Nexus among board characteristics, earnings management and dividend payout: evidence from an emerging market

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Received 25 December 2021
Revised 11 April 2022
Accepted 23 May 2022

Abstract

Purpose – The direct nexus between board characteristics, earnings management (EM) practices and dividend payout is examined in this study, followed by an examination of the indirect mediation impact of EM practices in the nexus between board characteristics and dividend payout. It aims to provide new empirical evidence from the Jordanian market, which is an emerging market.

Design/methodology/approach – The study population consists of all service firms that were listed on the Amman Stock Exchange (ASE) between 2012 and 2019. Due to the lack of availability of their complete data during the period, four service firms were omitted from the population; hence, a sample of 43 service firms was acquired over the time frame (2012–2019), yielding a total of 344 firm-year observations. Moreover, panel data analysis was employed in this study, and data for the study were acquired from yearly reports as well as the ASE's database.

Findings – Based on the GMM estimator findings, board size and independence have a negative and significant influence on the EM, but CEO/chairman duality has a positive and significant impact. Simultaneously, the impacts of female representation on the board of directors and the number of board meetings were both positive but insignificant. The findings also found that four board characteristics, including board size, female representation on the board of directors, CEO/chairman duality and the number of board meetings, had a significant negative or positive effect on dividend payout, while board independence did not. Additional findings show that EM practices have a direct negative insignificant effect on dividend payout, whereas EM practices partially mediate the relationship between board characteristics and dividend payout.

Research limitations/implications – The current study's limitation is that it only searched in Jordanian service firms listed on ASE from 2012 to 2019 to fulfill the study's objectives; thus, we urge that future work explores the study models for other sectors, whether in Jordan or other growing markets such as the Middle East and North Africa.

Practical implications – The findings of this study may be utilized by analysts, investors and other strategic decision-makers to enhance Jordan's financial market's efficiency and efficacy. These findings will improve policymakers' willingness to impose appropriate constraints, perhaps boosting Jordan's financial market performance and efficacy. These findings may also help investors make more enlightened judgments by utilizing board characteristics and EM factors that predict firm dividend policy.

Originality/value – Contradictions in the results of earlier investigations inspired the current study, with the findings filling a gap in the existing literature. This study differs from previous studies by constructing a novel research model and analyzing the mediating influence of EM in the nexus between board characteristics and dividend payout.

Keywords Earnings manipulation, Dividend policy, Corporate governance, Board characteristics, Information asymmetry

Paper type Research paper

1. Introduction

The last several years in accounting science have seen a concentration on the behavioral approaches, as the need of distinguishing between acceptable and unacceptable conduct from

JEL Classification — G40, G41, G32, M41

International Journal of Emerging Markets

1746-8809
DOI 10.1108/IJOEM-12-2021-1907

an accounting standpoint has emerged (Almasarwah *et al.*, 2021; Alsufy *et al.*, 2020). Among these approaches are the administration's judgments to regulate the accounting information on which the parties interested in the economic unit rely, where these judgments have an influence on net profit, whether positive or negative (Alqirem *et al.*, 2020; Saleh *et al.*, 2020).

Earnings management by managers' behavior causes income to be reduced in order to lower the amount of taxes realized during the period, increased in order to increase managers compensation or smoothed by reducing it if it is high and raising it if it is low in order to reduce variations in income levels from one period to the next and, thus, ensure market share price stability and improve performance perceptions to investors, lenders and other official organizations (Du and Shen, 2018; Huyuh, 2018). As a result, some consider it a type of accounting information manipulation if the activity is intentional, while others consider it lawful legal action, particularly if it is consistent with generally accepted accounting practices or international accounting standards, even if it is opportunistic, as long as it meets the goal of economic unit (Damak, 2018). Furthermore, businesses may resort to enabling opportunistic tactics connected to their returns to influence their dividend policy (Ben Amar *et al.*, 2018; Thompson and Manu, 2021). Managers resort to raising or reducing the returns achieved during the period in accordance with the firm's profit distribution directives, and in a manner that ensures stability in its dividend policy or the rise in the price of its shares in financial markets. Finally, when there is a disparity in the reasons that drive managers to manipulate earnings, the behavior of the influence on income follows one of the preceding paths, which is known as earnings management (He *et al.*, 2017).

With the recent emergence of crises and the failure of multinational corporations, such as the "Enron" bankruptcy event, which is attributable to its leaders' practices of manipulating earnings to seek personal benefits at the expense of stakeholders' interests, previous research has heightened interest in studying the impact of opportunistic activities on firm performance and efficiency, as well as their impact on the surrounding environment (Dempster and Oliver, 2019; Li, 2014). Previous literature also addressed the extent to which firms perform earnings management practices and the variables influencing them in an attempt to identify controls to limit them (Abdallah *et al.*, 2015), and, therefore, give more suitable and reliable information (Dempster and Oliver, 2019). Additionally, Ahmed *et al.* (2018) contend that fewer regulatory systems and a lack of interest in applying international accounting standards have resulted in an increase in corrupt administrative practices in firms, which has lately had a detrimental influence on financial market investor decisions. Dechow *et al.* (2010) and Warrad (2017) both confirmed that increasing the quality of earnings and decreasing the levels of opportunistic management practices boost investors' confidence in firm stocks, as the quality of earnings contributes to their ability to predict the future conditions of their investments and, thus, make the right decisions about them (Agustia *et al.*, 2020; Almarayeh *et al.*, 2020; Ugwunta *et al.*, 2018).

As a result, firms have implemented a number of control methods targeted at minimizing earnings management activities. Previous studies (e.g. Alsmairat *et al.*, 2018; Latif *et al.*, 2017) showed that corporate governance as a control mechanism contributes to reduce opportunistic practices. Inaam and Khamoussi (2016) and Toumeh *et al.* (2021) also found a negative correlation between audit quality and earnings management practices, owing to the fact that high-quality audit tasks increase oversight over administrators' practices and reduce their proclivity to pursue personal interests at the expense of stakeholders' interests.

According to Vitolla *et al.* (2019), board characteristics as a control tool also play a central role in increasing the financial reports quality disclosed by firms, owing to its role in limiting earnings management practices, where the size and independence of the board, in addition to the absence of the CEO/Chairman duality, contribute to increasing levels of control over management performance, thereby limiting potential earnings management. These results are compatible with the agency theory (Khan, 2022; Idris *et al.*, 2018; Usman *et al.*, 2019).

Kumari and Pattanayak (2014) reported that board size and the absence of CEO/chairman duality have a positive and negative link with earnings management practices, respectively, and that board independence has no link with earnings management practices. However, Kao and Chen (2004) discovered a negative correlation between board independence and earnings management practices, owing to these members' contributions to improving the effectiveness of oversight of firm administrators' performance, whereas CEO/chairman duality and board of director ownership have no link with earnings management.

Following that, prior research (e.g. Bouaziz *et al.*, 2019) revealed a positive correlation between CEO/chairman duality and earnings management practices, but no significant correlation for board independence, board size and board member turnover with earnings management practices. This might be due to inadequate levels of governance practices in firms, particularly those listed in developing markets. A body of literature implies that developing countries have weaker levels of monitoring and corporate governance than developed countries, reducing board members' ability to oversee managers' opportunistic activities (Almarayeh *et al.*, 2020; Shbeilat and Abdel-Qadir, 2018). Previous research, on the other hand, confirmed that personal relationships pervading in developing environments limit board members' ability to fully exercise their oversight functions (Abdullatif and Al-Khadash, 2010), which will have a significant influence on weakening supervisory practices in firms and, thus, the potential for increased opportunistic practices.

Hence, and based on past research findings, we may conclude that the nexus among board characteristics, earnings management practices and dividend payout remains a gap. As a result of the foregoing studies, inconsistencies in previous studies' findings prompted the current study, which investigated the impact of board characteristics on earnings management practices and dividend payout, as well as the mediating impact of earnings management practices in the nexus between board characteristics and dividend payout. Therefore, the primary contribution of this study is to fill a gap in the prior literature by adding more empirical evidence to the body of knowledge. This study presents new empirical evidence from an emerging market, and thus bridges the gap between theories (agency theory, signaling theory, entrenchment theory, threshold management theory and moral reasoning theory) and practice. As a result, the findings of this study can assist fellow researchers who are looking for relevant literature to gain a thorough understanding of the influence of board characteristics and earnings management practices on dividend payout, as well as the mediating role of earnings management practices in this context.

According to the findings of this study, board size and independence have a negative impact on earnings management practices, but CEO/chairman duality has a positive and significant impact. Furthermore, the firm-growth and audit quality factors both have a positive impact on earnings management practices. Following that, four board characteristics (i.e. board size, female representation on the board of directors, CEO/chairman duality and the number of board meetings) had a significant negative or positive impact on dividend payout, but board independence did not. Additional findings show that earnings management practices have a direct negative insignificant impact on dividend payout, whereas earnings management practices partially mediate the nexus between board characteristics (i.e. board size, female representation on the board of directors and CEO/chairman duality) and dividend payout. However, when board characteristics were taken into account, the results revealed that earnings management practices had a significant negative impact on dividend payout. Finally, this study provides a guide for policymakers and decision-makers. When these findings are made public, they become more important to investors, policymakers and other interested parties. For example, these findings can help legislators design legislation to minimize opportunistic activities by evaluating the characteristics of an efficient board of directors. Investors can also forecast firm dividend policy by looking at board characteristics and earnings management practices. Other interested parties, such as lenders and creditors, can utilize the study's findings

to support their judgments by analyzing and evaluating the firm's information (such as board characteristics and earnings management practices) to determine the level of risk and to comprehend the firm's future actions and policies.

Section 2 includes information on Jordan's background, as well as a literature review and the development of hypotheses in Section 3. Section 4 discusses methodology, Section 5 delves deeply into the data analysis and results. Section 6 contains the conclusion.

2. Jordan's background

Jordan is one of the world's fastest developing economies. Jordan is unusual among Middle Eastern countries in maintaining an appealing market in the area, owing to the fact that it provides a wide range of investment opportunities. Jordan is rich in both oil shale and uranium, and the government has recently shifted its focus to renewable energy (Al-Akra *et al.*, 2009). Furthermore, Jordan's economic progress has been impeded by political concerns in surrounding nations. Jordan's Ministry of Planning focuses on the growth of the industrial and service sectors to address this issue (Gerged *et al.*, 2021). As a result of the continued economic prosperity, higher employment and increasing innovation have been created. Despite the region's political problems, Jordan's strategic position and political stability continue to attract international investment. Jordan's goal is to achieve economic, social and political prosperity (Mansour, 2016). Furthermore, one of the most important sectors listed in the Jordanian market is the service sector, which contributes significantly to GDP in terms of the number of listed firms, the volume of investment and the number of workers when compared to other sectors; in fact, the Jordanian market is referred to as a service market. As a result, the emphasis of this study is on Jordanian service firms.

The Financial Accounting Standards Board (FASB) was created in early 1973. Jordan migrated to the US financial reporting system after three years of utilizing the British financial system with the Jordanian dinar (JD), the country's official currency (Almasarwah *et al.*, 2021). However, in recent years, a number of Jordanian agencies have been in charge of ensuring that business financial statements adhere to international standards such as the International Accounting Standards (IAS).

On the other side, board characteristics study is a relatively new phenomenon in Jordan, with most studies concentrating on governance procedures (Al-Rabba and Almahameed, 2020; Idris *et al.*, 2018). Furthermore, most research has revealed that governance practices in Jordanian firms are subpar (Abdullatif and Al-Khadash, 2010; Almarayeh *et al.*, 2020). As a result, other empirical evidences from the Jordanian context, including Abu Afifa *et al.* (2020), Alqirem *et al.* (2020), Saleh *et al.* (2020), Afifa *et al.* (2021) and Almasarwah *et al.* (2021), have documented that Jordanian firms, particularly those listed in the service sector, engage in earnings management practices. Therefore, as an emerging market, research on board characteristics and earnings management is currently neglected in Jordan; hence, this study examines the impact of board characteristics on earnings management practices and dividend payout. Following that, it intends to examine the mediating role of earnings management practices in this context.

3. Literature review and hypotheses

3.1 Underlying theories

Agency is defined as an agreement between two or more parties, with the first acting as the principal, that obligates the other party (as an agent) to perform a set of functions with the goal of transferring control over the firm's interests, including delegation of power in the decision-making process to the agents (Jensen and Meckling, 1976). The main issue with agency is the agency conflict, also known as the conflict of interest between owners and

management, in which managers in firms are sometimes interested in achieving their personal interests at the expense of investors' interests, giving rise to the concept of conflict of interests between both investors and managers (Davidson and Milligan, 2004). Another issue, no less significant than agency conflict, is agency costs, in which the process of moving authority from investors to management incurs large costs, restricting power-transfer procedures in firms (Okolie, 2014).

When it comes to profits, however, a conflict of interest can lead to bad management behavior, such as earnings manipulation, in which both the agent and the principal try to maximize their own gain regardless of the benefit of the other party. As a result, the independent interests of owners and management become a source of dispute, resulting in certain agents failing to completely execute their obligations. Inefficiency and financial loss can also result from incompatibility between the principal's and the agent's aspirations. So, the agency theory arose to address the issue of conflict of interest between the agent and the principal, where it is expected that managers of firms insured on their owners' money carefully manage it as if they were the owners of these funds, not prioritizing their personal interests over the interests of their owners (Kazemian and Sanusi, 2015). The theory is also focused on discussing some of the agency issue limits that curb conflicts of interest, such as those proposed by Jiraporn *et al.* (2008), that control practices limit opportunistic practices carried out by managers in firms, thereby reducing agency issues represented by conflicts of interest and costs.

Forecasting dividend policy, according to proponents of signaling theory in the context of this study, entails the sharing of private information about current and future earnings and, as such, can be used to reduce information asymmetry between insiders and outsiders; thus, dividend policy influences business value (Bartov *et al.*, 2002; Bhattacharya, 1980; Ronen and Sadan, 1981). Following that, based on the entrenchment theory, insiders may use firm activities to get personal benefits, like shirking and perk spending, when managers have insufficient equity and shareholders are too dispersed to take action against non-value maximization activity (Fama, 2008; Shleifer, 1989). Furthermore, when a firm's ownership and control are split, agency costs increase. Conversely, when the firm's ownership expands, agency expenditures reduce because managers shoulder a greater share of these costs. Giving ownership to a firm's management, on the other hand, may result in enhanced voting power, making the manager's workplace safer (Farinha, 2003). As a result, they are more safeguarded against takeovers and the current management market (Shleifer, 1989).

According to Degeorge *et al.* (1999), in terms of threshold management theory, firms consciously control their earnings in order to meet or exceed three earnings targets: zero earnings, last period's earnings and analysts' earnings projections. As a result, firm executives might engage in earnings management activities to meet one of three earnings targets. Following that, Kohlberg's (1969) moral reasoning theory is also applicable to earnings management practices, as it is a method in the process of analyzing the background and reasons underlying managers' ethics surrounding earnings management. This idea explains how people exhibit and justify their sense of good and wrong. Opportunistic activities might be considered unethical since they may be used to attain personal aims at the expense of others. As a result, choosing managers with high morals helps limit these opportunistic activities in businesses, achieving a balance between the aims of all stakeholders (Belgasem-Hussain and Hussaien, 2020).

Finally, this study's model is thus based on the above underlying theories, with the purpose of investigating the direct nexus among board characteristics, earnings management practices and dividend payout, as well as the indirect mediation impact of earnings management practices in this context.

3.2 Board characteristics and governance

Governance is described by stakeholders as a system of rules, processes and policies that carry out an effective process of monitoring the firm's activities, following up on its work, and

the performance level of those in charge, with the goal of ensuring fairness and transparency (Young *et al.*, 2008). The basic purpose of corporate governance is to correct the path by monitoring operational firms' operations and addressing any dubious behavior. It also leads to increased performance efficiency and effectiveness by actively reducing levels of error and deviation through the proper allocation of duties and powers as well as activating performance control systems with a high degree of transparency and supervision (Al-Rabba and Almahameed, 2020). In other words, corporate governance comprises the board of directors holding management accountable for their performance and the consequences of their operations on behalf of investors and stakeholders in order to achieve the firm's goals (Khan, 2022).

The board of directors is the firm's top administrative body; it represents the shareholders and ensures that the money invested is used wisely by management. It is also viewed as a crucial component of organizational structure in order to ensure the most effective use of capital. Because of its critical role in managing the firm and attaining its goals, the board of directors is acknowledged as one of the most important and influential actors in firms and their governance systems. The board of directors is also regarded as the most essential corporate governance structure since it has the most sway on performance, particularly over managers (Aifuwa and Embele, 2019). As a result, the fundamental rationale for placing a high value on board member characteristics is to provide them with the ability to monitor, oversee and evaluate executive leaders' performance in a high-quality way (Al-Rabba and Almahameed, 2020; Khan, 2022). Previous research suggests that firms with strong boards of directors deal with future errors more efficiently and provide higher-quality accounting information as a result of their engagement in reducing opportunistic actions by firm executive leaders (Chang and Sun, 2009; Garca Lara *et al.*, 2007).

3.3 Board characteristics and earnings management

In order to protect shareholders, the firm's senior management is overseen by an independent board of directors. The goal of having an independent board of directors is to reduce the possibility of information imbalances and untrustworthy management choices (Abata and Migiro, 2016). According to Tonay and Sutrisno's (2020) empirical evidence from Indonesian nonfinancial firms, having an independent board of directors aids in the reduction of earnings management activities since it provides more efficient oversight and supervision than a nonindependent board. Previous research has also demonstrated a beneficial association among the size of the board, the independence of board members, the number of board meetings and the quality of oversight in firms (Kapoor and Goel, 2017), all of which lead to the reduction of opportunistic activities by managers (Usman *et al.*, 2019).

Rauf *et al.* (2012) indicated a strong positive correlation between firm size and earnings management in Malaysian firms, indicating that executives in large firms prefer to engage in opportunistic behavior to achieve their personal goals at the expense of the interests of others. This is due to the vast number of activities done by large firms compared to smaller firms, which limits the capacity to assess operational performance. Executives of big firms have a greater comprehension of the firm's operational activities than other stakeholders, allowing them to engage in opportunistic conduct. Furthermore, empirical research demonstrated that a large-size board of directors failed in its job as a supervisory advisory board and had a detrimental influence on the firm's performance (Guest, 2009), owing to the probability of increased degrees of conflict of interest among members. According to Alves (2012), earnings management practices are positively affected by board size in Portuguese firms, because the presence of a large-size board of directors increases the possibility of reducing control and supervisory roles due to the intellectual and cognitive diversity they have, and, thus the occurrence of internal conflicts between board members, which increases the possibility of

increasing earnings management practices in firms (Epps and Ismail, 2009). In other words, a smaller board offers a more effective oversight function than a big board since the existence of an extremely large board of directors renders the control mechanism inefficient, which encourages earnings management practices (Jessica, 2020).

Al Azeez *et al.* (2019) argued that earnings management practices are negatively affected by female representation on the board of directors in the world's international oil and gas firms, and diverse boards of directors are distinguished in increasing control practices and their effectiveness in firms, which will contribute to reducing the possibility of managers manipulating earnings. Damak (2018) asserted that female members outperform male members in terms of supervision and control in French listed firms, which has a negative influence on earnings management practices. Usman *et al.* (2019) also stated that female members of listed firms on the Shanghai and Shenzhen stock markets have the capacity to efficiently control the performance of firms when compared to male members, which contributes to improve the levels of financial performance.

In other previous literature (e.g. Nugroho and Eko, 2012), earnings management practices are significantly affected by the dual position of the CEO/chairman. The dual position of the CEO/chairman in the firms contributes to opening the door to acquire support for management practices, since the dual role reveals the level of power consolidation in his or her judgment and personal opinion. As a result of the CEO/chairman duality role, it is feasible to undertake earnings management with the board's approval. According to Schepker *et al.* (2018) and Garca-Sánchez *et al.* (2019), there is a negative correlation between the dual position of CEO and corporate governance mechanisms, because control of the positions of CEO and chairman of the board of directors by one person contributes to reducing operational performance monitoring practices due to the possibility of unilateralism in decision-making processes, as well as steering other members of the board of directors.

Previous study has also found that firm boards of directors that meet on a regular basis have a stronger capacity to advise senior management and enhance levels of effective performance monitoring, resulting in improved firm profitability (Ntim and Osei, 2011). Earlier research has also shown that financial fraud is negatively influenced by the number of board meetings. According to Salleh and Othman's (2016) empirical evidence from Malaysia, increasing the number of board meetings held by Malaysian firms could be utilized to enhance corporate governance policy and control practices in order to minimize fraud incidents. Vafeas (1999) observed that, during times of turmoil, the board of directors meets more frequently, and that board meetings frequently show increased financial performance, because a board that meets more frequently can devote more time to discussing issues related to earnings management, thus finding solutions and making concurrent decisions to reduce them. These findings corroborate Rajeevan and Ajward's (2019) empirical evidence from Sri Lanka.

Based on our previous discussions, we can present further evidence from the Jordanian market regarding the impact of board characteristics on earnings management practices. The first hypothesis can, therefore, be organized as follows:

H1. Board characteristics negatively affect earnings management practices.

3.4 Earnings management and dividend payout

Previous research has looked at the motives for firms' earnings management practices, with Smith and Pennathur (2019) establishing that firms utilize earnings management to assure the consistency of their dividend policy, therefore minimizing agency concerns. According to Jiraporn and Lee (2018), opportunistic managers do not pay dividends to shareholders because dividends reduce the free cash flow that they may exploit, which is consistent with agency theory. Ahmed *et al.*'s (2018) empirical evidence from Pakistan reported that

dividends are also closely related to income variations in firms, since earnings management practices aim to enhance or cut income in order to limit its swings. As a result, depending on the firm's dividend policy, earnings management practices have an impact on payouts, either positively or negatively.

Other previous study (e.g. La Porta *et al.*, 2000) has discovered that managers have an incentive to hoard earnings rather than distribute them, since doing so permits them to steal or squander firm resources for personal benefit at the expense of outside investors. If dividends are not paid to shareholders, managers may transfer them for personal use or steer them to unproductive ventures for personal benefit (Denis and Osobov, 2008).

As a result, we believe that dividend-paying firms will reduce managers' personal judgment practices and, as a side effect, opportunistic behaviors. Dividend payers may also be less prone to fake their true economic success through earnings manipulation. Despite the fact that, when dividends to be paid out exceed cash flow from operations, earnings management in firms correlates positively with the requirement for dividends to be paid in order to increase income, an argument is consistent with He *et al.* (2017). Following that, this study seeks to give new evidence about the impact of earnings management practices on dividend payout. Thus, the second hypothesis can be structured as follows:

H2. Earnings management practices negatively affect dividend payout.

3.5 Mediating role of earnings management in the context of board characteristics and dividend payout

Previous literature discussed the role of board characteristics as one of the governance techniques in dividend policy, with Sanan (2019) demonstrating that firms with good governance measured by board characteristics paid lower amount of dividends to investors, owing to the instruction of the board of directors with strong governance to maintain high levels of free cash flow in the face of any future situations. Furthermore, Huyghebaert and Wang (2019) observed that various board of director characteristics in Chinese listed firms, such as board member independence, have a positive impact on cash dividends because they tend to boost firm market value by maintaining adequate levels of cash dividends. For example, independent directors are crucial in monitoring senior management's activities since the board's effective oversight mechanism must be independent of management. When it comes to monitoring, independent directors are more objective than insiders (Fama and Jensen, 1983), and they are also in a better position to provide firms with technical expertise for successful monitoring (Nguyen and Nielsen, 2010). According to Kao *et al.*'s (2019) empirical evidence from Taiwan, independent board members are inextricably linked to the firm's profits since they attempt to restrict earnings management processes in order to save and safeguard the firm's resources while also resolving agency conflicts. As a result, independent directors are more concerned with the preservation of minority shareholders, particularly in family businesses, where Setia-Atmaja (2010) and Khan (2022) demonstrate a positive correlation between independent directors and dividend payout to family firm shareholders in Australian and Turkish publicly listed firms, respectively. At the same time, Sanan (2019) reported that there is a negative correlation between independent board members and dividends in Indian firms since they tend to save the firm's free financial resources in order to shift them to future investment projects or to deal with any future financial troubles.

According to earlier research, the size of the board of directors is crucial in evaluating senior management effectiveness from the aspect of agency cost. Larger boards frequently provide a greater range of experiences and specializations, resulting in more effective performance monitoring methods (Gabrielsson, 2007), and thereby increasing firm performance (Al-Matari, 2019). Furthermore, due to insufficient monitoring and oversight

of the firm's resources, smaller board sizes, particularly in family firms, have little control over the firm's resources. In other words, Al-Najjar and Kilincarslan (2016) projected that a larger board in Turkish firms would boost supervision, but a smaller board would have a weak oversight role. Moreover, several studies have demonstrated that having more female board members correlates with better monitoring, fewer agency conflicts and higher dividend payments (Byoun *et al.*, 2016; Thompson and Manu, 2021). Female members are more productive and hardworking than their male counterparts, and they attend meetings more regularly (Adams and Ferreira, 2009). Furthermore, according to empirical evidence from nonfinancial firms in 77 countries provided by Boubakri *et al.* (2013), there is a negative correlation among female representation on the board of directors and dividends, because female members tend to avoid risks more than male directors when making financial and investment decisions, increasing the possibility of them supporting more conservative dividend decisions for the purpose of increasing levels of free liquidity in firms, thus increasing these firms' ability to avoid dividends. In other words, they are more likely to sanction smaller dividend payouts since they make fewer risky investment and financing decisions (Faccio *et al.*, 2016; Khan, 2022).

Other empirical investigations have found a link between the CEO/chairman duality role and dividend payouts (e.g. Braun and Sharma, 2007; Chen *et al.*, 2011). These investigations revealed the CEO's desire to keep more earnings and pay smaller dividends to shareholders in order to diversify future investment options or give themselves more choice when practicing earnings management. Khan (2022) noted that CEOs like to retain more free cash flows, which causes them to be hesitant to pay out more dividends to shareholders. Furthermore, according to Conger *et al.* (1998), frequent board meetings can increase board independence and effectiveness by providing board members with more opportunities to monitor and evaluate senior management performance. Taghizadeh and Saremi (2013) go on to claim that a stronger link between management control and board meetings reduces information asymmetry and improves firm performance, including dividend distribution to shareholders, in Malaysian public listed firms. Thus, it may be argued that firms that have board meetings on a regular basis have good governance processes, and that dividends play an alternate function in decreasing agency concerns when governance procedures are bad (Elmagrhi *et al.*, 2017).

Finally, the next goal of this study is to provide further empirical evidence about the impact of board characteristics on dividend payout, and thus the third hypothesis of this study may be arranged as follows:

H3. Board characteristics positively affect dividend payout.

Although managers have a variety of motivations for sharing or hoarding earnings, multiple studies have demonstrated the influence of control measures such as governance processes/board of directors' characteristics on influencing such motivations and diminishing opportunistic motivations (Afifa *et al.*, 2021). The correlation between dividends and earnings management practices in firms is, according to He *et al.* (2017), related to levels of governance, control and transparency. Previous study has also discovered that controls have a substantial influence on restricting earnings management practices as well as on presenting information in an honest and proper manner, particularly when it comes to dividend declarations. The high quality of earnings raises market share price because the quality of earnings represented by honest and objective disclosure of the current situation reflects the low levels of earnings management, and thus the quality of earnings may push management to make dividend decisions that are satisfactory to shareholders (Abu Afifa *et al.*, 2020). As a result, we are looking into the function of earnings management practices as a mediator in the nexus between board characteristics and dividend payout. This study's final hypothesis can be arranged as follows:

H4. Earnings management practices mediate the nexus between board characteristics and dividend payout.

4. Methodology

4.1 Population and sampling

The 47 service firms listed on the Amman Stock Exchange (ASE) between 2012 and 2019 comprise the study population. Four service firms were eliminated from the population due to the lack of availability of their whole data over the period; hence, a sample of 43 service firms was acquired over the time frame (2012–2019), generating a total of 344 firm-year observations. Other firms listed in other industries were excluded from this research due to differences in regulatory requirements. Financial firms, for example, are subject to Jordan's central bank's regulatory norms, while industrial firms must adhere to both general conditions and sector-specific laws. Finally, panel data analysis was employed in this study, and data for the study were acquired from yearly reports as well as the ASE's database.

4.2 Measurement of variables

The current study's model intends to investigate the direct effects of board characteristics on earnings management and dividend payout, followed by an evaluation of earnings management's indirect mediation effect in the nexus between board characteristics and dividend payout. According to earlier research (Kapoor and Goel, 2017; Khan, 2022; Idris *et al.*, 2018; Usman *et al.*, 2019), the board of directors has five primary characteristics: board size, board independence, female directors, CEO/chairman duality and the number of board meetings. As a result, these primary features were utilized in this study to reflect the characteristics of the board of directors.

Following that, in previous research, accruals-based earnings management using the modified Jones model was frequently used to measure earnings management (Afifa *et al.*, 2021; Al Saedi, 2018; Alqirem *et al.*, 2020; Chang and Sun, 2009; Dechow *et al.*, 1995; Jones, 1991; Saleh *et al.*, 2020). Earnings management is determined using the modified Jones model, which measures nondiscretionary accruals (Dechow *et al.*, 1995; Jones, 1991). As a result, Chen (2010) proposed that the modified Jones model is better suited to this situation. Finally, in this study, the modified Jones model is employed to evaluate earnings management.

The current study's model includes dividend payout as a dependent variable. Dividend payouts are cash distributions made by the target firms throughout the study period in which firms give a percentage of their earnings to shareholders as compensation for the amount of capital invested (Ghasemi *et al.*, 2018; Kalcheva and Lins, 2007). The study model also includes four control variables: firm size, return on assets, firm growth and audit quality. These control variables indicate firm characteristics, as past research has shown that firm characteristics influence earnings management practices and dividend payout. For example, because major-firm CEOs perform a large number of transactions, they have a huge potential to manipulate earnings (Dechow and Dichev, 2002; Mao and Renneboog, 2015). According to Goh *et al.* (2013) and Liu and Tsai (2015), a firm's size and profitability measures may incentivize managers to falsify earnings; hence, these factors may influence dividend payout. Considering that, when losses have occurred in the past, there is a greater possibility that additional earnings management will be performed in order to satisfy market expectations, it follows that further earnings management practices may have an impact on dividend payout. Furthermore, prior research (Abu Afifa *et al.*, 2020; Al-Thuneibat *et al.*, 2011; He *et al.*, 2017; Sanan, 2016) indicated that audit quality has an impact on earnings management and dividend payout, arguing that, when audit quality is good, earnings management practices are lowered and dividend payouts are enhanced.

Finally, Table 1 displays the measurement of each variable in the research model.

5. Data analysis and results

The next subsections provide the outcomes of the data analysis.

5.1 Descriptive analysis

Table 2 shows the descriptive analysis for the research variables across time using mean, standard deviation and max-min values. The results reveal that mean BOZ of 8.456 with 2.712 standard deviation indicates that the number of directors on the boards in the selected firms was greater than eight. Mean BOI of 1.223 with 2.030 standard deviation indicates that each firm in the chosen sample has one or more independent directors. An average FEDI of 0.305 with a standard deviation of 0.461 indicates that 30.5% of the targeted firms had female directors on their boards. The mean CEO/CH of 0.828 with standard deviation 0.377 shows that 82.8% of the selected firms do not have a CEO/chairman duality. Throughout the research period, this constituted the acceptable degree of corporate governance practice in these firms, which required for the separation of the CEO's tasks from the board of directors' duties and obligations represented by oversight and control functions (Kapoor and Goel, 2017; Khan, 2022). Following that, the mean BOM of 8.122 with standard deviation of 3.236

Variable	Proxy	Measurement equation	Reference
Board size	BOZ**	Number of board of directors i.t	Kapoor and Goel (2017), Khan (2022)
Board independence	BOI**	Number of independent board of directors i.t	Idris *et al.* (2018), Khan (2022)
Female directors	FEDI**	Is assessed as a dummy variable equal to one if the firm i has one or more females on its board of directors in the year t, otherwise zero	Usman *et al.* (2019), Khan (2022)
CEO/Chairman duality	CEO/CH**	Is assessed as a dummy variable equal to one if the firm i does not have a CEO/chairman duality in the year t, otherwise zero	Kapoor and Goel (2017), Khan (2022)
Number of board meetings	BOM**	Number of board meetings i.t	Usman *et al.* (2019), Khan (2022)
Earnings management	EM*	$\frac{TA_{i,t}}{A_{i,t-1}} = a_1\left(\frac{1}{A_{i,t-1}}\right) + a_2\left(\frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}}\right) + a_3\left(\frac{PPE_{i,t}}{A_{i,t-1}}\right) + \varepsilon_{i,t}$	Jones (1991), Dechow *et al.* (1995)
Dividend payout	Dividend**	$\frac{\text{Dividend per Share i.t}}{\text{Earning per Share i.t}}$	Kalcheva and Lins (2007), Ghasemi *et al.* (2018)
Firm size	Size**	The natural logarithm (Ln) of total assets i.t	Zuhroh (2019)
Return on assets	ROA**	$\frac{\text{Net Income i.t}}{\text{Total Assets i.t}}$	Kabajeh *et al.* (2012)
Firm growth	Growth**	$\frac{\text{Total Assets i.t} - \text{Total Assets i.(t-1)}}{\text{Total Assets i.(t-1)}}$	DeAngelo *et al.* (2006)
Audit quality	AuQu**	Is assessed as a dummy variable equal to one if the firm i was audited by a big-firm auditor in the year t, otherwise zero	Sumiadji *et al.* (2009), Al-Thuneibat *et al.* (2011), Abu Afifa *et al.* (2020)

Note(s): *TA is the total accruals; Δ REV is the change in the revenues; Δ REC is the change in net account receivables; PPE is gross property, plant and equipment; A is the total assets; *i* is the firm and *t* is the year. The nondiscretionary accruals are measured as estimated residuals (ε) from the equation; ***i* is the firm and t is the year

Table 1. Measurement of each variable

Variable	Standard deviation	Mean	Max-value	Min-value
BOZ	2.712	8.456	21	5
BOI	2.030	1.223	9	0
FEDI	0.461	0.305	1	0
CEO/CH	0.377	0.828	1	0
BOM	3.236	8.122	23	3
EM	0.097	−0.031	0.879	−0.403
Dividend %	56.919	44.079	413.53	0
Size	1.547	17.461	21.310	13.029
ROA	0.100	0.019	0.387	−0.687
Growth	0.156	0.022	1.220	−0.449
AuQu	0.497	0.445	1	0

Table 2.
Descriptive analysis

indicates that the average number of board meetings throughout the research period was eight meetings or more each year.

Mean EM of −0.031 with standard deviation of 0.097 suggests that, in general, the targeted firms used EM by reducing income rather than increasing it, in order to avoid paying more taxes or even to smooth income by shifting a portion of their earnings from the current period to the next periods. This conclusion is completely consistent with the work of Afifa *et al.* (2021). Furthermore, a mean dividend of 44.079% with standard deviation 56.919 indicates that the majority of the targeted firms have implemented a policy that seeks to pay earnings to shareholders in order to reduce agency issues despite achieving modest to poor returns on total assets over the period, with a mean ROA of 0.019 with standard deviation 0.100. Next, the mean size 17.461 with a standard deviation of 1.547, and mean growth of 0.022 with a standard deviation of 0.156. Finally, the mean AuQu of 0.445 with standard deviation 0.497 indicates that 44.5% of the targeted firms had their financial reports audited by the Big4 audit firms; this is owing to these firms' better audit quality when compared to other audit firms (Abu Afifa *et al.*, 2020; Afifa *et al.*, 2021; Sumiadji *et al.*, 2009).

5.2 Data validity and reliability

Several analytical tests were utilized in this study to evaluate the data validity and reliability. First, an interaction correlation analysis between the model's variables was performed, utilizing Pearson correlation test. Bryman and Cramer (2002) and Gujarati and Porter (2009) have shown that, when the correlations between model variables exceed 80%, a multicollinearity problem exists. The results in Table 3 reveal that the model's variables were less than 80% (range 0.348 to −0.003), indicating that there was no multicollinearity in the research data. The largest link was discovered between BOI and BOM (a significant positive correlation of 0.348), while size and growth had the poorest correlation (a nonsignificant negative; −0.003). Second, the variance inflation factor (VIF) test was used to assess the multicollinearity of the variables. Both Bryman and Cramer (2002) and Gujarati and Porter (2009) verified that when VIF values are above 5, and tolerance values are less than 0.2, there is a multicollinearity problem. As a consequence, the results in Table 3 show that there is no multicollinearity problem, as the VIF and tolerance values for the research variables were less than 5 (range 1.347 to 1.134) and greater than 0.2 (range 0.882 to 0.743), respectively.

Third, time series analysis is a statistical tool for analyzing and comprehending the behavior of events across time. In many analytic applications that rely on cross-sectional temporal data, time series stability is a critical concern. As a result, one of the procedures used to assure data stability is the unit root test. The presence of the unit root in the data denotes the presence of apparently random systematic patterns in the data, but the time series is

Table 3. Data validity and reliability

Variable	BOZ	BOI	FEDI	CEO/CH	BOM	EM	Size	ROA	Growth	AuQu	VIF	Tolerance
BOZ	1.000										1.284	0.779
BOI	0.196*	1.000									1.311	0.763
FEDI	0.112*	−0.158*	1.000								1.162	0.861
CEO/CH	0.212*	0.148*	0.067	1.000							1.134	0.882
BOM	0.268*	0.348*	−0.110*	0.111*	1.000						1.286	0.777
EM	−0.262*	−0.301*	0.051	0.149*	−0.284	1.000					1.347	0.743
Size	−0.034	0.031	0.132*	0.052	−0.023	0.017	1.000				1.152	0.868
ROA	0.024	−0.138*	0.176*	−0.099	−0.150*	−0.057	0.125*	1.000			1.277	0.783
Growth	0.069	0.017	−0.070	−0.019	0.066	0.264*	−0.003	0.332*	1.000		1.306	0.766
AuQu	0.293*	−0.131*	0.207*	0.205*	0.042	0.065	−0.254*	0.105	0.046	1.000	1.337	0.748

Note(s): *p-value < 0.05

deemed stable if the unit root is absent (Greene, 2008). In the current investigation, the augmented Dickey-Fuller unit root test was applied. According to Table 4, all variables in the time series are stable (stationary), with *P*-values less than 5%. As a result, the hypothesis that the data have a unit root is rejected.

5.3 Results of regression analysis models

Because regression models are grouped into two types – fixed effect models and random effect models – the Hausman test was used to assess which of the regression models was appropriate for this investigation, and a fixed effect model was chosen if the *p*-value was less than 5%, otherwise a random effect model was used (Baltagi, 2008). The Hausman test findings are shown in Table 5. The findings show that the *p*-value for all analysis models is less than 5%, showing that the analysis models are valid with a fixed effect model. Durbin–Watson statistics in the major analytic models (H1, H3) show that there was no autocorrelation in the sample, with values ranging from 1.5478 (H1) to 2.2228 (H3). As a result, the estimate equations are as follows:

$$EM_{i.t} = \alpha + \beta_1 BOZ_{i.t} + \beta_2 BOI_{i.t} + \beta_3 FEDI_{i.t} + \beta_4 CEO/CH_{i.t} + \beta_5 BOM_{i.t} + \beta_6 Size_{i.t} + \beta_7 ROA_{i.t} + \beta_8 Growth_{i.t} + \beta_9 AuQu_{i.t} + (\varepsilon_i + v_{i.t}) \quad (1)$$

$$Dividend_{i.t} = \alpha + \beta_1 EM_{i.t} + \beta_2 Size_{i.t} + \beta_3 ROA_{i.t} + \beta_4 Growth_{i.t} + \beta_5 AuQu_{i.t} + (\varepsilon_i + v_{i.t}) \quad (2)$$

Table 4. Results of data stability

Variable	*P*-value	Status
BOZ	0.020	Stationary*
BOI	0.001	Stationary*
FEDI	0.000	Stationary*
CEO/CH	0.012	Stationary*
BOM	0.001	Stationary*
EM	0.000	Stationary*
Dividend	0.000	Stationary*
Size	0.000	Stationary*
ROA	0.000	Stationary*
Growth	0.000	Stationary*
AuQu	0.006	Stationary*

Note(s): **p*-value < 0.05

Table 5. Hausman test

Correlated random effects – Hausman test Test cross-section random effects				
Analysis model	H1 Model	H2 Model	H3 Model	H4 Model
Chi-sq. statistic	18.126	12.423	24.116	24.404
Chi-sq. d.f	9	5	9	10
P-value	0.033	0.029	0.004	0.006

$$Dividend_{i.t} = \alpha + \beta_1 BOZ_{i.t} + \beta_2 BOI_{i.t} + \beta_3 FEDI_{i.t} + \beta_4 CEO/CH_{i.t} + \beta_5 BOM_{i.t} + \beta_6 Size_{i.t} + \beta_7 ROA_{i.t} + \beta_8 Growth_{i.t} + \beta_9 AuQu_{i.t} + (\varepsilon_i + v_{i.t}) \quad (3)$$

$$Dividend_{i.t} = \alpha + \beta_1 BOZ_{i.t} + \beta_2 BOI_{i.t} + \beta_3 FEDI_{i.t} + \beta_4 CEO/CH_{i.t} + \beta_5 BOM_{i.t} + \beta_6 EM_{i.t} + \beta_7 Size_{i.t} + \beta_8 ROA_{i.t} + \beta_9 Growth_{i.t} + \beta_{10} AuQu_{i.t} + (\varepsilon_i + v_{i.t}) \quad (4)$$

Furthermore, to check the heteroscedasticity issue in data series under panel cross-section and panel period methods, panel cross-section and panel period heteroscedasticity likelihood ratio (LR) tests were conducted. The results of both heteroscedasticity LR tests in Table 6 show that residuals are not homoscedastic – rejecting the null hypothesis – since the probability values of LR are less than 0.05 ($p < 0.05$). To solve this issue, this study is based on the use of the generalized method of moments (GMM) model, since a fixed effect model is not suitable. Arellano and Bond (1991) and Blundell and Bond (1998) created the GMM model, which may be utilized to dynamic panel data. In addition, one method for dealing with heteroscedasticity is to transform the dependent variable. Taking the log of the dependent variable is a common transformation method (Astivia and Zumbo, 2019). The lag of the dependent variables is utilized as explanatory factors in dynamic panel data estimation models to regulate endogenous relationships (Roodman, 2009). Furthermore, modeling the link between the variables in this study will be difficult if endogeneity is not appropriately handled (Jmaii, 2017). Additionally, the Sargan test for overidentification problem was performed in this study, and the test values for all study models were larger than 0.05 (see Tables 7–10), leaving no cause for overidentification and showing that one lagged dependent variable – first order – is adequate.

As a consequence, the GMM model with one lagged dependent variables (*Dividend i.t−1; EM i.t−1*) – first order – was employed to estimate the findings in this study for a variety of reasons. First and foremost, the model is a common estimator that can be utilized as a framework for comparison and evaluation. Second, it enables researchers to conduct more thorough long-term and short-term estimation, as well as overcome assumption breaches in regression analysis. The general final models then assume the following dynamic (autoregressive) estimation equations forms to handle any autocorrelation problems in the residual values of the regression analysis:

$$EM_{i.t} = \gamma_{1i.t-1} + \beta_1 BOZ_{i.t} + \beta_2 BOI_{i.t} + \beta_3 FEDI_{i.t} + \beta_4 CEO/CH_{i.t} + \beta_5 BOM_{i.t} + \beta_6 Size_{i.t} + \beta_7 ROA_{i.t} + \beta_8 Growth_{i.t} + \beta_9 AuQu_{i.t} + (\varepsilon_i + v_{i.t}) \quad (5)$$

$$Dividend_{i.t} = \gamma_{1i.t-1} + \beta_1 EM_{i.t} + \beta_2 Size_{i.t} + \beta_3 ROA_{i.t} + \beta_4 Growth_{i.t} + \beta_5 AuQu_{i.t} + (\varepsilon_i + v_{i.t}) \quad (6)$$

Analysis model	H1 model	H2 model	H3 model	H4 model
Panel cross-section heteroskedasticity tests				
LR value	241.559	254.063	246.283	251.218
P-value	0.000	0.000	0.000	0.000
Panel period heteroskedasticity tests				
LR value	62.147	62.383	58.867	58.689
P-value	0.029	0.001	0.003	0.002

Note(s): Null residuals are homoskedastic

Table 6. Heteroskedasticity LR tests

Variable (dependent variable: EM)	Fixed effect model Coeff	*P*-value	GMM model Coeff	*P*-value
C	−0.845	0.034**		
EM_{t-1}			0.076	0.041**
BOZ	−0.009	0.001***	−0.019	0.057*
BOI	−0.008	0.002***	−0.007	0.072*
FEDI	0.035	0.145	0.114	0.119
CEO/CH	0.002	0.923	0.077	0.058*
BOM	−0.006	0.005***	−0.002	0.811
Size	0.053	0.019**	0.021	0.664
ROA	−0.048	0.513	−0.633	0.001***
Growth	0.203	0.000***	0.309	0.007***
AuQu	0.021	0.455	0.115	0.014**
R-squared	0.439			
Adjusted *R*-squared	0.341			
F-statistic	4.488			
P-value(*F*-statistic)	0.000***			
Sargan test			11.607	
Prob Sargan test			0.928	
Total panel observations	344		258	

Note(s): Significance at the *** – 0.01, ** – 0.05 and * – 0.10 level

Table 7. The first regression model's results (H1)

Variable (dependent variable: dividend)	Fixed effect model Coeff	*P*-value	GMM model Coeff	*P*-value
C	−82.625	0.060*		
$Dividend_{t-1}$			−0.078	0.005**
EM	40.316	0.227	−22.973	0.242
Size	7.338	0.003***	46.351	0.038**
ROA	144.885	0.003***	−37.278	0.431
Growth	−72.731	0.001***	−44.867	0.014**
AuQu	−5.925	0.377	9.045	0.810
R-squared	0.096			
Adjusted *R*-squared	0.081			
F-statistic	6.441			
P-value (*F*-statistic)	0.000***			
Sargan test			20.136	
Prob Sargan test			0.449	
Total panel observations	344		258	

Note(s): Significance at the *** – 0.01, ** – 0.05 and * – 0.10 level

Table 8. The second regression model's results (H2)

$$Dividend_{i.t} = \gamma_{1i.t-1} + \beta_1 BOZ_{i.t} + \beta_2 BOI_{i.t} + \beta_3 FEDI_{i.t} + \beta_4 CEO/CH_{i.t} + \beta_5 BOM_{i.t} + \beta_6 Size_{i.t} + \beta_7 ROA_{i.t} + \beta_8 Growth_{i.t} + \beta_9 AuQu_{i.t} + (\varepsilon_i + v_{i.t}) \quad (7)$$

$$Dividend_{i.t} = \gamma_{1i.t-1} + \beta_1 BOZ_{i.t} + \beta_2 BOI_{i.t} + \beta_3 FEDI_{i.t} + \beta_4 CEO/CH_{i.t} + \beta_5 BOM_{i.t} + \beta_6 EM_{i.t} + \beta_7 Size_{i.t} + \beta_8 ROA_{i.t} + \beta_9 Growth_{i.t} + \beta_{10} AuQu_{i.t} + (\varepsilon_i + v_{i.t}) \quad (8)$$

whereby $\gamma_{1i.t-1}$ denotes the lagged dependent variable.

Variable (dependent variable: dividend)	Fixed effect model Coeff	*P*-value	GMM model Coeff	*P*-value
C	−117.932	0.009***		
Dividend$_{t-1}$			−0.142	0.046**
BOZ	3.769	0.006***	44.331	0.001***
BOI	2.947	0.097*	−2.846	0.244
FEDI	14.183	0.052*	233.709	0.023**
CEO/CH	3.033	0.755	48.525	0.049**
BOM	2.373	0.027**	−5.302	0.076*
Size	6.130	0.013**	8.297	0.761
ROA	151.243	0.004***	311.301	0.191
Growth	−67.002	0.002***	−59.231	0.252
AuQu	−18.247	0.015**	110.277	0.085*
R-squared	0.154			
Adjusted *R*-squared	0.128			
F-statistic	5.921			
P-value (*F*-statistic)	0.000***			
Sargan test			19.197	
Prob Sargan test			0.379	
Total panel observations	344		258	

Note(s): Significance at the *** – 0.01, ** – 0.05 and * – 0.10 level

Table 9. The third regression model's results (H3)

Variable (dependent variable: dividend)	Fixed effect model Coeff	*P*-value	GMM model Coeff	*P*-value
C	−116.179	0.010***		
Dividend$_{t-1}$			−0.096	0.151
BOZ	3.797	0.006***	38.247	0.003***
BOI	2.868	0.099*	−2.677	0.162
FEDI	14.260	0.050**	231.459	0.002***
CEO/CH	5.696	0.563	41.849	0.026**
BOM	2.461	0.022**	−3.615	0.107
EM	55.936	0.098*	−114.612	0.062*
Size	5.947	0.017**	45.491	0.065*
ROA	161.538	0.003***	565.125	0.001***
Growth	−77.704	0.001***	52.921	0.179
AuQu	−18.228	0.014**	71.051	0.188
R-squared	0.481			
Adjusted *R*-squared	0.378			
F-statistic	5.635			
P-value (*F*-statistic)	0.000***			
Sargan test			22.122	
Prob Sargan test			0.333	
Total panel observations	344		258	

Note(s): Significance at the *** – 0.01, ** – 0.05 and * – 0.10 level

Table 10. The fourth regression model's results (H4)

Following that, the first regression analysis model investigated the direct influence of board characteristics on EM practices, and the outcomes of the first GMM regression analysis model are presented in Table 7. According to the GMM estimator results, delayed EM has a positive influence on EM practices, implying that earlier EM activities increase the likelihood of using the same techniques in the future. The results also demonstrate that two board

characteristics, namely BOZ and BOI, have a substantial negative impact on the EM, while FEDI and BOM have no effect. At the same time, the CEO/CH has a significant positive impact on the EM. As a result, the first hypothesis is partially accepted. One possible explanation for these findings is that governance mechanisms in the targeted firms are of low quality, which is consistent with the findings of Abdullatif and Al-Kadash (2010) and Almarayeh *et al.* (2020). They observed that governance mechanisms in Jordanian firms are deficient since board members are chosen mostly based on personal connections, which fosters opportunistic conduct. Previous research (e.g. Kapoor and Goel, 2017; Usman *et al.*, 2019) found a positive nexus between board size, board independence and the number of board meetings with the control level, such as governance practices in firms, which is directly reflected in the reduction of EM practices; in fact, this is fully consistent with an agency theory (Khan, 2022). These findings, however, differ (to some extent) with those of Al Azeez *et al.* (2019), who observed no link between board size and EM practices. The researchers ascribed these findings to the fact that increasing the number of board members impedes the control process due to the likelihood of personal differences in board members' viewpoints. As a result, their ability to deal with opportunistic conduct in the workplace would deteriorate.

In this study, FEDI had a favorable but insignificant impact on EM practices, while CEO/CH had a positive and substantial impact. These findings are congruent with those of Al Azeez *et al.* (2019), but differ from those of Harakeh *et al.* (2019) and Vitolla *et al.* (2020). Al Azeez *et al.* (2019) stated that the CEO/CH reduces the board of directors' control powers, allowing firms to engage more in EM practices. Harakeh *et al.* (2019) and Vitolla *et al.* (2020) discovered that female presence on boards of directors enhances financial report quality by increasing the efficacy of the control process on executive performance. They also noted that having females on boards of directors raises the amount of transparency when it comes to revealing a firm's financial information. As a result, boards of directors, which are distinguished by the variety of their membership, are distinctive in enhancing control processes and their efficacy in firms, reducing CEOs' ability to manipulate accounting earnings. Finally, the differences in these conclusions between the current study and previous studies can be attributed to the fact that Jordanian firms are governed by the characteristics of family ownership, concentrated ownership, low investor protection and personal relationships that predominate when forming their boards of directors (Abdullatif and Al-Kadash, 2010), reflecting the low levels of governance that exist in their environments compared to those firms that exist in other countries, such as developed countries (Almarayeh *et al.*, 2020).

Following that, Table 7 demonstrates that, while both the growth and AuQu variables have a positive influence on EM practices, the ROA has a considerable negative impact. This indicates that CEOs of fast-growing firms are more likely to misrepresent accounting results in order to enrich themselves at the expense of investors. Another possible reason for these findings is that a firm's quick growth may have a favorable influence on its operational processes, lowering the control procedures in which they are present and, therefore, increasing EM practices. These findings are entirely consistent with those of Almarayeha *et al.* (2020). Furthermore, firms with high rates of return may avoid opportunistic conduct, which can boost management's image among investors and stakeholders (Saleh *et al.*, 2020).

Table 8 shows the GMM estimator findings for the second analysis model, which seeks to explore the direct influence of EM practices on dividend payout. The results show that delayed dividend payout has a significant negative influence on dividend payout, while EM practices have an insignificant negative impact on dividend payout. These findings are entirely consistent with those of Ekanayaka and Wijesinghe (2021), and are supported in part by He *et al.* (2017), who stated that CEOs use EM and dividend payout simultaneously to reduce agency problems, because dividend levels signal a firm's ability to generate revenue

and thus attract external financing. EM practices, on the other hand, are not strongly tied to dividends since firm managers use earnings manipulation to maximize their own gains at the detriment of investors' interests. One possible explanation for this finding is that opportunistic managers do not pay dividends to maintain high levels of free cash in order to use it to achieve one-side goal (Jiraporn and Lee, 2018). Finally, the second hypothesis is not accepted.

Size and growth have a significant positive and negative effect, respectively, on dividend payout in the second GMM model, indicating that large firms tend to pay more dividends to shareholders, whereas firms with strong growth choose to pay fewer dividends in order to keep more cash and thus maintain competitive levels of growth (Sanan, 2016).

Table 9 summarizes the findings of the GMM investigation on the direct influence of board characteristics on dividend payout. According to the findings, three board characteristics, namely BOZ, FEDI and CEO/CH, have a significant positive influence on dividend payout, whereas BOM has a significant negative effect and BOI does not. As a result, the third hypothesis is partially accepted. The findings are supported by agency theory and are congruent with Taghizadeh and Saremi (2013), Sanan (2016), Elmagrhi *et al.* (2017), Huyghebaert and Wang (2019) and Thompson and Manu (2021). They did, however, observe that the independent members of the board of directors had a tendency to pay earnings to shareholders in order to maintain the market price of the firm's shares steady (Huyghebaert and Wang, 2019). Furthermore, one possible explanation for these findings is that having more females on boards of directors improves the supervisory process, which leads to higher levels of financial performance in firms, which may contribute to larger earnings being delivered to shareholders. Thompson and Manu (2021) also discovered a link between board size and female participation on boards of directors and dividend policy. The primary board members desire to deliver higher earnings to investors in order to maintain the firm's market position in contrast to competitors, as well as improve investor perceptions of the firm in order to attract new investors, and therefore increase market value. There is, according to Taghizadeh and Saremi (2013) and Elmagrhi *et al.* (2017), a positive association between management control and board meetings. Higher management control connection with board meetings will eliminate agency issues and improve firm performance, resulting in increased earnings distribution to shareholders (Conger *et al.*, 1998).

Size and ROA have a positive insignificant influence on dividend payout in the third GMM analysis mode; however, AuQu has a positive significant effect. That is, large firms with strong financial performance attempt to increase earnings per share for shareholders in order to improve their market image. Furthermore, firms with high audit quality want to pay more dividends to shareholders in order to maintain comparable growth levels to rivals while also reducing the severity of future liquidity-related difficulties (Sanan, 2016).

Finally, Table 10 provides the GMM estimator results of the mediation impact of EM on the board characteristics-dividend payout nexus. The findings show that EM practices partially mediate the nexus between the board characteristics (i.e. the board size, female representation on the board of directors and CEO/chairman duality) and dividend payout. One interpretation for these findings is that the link between dividends and EM practices is connected to firm levels of governance, control and transparency (He *et al.*, 2017; Kapoor and Goel, 2017; Usman *et al.*, 2019). According to Sanan (2016) and Smith and Pennathur (2019), firms with strong governance and high supervision paid smaller dividends than firms with weak governance and low supervision, where dividend policy is utilized to handle conciliation-conflict issues between management and shareholders.

5.4 Robustness checks

Other measures of discretionary accruals, such as Kothari *et al.*'s (2005) performance-matched discretionary accruals, are required for robustness checks. They conducted a simulation to see how powerful the modified Jones model is, and observed that utilizing performance-matched discretionary accruals improves conclusion reliability. The following is their performance-matched discretionary accruals measurement equation:

$$\frac{TA_{i,t}}{A_{i,t-1}} = a_1\left(\frac{1}{A_{i,t-1}}\right) + a_2\left(\frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}}\right) + a_3\left(\frac{PPE_{i,t}}{A_{i,t-1}}\right) + ROA_{i,t} + \varepsilon_{i,t} \quad (9)$$

$$DA_{\mathrm{i.t}} = \frac{TA_{i,t}}{A_{i,t-1}} - \left[a_1\left(\frac{1}{A_{i,t-1}}\right) + a_2\left(\frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}}\right) + a_3\left(\frac{PPE_{i,t}}{A_{i,t-1}}\right) + ROA_{i,t}\right] \quad (10)$$

Therefore, we run the H1, H2 and H4 models through the GMM test by utilizing Kothari *et al.*'s (2005) performance-matched discretionary accruals model to measure EM practices. Table 11 shows that, in the H1 model, both the BOZ and the BOI have a direct negative influence on EM practices, but the CEO/CH has a direct positive impact. The results of the H2 model demonstrate that delayed dividend payout and growth have a direct negative influence on dividend payment, whereas EM practices have a negative but insignificant impact. Following that, the H4 model results show that the nexus between BOZ, FEDI and CEO/CH of the board characteristics and dividend payout is partially mediated by EM practices, where, with existing board characteristics in the model, EM practices have a negative and significant influence on dividend payout. Additionally, the control variables impact results are likewise similar to those included in the primary analysis models. Finally, we can see that the analysis results of Kothari *et al.*'s (2005) performance-matched discretionary accruals model closely resemble the results of the primary analysis models.

Table 11. Robustness checks using GMM model

Variable	H1 model (dependent variable: EM) Coeff	*P*-value	H2 model (dependent variable: dividend) Coeff	*P*-value	H4 model (dependent variable: dividend) Coeff	*P*-value
EM_{t-1}	0.061	0.073*				
$Dividend_{t-1}$			−0.079	0.004***	−0.096	0.151
BOZ	−0.021	0.031**			38.227	0.004***
BOI	−0.007	0.073*			−2.679	0.163
FEDI	0.121	0.117			231.821	0.002***
CEO/CH	0.081	0.037**			41.848	0.026**
BOM	−0.001	0.848			−3.609	0.106
EM			−23.152	0.241	−115.287	0.061*
Size	0.024	0.613	46.341	0.038**	45.536	0.064*
ROA	−0.503	0.001***	−34.997	0.461	576.414	0.001***
Growth	0.283	0.004***	−44.839	0.015**	53.401	0.175
AuQu	0.118	0.005***	9.053	0.803	71.039	0.188
Sargan test	12.219		20.128		22.136	
Prob Sargan test	0.908		0.449		0.333	
Total panel observations	258		258		258	

Note(s): Significance at the *** – 0.01, ** – 0.05 and * – 0.10 level

6. Conclusion

In this study, the direct influence of board characteristics on EM and dividend payout is examined first, followed by an assessment of the indirect mediation effect of EM in the nexus between board characteristics and dividend payout. It seeks to give fresh empirical findings from the Jordanian market, specifically Jordanian service firms listed on the ASE between 2012 and 2019. Finally, 344 firm-year observations were obtained through a panel data analysis of the 43 listed service firms.

According to the findings of this study, board size and independence have a negative and significant influence on the EM, but CEO/chairman duality has a positive and significant impact. These findings are congruent with the agency theory. Simultaneously, the impacts of female representation on the board of directors and the number of board meetings were both positive but insignificant. That is, both board size and board independence help to reduce EM behaviors. Furthermore, the firm-growth and audit quality variables both have a positive impact on EM practices, while the ROA has a significant negative impact. Additionally, the findings found that four board characteristics, including board size, female representation on the board of directors, CEO/chairman duality and the number of board meetings, had a significant effect on dividend payout, while board independence did not.

Additional findings show that EM practices have a direct negative but insignificant effect on dividend payout, whereas EM practices partially mediate the nexus between three board characteristics (i.e. board size, female representation on the board of directors and CEO/chairman duality) and dividend payout. However, when board characteristics were included, the findings revealed a significant negative impact of EM practices on dividend payout. One interpretation of these findings is that the nexus between dividends and EM practices is related to firm levels of governance, control and transparency.

Finally, contradictions in the results of earlier investigations inspired the current study, with the findings filling a gap in the existing literature based on underlying theories (i.e. agency theory, signaling theory, entrenchment theory, threshold management theory and moral reasoning theory). The findings of this study can assist fellow researchers who are looking for relevant literature to gain a thorough understanding of the influence of board characteristics and EM practices on dividend payout, as well as the mediating role of EM practices in this context. Additionally, the findings of this study provide a guide for policymakers and decision-makers. When these findings are made public, they become more important to investors, policymakers and other interested parties. For example, these findings can help legislators design legislation to minimize opportunistic activities by evaluating the characteristics of an efficient board of directors. Investors can also forecast firm dividend policy by looking at board characteristics and EM practices as signals. Other interested parties, such as lenders and creditors, can utilize the study's findings to support their judgments by analyzing and evaluating the firm's information (such as board characteristics and EM practices) to determine the level of risk and to comprehend the firm's future actions and policies.

However, the current study's limitation is that it only searched in Jordanian service firms listed on ASE from 2012 to 2019 to fulfill the study's objectives; thus, we urge that future work explores the study models for other sectors, whether in Jordan or other growing markets such as the Middle East and North Africa. Another limitation of this study is that the study model lacks additional variables, such as corporate governance and ownership structure characteristics, which may influence EM and dividend policy; as a result, we recommend that future work can include such variables in research models to have more explanations in this context.

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