

# Does corporate governance influence earnings management in listed companies in Bahrain Bourse?

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## Abstract

**Purpose** – This paper aims to consider data for listed companies in Bahrain Bourse to determine whether companies practice earnings management (EM). Further, the effect of a set of corporate governance characteristics on EM practices is examined.

**Design/methodology/approach** – The EM level was measured using discretionary accruals (DA) [calculated using the Modified Jones (1995) Model]. The study sample consisted of 20 companies listed during the period 2011-2015. Panel regression model was used to test the study hypotheses and achieve the study aims.

**Findings** – EM is negatively correlated with board size, confirming that a larger board is associated with a lower level of EM practices. Further, board independence is positively correlated with EM, suggesting that the larger the number of independent directors, the higher the level of EM practices. In addition, internal ownership is positively related to EM, confirming that the higher level of internal ownership increases EM practices. CEO duality does not appear to have any effect on EM in Bahrain Bourse. More interestingly, the findings reveal that companies practice EM through income-increasing DA.

**Research limitations/implications** – Financial data and data related to other corporate governance characteristics are lacking.

**Practical implications** – The results of this study provide empirical support for the development of new regulations and amendments and necessary corrective decisions regarding the effectiveness of applying corporate governance code in Bahrain Bourse. More specifically, this study reveals an urgent need for new amendments to restrict EM practices in Bahrain Bourse.

**Originality/value** – This study enriches the EM literature by covering Bahrain as an Asian country, which has not been sufficiently examined in relation to this topic. Further, this study provides a clear picture of the level of EM practices in Bahrain Bourse to multiple parties.

**Keywords** Discretionary accruals, Board size, Corporate governance, CEO duality, Internal ownership, Modified Jones (1995) model

**Paper type** Research paper

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## 1. Introduction

Over the past few decades, there have been a number of well-known scandals in which auditors failed to warn about the manipulation of firms' financial reports (e.g. WorldCom and Enron). [Goncharov \(2005\)](#) found that earnings management (EM) practices are typically at the core of such scandals. Managers use some of the flexibility allowed by accounting policies and practices to affect accounting profits ([Parfet, 2000](#)). Thus, fraud cases in the stock markets have proven the existence of unethical behavior and revealed a need for transparency and reliability in firms' financial reports ([Lang and Lundholm, 2000](#); [Kardan, et al., 2016](#)). High-profile corporate failures have also heightened global awareness of the importance of corporate transparency, reliability and accountability ([Ahmad-Zaluki and Nordin Wan-Hussin, 2010](#); [Shehata, 2015](#)).

Received 3 June 2017  
Revised 28 August 2017  
16 November 2017  
Accepted 22 December 2017

Because corporate failures have become a major concern for investors worldwide ([Alareeni and Branson, 2012](#); [Dalwai et al., 2015](#)), regulators have established corporate governance to maintain investor interests, improve confidence in stock markets, protect information transparency, mitigate conflicts of interest and increase auditor independence ([Leuz et al., 2003](#)). A high governance level may prevent EM practices among managers ([González and García-Meca, 2014](#)), which could decrease the magnitude of company failures/bankruptcies and thus positively affect shareholders and other related parties ([Johnson et al., 2000](#); [Fich and Shivadasani, 2006](#); [Cheng et al., 2010](#); [González and García-Meca, 2014](#)).

Many prior studies have investigated the relationship between corporate governance characteristics and EM practices ([Brick et al., 2006](#); [Hashim and Devi, 2008](#); [Kumari and Pattanayak, 2014](#); [Campa and Donnelly, 2014](#)). These studies have primarily been conducted in developed countries and some developing countries in which investors and all financial statement users are, in general, well-protected by the legal system and the level of transparency is high. These studies have shown progress in the quality of earnings due to the implementation of corporate governance.

While the relationship between corporate governance characteristics and EM has been tested extensively in developed countries, much less is known about this relationship in developing countries, particularly Gulf Cooperation Council (GCC) countries as Asian countries. More interestingly, the results on this relationship in developing countries differ between studies depending on several factors such as industry, sample size, year of data and economic environment.

For instance, in India and China, [Sarkar et al. \(2008\)](#) and [Gulzar and Zongjun \(2011\)](#) found a significant positive association between CEO duality and EM, namely, boards that have directors with multiple functions exhibit higher EM. By contrast, the findings of [Castañeda \(2000\)](#) did not support a positive impact of CEO duality on EM and showed that majority owners occupy dual roles in 85 per cent of Mexican listed firms. In Malaysia, [Saleh et al. \(2005\)](#) predicted a negative relationship between board size and EM, indicating that larger boards are more likely to decrease the EM level. In the following year, [Abdul Rahman and Ali \(2006\)](#) revealed that EM is positively related to board size in Malaysia, with no significant relationship between other corporate governance characteristics and EM. In China, [Liu and Lu \(2007\)](#) proved empirically that firms with higher levels of corporate governance have lower levels of EM. [Ali Shah et al. \(2009\)](#) found that the relationship between corporate governance and EM is positive for Pakistani listed firms. Finally, [Al-Abbas \(2009\)](#) found no evidence of a relationship between corporate governance and EM in Saudi Arabia.

Recently, GCC countries have developed their own corporate governance codes. In this regard, [Shehata \(2015\)](#) compared GCC corporate governance codes to clarify areas of similarities and differences in the scopes and requirements of each code. He found major differences in corporate social responsibility. In addition, corporate governance codes are more recent in the Middle East and North Africa (MENA) region than in developed countries. Considerable progress is needed in the MENA region, including the GCC and other Asian countries, to reach the current status of corporate governance in developed countries.

Thus, there is a real need to test the relationship between corporate governance and EM in different economic environments using recent time periods and industries and, more specifically, in the context of GCC countries as Asian countries in which the relationship between corporate governance and EM has received inadequate attention.

As an example GCC country, the situation in Bahrain remains questionable. Bahrain has recently begun experiencing economic difficulties as a result of increasing oil prices. High oil prices influence the costs of other production and manufacturing and increase transport and other business costs. Ultimately, the high price of oil could affect the whole economy

and, consequently, firms' activities, increasing the possibility of losses in Bahrain. [Zhang et al. \(2012\)](#) noted that Chinese firms engage in EM after the first year of loss. In addition, companies' managers also can feel pressure to manipulate the companies' accounting practices to keep the companies' shares price up, as many executives receive benefits and bonuses based on companies' earnings. Furthermore, managers may increase current earnings to either signal good future performance, or to hide bad past performance. Consequently, these factors could motivate Bahrain firms to forgo some principles of corporate governance and practice EM. Therefore, this study aims to detect the EM behavior of firms listed on Bahrain Bourse and show whether companies practice management of positive (income-increasing) discretionary accruals (DA) or management of negative (income-decreasing) DA. Further, this study analyzes the effect of a set of corporate governance characteristics (internal ownership, board independence, board size and CEO duality) on EM behavior.

This study is the first to focus on the relationship between corporate governance characteristics and EM in companies listed on Bahrain Bourse. Thus, this study enriches the corporate governance and EM literature by covering the Bahrain context as an Asian country, which has not been sufficiently examined in relation to this topic. Further, the results of this study will provide a clear picture of the level and quality of EM practices in Bahrain Bourse to multiple parties, such as auditors, credit institutions and financial statement users in general. More specifically, this study recommends that policymakers responsible for Bahrain corporate governance code establish new rules and procedures to protect the interests of shareholders, particularly with respect to EM practices.

The remainder of this study is divided into four sections. Section 2 presents the theoretical background and hypothesis development. Section 3 presents the design and research methodology. Section 4 describes the study results. Section 5 presents the study conclusions, limitations and scope for further research.

## 2. Theoretical background and hypotheses development

### 2.1 Gulf Cooperation Council countries and corporate governance codes

The six GCC countries are the Kingdom of Saudi Arabia, United Arab Emirates (UAE), Bahrain, Kuwait, Oman and Qatar. These countries share similar characteristics in terms of their ethnicity (Arab), religion (Islam), political regime (monarchy) and culture and traditions ([Benbouziane and Benmar, 2010](#)). All GCC countries appear in groups of emerging or developing economies and are classified as high-income countries ([World Economic Outlook, 2017](#)). The economic characteristics of these countries are reflected by their economic indicators. In terms of GDP per capita, for example, Qatar ranked first globally in 2016. Kuwait, the UAE, Oman and Bahrain also earned high rankings (3, 7, 12 and 13, respectively) (CIA World Factbook, 2010). The GCC countries have large reserves of oil. Saudi Arabia, the UAE, Kuwait and Qatar are among the top ten oil or gas exporters worldwide. Oman and Qatar also have significant exports. With economic changes on the global stage, the majority of the GCC countries have moved steadily from centralized to market economies ([Alia, 2010](#)). [Accenture \(2011\)](#) argued that the GCC countries emerged from the global financial crisis relatively unscathed due to their policies and development activities. In recent years, the GCC countries have attempted to diversify their revenue to include manufacturing, retail, construction, the tourism sector and housing investments and reduce their dependence on revenues from the oil and gas sector ([Dalwai et al., 2015](#)).

Like all countries, the GCC countries require effective corporate governance for many reasons, such as weak legal controls and investor protection; weak illiquid stock markets; government intervention; economic uncertainty; and high concentration of ownership ([Rabelo and Vasconcelos, 2002](#); [Dalwai et al., 2015](#)). Accordingly, the GCC countries have begun developing their own corporate governance systems codes using international best

practices as well as corporate governance principles. Other MENA corporate governance codes have also been used in developing the GCC codes. For example, the Kuwaiti code refers to both international and MENA codes ([Dalwai et al., 2015](#)).

## ***2.2 Bahrain Bourse, corporate governance code and policy***

Bahrain Bourse was established in 1987 and officially commenced operations in 1989 with 29 listed companies. Bahrain Bourse is fully owned by the Government of the Kingdom of Bahrain. As of 2015, 46 firms from different sectors were listed on the exchange. The market capitalization of the companies listed on the Bourse decreased to BD7.20bn in 2016 compared to BD8.33bn at the beginning of the year. Bahrain Bourse is a self-regulated multi-asset marketplace and aims to offer a comprehensive suite of exchange-related facilities, including offering, listing, trading, settlement and depository services for various financial instruments. Bahrain Bourse is considered an emerging capital market in the Middle East. It is the smallest but most stable and transparent market among the GCC countries. The capital market in Bahrain is connected to the economies of the GCC countries, which depend on the petroleum industry. Any increase or decrease in the petroleum industry will directly affect the growth of other business sectors and investment companies.

Accordingly, the Bahrain Government has promoted good corporate governance standards to protect investor rights, in addition to supporting capital market improvement. A corporate governance code was issued by the Central Bank of Bahrain & the Ministry of Industry and Commerce following a deliberative process extending over more than a year. The purpose of this code was to establish best-practice corporate governance principles and provide protection for investors and other company stakeholders through compliance with those principles. Drafting of the Bahraini corporate governance code began in 2006, with implementation in 2011 (Kingdom of Bahrain Ministry of Industry and Commerce and Central Bank of Bahrain report, 2010).

Bahrain Bourse seeks to apply the rules and principles of the corporate governance code in an effective manner and enhance compliance with the requirements of corporate governance. Such compliance will contribute to restrict EM practices and thus help enhance the efficiency of the capital market and attract increased domestic and foreign investment. By playing a key role in building investor confidence and enhancing the level of disclosure and transparency, good governance protects the interests of all stakeholders, thereby contributing to the strengthening of the position of the Kingdom of Bahrain as a financial center.

As the importance of corporate governance practices has increased in Asian countries and, more specifically, in GCC countries, relevant progress in Bahrain has been analyzed. Some prior studies have addressed issues of corporate governance in Bahrain. For example, [Hussain and Mallin \(2002\)](#) used a questionnaire to evaluate 33 firms listed on Bahrain Bourse and observed certain good practices of international corporate governance in Bahrain, including a predominance of non-executive directors on the firms' boards, separation between the responsibilities of the CEO and chairman and the presence of internal audit departments. In the following year, [Hussain and Mallin \(2003\)](#) examined corporate governance practices to analyze the board dynamics in Bahrain, revealing that non-executive directors are nominated for a term of three years if they have the relevant experience, skills and reputation. In addition, firms do not have nomination committees, and thus non-executive directors are appointed by the board of directors. Most firms have an audit committee and remuneration committee in place.

In 2011, a study by [Magalhães and Al-Saad \(2013\)](#) of Bahrain Islamic financial institutions revealed that the management of Islamic financial institutions is biased in its accountability

toward equity holders to the detriment of unrestricted investment account holders. Moreover, the measures deployed to avoid conflicts of interest are not sufficiently effective.

### 2.3 The relationship between corporate governance and earnings management

Jiraporn *et al.* (2008) argued that EM damages the value of firms by decreasing financial reporting quality. EM has the potential to decrease shareholder wealth (Park and Shin, 2004) because financial information will be less informative to shareholders (Teoh *et al.*, 1998; Alareeni and Branson, 2012). A high level of corporate governance could mitigate this information asymmetry and decrease the discrepancy between the managers and shareholders of firms.

Corporate governance characteristics can restrict the discretionary behavior of managers (Mersni *et al.*, 2016). For example, board governance can directly affect managers' decisions and activities. Consequently, good board governance can use internal control systems to control EM (DeFond and Jiambalvo, 1994; Kumari and Pattanayak, 2014). The prior literature has also documented how the characteristics and ownership structure of a board can limit EM because independent directors do not seek self-interests such as executive compensation and fraudulent assets or delude investors to meet personal objectives (Dechow and Dichev, 2002; Klein, 2002; Peasnell *et al.*, 2005).

The following sub-sections discuss the development of the hypotheses concerning the relationships between a set of corporate governance characteristics and EM.

**2.3.1 Internal ownership.** According to agency theory, when managers are not owners of the companies that they manage, their behavior and supervision are affected by their interest and aims, which may lead them to engage in EM practices because managers always seek to manage companies to maximize their benefits and profits. By contrast, when managers have shares in the companies that they manage, they will be directed to maintain their interests and show less discretionary behavior (Alonso and De Andrés, 2002). "Thus, internal ownership can be classified as a technique to reduce the opportunistic behavior of managers (González and García-Meca, 2014), and therefore the EM level is expected to be negatively related to internal ownership (Warfield *et al.*, 1995). Machuga and Teitel (2009) showed that companies with internal ownership have greater earnings quality than matched companies without internal ownership. A negative relationship between internal ownership and EM level has been found by Warfield *et al.* (1995) and many others (Jensen and Meckling, 1976; Sánchez-Ballesta and García-Meca, 2007; Jiraporn *et al.*, 2008; Türegün, 2016).

Conversely, non-moderate internal ownership can have a negative impact on the firms, since the greater manager's authority may lead them to make accounting decisions which reverberate personal aims, hence influencing the objective of maximizing firm value (Jung and Kwon, 2002). In this regards, prior studies showed that higher internal ownership of managers leads to EM to enable them to make the most of personal wealth (Gabrielsen, *et al.*, 2002; Peasnell *et al.*, 2005). In addition, further studies have indicated no significant relationship among the two variables (Habbash, 2010).

Thus, the following hypothesis on the effect of internal ownership on EM practices in Bahrain is formulated:

*H1.* Internal ownership negatively affects EM practices.

**2.3.2 Board size.** The board of directors is "the governance body to which shareholders delegate the responsibility of overseeing, compensating and substituting managers, as well as approving major strategic projects" Thus, the board of directors is an important component of corporate governance mechanism and is considered the central internal procedure in decreasing agency problems, either between managers and shareholders or between minority and majority shareholders (González and García-Meca, 2014). Prior

studies discuss a set of characteristics that influence the monitoring capabilities of boards and the relationship with EM, for example, board size, independence and CEO duality (Eberhart, 2012; Benjamin and Mat Zain, 2015; Yasser *et al.*, 2017).

For board size, the studies have shown a mixed relationship between board size and EM level. One line of research supports negative relationships between board size and EM practices. When the size of the board of directors is very small, oversight of management is lower, resulting in a tendency toward greater discretion among managers in obtaining higher compensation and remuneration. Consequently, there is a greater probability that managers will engage in EM. DeFond and Jiambalvo (1994) concluded that the probability of EM practices increases as board size decreases. Daghsni *et al.* (2016) investigated the impact of board size on EM for a sample of 70 French listed companies during the period 2008-2012. They found that board size had a negative impact on EM. These findings strongly indicate that large boards are more successful in controlling the actions of CEOs, which leads to higher quality of financial reporting. Many other studies have also predicted a negative relationship between board size and EM and indicated that larger boards are more likely to decrease the EM level (Saleh *et al.*, 2005; Davidson *et al.*, 2005; Brick *et al.*, 2006; Chin *et al.*, 2006; Kumari and Pattanayak, 2014).

In another line of research, Jensen (1993) suggested that smaller board size improves financial reporting quality and thus reduces the EM level. This improvement might be attributable to greater discussion of financial reporting by small boards compared to large boards. Vafeas (2000) concluded that larger boards are expected to be less effective as the control responsibility is diffused among the board of directors, thus increasing EM. Gulzar and Zongjun (2011) tested the efficiency of the board size of Chinese listed companies in mitigating and reducing EM behavior. He concluded that a smaller board is related to a low EM level. In addition, Lin (2011) and Charfeddine *et al.* (2013) concluded that board size is positively correlated with EM in Malaysia, Taiwan and Tunisia. Other studies have also revealed that a large board creates coordination problems that reduce oversight of management, thus increasing EM behavior (Beasley, 1996; Man and Wong, 2013; González and García-Meca, 2014). These findings suggest that the association between board size and EM is positive.

Further studies have indicated no relationship between board size and EM (Sukeecheep *et al.*, 2013). In this study, we support the first line of research and propose the following hypothesis:

H2. Board size negatively affects EM practices.

**2.3.3 CEO duality.** CEO duality occurs when the same person holds two roles in a company: CEO and president of the board (Chairman). According to agency theory, separation of duties is very important and may lead to effective supervision of board actions. An absence of separation between the chairman and the CEO roles may decrease the monitoring task of the board and thus increase EM because the CEO has greater discretion to practice EM and manipulate a company's financial reports (Finkelstein and D'aveni, 1994). Dechow *et al.* (1996) supported the agency theory and concluded that companies with CEO duality are at greater risk of investigation by the SEC. Accordingly, Chtourou *et al.* (2001) showed that EM is negatively related to separation between the two functions. Similarly, Sarkar *et al.* (2008) and Gulzar and Zongjun (2011) found a significant positive association between CEO duality and EM; i.e. separation of the two functions helps reduce EM practices. Along the same line, Har Sani Mohamad *et al.* (2012) examined the effect of the inclusion of corporate governance mechanisms in Malaysian Government Linked Companies on EM practices. The study showed that separation between the chairman and CEO roles negatively impacts EM activities. Furthermore, Daghsni *et al.* (2016) suggested that CEO duality may increase EM by decreasing board effectiveness and increasing discrepancy between management and the board.



However, other studies do not support a positive impact of CEO duality on EM and have shown that separation between the two functions does not exist in practice. For example, [Castañeda \(2000\)](#) showed that in 85 per cent of Mexican listed companies, the majority owners occupy dual functions. [Leal and Carvalho da Silva \(2005\)](#) conducted a survey of a sample of 400 Brazilian listed companies and found that 36 per cent of companies have authority concentrated in the CEOs and chairmen. In this context, we suggest the following hypothesis:

*H3. CEO duality positively affects EM practices.*

*2.3.4 Board independence.* [Daghshi et al. \(2016\)](#) reported that board independence is one of the most important determinants of board effectiveness in decreasing manager discretion and thus EM. Therefore, to increase the effectiveness and activity of a board of directors in terms of its monitoring functions, agency theory suggests including independent directors (non-executive) on company boards. In addition, prior studies suggest that board independence increases board control of companies and thus decreases EM.

In this regard, several studies have found a negative relationship between board independence and EM. For example, [Beasley \(1996\)](#) revealed that companies practicing EM have significantly fewer non-executive directors than companies that do not practice EM. [Dechow et al. \(1996\)](#) compared the ratio of independent directors in companies practicing EM with companies that do not and found that EM is correlated with an inadequate level of board independence. Similarly, [Klein \(2002\)](#) and [Peasnell et al. \(2005\)](#) found that board independence is an important tool to decrease EM practices and significantly constrains earnings manipulation. [Cheng and Courtenay \(2006\)](#) affirmed that the level of independence is directly associated with financial reporting quality. [Zhang et al. \(2012\)](#) examined a set of governance characteristics and EM practices in the context of delisting regulation in China and found that delisted companies had greater agency problems and a very low level of independence. In addition, [Iraya et al. \(2015\)](#) showed that companies with independent members are less likely to be involved in EM.

In contrast to these studies, [Osma and Nogueir \(2007\)](#) and [Supawadee et al. \(2013\)](#) found a positive significant relationship between the level of EM and the proportion of independent directors, affirming that a greater number of independent directors or non-executive directors is associated with a higher level of EM practices.

Meanwhile, other studies have confirmed no relationship between board independence and EM. For instance, [Saleh et al. \(2005\)](#) examined data from 561 companies listed on the Kuala Lumpur Stock Exchange and found that the level of board independence was not significantly related to EM in Malaysian companies. [Abdul Rahman and Ali \(2006\)](#) and [Gulzar and Zongjun \(2011\)](#) revealed that board independence had no effect on decreasing EM practices in companies. Hence, the following hypothesis is proposed to test the impact of board independence on EM.

*H4. Board independence negatively affects EM practices.*

### 3. Design and research methodology

#### 3.1 Sample and data

In 2015, Bahrain Bourse comprised 46 listed firms from different sectors, as shown in [Table I](#). Our study sample consists of companies listed on Bahrain Bourse and selected based on the following criteria:

- classification of the company as an industrial or service company; and
- available company data for five years for the period 2011-2015.

**Table I** Sample selection

No.	Sector	Listed firms	Excluded firms	Study sample	Study observations
1	Service sector	15	0	15	75
2	Industrial sector	5	0	5	25
	<i>Final sample</i>	20	0	20	100

Other sectors such as banks, insurance and financial services were excluded because they have unique characteristics (Carcello and Nagy, 2004) and complex properties that differ from those of other sectors (Al-Thuneibat, *et al.*, 2011). In addition, other sectors are likely to have different accruals (Türegün, 2016). Our final sample of 20 firms is shown in Table I. This small sample size might represent a limitation of this study.

Data on the financial reports of the companies were obtained from the Bloomberg database and annual company reports available on the Bahrain Bourse website.

Notably, the data comprise time-series and cross-sectional data, allowing us to analyze the data as panel data. Balanced panels were used for the observations incorporated in the study.

### 3.2 Measurement of discretionary accruals

The dependent variable in this study is EM, which is measured by DA calculated using the Modified Jones (1995) Model. Prior studies have used different models to estimate DA. For example, Dechow *et al.* (1995) and Bartov *et al.* (2001) evaluated the performance of various models of calculating EM developed in prior studies and proved that the Modified Jones (1995) Model provides the most powerful test of EM. Many other studies support the Modified Jones (1995) Model as the best measurement of DA and the most common model for estimating DA (Dechow *et al.*, 1995; Teoh *et al.*, 1998; Francis *et al.*, 1999; Xie *et al.*, 2003; Saleh and Ahmed, 2005; Atieh, and Hussain, 2012; Alareeni and Aljuaidi, 2014).

The Modified Jones (1995) Model is a cross-sectional model. The cross-sectional model has the following advantages over the time-series model:

- the cross-sectional model supposes that coefficient estimates on changes in revenues and plant, property and equipment cannot be stationary over time, in contrast to the time-series Jones model; and
- the cross-sectional model helps avoid survivorship.

The self-reversing property of accruals may introduce specification problems in the form of serially correlated residuals (Bartov *et al.*, 2001; Peasnell *et al.*, 2005; Alareeni and Aljuaidi, 2014).

The Modified Jones (1995) Model is based on the following equation:

$$\frac{TACC_{it}}{A_{it-1}} = \alpha_0 + \alpha_1 \left( \frac{1}{A_{it-1}} \right) + \alpha_2 \left( \frac{\Delta REV_{it} - REC_{it}}{A_{it-1}} \right) + \alpha_3 \left( \frac{\Delta PPE_{it}}{A_{it-1}} \right) + \varepsilon_{it} \quad (1)$$

where

$TACC_{it}$  (Total accruals) = Accounting Earnings – CFO;

$A_{it-1}$  = Total asset in year  $t-1$ ;

$\Delta REV_{it}$  = Change in the revenues of company  $i$  from year  $t-1$  to year  $t$ ;

$REC_{it}$  = Change in the receivables of company  $i$  from year  $t-1$  to year  $t$ ;

$\Delta PPE_{it}$  = Fixed asset of company  $i$  at the end of year  $t$ ; and

$\varepsilon_{it}$  = Errors of company  $i$  in year  $t$ .



To estimate the parameters ( $\alpha_0, \alpha_1, \alpha_2, \alpha_3$ ) of the Modified Jones (1995) Model in [equation \(1\)](#), multiple regression analysis was used. Using these estimated parameters from [equation \(1\)](#), the non-discretionary accruals (NDA) are calculated, for each sample firm-year observation using the Modified Jones (1995) Model, as shown in [equation \(2\)](#):

$$NDA_{it} = \alpha_0 + \alpha_1 \left( \frac{1}{A_{it-1}} \right) + \alpha_2 \left( \frac{\Delta REV_{it} - REC_{it}}{A_{it-1}} \right) + \alpha_3 \left( \frac{\Delta PPE_{it}}{A_{it-1}} \right) \quad (2)$$

Finally, the DA proxy is obtained by finding the difference between total accruals and estimated NDA, as presented in [equation \(3\)](#):

$$DA_{it} = TA_{it} - NDA_{it} \quad (3)$$

Thus, the absolute value of discretionary accruals Abs ( $DA_{it}$ ) is used as a measure of the degree of EM. This is in line with many prior studies on EM which indicate that the study of the quality of results does not impose any direction or sign on the expectations of EM ([Osma and Noguer, 2007](#); [Har Sani Mohamad et al., 2012](#); [González and García-Meca, 2014](#)).

### 3.3 Study model and variables

This study considers panel data and uses regression analysis to test the impact of a set of corporate governance characteristics (board size, board independence, CEO duality and internal ownership) on EM in companies listed on Bahrain Bourse. In addition, this study incorporates a set of specific control variables for firms used in previous studies that have been connected with corporate governance and EM, such as assets growth (AGROWTH), financial leverage (FLEV), earnings per share (EPS) and total assets (TA), to test their impact on EM.

AGROWTH is measured by the annual change in total assets. It is used as a measure for company growth which may impact opportunistic behaviors of managers. [Gul et al. \(2009\)](#), and [Sharma and Kuang \(2014\)](#) highlighted a positive association between AGROWTH and EM. On the other hand, [Jaggi et al. \(2009\)](#) reported a negative relationship between these two variables, while other studies like ([González and García-Meca, 2014](#)) found a positive association.

[Watts and Zimmerman \(1986\)](#) hypothesized that FLEV influences the accounting choices. It is expected to influence the EM due to debt covenant. High leverage companies have strong motives to use income-increasing accruals to slacken the debt restraints ([Peasnell et al., 2005](#)). Conversely, highly leveraged companies may be less capable of being involved in EM since they are under control of banks and lenders ([Park and Shin, 2004](#)).

TA is used to measure firm size, to control for the differences in managers' behavior of small and large firms. Some studies have debated that larger firms have supplementary steady EM, and others confirmed that level of EM showed through larger firms is consistently lower ([Gul et al., 2009](#)). [Watts and Zimmerman \(1986\)](#) argued that firm size may influence the accounting choices and could explain the level of DA in order to decrease the political sensitivity of regulators. In addition, larger firms may have other motives to practice EM for achieve more benefits for their managers ([Chen et al., 2007](#)).

Generally, earnings are used as a measure for firm's success and its ability to continue as a going-concern. Once the firm raises its EPS, it increases its value, creating a good impression of the firm's future position for the investors. Thus, this could motive managers to engage in EM practices to enhance EPS value ([Türegün, 2016](#)).

However, the methodology first involves estimating values of DA for each firm based on the Modified Jones (1995) Model. The absolute value of discretionary accruals Abs ( $DA_{it}$ ) is

then incorporated as a dependent variable with the corporate governance characteristics variables as independent variables, as shown in the following equation (4):

$$Abs(DA_{it}) = \alpha_0 + \alpha_1(INTOWN) + \alpha_2(BOARDS) + \alpha_3(DUALITY) + \alpha_4(BOARDIND) + \alpha_5(AGROWTH) + \alpha_6(EPS) + \alpha_7(FLEV) + \alpha_8(TA) + \varepsilon_{it} \quad (4)$$

The variables of the study model are measured as shown in Table II.

## 4. Analysis and results

### 4.1 Descriptive analysis

Table III presents the descriptive analysis including the mean, median, minimum, maximum and Std. Dev. of all dependent and independent variables. The mean Abs (DA) is 0.0543 with a Std. Dev. of 0.084192 and ranges from 0.0001 to 0.52. Thus, companies in Bahrain are relatively engaged in practicing EM through income-increasing DA.

The mean value of internal ownership is 6.266 per cent with a Std. Dev. of 9.756218 and ranges from 0 to 40.8 per cent. Thus, in general, the property percentage of managers in the companies' shares is very limited (only 6.266 per cent). As discussed above, the managers' behavior and supervision are affected by their interest and aims, therefore, once their property percentage in the companies' shares is small, this may lead them to engage

Table II Description of the study variables		
Variable	Definition	Description
Abs (DA)	Absolute Value of Discretionary Accruals	Absolute value of discretionary accruals, estimated using the Modified Jones (1995) Model as shown in equation (3)
INTOWN	Internal Ownership	Measured by the property ratio of managers in the company's shares
BOARDS	Board Size	Measured by the total number of board members
DUALITY	President-CEO Duality	Measured by a dummy variable equal to 1 if the chairman and CEO are the same person in company i and 0 otherwise
BOARDIND	Board Independence	Indicates the presence of independent directors or non-executive directors on the board; takes a value of 1 when the board of directors contains one or more independent directors and 0 otherwise
AGROWTH	Assets Growth	Measured by the annual change in total assets
EPS	Earnings per Share	A company's earnings per share
FLEV	Financial Leverage	Measured by total debt to total assets
TA	Total Assets	The natural logarithm of company's total assets at the end of year t

Table III Descriptive analysis of the study variables					
Variable	Mean	Median	Maximum	Minimum	SD
Abs (DA)	0.0543	0.0300	0.5200	0.0001	0.084192
INTOWN	6.2602	3.0000	40.800	0.0000	9.756218
BOARDS	9.4578	10	16	7	1.425390
DUALITY	0.1927	0	1	0	0.396873
BOARDIND	0.3614	0	1	0	0.483340
AGROWTH	3.1902	3.3684	51.1767	-15.7301	9.040546
FLEV	1.5192	1.3201	2.7903	1.0199	0.478508
TA	4.5625	4.4200	7.1700	2.5400	1.145403
EPS	0.0347	0.0292	0.1500	-0.1688	0.040417

in EM practices because managers always seek to manage companies to maximize their benefits and profits.

According to the corporate governance code in Bahrain, a board should not be larger than 16 members and should regularly be reviewed to assure that it is sufficiently small for effective decision making. However, the Bahrain Corporate Governance Code does not specify a minimum board size. The average board size in the sample is 9.4578 members, which is comparable to the average board size in Malaysia ([Har Sani Mohamad et al., 2012](#)). In China, [Zhang et al. \(2012\)](#) reported that the minimum and maximum board sizes are 5 and 15 members, respectively, with a mean value of 9.54. Thus, the average board size in Bahrain is reasonable compared to those in other Asian countries.

The mean CEO duality is 0.1927, which indicates that the majority of CEOs and chairmen do not occupy dual roles in the companies listed on Bahrain Bourse. This result is consistent with the study of [Sarkar et al. \(2008\)](#) in India, which indicated that CEO duality was 0.23. Moreover, these results are better than the situation in other developing Asian countries such as China, where the CEO duality percentage is 0.38 ([Zhang et al. \(2012\)](#)).

The mean value of board independence is 0.3614. Thus, only 36.14 per cent of companies listed on Bahrain Bourse have independent directors and a strategy of board independence. More specifically, the percentage of firms with independent directors is 36.14 per cent. According to the Bahrain Corporate Governance Code, at least half of a company's board should be non-executive directors, of which at least three should be independent directors. Thus, Bahrain firms have not followed the requirements of the corporate governance code regarding board independence. In China, [Zhang et al. \(2012\)](#) reported that the average number of independent directors is 1.78. In India, [Sarkar et al. \(2008\)](#) indicated that the percentage of firms with independent directors is 54.16 per cent. In Malaysia, ([Har Sani Mohamad et al., 2012](#)) indicated that the mean values of board independence were 40 and 41 per cent for the years 2003 and 2006, respectively, higher than the mean value of board independence in Bahrain in 2015. The situation in Malaysia as a developing country is similar to those in some developed countries, such as the UK. [Klein \(2002\)](#) showed that approximately 42 per cent of listed companies in the UK have independent directors.

In conclusion, Bahraini companies must continue to increase the level of board independence in light of its own corporate governance code requirements and compared to developed countries.

The control variables of assets growth, financial leverage, total assets and earnings per share are equal to 3.1902, 1.5192, 4.5625 and 0.0347, respectively.

However, to match the requirements of the regression analysis assumptions, we first examine the correlations between the study variables and test the multicollinearity problem using Pearson's correlation. [Table IV](#) presents the correlation outputs, with a focus on testing the relationships between the study variables (dependent and independent variables) as well as among the independent variables. According to [Hair et al. \(2006\)](#), the presence of high correlations (generally 0.90 and above) is the first indicator of substantial multicollinearity. As shown in [Table IV](#), the highest correlation is between the financial leverage variable and board size variable, with a value of 0.506611. Thus, there is no multicollinearity problem for all study variables because the maximum value does not exceed 0.9.

In addition, [Table IV](#) shows negative and significant correlations between Abs (DA) and TA and EPS, with correlation values of  $-0.177$  and  $-0.204$ , respectively. These correlations indicate that TA and EPS negatively influence the level of EM practices in Bahrain. This finding is consistent with many prior studies ([Daghsni et al., 2016](#); [Ahmad-Zaluki and Nordin Wan-Hussin, 2010](#)), and not in line with [Türegün, \(2016\)](#).

**Table IV** Pearson's correlations

Variable	Abs (DA)	AGROWTH	FLEV	TA	EPS	BOARDIND	BOARDS	DUALITY	INTOWN
Abs (DA)	1								
	–								
AGROWTH	–0.004	1							
Sig.	(0.483)	–							
FLEV	0.009	–0.083	1						
Sig.	(0.465)	(0.205)	–						
TA	–0.177*	0.023	0.443**	1					
Sig.	(0.039)	(0.411)	(0.000)	–					
EPS	–0.204*	0.318**	–0.136	0.065	1				
Sig.	(0.021)	(0.001)	(0.089)	(0.259)	–				
BOARDIND	–0.046	0.239**	0.119	0.206*	0.063	1			
Sig.	(0.326)	(0.008)	(0.120)	(0.020)	(0.266)	–			
BOARDS	–0.175	–0.118	0.587**	0.133	–0.077	–0.119	1		
Sig.	(0.056)	(0.144)	(0.000)	(0.116)	(0.244)	(0.142)	–		
DUALITY	0.063	–0.030	–0.215*	–0.239**	–0.281**	–0.016	–0.093	1	
Sig.	(0.265)	(0.385)	(0.016)	(0.008)	(0.002)	(0.437)	(0.201)	–	
INTOWN	0.044	0.001	0.127	0.043	–0.041	–0.043	0.128	–0.067	1
Sig.	(0.333)	(0.496)	(0.103)	(0.334)	(0.341)	(0.334)	(0.124)	(0.254)	–

Notes: \*Correlation is significant at the 0.05 level (1-tailed); \*\*correlation is significant at the 0.01 level (1-tailed)

In addition, tolerance and variance inflation factor (VIF) tests revealed no harmful correlation. According to Field (2009) and Neter *et al.* (1996), if the largest VIF is greater than 10, there is cause for concern. However, the maximum VIF value is 1.754. In addition, tolerance value is greater than 0.20 for all variables (the smallest tolerance is 0.570). Therefore, this study is not subject to high collinearity problems. Overall, there are no linearity, multicollinearity and autocorrelation problems. Thus, the models developed in the study are statistically significant for explaining Abs (DA).

#### 4.2 Regression results

After conducting the descriptive analysis of the variables and testing the regression analysis assumptions, we apply the regression analysis to test the impact of corporate governance characteristics (independent variables) on Abs (DA) (dependent variable).

However, to identify whether random effects or fixed effects is the best regression model for the collected data, we use the Hausman Test. Significant results (below 5 per cent) indicate that the fixed effects model is superior for our data.

As shown in Table V, the results of the Hausman Test show that the chi-square of the model is 0.0001, which is less than 0.05 (5 per cent). Thus, the time fixed effects model based on panel data is the best model for the study sample.

To test the study hypotheses and achieve the study aims, Table VI shows the results of the regression analysis using panel data. The relationships between the dependent variable Abs (DA) and independent and control variables are shown.

The results show that board size has a negative impact on Abs (DA) at the 5 per cent level. This finding supports *H2* and is consistent with some prior studies in developed countries that have predicted a negative relationship between board size and EM practices; i.e.

**Table V** Test of cross-section random effects – Hausman test

Test summary	Chi-Sq. statistic	Chi-Sq. d.f.	Prob.
Cross-section random	30.464219	7	0.0001

**Table VI** Time fixed effects model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
<i>Control variables</i>				
AGROWTH	0.000897	0.000895	1.001696	0.3198
EPS	-0.610491	0.301727	-2.023322	0.0467
FLEV	0.062802	0.062448	1.005666	0.3178
TA	0.063824	0.064468	0.990013	0.3252
<i>Independent Variables</i>				
BOARDS	-0.030843	0.009283	-3.322744	0.0015
BOARDIND	0.076733	0.029078	2.638829	0.0105
DUALITY	0.017500	0.073935	0.236695	0.8135
INTOWN	0.042286	0.017028	2.483308	0.0151
C	0.316749	0.282850	1.119850	0.2675
R-sq: Within	0.266		F-statistic	9.2213
Between	0.212		Prob(F-statistic)	0.0000
Overall	0.211			

larger boards are more likely to decrease EM (Beasley, 1996; Xie *et al.*, 2003; Azofra *et al.*, 2005; Peasnell *et al.*, 2005; Brick *et al.*, 2006; González and García-Meca, 2014; Daghsni *et al.*, 2016). These results are also consistent with other studies in developing Asian countries (Saleh *et al.*, 2005; Kumari and Pattanayak, 2014). Thus, it is very clear that board size plays an important role in protecting the interests of shareholders in Bahrain compared to developed countries and some developing Asian countries. This finding emphasizes the important role of boards in monitoring financial reporting and mitigating EM practices. When the board size is very small, oversight of management is lower, resulting in a tendency toward greater discretion among managers to engage in EM. According to DeFond and Jambalvo (1994), the probability of EM practices increases as board size decreases. However, this result is not in line with some studies in developing Asian countries. For example, Abdul Rahman and Ali (2006) indicated that EM is positively related to board size in Malaysia, and other studies by Lin (2011) and Charfeddine *et al.* (2013) concluded that board size is positively correlated with EM in Malaysia, and Taiwan, respectively. These discrepancies indicate that Bahrain is in an advanced stage with respect to enhancing the role of the board of directors and meeting its corporate governance code requirements.

Conversely, our results do not support *H4* that board independence has a significant negative impact on EM practices in Bahrain. The results show that board independence has a significant positive impact on Abs (DA) at the 5 per cent level. This positive impact may reflect the many duties and roles of independent directors in other companies, which limits their ability to control the company's activities. In addition, this may be due to the non-real presence of independent members in the board, as "there is little transparency regarding board members' compensation, their backgrounds and the appointment process, which makes it difficult for others to assess potential conflicts of interest and the true independence and competence of directors".

This result is line with a study by Osmá and Noguér (2007) in Spain, as an example of a developed country, which affirmed that the larger the number of independent directors or non-executive directors, the higher the level of EM practices. However, this result is not consistent with studies in many developed countries (Daghsni *et al.*, 2016; Beasley, 1996; Dechow *et al.*, 1996; Klein, 2002; Peasnell *et al.*, 2005; Cheng and Courtenay, 2006). However, this result is consistent with a study in Thailand by Supawadee *et al.* (2013), who found a significant positive impact of board independence on EM, thus confirming that the larger the number of independent directors, the higher the level of EM. This positive relationship contradicts the negative relationship observed in studies in developing Asian

countries (Klein, 2002; Iraya *et al.*, 2015). Further, the finding of a positive relationship is inconsistent with the lack of relationship between board independence and EM confirmed in other studies (Saleh *et al.*, 2005; Abdul Rahman and Ali, 2006; and Gulzar and Zongjun, 2011). In summary, these results indicate that the relationships between variables must be tested for each country, particularly for countries with different environmental factors as Asian countries. As noted above, results may differ between studies depending on several factors, such as industry, sample size, year of data and economic environment.

In addition, a positive significant relationship at the 5 per cent level is observed between internal ownership and Abs (DA). Thus, *H1* suggesting that internal ownership negatively affects EM practices is not supported. This reflects the greater level of ownership by managers in Bahrain have a negative impact on the firms. The greater manager's authority may lead them to EM practices to maximize their benefits and profits. This result is in line with some prior research showing that internal ownership is positively related to EM (Gabrielsen, *et al.*, 2002; Peasnell *et al.*, 2005). Yet, this result is inconsistent with agency theory and other studies that have found negative relationships between internal ownership and EM (Alonso and De Andrés, 2002; González and García-Meca, 2014; Türegün, 2016).

Furthermore, the results fail to support *H3* that CEO duality positively affects EM practices, since no significant relationship is detected. The lack of a relationship may be attributable to the separate roles and duties of the majority of CEOs and chairmen of the firms listed on Bahrain Bourse. Thus, this result is inconsistent with agency theory and many other studies that have found significant relationships between CEO duality and EM level in developed and developing Asian countries (Sarkar *et al.*, 2008; Gulzar and Zongjun, 2011; Har Sani Mohamad *et al.*, 2012; Daghsni *et al.*, 2016).

Regarding the control variables in the model, the relationship between EPS and Abs (DA) is negative and significant at the 5 per cent level. This indicates that the level of EM practices increases as company performance decreases, possibly because managers have incentives to increase EPS. This result is consistent with (Türegün, 2016), who reported that the relationship between EPS and EM is negative. We were ultimately unable to detect any significant relationships between assets growth, financial leverage, total assets and Abs (DA). Thus, there is no relationship between the assets growth level or leverage or total assets and EM practices in listed companies in Bahrain.

Notably, the F-statistic value for Abs (DA) is 9.2213, and the significance level is 0.000, which is less than the standard deviation of 0.05.

## 5. Conclusion

This study attempts to introduce empirical evidence of the influence of a set of corporate governance characteristics on EM practices in companies listed on Bahrain Bourse as an example for an Asian country from the GCC region. The impacts of internal ownership, CEO duality, board size, and board independence on EM were therefore assessed. In addition, a set of control variables was incorporated into this analysis: financial leverage, assets growth, total assets and EPS. The level of EM practices was measured using the absolute value of DA, computed using the Modified Jones (1995) Model. The study consisted of 20 Bahraini listed companies during the period 2011-2015. Further, the study used panel regression model to examine the relationships between the dependent and independent variables.

However, the findings showed that EM is negatively related to board size, confirming that a large board is more likely to reduce the EM level. The board size in Bahrain plays a vital role in protecting the interests of shareholders and restricts EM practices in Bahrain. Further, board independence is positively related to EM, confirming that a larger number of independent directors are associated with a higher level of EM practices. This relationship reflects the situation in Bahrain, which differs from that in developed and some developing



Asian countries; independent directors in Bahrain have many duties and roles in other firms and thus cannot control the companies' activities and, more specifically, EM practices. In addition, the findings showed that internal ownership is positively related to EM, confirming that internal ownership can have a negative impact on the firms, as the greater manager's authority may lead them to make accounting decisions which reverberate personal aims and, hence, lead them to engage in EM. Furthermore, the findings showed that CEO duality does not have any effect on EM in Bahrain.

Moreover, the relationship between EPS and Abs (DA) is negative, suggesting that EM increases as EPS decrease. Furthermore, no significant relationship was found between a company's assets growth level or financial leverage or its total assets and EM practices for the listed companies in Bahrain. The study results indicate that the listed companies in Bahrain are relatively engaged in practicing EM through income-increasing DA.

In general, the study results emphasize that the relationships between variables must be tested for each country, particularly when countries have different environmental factors.

The results of the study have important implications for researchers and regulators in Bahrain as an Asian country. First, the results show the type of EM practices among Bahraini firms (income-increasing DA). This crucial point warrants urgent consideration by policy makers responsible for establishing Bahraini corporate governance code, who should restrict EM practices by promoting the application of the rules and principles of corporate governance by firms in an effective manner. Second, the findings show that the board size of Bahraini firms is relatively small, with an average of 9.45 members, and that board size negatively affects the EM level. Thus, the corporate governance code should be changed to specify a minimum number of board members; currently, only the maximum size of the board is stated (16 members). Third, regulators of the corporate governance codes can use the results of this study as empirical support for the development of new regulations and amendments and the implementation of necessary corrective decisions regarding the effectiveness of applying corporate governance code in Bahrain Bourse and other Asian countries.

A limitation of this study is the absence of some financial data. Some companies were ignored because their data were not available in the Bloomberg database or from the website of Bahrain Bourse. Further, this study was conducted in Bahraini Bourse, which limited the study sample compared to similar studies. Finally, the study did not include all corporate governance characteristics due to a lack of available data.

The study excluded all financial companies, which provides scope for further research including the banking and insurance sectors, as the nature of their financial data is different. Further research could also encompass a set of company characteristics that may be relevant to the incidence of EM, such as firm age, firm size and governance index. In addition, this research could be extended to a larger number of companies by, for example, including all GCC countries because the GCC countries may have similar economic environments".

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