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Does the audit quality have any moderating impact on the relationship between ownership structure and dividends? Evidence from Jordan

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The article aims at investigating whether audit quality impacts the relationship between ownership structure and dividends in companies listed on the Amman Stock Exchange (ASE). The article is constructed on the analysis of time-series–cross-section (TSCS) (Panel Data). The study sample comprises 34 companies listed on the Amman Stock Exchange between 2016 and 2021. The study sample's content of the financial reports is analyzed to attain appropriate data for the study. The Findings indicate that family ownership and ownership of board members negatively impact dividends. In contrast, institutional ownership and concentrated ownership positively impact dividends, as no effect of foreign ownership is found on dividends. By introducing audit quality as a modified variable on the relationship between ownership structure and dividends, the findings demonstrate that audit quality positively enhances and strengthens this relationship. This article with its results is of great significance to future stockholders and shareholders, as they help in selecting companies capable of distributing higher dividends than other companies and achieving satisfactory investment returns. The findings of the study also focus on the significance of audit quality as a guarantor for regulating the relationship between forms of ownership structure and the distribution of dividends. This study is regarded among the little research investigating the factors that would impact the relationship between ownership structure and dividends. This article plays a key role in bridging the research gap related to the lack of studies dealing with the relationship between ownership structure and dividends in emerging markets.

1. Introduction

The decision to distribute dividends in listed companies is among the most significant decisions impacting the company's reputation in the financial market and efforts to attract shareholders and investors. The value of the distributed dividends is regarded as important evidence of the success of the company and the strength of the financial market to which the company belongs. As put by Thompson and Manu (2021), the dividends are a mirror reflecting the status of future investments and expected growth rates in the company.

Alternatively, financial collapses and crises have contributed to increasing the interest of current and future shareholders and investors in searching for companies whose dividends are distinguished with continuity and regularity over several successive years (Tahir *et al.*, 2020b, Soda *et al.*, 2022), Therefore, the issue of dividends is considered amongst the novel venues and research areas, especially in developing countries, since the decision to distribute dividends in developing markets is

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characterized by irregularity as a result of the different nature of the administrative structure and ownership structure (Abu-Khashabah, 2022), (Mehmood *et al.*, 2019), Conversely, most of the previous research and studies have focused on companies in developed countries (Al-Najjar and Kilincarslan, 2019).

Given the significance of the issue of dividends, plenty of the previous research and studies analyzing the factors affecting the value of the distribution of dividends in listed companies have focused on examining corporate governance mechanisms, i.e. the characteristics of the board of directors and the financing structure to reduce the effects of the agency problem on dividends. These studies, however, have overlooked other factors projected to impact dividends such as ownership structure.

Ownership structure in listed companies refers to the number of shares owned by different groups of shareholders (Wypych, 2015), Due to the difference of interests between the directors and the shareholders, the agency theory emphasizes that the ownership structure would worsen this dispute thanks to the desire of both the shareholders and the managers to maximize their benefits. Most of the previous studies have emphasized that the ownership structure has an efficient role in decreasing agency costs by attempting the owners of the ownership structure to reduce the cash available to managers by distributing higher dividends from one period to another (Bohdanowicz, 2016). From the viewpoint of the ownership structure's owners, the presence of excessive liquidity stimulates the managers to invest in unprofitable projects at times and may lead to reducing the wealth of the shareholders. (Alshehadeh & Al-Khawaja, 2022)

In the same discussion, the various forms of ownership structure; family ownership, foreign ownership, concentrated ownership, government ownership, and ownership of board members have a major role in influencing the decisions of the directors' board in the process and form of distribution of dividends according to the interests of these owners. Easterbrook (1984) argues that the ownership structure may affect the process of distribution of dividends due to the larger conflict that can occur between the minority stockholders and the controlling stockholders. Minority shareholders receive lower dividends as a result of the influence and control of other shareholders with a higher ownership structure, and accordingly, the process of the dividend distributions can be affected by the prevailing ownership structure in the joint stock companies (Arora and Srivastava, 2021). Consequently, the first objective lies in exploring the effect of the ownership structure in its various forms; family ownership, foreign ownership, concentrated ownership, government, state, or public ownership, and ownership of board members on the distribution of dividends in the ASE-listed companies in Jordan.

Despite the availability of studies dealing with the influence of ownership structure on dividends, the results of these shreds of research are mixed and inconclusive. Therefore, the current article aims to explore other factors impacting the relationship of ownership structure to the distribution of dividends, and among these factors is the quality of external auditing. The external auditor significantly preserves the rights of stakeholders, including owners and others, and has an effective role in mitigating the obstacles of information asymmetry between major shareholders and minority owners, thus mitigating the effects of the agency problem (Makhlouf *et al.*, 2022).

In the same context, the external auditor is regarded as a guarantor of shareholders' rights and can prevent the boards of directors from manipulating the decision to distribute dividends by delaying dividends or postponing them to other periods to exclude some shareholders as a result of not getting satisfactory distributions for them. Accordingly, the second objective of this study finds outs whether the audit quality represented by the auditors belonging to the big auditing companies (Big4) has an effect on the association between dividends and ownership structure in the ASE-listed companies in Jordan.

Importantly, the current article furnishes several academic and scientific contributions enriching the previous literature related to the impact of ownership structure on dividends. It is hoped that this study bridges the research gap relating to the lack of studies dealing with the issue of ownership structure and distribution of dividends in developing countries. Besides, the current article concentrates on the Jordanian market characterized by a wide variety of ownership structures as a result of economic and security stability and the confidence of shareholders and investors in this market as an emerging market among the Middle East countries.

This study also makes another contribution, which is enriching the previous literature by examining the factors that can strengthen and enhance the relationship between ownership structure and dividends and studying the impact of audit quality as a modified variable on this association. Moreover, this study looks at the impact of the ownership of the members of the directors' board on the dividends. More importantly, this study is a novel and unique study as it centers on exploring the influence of this type of ownership structure on the distribution of dividends thanks to its expected impact on the decision of distribution of dividends since the shareholders who have seats in the board of directors strongly impact this decision.

The structure of the study is divided into six sections including the introduction. The second section gives insight into the theoretical framework. Third section shows literature review and hypotheses developments. The methodology is explained in the fourth section, while section five includes the findings discussion. Last section concludes the study.

2. Theoretical Framework

The nature of the study necessitates incorporating the signaling theory and agency theory into the theoretical framework**.**

2.1 Signaling Theory

The signaling theory refers to the reaction of the market to the announcements of dividends; whereby the board of directors avoids cutting dividends to escape from any negative signals to existing shareholders that may lead to lower stock prices**.** Conversely, the board of directors raises the dividends when they have reliable indicators about the continuity of these dividends. Thus, this theory considers the availability of a direct relationship between dividends and shareholders' reactions, as low dividends can create negative indicators for shareholders (Miller & Modigliani, 1961). As stated by Fairchild (2010), dividend payments provide positive signals to companies' current and future performance and their investment ability in future projects. Alternatively, low dividend payments indicate low growth opportunities for companies. Conversely, high dividend payments contribute to providing a positive indicator for investors and reduce the severity of information asymmetry that can appear when the owners have more information about the value of the company and its investments than external investors (Hail *et al.*, 2014). The signaling theory also asserts that information asymmetry concerning the distribution of dividends between small and large shareholders creates negative impacts such as a lack of confidence in the data disclosed in the financial statements and the spread of false information among stakeholders, requiring the need for a third party, i.e. external auditor to ensure the availability of correct information for all stakeholders (Almutairi & Albloshi, 2022; Makhlouf, 2022).

2.2 Agency Theory

The agency theory elucidates how the directors' board uses the resources of the company to achieve their interests without the stockholders, and therefore the dividends contribute to reducing the intensity of shareholders' reactions to the actions of the owners (Jensen & Meckling, 2019). As argued by Mehdi *et al.* (2017),institutional investors often influence dividend policy and prefer distributing free cash flows to reinvesting them internally. Due to the availability of information asymmetry, the interests of the owners and management may conflict, and dividends are adopted as an instrument to decrease the cash available to management that could be used in bad investments that harm the interests of the owners (Zainudin *et al.*, 2018). Contrariwise, the dividend policy depends on the agency theory to distribute power between the CEO, the directors' board, and the shareholders, where the CEO and the directors' board seek to maximize the wealth of the owners, and in return, the shareholders have different positions of power to impose their preferences in dividends (Ullah *et al.*, 2012; Al-Khawaja *et al., 2023).* Based on this, the agency theory assumes that conflicts of interest can be between stockholders and directors, in companies that have branches and are spread in different countries of the world. In other words, this dissemination and dispersion reduces the possibility of gathering among shareholders and making appropriate decisions to monitor managers regarding dividend policy, which contributes to assisting managers in making decisions that serve their interests away from shareholders (Shleifer & Vishny, 1986). Conversely, a conflict of interest can occur between the majority and minority shareholders, where large stockholders dominate the company's decisions in the distribution of dividends, prefer to keep the company's resources at their disposal, and decide that serve their interests at the expense of the minority shareholders (Jensen & Meckling, 2019; Claessens & Yurtoglu, 2013).

3. Literature Review & Hypothesis Development

3.1 Ownership Structure & Dividends

Previous related research and studies come to an understanding and agreement that the ownership structure can be one of the most important factors influencing the dividends in public shareholding companies, but the degree of this effect varies according to the type of ownership of all kinds, family ownership, foreign ownership, concentrated ownership, institutional ownership, and board of members' ownership. Due to the diversity of the ownership structure in the Jordanian business market, the potential impact of all types of previous ownership structures on dividends, along with the previous literature dealing with this relationship are properly investigated and reviewed.

3.1.1 Family Ownership & Dividends

The business-owning family plays an important role in distributing large dividends to create confidence among shareholders or reduce dividends to maintain liquidity. Hence, the agency theory has emphasized the significance of having independent managers exercise an effective role in monitoring the decisions of family managers and their sometimes opportunistic behavior (Anderson & Reeb, 2004, Miller *et al.*, 2022). More than a few studies have dealt with the issue of the concentrated ownership of companies in the hands of one family and its relationship to the policy of distribution of dividends. Mulyani *et al.* (2016) demonstrate that this concentration increases the family's control over corporate affairs and decision-making, and they often misuse its resources. Reyna (2017) shows a negative association between dividends and family ownership policy in a sample of Mexican firms, where the controlling family prefers low dividends to maintain controlled liquidity. In the same mood, Charlier and Du Boys (2011) assert that family shareholders prefer to reduce dividend payments because they fear the high risk of bankruptcy. Using a sample of companies operating in the Turkish market, Kilincarslan (2021) indicates that family management harms dividends. However, Isakov and Weisskopf (2015) show that dividend payments are positively related to family ownership, as owners prefer to distribute dividends rather than keep them due to legal protections for minority shareholders. Using a sample of joint stock companies in Bangladesh Hasan *et al.* (2021) confirm that companies with a higher share of family ownership lean towards paying higher dividends to shareholders. This is confirmed by Trabelsi *et al.* (2018)

relating to the French market, indicating that the effect of dividends disappears in the case of companies controlled by the family, and this finding is in agreement with the long-term orientation of family companies. Using the relevant theories and the various findings of the previous studies, hypothesis No. 1 can be read:

H1: *Family ownership negatively affects the dividends policy.*

3.1.2 Foreign Ownership & Dividends

Plenty of reasons can affect dividend policy in foreign-owned companies. This ownership may positively impact the dividends as the foreign owners prefer to obtain high dividends, leading the management to reduce the percentage of retained earnings (Jeon *et al.*, 2011). Besides, foreign-owned companies comply with the requirements of governance and are better equipped with advanced technology, and thus have better management and transparency mechanisms that drive them to pay larger dividends in the future (Trinugroho *et al.*, 2014). Selected studies designate that the higher the share of foreign shareholders in the ownership structure of the firm, the greater the probability of distributing larger dividends, especially in companies whose foreign owners are institutional investors (Choi & Park, 2019). Conversely, foreign owners may prefer to invest in dividends instead of distributing them, as Al-Najjar and Kilincarslan (2016) indicate that foreign ownership is related to lower dividend payments in Turkish companies. Additionally, Boshnak (2021) shows no evidence that dividend policy is impacted by foreign ownership in Saudi companies. Using the relevant theories and the various findings of the previous studies, hypothesis No. 2 can be read:

H2: *Foreign ownership positively affects the dividends.*

3.1.3 Concentrated Ownership & Dividends

Concentrated ownership refers to many people controlling the ownership of the company without any family connection among them, as one of them controls more than 5% of the company's shares (Makhlouf & Al-Sufy, 2018). Concentrated ownership may affect the dividend policy in two conflicting methods, as it can have a positive effect if major shareholders use the distributed dividends to restrict the opportunistic actions of the management. However, the concentrated ownership may have a negative impact if large shareholders exploit the dividends to attain their interests at the cost of small shareholders (Harada & Nguyen, 2011; Alani & Makhlouf, 2023).

With the study of the relationship between dividend payments and ownership structure in a group of WSE-listed non-financial firms in Poland, Pieloch-Babiarz (2019) argues that despite the presence of the positive relationship between concentrated ownership and the frequency of dividend payments, there is a decline in the value of the distribution of dividends over study periods. Ting *et al.* (2017) show that dividend payments are lower when concentrated ownership is high in firms listed on the Malaysia Stock Exchange (MSE). Conversely, Mancinelli and Ozkan (2006) indicate that the increase in concentrated ownership leads to greater dividends through the control and strong influence of the major shareholders to achieve their key goals such as earning dividends. Also, Thanatawee (2013) shows a positive relationship between the concentrated ownership of both public and private and government and dividends in a group of Chinese companies, but the association is negative with the concentration of foreign and institutional ownership. Analyzing the effect of share ownership structure on dividend distributions in listed industrial firms in Indonesia, Widiatmoko *et al.* (2021) confirm that concentrated ownership and institutional ownership positively impact dividend policy. Using the relevant theories and the various findings of the previous studies, hypothesis No. 3 can be read:

H3: *Ownership concentration positively affects the dividends.*

3.1.4 Institutional Ownership & Dividends

Institutional ownership including ownership of banks, companies of insurance, and pension funds can strongly help in corporate governance and involvement to decide the adopted dividend policy (Mathuva *et al.*, 2017). Owners of institutional ownership have a stronger ability and incentive to collect and evaluate information about their investments, alongside sufficient leverage in controlling management and forcing changes when management poorly performs because institutions often have previous experience in money management (Tahir *et al.*, 2020a), (Alshammari, 2022). Opinions and findings about the impact of institutional ownership on the distribution of dividends have varied. Institutional ownership contributes to increasing dividends, justifying this by the fact that institutional investors mostly have a preference to make investments in mature companies that pay higher dividends than other companies, (Al-Omoush et al., 2022) along with the tendency of management to satisfy institutional ownership owners with the largest contribution to the capital (Harakeh *et al.*, 2020, Kılınçarslan, 2018). Also, Khan (2021) asserts the idea that institutional ownership and distribution of dividends have a positive association in TSE-listed companies in Turkey in line with the signal theory of paying high cash dividends to deliver a positive signal about the companies' performance to investors. (Alrai, 2023)

Using a service and industrial sample from the ASE-listed companies in Jordan between 2014 and 2017, Reyna (2017) shows that institutional ownership owners prefer to recover their investments through the distribution of high dividends, especially if they are convinced of the idea of the high cost of overseeing the management of the company. Bataineh (2021) indicates that higher institutional ownership results in higher distribution of dividends, arguing that it cannot directly observe the operations of the company; therefore, it might motivate companies to pay more dividends to mitigate potentially the management's opportunistic behavior by decreasing the cash flow available to them. Furthermore, institutional ownership prefers to obtain dividends to increase the returns of their investments. Oppositely, other articles show a negative relationship between institutional ownership and the distribution of dividends. Kouki and Guizani (2009) indicate that the owners of institutional ownership in Tunisian businesses conduct tight control over management which contributes to reducing the value of the dividends to shareholders. Using the relevant theories and the various findings of the previous studies, hypothesis No. 4 can be read:

H$_4$: *Institutional ownership positively affects the dividends.*

3.1.5 Board of Director Ownership & Dividends

Various studies support the idea that the ownership of the directors' board significantly influences dividends. The ownership of the directors' board significantly reduces dividends because the owners of the board of directors prefer to increase the internal funds in the company at the expense of paying lower dividends to the shareholders (Ph *et al.*, 2007). Besides, Tayachi *et al.* (2021) also show a positive relationship between the ownership of board members and the capital structure; however, the effect on the policy of distribution of dividends is large and negative, justifying that the higher the proportion of shares of ownership of the members of the directors' board, the greater their desire to personally use the company's resources on behalf of its distribution to the shareholders. Moreover, Okerekeoti (2022c) indicates that growth in the ownership of directors produces a decrease in the distribution of the dividends per share in Nigerian food production companies. When reviewing the effect of the ownership structure on the policy of dividends' distribution in a selected sample of ASE-listed companies in Jordan between 2005 and 2010, Al-Gharaibeh *et al.* (2013) show that the ownership of board members harms dividends. Then again, Vo and Nguyen (2014) contend that the ownership of board members positively affects the dividends, as top management members are more aware of the level and value of distributed dividends with which they maintain shareholder satisfaction. On a parallel line, using a selected sample of ESE-listed corporations in Egypt between 2015 and 2020, Megeid and Sobhy (2021) demonstrate that each of the ownership of board members, the size of directors' board, and the value of the company have an effective role in making the policy of the distribution of the dividends (Alshehadeh et al. 2023), reducing the information asymmetry problems and increasing the company's profitability and value and this is positively revealed on the value of the distributed dividends. Using the relevant theories and the various findings of the previous studies, hypothesis No. 5 can be read:

H$_5$: *Board of director ownership negatively affects the dividends.*

3.1.6 Audit Quality, Dividends, & Ownership Structure

The disparity of interests between the forms of ownership structure and the presence of control or access to decisions by some owners may lead to an inconsistency in information between large and small owners, especially concerning the distribution of dividends. With that, it is required to have an entity, i.e. an external auditor to guarantee the rights of all shareholders, regardless of their degree of ownership (Makhlouf *et al.*, 2022). The audit process also aims to ensure that true information about the company's reality reaches all beneficiaries of the financial statements within published reports, reflecting the actual and true reality of the company's performance (Alzoubi, 2016). Alternatively, audit quality assists to increase the degree of certainty of investors when relying on audited financial statements, reducing information asymmetry, and decreasing agency costs between stakeholders and investors (Okerekeoti, 2022a).

With the analysis of the effect of audit quality as a mediating variable for the correlation between the management of dividends and the distribution of dividends, Zeb *et al.* (2019) indicate that audit quality has positively impacted the distribution of dividends through its role in developing the financial reports' quality and raising the dividend ratios distributed to shareholders. The finding is justified since the low quality of the audit leads to an increase in the information asymmetry between the investors and the company, leading to a decrease in the financial reports' quality and the consequent decrease in the proportion of the distributed dividends.

Additionally, Boonyanet and Promsen (2020) show that corporate governance and audit quality significantly affect cash dividends through the role of auditors in accelerating company performance when audit quality is introduced as a mediating variable in the relationship between corporate governance and cash dividends. Besides, the controlling variables, namely: firm size, leverage ratio, and gross profit ratio produce a growth in the volume of dividends. Also, Bakri (2021) indicates a positive impact of audit quality on the association between dividends and company value.

In the same context, other studies demonstrate an effective association between audit quality and the company's ownership structure. Mahdavi *et al.* (2011) indicate that an increase in the ownership of board members reduces the probability of appointing big audit firms (Big 4). Reviewing the correlation between audit quality and ownership structure in a selected sample of Gulf-listed companies Guizani and Abdalkrim (2021) shows that family-owned companies usually tend to pay lower audit costs than other companies. Moreover, companies of an institutional nature rely on highly experienced auditors and pay high audit fees. Thus, interest in the audit quality in companies of an institutional nature prevails over family-owned companies. In contrast, Alshammari (2014) shows that government-owned companies in the Kuwaiti business market have a preference to hire low-quality auditors because the government is not much interested in the transparency of the financial information of the investee company. On a parallel line, various measures and methods are adopted to decide the audit quality, such as the size of the auditing firm, i.e. the four major companies (Almarayeh *et al.*, 2020). Other studies, however, show that audit fees are one of the most important factors for measuring audit quality, justifying this by the fact that major auditing firms have highly qualified employees compared to smaller auditing firms. Therefore, these companies need high-value fees, and thus high fees for the audit process yield an increase in audit quality (DeAngelo, 1981, Eshleman and Guo, 2014, Hay and Davis, 2004, Moutinho *et al.*, 2012). Using the relevant theories and the various findings of the previous studies, hypothesis No. 6 can be read:

H_6: *Audit quality positively affects the relationship between dividends and ownership structure.*

4. Research methodology

The research sample comprises all industrial ASE-listed companies in Amman, Jordan between 2016 and 2021. The industrial sector consists of 54 companies, where 16 companies are excluded for incomplete data, and thus the final sample is 38 companies. The industrial sector is selected due to its significance in the Jordanian economy, as it is amongst the largest sectors incorporated into the stock exchange domain.

4.1 Research Framework & Variable Measurements

Within the study's research framework, the actual data published in the financial reports of the study sample are used to make the required analyses. The distribution of dividends is selected as a dependent variable and measured by the approved dividends divided by the number of issued shares. Investigating the direct correlation between the ownership structure and dividends necessitates studying the effect of each variable of the ownership structure on the dividends separately. As presented in Table 1, the ownership structure represents the adopted independent variable.

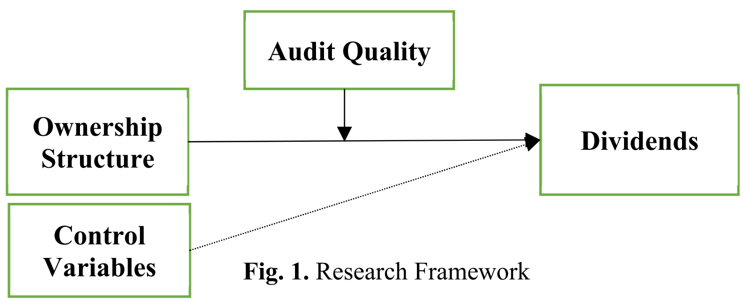

Fig. 1. Research Framework

The analysis of the impact of audit quality on the relationship between ownership structure and dividends requires measuring the audit quality using a dummy variable that uses the number (1) as an indicator of the companies depending on the auditing of the four major companies, and the number (0) in the case of depending on the auditing of companies other. The efficiency of the ownership structure symbolizes the independent variables measured by a composite measure of the ownership structure. Calculating the composite measure of ownership structure necessitates converting each of the non-binary variables into a binary form by allocating one to the variable which is greater than or equal to the median for all the samples and zero, otherwise. According to Makhlouf *et al.* (2018), the use of a composite measure of ownership structure rather than individual ownership structure characteristics adds several benefits. First, each ownership structure has its limitations which possibly do not meet the changeable environment's requirements. Therefore, the use of aggregate measures helps in evaluating the ownership structure comprehensively. Second, the individual ownership structure characteristics possibly create mixed results and contradictory effects. Thus, the composite measure can give a precise measurement of ownership structure effectiveness, especially with the moderating effect. The company's size and financial leverage are utilized as control variables, as shown in Table 1.

Table 1
Variable Measurements

Definition	Symbol	Measurement
Dependent Variable		
Dividends	DV	The approved dividend divided by the number of issued shares.
Independent Variable (Ownership Structure)		
Family Ownership	FO	Ratio of the shares owned by the family to the total number of shares.
Foreign Ownership	FRO	Ratio of shares owned by foreign shareholders to the total number of shares.
Concentrated Ownership	CO	Ratio of shares owned by major shareholders to the total number of shares.
Institutional Ownership	IO	Ratio of shares owned by corporations to the total number of shares.
Board of Director Ownership	BO	Ratio of shares owned by members of the board of directors to the total number of shares.
Moderating Variable		
Audit Quality		A dummy variable coded (1) if the firm is audited by a "Big 4" and 0 otherwise.
Control Variables		
Firm Size	FS	Natural logarithm of total assets.
Leverage	LV	Total liabilities to total assets.

4.2 Research Model & Panel Data Estimation Techniques

Achieving the study objectives necessitates using time-series–cross-section (Panel Data) constructed on two different dimensions; time-series is the first dimension and cross-section data. With the use of the method of time-series–cross-section (TSCS) (Panel Data), three models are assessed; the partial least squares model (PLS), the fixed effects model (FEM) and finally the random effects model (REM). To find out whether the study data suffer from any problems associated with this type of measurement, a set of diagnostic tests represented by the linear correlation test, autocorrelation tests, and heterogeneity tests are performed. Time-Series–cross-section (Panel Data) may suffer from problems of the inconsistency of variance or problems of heteroscedasticity due to the availability of the dimension of cross-sectional data within the study sample. In the same context, this type of problem is solved if it exists by using the standard error correction model of Driscoll and Kraay (1998).

4.3 Descriptive Analysis

As shown in Table 2, the analysis of the descriptive statistics and its results are represented by the mean, the lowest value, the highest value, and the standard deviation. These statistics provide rich information about the selected study sample represented by the ASE-listed companies between 2016 and 2021. The findings of the descriptive analysis of the dependent variable show distribution of dividends measured by the percentage of approved dividends divided by the number of issued shares. The mean of the share dividends is 0.05 per share, with a standard deviation of approximately 0.15, as the dividend values have ranged between 0 and 27% of the capital, except for the Arab Potash Company (APC), where the dividends range from 100%-120% of the capital during the study period, and this is a confidence indicator of the management in the ability of the company to achieve future dividends while maintaining its current position in the market. Concerning the ownership structure represented by several dimensions, the results of family ownership are measured by the ratio of shares owned by the family to the total number of shares, as this ratio indicates the number of common shares owned by family members in the company out of the total share value. The mean of this variable is 0.155 with a standard deviation value of 26%, and the lowest value is 0.00, while the highest value is approximately 0.85 which means that there is no concentration of members of a particular family within the company. These findings also demonstrate the presence of high differences in terms of value between the lowest value and the highest value, along with providing initial indicators of the heteroscedasticity of the data examined and corrected during the assessment of the study models, as shown later.

Concerning foreign ownership measured by the percentage of the shares owned by foreign shareholders to the total number of shares, Table 2 indicates that the mean of the ownership of foreign shareholders in Jordanian industrial companies has reached approximately 15%, while the lowest value is zero. These findings indicate that there are companies without foreign shareholders, while the highest percentage has reached nearly 99%, which is the National Poultry Company, which Fresh Del Monte Produce-Middle East owns (98.707%). About concentrated ownership represented by the shares' percentage owned by major shareholders to the total number of shares, the value of the mean is 0.61 with a standard deviation of 0.26. In detail, this ratio indicates that more than half of the ASE-listed industrial companies in Jordan have major shareholders' ownership. The findings indicate that the highest value is approximately 99% of these companies owned by key shareholders who own 5% or more of the company's shares in a percentage exceeding 90%, while the lowest value of this percentage is 0.00, as this value reflects the absence of shareholders who own 5% or more of the shares of the company. In other words, there are Jordanian industrial companies with no concentrated ownership by specific shareholders.

Relating to the results of institutional ownership measured by the shares' percentage owned by institutions to the total number of shares, the value of the mean is 0.42 with a standard deviation of approximately 33%, as this percentage indicates that industrial companies in Jordan are owned by a large percentage by institutions, and this indicates the diversity of the study sample and variance of the companies. It is found that the highest value is approximately 99%, which is a very high percentage, indicating that the companies are almost wholly owned by institutions, as this percentage belongs to the Arab Potash Company, which is mostly owned by institutions. The share ownership percentages are distributed among the companies as follows: Man Jia Industrial Development Ltd. (27.959%), Government Contributions Department (26.144%), Arab Mining (19.988%), the Jordanian Social Security Corporation (SSC) (10.394%), the Iraqi government (4.064%), Libyan for Foreign Investments (4.064%), and lastly the General Authority for Investment (3.944%). The lowest value of this percentage is zero, as this value reflects the presence of ASE-listed industrial companies in Amman, Jordan between 2016 and 2021 owned only by individuals and the absence of any ownership by institutions.

Regarding the ownership of board members measured by the percentage of the shares owned by board members to the total number of shares, Table 2 shows that the mean of the ownership of board members in the industrial companies in Jordan is approximately 36%, while the lowest value is zero. In other words, these percentages indicate that the members of the directors' board of the company are not shareholders, and the Arab Potash Company is an example of companies in which the members of the directors' board do not own shares. As we mentioned earlier, the potash company is owned by more than 97% of institutions, while the highest percentage of board members who own shares in the company is 97%.

Table 2
Descriptive Analysis

Variable	Mean	Std. Dev.	Min	Max
DPS	0.050	0.146	0.000	1.200
FO	0.155	0.262	0.000	0.85
FRO	0.146	0.284	0.000	0.99
CO	0.613	0.262	0.000	0.99
IO	0.420	0.325	0.000	0.987
BO	0.360	0.275	0.000	0.974
AQ	0.298	0.458	0.000	1.000
SIZE	74610844	$2.184e^{+08}$	11424.385	$1.505e^{+09}$
LEV	26.061	25.500	-2.191	127.757

5. Results & Discussion

The multiple linear regression tests are conducted using the Panel Data Analysis method applied to the adopted study model and the related diagnostic tests: Hausman and Breusch-Pagan L.M. after addressing the problems of heterogeneity and autocorrelation using the Driscoll-Kraay Standard Errors Method (Wooldridge, 2010; Baltagi, 2008). The results of the statistical analysis demonstrating direct effects resulting from the ownership structure on the distribution of dividends of the ASE-listed industrial companies in Amman, Jordan are presented. Moreover, the findings relating to testing the models including the quality of the audit variable added to the study model as a modified variable are shown.

In the regression analysis of family ownership and dividends, it is found that the estimated value of the coefficient is (-0.362), which is a negative value with high statistical significance, and this indicates that family-owned companies are not very interested in obtaining dividends. This result is in proportion to the agency theory that focuses on the family's control over important decisions such as distributing dividends to control the ownership of the company and threaten the survival of the small shareholders.

The previous finding is also in agreement with the results of Charlier and Du Boys (2011) and Kilincarslan (2021), indicating that family ownership is negatively associated with the distribution of dividends to maintain liquidity and thus control ownership. Relating to the analysis of the hypothesis of the relationship between foreign ownership and distribution of dividends, it is shown that the value of the estimated coefficient has reached (-0.271), which is a negative and insignificant value, indicating that companies with foreign ownership do not affect the decisions of the distribution of dividends. This result can be justified by the low number of companies that contain foreign owners in the study sample's companies. Although the result of this study contradicts agency theory and signal theory, it does agree with many previous studies that show different viewpoints on foreign ownership, including the study Boshnak (2021) hinting at the fact that the distribution of dividends is not affected by foreign ownership.

The statistical results of the estimated coefficient related to the percentage of concentrated ownership are (0.575), indicating that there are effects arising from the ownership of major shareholders on the distribution of dividends in Jordanian industrial companies. The results also show an impact of the concentration of the company's ownership among the major shareholders on the dividends that must be distributed from a statistical point of view. It is also indicated that the statistical value (t) corresponding to the estimated coefficient is (2.530) and with a probability value (0.053), which is less than the significance level (0.05), demonstrating the presence of a significant and positive relationship between concentrated ownership and dividends for the ASE-listed industrial companies in Jordan. This result supports the content of the agency theory, which emphasizes that major shareholders have more interest in dividends to maximize their wealth. This result is also along with the study of Widiatmoko *et al.* (2021) indicates that the concentration of ownership has positively affected the distribution of the dividends, as these distributions may be used to restrict management actions.

On the analysis of the relationship between institutional ownership and dividends, it is found that the value of the estimated coefficient is (0.771), which is a positive value with high and significant significance. This indicates that companies owned by institutions are very interested in dividends, as these companies are considered successful for investing in and thus pay higher dividends than other companies, along with the fact that the management tends to satisfy the owners of institutional ownership with the largest contribution to the capital through high dividends. This study is along with the studies of (Harakeh *et al.*, 2020; Kılınçarslan, 2018; Khan, 2021).

Concerning the result of the ownership of the members of the directors' board and the distribution of dividends, it is found that the estimated value of the coefficient is (0.111 -), which is a negative value with a significant effect, as the absolute value of the (t) statistic is (3.94) with a probability value of (0.011), which is less than the significance level (0.05), indicating the significance of this coefficient. This, in turn, leads to a negative relationship, as some departments prefer to reduce dividends to shareholders in return for increasing internal funds in the company. This result is in agreement with the study of Okerekeoti (2022b) indicating that growth in management ownership can create a decrease in the distribution of the dividends per share in Nigerian food production companies. As shown by Al-Gharaibeh *et al.* (2013) when studying the impact of the ownership structure on the policy of the distribution of dividends in a sample of ASE-listed companies in Jordan between 2005 and 2010, administrative ownership harms the distribution of the dividends. The results of the variables of institutional ownership and the ownership of the members of the directors' board are consistent with the agency theory, which confirms that the type of ownership can positively or negatively affect the dividends.

Concerning the control variable (F Size) measured by the natural logarithm of the size of the company's assets, it is noted that the value of the estimated coefficient is (0.084), which is a statistically positive and significant value at the level of significance (0.05), indicating that an increase in the company's size leads to a growth in the distribution of the dividends in the ASE-listed industrial companies in Jordan during the study period. Regarding the second control variable (Lev) measured as the percentage of total debt to the size of the company's assets, it is noted that the estimated value of the coefficient is (-0.001), which is a negative value and statistically significant at the level of significance (0.05), where there is a negative impact of increasing the volume of debt on the distribution of dividends.

Addressing the diagnostic tests of the estimated model, it is shown that the statistical value (F) is (120.55) with a probability value of (0.000), which is less than the significance level (0.01), hinting at the fact that the model is statistically acceptable and appropriate based on the statistical significance. The value of the coefficient of determination (R2) is (0.16), and this is elucidated by the fact that the independent variables together explain the amount of (16%) of the changes that occur in the dependent variable (distribution of dividends), and this percentage moderates the effect of audit quality on the relationship between ownership structure and dividends.

Table 3
The Relationship between Ownership Structure and Dividends

$$DPS_{it} = \alpha + \beta_1 FO_{it} + \beta_2 FRO_{it} + \beta_3 CO_{it} + \beta_4 IO_{it} + \beta_5 BO_{it} + \beta_6 \text{Fsize} + \beta_7 Lev_{it} + e_{it}$$

DPS	Coef.	Std.Err.	t	P>t	Sig
FO	-0.362	0.017	2.120	0.087	*
FRO	-0.271	0.018	-1.460	0.204	
CO	0.575	0.023	2.530	0.053	**
IO	0.771	0.023	3.300	0.021	***
BO	-0.111	0.028	-3.940	0.011	***
Fsize	0.084	0.025	3.320	0.021	***
LEV	-0.001	0.000	-3.170	0.025	***
_cons	-0.563	0.172	-3.270	0.022	***
Mean Dependent var	0.050	SD dependent var		0.146	
R-squared	0.16	Number of obs		228	
F-test	120.55	Prob > F		0.000	
Akaike crit. (AIC)	-620.085	Bayesian crit. (BIC)		-592.650	

**** p<.01, ** p<.05, * p<.1*

This part gives insight into the modified audit quality's role in interpreting the relationship between ownership structure and distribution of dividends for ASE-listed industrial companies in Jordan. The statistical results presented in Table 4 indicate that the value of the estimated coefficient for the variable combining the ownership structure indicator and audit quality (OC*AQ) is (0.57), which is a positive value with statistical significance and has an absolute value for a statistic (t) of the amount(3.53) with a probability value (0.001), which is less than the level of significance (0.01), leading to the presence of statistically significant impact for the variable linking audit quality and ownership structure.

Table 4
The Moderating Effect of Audit Quality on the Relationship between Ownership Structure and Dividends

$$DPS_{it} = \alpha + \beta_1 OC_{it} + \beta_2 AQ_{it} + \beta_3 OC * AQ_{it} + \beta_4 \text{Fsize} + \beta_5 Lev_{it} + e_{it}$$

DPS	Coef.	St.Err.	t-Value	p-Value	[95% Conf	Interval]	Sig
OC	-0.234	0.1	-2.35	0.02	-0.431	-0.037	**
AQ	-0.124	0.063	-1.96	0.051	-0.248	0.001	*
AQ*OC	0.571	0.161	3.53	0.001	0.252	0.889	***
LgSize	0.148	0.014	10.9	0	0.121	0.175	***
LEV	0	0	-0.15	0.884	-0.001	0	
Constant	-0.985	0.108	-9.1	0	-1.199	-0.772	***
Mean dependent var				0.046	SD dependent var		0.133
R-squared				0.483	Number of obs		228
F-test				33.607	Prob > F		0
Akaike crit. (AIC)				-598.398	Bayesian crit. (BIC)		-577.955

**** p<.01, ** p<.05, * p<.1*

It is noteworthy that the positive sign of the estimated coefficient is in agreement with the direction of the effect resulting from the size of the auditing firms, as the higher the auditing firms of high quality (Big 4), the better the ability to distribute dividends among the industrial companies. This result is along with the findings of (Zeb *et al.*, 2019, Boonyanet & Promsen, 2020). Concerning the model's statistical suitability, the statistical value (F) is (33.607) with a probability value of (0.000), which is less than the level of significance (0.01), indicating the model's suitability from a statistical viewpoint. Concerning the coefficient of determination (R2), its value is (0.483), and this value has increased in comparison to the direct model, where the value of the coefficient of determination (R2) is (0.16).

6. Conclusion

In a nutshell, this article aims to investigate whether audit quality impacts the relationship between dividends and ownership structure in ASE-listed companies in Jordan. The findings demonstrate that family ownership and the ownership of the members of the directors' board negatively affect the distribution of dividends. On the other hand, institutional ownership and concentrated ownership positively affect the distribution of dividends, and no effect of foreign ownership is found on dividends. By introducing audit quality as a modified variable on the relationship between ownership structure and dividends, the findings indicate that audit quality positively enhances and strengthens this relationship. On a parallel line, the findings are also of great significance to the categories of future shareholders and investors, as they help them to select companies that can distribute higher dividends than other companies to achieve satisfactory investment returns for them. The findings also concentrate on the significance of the quality of external auditing as a guarantor for regulating the relationship between the dividends and forms of ownership structure and mitigating the negative effects caused by varying ownership in listed companies, thus reducing agency problems.

Importantly, this article enriches the previous literature dealing with the variables of ownership structure and distribution of dividends by introducing audit quality as a modified variable to identify the factors and effects impacting this relationship and thus helping to theoretically solve the agency problem. Furthermore, this article considers the influence of the ownership structure according to two different mechanisms: reviewing the elements of the ownership structure individually and studying them in a composite form as an aggregate variable to avoid the problems arising from examining the previous elements individually. Besides, this study adds to the previous literature by focusing on a new environment, which is the companies operating in developing countries, especially the Middle East countries, including Jordan as most of the past studies focus on developed countries.

Having achieved its objectives, it still has certain limitations. First, this article does not include all forms of ownership structure, i.e. government ownership and administrative ownership due to their low percentage in the ASE-listed industrial companies in Amman, Jordan, so it is interesting for future studies to focus on forms of ownership unaddressed in this study. Secondly, the study sample is limited to the ASE-listed industrial companies in Amman, Jordan; therefore, future studies may focus on other sectors such as the financial sector described by different characteristics in terms of ownership structure. Third, the focus in measuring audit quality is on the audit company's size (Big4), as future studies can use other measures of audit quality, such as audit fees. Fourth, future studies can adopt other variables such as the independence of the board members.

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