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Dividend policy as a mediator between capital structure and profitability in manufacturing companies listed on ASE (2010–2021)

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Abstract: This study aimed to investigate the relationship between capital structure and profitability in manufacturing companies listed on the ASE, with a particular focus on the potential mediating effect of dividend policy. A survey approach was used to select a sample of 34 manufacturing companies, and panel data regression was used to analyse the financial data. Control variables were also incorporated into the analysis. The study found a significant correlation between profitability and ownership structure among Jordanian manufacturing companies. Furthermore, dividend policy was identified as a crucial factor influencing ownership structure and profitability, with a positive impact on profitability as measured by return on assets and return on equity. The study also highlighted the influence of business size and financial leverage as controlling variables affecting profitability. The findings suggest that companies should consider dividend policy when deciding on their capital structure to improve profitability.

Keywords: dividend policy; capital structure; profitability; manufacturing; Jordan.

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1 Introduction

Capital structure is a critical concern for companies, particularly in the wake of corporate scandals and bankruptcies linked to unethical business practices. One aspect of capital structure that has received significant attention is the decision of dividend policy and how it affects the distribution of profits to shareholders (DeAngelo, 2022). Dividends can serve as a means of evaluating a company's prospects under asymmetric information and can address the agency problem that arises from the conflicting interests of management and shareholders. Studies have indicated that companies with high capital structure scores tend to have higher levels of shareholder satisfaction, which may be linked to increased dividends being paid out (DeAngelo, 2022). However, not all research supports this finding, as some studies have suggested that higher capital structure scores may lead to lower dividend payouts (Arsyad et al., 2021).

Dividend policy is closely linked to capital structure and the agency problem, as it can either enhance transparency and accountability to shareholders or be used by management to conceal poor performance or mismanagement. To fully grasp the implications of dividends on capital structure and company value, it is essential to examine how they interact with other capital structure mechanisms (Borch, 2022). Capital structure also plays a significant role in determining company profitability, as leverage can affect control over the company and, therefore, dividend policy. This underscores the interdependence of financial policy decisions such as capital structure design and dividend policy, as well as the importance of understanding how dividend policy can align shareholders' and creditors' interests with those of management, and how this relates to the optimal mix of capital structure to maximise profitability (Sutomo et al., 2020).

Jordan's economy has grown, but it is also confronted with issues such as high unemployment, fiscal deficits, and external debt. The Amman Stock Exchange (ASE)

lists a wide range of firms with various capital structures, reliance on debt or equity funding, and dividend policies. The manufacturing sector contributes significantly to the Jordanian economy, contributing around 25% of the GDP. However, the COVID-19 epidemic has had an influence on the industry, leading in temporary plant closures, output cutbacks, and lower demand, which may have harmed the short-term profitability of manufacturing companies listed on the ASE (Al-Qudah et al., 2022; Ananzeh et al., 2022).

The relationship between capital structure and profitability is a well-studied issue in finance, and various studies have been undertaken to study this relationship. However, the function of dividend policy as a mediator between capital structure and profitability has not been well investigated, particularly in the context of manufacturing businesses listed on the ASE. As a result, there is a vacuum in the research discussing the mediating influence of dividend policy on the link between capital structure and profitability in these firms. Several studies have looked at the link between capital structure and profitability, but few have looked at the role of dividend policy in mediating this relationship. Furthermore, the majority of studies on this link have been undertaken in rich nations, and there is a shortage of study in developing countries, particularly in the context of manufacturing businesses listed on the ASE.

The purpose of this study is to fill a gap in the literature by exploring the mediating influence of dividend policy on the link between capital structure and profitability in ASE-listed manufacturing businesses. The study will evaluate the mediating influence of dividend policy on the link between capital structure and profitability using data from 2010 to 2021 using a mediation analysis. The study's findings will help to better understand the elements that determine the profitability of manufacturing businesses listed on the ASE, as well as the function of dividend policy in mediating the link between capital structure and profitability. In various aspects, this study varies from past investigations. For starters, it concentrates on manufacturing businesses listed on the ASE, which is a developing country environment, whereas the majority of prior research has been undertaken in wealthy nations. Second, it investigates the mediating influence of dividend policy on the link between capital structure and profitability, which has not been thoroughly investigated in the context of ASE-listed manufacturing businesses. Finally, the analysis employs a more current dataset that spans the years 2010 to 2021, providing more up-to-date insights on the relationship between capital structure, dividend policy, and profitability in these firms.

The study on the relationship between dividend policy, capital structure, and profitability in ASE-listed manufacturing businesses contains both advantages and downsides. On the one hand, the study spans a substantial amount of time and focuses on a single industry, offering a comprehensive examination of the interconnections between these three variables. The findings might help regulators and practitioners make judgments on capital structure and dividend policies for ASE-listed manufacturing businesses. The study, on the other hand, only looks at manufacturing enterprises listed on ASE, limiting the generalisability of the findings, and it depends on secondary data sources, which may have limits in terms of data quality and trustworthiness. Furthermore, the study may have overlooked other factors that may have an impact on the link between dividend policy, capital structure, and profitability.

This study provides an insight at how a company's dividend policy affects its capital structure and profitability, with an emphasis on the influence of diverse ownership forms. The findings help us understand how dividend policy interacts with capital structure and

profitability, which may be beneficial to managers, investors, and regulators. The study also offers insight on how ownership structure may impact dividend policy's efficacy in harmonising shareholder and management objectives. Specifically, the study examines the influence of capital structure measures, such as board composition, CEO compensation, and ownership structure, on the connection between capital structure, dividends, and profitability in manufacturing firms listed on the ASE in Jordan. The research provides new insights into the relationship between capital structure, dividends, and profitability in ASE-listed manufacturing firms, as well as the role of dividend policy in this relationship, which can be beneficial for ASE managers, investors, and regulators.

This study aims to examine the mediating role of dividend policy in the relationship between capital structure and profitability in manufacturing companies in Jordan. The study uses a descriptive-analytical approach to validate hypotheses and develop findings, and the document is structured as follows: Section 2 provides the theoretical foundation for linking the variables under investigation. Section 3 outlines the research model, while Section 4 presents the data analysis results. Finally, Section 5 discusses the implications of the findings and suggests possible avenues for future research.

2 Literature review

Extensive research has been conducted on the relationship between capital structure and profitability, with an increasing focus on the role of dividend policy in moderating this link. Scholars have examined the factors influencing capital structure decisions and their impact on profitability, emphasising the need to understand how dividend policy affects this relationship. This issue is particularly pertinent for manufacturing firms listed on the ASE due to the unique economic and financial challenges they face, which may influence their decisions regarding capital structure and dividend policy. Recent studies have investigated the interplay between capital structure, dividend policy, and profitability in the manufacturing sector of the ASE (Ananzeh et al., 2022; Ghardallou, 2022; Habibniya et al., 2022; Ngatno et al., 2021; Singh and Bagga, 2019). Such research provides valuable insights for managers, investors, and policymakers into the effects of dividend policy on the relationship between capital structure and profitability in this industry.

2.1 Capital structure

A company's capital structure refers to the combination of long-term debt and equity it employs to finance its operations and expansion. This allocation of debt and equity is achieved through a balancing process (Aibar-Guzmán et al., 2022). The makeup of a company's capital structure can significantly affect its level of risk, returns, and overall financial performance. The two primary elements of a capital structure are long-term debt, including bonds, and equity, such as retained earnings and common stock (Yang et al., 2022).

The optimal capital structure for a company maximises its overall value. However, finding this balance can be challenging since the use of debt can increase a company's risk while also providing leverage to improve its return on investment. Conversely, using equity dilutes shareholder ownership but provides a consistent source of financing that does not need to be repaid. To optimise their capital structure, companies use various financial strategies that depend on their sector and specific circumstances, including

issuing new stock or debt, repurchasing shares, or paying dividends. Ultimately, the goal is to strike a balance between maximising shareholder profits and maintaining the long-term financial health and sustainability of the organisation (Sikveland et al., 2022).

The capital structure of a company affects not only the trade-off between risk and returns but also its financial flexibility. If a company has excessive debt, a significant portion of its earnings may go towards servicing the debt, leaving fewer resources for reinvestment or shareholder returns (Jiang et al., 2021). On the other hand, a company with a lower debt-to-equity ratio may have greater financial flexibility to invest in growth opportunities or distribute profits through dividends or share repurchases. Capital structure also plays a crucial role in determining a company's credit rating, as higher levels of debt increase the risk of default, leading to a lower credit rating (Abdullah and Tursoy, 2021). This can make it more difficult for the company to raise capital in the future since investors may be less willing to lend to a company with a lower credit rating. Additionally, a company's optimal capital structure may change over time as it evolves and grows, and it may need to adjust its capital structure to support its development while maximising shareholder value (Nguyen et al., 2021).

2.2 Profitability

Profitability is a crucial financial metric that gauges a company's ability to generate earnings that surpass its costs. It measures the company's efficiency in utilising its resources to produce profits. There are several ways to assess profitability, such as return on assets (ROA), return on equity (ROE), and gross margin. ROA evaluates how effectively a company employs its assets to generate revenue. It is calculated by dividing the company's net income by its total assets. A higher ROA indicates that the company produces more profits per dollar of assets. On the other hand, ROE assesses how efficiently a company uses its shareholders' equity to generate profits. It is computed by dividing the company's net income by its shareholders' equity. A higher ROE implies that the company generates more earnings per dollar of shareholders' equity (Kim et al., 2022; Alabdullah, 2022).

Profitability refers to a company's ability to generate earnings that surpass its costs, resulting in a positive net income. It is a critical metric for investors and stakeholders as it indicates a company's potential to create value and earn profits. Profitability can be measured in several ways, including ROA, ROE, and gross margin. ROA assesses how effectively a company utilises its assets to produce revenue, while ROE evaluates its ability to generate profits using shareholders' equity. Gross margin, on the other hand, measures the percentage of revenue that a company retains after accounting for the cost of goods sold. A higher gross margin indicates better earnings per dollar of revenue. However, while profitability is an essential indicator of a company's performance, other factors such as growth, risk, and liquidity must also be considered. Therefore, ROA, ROE, and gross margin, among other profitability measures, provide insight into a company's financial performance and are crucial for evaluating its overall success (Daneshgar and Zahedi, 2022; Hasan et al., 2020; Srinivasan and Vázquez-Rodríguez, 2020).

2.3 *Dividend policy*

Dividend policy refers to the decision made by a company to distribute a portion of its profits to its shareholders as dividends. It is an important consideration for companies as it impacts the distribution of profits to shareholders and can have significant effects on a company's capital structure and overall financial performance (Ali, 2022).

Various factors may influence a company's dividend policy, including growth prospects, industry, and liquidity. Mature companies may distribute a larger portion of their earnings as dividends, while high-growth firms may retain more profits to reinvest in the business. Additionally, the agency problem, which arises due to the competing interests of management and shareholders, can affect dividend policy decisions. Dividends can serve as a tool for aligning management and shareholder interests, promoting transparency and accountability. By paying dividends, companies may be less inclined to engage in unethical practices or investments that do not benefit shareholders (Tinungki et al., 2022; Barros et al., 2022).

In addition to profit distribution, a company's dividend policy can have an impact on its prospects. Paying dividends may enhance a company's financial stability and create a positive outlook for future earnings, which can attract investors and raise stock prices. By contrast, reducing or eliminating dividends may signal pessimism about a company's future. Moreover, tax implications are another consideration for companies when deciding on their dividend policy. Dividends are typically taxed at a higher rate than capital gains, so a company may opt for dividend payments to take advantage of lower capital gains tax rates. However, determining the appropriate dividend policy is a challenging decision that must balance aligning management and shareholder interests, forecasting prospects, and tax implications. The optimal dividend policy will vary based on factors such as the company's industry, stage of development, and strategic objectives, and may need to be reviewed and revised over time to maximise profitability and shareholder value (Kadim et al., 2020; Barros et al., 2020; Sami and Abdallah, 2021).

2.4 *Review of the literature and formulation of study hypotheses*

The link between capital structure, profitability, and control characteristics such as board size, board independence, CEO duality, institutional ownership, and executive remuneration has been studied in depth. Greater debt levels in a company's capital structure are related with greater returns on assets and returns on equity, according to Wieczorek-Kosmala et al. (2021). However, Noreen (2019) revealed that organisations with lower levels of debt had lower profitability, whilst Sari and Sedana (2020) discovered that high levels of debt might increase a company's vulnerability to financial difficulty, negatively impacting profitability. According to Antoro et al. (2020), there is an ideal capital structure that varies according on risk and profitability. Almashhadani and Almashhadani (2022) reported a positive association between board size and profitability, but Abu Afifa et al. (2022) identified a negative relationship. Guizani and Abdalkrim (2022) stated that while establishing the right board size, corporations must carefully consider the trade-offs involved.

According to Alves (2021), having independent directors on a company's board is associated with improved business performance; however Mukhibad and Anisykurlillah (2020) discovered that the association between board independence and profitability is not always statistically significant. Pham and Nguyen (2019) observed a negative

association between CEO dualism and profitability, but Mubeen et al. (2020) discovered a favourable relationship. In research by Setyabudi (2021), Ajay and Madhumathi (2015), and Purba and Africa (2019), institutional ownership has been demonstrated to have a positive link with profitability as evaluated by different metrics. According to Purba and Africa (2019), the link between institutional ownership and profitability might vary depending on the economic circumstances.

Some research found a favourable link between CEO salary and firm profitability (Barros et al., 2022), while others found a negative correlation (Alves, 2021; Mubeen et al., 2020). Similarly, the link between capital structure and profitability has produced conflicting results, with some research indicating a positive relationship (Efni, 2017) and others indicating a negative one (Sari and Sedana, 2020). The impact of dividend policy in mediating these linkages has been studied, with some research showing that firms with a larger dividend payout ratio may be better suited to handle the debt-profitability trade-off (Sari and Sedana, 2020). Dividend policy has also been shown to regulate the link between board size and profitability (Phan and Tran, 2019; Waris et al., 2021), board independence (Alves, 2021; Waris et al., 2021), and CEO duality (Barros et al., 2022).

Dividend policy, according to Setyabudi (2021), can act as a moderator in the link between institutional ownership and profitability. Purba and Africa (2019) discovered a favorable relationship between dividend payment ratio and the beneficial impact of institutional ownership on profitability, but Guizani (2018) discovered a weaker correlation between CEO compensation and profitability for businesses with a larger dividend payout ratio. Dividend policy, according to Ramirez and Ferrer (2021), can mitigate the link between CEO remuneration and profitability. Finally, Khan (2022) identified a positive relationship between dividends and profitability, but Ananzeh et al. (2022) discovered no direct relationship between dividends and a company's worth or profitability. They presented the following hypothesis to evaluate this relationship:

- H1 Capital structure (board size, board independence, CEO duality, institutional ownership, and executive compensation) has a significant impact on profitability (ROA and ROE).
- H2 Capital structure (board size, board independence, CEO duality, institutional ownership, and executive compensation) has a significant effect on profitability (ROA and ROE) through dividend policy.
- H3 Dividend policy has a significant impact on profitability (ROA and ROE).

3 Methods

In this study, profitability, as measured by ROA and ROE, is the primary dependent variable, while the capital structure is the independent variable, and dividend policy serves as a moderator. Control variables, such as financial leverage, company size, and manufacturing type, are also included in the analysis. The study population is comprised of continuously listed manufacturing companies on the ASE from 2012 to 2021. A purposive sampling technique was employed based on specific criteria, including the requirement for organisations to provide complete financial statements and have no cash flow issues. After applying the criteria, the number of companies included in the study was reduced to 34, with one company excluded due to inadequate data.

This study's sample was chosen using a purposive sampling approach, which implies that the researcher picked the sample based on particular criteria. The requirements required firms to present comprehensive financial accounts and to have no cash flow problems. The number of firms included in the research was decreased to 34 after applying the criteria, with one company omitted owing to insufficient data. From 2012 through 2021, the research population comprised of continually listed manufacturing businesses on the ASE. To select the sample, a detailed survey of all Jordanian manufacturing enterprises was done. As a result, the sample in this study was chosen based on specified criteria, and it may not reflect Jordan's whole manufacturing sector.

The present study aims to apply its findings to the manufacturing sector of Jordan, which is considered a crucial supporting pillar for the expansion of other industries and has contributed significantly to the country's GDP. The study population consists of manufacturing companies listed on the ASE, which totalled 34 and were selected through a comprehensive survey of all Jordanian manufacturing companies from 2012 to 2021. The manufacturing sector encompasses a variety of industries, including food and beverage, pharmaceuticals, textiles, and chemicals, among others. It has drawn both domestic and foreign investment and employs a considerable section of the population, thus playing a vital role in maintaining the economy. To support the manufacturing sector's growth, the government has enacted various policies and measures.

This study utilised the panel data regression analysis method, which is a statistical technique commonly used in analysing panel data. According to Zulfikar and STP (2018), there are three approaches to estimating regression models with panel data: pooling least-square (common effect), effect model, and random effects. Various statistical tests, such as Pearson's chi-squared test and its variations, can be used to determine the most appropriate method for panel data regression analysis. The linear regression test is another tool that can be used to select unexpected and predictable effects.

The estimated regression analysis equation, which includes both passing and time data, is provided in Table 1.

- Model 1: the effect of capital structure (board size, board independence, CEO duality, institutional ownership, and executive compensation) on profitability (ROA and ROE) throughout control variables (company size and financial leverage):

$$Prof_{it} = \beta_0 + \beta_1 CS_{it}(BS, BI, CEOD, IO, \text{ and } EC) + \beta_2 FSIZE + \beta_3 LEV + \epsilon_{it} \quad (1)$$

- Model 2: the effect of capital structure (board size, board independence, CEO duality, institutional ownership, and executive compensation) on profitability (ROA and ROE) through mediating dividend policy (payout ratio) throughout control variables (company size and financial leverage):

$$Prof_{it} = \beta_0 + \beta_1 CS_{it}(BS, BI, CEOD, IO, \text{ and } EC) + \beta_2 PR_{it} + \beta_3 CS_{it}(BS, BI, CEOD, IO, \text{ and } EC) * PR_{it} + \beta_4 SIZE + \beta_5 LEV + \epsilon_{it} \quad (2)$$

- Model 3: the effect of dividend policy (payout ratio) on profitability (ROA and ROE) throughout control variables (company size and financial leverage):

$$Prof_{it} = \beta_0 + \beta_1 PR_{it} + \beta_2 FSIZE + \beta_3 LEV + \epsilon_{it} \quad (3)$$

The study focuses on the link between several factors such as debt ratio (DR), ROA, ROE, company size (FSIZE), and financial leverage (LEV), which may be estimated from financial records. Annual reports or financial databases such as Bloomberg, Reuters, or Yahoo Finance can be used to get financial statements. Data on board size (BS), board independence (BI), CEO duality (CEOD), institutional ownership (IO), and executive compensation (EC) are available from a variety of sources, including corporate annual reports, proxy statements, and financial databases such as Bloomberg, Reuters, and CompUSA. Divide the dividend per share by the earnings per share to get the payout ratio (PR). Financial statements or financial databases can be used to gather data on these two variables.

4 Results and discussion

In this study, capital structure is considered an independent variable, while the dependent variable is profitability, which is represented by ROA and ROE. Additionally, dividend policy is treated as a moderator, and control factors such as financial leverage and business size are taken into account. Descriptive statistics are used to provide information about the variables, including their mean, minimum, maximum, and standard deviation. The table presented displays the qualitative statistics used in this study.

Table 1 The descriptive statistics for the study variables were examined

<i>Variables</i>	<i>Obs.</i>	<i>Mean</i>	<i>Std. dev.</i>	<i>Max</i>	<i>Lowest</i>	<i>p1</i>	<i>p99</i>	<i>Skew.</i>	<i>Kurt.</i>
ROA	340	1.153	0.175	0.85	1.46	0.86	1.45	0.061	1.802
ROE	340	1.555	0.256	1.15	2.01	1.15	2	0.113	1.758
PR	340	3.021	1.341	0.61	5.2	0.64	5.14	-0.165	1.785
CS	340	0.35	0.038	0.29	0.41	0.29	0.41	0.019	1.748
BS	340	10.974	2.685	7	15	7	15	0.017	1.724
BI	340	2.318	1.71	0	5	0	5	0.137	1.753
CEOD	340	0.488	0.501	0	1	0	1	0.047	1.002
IO	340	0.576	0.253	0.15	0.99	0.16	0.98	-0.019	1.653
Executive cop	340	12.192	0.732	9.959	13.122	10.128	13.113	-0.941	3.296
Size lo	340	16.844	1.24	13.893	20.883	14.053	20.832	0.783	4.808
LEV	340	1.454	1.083	0.624	11.35	0.836	8.35	6.743	51.801

Table 1 presents the descriptive statistics of the variables in the study. The standard deviation of ROA and ROE are 0.175 and 0.256, respectively. The skewness values of the variables range from 0.061 to 0.113, while the kurtosis values range from 1.758 to 1.802. The median and standard deviation of the dividend policy are 3.021 and 1.341, respectively. Among the ownership structure factors, executive compensation has the highest mean value of 12.192, with skewness ranging from -0.941 to 0.019 and kurtosis ranging from 1.002 to 3.296. The standard deviation of company size is 1.24, while the leverage values range from 0.086 to 8.35 at p1 and p99, respectively. The study concludes that capital structure has a significant impact on profitability (ROA).

Table 2 Pearson relationship

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) ROA	1.000										
(2) ROE	0.042	1.000									
(3) PR	0.077	0.080	1.000								
(4) CS	-0.022	0.021	0.148	1.000							
(5) BS	-0.010	0.034	-0.023	0.006	1.000						
(6) BI	0.063	0.056	-0.012	0.104	-0.055	1.000					
(7) CEOD	0.014	0.003	0.151	-0.039	0.049	0.066	1.000				
(8) IO	-0.009	0.014	0.026	-0.088	-0.043	-0.035	-0.019	1.000			
(9) executive_cop	-0.025	-0.041	-0.047	0.004	-0.042	-0.041	0.018	0.071	1.000		
(10) size_lo	-0.062	0.024	0.031	-0.033	0.041	0.131	-0.037	-0.045	-0.062	1.000	
(11) LEV	-0.027	-0.045	0.042	0.009	-0.043	-0.035	0.015	0.018	-0.055	-0.143	1.000

Table 3 Shows the results of a linear regression study of the association between capital structure and ROA

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ROA	ROA	ROA	ROA	ROA	ROA	ROA
CS	-0.0183 [-0.0736]						-0.0640 [-0.246]
BS		-0.000849 [-0.233]					-0.000809 [-0.221]
BI			0.00621 [1.077]				0.00601 [1.018]
CEOD				0.00976 [0.495]			0.00845 [0.428]
IO					-0.0136 [-0.345]		-0.0129 [-0.319]
executive_cop						-0.00580 [-0.425]	-0.00525 [-0.379]
size_lo		-0.00973 [-1.243]	-0.0109 [-1.362]	-0.00966 [-1.228]	-0.00989 [-1.265]	-0.0100 [-1.282]	-0.0111 [-1.378]
LEV	-0.00623 [-0.557]	-0.00790 [-0.692]	-0.00760 [-0.677]	-0.00786 [-0.697]	-0.00779 [-0.684]	-0.00804 [-0.703]	-0.00786 [-0.697]
Constant	1.096*** [11.28]	1.265*** [8.703]	1.260*** [8.821]	1.250*** [8.754]	1.267*** [8.707]	1.333*** [5.907]	1.366*** [5.470]
Observations	340	340	340	340	340	340	340
R-squared	0.035	0.040	0.043	0.041	0.040	0.041	0.045

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4 Shows the results of a linear regression study of the association between capital structure and ROE

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ROE	ROE	ROE	ROE	ROE	ROE	ROE
CS	0.117 [0.323]						0.0934 [0.246]
BS		0.00242 [0.448]					0.00253 [0.468]
BI			0.00771 [0.913]				0.00743 [0.855]
CEOD				0.00576 [0.199]			0.00425 [0.144]
IO					0.0135 [0.253]		0.0197 [0.364]
executive_cop						-0.0148 [-0.715]	-0.0142 [-0.680]
size_lo	0.00362 [0.334]	0.00337 [0.312]	0.00210 [0.194]	0.00357 [0.332]	0.00362 [0.337]	0.00282 [0.262]	0.00168 [0.152]
LEV	-0.0108 [-0.761]	-0.00995 [-0.692]	-0.00988 [-0.675]	-0.0102 [-0.702]	-0.0102 [-0.708]	-0.0107 [-0.746]	-0.0103 [-0.700]
Constant	1.579*** [11.50]	1.537*** [7.671]	1.566*** [8.156]	1.557*** [8.089]	1.550*** [7.862]	1.757*** [5.302]	1.676*** [4.607]
Observations	340	340	340	340	340	340	340
R-squared	0.046	0.047	0.049	0.047	0.047	0.048	0.052

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5 Shows the results of a linear regression study of the association between capital structure and ROA and the mediating role of dividends payout ratio

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ROA	ROA	ROA	ROA	ROA	ROA	ROA
PR	0.0134* [1.804]	0.0130* [1.805]	0.0130* [1.804]	0.0128* [1.756]	0.0131* [1.815]	0.0130* [1.790]	0.0135* [1.765]
CS	-0.0951 [-0.370]						-0.14 [-0.523]
BS		-0.000828 [-0.227]					-0.000682 [-0.186]
BI			0.00619 [1.068]				0.00639 [1.077]
CEOD				0.00433 [0.218]			0.00216 [0.109]
IO					-0.0149 [-0.374]		-0.0153 [-0.376]
executive_cop						-0.00511 [-0.375]	-0.00419 [-0.302]
size_lo	-0.0105 [-1.293]	-0.0103 [-1.280]	-0.0115 [-1.399]	-0.0103 [-1.276]	-0.0105 [-1.304]	-0.0106 [-1.312]	-0.0119 [-1.438]
LEV	-0.00865 [-0.793]	-0.00873 [-0.788]	-0.00844 [-0.774]	-0.00866 [-0.787]	-0.00863 [-0.780]	-0.00885 [-0.796]	-0.00859 [-0.790]
Constant	1.256*** [7.197]	1.230*** [8.232]	1.226*** [8.368]	1.219*** [8.360]	1.233*** [8.300]	1.289*** [5.568]	1.350*** [5.320]
Observations	340	340	340	340	340	340	340
R-squared	0.05	0.05	0.053	0.05	0.05	0.05	0.055

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6 Shows the results of a linear regression study of the association between capital structure and ROE and the mediating role of dividends payout ratio

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ROE	ROE	ROE	ROE	ROE	ROE	ROE
PR	0.0142 [1.324]	0.0144 [1.349]	0.0144 [1.347]	0.0144 [1.339]	0.0144 [1.341]	0.0142 [1.325]	0.0142 [1.303]
CS	0.0502 [0.139]						0.0127 [0.0332]
BS		0.00245 [0.455]					0.00267 [0.495]
BI			0.00769 [0.909]				0.00783 [0.898]
CEOD				-0.000376 [-0.0130]			-0.0024 [-0.0809]
IO					0.0121 [0.228]		0.0171 [0.316]
executive_cop						-0.0141 [-0.673]	-0.0131 [-0.621]
size_lo	0.00292 [0.270]	0.00272 [0.252]	0.00146 [0.135]	0.00285 [0.265]	0.00297 [0.276]	0.00222 [0.207]	0.000834 [0.0759]
LEV	-0.0111 [-0.765]	-0.0109 [-0.750]	-0.0108 [-0.732]	-0.0111 [-0.763]	-0.0111 [-0.764]	-0.0116 [-0.799]	-0.0111 [-0.748]
Constant	1.504*** [6.327]	1.498*** [7.426]	1.528*** [7.855]	1.523*** [7.807]	1.513*** [7.570]	1.709*** [5.087]	1.659*** [4.531]
Observations	340	340	340	340	340	340	340
R-squared	0.052	0.053	0.054	0.052	0.052	0.053	0.057

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2 presents the results of a Pearson correlation analysis that was conducted to examine the relationship among various variables, including independent factors (board size, board independence, CEO duality, institutional ownership, and executive compensation), dependent factors (ROA and ROE), a mediating factor (dividend policy), and control variables (company size and financial leverage). The analysis revealed a positive correlation between the impact of capital structure (the independent factors) on profitability (the dependent factors) through the mediating role of dividend policy and control variables.

4.1 Hypothesis test

Table 3 presents the findings of a study that examines the relationship between ownership structure and profitability in Jordanian manufacturing companies. The results indicate a negative correlation (-0.0183) between the profitability measure (ROA) and the ownership structure. However, the dimensions of the ownership structure show varying values, suggesting a significant association between the profitability factor (ROA) and the dimensions of the ownership structure, ranging from (-0.000809 to 0.00845). The study also suggests that regulated variables have a positive and significant impact on the balance of assets and debts in these companies. The results indicate that the overall link between ownership structure and profitability (ROA) is positive, as evidenced by an R^2 value of 0.040 .

Table 4 presents the findings of a study on the relationship between ownership structure and profitability (ROE) in Jordanian manufacturing companies. The results indicate a favourable relationship between profitability (ROE) and ownership structure (0.117). The dimensions of the ownership structure also show varying values, suggesting a significant association between profitability (return on equity) and the dimensions of the ownership structure, ranging from (-0.0142 to 0.0197). The study further reveals that the controlled variables have a favourable and consistent impact on the equity and debt balances of these companies. Additionally, the results show a positive correlation between ownership structure and profitability (ROE), as demonstrated by $R^2 = 0.048$.

Table 5 presents the findings of a study that investigates the relationship between profitability (ROA), ownership structure, and the mediating variable of dividend policy in Jordanian manufacturing companies. The results, as shown in Table 6, demonstrate that the inclusion of the mediating variable (dividend policy) has a positive impact on the profitability component (ROA) and the ownership structure (0.0135). The dimensions of the ownership structure show varying values, indicating a significant association between the profitability component (ROA) and the dimensions of the ownership structure. The study also found that the controlled variables have a positive and significant effect on the asset and debt balances of these companies. Furthermore, the results indicate that the presence of the mediating variable (dividend policy) has a negative relationship with the ultimate link between ownership structure and profitability (ROA), as indicated by $R^2 = 0.055$.

Table 6 presents the results of a study on the relationship between profitability (ROE), ownership structure, and the intermediate variable of dividend policy in Jordanian manufacturing companies. The findings show that the inclusion of the intermediate variable (dividend policy) has a positive influence on the profitability factor (ROE) and the company structure (0.0135). The dimensions of the ownership structure also indicate a significant relationship with the profitability factor (ROE), with values ranging from

(−0.0097 to 0.0152). The study found that the controlled variables have a positive and significant impact on the balance of ownership and debt in these companies. However, the ultimate link between ownership structure and profitability (ROE) is negative, with the presence of the intermediate variable (dividend policy) explaining 5.7% of the variance in the relationship ($R^2 = 0.057$).

Table 7 Shows the results of a linear regression study of the association between dividends and profitability (ROA, ROE)

<i>Variables</i>	(1)	(2)
	<i>ROA</i>	<i>ROE</i>
PR	0.0131* [1.81]	0.0144 [1.35]
size_lo	−0.0104 [−1.29]	0.00286 [0.27]
LEV	−0.00866 [−0.79]	−0.0111 [−0.76]
Constant	1.221*** [8.41]	1.522*** [7.81]
Observations	340	340
R-squared	0.050	0.052

The study examined the impact of profitability, dividend policy, and control factors on Jordanian manufacturing companies. Table 7 presents the results, summarises the findings. The results indicate that dividend policy has a positive effect on both profitability coefficients, with ROA and ROE having values of 0.0144 and 0.0131, respectively. The control factors also had a positive and significant influence on maintaining the balance of assets, equity, and debts in these companies. Moreover, the results show a positive correlation between dividend policy and profitability coefficient (ROA) with an R^2 value of 0.050, and a negative correlation between dividend policy and profitability coefficient (ROE) with an R^2 value of 0.052. The study’s methodology and results are consistent with previous research on the topic (Zulfikar and STP, 2018).

The study investigates the link between ownership structure and profitability in Jordanian manufacturing firms. The authors discovered that the association between ownership structure and profitability changes depending on the metric utilised to calculate profitability. When the ROA was utilised as the profitability metric, a negative relationship was discovered, however when the ROE was used, a positive link was seen. The study also emphasised the influence of controllable variables on these organisations’ asset and debt balances. More study, according to the authors, is needed to better understand the complicated link between ownership structure and profitability in Jordanian Manufacturing companies.

The methods through which ownership structure effects profitability in Jordanian manufacturing firms should be investigated, since ownership structure has the potential to influence investment decisions, management incentives, and decision-making processes. Furthermore, ownership structure may impact the distribution of power and control inside organisations, which can have both good and bad implications for profitability. These

findings are important for investors, policymakers, and regulators interested in promoting Jordanian economic development and stability (Wieczorek-Kosmala et al., 2021; Antoro et al., 2020; Guizani and Abdalkrim, 2022; Pham and Nguyen, 2019; Okoro et al., 2018; Mubeen et al., 2020; Waris et al., 2021). However, further study is needed to thoroughly understand the relationship between ownership structure and profitability in Jordanian manufacturing firms (Wieczorek-Kosmala et al., 2021).

The second hypothesis of this study is that dividend policy serves as an important mediator in the link between ownership structure and profitability in Jordanian manufacturing firms. Despite the fact that dividend policy had a favourable influence on both ownership structure and profitability, the study discovered a negative link between ownership structure and profitability when dividend policy was included as an intermediate variable. The study's limitations, such as sample size, data collection technique, and time period, should be considered, as well as other aspects that may affect profitability. Nonetheless, the findings provide useful information on the relationship between ownership structure, profitability, and dividend policy in Jordanian manufacturing firms. More study is needed to investigate the influence of dividend policy on business performance, as well as the links between ownership structure, profitability, and dividend policy.

The R^2 values in the study show that the link between ownership structure, dividend policy, and profitability in Jordanian manufacturing firms is complicated and warrants more investigation. The values of the ownership structure dimensions indicate that the influence of different ownership arrangements on profitability may vary depending on the unique features of the business. Future study might also look into how ownership structure, dividend policy, and other company-level variables interact to acquire a better understanding of how these aspects affect business success. These findings are consistent with prior research by Wieczorek-Kosmala et al. (2021), Antoro et al. (2020), Guizani and Abdalkrim (2022), and others. More study in this area might give significant insights for policymakers, practitioners, and researchers interested in improving the performance and competitiveness of businesses in Jordan and other comparable nations (Barros et al., 2022).

The third hypothesis of the study, supported by the control variables used in the analysis, concludes that dividend policy has a positive impact on the profitability of manufacturing companies listed on the ASE, as measured by ROA and ROE (Al-Rawashdeh and Al-Amarneh, 2021). The findings show a strong and substantial relationship between dividend policy and profitability, with R^2 values of 0.050 and 0.052, respectively, for ROA and ROE. These findings indicate that dividend policy can be a useful tool for increasing the profitability of Jordanian manufacturing enterprises, especially when suitable controls are in place. However, further study is needed to verify these findings and investigate the underlying mechanisms through which dividend policy affects profitability.

The findings of this study reveal a favourable relationship between dividend policy and profitability in Jordanian manufacturing firms, which has substantial implications for management, investors, stakeholders, and policymakers. Adopting dividend policies may improve financial performance, which can have a favourable influence on the economy as a whole. These findings are congruent with earlier studies on the subject, such as Ramirez and Ferrer (2021), Guizani (2018), and Abdo et al. (2021). More study is needed to corroborate these findings and look into the exact processes through which dividend policy affects profitability (Ananzeh et al., 2022; Al-Qudah et al., 2022; Khan, 2022).

4.2 Practical implications

The study's findings have immediate implications for Jordanian manufacturers, governments, and investors. To begin, leaders at Jordanian manufacturing companies may use these insights to prioritise shareholder interests and alter their ownership structure in order to maximise profitability. In addition, they should implement a dividend policy that balances the interests of shareholders and managers. Second, the findings may be used to guide regulation of the industrial sector's ownership structure and dividend policy. Encouragement of appropriate ownership structures and dividend policies may increase firm financial performance, which can benefit the whole economy. Third, investors may use this information to make informed investments in Jordan's manufacturing sector. Companies with appropriate ownership structures and dividend policies outperform their competition and generate superior returns for their shareholders. Finally, the conclusions of this study can assist academics and researchers investigating the relationship between ownership structure, dividend policy, and profitability in emerging economies such as Jordan.

5 Conclusions

In conclusion, this study indicates that profitability, measured by ROA and ROE, has a positive impact on ownership structure in Jordanian manufacturing companies. Managers tend to prioritise their interests in enhancing their utility rather than focusing on shareholder welfare. Moreover, an unfavourable dividend policy has a significant influence on the relationship between ownership structure and profitability, with companies with high dividend policies trying to manage profits by increasing or decreasing them as needed. The aim is to attract lenders, accounting reporting clients, and stockholders to invest in the company. The results also suggest that control variables such as company size and financial leverage have a positive impact on profitability, indicating that larger loans lead to more lender regulation and control over managers' policies to minimise the possibility of loan agreement violations. Inspection and oversight can also reduce the likelihood of opportunistic management using harmful strategies, such as dividend policy. These findings are consistent with previous research by Ramirez and Ferrer (2021), Guizani (2018), Khan (2022), Abdo et al. (2021), Al-Qudah et al. (2022), and Ananzeh et al. (2022). Further research is needed to better understand the mechanisms through which ownership structure, profitability, and dividend policy interact in Jordanian manufacturing companies.

5.1 Limitations

This study has various limitations that should be noted. For starters, the study only looks at the manufacturing sector, thus the findings may not be applicable to other industries. Second, the study used a cross-sectional design, which makes establishing causal links between variables challenging. Third, the study only looks at publicly traded enterprises, which may not represent the whole population of Jordanian manufacturing firms. Fourth, the study is based on secondary data sources, and several critical characteristics, such as management quality and corporate governance, are not examined. Finally, the study only

looks at the influence of dividend policy on profitability and ignores other potential outcomes such as investment, growth, or stock price performance.

5.2 Further suggestions

Several suggestions for further research in the topic are based on the findings of this study. To begin, it would be beneficial to analyse the influence of various ownership arrangements, such as family-owned enterprises or foreign-owned corporations, on profitability and dividend policy in Jordanian manufacturing firms. Furthermore, the additional study might look into the function of corporate governance mechanisms including board structure and executive compensation in moderating the link between ownership structure, profitability, and dividend policy. Another issue worth investigating is the impact of macroeconomic factors such as interest rates and inflation on the link between ownership structure and profitability in Jordanian manufacturing firms. Finally, future research might look at the influence of technical improvements and innovation on profitability and dividend policy in Jordan's manufacturing sector.

Future research should conduct long-term studies to provide a better understanding of the relationship between profitability, ownership structure, and dividend policy. Alternative measures of profitability, such as economic value added (EVA) or residual income (RI) should also be considered to gain a more comprehensive understanding of the relationship between the variables. Additionally, macroeconomic factors such as interest rates, inflation, and economic growth should be taken into account, as they may influence the relationship between these variables. Finally, it would be valuable to explore the effects of various dividend policies, such as regular, special, or no payouts, on profitability and to compare the results with similar studies conducted in other countries to obtain a more global perspective on the topic.

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