Corporate governance, financial transparency and currency devaluation shocks: evidence from Egypt

Marwa Hassaan and Wafaa Salah

Abstract

Purpose – *This study aims to investigate the association between corporate governance and financial transparency, using the moderating role of an Egyptian currency devaluation decision as a policy shock.*

Design/methodology/approach – *Data was collected for a sample of companies listed on the Egyptian stock exchange from 2014 to 2019. To control for time-invariant unobserved heterogeneity, the authors analyse panel data using an estimated generalised least squares regression model.*

Findings – *The findings underline the pitfalls of assuming that corporate governance mechanisms are effective regardless of circumstances and support the complementary roles of a number of theories in interpreting the empirical findings.*

Research limitations/implications – *This study is limited to non-financial companies and includes only corporate board and audit committee governance mechanisms. The study results have important implications for policymakers, international lending institutions, investors and accounting standards setters. It is of particular importance to policymakers in other less-developed countries with similar economic conditions.*

Originality/value – *To the best of the authors' knowledge, this study is the first empirical attempt to provide evidence of the impact of a currency devaluation shock on the relationship between corporate governance and financial transparency within the Egyptian context as an example of a transitional economy. Hence, it provides a significant theoretical and empirical contribution to the literature.*

Keywords *Corporate governance, Financial transparency, Currency devaluation, Agency theory and stewardship theory*

Paper type *Research paper*

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1. Introduction

Rigorous corporate governance (CG) is universally recognised as a requirement for a country to achieve market integrity and efficiency, financial stability and economic growth. Several mechanisms are used to enhance CG monitoring and control functions, effectively regulate management power and protect stakeholders' interests (Filatotchev and Boyd, 2009). This point of view is supported by many previous studies that rely heavily on the notions embedded in agency theory (Lin and Hwang, 2010; Shepardson, 2019).

Egypt is a code-law country and a leading emerging market in the Middle East and North Africa (MENA) region. It represents an example of a transitional economy that heavily relies on foreign debts. Hence, investigating CG effectiveness in such a market, given the impact of devaluation, supports the external validity of the current study. Over the past two decades, Egypt's business environment has undergone fundamental changes designed to globalise its capital market and attract foreign direct investment. The CG code was first issued in 2005. It was then revised in 2011, and most recently, in July 2016, to reflect global and national changes. The code emphasises the board's role in overseeing the application

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of governance principles. It also talks about how the audit committee is an important subcommittee that helps the board do its job (EIoD, 2016). Under pressure from the International Monetary Fund, the Egyptian Central Bank devalued the national currency (DEV) in November 2016 to stabilise the Egyptian stock exchange (EGX), without taking the necessary precautions to prepare affected groups for the consequences of devaluation. This decision increased the value of a US dollar from E£8 to E£18 (El Baradei, 2019). Orazalin *et al.* (2016) claim that the deep influence of external governance mechanisms, such as reforms, on the effectiveness of internal governance mechanisms, especially in imperfect economies, makes it more likely that sudden changes to monetary policies will have a negative effect on the relationship between CG and financial transparency (FT), especially in transition markets.

Shocks, including currency devaluations, can undermine the authority and effectiveness of CG mechanisms (Assenso-Okofo *et al.*, 2020). It is therefore important to understand how situational variables influence the effectiveness of CG mechanisms. Furthermore, awareness of the context in which CG operates improves our theoretical understanding of how its mechanisms work (Brennan, 2021). Despite the importance of DEV as a regulatory shock, studies on CG and FT have received insufficient attention, particularly in emerging markets, which are still undergoing political, economic and accounting transformations. Therefore, this study investigates the impact of DEV on CG mechanisms' monitoring role through FT. Our study supports the need to further connect accounting research with practice (Rajgopal, 2021).

Although Egypt's capital market is the most active and liquid in the MENA region, greater transparency in its reporting practices is needed (Nasr and Ntim, 2018). To go beyond simply determining whether a CG-FT relationship exists, the unexpected shock caused by Egypt's 2016 currency devaluation creates an ideal setting for research in this area, and this study was partly motivated by the lack of research on this topic. Relying on insights from agency, stewardship, resource dependency and behavioural theories to explain the CG-FT relationship, this study provides an innovative theoretical underpinning with a comprehensive interpretation of the CG-FT relationship post devaluation. This integrative framework is expected to provide additional insights, particularly in scrutinising transitional economies.

Our findings reveal that more independent boards and more active audit committees support FT. However, greater board size reduces it, and board meetings have an insignificant impact. These findings support the moderating role of DEV in the CG-FT relationship. The post-devaluation analysis shows less FT with greater board and audit committee activity.

In light of these findings, our study contributes to the literature on CG, FT and emerging markets by providing the first empirical evidence on the impact of DEV shock on the CG-FT relationship based on the experience of the Egyptian market. It suggests that shocks may degrade the quality of CG and hence FT. This result has strong implications for the development of the CG framework and should urge policymakers and regulatory bodies to improve monitoring of management behaviour and *de facto* compliance with CG best practices, accompanied by training programmes for board members and sub-committee members designed to promote FT, especially during shocks. The results are also likely to be of interest to the regulatory bodies and decision-makers of other emerging markets that are studying the devaluation of their national currencies. Additionally, the findings in this study have substantial implications for investors, especially foreign ones, in evaluating risks associated with investment in less developed markets at times of severe economic change. International lending organizations such as the World Bank and the International Monetary Fund can benefit from the results in evaluating the consequences of sudden monetary changes to meet their lending conditions in fragile transitional economies. Lastly, the

study's findings may benefit accounting standards setters evaluate current standards for re-evaluating financial statement numbers to show currency devaluation effects.

The remainder of this study is organized as follows. Section 2 describes the relevant theories in this area, reviews the prior literature and develops study hypotheses. Our research methodology is detailed in Section 3, and study findings are discussed in Section 4. Lastly, Section 5 concludes and recommends avenues for future research.

2. Theoretical background and hypotheses development

2.1 Theoretical background

2.1.1 Agency theory. Most of the existing research on CG is based on the agency theory (Peasnell *et al.*, 2005; Shepardson, 2019). Managers can be incentivised to produce reliable and transparent financial reports by CG monitoring mechanisms (Elghuweel *et al.*, 2017). This has the potential to reduce agency costs (Garanina and Kaikova, 2016). As Brennan (2021) points out, this is not always the case. The agency theory has been accused of being unsocialised (Westphal and Zajac, 2013). Accordingly, Filatotchev and Boyd (2009) call for a more comprehensive approach to CG issues that takes an inter-disciplinary perspective by using complementary approaches that involve both behavioural and agency-based theories. Similarly, Van Ees *et al.* (2009) argue the need for new non-economic directions in tackling board and CG-related issues, given that existing CG research is inconsistent and ambiguous. These criticisms reflect the one-size-fits-all interpretation of CG practices extant in the current literature, which ignores the uniqueness of the emerging market context. Given that efficient and effective governance practices are essential for corporate survival and meeting stakeholders' needs, it is essential to consider behavioural processes and interactions within boardrooms to better understand the conditions for effective CG (Elghuweel *et al.*, 2017).

2.1.2 Stewardship theory. According to this theory, managers should be empowered by boards, and both should collaborate to best serve the interests of shareholders. Hence, managers are acting as good stewards of corporate assets with the intention of maximising shareholders' wealth (Donaldson and Davis, 1991). Applying to the consequences of devaluation, managers and boards are expected to work together to find the possible actions to be taken to diminish the negative implications of devaluation on the company's value.

2.1.3 Resource dependency theory. According to this theory, boards perform better when they are composed of a wide pool of diverse skills, specialist knowledge, expertise and backgrounds (Donaldson and Davis, 1991; Booth-Bell, 2018). Accordingly, as a resource provider, directors' attributes improve their competency and performance, and hence the whole company's performance (Hillman *et al.*, 2009). The importance of such attributes is more evident at the time of crisis (Duppati *et al.*, 2018). This implies that the success of board members and audit committee members in securing effective governance at the time of shock is influenced by the kind of capabilities and qualifications they possess.

2.1.4 Behavioural theory. This theory can help in capturing real-world board behaviour as it assumes that management and boards' decisions are influenced by their experiences, beliefs and values (Van Ees *et al.*, 2009). According to Elghuweel *et al.* (2017), informal governance arrangements, bounded rationality, routinisation, satisficing behaviour and political bargaining influence corporate decision-making more than the dominant agency theoretical lenses of formal governance structures, rational economic motives, managerial opportunism and optimising behaviour.

Based on the behavioural theory of the firm (Cyert and March, 1963), we contend that boards in emerging markets, particularly during shocks, may be less concerned with agent–principal conflicts as they are likely more concerned with finding solutions to and

handling the complexities and uncertainties resulting from those shocks. Hence, from a bounded rationality perspective, because of DEV Egyptian boards may have found it difficult to impose effective monitoring and control over management due to imperfections in the board members' cognitive capabilities that limit their ability to deal with complex issues. These inherent limitations also affect the efficiency of audit committees' decisions. Consequently, from the perspective of pursuing satisfying behaviour (short run/not optimal), FT may deteriorate due to management's choice of accounting alternatives that help to preserve the company's good image or avoid outright failure. Hence, a lack of FT may be accepted as a temporary solution if it does not violate accounting standards and does not result from managerial opportunism. This is emphasised by routinization, which implies that the non-routine nature of DEV leads to biased management decisions and a decline in CG effectiveness. Consequently, a continuous process of negotiation and political bargaining to solve emerging conflicts and meet the goals set by the dominant coalition seems justified (Elghuweel *et al.*, 2017).

2.2 Literature review

2.2.1 Corporate governance and financial transparency. Earlier investigations have documented that effective governance enhances the quality of corporate financial reporting (Firth *et al.*, 2007; Siagian *et al.*, 2013; Bonetti *et al.*, 2016; Marchini *et al.*, 2018; Alzeban, 2019; Asghar *et al.*, 2020; Rezaee and Safarzadeh, 2022). An effective monitoring system can improve the reliability and informativeness of earnings data (García-Meca and Sánchez-Ballesta, 2009). Hence, FT is used in prior literature investigating the use of earnings to portray the actual financial performance of a company (Hunton *et al.*, 2006; Nair *et al.*, 2019). Many researchers provide evidence for the association between CG mechanisms and FT because of earnings quality (Klein, 2002; Xie *et al.*, 2003; Mohammad *et al.*, 2016; Elghuweel *et al.*, 2017; Nikulin *et al.*, 2022).

Prior studies support the existence of earnings management (EM) practices in Egypt to meet debt covenant requirements (Kamel and Elbanna, 2010), increase IPO prices and promote stock trading (Kamel, 2012) and conceal poor performance (Elzahaby, 2021). Elzahaby (2021) claims statistically significant evidence of a direct path from CG quality to earnings quality. This necessitates a closer examination of boardroom dynamics and behaviour to better understand the conditions for good CG. The effectiveness of both the board of directors and the audit committee in monitoring and controlling opportunistic managerial behaviour may be influenced by their attributes. As key internal monitoring mechanisms, they can better depict the extent to which CG systems at Egyptian listed companies can secure faithful presentation of company earnings at extraordinary times. In particular, the role of internal governance mechanisms in mitigating management opportunistic behaviour in transitional economies is emphasised in prior literature, especially with governance codes and practises that are still evolving (Orazalin *et al.*, 2016). Consequently, we draw on insights from prior literature, relevant grounded theories and related insights from the Egyptian context to identify potential CG mechanisms that are more likely associated with corporate FT and the effect of the currency devaluation shock on such an association. We investigate whether board independence (BIN), board size (BSZ), board activity (BA) and audit committee activity (ACA) influence FT for Egyptian listed companies, as well as the potential impact of the Egyptian government's DEV decision in 2016. Furthermore, we investigate the interpretive power of the employed theoretical foundation in explaining our findings.

2.2.1.1 Board of directors' independence. Boards dominated by independent directors can better monitor and control management behaviour, and hence reduce agency costs (Choi *et al.*, 2021). This is especially true when independent directors bring their expertise and networks to the firm, and when they are keen to protect their reputation and show their monitoring competence (Elnahass *et al.*, 2022). However, Sarkar *et al.* (2008) see

independence as not enough for effective monitoring, especially when expertise is desired. According to the behavioural theory, board independence improves FT when they have competent cognitive abilities gained through comprehensive and complementary knowledge as well as through external work experience and valuable external links. This notion is supported by the resource dependency theory.

Most previous studies demonstrate a positive impact of board independence on FT (Ebrahim, 2007; Lin and Hwang, 2010); however, Gulzar (2011) does not find a significant association. This may be attributed to the presence of grey directors (Sáenz González and García-Meca (2014). According to the Egyptian CG code, the majority of board members should be non-executives, and at least two should be independent (EIoD, 2016). Based on the foregoing discussion, our first hypothesis is as follows:

H1. There is a statistically significant positive relationship between board independence and FT.

2.2.1.2 Board of directors' size. According to the agency theory, smaller boards are preferable to larger ones, which are more likely to lack coordination, communication, effective control and decision-making flexibility (Gulzar, 2011). Larger boards may be more likely to experience disagreements and free-rider issues, as each member relies on the others to monitor managers (Nasr and Ntim, 2018). However, larger boards may enable greater skill diversity and technical expertise, including accounting and financial knowledge (Elnahass *et al.*, 2022). This supports the notions of the resource dependency theory. In a similar vein, from the behavioural theory perspective, larger boards can be an effective monitoring mechanism if members have high cognitive abilities and communicate, interact and share their views formally and informally.

Some researchers report a positive association between BSZ and EM (Rahman and Ali, 2006; Sáenz González and García-Meca, 2014), while Elnahass *et al.* (2022) show a negative association and Elghuweel *et al.* (2017) find no association. According to Egypt's CG code, a board should have enough members to properly perform its duties. Consequently, our second hypothesis is proposed:

H2. There is a statistically significant relationship between board size and FT.

2.2.1.3 Board of directors' activity. The agency theory states that because board meetings consume much of board members' time, little time is spent on monitoring and controlling management, especially by outside directors. Frequent board meetings may not be cost-effective due to the time, travel and director allowances involved (Lin *et al.*, 2014). Although meetings allow board members to exchange ideas, gather information and resolve various issues, they may also reflect poor company performance (García-Ramos and Díaz, 2021). Hence, we conclude that the frequency of board meetings should be consistent with what is needed to assign duties among board members and ensure they are performing their monitoring role properly. Behavioural theory assumes that boards have a positive impact on FT if members analyse and debate alternative solutions and have the necessary cognitive abilities and experience to do so effectively. This proposition also agrees with the notions of the resource dependency theory.

Many prior studies show a positive correlation between BA and financial opacity (FO) (Gulzar, 2011). While holding more frequent meetings may indicate poor company performance (García-Ramos and Díaz, 2021), Sáenz González and García-Meca (2014) find a negative association between board activity and FO in Latin American markets, while other studies find no correlation (Ebrahim, 2007). The Egyptian CG code requires boards to meet at least once every three months. Consequently, the third hypothesis is stated as follows:

H3. There is a statistically significant negative relationship between board activity and FT.

2.2.1.4 Audit committee activity. According to the agency theory, the more active the audit committee, the better it can monitor managerial behaviour (Xie *et al.*, 2003). On the other hand, according to the behavioural theory and resource dependency theory, meetings will have a positive impact on FT if committee members master the cognitive abilities and experience to offer appropriate solutions to routine and non-routine situations and are able to put their hands on the possible alternatives company management is likely to use to conceal actual performance.

Many researchers demonstrate that audit committee activity limits EM (Lin and Hwang, 2010). However, Mishra and Malhotra (2016) demonstrate a non-significant association, and Katmon and Farooque (2017) support a positive association. The Egyptian CG code requires audit committees to meet at least once every three months. Consequently, the fourth hypothesis is stated:

H4. There is a statistically significant positive relationship between audit committee activity and FT.

2.2.2 Devaluation shock and the association between monitoring effectiveness and financial transparency. A growing body of research examines the effectiveness of CG mechanisms during regulatory and economic shocks (Iatridis and Dimitras, 2013; Assenso-Okofo *et al.*, 2020) that can cause significant, unexpected and potentially disruptive crises (Bundy *et al.*, 2017). Prior studies show that EM increases during regulatory and macroeconomic changes (Iatridis and Dimitras, 2013; Assenso-Okofo *et al.*, 2020), and managers may employ legal alternatives to meet investors' expectations (Brennan, 2021) with respect to these changes. This is more likely to happen in emerging markets where institutional frameworks are less efficient, and boards and audit committee members often lack the training and qualifications to deal with shocks while maintaining financial reporting quality.

Applying the Egyptian context as a moderator, we expect DEV to decrease the monitoring effectiveness of CG mechanisms, namely, BA and ACA [1]. This would negatively affect FT (measured by the quality of accruals as an outcome of monitoring effectiveness). Consequently, our fifth hypothesis is stated as follows:

H5. A currency devaluation decision moderates the CG-FT relationship.

This hypothesis is further extended as follows:

H5a. A currency devaluation decision moderates the BA-FT relationship.

H5b. A currency devaluation decision moderates the ACA-FT relationship.

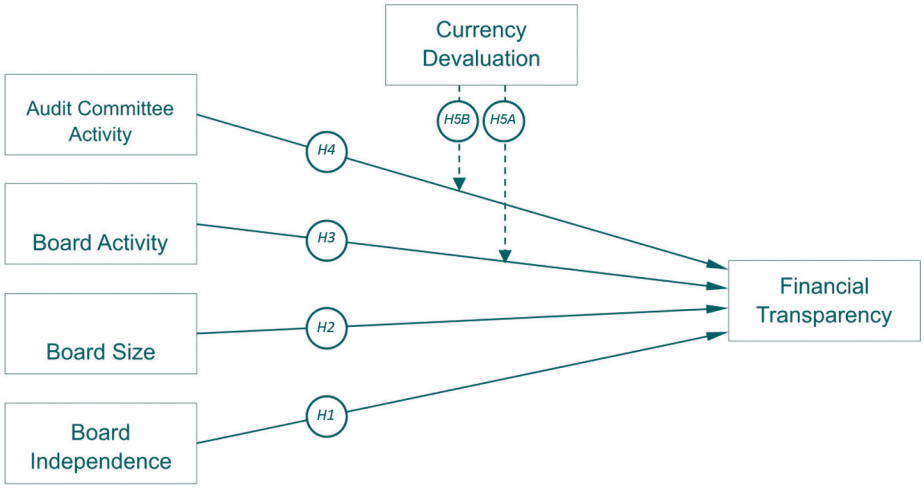
To further understand the CG-FT relationship and the theoretical underpinnings of this study, the proposed conceptual model is shown in Figure 1.

3. Methodology

3.1 Data sources

Company financial data is obtained from the Refinitiv Eikon database, and CG-related data is extracted from companies' annual reports available on the Mubasher website (www.mubasher.info) and company websites. The sample for this study is comprised of companies listed on the EGX during the period 2014–2019. To increase the homogeneity of the sample, financial institutions are excluded as they are subject to different regulations and financial reporting requirements. Additionally, firms with missing observations for any variable in the model are excluded. Following Peasnell *et al.* (2005), for more efficient measurement of the regression model coefficients, sectors with fewer than ten firm-year observations are excluded. Accordingly, the final sample consists of 672 firm-year observations covering five sectors (see Table 1). Additionally, Table A1 in Appendix lists the name of the firms in the study sample. The years 2017, 2018 and 2019 are classified as the "post-devaluation period".

Figure 1 Conceptual model



Source: Authors own work

Table 1 Sample distribution by sectors

Industry	*Firm-year observations*	*% of sample*
Basic materials	168	25
Consumer cyclicals	162	24
Consumer non-cyclicals	126	18
Industrials	90	14
Real estate	126	19
Total	672	100

Source: Authors own work

3.2 Variables and measures

3.2.1 Financial transparency. FT, our *dependent variable*, is measured consistently with previous studies (Dhaliwal *et al.*, 2014; Qian *et al.*, 2015) as the quality of accruals. FT is the inverse of FO (Nair *et al.*, 2019). There is a lack of proof regarding the superiority of any of the available EM estimation models, due to the multidimensionality of the issue (Parte-Esteban and García, 2014). We use an estimate of discretionary accruals (DA) as it is recommended in the presence of a particular directional estimation (Elghuweel *et al.*, 2017). Additionally, Elzahaby (2021) claims that Egyptian managers use DA to conceal actual company earnings. We measure DA using two widely adopted models: the modified Jones model and the model in Kothari *et al.* (2005).

3.2.1.1 Modified Jones model. DA reflects the extent to which managers use their judgement to adjust earnings (Chintrakarn *et al.*, 2018). The modified Jones model is regarded as one of the most effective and commonly used models for measuring EM (Dechow *et al.*, 1995). The model, as defined below, is used to estimate the DA for each year and industry:

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

where $TACC_{it}$ is total accruals (income before extraordinary items minus operating cash flows) scaled by lagged total assets for firm i in year $t-1$, A_{it_1} is lagged total assets, ΔREV_{it} is the change in revenues from $t-1$ to t), ΔREC_{it} is the change in receivables from t to $t-1$, $GPPE_{it}$ is gross property, plant and equipment in year t, α_1, α_2 and α_3 are the regression coefficients and ε_{it} is an error term. The residuals from the annual cross-sectional regression model in equation (1) are defined as the level of DA, which is a proxy for FO. The absolute value of the residual is used to account for increases and decreases in accruals, the greater the absolute value, the lower the FT. Equation (1) is estimated for each industry and year. A minimum of ten observations are required for each industry-year grouping (Jones *et al.*, 2006).

3.2.1.2. Kothari *et al.* (2005) model. To cross-check the findings of the modified Jones model, we also use the Kothari *et al.* (2005) model, which provides one of the most effective tests for EM (Elghuweel *et al.*, 2017). It augments the modified Jones model by adding the lagged return on assets to control for measurement errors in DA caused by performance. DA is represented by the absolute value of the predicted residual of the model shown in equation (2):

$$\frac{TACC_{it}}{A_{it-1}} = \alpha_1 \frac{1}{A_{it-1}} + \alpha_2 \frac{(\Delta REV_{it} - \Delta REC_{it})}{A_{i,t-1}} + \alpha_3 \frac{GPPE_{it}}{A_{i,t-1}} + \alpha_4 ROA_{it-1} + \varepsilon_{it} \quad (2)$$

where ROA_{it-1} is the lag return on assets, and all other variables are as defined in the modified Jones model. Equation (2) is estimated for each industry and year.

3.2.2 Study variables. We follow previous research to measure CG mechanisms represented by their activity, size and independence. CG effectiveness is evaluated through four variables (board independence, board size, board activity and audit committee activity), with DEV as the moderating variable. Following prior studies, we measure the board independence (BIN) as the proportion of independent non-executive board directors (Elnahass *et al.*, 2022) and the board size (BSZ) as the number of board members (Elghuweel *et al.*, 2017). We also measure board activity (BA) as the number of board meetings held during the year (Gulzar, 2011) and audit committee activity (ACA) as the number of audit committee meetings held during the year (Ghosh *et al.*, 2010). Currency devaluation (DEV) variable is the moderating variable, measured as a dummy variable equal to 1 if the year is from 2017 to 2019, and 0 otherwise. According to *H1* and *H4*, a positive coefficient is estimated for BIN and ACA. Consistent with *H2* and *H3*, a negative coefficient is estimated for BA and non-directional BSZ estimations.

We control for several firm-related variables that have been shown in previous research to influence FT. Previous research has shown that firm size (FZ) has a significant impact on FT (Klein, 2002; Elnahass *et al.*, 2022). Large firms face more scrutiny from outsiders and, as a result, are more likely to have stricter CG systems that improve FT. As a result, we control for FZ, which is calculated as the natural logarithm of total assets at the end of the fiscal year (Abousamak and Shahwan, 2018). Following Francis and Wang (2004), we also control for firm performance using firm profitability (FP), firm growth (FG) and firm efficiency(FE). Klein (2002) shows that firm FP is positively associated with EM. Thus, we control for FP, which is measured as net income before extraordinary items divided by total assets (Sáenz González and García-Meca, 2014). Previous research indicates that FG is one of the factors influencing FT (Dechow *et al.*, 1995; Chintrakarn *et al.*, 2018). EM is more likely for firms that wish to meet or beat a required level of growth or wish to influence sales accruals as proof of efficiency. Thus, we control for FG, which is measured as the percentage change in current year assets versus the previous year. Managers tend to manipulate earnings for less efficient firms to hide a firm's real performance (Huang *et al.*, 2021). Thus, we control for FE, which is measured as sales to assets (Israa *et al.*, 2021). We further control for free float (FF), which is a proxy for the ownership structure, which is measured as a percentage of

traded shares (Abousamak and Shahwan, 2018). Lastly, we control for the sector (SEC), which is a dummy variable for the sector in which a firm is active (Elghuweel *et al.*, 2017).

3.3 Empirical model

We use a random effect generalized least squares (GLS) estimation approach to analyse panel data consisting of observations over a six-year period as it allows for individual effects. The model is stated as follows:

$$DA_{it} = \alpha_1 + \alpha_2 BIN_{it} + \alpha_3 BSZ_{it} + \alpha_4 BA_{it} + \alpha_5 ACA_{it} + \alpha_6 DEV_{it} + \alpha_7 (BA^{*}DEV)_{it} + \alpha_8 (ACA^{*}DEV)_{it} + \sum_{j=9}^{18} \alpha j \, Control_{it} + (\mu_i + \varepsilon_{it}) \quad (3)$$

where DA represents the degree of FO (the opposite of FT), and α_1, α_2, α_3,…. α_i are regression coefficients. $Control_{it}$ is a vector of firm-level control variables discussed in the study variables above, μ_i is an unobserved cross-sectional heterogeneity term (random individual differences) and ε_{it} is the error term. The variable DEV is interacted with the BA and ACA variables to examine its moderating effect on the CG-FT relationship, and ε_{it} is the error term.

Conducting a moderated multiple regression analysis with an "interaction term" can result in a high correlation among the independent variables (Zaid *et al.*, 2020). As a result, the governance variables are mean-centred to avoid multicollinearity. Additionally, robust standard errors are used to correct the problem of heteroskedasticity.

4. Empirical results and discussion

4.1 Descriptive statistics

Table 2 provides general descriptive statistics for the model variables. The dependent variable, DA, as measured by the modified Jones model, has an average value of 0.076 and ranges from 0 to 1.0806. This implies that although some Egyptian companies are not practicing EM using DA, it does exist to varying degrees. This result is consistent with Elzahaby (2021). The mean value of DA using the model in Kothari *et al.* (2005) is 0.072, and ranges from 0 to 1.0532. We conclude that both models capture equivalent levels of earnings manipulation. Additionally, Figure A1 displayed in Appendix shows a sudden increase in the mean value of DA, indicating a deterioration in FT mean value. This highlights the destructive impact of devaluation decision on accounting practices in the Egyptian listed companies.

Table 2 Descriptive statistics

Variable	*Mean*	*Median*	*Maximum*	*Minimum*	*SD*	*Interquartile range*
Modified Jones model (DA)	0.076	0.051	1.0806	0.0006	0.089	0.074
Kothari *et al.* model (DA)	0.072	0.052	1.0532	0.0004	0.083	0.073
BIN	0.717	0.750	1.50	0	0.181	0.257
BSZ	7.99	7	17	3	2.681	3
BA	8.36	7	23	0	4.448	6
ACA	4.95	4	19	0	2.817	0
FZ	7.873	7.86	9.903	6.144	0.796	1.14
FE	0.629	0.502	4.187	0.0002	0.631	0.721
FG	0.004	0.013	2.532	−0.712	0.317	0.253
FP	0.029	0.030	0.483	−1.167	0.131	0.077
FF	0.369	0.342	1	0.003	0.226	0.324

Source: Authors own work

The mean values of 8.36 for board activity and 4.95 for audit committee activity indicate that the sample companies hold approximately eight board meetings and five audit committee meetings per year, on average. The mean value of 7.99 for board size indicates that each board has an average of eight members, and the mean value of 0.717 for board independence indicates that an average of 72% of board members are independent. This analysis indicates that Egyptian companies are complying with the requirements of international CG best practices, from which the Egyptian CG code was derived.

4.2 Bivariate analysis

The Pearson correlation coefficients among study variables shown in Table 3 range from 0 to 0.4. As all are less than 0.8, this indicates weak correlation among the variables, suggesting multicollinearity is not a concern (Gujarati *et al.*, 2009).

4.3 Multivariate regression results

The result of the random effects GLS regression model is displayed in Table 4. We apply several statistical tests to identify the best model for the panel data. Firstly, the Hausman test is used to assess the validity of the random effects' parameters. The results support the random effects model (p-value > 0.05). Following that, the Breusch–Pagan Lagrange multiplier test for random effects is conducted to choose between the pooled OLS and random effects panel data model. The results suggest that the random effects panel data model is more appropriate (p-value < 0.01).

Model 1 shows that most of the independent variables are related to FT. The results indicate that board independence and audit committee activity are positively (negatively) associated ($p < 0.05$) with different measures of FT (FO), suggesting that FT is higher in firms that have more independent board members and more frequent audit committee meetings. Thus, *H1* and *H4* are supported. This affirms findings in the literature regarding the positive relationship between board independence and FT (Lin and Hwang, 2010; Elnahass *et al.*, 2022), and between audit committee activity and FT (Xie *et al.*, 2003; Lin and Hwang, 2010). The findings are also in line with the agency theory, which posits that boards dominated by independent directors can better monitor and control management behaviour and hence reduce agency costs, and that more frequent meetings by the audit committee enable better monitoring of financial reporting practices with more effective prevention and detection of EM. On the other hand, from the behavioural theory perspective, board independence can improve FT when board members have competent cognitive abilities gained through their comprehensive and complementary knowledge, external work experience and valuable external links. Additionally, audit committee activity will have a positive impact on FT if committee members master the necessary cognitive abilities and

Table 3 Pearson correlation matrix

Probability

BIN	1								
BSZ	0.371***	1							
BA	−0.047	−0.009	1						
ACA	0.086**	0.232***	0.219***	1					
FZ	0.064*	0.383***	0.096**	0.108***	1				
FE	−0.107***	0.076**	−0.020	−0.026	0.025	1			
FG	−0.026	0.020	0.042	−0.002	0.171***	0.081***	1		
FP	0.034	0.103***	0.061	−0.096***	0.176***	0.169***	0.188***	1	
FF	−0.108***	−0.088**	−0.064*	−0.003	−0.301***	−0.133***	−0.060	−0.076***	1

Notes: *, ** and ***denote p-values < 0.10, 0.05, and 0.01, respectively
Source: Authors own work

Table 4 Random effects regression results

Variables	*Model 1 (modified Jones model)*	*Model 2 (Kothari et al. (2005) model)*
BIN	−0.0390** (0.0197)	−0.0456*** (0.0176)
BSZ	0.0049*** (0.0013)	0.0044*** (0.0011)
BA	0.0003 (0.0009)	−0.0002 (0.0007)
ACA	−0.0030*** (0.0010)	−0.0026*** (0.0009)
DEV	−0.0031 (0.0052)	−0.0019 (0.0045)
BA_DEV	0.0024** (0.0009)	0.0024*** (0.0007)
ACA_DEV	0.0018* (0.0009)	0.0024** (0.0010)
FZ	−0.0191*** (0.0061)	−0.0179*** (0.0051)
FE	0.0201*** (0.0101)	0.0155* (0.0086)
FG	0.0842*** (0.0113)	0.0726*** (0.0105)
FP	−0.0947*** (0.0313)	−0.0688*** (0.0249)
FF	−0.0355*** (0.0108)	−0.0303*** (0.0102)
C	0.2212*** (0.0487)	0.2055*** (0.0408)
No. of observations	672	672
R^2	16.22%	14.55%
Hausman test	Chi-square = 16.98 Prob = 0.150	Chi-square = 13.21 Prob = 0.3541
Breusch–Pagan LM test	LM statistics = 36.33***	LM statistics = 16.57***

Notes: *, ** and ***denote p-values < 0.10, 0.05, and 0.01, respectively. Robust standard errors are shown in parentheses
Source: Authors own work

experience to offer suitable solutions to deal with routine and non-routine situations and are able to identify possible ways in which management could conceal actual performance. This proposition is also supported by the notions of the resource dependency theory.

The findings reveal a significant negative (positive) relationship ($p < 0.01$) between board size and FT (FO), suggesting that having a large number of board members reduces FT. Thus, *H2* is supported. This finding is consistent with Sáenz González and García-Meca (2014), and is in line with the agency theory that states large boards tend to have more conflicts among board members and may create free-rider problems. Hence, the monitoring effectiveness of corporate boards declines as board size increases. On the other hand, behavioural theory posits that ineffective monitoring by large boards may be attributed to a lack of effective formal and informal communication among members, which limits their ability to interact and share their views, especially when the cognitive abilities of board members are limited.

Lastly, the findings reveal an insignificant relationship ($p > 0.05$) between board activity and FT. Thus, *H3* is not supported. This finding is consistent with Ebrahim (2007). From the perspective of the agency theory, the lack of association between board activity and FT is attributed to the amount of time board meetings consume discussing routine work, leaving little time to monitor and exercise control over management. From the perspective of behavioural theory, this result may reflect the limited time devoted in board meetings to analysing and constructively debating issues that may negatively affect the quality of financial reporting. Given that audit committee activity has a significant positive impact on FT, the insignificant association between board activity and FT suggests that audit committee members are superior to other board members in terms of mastering the necessary cognitive abilities, knowledge and experience to preserve financial reporting quality. This emphasises the important role of audit committees in constraining opportunistic EM and maintaining an effective internal control system as identified by regulators and stock exchanges, compared to board committees that are responsible for non-monitoring duties that may consume most of a board meeting's time.

The results in Table 4 show the negative impact of DEV on the CG-FT relationship. The coefficients from Model 1 reveal that BA_DEV and ACA_DEV have statistically significant negative (positive) effects on FT (FO) ($p < 0.05$ and $p < 0.10$, respectively). Thus, *H5* is

supported. This verifies the moderating role DEV plays in the relationship between CG and FT, implying that boards and audit committees in Egyptian listed companies face difficulties in monitoring and exercising effective control over management during times of shocks. As a consequence, FT deteriorates. This finding is in line with findings in prior studies (Iatridis and Dimitras, 2013; Assenso-Okofo *et al.*, 2020) that support the negative impact of shocks on financial reporting quality and demonstrate how CG mechanisms often fail to function at crisis time.

This finding is in line with findings in prior studies (Iatridis and Dimitras, 2013; Assenso-Okofo *et al.*, 2020) that support the negative impact of shocks on financial reporting quality and demonstrate how CG mechanisms often fail to function at crisis time.

Additionally, our finding suggests that there is no one specific theory that can fully interpret the practice of CG in relation to FT in times of shocks. FT may deteriorate during shocks because management, boards and audit committees are dealing with a non-routine issue. This may lead to biased management decisions regarding accounting choices as a means to preserve the company's good image or to delay the negative consequences of the shock that may result in severe distress or failure. Additionally, assuming managers are good stewards of owners' wealth, boards and audit committees that lack preparation, qualification and decision-making competency in complex situations like sudden devaluation decision may accept management behaviour as a temporary solution, as long as it does not contradict with the requirements of effective accounting standards. Meanwhile, as management and board behaviours are supposed to serve the interests of dominant stakeholder groups, a process of negotiation and political bargaining under times of stress is expected to take time.

4.4 Robustness test

To verify the robustness of our findings, we use the Kothari *et al.* (2005) model as an alternative FT proxy. The results obtained (Model 2, Table 4), are consistent with those of the modified Jones model (Model 1), showing that the study findings are robust to the use of an alternative measure of the dependent variable. Table A2 in Appendix shows the findings of the fixed effects regression model. The findings support the moderating role of DEV in the relationship between CG and FT, which is consistent with the findings reported in Table 4.

5. Conclusions, limitations and avenues for future research

Our study sheds light on the incomplete picture presented in accounting literature where the effects of CG on accounting practices have been established without acknowledging the impacts of shocks. We provide evidence that, in line with the agency theory, FT is significantly improved by board independence and audit committee activities under normal times, and that board size has a significant negative effect on FT. However, when the currency devaluation shock is introduced into our model as a moderator, we find evidence of a significant negative moderating effect on the board activity-FT relationship. The same result is demonstrated for the audit committee activity-FT relationship. Moreover, we provide evidence through the lenses of stewardship, resource dependency and behavioural theories that with complexity resulting from economic instability/shocks, EM may be committed for non-opportunistic reasons, and that governance effectiveness suffers either. This is more likely pronounced in emerging economies. Due to the possible deficiency in monitoring capabilities with respect to accounting for devaluation, and to the lack of competency needed to provide the necessary guidance for management to sustain the faithful presentation of corporate earnings, FT deteriorates.

Despite these contributions, we note the following limitations in our study design. Firstly, due to data limitations, our analysis is limited to 670 firm-year observations for non-financial EGX listed companies. Although it is a large sample compared to previous work on Egyptian

markets – for example, Nasr and Ntim (2018) use 201 firm-year observations to examine the impact of CG on conservatism – it is not a random sample, as listed companies are typically the best performing firms in the Egyptian economy and the study is limited to non-financial companies. As a result, future studies could include non-listed companies, and the same study could be replicated for the financial sector. Additionally, future studies might investigate companies in other emerging markets to extend our findings. Secondly, this study is limited to the mechanisms of corporate boards and audit committees as measures of CG effectiveness, and accruals quality is used as the only a measure of FT. It would be useful for future research to scrutinise the impact of other CG mechanisms (e.g. other board committees, ownership structure, size of auditing firm) and different financial reporting quality measures (e.g. accounting conservatism, financial disclosure quality). Thirdly, this study is limited to the impact of a currency devaluation shock on FT. Future research could investigate the impact of other shocks, such as the VAT law, the COVID-19 pandemic or gas and oil supply shortage due to the Russian–Ukrainian war. Fourthly, this study is considered an archival one; future research could better integrate with surveys and interviews. Lastly, this study investigates the interpretive power of agency, stewardship theory, the resource dependency and behavioural theories, so future research can examine the application of these same theories in other contexts, as well as the interpretive power of other theories such as the institutional theory, and the upper echelon theory.

Note

1. Examining the moderating effect of DEV on BIN-FT and BSZ-FT relationships reveals insignificant results.

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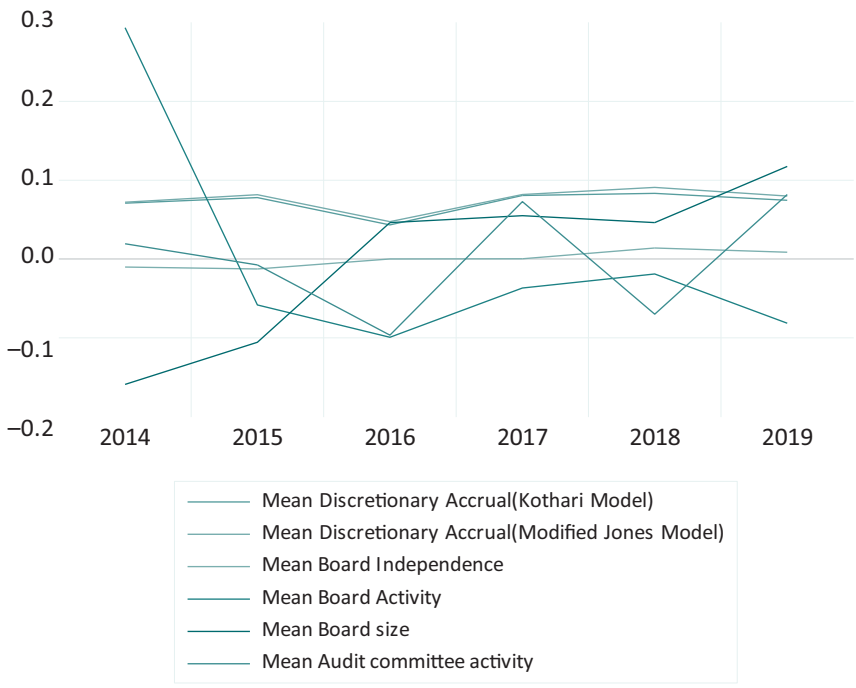
Appendix

Table A1 List of firms in the study sample

Acrowmisr for Metallic Scaffoldings and Frameworks SAE	*Egyptian Starch and Glucose Manufacturing Co SAE*
Ajwa for Food Industries Co Egypt SAE	Egyptian Tourah Portland Cement Co SAE
Al Arafa for Investment and Consultancies SAE	Egyptian Transport and Commercial Services Co SAE
Al Ezz Ceramic and Porcelain Co SAE	Egyptians for Housing and Development Reconstruction Company SAE
Al Ezz Dekheila Steel Company Alexandria SAE	Egyptians for Investment and Urban Development SAE
Alexandria Container and Cargo Handling Company SAE	El Ahram Co for Printing and Packaging SAE
Alexandria Portland Cement Co SAE	El Nasr Clothing and Textiles Company SAE
Amer Group Holding Co SAE	El Nasr for Manufacturing Agricultural Crops SAE
Arab Aluminum Company SAE	El Sewedy Electric Co SAE
Arab Ceramic Co SAE	El Shams Housing and Urbanization Co SAE
Arab Dairy Products Company SAE	El Wadi for International and Investment Development SAE
Arab Valves Co SAE	El-Saeed Contracting and Real Estate Investment Co
Arabia Cotton Ginning Co SAE	Electro Cable Egypt Co SAE
Arabian Cement Company SAE	Emaar Misr for Development SAE
Arabian Food Industries Company SAE	Extracted Oil and Derivatives Co SAE
ASEC Co for Mining SAE	Ezz Steel Co SAE
Atlas for Investment and food Industries SAE	GB Auto SAE
Cairo for Housing and Development Co SAE	General Company for Paper Industry SAE
Cairo for Oil and Soap Co SAE	Giza General Contracting and Real Estate Investment Co SAE
Cairo Poultry Company SAE	Golden Pyramids Plaza SAE
Canal Shipping Agencies Co SAE	Golden Textiles and Clothes Wool SAE
Delta Co for Construction and Rebuilding SAE	Gulf Canadian Company for Arab Real Estate Investment SAE
Delta Co for Printing and Packaging SAE	Heliopolis Company for Housing and Development SAE
Delta Sugar Co SAE	Ibnsina Pharma Co SAE
Development and Engineering Consultants Co SAE	Industrial Engineering Co for Construction and Development SAE
Dice Sports and Casual Wear SAE	International Co for Agricultural Corps SAE
Eastern Company SAE	International Company for Investment and Development SAE
Edita Food Industries SAE	Islamic Gharbia Co for Developed Buildings SAE
Egyptian Chemical Industries SAE	Ismailia Development and Real Estate Co SAE
Egyptian Co for International Touristic Projects SAE	Ismailia Misr Poultry Co SAE
Egyptian Company for Construction Development SAE	Ismailia National Company for Food Industries SAE
Egyptian Financial and Industrial SAE	Juhayna Food Industries SAE
Egyptian Iron and Steel Co SAE	Kafr El Zayat Pesticides and Chemicals Co SAE
Egyptian Media Production City Co SAE	Lecico Egypt SAE
Egyptian Poultry Co SAE	Madinet Nasr for Housing and Development SAE
Egyptian Resorts Co SAE	Mansoura Poultry Co SAE
Egyptian Satellite Co SAE	Marsa Marsa Alam for Development Tourism SAE
Medical Packaging Co SAE	Raya Contact Center Co
Mena for Touristic and Real Estate Investment Co SAE	Real Estate Egyptian Consortium SAE
Middle East Glass Manufacturing Co SAE	Remco Tourism Villages Construction SAE
Misr Beni Suef Cement Co SAE	Rowad Misr for Tourism Investment Co SAE
Misr Cement Company SAE	Rowad Tourism Company SAE
Misr Fertilizers Production Co SAE	Rubex for Plastic Manufacturing Co SAE
Misr National Steel SAE	Samad Misr SAE
MM Group for Industry and International Trade SAE	Sharkia National Company for Food Security SAE
Nasr Company for Civil Works SAE	Sharm Dreams Company For Touristic Investment SAE
National Company for Housing for Professional Syndicates SAE	Sidi Kerir Petrochemicals Company SAE
National Real Estate Bank for Development SAE	Sinai Cement Co SAE
North Africa Company for Real Estate Investment SAE	Sixth of October Development and Investment Co SAE
North Upper Egypt Development and Agricultural Production Co SAE	South Valley Cement Co SAE
Obour Land for Food Industries	Talaat Mostafa Group Holding Co SAE
Orascom Development Egypt SAE	Trans Oceans Tours SAE
Oriental Weavers Carpet Co SAE	Unirab Polvara Spinning and Weaving Co SAE
Palm Hills Developments	United Arab Stevedoring Co SAE
Porto Group Holding SAE	United Company for Housing and Development SAE
Pyramisa Hotels and Resorts SAE	Universal Co for Packaging Materials and Paper SAE

Source: Authors own work

Figure A1 Mean value of the study variables



Source: Authors own work

Table A2 Fixed effects regression results

	FE models		*RE models copied from Table 4*	
Variables	*Model 1 (modified Jones model) Fixed effect model*	*Model 2 (Kothari et al. (2005) model)*	*Model 1 (modified Jones model)*	*Model 2 (Kothari et al. (2005) model)*
BIN	0.0149 (0.0164)	0.01989 (0.0162)	−0.0390** (0.0197)	−0.0456*** (0.0176)
BSZ	0.0041* (0.0022)	0.0045* (0.0025)	0.0049*** (0.0013)	0.0044*** (0.0011)
BA	0.0004 (0.0008)	0.0005 (0.0007)	0.0003 (0.0009)	−0.0002 (0.0007)
ACA	−0.0027** (0.0013)	−0.0023 (0.0015)	−0.0030*** (0.0010)	−0.0026*** (0.0009)
DEV	0.0014 (0.0035)	−0.0031 (0.0029)	−0.0031 (0.0052)	−0.0019 (0.0045)
BA_DEV	0.0018** (0.0006)	0.0015*** (0.0004)	0.0024** (0.0009)	0.0024*** (0.0007)
ACA_DEV	0.0025*** (0.0006)	0.0029*** (0.0007)	0.0018* (0.0009)	0.0024** (0.0010)
FZ	−0.0027 (0.0106)	−0.0189** (0.0092)	−0.0191*** (0.0061)	−0.0179*** (0.0051)
FE	0.0197** (0.0077)	0.0079* (0.0082)	0.0201*** (0.0101)	0.0155* (0.0086)
FG	0.0428*** (0.0065)	0.0492*** (0.0060)	0.0842*** (0.0113)	0.0726*** (0.0105)
FP	−0.0761*** (0.0205)	−0.0384** (0.0195)	−0.0947*** (0.0313)	−0.0688*** (0.0249)
FF	−0.0289** (0.0141)	−0.0359** (0.0177)	−0.0355*** (0.0108)	−0.0303*** (0.0102)
C	0.0971 (0.0858)	0.2314*** (0.0733)	0.2212*** (0.0487)	0.2055*** (0.0408)
No. of observations	672	672	672	672
R^2	41.98%	37.27%	16.22%	14.55%

Notes: *, ** and ***denote *p*-values < 0.10, 0.05, and 0.01, respectively. Robust standard errors are shown in parentheses
Source: Authors own work