured and unstructured data could offer a better evaluation to the company performance and assess the reasonableness of financial reports results.

References

Ahmed, K., Godfrey, J.M. and Saleh, N.M. (2008), "Market perceptions of discretionary accruals by debt renegotiating firms during economic downturn", *International Journal of Accounting*, Vol. 43 No. 2, pp. 114-138, doi: 10.1016/j.intacc.2008.04.002.

Ahmad-Zaluki, N.A., Campbell, K. and Goodacre, A. (2011), "Earnings management in Malaysian IPOs: the East Asian crisis, ownership control, and post-IPO performance", *International Journal of Accounting*, Vol. 46 No. 2, pp. 111-137, doi: 10.1016/j.intacc.2011.04.001.

Al-Jaifi, H.A. (2017), "Ownership concentration, earnings management and stock market liquidity: evidence from Malaysia", *Corporate Governance (Bingley)*, Vol. 17 No. 3, pp. 490-510, doi: 10.1108/CG-06-2016-0139.

Almansour, B.Y., Alshater, M.M., Marashdeh, H., Dhiaf, M. and Atayah, O.F. (2023), "The return volatility and shock transmission patterns of chosen S&P and Dow Jones sustainability indices and their conventional counterpart", *Competitiveness Review*, Vol. 33 No. 1, pp. 107-119, doi: 10.1108/CR-12-2021-0188.

AlNajjar, F. and Riahi-Belkaoui, A. (2001), "Growth opportunities and earnings management", *Managerial Finance*, Vol. 27 No. 12, pp. 72-81, doi: 10.1108/03074350110767457.

Asquith, P., Gertner, R. and Scharfstein, D. (1994), "Anatomy of financial distress: an examination of junk-bond issuers author (s): Paul Asquith, Robert Gertner and David Scharfstein published by: oxford university press all use subject to Jstor terms and conditions anatomy of financial distress: an E", *The Quarterly Journal of Economics*, Vol. 109 No. 3, pp. 625-658, doi: 10.2307/2118416.

Atayah, O.F., Najaf, K., Subramaniam, R.K. and Chin, P.N. (2022), "The ascension of executives' tenure, corporate risk-taking and corporate performance: evidence from Malaysia", *Asia-Pacific Journal of Business Administration*, Vol. 14 No. 1, pp. 101-123, doi: 10.1108/APJBA-05-2021-0189.

Ayedh, A., Fatima, A.H. and Mohammad, M. (2019), "Earnings management in Malaysian companies during the global financial crisis and the coincidental effect of IFRS adoption", *Australasian Accounting, Business and Finance Journal*, Vol. 13 No. 1, pp. 4-26, doi: 10.14453/aabfj.v13i1.2.

Beuselinck, C. and Deloof, M. (2014), "Earnings management in business groups: tax incentives or expropriation concealment?", *International Journal of Accounting*, Vol. 49 No. 1, pp. 27-52, doi: 10.1016/j.intacc.2014.01.008.

Beuselinck, C., Cascino, S., Deloof, M. and Vanstraelen, A. (2019), "Earnings management within multinational corporations", *Accounting Review*, Vol. 94 No. 4, pp. 45-76, doi: 10.2308/accr-52274.

Bhattacharya, N., Desai, H. and Venkataraman, K. (2013), "Does earnings quality affect information asymmetry? Evidence from trading costs", *Contemporary Accounting Research*, Vol. 30 No. 2, pp. 482-516, doi: 10.1111/j.1911-3846.2012.01161.x.

Brown, L.D. and Caylor, M.L. (2005), "A temporal analysis of quarterly earnings thresholds: propensities and valuation consequences", *Accounting Review*, Vol. 80 No. 2, pp. 423-440, doi: 10.2308/accr.2005.80.2.423.

Charitou, A., Lambertides, N. and Trigeorgis, L. (2011), "Distress risk, growth and earnings quality", *Abacus*, Vol. 47 No. 2, pp. 158-181, doi: 10.1111/j.1467-6281.2011.00337.x.

Chen, D., Li, J., Liang, S. and Wang, G. (2011), "Macroeconomic control, political costs and earnings management: evidence from Chinese listed real estate companies", *China Journal of Accounting Research*, Vol. 4 No. 3, pp. 91-106, doi: 10.1016/j.cjar.2011.06.002.

Cohen, D.A., Dey, A. and Lys, T.Z. (2008), "Real and accrual-based earnings management in the pre- and post-sarbanes-oxley periods", *Accounting Review*, Vol. 83 No. 3, pp. 757-787, doi: 10.2308/accr.2008.83.3.757.

Das, S. and Zhang, H. (2003), "Rounding-up in reported EPS, behavioral thresholds, and earnings management", *Journal of Accounting and Economics*, Vol. 35 No. 1, pp. 31-50, doi: 10.1016/S0165-4101(02)00096-4.

Dechow, P., Ge, W. and Schrand, C. (2010), "Understanding earnings quality: a review of the proxies, their determinants and their consequences", *Journal of Accounting and Economics*, Vol. 50 Nos 2-3, pp. 344-401, doi: 10.1016/j.jacceco.2010.09.001.

Dhiaf, M.M., Najaf, K., Marashdeh, H., Atayah, O.F. and Frederico, G.F. (2021), "The role of project's initiatives focused on the reduction of environmental footprints during COVID-19: evidence from the United States firms", *Operations Management Research*, Vol. 15 Nos 1-2, pp. 413-427, doi: 10.1007/s12063-021-00206-y.

Dechow, P.M., Kothari, S.P. and Watts, R.L. (1998), "The relation between earnings and cash flows", *Journal of Accounting and Economics*, Vol. 25 No. 2, pp. 133-168.

Dechow, P.M., Sloan, R.G. and Sweeney, A.P. (1995), "Detecting earnings management", *The Accounting Review*, Vol. 70 No. 2, pp. 193-225, available at: http://www.jstor.org/stable/248303

Dhiaf, M.M., Khakan, N., Atayah, O.F., Marashdeh, H. and El Khoury, R. (2022), "The role of FinTech for manufacturing efficiency and financial performance: in the era of industry 4.0", *Journal of Decision Systems*, pp. 1-22, doi: 10.1080/12460125.2022.2094527.

Dyreng, S.D., Hanlon, M. and Maydew, E.L. (2012), "Where do firms manage earnings?", *Review of Accounting Studies*, Vol. 17 No. 3, pp. 649-687, doi: 10.1007/s11142-012-9194-7.

Eng, L.L., Fang, H., Tian, X., Yu, T.R. and Zhang, H. (2019), "Financial crisis and real earnings management in family firms: a comparison between China and the United States", *Journal of International Financial Markets, Institutions and Money*, Vol. 59, pp. 184-201, doi: 10.1016/j.intfin.2018.12.008.

Enomoto, M., Kimura, F. and Yamaguchi, T. (2018), "A cross-country study on the relationship between financial development and earnings management", *Journal of International Financial Management and Accounting*, Vol. 29 No. 2, pp. 166-194, doi: 10.1111/jifm.12078.

Ernst & Young (EY) (2019), "Transparency report 2019", available at: https://assets.ey.com/content/dam/ey-sites/ey-com/en_la/ey-lao-transparancy-report-2019.pdf

Filip, A. and Raffournier, B. (2014), "Financial crisis and earnings management: the european evidence", *International Journal of Accounting*, Vol. 49 No. 4, pp. 455-478, doi: 10.1016/j.intacc.2014.10.004.

Franceschini, S., Faria, L.G.D. and Jurowetzki, R. (2016), "Unveiling scientific communities about sustainability and innovation. A bibliometric journey around sustainable terms", *Journal of Cleaner Production*, Vol. 127, pp. 72-83, doi: 10.1016/j.jclepro.2016.03.142.

Githaiga, P.N. (2024), "Sustainability reporting, board gender diversity and earnings management: evidence from East Africa community", *Journal of Business and Socio-economic Development*, Vol. 4 No. 2, pp. 142-160, doi: 10.1108/JBSED-09-2022-0099.

Grossman, B.G.M. and Rossi-hansberg, E. (2016), "Trading tasks: a simple theory of offshoring", *The American Economic Review*, Vol. 98 No. 5, pp. 1978-1997, American Economic Association.

Guenther, D.A., Krull, L.K. and Williams, B.M. (2021), "Identifying different types of tax avoidance: implications for empirical research", *Journal of the American Taxation Association*, Vol. 43 No. 1, pp. 27-50, doi: 10.2308/JATA-17-044.

Gujarati, D.N. and Dawn, C.P. (2003), *Basic Econometrics*, McGraw-hill, New York.

Habib, A., Uddin Bhuiyan, B. and Islam, A. (2013), "Financial distress, earnings management and market pricing of accruals during the global financial crisis", *Managerial Finance*, Vol. 39 No. 2, pp. 155-180, doi: 10.1108/03074351311294007.

Han, J.C.Y. and Wang, S.-W. (1998), "Political costs and earnings management of oil companies during the 1990 Persian Gulf crisis", *Accounting Review*, Vol. 73 No. 1, pp. 103-117, available at: https://www.scopus.com/inward/record.uri?eid=2-s2.0-0032220832&partnerID=40&md5=3dcc97fbe412bbce657b57dfbe8535a0

Hashim, H.A., Salleh, Z., Shuhaimi, I. and Ismail, N.A.N. (2020), "The risk of financial fraud: a management perspective", *Journal of Financial Crime*, Vol. 27 No. 4, pp. 1143-1159, doi: 10.1108/JFC-04-2020-0062.

Jansen, I.P., Ramnath, S. and Yohn, T.L. (2012), "A diagnostic for earnings management using changes in asset turnover and profit margin", *Contemporary Accounting Research*, Vol. 29 No. 1, pp. 221-251, doi: 10.1111/j.1911-3846.2011.01093.x.

Jensen, M.C. and Meckling, W.H. (1976), "Theory of the firm: managerial behavior, agency costs and ownership structure", *Corporate Governance: Values, Ethics and Leadership*, Vol. 3 No. 4, pp. 305-360, doi: 10.2139/ssrn.94043.

Kałdoński, M. and Jewartowski, T. (2020), "Do firms using real earnings management care about taxes? Evidence from a high book-tax conformity country", *Finance Research Letters*, Vol. 35, 101351, doi: 10.1016/j.frl.2019.101351.

Kanagaretnam, K., Lim, C.Y. and Lobo, G.J. (2014), "Effects of international institutional factors on earnings quality of banks", *Journal of Banking and Finance*, Vol. 39 No. 1, pp. 87-106, doi: 10.1016/j.jbankfin.2013.11.005.

Key, K.G. (1997), "Political cost incentives for earnings management in the cable television industry", *Journal of Accounting and Economics*, Vol. 23 No. 3, pp. 309-337, doi: 10.1016/S0165-4101(97)00012-8.

Kolsi, M.C. and Attayah, O.F. (2018), "Are socially responsible firms less engaged in earnings management? Evidence from ADX listed companies", *International Journal of Business Innovation and Research*, Vol. 17 No. 4, pp. 536-560, doi: 10.1504/IJBIR.2018.096373.

Kothari, S.P., Leone, A.J. and Wasley, C.E. (2005), "Performance matched discretionary accrual measures", *Journal of Accounting and Economics*, Vol. 39 No. 1, pp. 163-197.

Kukreja, G. and Gupa, S. (2019), "Gem of the Indian banking fraud: A case of systemic control failures at Punjab National Bank", *Journal of Forensic and Investigative Accounting*, Vol. 11 No. 2, pp. 366-379.

Loy, T. (2016), "Stakeholder influence on earnings management: ethical considerations and potential avenues", *Corporate Ownership and Control*, Vol. 13 No. 3, pp. 89-99, doi: 10.22495/cocv13i3p8.

Marashdeh, H., Dhiaf, M.M., Atayah, O.F., Nasrallah, N., Frederico, G.F. and Najaf, K. (2023), "Sensitivity of market performance to social risk index: evidence from global listed companies in logistics and transportation industry", *Socio-Economic Planning Sciences*, Vol. 87, 101536, doi: 10.1016/j.seps.2023.101536.

Najaf, K., Atayah, O. and Devi, S. (2021), "Ten years of journal of accounting in emerging economies: a review and bibliometric analysis", *Journal of Accounting in Emerging Economies*, Vol. 12 No. 4, pp. 663-694, doi: 10.1108/JAEE-03-2021-0089.

Najaf, K., Subramaniam, R.K. and Atayah, O.F. (2022), "Understanding the implications of FinTech Peer-to-Peer (P2P) lending during the COVID-19 pandemic", *Journal of Sustainable Finance and Investment*, Vol. 12 No. 1, pp. 87-102, doi: 10.1080/20430795.2021.1917225.

Najaf, K., Dhiaf, M.M.M., Marashdeh, H. and Atayah, O.F. (2023), "The social role of supply chain firms during the pandemic period", *International Journal of Quality and Reliability Management*, Vol. 40 No. 5, pp. 1343-1361, doi: 10.1108/IJQRM-03-2022-0106.

Naz, A., Sheikh, N.A., Khatib, S.F.A., Al Amosh, H. and Ananzeh, H. (2024), "Illuminating the shadows: a systematic review of earnings management practices in family-owned enterprises and future research directions", *Journal of Business and Socio-economic Development*, Vol. ahead-of-print ahead-of-print, doi: 10.1108/JBSED-07-2023-0051.

Persakis, A. and Iatridis, G.E. (2015), "Earnings quality under financial crisis: a global empirical investigation", *Journal of Multinational Financial Management*, Vol. 30, pp. 1-35, doi: 10.1016/j.mulfin.2014.12.002.

Ross, S.A. (1973), "American economic association the economic theory of agency: the principal's problem", *The American Economic Review*, Vol. 63 No. 2, pp. 134-139, Linked references are available on JSTOR for this article: You may need. Published by: American Economic Association Stable, available at: http://www.jstor.org/stable/1817064

Roychowdhury, S. (2006), "Earnings management through real activities manipulation", *Journal of Accounting and Economics*, Vol. 42 No. 3, pp. 335-370, doi: 10.1016/j.jacceco.2006.01.002.

Saona, P. and Muro, L. (2018), "Firm- and country-level attributes as determinants of earnings management: an analysis for Latin American firms", *Emerging Markets Finance and Trade*, Vol. 54 No. 12, pp. 2736-2764, doi: 10.1080/1540496X.2017.1410127.

Schmalenbach, E. (1925), *Grundlagen dynamischer Bilanzlehre*, 3rd ed., G.A. Gloeckner, Leipzig.

Sisaye, S. (2022), "The organizational ecological resource framework of sustainability reporting: implications for corporate social reporting (CSR)", *Journal of Business and Socio-economic Development*, Vol. 2 No. 2, pp. 99-116, doi: 10.1108/JBSED-05-2021-0065.

Türegün, N. (2018), "Effects of borrowing costs, firm size, and characteristics of board of directors on earnings management types: a study at Borsa Istanbul", *Asia-Pacific Journal of Accounting and Economics*, Vol. 25 Nos 1-2, pp. 42-56, doi: 10.1080/16081625.2016.1246192.

Voskoboynikov, I.B. (2017), "Sources of long run economic growth in Russia before and after the global financial crisis", *Russian Journal of Economics*, Vol. 3 No. 4, pp. 348-365, doi: 10.1016/j.ruje.2017.12.003.

Wasan, P. and Mulchandani, K. (2020), "Corporate governance factors as predictors of earnings management", *Journal of General Management*, Vol. 45 No. 2, pp. 71-92, doi: 10.1177/0306307019872304.

Yang, J., Hemmings, D., Jaafar, A. and Jackson, R.H.G. (2022), "The real earnings management gap between private and public firms: evidence from Europe", *Journal of International Accounting, Auditing and Taxation*, Vol. 49, 100506, doi: 10.1016/j.intaccaudtax.2022.100506.

Yiwei, W., Najaf, K., Frederico, G.F. and Atayah, O.F. (2022), "Influence of COVID-19 pandemic on the tourism sector: evidence from China and United States stocks", *Current Issues in Tourism*, Vol. 25 No. 23, pp. 3783-3798, doi: 10.1080/13683500.2021.1972944.

Yu, Q., Du, B. and Sun, Q. (2006), "Earnings management at rights issues thresholds-Evidence from China", *Journal of Banking and Finance*, Vol. 30 No. 12, pp. 3453-3468, doi: 10.1016/j.jbankfin.2006.01.011.

Further reading

Amidu, M. and William Coffie, P.A. (2019), "기사 (article) 와 안내문 (information)", *The Eletronic Library*, Vol. 34 No. 1, pp. 1-5.

An, R., Shen, J., Bullard, T., Han, Y., Qiu, D. and Wang, S. (2020), "A scoping review on economic globalization in relation to the obesity epidemic", *Obesity Reviews*, Vol. 21 No. 3, pp. 1-11, doi: 10.1111/obr.12969.

Burgstahler, D.C., Hail, L. and Leuz, C. (2006), "The importance of reporting incentives: earnings management in European private and public firms", *Accounting Review*, Vol. 81 No. 5, pp. 983-1016, doi: 10.2308/accr.2006.81.5.983.

Chan, K., Chan, L.K.C., Jegadeesh, N. and Lakonishok, J. (2006), "Earnings quality and stock returns", *Journal of Business*, Vol. 79 No. 3, pp. 1041-1082, doi: 10.1086/500669.

Cimini, R. (2015), "How has the financial crisis affected earnings management? A European study", *Applied Economics*, Vol. 47 No. 3, pp. 302-317, doi: 10.1080/00036846.2014.969828.

Comporek, M. (2022), "Determinants of the capital structure and accrual-based earnings management; [Determinanty struktury kapitałowej a rachunkowe kształtowanie wyniku finansowego przedsiębiorstw]", *Zeszyty Teoretyczne Rachunkowosci*, Vol. 46 No. 1, pp. 9-27, doi: 10.5604/01.3001.0015.7985.

Dang, H.N., Nguyen, T.T.C. and Tran, D.M. (2020), "The impact of earnings quality on firm value: the case of Vietnam", *Journal of Asian Finance, Economics and Business*, Vol. 7 No. 3, pp. 63-72, doi: 10.13106/jafeb.2020.vol7.no3.63.

Di Meo, F., García Lara, J.M. and Surroca, J.A. (2017), "Managerial entrenchment and earnings management", *Journal of Accounting and Public Policy*, Vol. 36 No. 5, pp. 399-414, doi: 10.1016/j.jaccpubpol.2017.07.003.

Dowdell, T.D. and Krishnan, J. (2004), "Former audit firm personnel as CFOs: effect on earnings management", *Canadian Accounting Perspectives*, Vol. 3 No. 1, pp. 117-142, doi: 10.1506/6RDR-AXNP-RH7A-U5J8.

Durnev, A., Li, T. and Magnan, M. (2017), "Beyond tax avoidance: offshore firms' institutional environment and financial reporting quality", *Journal of Business Finance and Accounting*, Vol. 44 Nos 5-6, pp. 646-696, doi: 10.1111/jbfa.12240.

Eisenhardt, K.M. (1989), "Making fast strategic decisions in high-velocity environments", *Academy of Management Journal*, Vol. 32 No. 3, pp. 543-576, doi: 10.2307/256434.

Elleuch Hamza, S. and Kortas, N. (2018), "The interaction between accounting and real earnings management using simultaneous equation model with panel data", *Review of Quantitative Finance and Accounting*, Springer US, doi: 10.1007/s11156-018-0779-5.

Enomoto, M., Kimura, F. and Yamaguchi, T. (2015), "Accrual-based and real earnings management: an international comparison for investor protection", *Journal of Contemporary Accounting and Economics*, Vol. 11 No. 3, pp. 183-198, doi: 10.1016/j.jcae.2015.07.001.

Farrell, D. (2005), "Offshoring: value creation through economic change", *Journal of Management Studies*, Vol. 42 No. 3, pp. 675-683, doi: 10.1111/j.1467-6486.2005.00513.x.

Franceschetti, B.M. (2018), *Financial Crises and Earnings Management Behavior: Arguments and Evidence Against Causality*, Springer, London.

Gao, S. and Gao, J. (2016), "Earnings management: a literature review. December", *Proceedings of the 2016 International Seminar on Education Innovation and Economic Management (SEIEM 2016)*. doi: 10.2991/seiem-16.2016.48.

Grougiou, V., Leventis, S., Dedoulis, E. and Owusu-Ansah, S. (2014), "Corporate social responsibility and earnings management in U.S. banks", *Accounting Forum*, Vol. 38 No. 3, pp. 155-169, doi: 10.1016/j.accfor.2014.05.003.

Hashim, F., Ahmed, E.R. and Huey, Y.M. (2019), "Board diversity and earning quality: examining the role of internal audit as a moderator", *Australasian Accounting, Business and Finance Journal*, Vol. 13 No. 4, pp. 73-91, doi: 10.14453/aabfj.v13i4.6.

Jacobsen, B. (2013), "Is earnings quality associated with corporate social responsibility?", *Social and Environmental Accountability Journal*, Vol. 33 No. 3, p. 177, doi: 10.1080/0969160X.2013.845031.

Kanagaretnam, K., Lobo, G.J. and Yang, D.-H. (2004), "Joint tests of signaling and income smoothing through bank loan loss provisions", *Contemporary Accounting Research*, Vol. 21 No. 4, pp. 843-884, doi: 10.1506/UDWQ-R7B1-A684-9ECR.

Kapoutsou, E., Tzovas, C. and Chalevas, C. (2015), "Earnings management and income tax evidence from Greece", *Corporate Ownership and Control*, Vol. 12 No. 2, pp. 523-541, doi: 10.22495/cocv12i2c5p1 or, available at: https://www.scopus.com/inward/record.uri?eid=2-s2.0-84925956984&partnerID=40&md5=6fe810e4e00c802e682a5f462d501238

Karampinis, N.I. and Hevas, D.L. (2013), "Effects of IFRS adoption on tax-induced incentives for financial earnings management: evidence from Greece", *International Journal of Accounting*, Vol. 48 No. 2, pp. 218-247, doi: 10.1016/j.intacc.2013.04.003.

Kolsi, M.C. and Grassa, R. (2017), "Did corporate governance mechanisms affect earnings management? Further evidence from GCC Islamic banks", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 10 No. 1, pp. 2-23, doi: 10.1108/IMEFM-07-2015-0076.

Marinovic, I. (2013), "Internal control system, earnings quality, and the dynamics of financial reporting", *RAND Journal of Economics*, Vol. 44 No. 1, pp. 145-167, doi: 10.1111/1756-2171.12015.

Paul, M.H. and Wahlen, M.J. (1999), "A review of the earnings management literature and its implications for standard setting", *Accounting Horizons*, Vol. 13 No. 4, pp. 365-383, doi: 10.2308/acch.1999.13.4.365.

Persakis, A. and Iatridis, G.E. (2017), "The joint effect of investor protection, IFRS and earnings quality on cost of capital: an international study", *Journal of International Financial Markets, Institutions and Money*, Vol. 46, pp. 1-29, doi: 10.1016/j.intfin.2016.10.001.

Phillips, J., Pincus, M. and Rego, S.O. (2003), "Earnings management: new evidence based on deferred tax expense", *Accounting Review*, Vol. 78 No. 2, pp. 491-521, doi: 10.2308/accr.2003.78.2.491.

Rydqvist, K., Schwartz, S.T. and Spizman, J.D. (2014), "The tax benefit of income smoothing", *Journal of Banking and Finance*, Vol. 38 No. 1, pp. 78-88, doi: 10.1016/j.jbankfin.2013.09.017.

Sundvik, D. (2017), "Tax-induced fiscal year extension and earnings management", *Journal of Applied Accounting Research*, Vol. 18 No. 3, pp. 356-374, doi: 10.1108/JAAR-06-2015-0051.

Wang, D. (2006), "Founding family ownership and earnings quality", *Journal of Accounting Research*, Vol. 44 No. 3, pp. 619-656, doi: 10.1111/j.1475-679X.2006.00213.x.

Ye, K., Zhang, R. and Rezaee, Z. (2010), "Does top executive gender diversity affect earnings quality? A large sample analysis of Chinese listed firms", *Advances in Accounting*, Vol. 26 No. 1, pp. 47-54, doi: 10.1016/j.adiac.2010.02.008.

Corresponding author
Allam Hamdan can be contacted at: dr.allamh@gmail.com