

Economic Fluctuations, Managerial Ownership, and Firm Value

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Submit: 2025/10/11 Accept: 2025/12/15

Abstract

Objectives: The main purpose of this study is to investigate the relationship between economic fluctuations, managerial ownership, and firm value among firms listed on the Tehran Stock Exchange (TSE). The research specifically examines how macroeconomic variables such as inflation rate fluctuations and GDP growth interact with managerial ownership, investment growth, and financial leverage to influence firm value.

Methodology/Design/Approach: This study is applied in nature and adopts a causal (ex post facto) correlational design. The statistical population includes all firms listed on the TSE, from which 133 firms were selected using the systematic elimination sampling method. The study covers seven years from 2017 to 2023, and data were analyzed using multiple regression models.

Findings: The results show an inverse relationship between inflation rate fluctuations and firm value, while no significant relationship is found between GDP growth and firm value. The interaction between managerial ownership and GDP growth positively affects firm value, whereas the interaction between managerial ownership and inflation rate fluctuations has no significant effect. Moreover, the interaction between investment growth and GDP growth has a positive effect on firm value, but its interaction with inflation rate fluctuations does not. Finally, the interaction between financial leverage and inflation rate fluctuations has an inverse impact on firm value, while the interaction between financial leverage and GDP growth is insignificant.

Innovation: This study contributes to the understanding of how economic fluctuations interact with firm-specific characteristics to shape firm value in emerging markets. The findings provide policymakers and managers with practical insights, emphasizing the importance of managing ownership structures and leverage decisions under varying macroeconomic conditions.

Keywords: Economic Fluctuations, Managerial Ownership, Firm Value.

1. Introduction

One of the most important sectors of any economy is the capital market, with the stock exchange and its listed firms playing a central role due to their close connection with the country's economic structures. Among the various factors influencing the capital market, macroeconomic variables appear to have a greater impact than microeconomic ones. Consequently, financial researchers, analysts, and economists strive to identify the determinants of firm performance and value, as well as the magnitude of their effects. Such analyses support informed investment decisions and help create an efficient stock exchange, fostering high-performing and high-value firms.

In this context, the effects of macroeconomic indicators—such as employment growth, GDP, inflation, and stock price index growth—on investor decision-making and risk assessment (particularly systematic risk) require careful examination. Fluctuations in these macroeconomic factors can affect all investing firms and, ultimately, the capital of stakeholders. Economic fluctuations, commonly referred to as business cycles, represent periodic increases and decreases in the production of goods and services within an economy. Market-oriented economies, particularly in Western countries, have experienced successive cycles of production changes reflected in GDP.

Each business cycle consists of four phases: recovery, boom, recession, and stagnation. These cycles repeat over time, with long-term trends being either bullish or bearish. Each stage of economic fluctuation presents unique challenges. During downturns, unemployment rises due to reduced labor demand, and the economy operates below its production possibilities frontier, resulting in underutilization of labor and other production factors. Conversely, during recovery, prices and wages generally increase, which can contribute to inflation. In boom periods, employment and production levels rise rapidly, while in recessions, these levels decline sharply. Despite these short-term fluctuations, long-

term trends generally show an increase in overall production. Boom phases represent the highest level of economic activity, whereas recessions reflect periods of declining production and high unemployment. Recovery phases signify expanding production and decreasing unemployment, illustrating how economic fluctuations can directly affect firm value and performance (Mohtasham Dolatshahi, 2011).

Severe variations in macroeconomic variables, such as inflation and GDP growth, along with environmental factors, directly influence investors' decisions and the valuation of firms listed on the Tehran Stock Exchange. To manage risk and achieve expected returns, investors must accurately evaluate the impact of these uncertainties on future cash flows. This underscores the importance of understanding how such effects are moderated by corporate ownership structures and strategic decisions.

Determining the extent and direction of both direct and interactive impacts of economic fluctuations on firm value is a fundamental research problem in corporate finance. Beyond macroeconomic influences, managerial ownership plays a critical moderating role, particularly when directors hold significant shares and are primary beneficiaries. How management responds to shocks from economic fluctuations, in combination with structural variables such as financial leverage and investment levels, can create opportunities or threats that affect firm value.

The present study seeks to address this knowledge gap by disentangling these complex relationships and providing empirical evidence from the Iranian capital market, aiming to develop a comprehensive framework for understanding firm valuation in turbulent economic environments. In today's context, macroeconomic volatility, uncontrolled inflation, and sudden governmental policy changes can profoundly affect market conditions and firm performance. Firms that fail to identify and adapt to these factors risk losing competitive advantage and stakeholder trust. Understanding external economic and policy factors enables firms to strategically position themselves ahead of competitors, sustain firm value, and

maximize returns for investors. Therefore, investigating the relationships among economic fluctuations, firm value, and managerial ownership is more essential than ever.

In the continuation of this research, the study first presents the development of theoretical foundations, hypotheses, and an empirical framework, followed by the methodology and operational definitions of research variables, and concludes with the presentation of findings and research conclusions.

2. Theoretical Foundations of Research

Investors closely monitor macroeconomic factors and their volatility in making investment decisions, as these factors directly influence systematic risk and the potential to achieve expected returns. Consequently, macroeconomic variables and their fluctuations significantly impact both the current and future performance of firms and investments (Pourzamani et al., 2011).

Inflation is generally defined as a disproportionate and sustained increase in the general price level of goods and services in an economy. While definitions vary, a widely accepted perspective since the 19th century considers inflation as an increase in the volume of non-convertible currency not backed by gold. Inflation represents a key economic risk that affects the supply-demand balance and, ultimately, investment decisions. In economies like Iran, which has experienced persistent inflation over the past two decades, low inflation is often regarded as an indicator of economic stability.

During inflationary periods, preserving purchasing power becomes the primary concern for investors, individuals, and firms. Rising living costs reduce disposable income and savings, which in turn may decrease stock market activity and lower corporate stock returns. Conversely, the demand for tangible consumer goods tends to increase. In such conditions, the real value of money declines, while the value of non-monetary assets—such as fixed assets or inventory—remains relatively stable on financial statements (Zamani Amoughin et al., 2014).

Among macroeconomic indicators, Gross Domestic Product (GDP) holds particular importance. GDP is not only a key measure of overall economic performance but also serves as a summary of numerous microeconomic activities. It represents the total value of final goods and services produced by economic units within a country over a specific period, whether annual or seasonal (Lashkari et al., 2018).

Economic expansions (production increases relative to long-term trends) influence investor expectations regarding profitability and investment confidence. Higher economic growth reduces uncertainty and raises anticipated returns, which, together with increased wealth expectations, elevates demand for all types of assets, including stocks. Changes in stock prices, in turn, affect household wealth, consumption, and firm investment and production decisions. Conversely, during economic recessions, corporate sales growth, profit margins, and investment levels are expected to decline, while the opposite occurs in boom periods.

Therefore, economic conditions are expected to have differential effects on firm performance and value. This relationship is bidirectional, as GDP reflects the aggregate outcomes of micro-level firm activities and profitability. In other words, the performance and profits of individual firms collectively shape the macroeconomic output, and macroeconomic variables, in turn, influence firm performance through their impact on expected profits. Given the close interaction between the capital market and the macroeconomy, it is reasonable to expect that macroeconomic variables significantly affect corporate performance and profitability.

Accordingly, the first hypothesis of the present study is as follows:

H1: There is a significant relationship between economic fluctuations and firm value.

The global financial crises highlight the critical importance of a country's financial stability and the effectiveness of its monetary and fiscal policies, as well as their impact on the private sector and individual firms. Macroeconomic policies directly

influence corporate financial performance, growth, and development (Tehrani & Najafzadeh Khoei, 2018). For example, during the East Asian financial crisis of 1997, many firms and financial institutions went bankrupt due to inadequate risk management of both systematic and non-systematic risks. Similarly, in the 2007–2008 global financial crisis, the use of risk management tools to identify and control financial and non-financial risks—including market risks such as inflation, interest rates, and currency fluctuations—became particularly widespread.

Firms face a variety of market risks, including exchange rate risk and inflation, as well as firm-specific risks such as liquidity and financial crises. Effective risk management can help mitigate these threats. The role of managers who are also shareholders is particularly noteworthy, as they actively engage in risk management to preserve firm value and attract investor confidence. Empirical evidence shows that greater managerial ownership often aligns managers' interests with those of the firm, enhancing performance, while many managers tend to be risk-averse and avoid excessive risk-taking (Zamir et al., 2021).

Valuation of firms is essential for both managers and investors, as it reflects how corporate strategy and financial structure influence market value. Firm valuation is critical for shareholders, investors, managers, creditors, and other stakeholders in evaluating the firm's future, estimating investment risk and returns, and determining stock prices (Pourzamani & Buyer, 2013; Hassas Yeganeh et al., 2008). In financial decision-making, risk and return considerations are fundamental: for a given level of return, investors expect minimal risk, and for a given level of risk, the highest possible return (Markowitz, 1959).

Managers increasingly focus on investment decisions and risk management to minimize potential losses. Traditional risk measures, such as duration, beta coefficient, variance, and standard deviation, have limitations due to their sensitivity and volatility, particularly in complex modern markets, which can

lead to suboptimal investment decisions. In this context, Value at Risk (VaR), which estimates the worst expected loss under normal market conditions, has become a widely used tool to assess risk comprehensively and inform managerial decisions (Kargar & Zanganeh, 2018).

Given the systematic risks faced by firms—such as inflation and its fluctuations—and the influence of managerial and shareholder ownership on performance and strategic decision-making, it is critical to understand how these factors collectively impact firm value (Baghaei et al., 2009).

Accordingly, the second hypothesis of the present study is formulated as follows:

H3: Investment growth affects the relationship between economic volatility and firm value.

Economic fluctuations can significantly influence a firm's capital structure, particularly its financial leverage. The determinants of capital structure can be classified into internal and external factors. Internal factors, such as managerial decisions and firm policies, are within the control of management, whereas external factors, including macroeconomic conditions, are largely beyond managerial control. Understanding the effects of these internal and external determinants enables managers to make informed decisions regarding capital structure under varying economic conditions, aiming to achieve financial stability and sustainable growth (Mopit & Farid, 2019).

Accordingly, the present study hypothesizes that the interaction between capital structure and economic fluctuations can affect firm value. Thus, the fourth hypothesis of the study is formulated as follows:

H4: Financial leverage affects the relationship between economic volatility and firm value.

Zamir et al. (2021), in a study examining the effects of economic fluctuations and managerial shareholders on firm value, stated that market derivatives and macroeconomic factors, including the inflation rate, can influence firm value. They noted that managerial shareholders may not always be risk-takers, as they directly benefit from the firm. The study's findings indicated that economic fluctuations

affect firm value, and managerial ownership can serve as a moderating variable in this relationship.

Khavela et al. (2021), in a study titled "*The Effect of Economic Variables (Workers' Remittances, Bank Deposits, GDP, and Inflation) on Stock Returns*", emphasized the critical role of macroeconomic factors in stock performance. The research highlighted that investors can make better investment decisions when market variables are identified and volatility is predicted. The study examined the effects of interest rates, inflation, and bank deposit rates on stock fluctuations. The results demonstrated that all variables significantly influence stock movements, with stock returns fluctuating more in response to changes in each variable. Specifically, GDP showed a strong positive relationship with stock returns, whereas inflation exhibited an inverse relationship.

Nuho (2021), in a study titled "*The Impact of Exchange Rate Fluctuations on Inflation in Nigeria*", showed that both money supply and nominal exchange rates have a positive and significant effect on the consumer price index, indicating that inflation in Nigeria is driven by exchange rate fluctuations as well as increases in the money supply. The study recommended that the central bank control money supply growth to minimize inflation.

Musarat and Elul (2021), in a study titled "*The Impact of the Inflation Rate on the Cost of Construction Budgets*", emphasized the significant role of the construction industry in economic growth due to its contribution to GDP and other sectors. They highlighted that inflation is a critical factor affecting economic growth, whether positively or negatively. The study found that ignoring inflation in economic planning and budgeting for construction projects increases project costs because prices of building materials, labor wages, and machinery rentals fluctuate annually. Moreover, the study proposed a framework demonstrating the strong relationship between inflation and the construction industry, which can be useful for future budget estimation models to prevent cost overruns caused by inflation.

Baccheri et al. (2021), in their study titled "*The Effect of Leverage, Profitability, Agency Cost, and Inflation Rate on Predicting Corporate Factors*," examined the impact of leverage (measured by the debt-to-equity ratio), profitability (measured by return on assets), agency cost, and inflation rate on predicting firm-level financial distress, considering interest rate fluctuations as a moderating variable. The sample included 50 real estate firms listed on the Indonesian and Malaysian stock exchanges between 2014 and 2018. Dummy logistic regression analysis was employed to test the hypotheses. The results indicated that leverage has a positive and significant effect on financial distress, whereas the inflation rate has a significant negative effect. Additionally, agency cost, profitability, and interest rate fluctuations significantly influence firms' financial distress.

Machado et al. (2021), in a study titled "*The Impact of Economics on Corporate Governance and Stock Market Volatility*," found that corporate governance mechanisms significantly affect stock market fluctuations when analyzed alongside GDP changes. However, governance mechanisms alone do not have a significant impact on market volatility.

Doha and Rana (2021), in their study "*Determinants of Inflation in the Gulf Cooperation Council (GCC) Countries*," aimed to assess the effects of GDP and money supply on inflation levels. The results showed that money supply significantly affects inflation across most countries, and increases in GDP were also associated with higher inflation.

Ben Lee (2019) investigated the effects of working capital, firm value, profitability, and corporate risk. The findings revealed a negative and significant relationship between working capital and firm value, profitability, and risk, suggesting that managers must balance working capital management to achieve profitability while controlling risk.

Zargar and Abdulshakur (2016) studied the effects of managerial ownership on the relationship between goodwill and firm value. Their results showed a significant positive relationship between goodwill reporting and firm value. However, managerial

ownership, as a moderating variable, exhibited a negative effect on the relationship between goodwill and firm value.

Park et al. (2016) examined the impact of managerial capability on firm value in the context of tax avoidance. The study found a negative relationship between tax avoidance and firm value, and managers' abilities mitigated the adverse effects of tax avoidance on firm value.

Kazemimanesh and Dastgir (2020), in their study titled "*The Effect of Firm Value and Profitability on Stock Return Risk*," emphasized working capital. They reported that firm value negatively affects stock return risk, and working capital amplifies the impact of both firm value and profitability on stock return risk.

Montashari and Farid (2019), in their study "*Volatility in Capital Structure and the Role of Macroeconomic Variables*," noted that fluctuations in firms' capital structures disrupt managerial focus on maintaining and improving returns, consequently affecting performance. One of the key managerial duties is deciding on an optimal combination of financing sources. The study investigated the role of macroeconomic variables on capital structure volatility for 89 firms listed on the Tehran Stock Exchange between 2014 and 2018, selected via the systematic elimination method. The results indicated that increases in inflation raise volatility in both short-term and long-term debt structures, while rising interest rates reduce this volatility. Additionally, higher economic growth slightly increases volatility in long-term debt structures.

Babaei and Khanmohammadi (2018), in their study entitled "*Economic Variables and Financial Performance of Firms*," stated that macroeconomic factors such as exchange rates, inflation, and interest rates can directly and indirectly affect firms, particularly manufacturing firms. Their findings indicated that in the oil and pharmaceutical industries, exchange rate fluctuations have an inconsistent relationship with financial performance, whereas the inflation rate aligns with corporate financial performance. In the automotive industry, both

exchange rate fluctuations and inflation rates show an inconsistent relationship with firm performance.

Kargar and Zanganeh (2018), in their study entitled "*The Effect of Business Strategy on the Relationship between Risk-Taking and Firm Value*," reported a positive and significant relationship between risk-taking and firm value. They found that a defensive business strategy has a direct and significant effect on the relationship between risk-taking and firm value, while an aggressive business strategy has a significant inverse effect on this relationship.

Tehrani and Najafzadeh Khoei (2017), in their study entitled "*Inflation Uncertainty on Capital Structure*," reported that inflation rate uncertainty negatively affects the capital structure of 55% of the sample firms, while it has a positive effect on the capital structure of 41% of the firms studied.

Mehrabanpour et al. (2017), in a study focusing on risk management and firm value, indicated that increasing risk management (environmental uncertainty) tends to increase firm value. They also found that in firms with institutional owners, the effect of risk management on firm value is higher than in other firms, although this effect is not statistically significant. Furthermore, an increase in board independence does not significantly enhance the effect of risk management on firm value. The presence of an audit committee in listed firms similarly does not significantly alter the impact of risk management on firm value.

Salehnejad and Vaghegi (2016), in their study entitled "*The Effect of Earnings Forecasting by Management on Firm Risk and Value*," used the beta coefficient as a measure of systematic risk and the Tobin Q index as a measure of firm value. Their findings indicated that management earnings forecasts significantly affect firm value, whereas such forecasts do not significantly impact stock risk.

Zamani Amoughin et al. (2014), in a study entitled "*The Effects of Inflation on the Financial Performance Evaluation Indicators of Tehran Stock Exchange Firms*," concluded that inflation rates have a substantial effect on firms' financial performance. Specifically,

high or low inflation in a country can respectively have favorable or unfavorable effects on corporate financial performance, highlighting inflation as a key external factor influencing firm performance.

Pourzamani et al. (2011), in their study entitled *Investigating the Effect of Macroeconomic Indicators Volatility on Stock Returns*, reported that employment rate growth does not significantly affect stock returns. GDP growth has a limited effect, inflation exerts a minor negative effect, and stock price index growth has a significant impact on stock returns.

3. Research Methodology

Given the existence of established theoretical foundations related to the study variables, the present research is classified as applied research in terms of its purpose. In terms of methodology, since it does not manipulate an independent variable to observe its effect on a dependent variable, but rather examines the variables as they naturally occur, it is classified as descriptive-causal research.

The study relies on historical and post-event data, which were collected using library and archival methods to obtain the information required to test the research hypotheses. Due to accessibility and reliability, the statistical population consists of all firms listed on the Tehran Stock Exchange (TSE). Firms were excluded if their fiscal year did not end in March, if they changed their financial period during the research timeframe, if they lacked sufficient information to ensure comparability, or if they were investment firms, banks, or insurance firms.

To ensure data homogeneity given the differing nature of firm activities and reporting, a systematic screening method was applied, resulting in a final sample of 133 firms. Data were collected for a period of seven years (2017–2023), consistent with similar studies. The hypotheses were tested using EViews 12 software, employing logistic regression and appropriate statistical techniques for the final analysis.

4. Research Regression Models

4.1. Test Model of the First Hypothesis

$$Q_{j,t} = \beta_0 + \beta_1 Q_{i,t-1} + \beta_2 \text{inflation}_{i,t} + \beta_3 \text{GDP growth}_{i,t} + \beta_4 \text{ACCES}_{i,t} + \beta_5 \text{RISK}_{i,t} + \beta_6 \text{SIZE}_{i,t} + \beta_7 \text{GROWTH}_{i,t} + \beta_8 \text{LEV}_{i,t} + \epsilon_{i,t}$$

4.2. Testing Model of Second, Third, and Fourth Hypotheses

$$Q_{j,t} = \beta_0 + \beta_1 Q_{i,t-1} + \beta_2 \text{inflation}_{i,t} + \beta_3 \text{GDP growth}_{i,t} + \beta_4 \text{MO}_{i,t} + \beta_5 (\text{inflation}_{i,t} * \text{MO}_{i,t}) + \beta_6 (\text{GDP growth}_{i,t} * \text{MO}_{i,t}) + \beta_7 (\text{inflation}_{i,t} * \text{GROWTH}_{i,t}) + \beta_8 (\text{GDP growth}_{i,t} * \text{GROWTH}_{i,t}) + \beta_9 (\text{inflation}_{i,t} * \text{LEV}_{i,t}) + \beta_{10} (\text{GDP growth}_{i,t} * \text{LEV}_{i,t}) + \beta_{11} \text{ACCES}_{i,t} + \beta_{12} \text{RISK}_{i,t} + \beta_{13} \text{SIZE}_{i,t} + \beta_{14} \text{GROWTH}_{i,t} + \beta_{15} \text{LEV}_{i,t} + \epsilon_{i,t}$$

Table 1: Introduction of the components of the research model

Variable Title	Variable Symbol	Variable Role
Q. Tobin	Q	Dependent Variable
Inflation rate fluctuations	inflation	Independent Variable
GDP growth	GDP growth	Independent Variable
Dividend	ACCES	Control Variable
Systemic risk	RISK	Control Variable
Firm Size	SIZE	Control Variable
Investment Growth	GROWTH	Control and Moderating Variable
Leverage	LEV	Control and Moderating Variable
Managerial Ownership	Mo	Moderator Variable

5. Operational Description of Research Variables

5.1. Independent Variable: Economic Volatility

To measure economic volatility, two measures of inflation rate fluctuations and GDP growth are used: Inflation fluctuations are the standard deviation of the last three periods of the inflation rate.

Gross Domestic Product (GDP Growth)

$$\text{GDP growth} = (\text{GDPT} - \text{GDPT-1}) / \text{GDPT-1}$$

5.2. Dependent Variable: Corporate Value

To measure the value of the firm following the research of Zamir et al. (2021), the Tobin Q criterion is used, and to measure the Tobin Q following Salehnejad and Waghegi (2016), Tobin's Q is measured as follows:

Tobin Q Index (Q)

Tobin Q = M.V.S. + B.V.D. / B.V.A.

M.V.S. = Shareholders' Market Value

B.V.D. = Book Value of Debts

B.V.A. = Book Value of Assets

5.3. Moderating Variable: Managerial Ownership (MO)

To measure the moderating variable, the percentage of shares owned by the board members of the firms will be used.

5.4. Control variables of the research

SIZE: Natural Logarithm of Total Assets

GROWTH: The amount invested in fixed assets divided by the fixed assets of the first period.

LEV: The ratio of total liabilities to total assets

RISK: To calculate the systematic risk, the information of the new Rahavard software is used, and the following model, which is the pricing model of capital assets, has been used to calculate it:

$$E(r_j) = R_f + (E(R_m) - R_f)\beta_j$$

In these patterns:

$E(r_j)$; the expected return of the asset j,

R_f , Risk-Free Returns

$E(R_m)$, the expected return of the market portfolio

ACCES: It is a two-value variable (0 and 1) that will be 1 or zero if the firm has distributed profits in the current period.

6. Findings Research

The findings of the research include descriptive statistics and inferential statistics, which are presented below.

The primary measure of central tendency is the mean, which represents the equilibrium point or the "center of gravity" of the distribution and serves as a useful indicator of data centrality. For instance, the mean value of the financial leverage variable is 0.56, indicating that most of the data is concentrated around this point.

Dispersion parameters, on the other hand, are used to assess the degree of spread among data points or their deviation from the mean. One of the most important measures of dispersion is the standard deviation. For example, financial leverage has a standard deviation of 0.20, which is the lowest among the variables.

The minimum and maximum values indicate the range of each variable. For instance, the highest observed financial leverage in the sample is 1.12.

Table (2): Descriptive Statistics of Quantitative Research Variables

Variable	Mean	Max	Min	ST.D
Inflation	7.30	12.92	1.24	4.01
GDP growth	0.24	1.39	-0.068	0.47
Mo	60.2	99.00	0.00	26.28
Q	2.58	7.29	1.01	1.78
SIZE	14.67	18.47	11.52	1.44
LEV	0.56	1.12	0.12	0.20
GROWTH	0.30	1.21	0.002	0.37
RISK	0.67	3.83	1.84-	0.87

Table 3: Frequency Distribution of Dividend Variable

Description	Symbol	Value	Abundance	Frequency
It has dividends	ACCES	1	731	78.52
There is no dividend.	ACCES	0	200	21.48
Total	-	-	931	100

As can be seen in Table 3, the total number of years of the firms under review is equal to 931 cases, of which 731 cases, equal to 78.52% of the year-firms, had

dividends, and 200 cases, equal to 21.48% of the year-firms, did not have dividends.

According to the results obtained in Table 4, it can be seen that the significance level of the variables in the validity test is less than 5% and indicating the reliability of the variables.

Table 4: Durability Test (Levin, Lin, and Chu) Quantitative Research Variables

Variable Name	Test Statistics	Significance level	Results
Inflation	-1984.95	0.0000	Stationary
GDP growth	-160.635	0.0000	Stationary
Mo	-16.7417	0.0000	Stationary
Q	-38.2061	0.0000	Stationary
SIZE	-55.6463	0.0000	Stationary
LEV	-32.1185	0.0000	Stationary
GROWTH	-34.8179	0.0000	Stationary
RISK	-27.060	0.0000	Stationary

Table (5): Results of the F. Limmer (Chow) test

Test Model	Test Statistics	Significance level
Model First	1.22	0.29
Model II	1.28	0.25

According to the results presented in Table 5, the significance level for the research models is higher than 5%, indicating that the use of the random effects model is preferable to the fixed effects model. Therefore, in this case, performing the Hausman test is not necessary (Banimahd et al., 2016). Since the statistical tests were robust to variance heterogeneity and serial autocorrelation, these two issues were further addressed by applying the robust standard errors approach and the generalized least squares (GLS) method using the Ives 10 software, in line with recent global research practices.

The results in Table 6 show that the significance level of the test in the research models is less than 5% and indicate the existence of variance heterogeneity in the disturbance sentences, which has been solved in the final estimation of the models by implementing the GLS.

According to the results of Table 7, it can be seen that the significance level of the serial autocorrelation test of the research models was more than 5% and indicated the absence of serial autocorrelation in the models.

Table (6): Results of Variance Variance Test

Test Model	Test Statistics	Significance level
Model First	21.51	0.0000
Model II	17.19	0.0000

Table 7: Results of the Serial Autocorrelation Test

Test Model	Test Statistics	Significance level
Model First	0.96	0.38
Model II	1.00	0.36

The results presented in Table 8 indicate that the inflation rate fluctuation variable, with a negative coefficient (-0.030) and a significance level below 5% (0.03), has an inverse and significant relationship with firm value. Therefore, the first part of the first hypothesis is supported at the 5% significance level. The second part of the first hypothesis, which considers GDP growth as a measure of economic fluctuation, is not supported, as its significance level exceeds 5% (0.11).

Regarding the control variables, all except corporate risk exhibit a significant relationship with the dependent variable at the 5% significance level. The coefficient of determination (R^2) is 0.34, indicating that the independent and control variables in the model collectively explain 34% of the variation in the dependent variable. The Durbin-Watson statistic is 1.98, suggesting no presence of autocorrelation in the residuals of the model. Additionally, the model demonstrates good overall fit, as confirmed by the test statistic with a significance level below 5%. The variance inflation factor (VIF) values are below 5 and close to 1, indicating the absence of strong multicollinearity among the research variables.

Table (8): The result of the first hypothesis

$Q_{i,t} = \beta_0 + \beta_1 Q_{i,t-1} + \beta_2 \text{inflation}_{i,t} + \beta_3 \text{GDP growth}_{i,t} + \beta_4 \text{ACCES}_{i,t} + \beta_5 \text{RISK}_{i,t} + \beta_6 \text{SIZE}_{i,t} + \beta_7 \text{GROWTH}_{i,t} + \beta_8 \text{LEV}_{i,t} + \varepsilon_{i,t}$					
Dependent Variable: Corporate Value					
Variables	Coef	Stdev	T Statistic	Sig	VIF
Q t-1	0.95	0.048	19.44	0.0000	1.40
inflation	-0.030	0.014	-2.17	0.030	1.07
GDP growth	0.002	0.0018	1.56	0.11	1.24
SIZE	0.060	0.011	5.35	0.0000	1.11
RISK	-8.52	0.0001	-0.051	0.95	1.18
LEV	0.033	0.013	2.50	0.012	1.40
GROWTH	0.050	0.018	2.80	0.0052	1.14
ACCES	-0.013	0.003	-3.73	0.0002	1.16
C	0.54	0.069	7.94	0.0000	-
Determination Coefficient			0.34		
Watson Durbin			1.98		
Statistic F			34.39		
Significance level			0.0000		

Table 9: The result of the second, third, and fourth hypotheses

$Q_{i,t} = \beta_0 + \beta_1 Q_{i,t-1} + \beta_2 \text{inflation}_{i,t} + \beta_3 \text{GDP growth}_{i,t} + \beta_4 \text{MO}_{i,t} + \beta_5 (\text{inflation}_{i,t} * \text{MO}_{i,t}) + \beta_6 (\text{GDP growth}_{i,t} * \text{MO}_{i,t}) + \beta_7 (\text{inflation}_{i,t} * \text{GROWTH}_{i,t}) + \beta_8 (\text{GDP growth}_{i,t} * \text{GROWTH}_{i,t}) + \beta_9 (\text{inflation}_{i,t} * \text{LEV}_{i,t}) + \beta_{10} (\text{GDP growth}_{i,t} * \text{LEV}_{i,t}) + \beta_{11} \text{ACCES}_{i,t} + \beta_{12} \text{RISK}_{i,t} + \beta_{13} \text{SIZE}_{i,t} + \beta_{14} \text{GROWTH}_{i,t} + \beta_{15} \text{LEV}_{i,t} + \varepsilon_{i,t}$					
Dependent Variable: Corporate Value					
Variables	Coef	Stdev	T Statistic	Sig	VIF
Q t-1	0.95	0.049	19.47	0.0000	1.13
Inflation	-0.0046	0.0020	-2.24	0.025	1.06
GDP growth	0.003	0.0019	1.78	0.074	1.09
Mo	0.052	0.022	2.28	0.022	1.10
inflation * MO	0.023	0.012	1.85	0.063	1.15
GDP growth * MO	0.004	0.002	2.05	0.040	1.56
inflation * GROWTH	0.0009	0.003	0.28	0.77	1.31
GDP growth * GROWTH	0.081	0.038	2.13	0.032	1.27
inflation * LEV	-0.058	0.029	-1.99	0.046	2.66
GDP growth * LEV	0.005	0.003	1.51	0.12	1.86
SIZE	0.069	0.011	5.90	0.0000	1.92
RISK	-2.06	0.0001	-0.12	0.90	1.97
LEV	0.038	0.013	2.79	0.0052	1.05
GROWTH	0.050	0.015	3.28	0.001	1.28
ACCES	0.012	0.003	3.58	0.0003	1.09
C	0.55	0.074	7.46	0.0000	-
Determination Coefficient			0.35		
Watson Camera			1.98		
Statistic F			23.63		
Significance level			0.0000		

The results presented in Table 9 pertain to the second hypothesis, which examines the moderating role of managerial ownership on the relationship between economic fluctuations and firm value. Managerial ownership exhibits a significant positive relationship with firm value, with a coefficient of 0.052 and a significance level of 0.02 (<5%). Regarding the interaction effects, the interaction between inflation rate fluctuations and managerial ownership is not significant, with a coefficient above 5% (0.06). However, the interaction between GDP growth and managerial ownership is significant, with a positive coefficient of 0.004 and a significance level of 0.04 (<5%), indicating a meaningful effect on firm value.

For the third hypothesis, the interaction between investment growth and inflation rate fluctuations is not significant (significance level = 0.77). In contrast, the interaction between investment growth and GDP growth shows a significant positive effect on firm value, with a coefficient of 0.081 and a significance level of 0.032 (<5%).

The fourth hypothesis results reveal that the interaction between financial leverage and inflation rate fluctuations has a significant negative effect on firm value, with a coefficient of -0.058 and a significance level of 0.046 (<5%). Conversely, the interaction between financial leverage and GDP growth is not significant, with a p-value of 0.12 ($p > 0.05$).

7. Research Conclusion

The main purpose of this study is to investigate the relationship between economic fluctuations, managerial ownership, and firm value. The results indicate that the inflation rate fluctuation has a negative coefficient and is significant at the 5% level, demonstrating an inverse and significant relationship with firm value. Therefore, the first part of the first hypothesis is supported. In contrast, the second part of the first hypothesis, which examines GDP growth as an economic fluctuation, is not confirmed, as its significance level exceeds 5%.

Investors pay attention to macroeconomic factors and their volatility when making investment decisions because these factors influence systematic risk and expected returns. Accordingly, macroeconomic conditions significantly affect firm value and performance. The results of this study suggest that fluctuations in the inflation rate within a country's capital market can impact firm performance. When inflation is unstable or increasing, firms' performance and customer demand are adversely affected. Increased inflation fluctuations reduce firm value due to lower sales, decreased demand, higher raw material costs, and investors' preference for alternative investment opportunities offering better returns. The lack of a significant effect of GDP growth on firm value aligns with prior research by Lashkari et al. (2018), Pourzamani et al. (2011), Montashari and Farid (2019), Zamani Amoughin et al. (2014), and Zamir et al. (2021), who also highlighted that economic fluctuations, particularly inflation, affect firm performance. Lashkari et al. (2018) and Pourzamani et al. noted that GDP has little to no effect on firm value.

Regarding the second hypothesis, which examines the moderating role of managerial ownership, the results show that managerial ownership has a direct positive effect on firm value. This finding supports the convergence-of-interests hypothesis, suggesting that when managers hold equity in their firms, they are incentivized to increase firm value. Higher managerial ownership motivates managers to supervise operations more effectively, as their personal financial gains are aligned with firm performance. Ownership structure, including concentration, sustainability, and the presence of major and minor shareholders, serves as a key governance mechanism. Institutional and managerial shareholding ensures long-term commitment, aligning managers' interests with those of shareholders and enhancing firm performance. However, excessive managerial power without adequate oversight can reduce future performance.

The results further indicate that the interaction between inflation rate fluctuations and managerial ownership is not significant, while the interaction

between GDP growth and managerial ownership is significant. This implies that manager-shareholders can mitigate the negative impact of inflation fluctuations and leverage economic growth opportunities to enhance firm value. Capable managers with strategic plans can transform threats into opportunities, preserving or increasing firm value. These findings are consistent with the studies of Valipour et al. (2013), Abdi et al. (2017), Sandra Murati et al. (2003), Zamir (2021), and Gol Khandan (2017), which demonstrate a positive relationship between managerial ownership and firm value.

The third hypothesis examined the interaction of investment growth with economic fluctuations. The interaction between investment growth and inflation fluctuations is not significant, while the interaction between investment growth and GDP growth is positive and significant. Investment growth, reflecting changes in tangible fixed assets, is a crucial determinant of future firm performance and shareholder returns. Firms with higher investment growth are more likely to generate future profits, thereby increasing their market value. When investment growth aligns with GDP growth, the combined effect enhances firm value in the capital market. These findings are consistent with Yeganeh and Tavakolnia (2021), Izadinia and Azimi Dastgerdi (2014), and Maham and Heidari (2014), who emphasized that investment in fixed assets promotes firm value.

The fourth hypothesis assessed the interaction of financial leverage with economic fluctuations. The interaction between leverage and inflation rate fluctuations has a negative and significant effect on firm value, while the interaction between leverage and GDP growth is not significant. Financial leverage, the ratio of total liabilities to total assets, measures financial risk and fixed financial obligations. Although debt financing can be cost-effective for long-term projects, excessive leverage increases financial risk and reduces flexibility. Firm credibility and market value are highly influenced by capital structure, making leverage a key determinant of firm valuation.

The negative effect of the interaction between inflation fluctuations and leverage suggests that high debt magnifies the adverse impact of inflation on firm value. These results align with the findings of Nazemi and Taftian (2014) and Aligholi (2018), who reported a significant relationship between financial leverage and firm value.

8. Practical Research Suggestions

Based on the results of the first hypothesis, it is suggested that the government, by implementing codified and stable economic plans, can help stabilize corporate performance through effective control of the inflation rate. Uncontrolled inflation may lead to the unfair distribution of wealth, unsupported incomes in certain sectors, and the destruction of some jobs. Therefore, maintaining inflationary stability can significantly support firms in achieving sustainable performance.

According to the findings of the second hypothesis, to reduce conflicts of interest between owners and managers, firm owners should consider selecting managers from among the shareholders or providing managers with equity participation as a reward. This approach aligns managerial interests with those of the firm and all stakeholders. Additionally, employing capable and skilled managers can enhance firm value through their expertise and by establishing systematic programs to mitigate the effects of economic fluctuations.

Based on the results of the third hypothesis, it is recommended that firms strategically invest in fixed assets to maximize investment opportunities. Such investments can also serve as collateral, providing security to compensate for any debt obligations.

Regarding the fourth hypothesis, firms are advised to maintain a permissible level of financial leverage. While external financing can improve liquidity and create investment opportunities, excessive leverage may expose the firm to significant risks during financial crises. Therefore, maintaining a balanced leverage level is crucial.

Investors are recommended to carefully examine corporate financial statements and evaluate the firm's value in relation to market volatility and economic fluctuations. Such assessments enable investors to gauge corporate and managerial performance and make informed investment decisions.

Finally, it is suggested that the Securities Exchange Organization provide necessary training to investors on investment concepts and regulations, as well as the impact of macroeconomic variables—such as exchange rates and inflation—on firm growth. This training can help small shareholders achieve higher investment returns while promoting more informed decision-making.

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