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Political Uncertainty and Cash Holdings

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Abstract

The present study investigates the impact of political uncertainty on corporate cash holdings. In this research, political uncertainty is considered the independent variable, corporate cash holdings serve as the dependent variable, and firm size, financial leverage, firm growth, working capital, and Return On Assets (ROA) are included as control variables. The sample consists of 169 firms listed on the Tehran Stock Exchange over the period 2014–2023 (1393–1402 in the Iranian calendar). The study employs a descriptive correlational research design, and the hypotheses are tested using the Ordinary Least Squares (OLS) method with EViews 12 software. To achieve the main research objective, a single hypothesis was formulated and empirically tested. The results indicate that political uncertainty has a significant negative effect on corporate cash holdings. Given the negative impact of political uncertainty on corporate cash reserves, it can be concluded that during periods of heightened political uncertainty, firms should develop appropriate strategies to avoid underinvestment and enhance performance and investment levels. Additionally, it is recommended that private sector investors and financial analysts consider corporate liquidity as a key metric for assessing and predicting investment behavior during politically uncertain periods.

Keywords: Corporate cash holdings, Political uncertainty, Sales volatility.

1 | Introduction

Uncertainty arises when future events are unknown or their likelihood is unpredictable. Economic policy uncertainty, in particular, alters the environmental conditions in which firms operate. In such situations, where firms face considerable uncertainty regarding the timing, content, and potential impact of economic policy decisions, it becomes crucial to examine the consequences stemming from this uncertainty. The predictability of a country's economic environment is of critical importance for economic decision-makers. In essence, the lower the predictability of the economy, the higher the level of economic uncertainty. A lack of forecasting knowledge is the primary source of uncertainty, making future-oriented decision-making complex and

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challenging, and directly affecting the choices of economic agents. Key factors that create and exacerbate economic uncertainty include the design of policies with short-term horizons and the prioritization of immediate gains over long-term benefits. Additionally, structural political factors, oil prices, and instability in economic policymaking significantly contribute to the uncertainty of the economic environment, resulting in a reduction of productive economic activities and a shift of resources toward speculative ventures. High volatility in economic variables is a primary indicator of uncertainty within an economic system. Consequently, one reason why the private sector in developing countries, including Iran, is often reluctant to participate in economic activities is the volatility of economic variables, which generates uncertainty both in terms of profitability and investment costs. Under such conditions, risk-averse firms reduce their investment levels, which in turn diminishes corporate cash holdings, while risk-tolerant firms also decrease their irreversible capital expenditures as uncertainty rises. A major challenge for oil-exporting countries is their heavy reliance on oil revenues, and fluctuations in oil prices, and the resulting uncertainty, further exacerbate this problem [1].

Today, cash represents one of the most critical and vital resources for any economic entity, and maintaining a balance between cash holdings and liquidity needs is a key determinant of a firm's financial health and operational continuity. A shorter cash conversion cycle indicates that a company's capital is engaged in the business process for a shorter duration, allowing the firm to generate the necessary cash from sales more quickly. This, in turn, leads to improved cash flow and enhances the company's financial and operational performance. The primary purpose of maintaining cash reserves is to provide financial flexibility for the firm. On one hand, holding cash can reduce transaction costs associated with interacting with external capital markets, and it can serve as an accessible financial resource when credit availability is constrained. On the other hand, excessive cash holdings may create opportunities for managerial opportunism. Although most studies have found a positive relationship between liquidity and firm performance, this relationship appears to depend on firm-specific characteristics and the organizational context in which firms operate [2]. In light of these considerations, the present study investigates the relationship between economic policy uncertainty and corporate cash holdings.

2|Statement of the Problem

The term and concept of uncertainty carry multiple meanings and definitions. Uncertainty is often associated with notions such as ambiguity, disagreement, inaccuracy, fuzziness, and indeterminacy. Milliken [3] categorized uncertainty into three types: State Uncertainty: This occurs when an organization cannot determine how environmental variables will change in the future. Effect uncertainty: In this type, individuals are unable to assess how changes in the environment will impact their organization. Response uncertainty: Here, individuals are uncertain about the possible responses to environmental changes and the outcomes of those responses. When entering a new market, firms simultaneously face all three types of uncertainty. Political and economic conditions, as well as the future trajectory of market development, are often unclear, making it difficult to assess the competitive environment [4].

An asset is any source of revenue available to firms or governments that is expected to generate future economic benefits. Assets are acquired to increase the value of the firm or to derive benefits from its operations. Corporate assets can be considered as resources that generate cash flows. In accounting, cash assets are defined as those assets that can be readily and quickly converted into cash [5]. In other words, cash assets refer to assets that can be converted into cash in the shortest possible time and with minimal impact, which are classified as current assets in accounting. Highly liquid assets are generally treated as cash because their market price remains stable and relatively constant whenever sold in the open market. The foreign exchange market is considered the most liquid market in the world, as trillions of dollars are traded in it daily. For an asset to be considered liquid, it requires a strong market with sufficient buyers and sellers to ensure that the asset can be sold without affecting its price [6].

Government economic policies, including monetary, exchange rate, and fiscal policies—can create conditions that give rise to uncertainty in the economy, commonly referred to in the economic literature as economic policy uncertainty. One of the primary factors exacerbating this type of uncertainty is the policy actions of governments and monetary authorities. Governments design their policies based on their planning horizons, often prioritizing the benefits of reducing unemployment over controlling inflation, or vice versa. Economic policy uncertainty specifically refers to the instability resulting from changes in government economic policies, rather than instability arising from a regime change. This instability is often measured using the dispersion of key economic indicators. Furthermore, changes in government and economic policymakers inevitably lead to adjustments in economic programs and policies, and these continual changes serve as a significant source of economic instability and uncertainty [4].

Government economic policy uncertainty can have detrimental effects on the economy. Previous research indicates that uncertainty related to government spending, taxation, and regulatory and monetary policies intensified the economic recession during 2007–2009 and hindered economic recovery [7]. Policy uncertainty in the United States increased significantly between 1985 and 2012, with notable peaks during the federal debt ceiling impasse in August 2011 and the financial crisis at the end of 2012, which potentially led to higher taxes and reduced government spending. Economic policy uncertainty is estimated to have contributed to a decline of more than 0.1% in U.S. GDP and the loss of over one million jobs during the 2011–2012 period [8].

Among various asset classes, cash is the most common and is often the preferred asset for conservative managers during periods of high policy uncertainty [2]. One of the primary challenges facing corporate managers is determining the optimal level of cash holdings. On the one hand, insufficient cash can prevent a firm from meeting its day-to-day operational needs, while on the other hand, maintaining excessively high cash balances entails significant opportunity costs. Despite these costs, many firms prefer to hold substantial cash reserves due to the flexibility it provides in responding effectively to unforeseen contingencies as well as addressing routine operational requirements.

Cash holdings and cash flows are key factors that influence managers' ability to allocate resources and shape their responses to new information. Specifically, firms facing greater financial constraints experience a reduction in expected firm value, which increases their propensity to invest. In contrast, firms with fewer financial constraints enjoy greater financial stability and, with sufficient capital at their disposal, bear lower risk [9]. These well-capitalized firms often delay investment decisions while waiting for new information; due to the absence of complete certainty, they maintain greater flexibility to invest at a later stage when conditions are more favorable [10].

Investors, creditors, and other stakeholders who seek to evaluate a firm's potential future cash flows fully recognize the importance of asset liquidity. Liquidity refers to the ease with which assets can be converted into cash. Rational and informed users of financial information strive to reduce uncertainties and obtain clear, reliable data to support economically sound decisions. Their goal is to maximize incoming cash flows from their activities relative to the cash outflows required to sustain those activities. Investors and creditors, therefore, require detailed information on cash inflows and outflows, as well as analyses of a firm's liquidity position and financial flexibility. Such information enables them to make informed decisions regarding new investments, lending, or the retention or divestment of existing investments. In this context, the sources and uses of cash within a firm essentially reflect managerial decisions concerning short- and long-term operational planning, investment projects, and financing strategies. Furthermore, investors and creditors pay close attention to the timing and magnitude of cash inflows and outflows, as well as the overall availability of free cash flows, because access to liquid resources is a critical factor for evaluating a firm's capacity to undertake new investments, service debt, and maintain operational stability [10].

Economic policy uncertainty has a significant impact on corporate investment behavior. Policy uncertainty can increase expected costs and reduce both investment levels and long-term returns [6]. This effect is particularly pronounced in developing countries, where, as long as policy-related uncertainty persists, economic agents respond cautiously to policy changes, and rational behavior tends to constrain investment

growth. Theoretical models and empirical findings by Pastor and Veronesi [11] indicate that economic policy uncertainty diminishes the value of government-provided market support. Similarly, Akron et al. [12] found that economic policy uncertainty exerts a significant negative effect on corporate investment. In line with these findings, Abbas et al. [13] demonstrated that a stable political and economic environment has a positive and significant impact on investment, highlighting the importance of policy stability for encouraging corporate capital expenditures.

Given the impact of economic policy uncertainty on corporate cash holdings, the present study investigates the relationship between political uncertainty and firms' cash assets. Since there is a relative scarcity of research examining the effects of political uncertainty on corporate cash holdings, there is a clear need for studies that explore this relationship within the context of Iran. Accordingly, this study seeks to elucidate the interplay between political uncertainty and corporate cash holdings. Based on the foregoing discussion, the central research question is: Does political uncertainty have a significant effect on firms' cash holdings?

3 | Conceptual Framework and Hypothesis Development

Government economic policy uncertainty can have detrimental effects on the economy. Previous research indicates that uncertainty related to government spending, taxation, and regulatory and monetary policies intensified the economic recession during 2007–2009 and hindered economic recovery [7]. Recent studies further show that economic policy uncertainty has had significant real and financial impacts. Gulen and Ion [6] 2016 report that firms are more likely to delay investments, particularly those operating under high levels of economic policy uncertainty with inflexible structures. Moreover, policy uncertainty can increase the cost of external financing, thereby exacerbating firms' financial constraints [11].

In examining the relationship between government economic policy uncertainty and corporate liquidity, it can be argued that economic uncertainty disrupts the price system, directing cash flows toward unproductive activities and reducing the inflow of liquidity to productive investments, thereby lowering corporate investment levels. Policy uncertainty may increase the volatility of a firm's future cash flows, raising the costs associated with financial distress. Previous studies report that policy uncertainty reduces asset returns and increases the cost of external financing, thereby intensifying firms' financial constraints [2], [14]. In the face of potential external financial uncertainty and higher investment costs under elevated policy uncertainty, firms are likely to increase their cash holdings to buffer against financial shocks and maintain operational performance and investment capacity. Furthermore, firms are prone to delay investment during periods of high policy uncertainty, which may also lead to larger cash reserves [2]. Firms can utilize cash that is not immediately required for investment; however, they may weigh the potential losses associated with reduced cash balances, as external financing to support future investments may be constrained once policy uncertainty diminishes. Since policy uncertainty is unlikely to be permanent, holding cash initially may be more cost-effective than relying on subsequent external financing. Additionally, policy uncertainty tends to increase managerial conservatism, further encouraging firms to maintain higher liquidity [2].

4 | Literature Review

Zare [15] investigated political uncertainty and stock market volatility in Iran, with particular consideration of international developments. The results of his study indicate a significant positive effect of presidential elections on the stock market. Moreover, using an asymmetric GARCH model, the study found that different periods of nuclear negotiations, as well as regional political developments, exerted a direct and significant impact on the stock market index. Additionally, during the period under review, the consumer price index, used as a control variable, also showed a significant and positive effect on the stock market price index. The findings demonstrated that the Iranian stock market reacts noticeably to various domestic political events, such as presidential elections, and external events, including the imposition of economic sanctions and negotiations to lift them. However, the influence of these developments on the volatility of other asset markets, such as real estate, gold, and foreign currency, and their effects on stock market expectations and

inflation forecasts should not be overlooked. Consequently, the study recommends that stock market regulators and macroeconomic policymakers employ all available capital market support mechanisms to safeguard the market and protect both small and large investors, and to manage the market proactively to prevent capital flight and maintain public trust before major crises.

Mostafaei [2] examined the relationship between political uncertainty and cash holdings among firms listed on the Tehran Stock Exchange. The study population comprised all companies listed on the Tehran Stock Exchange over a six-year period from 2012 to 2018, from which, using systematic deletion sampling, a total of 151 companies, equivalent to 311 firm-year observations, were selected as the sample. In this study, the effect of the sales volatility coefficient, used as a proxy for firm-level political uncertainty, on corporate cash holdings was analyzed. Additionally, the regression model controlled for firm size, market-to-book ratio, cash flows, working capital, capital expenditures, financial leverage, industry cash flow volatility, dividend payouts, and research and development expenditures. The findings indicated a significant relationship between political uncertainty and the level of corporate cash holdings, suggesting that higher political uncertainty is associated with adjustments in firms' cash management policies.

Loni et al. [16] investigated the impact of economic policy uncertainty on corporate investment, drawing evidence from firms listed on the Tehran Stock Exchange. Their study estimated models by entering each source of uncertainty, namely inflation, interest rates, exchange rates, economic growth, and monetary and fiscal policy, separately. The uncertainty of each variable was calculated using the Hodrick-Prescott filter. Subsequently, a composite economic policy uncertainty index was constructed using principal component analysis of these variables, and its effect on corporate investment was examined employing the Generalized Method of Moments (GMM). The results indicated that both the composite economic policy uncertainty index and the individual sources of uncertainty exerted a significant negative effect on corporate investment. Moreover, the findings revealed that monetary policy uncertainty had a stronger adverse impact on corporate investment compared to fiscal policy uncertainty.

Goodarzi-Farahani et al. [17] examined the relationship between policy uncertainty and the accounting of financial cryptocurrency assets. In their study, a policy uncertainty index—encompassing monetary, fiscal, and exchange rate policies, was constructed for Iran, China, the United States, and the United Kingdom, and its association with the cryptocurrency market, specifically Bitcoin, was analyzed. The results derived from their GMM estimation indicated that the policy uncertainty index in China, the United States, the United Kingdom, and Iran exhibited a positive relationship with the monthly returns of cryptocurrencies, with the only difference being the number of lag periods over which the effects manifested. Accordingly, cryptocurrency investors can potentially achieve higher expected returns by accepting the risks associated with policy uncertainty and forecasting macroeconomic variables.

Badami et al. [18] investigated the impact of monetary policy uncertainty on cash holdings, with a particular focus on firms facing financial constraints. Their study examined how monetary policy uncertainty influences the optimal level of cash holdings in publicly listed companies, while incorporating the moderating role of financial constraints into the model, given that not all firms have equal access to financial resources for liquidity management. The findings indicated that monetary policy uncertainty is regime-dependent, with five distinct regimes identified for estimating cash holdings. Results showed that as the level of policy uncertainty increased, firms tended to hold higher cash reserves. Moreover, when financial constraints were included in the five-regime model, the positive effect on cash holdings became more pronounced, highlighting the amplified sensitivity of financially constrained firms to policy uncertainty.

Abdi-Golzar and Zarboor [19] examined the impact of economic policy uncertainty on corporate leverage and investment. Their study sampled 120 companies listed on the Tehran Stock Exchange over the period 2016–2021 [1395–1400]. The results indicated that economic policy uncertainty increases leverage pressure; in other words, when economic policy is unstable, firms face heightened financial risk. Furthermore, a significant negative relationship was found between economic policy uncertainty and corporate investment.

Specifically, rising policy uncertainty leads to reduced investment, primarily due to information asymmetry and agency conflicts among different stakeholder groups.

Phan et al. [20] investigated the relationship between policy uncertainty and corporate cash holdings. Their study examined how government economic policy uncertainty affects firms' cash reserves. The evidence indicated that political uncertainty is positively associated with corporate cash holdings, reflecting firms' precautionary motives and, to some extent, investment delays. This relationship is particularly pronounced for firms that are more dependent on government expenditures and extends beyond the typical business cycle. Further analyses revealed that the effect of policy uncertainty on corporate cash holdings is distinct from market-specific policies or broader macroeconomic uncertainty.

Wu et al. [21] examined the relationship between economic policy uncertainty and the cryptocurrency market. Using data from 2015 to 2019 for Bitcoin, Ethereum, Ripple, and Litecoin, alongside an economic policy uncertainty index, their study analyzed the impact of policy fluctuations on cryptocurrency returns. The findings indicated that in China and the United States, changes in economic policies had a positive and statistically significant effect on cryptocurrency returns. In contrast, no significant relationship was observed between the economic policy uncertainty index and monthly cryptocurrency returns in Japan and South Korea.

Huynh et al. [22] investigated the relationship between economic policy uncertainty and the Bitcoin market. Utilizing monthly time-series data from May 2013 to June 2019 and applying a Markov regime-switching approach, the study examined the connection between Bitcoin returns, trading volume, and volatility with economic policy uncertainty. The results indicated that global economic policy uncertainty negatively affected Bitcoin's trading volume and volatility. Additionally, the findings demonstrated that Bitcoin returns were also influenced by this policy uncertainty.

Chen et al. [23] examined the relationship between Bitcoin returns and economic policy uncertainty in China during the COVID-19 crisis. The study utilized statistical data from December 31, 2019, to May 20, 2020. The results indicated a positive and significant relationship between Bitcoin returns and economic policy uncertainty in China.

5 | Research Methodology

This study is classified as applied research in terms of its objective and is descriptive in nature and methodology. The research data are secondary and combined in type. To obtain the necessary information for testing the research hypotheses, data were collected from the Rahavard Novin database and through a review of the audited financial statements of companies listed on the Tehran Stock Exchange, supplemented by information retrieved from the official website of the Tehran Stock Exchange.

The statistical population of this study comprises all companies listed on the Tehran Stock Exchange that were active from the beginning of 2014 to the end of 2023 (a period of 10 years). A sample is a subset of the population selected for observation and analysis, and by examining the characteristics of the sample, inferences can be drawn about the entire population [24]. The sampling method in this study is based on the characteristics of the population. To select the research sample, four criteria were applied, and only companies that met all criteria were included in the sample; the remaining companies were excluded. The criteria are as follows:

I. Since calculating the political uncertainty variable requires data from the six preceding years for each company, it is necessary that the company was listed on the Tehran Stock Exchange before 2009 and remained active on the exchange until the end of 2023.

II. Due to the specific nature of activities in holding companies, insurance, leasing, banks, financial institutions, and investment companies, and their significant differences from manufacturing and trading companies, selected companies should not belong to these sectors.

III. The company's fiscal year must end in March 20 (Esfand), and it should not have changed its fiscal year during the study period.

IV. Financial information of the companies must be accessible.

After applying all the above criteria, a total of 169 companies were selected as the screened population. Consequently, observations over the period from 2014 to 2023 amount to 1,690 company-years.

5.1 | Research Variables and Measurement Methods

The variables in the present study are classified into three categories: 1) independent variables, 2) dependent variables, and 3) control variables.

5.1.1 | Independent variable: political uncertainty (EUit)

In this study, the coefficient of sales variation is employed to measure political uncertainty. Higher sales volatility indicates a more uncertain operating environment for the firm [25]. The coefficient of sales variation is calculated using *Eq. (1)*:

$$\mathrm{En}-\mathrm{U}_{\mathrm{it}}=\frac{\sigma(\mathrm{sales}_{\mathrm{it}})}{\mu(\mathrm{sales}_{\mathrm{it}})} \quad (1)$$

I. EUit : political uncertainty of the firm

II. σSalesit: standard deviation of the firm's sales over six years (from year t to t−5)

III. μSalesit: average of the firm's sales over six years (from year t to t−5) [2].

IV. Dependent variable: firm cash holdings (cash assets)

V. Firm cash holdings are measured using the ratio of cash to total assets [2].

5.2 | Control Variables

In this study, the control variables include firm size, financial leverage, firm growth, working capital, and Return On Assets (ROA). The operational definitions of each control variable are provided below:

I. Firm Size (Size): defined as the natural logarithm of the firm's total assets at the end of the fiscal year [26].

II. Financial Leverage (Lev): measured as the ratio of total book value of debt to the total book value of assets at the end of the fiscal year [27].

III. Firm Growth (MB): calculated as the market-to-book ratio, i.e., the ratio of the market value of equity to the book value of total shareholders' equity at the end of the fiscal year [27].

IV. Working Capital (NWC): defined as the ratio of working capital to total book assets of the firm at the end of the fiscal year [26].

V. ROA: measured as the ratio of net income to total assets of the firm at the end of the fiscal year [26].

VI. Firm Age (Age): defined as the natural logarithm of the number of years the firm has been in operation from its establishment to the end of the year under study [26].

5.2.1 | Hypothesis testing model

The regression model for hypothesis testing, *Model (1),* is specified as follows:

$$\text{Cash assets}_{i,t}=\beta_0+\beta_1\,\mathrm{EU}_{it}+\beta_2\,\mathrm{Size}_{it}+\beta_3\,\mathrm{Lev}_{it}+\beta_4\,\mathrm{MB}_{it}+\beta_5\mathrm{NWC}_{it}+\beta_6\mathrm{Roa}_{it}+\beta_7\mathrm{Age}_{it}+\varepsilon_{i,t}$$

In *Model (1)*:

I. Cash assets, t corporate cash assets

II. EU in political uncertainty
III. Sizeit firm size levit financial leverage,
IV. MBit firm growth,
V. NWCit Net working capital,
VI. Roait ROA,
VII. Ageit Firm age i the symbol representing the specific firm under consideration,
VIII. εit The model's error term, β0= the intercept coefficient (constant term),
IX. and β1 up to β7 coefficients of the independent and control variables.

6 | Research Findings

Table 1 presents descriptive statistics for all variables employed in the study, calculated using EViews 12. According to the results shown in *Table 1*, the mean of the firm growth variable is 5.630, derived from the ratio of the market value of equity to the book value of equity. Interpreting this indicator, a ratio greater than one in a firm generally signifies the presence of valuable investment opportunities and potential for growth, thereby encouraging investors to commit capital with greater confidence and motivation. Conversely, a ratio below one indicates an investment halt. The mean value of the financial leverage variable is 0.704, suggesting that, on average, 61% of the assets of the firms under study are financed through debt. The maximum observed value for financial leverage is 1.343, indicating that, for some firms, total liabilities exceed total assets at the end of the fiscal year. Furthermore, based on the descriptive statistics, the dispersion of these variables across the sampled firms is relatively low. The highest standard deviation corresponds to the dependent variable, cash holdings, whereas the lowest standard deviation is observed for the control variable, financial leverage.

Table 1. Descriptive statistics of the study variables.

Kurtosis	Skewness	Standard Deviation	Minimum	Maximum	Median	Mean	Abbreviation	Study Variables
55.463	6.491	2.162	-0.998	26.971	0.474	0.642	CASH_ ASSETS	Company cash holdings
8.843	2.394	0.277	0.001	1.404	0.151	0.240	EU	Political uncertainty
3.948	0.797	1.524	10.031	19.374	13.723	13.915	SIZE	Firm size
3.473	0.156	0.196	0.078	1.343	0.619	0.704	LEV	Financial leverage
13.107	2.829	5.114	-2.994	36.308	2.885	5.630	MB	Firm growth
29.519	4.688	2.183	-2.619	19.751	0.213	0.784	NWC	Working capital
12.701	2.418	0.334	-0.999	2.353	0.056	0.168	ROA	ROA
4.501	-0.360	0.479	0.193	3.932	2.773	2.766	Age	Firm age

Before analyzing the research data, it is essential to examine the stationarity of each variable. Variable stationarity implies that the mean and variance of the variables remain constant over time and that the covariance of the variables between different years is stable. Consequently, including these variables in the model does not result in spurious regression. To this end, the Augmented Dickey-Fuller (ADF) test and EViews 12 software were employed to study the time series in this research. As shown in *Table 2*, the p-values for all variables are below 0.05, indicating that all research variables are stationary over the period under investigation.

Table 2. Results of the stationarity test for research variables.

Result	P-Value	t-Statistic	Abbreviation	Research Variables
Confirmation of Stationarity	0.000	-12.608	Cash assets	Corporate cash assets
Confirmation of Stationarity	0.000	-7.374	EU	Political uncertainty
Confirmation of Stationarity	0.000	-8.301	SIZE	Firm size
Confirmation of Stationarity	0.000	-15.362	LEV	Financial leverage
Confirmation of Stationarity	0.000	-8.584	MB	Firm growth
Confirmation of Stationarity	0.000	-9.597	NWC	Working capital
Confirmation of Stationarity	0.000	-13.774	Roa	ROA
Confirmation of Stationarity	0.000	-7.477	Age	Firm age

Before proceeding to hypothesis testing, it is necessary first to examine the correlation, or more precisely, the relationship between the dependent and independent variables. For this purpose, and to determine the presence or absence of correlation between the dependent and independent variables, Pearson's correlation coefficient is employed. It should be noted that correlation does not imply a causal relationship; rather, it only indicates the strength of the association between two variables. In other words, the extent to which two variables are related is referred to as correlation, which is typically expressed as a coefficient ranging from -1 to +1. A positive correlation coefficient indicates a positive relationship between the two variables, whereas a coefficient below zero indicates a negative relationship. *Table 3* presents the results of the correlation analysis using the dependent variable (company cash assets). According to the results, the correlation coefficients among the variables are low, indicating the absence of significant correlation between them.

Table 3. Correlation test.

	CASH_ASSETS	EU	SIZE	LEV	MB	NWC	ROA	AGE
CASH_ASSETS	1.000							
EU	0.001	1.000						
SIZE	-0.159	0.097	1.000					
LEV	-0.041	0.028	0.061	1.000				
MB	-0.005	0.046	0.036	0.001	1.000			
NWC	-0.019	0.085	-0.211	-0.123	-0.019	1.000		
ROA	0.011	-0.029	-0.309	-0.103	0.007	0.162	1.000	
AGE	0.020	0.162	0.030	0.103	0.176	-0.037	-0.077	1.000

Multicollinearity essentially refers to the presence of a perfect or near-perfect linear relationship among some or all of the explanatory variables in a regression model. This test addresses only the linear associations between variables and does not capture any nonlinear relationships. The multicollinearity test, through the Variance Inflation Factor (VIF), assesses the extent of multicollinearity in Ordinary Least Squares (OLS) regression analysis. Specifically, it provides an index indicating the proportion by which the variance of the estimated coefficients is inflated due to multicollinearity. The severity of multicollinearity can be evaluated by examining the magnitude of the VIF. A VIF value close to one indicates the absence of multicollinearity. As a general rule of thumb, a VIF exceeding 5 is considered indicative of high multicollinearity. *Table 4* presents the results of the multicollinearity test for two regression models. Based on the results, all VIF values are below 5, suggesting that multicollinearity is not a concern among the variables in this study.

Table 4. Multicollinearity test.

Model 1	Abbreviation
1.051	EU
1.155	SIZE
1.033	LEV
1.035	MB
1.085	NWC
1.130	ROA
1.075	AGE

After examining the study sample through descriptive statistics, this section proceeds to analyze the collected data using various statistical tests.

The Chow test was conducted to determine whether a fixed effects model should be employed as opposed to a pooled data approach. The results of the Chow test for the study's regression model are presented in *Table 5*. Based on the findings, since the p-value for the model is less than 0.05, the null hypothesis (H_0: pooled data approach) is rejected, and the alternative hypothesis (H_1: fixed effects model) is accepted for the firms under study.

Table 5. Chow test results.

Test Result	P-Value	F-Statisti	Regression Model
Fixed effects	0.0000	16.12	Model 1

In 1980, Breusch and Pagan [28] employed the Lagrange Multiplier (LM) test to assess a pooled data model against a two-way random effects model, with estimations obtained using the maximum likelihood method. The hypotheses of this test are formulated as follows [29].

I. H_0: pooled model

II. H_1: random effect model

In this test, the null hypothesis (H_0) indicates that the pooled data model is preferable, whereas the rejection of H_1 signifies the presence of random effects in the model. The results of the Breusch and Pagan test for the regression models are presented in *Table 6*. Based on the findings, since the p-value for the study model is less than 0.05, the null hypothesis (H_0: pooled data approach) is rejected, and the alternative hypothesis (H_1: random effects model) is accepted for the firms under investigation.

Table 6. Breusch–Pagan (LM) test results.

Test Result	P-Value	Chi-Bar Statistic	Regression Model
Random effects	0.0000	2484.22	Model 1

Given that the Chow test confirmed the presence of fixed effects and the Breusch–Pagan test indicated the presence of random effects in the study model, the Hausman test was conducted to determine the appropriate choice between fixed and random effects models. The results of the Hausman test for the research model are presented in *Table 7*. Based on the findings, since the p-value for the study models exceeds 0.05, the null hypothesis (H_1: fixed effects model) is rejected, and the random effects model is therefore selected as the preferred specification.

Table 7. Hausman test results.

Test Result	P-Value	Chi-Sq. Statistic	Regression Model
Random effects	0.0746	12.90	Model 1

One of the key issues encountered in econometrics is heteroscedasticity. Heteroscedasticity occurs when the error terms in a regression model have non-constant variances. To assess heteroscedasticity in this study, the White test was employed. The results of this test are presented in *Table 8*. Examination of the findings indicates that, in all research models, the significance level of the heteroscedasticity test is below 5%, suggesting the presence of heteroscedasticity. Given this issue, to address heteroscedasticity, the Generalized Least Squares (GLS) regression method was applied. Consequently, the hypothesis test results were evaluated after correcting for heteroscedasticity.

Table 8. Heteroscedasticity test.

Test Result	P-Value	White statistic	Regression Model
Exhibits heteroscedasticity	0.0001	2.237	Model 1

This study examines political uncertainty, financial corruption, and corporate cash holdings. In the analysis, political uncertainty and financial corruption are treated as independent variables, corporate cash holdings as the dependent variable, and firm size, financial leverage, firm growth, working capital, ROA, and firm age as control variables, with their effects on the relationships being assessed. *Table 9* presents the results of the multiple regression analysis using political uncertainty as the independent variable and corporate cash holdings as the dependent variable.

The first regression model was employed to test the research hypotheses. According to the results presented in *Table 9*, the Chi-square (χ^2) statistic and its associated p-value are significant at the 0.05 level, indicating that the overall fitted regression is statistically significant at a confidence level exceeding 99%. In addition to testing the significance of individual estimated parameters, the overall explanatory power of the regression can be assessed using the coefficient of determination (R^2). The R^2 measures the proportion of the variance in the dependent variable that is explained by the independent and control variables. As reported in *Table 9*, the R^2 for the study model is 0.476, indicating that approximately 47% of the variation in corporate cash holdings can be explained by political uncertainty and the included control variables.

As shown in *Table 9*, the coefficient of the independent variable, political uncertainty, in the first model is -0.61, with a corresponding standard error of 0.0159. Considering its significance level ($p = 0.044$), political uncertainty has a statistically significant negative effect on corporate cash holdings at the 95% confidence level. Consequently, the research hypothesis is supported.

Furthermore, the results presented in *Table 9* indicate that the control variables, firm size and firm growth, exhibit a positive and statistically significant relationship with the dependent variable, corporate cash holdings, at the 95% confidence level. Financial leverage shows a negative and significant relationship with corporate cash holdings at the same confidence level. However, working capital, ROA, and firm age do not demonstrate a statistically significant association with corporate cash holdings.

Table 9. Hypothesis test results.

P-Value	Std. Err	Coefficients	Research Variables
0.000	0.0105	5.63	Firm size
0.040	0.0436	-0.54	Financial leverage
0.037	0.0011	0.16	Firm growth
0.561	0.0062	-0.58	Working capital
0.395	0.0395	0.85	ROA
0.476	0.0231	-0.71	Firm age
0.044	0.0159	0-.61	Political uncertainty
0.000	0.1759	5.74	Intercept
0.7535			First-order autocorrelation
0.5810			Durbin-Watson stat
0.476			Coefficient of determination (R^2)
0.2275			Adj R-squared
33.11			Test statistic
0.0000			Significance level

6 | Discussion and Conclusion

Cash can be considered one of the most important and vital resources for any economic unit, playing a central role in many financial decisions. There exists an optimal level of cash holdings for firms, at which management actively decides on cash retention based on a cost–benefit analysis. Free cash flow is a critical concept that enables firms to pursue opportunities that enhance shareholder value. Without sufficient cash, activities such as new product development, payment of dividends to shareholders, and debt reduction are not feasible. On the other hand, cash must be maintained at a level that balances the cost of holding cash against the cost of cash shortages. Historical information on cash flows can also be useful for monitoring the accuracy of past evaluations and for illustrating the relationship between a firm's operational activities and its future receipts and payments. Firms typically hold a certain percentage of their assets in cash. Moreover, many companies

actively increase their cash holdings. Therefore, the level of cash retention and cash holdings in firms is expected to be associated with multiple factors. Among the factors influencing corporate cash holdings are economic policy uncertainty and financial corruption.

Recent studies indicate that government economic policy uncertainty has had negative real and financial effects. Political uncertainty can be defined as the unpredictability associated with future events, economic shocks and fluctuations, actual economic performance, and market responses to current central bank policies, among other factors. Gulen and Ion [6] report that firms are more likely to postpone investments, particularly those that are most exposed to high levels of economic policy uncertainty.

The first research hypothesis examined the effect of political uncertainty on corporate cash holdings and was tested using a multiple regression approach. Based on the results of the panel data analysis, the first hypothesis was confirmed. The findings indicate that political uncertainty has a negative and statistically significant impact on corporate cash holdings; in other words, as political uncertainty increases, firms' cash holdings decrease. This result can be interpreted as follows: with rising political uncertainty, firms tend to reduce their level of cash holdings. It can be inferred that when firms' income sensitivity coefficients fluctuate more, they are likely to maintain lower cash reserves. In this context, it should be noted that uncertainty in firm policies can increase the volatility of future cash flows, prompting firms to adopt new financial strategies and decisions. Moreover, when policy uncertainty intensifies, firms operating in more turbulent environments are likely to exploit external investment opportunities more aggressively, potentially utilizing more cash for such investment opportunities rather than maintaining high levels of cash holdings. Additionally, increased policy uncertainty may lead to a reduction in capital assets and consequently raise the cost of external financing, which can further incentivize firms to reduce cash reserves and rely more on internal financing.

The results of the first research hypothesis are consistent with the study conducted by Mostafaei [2], which examined the relationship between political uncertainty and cash holdings in companies listed on the Tehran Stock Exchange and found a significant association between political uncertainty and corporate cash holdings. However, the findings do not align with the study by Phan et al. [20], which investigated policy uncertainty and corporate cash holdings and reported that political uncertainty is positively associated with cash holdings, reflecting firms' precautionary motives and, to some extent, investment delays.

Given the confirmation of the first research hypothesis, that political uncertainty has a negative and statistically significant impact on corporate cash holdings, it can be inferred that in the presence of instability and unpredictability in economic policies, firms tend to maintain lower levels of cash. Therefore, it is recommended that investors, users, and standard-setting organizations take this factor into account when making decisions [30]. Furthermore, considering the negative effect of political uncertainty on corporate cash holdings, firms facing heightened political uncertainty are advised to develop appropriate strategies to prevent underinvestment, thereby enhancing performance and investment levels. Such strategies should explicitly account for political uncertainty and identify measures to mitigate its impact. In addition, private-sector investors and financial analysts are encouraged to consider a firm's liquidity position as a key metric for evaluating and forecasting corporate investment during periods of political uncertainty. Finally, market participants, including creditors, suppliers, investors, analysts, and users of corporate financial statements, should incorporate political uncertainty into their assessments of firms' cash holdings and overall financial health. This approach allows for a more precise examination of variations in sales and operational cycles. Moreover, corporate managers can use insights from seasonal and periodic sales fluctuations to guide decisions regarding cash retention policies.

Conflict of Interest

The authors declare that they have no competing interests.

Data Availability

The data supporting the findings of this study are available within the article.

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