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The moderating effect of dividend policy on the relationship between the corporate risk disclosure and firm value: evidence from Egypt

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Abstract

This paper investigates the effects of corporate risk disclosure (CRD) and dividend policy (DP) on firm value (FV) for non-financial companies listed on the Egyptian Stock Exchange. Using a sample of 45 non-financial firms from 2016 to 2022, which yielded 315 firm-year observations, we find a significant positive relationship between CRD and FV, supporting signaling theory. DP also exhibits a positive association with FV. Additionally, DP positively moderates the CRD-FV relationship, indicating a complementary effect where dividends enhance the CRD's positive signal. The results are robust across fixed effects, random effects, and pooled OLS models. This study makes key empirical and theoretical contributions by validating the hypothesized relationships in the Egyptian context. It also provides managerial insights into value drivers for public firms in developing economies. Further research can corroborate the findings in other emerging markets. Overall, this paper enhances understanding of the linkages between risk disclosure, dividend policy, and firm valuation outcomes.

Keywords Dividend policy, Corporate risk disclosure, Firm value, Egypt

Introduction

In the realm of financial reporting, the principal aim is to provide key information to stakeholders, such as investors and lenders, to facilitate the achievement of a company's long-term goals through its short-term accomplishments. Financial statements are instrumental in this regard, offering retrospective quantitative data that, while essential, often requires the support of additional notes and disclosures to provide a comprehensive understanding [45]. This is particularly true in the context of CRD, a facet of financial reporting that has gained significant attention in the aftermath of the financial

crisis for its role in promoting transparency and aiding investment decisions [21].

According to Samaha and Khelif [80], the enforcement of accounting standards presents a particular challenge, especially in emerging nations. The lack of uniformity and adherence to obligatory risk reporting requirements, highlighted by Mokhtar and Mellett [64], underscores the need for a more consistent approach to risk disclosure. CRD involves a plethora of information aimed at addressing uncertainties in business, encompassing subjective assessments, estimations, managerial decisions, financial instruments, and internal control risks.

Investment choices depend on assessing expected returns and risks. However, failure to properly identify key risk factors prevents investors from effectively evaluating risk, potentially causing poor decisions [21]. Effective CRD mitigates information asymmetry, reduces uncertainty, affects shareholder confidence, and impacts FV [4, 32, 74]. Risk reporting involves including relevant details in financial statements related

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to reliance on market-based accounting judgments, including subjective assessments, estimates, managerial decisions, financial instruments, and internal control risks. This encompassing definition aligns with other authors concurring that risk disclosures cover diverse information addressing business uncertainties. CRD has attracted significant attention, especially after the financial crisis. Investors, stakeholders, and the public increasingly expect a comprehensive understanding of a firm's risks held by management [75]. Abraham and Cox [6] highlight risk reporting's importance in financial management and investing. The anticipated return impact has capital cost and shareholder wealth implications.

Notably, despite the crucial roles that disclosure practices (DP) and corporate reporting disclosure (CRD) play in relation to financial visibility (FV), prior research on CRD has primarily focused on its nature, usefulness, and determinants. This is evident in the works of Linsley and Shives [57], Elshandidy et al. [31, 32], Ntim et al. [70], Mokhtar and Mellett [64], Kim and Yasuda [52], and Ibrahim and Aboud [42]. However, the field has witnessed limited study on the interplay between DP and risk disclosure, especially in the context of Egyptian listed corporations. This gap is what our study aims to address. We investigate the potential moderating influence of DP on the relationship between CRD and FV. This interaction has not been extensively examined in prior research, making our study a novel contribution to the literature. It forms the basis of our main research question, which concerns the unique effect of DP as a moderating variable on the relationship between CRD and FV in the Egyptian context.

Our paper makes several unique contributions. Firstly, it bridges the gap in the literature regarding the effect of CRD on FV with DP as a moderating variable in developing countries, particularly Egypt. A lot of research has been done on the nature, usefulness, and factors that affect CRD in the past. This study adds a new dimension by looking at CRD for non-financial companies listed on the EGX 100, how CRD and DP affect FV, and how DP affects this relationship. Secondly, our study assesses the level of risk disclosure in the annual reports of Egyptian companies, providing practical evidence of the need to enhance disclosure quality. This is vital in light of the diverse risks that companies face, which affect the efficiency of their investments. Lastly, our research contributes to rebuilding investor confidence in the annual reports of Egyptian companies. Studies like Marzouk [59] and Abd Elghaffar and Abotalib [1] have shown that the Egyptian market lacks adequate risk disclosure, and addressing this can reduce information asymmetry and lead to more efficient investment decisions.

The paper proceeds as follows: Sect. "Literature review and development of hypotheses" reviews relevant literature and develops the hypotheses. Sect. "Research variables and models" discusses the research variables and models. Sect. "Research methodology" outlines the methodology. Sect. "Discussion" presents the results and analysis. Sect. "Conclusion" concludes.

Literature review and development of hypotheses

CRD and FV

This section explores the complex interplay between CRD and FV. By utilizing a wide array of scholarly viewpoints, the objective is to develop and examine possible interactions among the three variables. A complex interplay exists between (CRD) and (FV), as evidenced across scholarly viewpoints. CRD involves disseminating information on risks, opportunities, and mitigation methods affecting a company [57]. Although mandated, it is unclear if the requirements fully satisfy stakeholders [63].

The dynamic nature of the contemporary corporate environment, marked by technical advancements and the expansion of global markets, has led to an increased level of vulnerability to risks. Investors are currently expecting the management of a company to have a more thorough understanding of the risks associated with the company [75]. The authors Abraham and Cox [6] highlight the significant importance of risk reporting within the realm of financial management and investing practice. The influence of appropriate risk disclosure on the anticipated rate of return has implications for a company's cost of capital and the wealth of its shareholders.

The investment and selling decisions made by investors are contingent upon their assessment of the levels of return and risk. Nevertheless, in the event that a corporation's primary risk factors are not properly identified, investors may be unable to effectively evaluate the degrees of risk involved, which could ultimately result in misguided decision-making [21]. The implementation of effective CRD practices serves to mitigate the presence of information asymmetry, mitigate uncertainty among investors, and have an influence on shareholder confidence, consequently exerting an impact on the overall value of a corporation [4, 32, 42, 74].

CRD, as defined by Linsley and Shives [57], pertains to the dissemination of information regarding potential opportunities, hazards, and the mitigation of risks that have either already affected or have the potential to impact a company. Legal mandates require businesses to abide by reporting requirements, but it is unclear if these requirements sufficiently satisfy stakeholders' demand for pertinent information [63].

Many theories support the correlation and impact of CRD on FV. First, the Stakeholder Theory states that

transparent risk disclosure meets stakeholders' informational needs and may increase FV. CRD lowers information asymmetry between managers and shareholders, resulting in better investment decisions and increased business value, according to agency theory. According to the Signaling Theory, good risk disclosure signals management's confidence and competence, which may increase investor perception and FV. According to the Legitimacy Theory, revealing risks legitimizes organizations' operations to stakeholders, protecting their right to operate and increasing their market price. These ideas all support the idea that thorough and transparent CRD can boost a firm's value, stressing the importance of risk disclosure [42, 67].

Studies conducted in this field demonstrate a complex relationship between CRD and FV. Various studies have demonstrated favorable correlations [19, 85]; however, conflicting findings have also been reported [23, 50]. The complex nature of this relationship necessitates a comprehensive analysis and comprehension, particularly within the Egyptian context, where these complicated connections need more investigation.

While certain research proposes a positive correlation between higher levels of CRD and enhanced FV [71, 85], contradictory findings have also been reported. There is a range of perspectives in academic literature concerning the influence of CRD on the value of firms. Various researchers have reported divergent findings, indicating both positive and negative associations [38, 39, 48]. The aforementioned discrepancy is also observed in emerging nations like Tunisia and Egypt [15, 24].

Moreover, the significance of CRD extends beyond its monetary value. According to the study by Bravo [17], CRD has a favorable effect on investor awareness and FV. On the other hand, Abdullah [3] emphasizes the importance of firms assessing the appropriate level of risk disclosure based on their own circumstances. The relationship among CRD, firm reputation, and financial value is apparent, as noted by Abdullah [3].

The literature review presents a complex landscape regarding the influence of CRD on FV, characterized by a lack of consensus. This divergence in findings primarily stems from the application of different theoretical frameworks and the analysis of various market types, ranging from emerging to developed. These methodological variations contribute significantly to the inconsistencies observed in the literature. Notably, Ibrahim and Husainey [43] identified a distinct and significant positive correlation between comprehensive CRD and FV. This finding contrasts with the results of Campbell et al. [23] and Kamaruzaman et al. [50], who reported a negative association between these variables. In the context of Egypt, Hassan [38] discovered a significant yet negative

link between mandatory disclosures and FV, while voluntary disclosures appeared to have no significant impact on FV.

Despite these findings, the exploration of risk disclosure's effect on FV remains relatively underdeveloped. The varying impacts observed across different types of CRD highlight the complexity of this relationship. This inconsistency in the literature underscores the necessity for more thorough research into the economic consequences of CRD, particularly its capacity to influence FV. Such inquiries continue to be a focal point of interest within the field of accounting research.

DP and FV

The ability of a company to produce short-term profits in various areas of its business within specific time frames serves as evidence that it has achieved its long-term objectives [34]. The earnings of the company are crucial for maintaining its long-term sustainability. In addition to bolstering the prosperity of firm proprietors, they also function as an internal means of financing for subsequent growth endeavors. The allocation of profits, also referred to as DP, plays a crucial role in determining whether earnings should be distributed to shareholders as dividends or preserved as reserves for future investments [91].

There are several important theories that shed light on the interaction between DP and FV. According to Jensen and Meckling's [47] description of agency theory, DP may help management and shareholders align their interests, potentially improving FV through more effective resource allocation. According to the Signaling Theory, which Makhoul et al. [58] explored, DP serves as a market signal that indicates a firm's stability and promising future earnings prospects. Investors can interpret this as a sign of a firm's robustness, which raises its value. Additionally, the Bird-in-Hand Theory proposes that investors might view regular dividends as less risky than future capital gains, making a dividend-favoring policy more appealing to risk-averse investors and potentially boosting the firm's value. These theories collectively provide a multifaceted perspective on how DP influences FV, encompassing aspects of corporate governance, investor information, and shareholder preferences [72, 90].

The Modigliani and Miller hypothesis posits that DP does not have a direct impact on FV, highlighting the significance of investment policy in enhancing shareholder wealth [12]. On the contrary, ideas such as the "bird in hand" theory and signaling theory claim that DP does indeed have an impact on FV. The hypothesis known as the "bird in hand" posits that companies that pay dividends provide a sense of financial stability to their owners. The theory of signaling posits that dividend

disbursements serve as indicators of favorable future prospects for a firm, hence exerting an influence on the pricing of its stocks. The notion put forth by Makhoul et al. [58] suggests that alterations in dividends possess informational content that might impact the valuation of stocks.

On the other hand, advocates of the second viewpoint contend that DP serves to reduce uncertainty, thereby enhancing shareholder value. The argument put forth is that investors exhibit a preference for current dividends as opposed to future dividends and capital gains, primarily due to the comparatively lower level of inherent uncertainty associated with the former. This statement is consistent with the dividend relevance theory, which suggests that investors place greater importance on current payouts due to their perceived security and immediate benefits [89].

The relationship between (DP) and (FV) has been a focal point of numerous scholarly studies, which have sought to determine the extent to which dividend distributions influence investor evaluations of corporate equities. Researchers have employed various metrics, including share price and Tobin's Q ratio, to assess the impact of dividend changes on corporate value [12–14]. Despite varied perspectives, empirical evidence on DP's impact on FV is diverse. The Modigliani and Miller's dividend-irrelevance theory has received both support and criticism from studies. Different studies in places like Ghana, Vietnam, Morocco, and Kenya have found different correlations between DP and FV. This shows that the relationship is situational [18, 54, 81, 83, 84].

To make things even more complicated, research in Turkey, such as that by Agung et al. [7], has shown that DP has a positive effect on FV. This finding fits with the Signaling Theory, which says that DP can be used to give investors confidence [8, 73, 87]. However, the connection between DP and FV is not simple and depends on many environmental factors. This is shown by the different results of Ibrahim [44], Mulyani et al. [66], and Butar-Butar et al. [20]. Other researchers, like Megeid and Sobhy [62], also say that DP has a big effect on FV. In essence, the interplay between DP and FV represents a complex and multifaceted area of study. The divergent findings from empirical research across different countries highlight the nuanced and context-sensitive nature of this relationship. These varied insights form a critical foundation for a more in-depth analysis and understanding of how DP influences FV, emphasizing the need for a comprehensive approach to exploring this intricate dynamic.

This study investigates the complex DP-CRD-FV interplay in Egypt, addressing gaps in emerging market evidence. It makes unique contributions by empirically

evaluating DP and CRD's effects on FV and testing DP's moderating effect. The results provide practical insights into value drivers for Egyptian firms and expand signaling and disclosure theories. Additional research can validate the findings in other developing economies. According to the illustrated literature, the following hypothesis has been formulated:

H1 There is a significant impact of corporate risk disclosure and dividend policy on firm value.

The effect of DP on the relationship between the CRD and FV

The significance of DP and CRD cannot be overstated in their influence on FV and investor views. Both elements provide valuable information regarding a company's financial well-being, potential for growth, and the strategies employed by management to mitigate risks and maintain transparency. This synthesis examines a wide range of studies conducted in various circumstances to emphasize this complex intercorrelation.

Over the course of time, scholars have conducted investigations into the impacts of DP and CRD on FV, yielding a diverse array of viewpoints. The key work of Modigliani and Miller first proposed that DP has no direct effect on FV. They argued that a company's ability to create profits is the determining factor in its financial performance. In contrast, the concept of agency theory, as originally proposed by Jensen and Meckling in 1976, highlights the interconnectedness between the phenomenon of divergent interests among agents, financial performance, and the alignment of management with the interests of shareholders. According to Al-Kuwari [9], the author highlights the significance of the DP as a means of providing information to current and potential investors regarding a company's anticipated financial performance in the future. Furthermore, the study conducted by Kajola et al. [49] provided empirical evidence supporting a substantial and positive relationship between DP and FV.

The importance of CRD in company disclosures is emphasized, especially with regard to risk management and transparency. Risk reporting plays a crucial role in assisting firms in effectively navigating periods of transition, mitigating capital expenditures, and effectively managing operational risks. Investors, in return, derive advantages from risk information as they evaluate risk profiles, estimate market values, and make well-informed investment choices [6]. Linsley and Shrives [57] underscore the significant importance of risk reporting, highlighting that users assess risk disclosures in terms of their potential impact on business operations.

Many empirical investigations have explored the complex association between dependent variables (DP)

and independent variables (FV). Dogan and Topal [29] conducted an analysis on firms listed on the Istanbul Stock Exchange, wherein they classified these companies according to their dividend distribution practices. The findings of their study revealed a favorable influence of dividend payouts on FV. In a study conducted by Murekefu and Ouma [68], an examination was made of companies listed on the Nairobi Stock Exchange. The findings of the study revealed a clear correlation between dividend payments and financial success.

The function of DP as a moderating variable in the relationship between corporate reputation and FV is emphasized, as dividends are utilized as indicators of a company's future prospects. The distribution of high dividends serves as a signal of positive expectations and generates investor attention, thus strengthening the fair value of the investment. Furthermore, the concept of DP serves as a means of communication between management and shareholders, as dividend payments serve as an indicator of the company's success and its capacity to fulfill shareholder expectations [33, 36, 46, 51, 86]

Up to the researcher's knowledge, the academic landscape presents a singular study by Shahwan [82] that explores the moderating role of DP on the relationship between financial statement disclosure and corporate value in the context of Jordanian industrial companies listed on the Amman Stock Exchange (ASE). Shahwan's findings suggest that DP has an insignificant moderating effect on the nexus between financial disclosure and the corporate value of these Jordanian industries. It implies that while DP contributes to determining corporate value, it does not significantly alter the influence of financial disclosure on corporate value. Notably, most literature, including studies focused on Egypt, primarily investigates the impact of corporate CRD or DP on FV. However, there is a paucity of research examining the role of DP as a moderator in the relationship between CRD and FV, particularly in emerging markets like Egypt.

In summary, the interaction between DP and FV represents a complex and multi-dimensional field of inquiry. The disparate results from empirical studies across various geographic contexts underscore the context-dependent nature of this relationship. These diverse perspectives lay the groundwork for a more nuanced understanding of how DP affects FV, underscoring the importance of a holistic approach in examining this intricate interplay. This paper examines the interconnectedness of DP, CRD, and FV through a comprehensive collection of research that includes diverse geographical and legislative contexts. The aforementioned investigations highlight the intricate connections between these factors and their combined impact on investor opinions and corporate

valuation. The following hypothesis has been formulated to examine this complex relationship:

H2 Dividend policy moderates the relationship between the corporate risk disclosure and the firm value.

Research variables and models

This study investigates the effect of CRD on FV. It also tests DP's moderating effect on the CRD-FV relationship. The selection of variables draws from previous studies and aligns with the research objectives. DP serves as the moderating variable, measured through the dividend payout ratio (DPR) based on studies by Shahwan [82], Megeid and Sobhy [61], and Ismail and ElDeeb [46], among others. The independent variable CRD is measured using a disclosure index approach consistent with Ibrahim and Hussainey (2019), Dey et al. [27], and Abid and Shaiq [5]. The selection of the disclosure index method for this study was based on two primary considerations. Firstly, its comprehensiveness: the method encompasses the majority of items typically used in earlier studies, ensuring thorough coverage of relevant aspects. Secondly, its relatively rare application in the Egyptian context as a metric for assessing risk disclosure. This contrasts with the common practice in earlier studies, which often relied on quantitative analyses such as counting words, sentences, pages, lines, and paragraphs—a method believed to be heavily dependent on the analyst's subjective judgment. (FV) is measured as the dependent variable through Tobin's Q. According to studies by Riyadh et al. [76], Garay et al. [35], Mouselli and Hussainey [65], and Hassanein [40], this metric is the most suitable for evaluating FV and has seen widespread use in the fields of economics, accounting, and finance. Tobin's Q is favored over other measures such as return on equity (ROE) and earnings per share (EPS), which tend to focus on short-term financial performance. In addition to the principal variables of corporate risk disclosure practices (CRD) and FV, this research incorporates several control variables based on prior literature in CRD and DP. These include factors such as firm size, profitability, liquidity, and leverage, as utilized in the research by Ibrahim and Hussainey [43] and Ismail and ElDeeb [46], among others.

The existing literature provides a rationale for using these specific variables. DP and CRD have been shown to individually influence FV through signaling effects based on agency theory [47]. As key decision variables, their joint and moderated effects on FV warrant investigation, although limited research exists in the Egyptian context. The selected measurements align with established accounting literature and allow a thorough investigation of the hypotheses. The control variables

help account for other factors affecting FV. In total, the variable selection and measurements will facilitate a robust examination of the research questions. Table 1 summarizes the variables and measurements.

Accordingly, this paper formulates the relationship between the variables as the two models below:

For the 1st hypothesis:

H1 There is a significant impact of corporate risk disclosure and dividend policy on firm value.

The following model has been formulated:

Model (1): The relationship between corporate risk disclosure and firm value.

$$FV_{it} = \alpha + \beta_1 CRD_{it} + \beta_2 DP_{it} + \beta_3 FZ_{it} + \beta_4 PROF_{it} + \beta_5 LIQ_{it} + \beta_6 LEV_{it} + \varepsilon_{it}$$

For the 2nd hypothesis:

H2 Dividend policy moderates the relationship between the corporate risk disclosure and the firm value.

The following model has been formulated:

Model (2): The moderation effect of dividend policy on the relationship between corporate risk disclosure and firm value.

$$FV_{it} = \alpha + \beta_1 CRD_{it} + \beta_2 DP_{it} + \beta_3 CRD_{it} * DP_{it} + \beta_4 FZ_{it} + \beta_5 PROF_{it} + \beta_6 LIQ_{it} + \beta_7 LEV_{it} + \varepsilon_i$$

Figure 1 in our paper presents a visually intuitive model that encapsulates the core research focus. It illustrates how (DP) serves as a moderating factor in

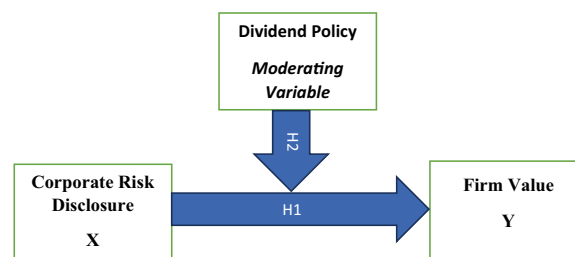


Fig. 1 Research model: DP moderating the impact of CRD on FV

the dynamic between (CRD) and FV. This graphical representation is designed to clearly convey the intricate interplay among these key variables, providing a straightforward yet comprehensive overview of our study’s theoretical framework.

Research methodology

Sample selection

The primary objective of this study is to examine the relationship between the CRD, DP, and FV. Furthermore, this study aims to investigate the potential moderating effect of DP on this association. Prior research studies have employed correlation and regression approaches to investigate similar research queries. The choice of panel data analysis was based on its ability to accurately model the interconnectedness of CRD, DP, FV, and control variables concurrently. Prior academic inquiries have exten-

sively employed this methodology to investigate similar research questions [22, 37, 46]. This study uses panel data analysis to investigate the anticipated associations in line

Table 1 Definitions and measurement of research variables

Variables	The type of the measure	Measurement
<i>Independent variable</i>		
Corporate risk disclosure	Index	CRD Index = \sum Actual Score / \sum Maximum Score points
<i>Dependent variable</i>		
Firm value	Tobin’s Q	Tobin’s Q = (Total debt + market value of equity) / Book value of total assets
<i>Moderator variable</i>		
Dividend policy	Dividend payout ratio	Dividend payout ratio is measured is current year dividends divided by current share price, or dividend per share over earnings per share
<i>Control variables</i>		
Firm size	Numeric value	Natural logarithm of total assets
Profitability	Financial ratio	Return on Equity ratio is measured by dividing net income by shareholder equity
Liquidity	Financial ratio	Current ratio is measured by dividing current assets by current liabilities
Leverage	Financial ratio	Debt / Equity ratio is measured by dividing total liabilities by total equity

with established methodological precedent. The models' quality of fit is assessed using R-squared values. The regression model examined the moderating influence of CRD and DP through an interaction term. A moderating influence is inferred when the interaction term is statistically significant. To assess the robustness of the primary findings, the study employs pooled ordinary least squares (OLS) regression as an alternative method for analyzing panel data [92]. This robust cross-validation method evaluates the stability of the major research findings.

The initial sample comprised a total of 100 firms, all of which were publicly listed on the Egyptian Exchange (EGX). A purposive sampling approach was utilized to determine the final sample size of non-financial companies for the purpose of research. Using purposive sampling, and after excluding the financial institutions and banks and removing the firms with missing data, the selection of the sample is adjusted according to specified criteria: (1) The period from 2016 to 2022 witnessed the inclusion of a non-financial enterprise on the EGX. (2) Financial statements and annual reports for the aforementioned years were made available to the public. (3) The company possessed extensive data regarding CRD. The selection procedure underwent intensive scrutiny, resulting in a final sample size of 45 annual reports that satisfied the specified requirements [46].

The data collection methodology employed in this study relies on the utilization of secondary data obtained from multiple sources. These sources include firms' annual reports, the Egyptian Exchange, Egypt for Information Dissemination (EGID), and relevant databases that encompass listed companies on the EGX. One such database can be accessed at <https://www.mubasher.info/countries/eg>.

Analysis and results

Descriptive analysis

Table 2 presents the descriptive statistics, offering a comprehensive summary of the primary variables of relevance within our sample.

The average FV was seen to be 3.2, suggesting the presence of significant heterogeneity within our sample, which encompasses a varied range of enterprises operating under varying financial conditions. This finding provides evidence for the representativeness of our sample in examining the factors that influence FV.

The mean value of CRD in our sample was 0.722, indicating that the majority of organizations included in our analysis exhibit a moderate to high degree of risk disclosure. This finding is consistent with other studies that have demonstrated a temporal increase in the practice of corporate risk reporting [60].

Table 2 Descriptive statistics for the variables in the phenomenon

Variables	Obs	Mean	SD	Min	Max
Firm value	315	3.20653	6.32209	0.00455	39.9896
Corporate risk disclosure	315	0.72265	0.08257	0.5	0.93333
Firm size	315	21.0028	1.5092	16.9355	23.5261
ROE	315	17.7242	18.5559	-167.45	99.569
Current ratio	315	0.76695	1.75888	-8.5629	6.58796
Financial leverage	315	2.17658	7.16339	0.00116	71.7226
Dividend policy	315	0.48625	0.25778	0.0007	0.94

Source: Calculations based on data collected from 45 firms for years 2016–2022

The sample data demonstrates a limited range of firm sizes, characterized by a mean value of 21.0028. This suggests that the composition of our sample predominantly consists of mid-sized enterprises, hence offering valuable insights into the risk disclosure methods that are notably prevalent among this group. According to Lin et al. [56], the mean return on equity (ROE) of 17.7% is consistent with the performance indicators often observed in financially sound mid-sized enterprises.

The average current ratio of the sampled enterprises was 0.767, which falls below the desired ratio of 1. This suggests that there may be potential liquidity issues for these organizations. Nevertheless, the presence of significant heterogeneity implies that the level of liquidity is contingent upon characteristics peculiar to each individual organization. The financial leverage ratios exhibited a significant range, spanning from 0.0016 to 71.7226, with an average value of 2.17658. The broad distribution seen in our sample suggests that it encompasses both companies with cautious financial practices and those with high levels of debt. This allows for a meaningful examination of risk disclosure in relation to this particular aspect.

Ultimately, the mean DP amounted to 0.48625. However, it is important to note that there was a considerable degree of variability, indicating significant variations in dividend practices within our selected sample. In general, the descriptive statistics of our sample demonstrate a diverse range of important financial qualities, which enhances our capacity to identify the factors that influence FV.

Correlation analysis

The correlation analysis in Table 3 provides insights into the relationships between FV and the key independent variables of interest.

Our analysis reveals several notable correlations between key financial metrics and FV within mid-sized enterprises. Specifically, we find CRD positively and significantly correlates with FV, aligning with studies

Table 3 Pearson correlation coefficients of the variables in phenomenon

	Firm value	Corporate risk disclosure	Firm size	ROE	Current ratio	Financial leverage	Dividend policy
Firm value	1						
Corporate risk disclosure	0.315*	1					
Firm size	0.442*	0.121	1				
ROE	0.406*	0.171	0.119	1			
Current ratio	0.613*	0.102	0.150	0.142	1		
Financial leverage	0.312**	0.151	0.134	0.125	0.105	1	
Dividend policy	0.536*	0.525*	0.127	0.128	0.146	0.157	1

Sig values: *** < 0.01, ** < 0.05, * < 0.1, "" > 0.1

Source: Calculations based on data collected from 45 firms for years 2016–2022

showing transparency increases valuation [56]. Firm size also exhibits a robust positive correlation, consistent with larger firms gaining valuation advantages from economies of scale [11]. Return on equity positively correlates with value, fitting the role of performance in efficient market pricing [16]. Additionally, strong positive links emerge between FV and the current ratio and financial leverage. The current ratio finding highlights the importance of liquidity for valuation of businesses [44], while the leverage correlation follows tradeoff theory [30]. Finally, a positive dividend-value correlation contradicts irrelevancy but reinforces signaling theory [46]. Overall, these correlations provide validity to hypothesized relationships between financial factors and FV within the mid-sized firm context. Overall, these correlations between FV and key financial variables are largely consistent with established relationships documented across prior accounting literature. This provides validity to our sample and model specification.

Model building

In this section, hypothesis testing is employed to investigate the proposed relationships of the study through the utilization of panel data analysis. In this study, we shall proceed to estimate two distinct models. The initial model examines the effects of CRD and DP on the valuation of a corporation. The inclusion of an interaction term in the second model will allow for the examination of the potential moderating effect of DP on the association between CRD and FV. The estimation of these two models will facilitate the empirical evaluation of the postulated connections between corporate risk reporting, dividend payouts, and business valuation. Panel data techniques are employed in order to account for unobserved heterogeneity that may exist among organizations and over time. By utilizing these techniques, researchers are able to obtain robust and

rigorous insights into their research issues. The subsequent section will provide and discuss the outcomes of the hypothesis testing.

1st model The first model intends to evaluate the first hypothesis, which examines the impact of CRD and (DP) on (FV). To achieve this objective, panel data analysis is chosen as the analytical method.

CRD significantly affects business value, as shown in Table 4, Panel A and B, with 99% confidence. This shows that CRD increases business value. Furthermore, (DP) influences FV positively and significantly with 90% confidence. Panel C of Table 4 uses the Hausman test to evaluate our random effect model. Since the *p*-value is above the significance level (*p*=0.876), the random effect model fits the data better than the fixed effect model. This statistical choice supports our analytical methodology.

Table 4’s regression results confirm our first hypothesis about explanatory variables and FV. We find that CRD and DP significantly enhance FV at both the 99% and 90% confidence levels. Unlike irrelevancy theory, signaling theory views dividends as indicators of a firm’s profitability and growth [46]. Importantly, DP’s effect on company value prepares for future models to examine its moderating function between risk disclosure and FV. These associations are consistent across model parameters, and the Hausman test results support our findings, proving the random effects model works for our data analysis. This supports recent research showing that risk reporting increases transparency, eliminates information asymmetry, lowers capital costs, and increases FV [55, 78].

2nd Model The second model intends to evaluate the second hypothesis, which examines the moderating role of DP on the association between CRD and FV. To achieve this objective, panel data analysis is chosen as the analytical method.

Table 4 Panel data analysis for impact of CRD on FV

	Panel A: Random effect model		Panel B: Fixed effect model	
	Coefficient	Standard error	Coefficient	Standard error
Corporate Risk Disclosure	4.255348***	0.012766	Coefficient	Standard error
Firm Value	0.073831	0.311895	7.419316*	4.377178
ROE	0.037245**	0.019003	0.493134	0.596477
Current Ratio	0.382255*	0.218307	0.031890**	0.019269
Financial Leverage	0.003198	0.048147	0.442350*	0.242384
Dividend Policy	2.792502*	1.472839	0.006147	0.048561
_cons	-2.85701	7.124783	2.849153*	1.638386
Panel C: Hausman Test	Test Value	Significance		
	3.28	0.876		

Sig values: *** < 0.01, ** < 0.05, * < 0.1, "" > 0.1

Source: Calculations based on data collected from 45 firms for years 2016–2022

Table 4’s Panels A and B reveal that (DP) moderates the link between CRD and FV at a 90% confidence level. The paper then analyzes these findings using Table 5, Panel C’s random effects model and Hausman test. Key results show that CRD significantly affects FV at a 99% confidence level. According to prior studies, openness and reduced information asymmetry boost corporate value and CRD. The analysis also supports the second hypothesis that DP moderates CRD-FV. Signaling theory is supported by the positive and statistically significant interaction between risk disclosure and DP with 99% confidence. This shows that this relationship boosts valuation by reducing risk and improving prospects.

In the interaction model, risk disclosure and DP remain substantial, suggesting that DP is a complementing moderator rather than a mediator. According to the basic theories, direct and moderating channels affect business value. With increasing F-statistic and R-squared values,

the model fit improves significantly, bolstering DP’s moderating effect on risk disclosure and company value. The findings strongly support the second hypothesis, expanding signaling and disclosure theories. They emphasize the impact of risk reporting and dividends on corporate valuations. Further robustness testing will strengthen these moderating effects’ consistency and reliability [46, 54, 58].

Robustness test

In order to evaluate the resilience of the main findings, the models are recalculated using pooled ordinary least squares (OLS) regression as an alternate method for analyzing panel data. The validation of the associations identified in the initial panel data analysis is achieved through the examination of the consistency of results across various estimating methodologies. The utilization of pooled ordinary least squares (OLS) for the purpose

Table 5 Panel data analysis for impact of CRD on FV

	Panel A: Random effect model		Panel B: Fixed effect model	
	Coefficient	Standard error	Coefficient	Standard error
Corporate risk disclosure	4.629813*	2.051313	7.376934*	4.457362
Firm value	11.972450***	4.356787	1.028832*	0.595389
ROE	0.622693*	0.312127	0.014167	0.019260
Current ratio	0.058716**	0.019002	0.310496*	0.242197
Financial leverage	0.407314*	0.218282	0.082348*	0.048583
Dividend policy	0.082709	0.048171	4.123793	4.29227
_cons	-3.08879	7.174004	-51.9817*	12.61613
Panel C: Hausman test	Test value	Significance		
	5.1	0.60		

Sig values: *** < 0.01, ** < 0.05, * < 0.1, "" > 0.1

Source: Calculations based on data collected from 45 firms for years 2016–2022

of robustness assessment has been widely acknowledged and accepted in the field of econometrics. This approach offers a less constraining alternative to fixed and random effects methodologies [92]. The utilization of pooled ordinary least squares (OLS) in re-estimating the models offers a robust method of cross-validation, enabling the assessment of the stability and generalizability of the primary findings pertaining to risk disclosure, dividends, and firm valuation in mid-sized firms (Table 6).

The pooled ordinary least squares (OLS) models confirm the main findings obtained from the panel data analysis, thereby enhancing the reliability of the identified correlations. In accordance with the preliminary findings, it can be observed that there is a positive relationship between CRD and DP on company value, with a confidence level of 90%. This finding is consistent with the principles of signaling theory, which posits that transparency and dividend distributions serve as signals of a firm’s future prospects [25].

In the moderated model, it is observed that dividends play a crucial role in favorably moderating the relationship between risk disclosure and company value, with a confidence level of 95%. The observed rise in adjusted R-squared from 0.68 to 0.75 indicates a significant enhancement in explanatory power. This finding further supports the notion that incorporating both dividend and disclosure effects in the model offers a more comprehensive understanding of FV. This aligns with the proposed

complementary signaling mechanism, as suggested by previous studies [41, 46].

In general, the consistency observed in estimations enhances the trust of the connections inside mid-sized enterprises and supports the applicability of signaling and disclosure theories in this particular setting. Additional validation can be obtained through doing further robustness tests. However, the findings presented in this study provide a significant empirical contribution to the understanding of the factors that influence value creation, particularly within the mid-sized firm sector, which has received limited attention in previous research despite its economic significance.

Discussion

The study’s findings reveal the complex dynamics between (CRD), (DP), and (FV) in the Egyptian context, offering a nuanced understanding that resonates with and extends existing literature. To effectively link the results of your study with the corresponding literature and hypotheses, it’s essential to construct a comprehensive table that not only displays the findings but also correlates them with the expected outcomes based on the research and supporting literature. Table 7 indicates the main results of the study and supporting literature.

At a 99% confidence level, the positive relationship between CRD and FV backs up what Samaha and Khlif [80] and Alshahmy and Abdo [10] said about how

Table 6 Pooled OLS effect model

	Coefficients	Standard Error
<i>Panel A: Pooled OLS Effect model on relation between CRD, DP and FV</i>		
Corporate risk disclosure	7.607932*	4.33007
Firm Value	0.457317	0.4222762
ROE	0.040329*	0.0195489
Current ratio	0.644503**	0.2067705
Financial leverage	-0.121839	0.1498934
Dividend policy	2.320583*	1.397942
_cons	5.844371	5.912556
Adjusted R2	0.6839	
<i>Panel B: Pooled OLS Effect model with moderator effect on relation between CRD and FV</i>		
Moderator DP	6.041653**	1.938291
corporate risk disclosure	12.885686*	4.443304
Firm Value	-0.500048	0.5426019
ROE	-0.039180	0.0295513
Current ratio	0.456547*	0.2067698
Financial leverage	-0.085858	0.1499128
_cons	6.289788*	5.963906
Adjusted R2	0.7545	

Sig values: *** < 0.01, ** < 0.05, * < 0.1, "" > 0.1

Source: Calculations based on data collected from 45 firms for years 2016–2022

Table 7 Summary of results and correlation with literature

Hypothesis	Expected outcome based on literature	Empirical finding	Support from literature
H1: CRD and DP positively affect FV	CRD and DP should positively influence FV, indicating transparency and perceived stability	CRD and DP coefficients positive and significant, suggesting transparency and dividends increase FV	Strong support from studies like Ismail and ElDeeb [46], Megeid and Sobhy [61]
H2: DP positively moderates CRD-FV link	DP should enhance the positive impact of CRD on FV, indicating a synergistic effect	Interaction term positive and significant. Indicating dividends complement CRD's impact on FV	Supported by Kanta et al. [51], Gharbi and Jarboui [36]

transparency can help reduce information inequality and the cost of capital. This result is telling, it underscores the notion that effective risk reporting can facilitate more informed assessments by investors, thereby reducing uncertainty and enhancing the perceived value of the firm. This aligns with Nel et al. [69] and Haj-Salem et al. [37], who highlighted the value-adding aspect of transparency in corporate governance.

Similarly, the study's findings on DP's positive influence on FV, significant at a 90% confidence level, lend credence to the dividend relevance theory. This theory, as espoused by Truong et al. [88] and Abdullah et al. [2], posits that dividends are seen as tangible, stable returns in contrast to uncertain future gains. The results suggest that in the Egyptian market, consistent and substantial dividend payouts may be interpreted as indicators of firm stability and managerial efficiency, a perspective in line with Rizk et al. [77] and Diab et al. [28].

The interaction model further enriches the discourse by revealing that DP significantly and positively moderates the relationship between CRD and FV, a finding consistent with 99% confidence. This insight notably expands upon the signaling theory, as discussed by Connelly et al. [26] and Koleosho et al. [53], by indicating that dividends can complement and amplify the positive signal emitted by transparent risk reporting. The model's enhanced fit, indicated by an increased F-statistic and R-squared, corroborates the notion of a synergistic signaling effect between CRD and DP, echoing the findings of Ismail and ElDeeb [46] and Rahim et al. [73].

In summary, the study provides compelling empirical evidence of the strategic value of CRD and DP for Egyptian firms, primarily in enhancing FV through the reduction of uncertainty. This insight contributes significantly to the existing body of knowledge, particularly in the context of emerging markets where such dynamics are less explored.

Conclusion

The objective of this study was to investigate the effects of CRD and DP on company value while also considering the moderating influence of dividends, specifically within the relatively unexplored domain of mid-sized firms. The

findings derived from conducting panel data analysis on a representative sample of 45 mid-sized enterprises in Egypt indicate that there is a positive relationship between CRD, dividends, and FV. These results align with the principles of signaling theory. The empirical findings suggest that there exists a notable interplay between risk disclosure and dividends, indicating a synergistic moderating effect characterized by strengthened signaling. The relationships exhibited strong resilience across several model configurations and demonstrated an enhancement in explanatory capability (Hendijani, 2021; [46]).

The results from this study provide robust support for the hypothesized relationships between (CRD), (DP), and (FV) in the Egyptian financial context. The positive and significant coefficients for both CRD and DP in Model 1, as indicated in Table 1, corroborate H1. This finding is in line with signaling theory, suggesting that both transparency in risk reporting and dividend payments serve as indicators of a firm's sound financial health, thereby reducing information asymmetry and investor uncertainty. This supports the findings of Ismail and ElDeeb [46] and Megeid and Sobhy [61], reinforcing the theory's relevance in an Egyptian setting.

In contrast to prior research in Egypt, which has shown mixed results, particularly concerning the impact of risk disclosure (as noted in the works of [40, 80], this study provides a more definitive link between CRD and FV. The clear evidence of a CRD-FV relationship not only fills a gap in the existing literature but also validates the applicability of signaling theory within the unique dynamics of the Egyptian market, as discussed in studies by Mouselli and Hussainey [65] and Gharbi and Jarboui [36]. Moreover, the significant positive interaction term in Model 2 upholds H2, offering an insightful addition to the existing body of knowledge. This result, highlighting that DP positively moderates the CRD-FV link, is a novel finding in the Egyptian context. It goes beyond the traditional view of these variables as either substitutive or independent, suggesting instead a complementary effect. Such a revelation aligns with supplemental signaling perspectives proposed by authors like Connelly et al. [26] and Kanta et al. [51], and further explored by Ismail and ElDeeb [46] and Rahim et al. [73].

This study's empirical contributions are particularly noteworthy. It not only confirms the hypothesized effects but also provides new insights into the signaling mechanisms among Egyptian firms, an area where previous evidence was limited, especially in the interconnected domains of CRD, DP, and FV. This unique contribution addresses a critical literature gap identified by Samaha and Dahawy [79] and Hendijani [41]. The implications of these findings are significant, both from practical and theoretical standpoints. For practitioners in the Egyptian financial market, this study offers concrete evidence on the strategic value of CRD and DP in enhancing FV. For scholars, it provides a foundation for further exploration of signaling theory in emerging markets, contributing to a more global understanding of these complex financial dynamics.

Limitation and future research directions

While providing meaningful insights, this study has certain limitations that point to avenues for future research. The sample is limited to non-financial Egyptian firms, so the findings may not generalize to other industries, countries, or institutional contexts. Additionally, the use of secondary data sources means insights into managerial motivations and perceptions are lacking. Finally, cross-sectional analysis provides limited ability to infer causal relationships between variables.

Future studies could examine larger, more diverse samples and incorporate primary survey or interview data to understand motivations while corroborating the relationships. Longitudinal and experimental approaches could more rigorously assess causality between CRD, dividends, and FV over time. Comparative studies across different industries and emerging economies could uncover how varying contextual factors, including political climates, influence these relationships. In regions where political factors play a significant role in economic and corporate dynamics, understanding their impact on corporate decisions could provide invaluable insights.

This study makes significant contributions, but the limitations highlight opportunities for deeper investigation into the tones of risk reporting, dividend policies, and value creation across different settings. Building on these findings through varied samples, data sources, and methods would further expand knowledge and practical insights. Overall, this research serves as a meaningful foundation for ongoing exploration of the multifaceted links between transparency, payouts, and performance. Future studies should aim to corroborate the findings by doing studies on larger and more diverse samples, as well as in various institutional contexts. This study aims to enhance comprehension of the dynamics of value generation in mid-sized firms on a worldwide scale. In general,

this work represents a significant initial advancement in understanding the connections among risk disclosures, dividends, and FV within the relatively unexplored domain.

Policy recommendations

The findings of this study lead to several policy recommendations for Egyptian regulators and corporate managers, focusing on enhancing FV through improved transparency and dividend strategies. Key among these is the need for expanded risk disclosure requirements, which would help mitigate information asymmetry and reduce uncertainty impacting FV. Regulators are encouraged to mandate more comprehensive risk reporting standards, thereby ensuring greater transparency in the financial market. Alongside, introducing incentives for reporting that align with DP could promote transparency while ensuring that dividend distributions reflect the firm's actual performance. This approach would help in balancing investor expectations with corporate realities.

Moreover, it would be beneficial for regulatory bodies to offer clear guidelines on optimizing risk disclosure and dividend policies. Such guidance would assist firms in leveraging the signaling benefits of transparent practices. Additionally, conducting investor awareness campaigns about the value implications of corporate transparency could foster a more informed investment community. For corporate governance, integrating signaling considerations into strategic decision-making is essential. Boards and executives should be advised on how their decisions regarding risk disclosure and dividend policies influence investor perceptions and, consequently, FV. Encouraging further research into emerging best practices for risk reporting and DP will not only aid individual companies but also enhance the overall health of Egypt's financial market.

Abbreviations

CRD	Corporate risk disclosure
DP	Dividend policy
FV	Firm value
OLS	Pooled ordinary least squares
EGX	Egyptian exchange
EGID	Egypt for information dissemination
ROE	Return on equity

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Author contributions

MA performed the theoretical framework and literature review of the research, and was a major contributor in writing the manuscript and data collection, MS analyzed and interpreted the statistical data regarding the two models and was a major contributor in writing the conclusion and discussion of the manuscript. All Authors contributed to the completion of this research from

conceptualization to the concluding remark. All authors read and approved the final manuscript.

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Declarations

Ethics approval and consent to participate

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Consent for publication

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Competing interests

The authors declare that they have no competing interests.

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