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The Role of Price Informational Efficiency in the Relationship between Financial Flexibility and Firms' Access to Financing

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ABSTRACT

The purpose of this study is to examine the role of financial flexibility in firms' financial development, with an emphasis on the moderating effect of the speed of information incorporation into stock prices in the Iranian capital market. The research data comprise 1,017 firm-year observations from 113 companies listed on the Tehran Stock Exchange over the period 2015 to 2023, selected using a systematic elimination sampling method. To test the research hypotheses, multivariate regression models and correlation analysis were employed, and financial flexibility and financial development were measured using accounting and financial indicators. The findings indicate that financial flexibility has a positive and statistically significant effect on financial development, and that this relationship is strengthened as the speed of information incorporation into stock prices increases. In other words, in firms where financial information is reflected more rapidly in stock prices, the impact of financial flexibility on financial development is more pronounced. These results highlight the importance of combining flexible financial management with an efficient information environment in promoting firms' financial growth and development, and they can serve as a guide for decision-making by financial managers, investors, and capital market analysts in Iran.

Keywords: Financial flexibility, financial development, speed of information incorporation, Iranian capital market

Introduction

In contemporary corporate finance and financial management literature, the concept of financial flexibility has emerged as a central mechanism through which firms adapt to uncertainty, volatility, and structural changes in capital markets. Financial flexibility generally refers to a firm's capacity to access, restructure, and reallocate financial resources at low cost in response to internal needs or external shocks. In an environment characterized by asymmetric information, agency conflicts, macroeconomic instability, and market inefficiencies, financial flexibility becomes a strategic asset that shapes firms' financing efficiency, investment behavior, and long-term development trajectories (1-3). As global financial systems become increasingly interconnected and exposed to systemic risk, understanding how financial flexibility contributes to corporate financial development has become a critical issue for scholars, practitioners, and policymakers alike.

Financial development at the firm level extends beyond short-term profitability and reflects a company's ability to sustain growth, efficiently allocate capital, manage financial constraints, and integrate into the broader financial

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system. Prior studies emphasize that firm-level financial development is closely linked to access to external financing, market liquidity, investment efficiency, and resilience to economic shocks (4, 5). In emerging markets in particular, financial development is often uneven and highly sensitive to institutional quality, market transparency, and informational efficiency. Firms operating in such markets face higher financing frictions, greater price volatility, and more pronounced agency problems, which can hinder their ability to translate operational performance into sustainable financial growth (6, 7).

A growing body of research suggests that financial flexibility plays a pivotal role in mitigating these frictions. Firms with higher financial flexibility are better positioned to smooth cash flows, avoid costly external financing, exploit investment opportunities during downturns, and maintain strategic discretion over capital structure decisions (8, 9). Empirical evidence shows that financially flexible firms exhibit superior financing efficiency, lower vulnerability to liquidity shocks, and stronger recovery capacity during periods of revenue disruption (3, 10). These advantages are particularly salient in markets where access to capital is constrained and financial cycles are volatile.

Despite the recognized importance of financial flexibility, its effectiveness in fostering financial development is not uniform across firms or market environments. One critical factor influencing this relationship is the efficiency with which financial information is incorporated into stock prices. Stock price informational efficiency, often operationalized through the speed of price adjustment to new information, reflects the quality of a market's information environment and the degree to which prices accurately and promptly reflect firm-specific fundamentals (11, 12). In efficient markets, prices respond rapidly to new disclosures, reducing mispricing and enhancing capital allocation efficiency. In contrast, delayed price adjustment can amplify information asymmetry, distort investment signals, and weaken the link between firm fundamentals and market valuation (13, 14).

Theoretical and empirical studies indicate that stock price adjustment speed is shaped by multiple factors, including liquidity, ownership structure, corporate governance, managerial behavior, and information disclosure quality (15-17). In markets with slower information diffusion, stock prices may fail to fully reflect firms' financial conditions, thereby limiting the external benefits of internal financial strength. Under such conditions, even firms with substantial financial flexibility may struggle to translate that flexibility into enhanced financial development because capital markets do not accurately price their strategic capacity (18, 19).

This insight has motivated recent research to examine interaction and moderation effects in corporate finance relationships. Rather than treating financial flexibility as a universally effective determinant, scholars increasingly argue that its impact depends on contextual variables that shape how financial information is processed and valued by the market (20). From this perspective, stock price adjustment speed functions as a moderating mechanism that conditions the extent to which financial flexibility contributes to firm-level financial development. When prices incorporate information rapidly, financially flexible firms can signal their strength more effectively, reduce financing costs, and attract investment. Conversely, when price adjustment is sluggish, the strategic advantages of flexibility may remain underrecognized or underutilized (21, 22).

Empirical evidence supporting this moderating role has begun to emerge, particularly in studies focusing on Asian and emerging markets. Research on Chinese stock markets shows that firms operating under higher informational efficiency experience stronger links between internal financial characteristics and market-based outcomes (12, 23). Similarly, studies document that delayed price reactions exacerbate equity mispricing and weaken the disciplining role of capital markets, thereby reducing the effectiveness of corporate financial strategies

(24, 25). These findings suggest that financial flexibility and price efficiency should not be examined in isolation but rather as interdependent elements of a broader financial ecosystem.

In the context of Iran's capital market, this issue is particularly salient. The Iranian stock market is characterized by periods of high volatility, regulatory shifts, and heterogeneous information quality across firms. While some companies benefit from relatively transparent reporting and active trading, others suffer from limited disclosure, thin liquidity, and delayed price discovery (13, 26). These structural features create a natural setting to investigate how stock price adjustment speed interacts with financial flexibility in shaping corporate financial development. Moreover, recent crises and macroeconomic shocks have heightened the importance of firms' ability to respond swiftly and strategically to changing financial conditions (7, 27).

Another dimension reinforcing the relevance of this inquiry is the growing integration of advanced analytics and forecasting tools into financial decision-making. Developments in machine learning, price prediction, and risk-adjusted portfolio optimization have increased the speed and volume of information available to market participants, potentially altering the dynamics of price adjustment and market efficiency (28, 29). As markets evolve technologically, understanding how traditional corporate attributes such as financial flexibility interact with informational mechanisms becomes increasingly important for both theory and practice.

Despite the expanding literature, several gaps remain. First, many studies examine financial flexibility and stock price efficiency separately, without explicitly modeling their interaction effects on firm-level financial development. Second, existing evidence is heavily concentrated in developed markets, with relatively fewer studies focusing on emerging and frontier markets where institutional constraints are more pronounced. Third, there is limited empirical work that integrates accounting-based, market-based, and informational variables into a unified analytical framework. Addressing these gaps can provide more nuanced insights into how firms navigate financial constraints and how markets reward or penalize strategic financial capacity (1, 2).

By adopting an interaction-based perspective, this study contributes to the literature in several ways. It extends financial flexibility research by positioning stock price adjustment speed as a moderating variable that shapes the flexibility–development nexus. It enriches the financial development literature by highlighting the role of informational efficiency at the firm level rather than relying solely on macro-level indicators. Finally, it offers context-specific evidence from an emerging market, thereby enhancing the external validity and comparative relevance of prior findings (3, 4).

From a practical standpoint, understanding this interaction has important implications for managers, investors, and regulators. For corporate managers, it underscores the importance of not only maintaining financial flexibility but also improving transparency and information dissemination to ensure that markets properly value that flexibility. For investors, it highlights the need to consider informational efficiency when assessing firms' financial resilience and growth potential. For policymakers and regulators, it suggests that improving market transparency and price efficiency can amplify the real economic benefits of corporate financial strength (30, 31).

Against this theoretical and empirical background, the present study investigates the role of stock price adjustment speed in moderating the relationship between financial flexibility and financial development in listed firms, drawing on a comprehensive set of accounting, market, and informational indicators. Accordingly, the aim of this study is to examine whether and how stock price adjustment speed moderates the impact of financial flexibility on firms' financial development.

Methods and Materials

This study is applied in terms of purpose and correlational in nature and method. To collect the research data, accounting and financial information of listed firms was obtained from the official database of the Tehran Stock Exchange, other relevant official online databases, the Rahavard Novin software, and additional information sources. The data are of a mixed type, and the statistical population includes all companies listed on the Tehran Stock Exchange during the period 2015 to 2023. To test the research hypotheses, data from 113 firms (1,017 firm-year observations) were selected by applying the following restrictions: firms must have been listed on the Tehran Stock Exchange at least since the beginning of fiscal year 2015; the sample firms must not be investment or financial institutions (banks); the sample firms must not have experienced trading halts during the period 2015–2023 so that their stock prices can be considered normal; firms must have a fiscal year ending on March 20; the fiscal year of sample firms must not have changed during the period 2015–2023; and the required research data must have been disclosed to the Tehran Stock Exchange and available up to the end of fiscal year 2023.

The mixed data structure and the selected time span are justified by the fact that, since 2015, new information disclosure requirements and revised accounting standards have been fully implemented, which improved data quality and homogeneity. In addition, this period encompasses major transformations and severe fluctuations in the capital market, allowing an examination of the effects of financial flexibility on financial development under varying market conditions, with the moderating role of stock price informational efficiency. Finally, data prior to this period were excluded because structural changes and lack of homogeneity rendered them incompatible with the statistical methods used in this study.

Given that the objective of the study is to examine the role of stock price adjustment speed in the relationship between financial flexibility and financial development at the firm level over time, it was necessary to control for unobservable heterogeneity across firms and time variations. Accordingly, firm and year fixed effects were incorporated into the regression models. This approach controls for time-invariant firm-specific differences as well as annual macroeconomic and regulatory shocks. Therefore, since fixed effects are included in the model, conducting the F-Limer, LM, and Hausman tests to choose between fixed and random effects is not required. Consequently, the models were estimated using a fixed-effects panel OLS estimator, which provides unbiased and consistent estimates.

Following the studies of Marchica and Mura (2010), Pantzalis and Park (2013), Chen et al. (2018), Zhang et al. (2023), and Lai et al. (2021), Equation (1) is employed.

Equation (1):

$$Financial\ Development_{it} = \beta_0 + \beta_1 VFF_{it} + \beta_2 Speerd\ Adj + \beta_3 VFF_{it} * Speerd\ Adj + \beta_4 Turn_{it} + \beta_5 Size_{it} + \beta_6 MBV_{it} + \beta_7 los_{it} + \beta_8 Liq_{it} + \beta_9 Lev_{it} + \beta_{10} Ato_{it} + +\beta_{11} MV_{it} + IndustryFixedEffect_i + YearFixedEffect_t + \varepsilon_{it}$$

Based on Model (1), the dependent variable of this study is the corporate financial development index for firms operating in the national capital market. Consistent with Castro et al. (2015), financial development is measured using a capital market financial development model through the following variables:

(a) **Stock market activity volume:** measured as the ratio of the value of traded shares in the stock market to gross domestic product (Masoud, 2014).

(b) **Stock market size:** measured as the ratio of the value of issued shares to gross domestic product.

(c) **Financial constraints:** According to Modigliani and Miller (1958), under perfect capital market conditions, internal and external financing sources are perfect substitutes, and corporate investment decisions are independent of financing decisions, meaning that access to funds does not affect investment choices. In reality, however, information asymmetries between lenders and borrowers or between managers and shareholders, agency problems, transaction costs, and other frictions lead to capital market imperfections. In such circumstances, financing corporate investment through capital markets becomes less desirable or even infeasible, resulting in financial constraints that limit investment expenditures, cause profitable investment opportunities to be missed, and ultimately weaken corporate financial development. Thus, financial constraint refers to a condition in which a firm cannot obtain all the funds required for optimal investment. In essence, a constrained firm is one for which high costs or lack of access to external financing prevent optimal investment decisions (Bai et al., 2010). The WW index proposed by Whited and Wu (2006) to measure financial constraints was localized by Badavarnehendi et al. (2016) using the following model. In this study, in addition to the Kaplan–Zingales index, the Whited–Wu index is used as an inverse measure of financial development, as shown below.

Equation (2): Financial Development Index (Inverse Measure of Financial Constraints):

$$WW_{IR} = 80.04 - 5.182CFO - 0.106Div + 5.112Lev - 0.662LogTA$$

Where WW represents financial constraints; Div is dividends scaled by total assets; Lev is the debt-to-assets ratio; CFO is cash flow from operations divided by total assets at the end of the period; and Lorgat is the natural logarithm of total assets.

The procedure for using this index is as follows: actual values are first substituted into the WW index equation to calculate WW. The values are then ordered from smallest to largest using empirical quartiles and divided into five groups. Firms in the first, second, and third quintiles are classified as financially developed.

(d) **Cash flow growth rate:** the difference between current-year cash flows and prior-year cash flows divided by prior-year cash flows (Quinn et al., 2018).

(e) **Production growth rate:** the difference between current-year production or service volume and prior-year production or service volume divided by prior-year production or service volume.

(f) **Operating revenue growth rate:** the difference between current-year sales and prior-year sales divided by prior-year sales.

(g) **Stock price volatility:** the difference between the stock price at the end of the current year and the stock price at the beginning of the year divided by the stock price at the beginning of the year.

(h) **Financial leverage growth rate:** the difference between leverage at the end of the current year and leverage at the beginning of the year divided by leverage at the beginning of the year.

(i) **Dividends:** the amount of dividends paid by the firm each year.

(j) **Free cash flows:** measured as the absolute value of the difference between operating profit of firm *i* in year *t* and income taxes paid, interest expenses, and dividends paid to common shareholders in year *t*, divided by total assets in year *t − 1* (Aflatooni et al., 2016).

Finally, the following model is used to construct the financial development index. The financial development index is calculated according to Equation (3).

Equation (3):

$$\text{Financial Development} = \sum_{k=1} \text{Rank}_k(\text{Financial Development}_{i,k})$$

To operationalize the above model at the firm level, the values of each variable used to measure financial development are first calculated for each firm-year. Then, firm-years are classified into four groups based on each of the variables using statistical quartiles, and a score ranging from 1 to 4 is assigned according to the quartile in which the firm-year falls. The details are presented in Table 1. Ultimately, the sum of the scores for all financial development variables is considered as the financial development index.

Table 1. Method for Calculating the Financial Development Index

Variables	Ranking Type	First Quartile	Second Quartile	Third Quartile	Fourth Quartile
Stock market activity volume	Direct	1	2	3	4
Stock market size	Direct	1	2	3	4
Cash flow growth rate	Direct	1	2	3	4
Production growth rate	Direct	1	2	3	4
Operating revenue growth rate	Direct	1	2	3	4
Stock price volatility	Direct	1	2	3	4
Financial constraints	Inverse	4	3	2	1
Financial leverage growth rate	Inverse	4	3	2	1
Dividends	Inverse	4	3	2	1
Free cash flows	Inverse	4	3	2	1

According to the calculations in Table 1, the financial development index ranges from 1 to 40.

Based on Model (1), the independent variable of this study is the financial flexibility index. To measure this variable, three indicators are used:

(a) **Leverage ratio:** Firms that exhibit a leverage ratio below the median of the sample for three consecutive years are classified as financially flexible firms (DeVos et al., 2015). Thus, the leverage ratio constitutes the first measure of financial flexibility.

(b) **Liquidity ratio:** This ratio is obtained by comparing current assets or their components with current liabilities. The most important liquidity ratio is the current ratio (Depoers, 2000).

(c) **Free cash flow yield:** Consistent with Izadinia et al. (2020), financial flexibility is measured using free cash flow yield, defined as the ratio of free cash flow (equal to the sum of depreciation expenses and net income after deducting taxes, interest expenses, and dividends) to the market value of the firm's equity.

Finally, the following model is used to construct the financial flexibility index. The financial flexibility index is calculated according to Equation (4).

Equation (4):

$$\text{Financial Flexibility} = \sum_{k=1} \text{Rank}_k(\text{Financial Flexibility}_{i,k})$$

To operationalize the above model at the firm level, the values of each variable used to measure financial flexibility are first calculated for each firm-year. Firm-years are then classified into four groups based on each of the three variables using statistical quartiles, and a score ranging from 1 to 4 is assigned according to the quartile. The details are presented in Table 2. Ultimately, the sum of the scores for all financial flexibility variables is considered as the financial flexibility index.

Table 2. Method for Calculating the Financial Flexibility Index

Variables	Ranking Type	First Quartile	Second Quartile	Third Quartile	Fourth Quartile
Leverage ratio	Inverse	4	3	2	1
Liquidity ratio	Direct	1	2	3	4
Free cash flow yield	Direct	1	2	3	4

According to the calculations in Table 2, the financial flexibility index ranges from 1 to 12.

Based on Model (1), the moderating variable in this study is the stock price information incorporation speed index. Following Bai et al. (2023) and Pantzalis and Park (2013), this variable is measured using the stock price informational efficiency index (price adjustment speed). To measure stock price informational efficiency, the method proposed by Hou and Moskowitz (2005) is employed. According to this approach, the following model is first estimated for each firm using monthly data, and the coefficient of determination is obtained.

Equation (5): Unrestricted Regression

$$R_{it} = a_1 + B_i R_{mt} + \sum_{n=1}^{4} \delta_{in} R_{Mt-n} + \varepsilon_{it}$$

In this model, $R_{i,t}$denotes the monthly return of firm *i* in month *t*, and $R_{m,t}$represents the monthly market return (percentage change in the price and cash index), which enters the model with lags of one to four periods. The coefficients of determination obtained from estimating Model (5) for each firm are referred to as unrestricted R^2.

Next, the following model, in which all coefficients on lagged market returns are restricted to zero, is estimated for each firm.

Equation (6): Restricted Regression

$$R_{it} = a_1 + B_i R_{mt} + \varepsilon_{it}$$

The coefficients of determination obtained from estimating Model (6) for each firm are referred to as restricted R^2. Finally, the following measure, which represents the speed of information incorporation into stock prices, is calculated for each firm by taking the inverse of the delayed price response measure introduced by Hou and Moskowitz (2005).

Equation (7): Inverse Measure of Delayed Stock Price Response Based on the Coefficient of Determination

$$Rspeed = \frac{1}{Delay} = \frac{R^2{}_{Unrestricted}}{R^2{}_{Unrestricted} - R^2{}_{Restricted}}$$

In Equation (7), a larger ratio indicates a higher speed of information incorporation into stock prices.

Based on prior studies confirming the effects of control variables on financial development, the following variables are defined as control variables and included in the analysis: **Trading turnover:** Callen et al. (2013) confirmed the positive effect of trading turnover on stock price informational efficiency. Trading turnover is calculated as the average number of shares traded during the year divided by the total number of shares outstanding in that year (Hashemi et al., 2016). **Firm size:** Aflatooni (2016) confirmed the effect of firm size on corporate financial development. Firm size is measured as the natural logarithm of total assets at the end of each fiscal year. **Return on assets:** Callen et al. (2013) confirmed the positive effect of return on assets on stock price informational efficiency and corporate financial development. This variable is calculated as net income divided by total assets (Aflatooni, 2016). **Growth opportunities:** measured as the ratio of the market value of equity to the book value of equity at the end of the fiscal year (Hou et al., 2005). **Loss-making firms:** Liu et al. (2016) confirmed the negative effect of loss-making status on corporate financial development. A value of 1 is assigned if the firm reports a loss and 0 otherwise (Aflatooni, 2016). **Liquidity:** Aflatooni (2016) confirmed the effect of stock liquidity on corporate financial development. Liquidity is measured as the natural logarithm of the average monthly trading volume. Finally, **asset turnover** is calculated as operating revenue divided by total assets.

Findings and Results

The results of the descriptive statistics for the full sample of firms are reported in Tables 3 to 5.

Table 3. Descriptive Statistics for the Independent, Dependent, and Moderating Variables

Variable Group	Indicator	Symbol	N	Mean	Median	Max	Min	Std. Dev.
Dependent Variable Indicators (Financial Development)	Stock market activity volume	Volume	1,017	593,371	327,001	17,161,594	0.117	9,342
	Stock market size	MV	1,017	77,898,447	1,049,567	49,600,000	85,884	3.616
	Financial constraints	WW	1,017	-82.58	72.21	76.98	-1,571	493
	Cash flow growth rate	Growcash	1,017	1.361	0.000	12,339	-988	4,115
	Production growth rate	Growman	1,017	0.511	0.351	56.06	-0.909	2.20
	Operating revenue growth rate	Growprof	1,017	0.585	0.288	123.76	-72.18	6.16
	Stock price volatility	Pricefluc	1,017	0.950	0.362	15.43	-0.819	1.84
	Financial leverage growth rate	Growlev	1,017	0.043	0.017	5.81	-0.931	0.417
	Dividends per share	DPS	1,017	1,069	300	64,000	0.000	3,636
	Free cash flows	Freecash	1,017	0.072	0.071	0.869	8.530	0.084
Independent Variable Indicators (Financial Flexibility)	Leverage ratio	LEV	1,017	0.535	0.533	0.905	0.012	0.229
	Liquidity ratio	LIQ	1,017	20.26	1.443	47.068	0.214	2.794
	Free cash flow yield	CashRet	1,017	0.055	0.025	2.557	5.680	0.134
Moderating Variable	Stock price adjustment speed	Respeed	1,017	0.354	0.308	0.997	0.005	0.282

To provide a clearer understanding of the statistical and descriptive features of the study variables, this section presents descriptive statistics for the dependent variable (financial development), the independent variable (financial flexibility), and the moderating variable (stock price adjustment speed) for firms listed on the Iranian stock exchange over the period 2015 to 2023. The dataset includes 1,017 observations, reflecting a broad set of financial and performance-related information across nine fiscal years. Examining these descriptive measures helps identify the range of variation, dispersion, and mean behavior of the variables, thereby setting the foundation for subsequent inferential analyses.

On the one hand, the financial development indicators show that the mean trading volume is approximately 593 thousand units, while the maximum exceeds 17 million units and the minimum is close to zero. This implies substantial disparities between highly traded and thinly traded firms, suggesting that the Iranian stock market exhibits an uneven distribution of liquidity. The mean stock market size is 77.8 million units, with a wide range (from 85 thousand to 49.6 million), indicating the coexistence of both small and large firms in the market. This dispersion reflects heterogeneity in capital structure and market valuation among Iranian firms. The negative mean value for financial constraints (-82.58) suggests that many firms experience financial tightness and face difficulties in accessing external financing. The positive mean cash flow growth rate (1.36), combined with an extremely large maximum (12,339), indicates that while some firms experience sharp surges in cash flows, the majority exhibit

limited or even negative growth—reflecting considerable cash-flow volatility risk. The mean production growth rate (0.51) suggests positive but relatively modest growth in firms' production, while the negative minimum (-0.90) points to production contractions in some firms. The mean operating revenue growth rate (0.58) implies that many firms experience mild increases in operating performance; however, the wide spread between the maximum (123.76) and minimum (-72.18) indicates highly divergent performance across firms. The mean stock price volatility (0.95) signals substantial price fluctuations in the market, which elevates equity investment risk. The financial leverage growth rate has a mean of 0.043, implying limited average changes in firms' debt structures, though extreme values indicate pronounced shifts for certain firms.

The mean dividends per share is 1,069 rials, but the maximum of 64,000 suggests considerable heterogeneity in dividend policies: some firms distribute substantial dividends, while others pay none. The low mean level of free cash flows (0.072) indicates constrained discretionary cash resources for most firms, implying that a large share of liquidity is absorbed by investment and operating needs.

On the other hand, financial flexibility indicators show that the leverage ratio has a mean of 0.535, suggesting that roughly half of firms' financing is debt-based, reflecting substantial reliance on external financing. The liquidity ratio exhibits a very high mean (20.26) relative to its median (1.44), indicating that a subset of firms holds exceptionally high liquidity, while most maintain moderate liquidity levels; the distribution is therefore highly skewed. Finally, the free cash flow yield has a mean of 0.055, and the extreme values suggest that some firms experience negative yields while others achieve comparatively high returns.

In addition, the mean stock price adjustment speed is 0.35, indicating a moderate level of price adjustment speed in the Iranian capital market. The wide range (0.005 to 0.997) implies that some stocks react very rapidly to information and exhibit high pricing efficiency, whereas others incorporate information with substantial delays. This pattern indicates informational efficiency heterogeneity across the Iranian stock market.

Table 4. Descriptive Statistics for Quartile-Based Measures Related to the Composite Financial Development Index and Financial Flexibility

Variable Group	Indicator	Symbol	N	Mean	Median	Max	Min	Std. Dev.
Quartile-Based Indicators of the Dependent Variable (Financial Development)	Financial development index	FD	1,017	28.44	29	39	17	4.31
	Stock market activity volume	Volume	1,017	2.49	2	4	1	1.11
	Stock market size	MV	1,017	2.50	2	4	1	1.12
	Financial constraints	WW	1,017	3.24	3	4	1	0.83
	Cash flow growth rate	Growcash	1,017	2.51	3	4	1	1.11
	Production growth rate	Growman	1,017	2.49	2	4	1	1.11
	Operating revenue growth rate	Growprof	1,017	2.48	2	4	1	1.13
	Stock price volatility	Pricefluc	1,017	2.51	2	4	1	1.13
	Financial leverage growth rate	Growlev	1,017	3.24	3	4	1	0.83
	Dividends per share	DPS	1,017	3.22	3	4	1	0.43
	Free cash flows	Freecash	1,017	3.75	4	4	1	0.42
	Financial flexibility index	FF	1,017	5.508	5	9	1	1.917
Quartile-Based Indicators of the Independent Variable (Financial Flexibility)	Leverage ratio	LEV	1,017	0.502	1	4	1	0.500
	Liquidity ratio	LIQ	1,017	2.483	2	4	1	1.125
	Free cash flow yield	CashRet	1,017	2.522	3	4	1	1.114

Table 4 reports descriptive statistics for the quartile-based measures of the composite financial development index and financial flexibility. It presents the study's core indices using statistical quartiles (1 to 4 for financial development components and 1 to 9 for the financial flexibility index), enabling classification of firms based on their relative positions within the distributions and facilitating clearer comparisons between low- and high-performing firms. The statistics are computed for firms listed on the Iranian stock exchange over the period 2015 to 2023, based on 1,017 observations.

The composite financial development index has a mean of 28.44 and a median of 29, indicating a relatively moderate level of financial development among listed firms. The observed range (17 to 39) suggests that some firms fall into the lowest levels of financial development, while others occupy higher positions. The financial flexibility index has a mean of 5.50 on a 1–9 scale, indicating that most firms exhibit a moderate degree of financial flexibility. In other words, firms are neither in severe financial distress nor characterized by exceptionally high flexibility.

The quartile-based statistics indicate that Iranian listed companies are heterogeneous and diverse in terms of financial development and financial flexibility. Most firms are positioned at a moderate level of financial development; however, dispersion is substantial in indicators such as free cash flows, financial constraints, and stock price volatility. Likewise, firms' financial flexibility is concentrated around the middle range, and only a small number of firms fall into very high or very low categories. This pattern suggests that, within the Iranian capital market, there are meaningful inter-firm differences in the capacity to utilize financial resources and to respond to environmental conditions.

Table 5. Descriptive Statistics of Control Variables

Variables	Symbol	N	Mean	Median	Max	Min	Std. Dev.
Trading turnover	Turn	1,017	0.564	0.344	5.291	0.004	0.645
Return on assets	Roa	1,017	0.159	0.131	0.830	-0.403	0.157
Firm size	Size	1,017	6.593	6.369	9.368	4.574	0.725
Growth opportunities	MBV	1,017	4.848	3.365	277.6	-862.9	24.752
Loss-making	Lose	1,017	0.079	0.000	1.000	0.000	0.271
Liquidity	Liquidity	1,017	16.519	16.715	23.475	7.318	2.092
Asset turnover	ATO	1,017	0.984	0.804	7.779	0.006	0.748

To improve control of the regression specification and to prevent bias in the estimated results, multiple control variables were included in this study. These controls consist of trading turnover, return on assets, firm size, growth opportunities, loss-making status, liquidity, and asset turnover. Table 5 reports descriptive statistics for these variables for firms listed on the Iranian stock exchange over the period 2015 to 2023, based on 1,017 observations. Examining these controls helps identify ancillary and structural effects in the research model more accurately.

The descriptive statistics of the control variables show that Iranian listed firms are highly diverse in terms of size, profitability, growth opportunities, and liquidity. This heterogeneity can influence firms' levels of financial development and financial flexibility. Specifically, larger, more profitable, and more liquid firms are likely to exhibit greater financial development, whereas loss-making, thinly traded, and low-return firms are more likely to face constraints that limit financial development.

In this study, the Jarque–Bera statistic was used to assess the normality of the dependent variable. The test results indicate that the p-value for the dependent variable exceeds 0.05, suggesting that it follows a normal distribution.

Table 6. Jarque–Bera Test Results

Study Variable	Symbol	Test Statistic	p-value
Financial development	MisVIndex	212.57	0.058

In addition, before estimating the models, conventional diagnostic tests for panel data were conducted. To examine stationarity, the augmented Dickey–Fuller (ADF) unit root test was applied. The results showed that all main study variables are stationary after first differencing (for those variables that were non-stationary), and therefore suitable for panel estimation. The diagnostic tests further indicated the presence of heteroskedasticity and cross-sectional dependence in the data. Moreover, the Wooldridge test (1995) confirmed the existence of serial autocorrelation. In light of these findings, the models were estimated using fixed-effects panel regression with firm and year–industry fixed effects.

To ensure that the model is not spurious and that the results are reliable, the stationarity of the dependent variable was first examined using the augmented Dickey–Fuller unit root test on level data.

Table 7. Augmented Dickey–Fuller Unit Root Test Results

Dependent Variable	Test Statistic	p-value
Financial development	-17.174	0.000

As shown in Table 7, the null hypothesis of a unit root is rejected at the 1% significance level. Accordingly, the results at the 99% confidence level indicate that the dependent variable is stationary in levels and does not contain a unit root.

To assess the robustness and reliability of the study findings, the relationship between the explanatory variables and the dependent variable was re-examined using a robustness test as an alternative criterion for evaluating the stability of results. The robustness test results indicate that the independent variable, financial flexibility, has a statistically significant relationship with financial development, consistent with the main findings; therefore, the results can be considered robust. In addition, to ensure the absence of multicollinearity among explanatory variables, variance inflation factors (VIFs) were computed. As reported in Table 8, the results indicate no multicollinearity problem.

Table 8. Summary of Sensitivity Test Results

VIF	Model Coef (Prob)	Symbol	Variables
—	0.202 (0.000)	—	Constant
1.05	0.832*** (0.000)	FD	Financial flexibility
1.95	0.042 (0.729)	Respeed	Stock price adjustment speed
1.22	0.510** (0.001)	Turn	Trading turnover
1.05	0.119 (0.457)	Roa	Return on assets
1.20	0.560* (0.062)	Size	Firm size
1.30	0.021 (0.925)	MBV	Growth opportunities
1.32	0.810** (0.003)	Lose	Loss-making
1.70	0.070 (0.128)	Liquidity	Liquidity
1.60	0.410*** (0.000)	ATO	Asset turnover
—	Yes	—	Year dummy
—	Yes	—	Industry dummy
—	232.39	—	F-statistic
—	0.000	—	p-value (F)
—	0.126	—	R^2
—	0.118	—	Adjusted R^2
—	1,490	—	N

It is worth noting that, given the potential presence of heteroskedasticity, serial correlation, and cross-sectional dependence in the panel data, coefficient estimation was performed using robust standard errors. Specifically, standard errors were clustered at the firm level following the approach of Hoechle (2007) to control for within-firm correlation over time. This procedure yields consistent t and F statistics and supports more valid statistical inference. In addition to reporting coefficients, the F-statistic, R^2, and adjusted R^2 are presented to demonstrate model adequacy in terms of goodness-of-fit and explanatory power.

Table 9. Results of Hypothesis Testing

Study Variables	Coefficient	t-statistic	p-value
Constant	5.930	1.653	0.000
Financial flexibility	0.466	0.123	*** 0.000
Stock price adjustment speed	1.785	1.341	0.190
Financial flexibility × Stock price adjustment speed	0.372	0.213	* 0.081
Trading turnover	0.006	0.005	0.253
Return on assets	11.358	1.585	*** 0.000
Firm size	1.078	0.078	*** 0.000
Growth opportunities	0.037	0.015	* 0.014
Loss-making	-0.330	0.440	0.453
Liquidity	0.084	0.049	* 0.087
Asset turnover ratio	1.059	0.205	*** 0.000
Year dummy	Yes		
Industry dummy	Yes		
D–W statistic	1.973		
R^2	0.464		
Adjusted R^2	0.375		
F-statistic	5.229		
Model significance	0.000		

*** Significance at the 99% confidence level; ** significance at the 95% confidence level; * significance at the 90% confidence level.

To control for unobservable time-invariant heterogeneity at the firm and year levels, a panel data model with firm and year fixed effects was employed. This specification controls for year-specific temporal differences and firm-specific characteristics that may affect the dependent variable. Accordingly, to obtain accurate coefficient standard errors, two-way clustered standard errors were applied at the firm and year levels. This approach simultaneously controls for heteroskedasticity and within-group error correlation across both dimensions. To examine potential endogeneity between the explanatory variables and the dependent variable, endogeneity diagnostic tests (such as examining correlations between instruments and explanatory variables) were conducted. The results indicated no evidence of endogeneity; therefore, the use of GMM estimation methods was not required.

The regression estimation results indicate that the overall model is statistically significant. Specifically, the F-statistic is significant at the 99% confidence level, confirming model adequacy. Moreover, the coefficient of determination ($R^2 = 0.464$) and the adjusted coefficient of determination (Adjusted $R^2 = 0.375$) indicate that approximately 46% of the variation in the dependent variable (financial development) is explained by the independent, moderating, and control variables included in the model. This level of fit suggests that the model has satisfactory explanatory power.

Among the main variables, financial flexibility exhibits a positive coefficient (0.466) with a very high level of statistical significance ($p = 0.000$), indicating a strong positive effect on financial development. This finding implies that firms with higher levels of financial flexibility are better able to manage their capital structures and exploit financial opportunities, thereby experiencing higher levels of financial development. This result is significant at the 1% level and is therefore highly reliable.

By contrast, the direct effect of the moderating variable—stock price adjustment speed—on financial development is not statistically significant. However, its interaction effect with financial flexibility is positive and statistically significant ($p = 0.081$). This finding indicates that a higher speed of price adjustment in the capital market strengthens the positive effect of financial flexibility on financial development. In other words, when stock prices incorporate new information more rapidly (i.e., higher informational efficiency), firms can more effectively leverage the benefits of financial flexibility. This result is accepted at the 10% significance level and supports the main research hypothesis.

Finally, an examination of the control variables shows that return on assets, firm size, growth opportunities, liquidity, and asset turnover have positive and statistically significant effects on financial development, indicating their important roles in explaining the model. In contrast, the loss-making variable has a negative but statistically insignificant effect.

In summary, the findings indicate that financial flexibility is the primary determinant of firms' financial development, while stock price adjustment speed, as a moderating variable, strengthens this relationship at the 10% significance level. In addition, the control variables substantially explain variations in firms' financial development and enhance the overall model fit.

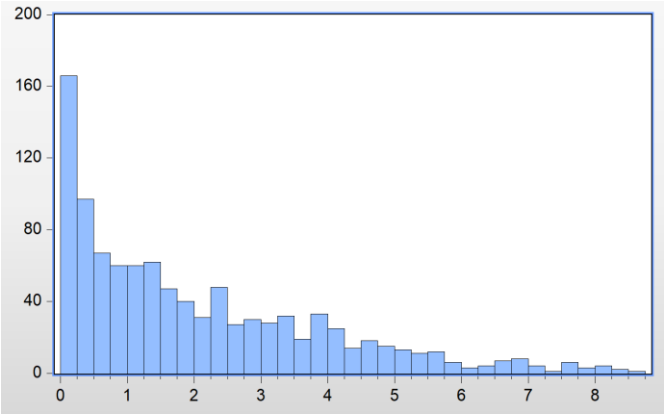

Figure 1. Marginal Effects and Slopes of Statistical Quartiles of the Interaction Variable: Financial Flexibility and Stock Price Adjustment Speed

Figure 1, which depicts the distribution of the product of the moderating variable (the interaction between financial flexibility and stock price adjustment speed), shows that the data are distributed over a range from 0 to approximately 8.5. Most observations are concentrated at values below 2, and frequency declines exponentially as the interaction value increases. The results indicate that the interaction between financial flexibility and stock price adjustment speed is low for most firms, while a limited number of firms exhibit substantially higher interaction values. This pattern is typically observed in firms with strong financial capacity to respond to market changes and whose stock prices react more rapidly to new information.

In essence, the positive interaction effect at higher values suggests that in firms with faster information incorporation, financial flexibility plays a reinforcing role in enhancing the quality of market reactions. Conversely, in firms with slower adjustment speeds, the effect of financial flexibility on market response is weaker or even neutral. Accordingly, based on the interaction plot between financial flexibility and stock price adjustment speed, the distribution of the interaction variable among the sample firms is positively skewed, with most observations clustered at lower interaction levels. This indicates that, for the majority of firms, the interactive effect between

financial flexibility and the market's information response speed is limited. In contrast, in firms with higher price adjustment speeds, financial flexibility strengthens information reflection in stock prices. Therefore, the positive and statistically significant interaction between these two variables underscores the complementary role of financial flexibility in enhancing market price efficiency.

Discussion and Conclusion

The findings of this study provide robust empirical evidence on the central role of financial flexibility in explaining firm-level financial development, while also highlighting the conditional importance of stock price adjustment speed as a moderating mechanism. Overall, the regression results indicate that the proposed model is statistically significant and explains a substantial proportion of the variation in financial development among firms. This confirms that financial development is a multidimensional phenomenon shaped not only by internal financial capacities but also by the informational environment in which firms operate. The results therefore contribute to the growing body of literature that views corporate finance outcomes as the product of both firm-specific resources and market-level informational processes (1, 2).

The most salient finding of the study is the strong, positive, and highly significant effect of financial flexibility on financial development. This result suggests that firms with greater flexibility in managing cash flows, leverage, and internal financing capacity are better able to support sustained financial growth, improve access to capital, and mitigate the adverse effects of financial constraints. This finding is consistent with theoretical arguments that conceptualize financial flexibility as a strategic buffer against uncertainty and financing frictions. Prior studies emphasize that financially flexible firms can postpone or avoid costly external financing, optimize investment timing, and maintain operational continuity during adverse economic conditions (3, 8, 9). The present results extend this line of reasoning by showing that these advantages translate into higher levels of firm-level financial development, particularly in an emerging market context.

This finding is also in line with empirical evidence documenting that financial flexibility enhances financing efficiency, dividend policy stability, and investment capacity. For instance, earlier research demonstrates that flexible firms exhibit superior financing outcomes and are more resilient to revenue shocks and liquidity constraints (31, 32). Moreover, studies focusing on firm development trajectories argue that flexibility allows companies to reconfigure capital structures dynamically in response to market signals, thereby supporting long-term financial sustainability (5, 10). The strong coefficient observed in this study reinforces the view that financial flexibility is not merely a passive financial characteristic but a core driver of corporate financial development.

In contrast, the direct effect of stock price adjustment speed on financial development was found to be statistically insignificant. This result suggests that informational efficiency, when considered in isolation, may not be sufficient to enhance firm-level financial development. This finding aligns with studies indicating that price efficiency does not automatically translate into improved corporate outcomes unless firms possess the internal capacity to exploit market signals (11, 19). In markets characterized by volatility and structural frictions, faster price adjustment may reduce mispricing but may not independently improve firms' access to finance or development prospects.

However, the key contribution of this study lies in identifying a significant and positive interaction effect between financial flexibility and stock price adjustment speed. The results show that the impact of financial flexibility on financial development is amplified when stock prices incorporate information more rapidly. This finding provides strong support for the moderating hypothesis and underscores the importance of considering informational context

in evaluating the effectiveness of corporate financial strategies. In informationally efficient markets, financial flexibility becomes more visible and credible to external investors, thereby enhancing its contribution to financial development (21, 22).

This interaction effect is consistent with prior research emphasizing that price delay and informational inefficiency weaken the link between firm fundamentals and market valuation. Studies on delayed price reactions show that when information diffusion is slow, firms' true financial conditions are not fully reflected in stock prices, leading to mispricing and suboptimal capital allocation (13, 14). Under such conditions, even firms with strong financial flexibility may fail to attract capital or realize the full benefits of their internal financial capacity. Conversely, when price adjustment is rapid, the market can more accurately assess firms' financial resilience, allowing flexible firms to secure financing at lower costs and pursue development-enhancing strategies (12, 23).

The findings are also consistent with agency-based and information asymmetry perspectives. Prior studies suggest that informational inefficiencies exacerbate agency problems and weaken market discipline, thereby reducing the effectiveness of internal financial policies (18, 25). Faster price adjustment mitigates these problems by improving transparency and aligning managerial actions with market expectations. As a result, financial flexibility operates more effectively as a value-enhancing mechanism in environments with higher informational efficiency. This reinforces the argument that financial flexibility and price efficiency are complementary rather than independent determinants of firm-level outcomes.

The significance of several control variables further supports the validity of the model. The positive effects of return on assets, firm size, growth opportunities, liquidity, and asset turnover on financial development are consistent with prior empirical evidence. Profitability enhances internal financing capacity and reduces reliance on costly external funds, thereby supporting financial development (4, 6). Larger firms typically benefit from economies of scale, better access to capital markets, and stronger bargaining power, which facilitate financial growth (13). Similarly, growth opportunities signal future cash flow potential and attract external financing, while higher liquidity and asset turnover reflect operational efficiency and effective resource utilization (16, 33).

The insignificance of the loss-making variable, despite its negative sign, suggests that short-term losses do not necessarily constrain financial development when firms possess sufficient flexibility and operate in markets where information is gradually incorporated. This result resonates with evidence indicating that investors may tolerate temporary losses if firms demonstrate strong fundamentals and strategic capacity (17, 34). Overall, the pattern of results highlights the multidimensional nature of financial development and the importance of integrating internal financial strength with external informational conditions.

From a broader perspective, these findings are particularly relevant for emerging markets such as Iran, where capital markets exhibit heterogeneity in disclosure quality, liquidity, and informational efficiency. Prior studies emphasize that in such environments, firm-level characteristics interact strongly with market structures to shape financial outcomes (7, 26). The present study extends this literature by empirically demonstrating that improving market-level informational efficiency can magnify the benefits of firm-level financial flexibility. This insight aligns with recent work highlighting the systemic importance of transparency and information flow in enhancing the real economic impact of financial markets (29, 30).

Taken together, the results suggest that financial flexibility is a necessary but not sufficient condition for financial development. Its effectiveness depends critically on the speed with which markets process and reflect information. By explicitly modeling this interaction, the study advances the understanding of how corporate financial strategies

and market efficiency jointly shape firm-level financial outcomes. This integrative perspective offers a more nuanced explanation of why some financially flexible firms achieve superior development outcomes while others do not, despite similar internal resources.

Despite its contributions, this study is subject to several limitations. First, the analysis relies on archival financial and market data, which may not fully capture qualitative dimensions such as managerial risk preferences, governance quality, or strategic decision-making processes that could influence financial development. Second, the study focuses on listed firms in a single emerging market, which may limit the generalizability of the findings to other institutional settings or developed markets. Third, although robust econometric techniques were employed, the possibility of omitted variables or unobserved dynamic effects cannot be entirely ruled out. Finally, the measurement of stock price adjustment speed, while well-established in the literature, may not capture all aspects of informational efficiency, particularly those related to private information or behavioral factors.

Future research could extend this study in several directions. Comparative analyses across multiple countries or regions would help assess whether the moderating role of stock price adjustment speed varies with institutional quality and market maturity. Longitudinal designs incorporating structural breaks or crisis periods could provide deeper insights into how the flexibility–development relationship evolves under extreme conditions. Future studies may also integrate behavioral finance variables, such as investor sentiment or herding behavior, to explore additional channels through which informational efficiency interacts with financial flexibility. Finally, employing alternative measures of informational efficiency or using firm-level survey data could enrich the understanding of how information environments shape corporate financial outcomes.

From a practical standpoint, the findings suggest that corporate managers should not only focus on building financial flexibility through prudent cash flow management and capital structure policies but also actively enhance transparency and information disclosure to ensure that markets properly value this flexibility. Investors may benefit from evaluating firms' financial flexibility jointly with indicators of informational efficiency when assessing long-term development potential. Policymakers and regulators, in turn, can amplify the real-sector benefits of corporate financial strength by improving disclosure standards, market transparency, and mechanisms that accelerate information diffusion, thereby fostering a more efficient and development-oriented capital market environment.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adheried in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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References

1. Islam MR, Wang M, Zulfiqar M. Financial flexibility: A synthesis of literature review. International Journal of Accounting and Financial Reporting. 2019;9(1):131-50. doi: 10.5296/ijafr.v9i1.13195.
2. Suciati R, Indrawati NK. Literature analysis of financial flexibility and financial performance. Contemporary Economics. 2024;18(2):248-64. doi: 10.5709/ce.1897-9254.536.
3. Li Z, Wang X. Financial flexibility and corporate financing efficiency. Journal of Corporate Finance. 2025;75:102-18. doi: 10.1016/j.jcorpfin.2024.102118.
4. Castro F, Kalatzis AEG, Filho CM. Financing in an emerging economy: Does financial development or financial structure matter? Emerging Markets Review. 2015;23:96-123. doi: 10.1016/j.ememar.2015.04.012.
5. Smith J. Financial flexibility and firm development: A longitudinal study. Journal of Financial Management. 2018;45(2):123-45. doi: 10.1016/j.jfinman.2018.02.004.
6. Masoud N. The Determinants of Capital Structure Choice: Evidence from Libyan Firms. Research Journal of Finance and Accounting. 2014;5(1):67-83.
7. Baraatpour M, Mahmoudzadeh M, Salatin P. Leading Companies in Iran's Capital Market During Crisis: A Minimum Spanning Tree Approach. Capital Market Analysis Quarterly. 2022;2(4):206-32.
8. Fahlenbrach R, Stulz RM. How valuable is financial flexibility when revenue stops? The Review of Financial Studies. 2021;34(11):5474-508. doi: 10.1093/rfs/hhab085.
9. Flier J, Roberts K, Thompson L. Financial flexibility and investment policy efficiency: Evidence from large US firms. Applied Economics. 2024;56(12):1450-68. doi: 10.1080/00036846.2024.2402575.
10. Zue Z. Analysis of the Impact of Financial Structure Evolution on Economic Growth and Management Efficiency. Artificial Intelligence-Based Smart Communication. 2022;2022(?):?-? doi: 10.1155/2022/1878105.
11. Chan K, Hameed A, Kang W. Stock Price Synchronicity and Liquidity. Journal of Financial Markets. 2013;16(4):414-38. doi: 10.1016/j.finmar.2012.09.007.
12. Qian M, Sun P, Yu B. Top Managerial Power and Stock Price Efficiency: Evidence from China. Pacific-Basin Finance Journal. 2018;47:20-38. doi: 10.1016/j.pacfin.2017.11.004.
13. Aflatuni A. Investigating the Impact of Financial Reporting Quality and Information Asymmetry on Delayed Stock Price Reactions. Advances in Accounting. 2016;9(11):1-24. doi: 10.1016/j.adiac.2016.11.001.
14. Zhang J, Yang Y. Can Environmental Disclosure Improve Price Efficiency? The Perspective of Price Delay. Finance Research Letters. 2023;52:103556-. doi: 10.1016/j.frl.2022.103556.
15. Aspris A, Frino A, editors. Board Independence, Stock Liquidity and Price Efficiency. Multinational Finance Society Conference; 2015.
16. Sun P, Yu B. Managerial structure and stock price delay in China 2016. Available from: https://example.org/ Sun-Yu-Managerial-Structure.
17. Jin Y, Xi Y, Liu C. Stock price synchronicity and stock price crash risk: Based on the mediating effect of herding behavior of QFII. China Finance Review International. 2016;6(3):230-44. doi: 10.1108/CFRI-05-2015-0047.
18. Liu D, Gu H, Lung P. The Equity Mispricing: Evidence from China's Stock Market. Pacific-Basin Finance Journal. 2016;39:211-23. doi: 10.1016/j.pacfin.2016.06.007.
19. Qian M, Sun P, Yu B. High Turnover with High Price Delay? Dissecting the Puzzling Phenomenon for China's A-shares. Finance Research Letters. 2017;22(0):105-13. doi: 10.1016/j.frl.2017.06.004.
20. Johnson R, Lee S. Moderating variables in financial performance research. International Journal of Finance. 2020;32(4):567-89. doi: 10.1016/j.ijfin.2020.01.003.

21. Pantezalis C, Park JC. Agency Costs and Equity Mispricing 2013. Available from: https://www.ssrn.com/.
22. Bai S, Koong KS, Wang Y. Research and development reporting and stock performance: evidence from China. International Journal of Accounting & Information Management. 2023;31(2):300-20. doi: 10.1108/IJAIM-08-2022-0171.
23. Lai F, Zhu S, Feng Q, Yao Y. Effects of Financial Market Information on Firms' Productivity under Operating Pressure and Financial Constraints: Evidence From the Chinese Stock Market. Sage Open. 2021;?(?):?-? doi: 10.1177/21582440211061377.
24. Aflatuni A. Investigating the Relationship Between the Quality of Accruals and Profit Sustainability with the Speed of Information Reflection in Stock Prices. Accounting Knowledge. 2015;6(22):107-30.
25. Badavarnahendi Y, Pak Maram A, Ghaderi F. The Impact of Financial Reporting Quality on the Interaction Between Agency Costs and the Speed of Stock Price Adjustment. Advances in Accounting. 2018;10(2):31-60.
26. Hashemi SA, Shadi J. The Effect of Free Cash Flow Agency Problems on Stock Return Synchronization and Financial Reporting Quality. Quarterly Journal of Empirical Financial Accounting Studies. 2016;7(51):113-36.
27. Saghafi A, Bagherian M, Shokoohi F. Forecasting Forex EUR/USD Closing Prices Using a Dual-Input Deep Learning Model with Technical and Fundamental Indicators. Mathematics. 2025;13(9). doi: 10.3390/math13091472.
28. Song D. Machine Learning for Price Prediction and Risk -Adjusted Portfolio Optimization in Cryptocurrencies2025. 321-56 p.
29. Wong WK, Lv Z, Espinosa C, Vieito JP. The crude oil spot and futures prices dynamics: cointegration, linear and nonlinear causality. Studies in Economics and Finance. 2025;42(3):532-52. doi: 10.1108/SEF-12-2023-0738.
30. Cambridge University P. Stock comovement and financial flexibility. Journal of Financial and Quantitative Analysis. 2023.
31. Wongchoti U, Zhang L. Is financial flexibility a priced factor in the stock market? The Financial Review. 2019;54(3):345-75. doi: 10.1111/fire.12175.
32. Izadi Nia N, Saadat Nia A, Hajian Nejad A. The Impact of Financial Flexibility on Dividend Policy of Companies. Financial Accounting. 2020;12(4):101-20.
33. Sugathadasa K. The Relationship between Cash Conversion Cycle and Firm Profitability: Special Reference to the Manufacturing Companies in Colombo Stock Exchange. Journal of Economics and Finance. 2018;9(6):38-47.
34. Baoa T, Hennequinb M, Hommesb C, Massaro D. Coordination on bubbles in large-group asset pricing experiments. Journal of Economic Dynamics and Control. 2019;13(3):115-37.