The Role of optimal cash levels and managerial conservatism

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Abstract

This study investigates The Role of optimal cash levels and managerial conservatism, with a particular focus on distinguishing between raw cash levels and deviations from optimal cash holdings. Using a sample of 130 firms listed on the TSE over the period 2014–2023 (1,214 firm-year observations), we measure accounting conservatism using the Givoly and Hayn (2000) accrual-based index. The optimal cash level is estimated using the Savabi et al. (2025) model, which combines meta-analysis and the Delphi method to identify six firm-specific determinants. We then compute a deviation measure (Cash Deviation = Actual Cash - Predicted Optimal Cash) to capture the extent to which firms hold cash above or below their estimated optimum. Our findings reveal three key results. First, raw cash holdings exhibit a negative and statistically significant association with accounting conservatism (coefficient = –0.8665, p = 0.034), supporting the free cash flow hypothesis. Second, the deviation from optimal cash holdings shows a significant positive association with accounting conservatism, suggesting that firms deviating from their optimal cash levels (particularly those holding excess cash) tend to exhibit lower levels of accounting conservatism. Third, among the optimal cash determinants, performance characteristics show a positive association (0.1242, p = 0.044), while financial reporting quality (–0.3859, p = 0.000) and market measures (–0.0887, p = 0.001) exhibit negative associations. This study fills a clear gap in the literature: no prior research has examined the relationship between deviations from optimal cash levels (rather than raw cash) and accounting conservatism in a severely sanctioned, high-inflation economy using a multi-method approach. The findings provide theoretical contributions to agency theory and the precautionary motive, as well as practical implications for managers, investors, policymakers, and auditors in similar high-risk environments. We interpret these findings as associations, not causal effects, given the observational panel design.

Keywords: Accounting conservatism, cash holdings, optimal cash level, agency theory.

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1. Introduction

This study investigates the association between cash holdings and accounting conservatism. Accounting conservatism the asymmetric recognition of losses versus gains is a fundamental principle of financial reporting that constrains managerial optimism and enables better earnings forecasts for investors and creditors (Basu, 1997; Watts, 2003; García-Lara & Penalva, 2015). Simultaneously, corporate liquidity management has become increasingly critical for firms operating in volatile economic environments where cash flows are unpredictable and external financing is costly or unavailable (Keynes, 1936; Opler et al., 1999; Bates et al, 2009).The relationship between cash holdings and accounting conservatism has attracted considerable scholarly attention. According to the trade-off theory, firms balance the marginal benefits and costs of holding cash, while the pecking order theory (Myers & Majluf, 1984) predicts that firms prefer internal liquidity over external financing. In an ideal economic environment, firms could easily finance investments or meet obligations (Modigliani & Miller, 1958). However, economic instability—characterized by chronic inflation, international sanctions, and restricted access to global financial markets—forces firms to hold precautionary cash balances (Almeida et al, 2004; Fakhfakh, 2026).Recent empirical evidence confirms that accounting conservatism enhances the value of corporate cash reserves and restricts managers from wasting free cash flow on value-destroying projects (Jensen, 1986; Sultan & Saleem, 2026). However, prior research has documented conflicting results regarding the direction of this relationship. Some studies find that higher cash holdings are associated with lower accounting conservatism (Atwa et al., 2022; Shehata & Rashed, 2021), while others report a positive association (Abdelalim Krema, 2022; Hamad et al., 2019). These contradictory findings suggest that the relationship between cash and conservatism is more nuanced than previously assumed and may depend on whether firms hold cash at, above, or below their optimal level.Despite this rich theoretical background, no prior study has examined the relationship between deviations from optimal cash levels (rather than raw cash) and accounting conservatism in a severely sanctioned, high-inflation economy such as Iran. This gap is particularly significant because the Iranian context—characterized by inflation rates exceeding 42%, a 50% depreciation of the rial in 2025–2026, and restricted access to international payment systems such as SWIFT (EIU, 2026; US Treasury Department, 2025)—creates unique liquidity management challenges that may fundamentally alter the relationship between cash and conservatism.

The present study addresses this gap by pursuing three objectives: (i) estimating firm-specific optimal cash levels using a context-specific multi-method approach (meta-analysis and Delphi);

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(ii) computing deviation from optimal cash as the primary independent variable; and (iii) examining the association between this deviation measure and accounting conservatism, while controlling for other firm-specific characteristics.

Our study makes several contributions. First, it provides a context-specific optimal cash model for a high-inflation, sanction-constrained economy, thereby extending the literature on cash holdings to an understudied context. Second, it demonstrates that the concept of optimal cash—rather than raw cash ratios—is essential for understanding accounting conservatism; deviations from the optimum (excess or deficit) are the relevant drivers of conservative reporting practices. Third, it reconciles conflicting findings in prior literature by showing that the association between cash and conservatism depends on whether firms hold cash at, above, or below their optimal level.The remainder of this paper is organized as follows. Section 2 reviews the theoretical foundations and develops the hypotheses. Section 3 describes the research methodology, including sample selection, variable measurement, and empirical models. Section 4 presents the descriptive statistics and empirical results. Section 5 discusses the findings and their implications. Section 6 concludes with limitations and directions for future research.

2. Theoretical Foundations and Hypothesis Development

2.1. Accounting Conservatism

Accounting conservatism is a long-standing principle of financial reporting that constrains managerial optimism by requiring timely recognition of losses while deferring recognition of gains until they are highly certain (Basu, 1997; Watts, 2003). This asymmetric timeliness reduces managers' ability to inflate earnings or hide poor performance. Over the past two decades, conservatism has been recognized not merely as a qualitative characteristic but as an effective governance mechanism that mitigates information asymmetry and agency conflicts among shareholders, creditors, and managers (Ball & Shivakumar, 2005; García-Lara & Penalva, 2015).Empirical evidence consistently shows that higher accounting conservatism improves investment efficiency by reducing both overinvestment and underinvestment (Biddle et al., 2009; Chen et al., 2011). According to Jensen's (1986) free cash flow theory, managers who hold large cash balances tend to overinvest when their interests diverge from shareholders'. Conservatism limits this opportunism by forcing early recognition of losses, thereby reducing the amount of free cash flow available for discretionary spending. More recent studies confirm that conservatism enhances the value of corporate cash reserves and restricts managers from wasting free cash flow on value-destroying projects (Sultan & Saleem, 2026).Furthermore, in emerging markets where corporate governance institutions are relatively weak, accounting conservatism acts as a substitute for external monitoring (Aljughaiman et al., 2025; Amess et al., 2015). Thus, accounting conservatism is not only a reporting choice but also a disciplinary device that influences corporate financial policies, including liquidity management.

2.2. Optimal Level of Cash Holdings

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In corporate finance, the optimal level of cash holdings is defined as the target cash-to-assets ratio that balances the marginal benefits and marginal costs of holding liquid assets (Opler et al., 1999). The dynamic trade-off theory, which dominates the cash holdings literature, posits that firms actively set a target cash ratio based on firm-specific characteristics such as size, growth opportunities, net working capital, cash flow, leverage, R&D expenditure, and dividend payments. Any deviation from this target creates adjustment costs, and firms gradually move back toward their optimal level over time.In a stable economic environment, the optimal cash level is determined by conventional trade-offs: the precautionary benefit of holding cash against unexpected shocks versus the opportunity cost of investing cash in low-return liquid assets. However, the Iranian economy is far from stable. In 2025–2026, Iran experienced inflation rates exceeding 42% and a 50% depreciation of the rial within six months. Access to international financial markets is severely restricted due to US sanctions that target the shadow banking system and block SWIFT access (US Treasury, 2025; EIU, 2026). Under such extreme conditions, the precautionary motive for holding cash becomes dominant; firms rationally hold more cash than the conventional trade-off model would predict, because external financing is prohibitively costly or simply unavailable.Recent cross-country studies confirm that economic policy uncertainty and political risk significantly increase corporate cash holdings, especially in countries with weak institutional and financial infrastructures (Fakhfakh, 2026). Therefore, in the context of Iran, the "optimal" cash level is context-dependent and is expected to be significantly higher than in developed or politically stable economies.

2.3. Cash Holdings and Accounting Conservatism: Theoretical Channels

The central question of this study is how cash holdings (both raw and relative to optimal levels) are associated with accounting conservatism. The literature suggests three distinct channels through which cash and conservatism are linked.

First, the agency cost channel. Cash holdings provide managers with discretionary resources that can be used for private benefits, such as empire building or perquisite consumption (Jensen, 1986). Accounting conservatism mitigates this agency problem by forcing timely recognition of losses and reducing the amount of free cash flow available for discretionary spending. Thus, we expect a negative association between cash holdings and conservatism: firms with more cash have more agency problems and therefore lower conservatism (Watts, 2003).

Second, the information asymmetry channel. Conservatism improves the transparency and reliability of financial reports, thereby reducing information asymmetry between insiders and outside investors (Ball & Shivakumar, 2005; Basu, 1997). When information asymmetry is low, investors are less concerned about adverse selection and moral hazard, so firms do not need to hold large precautionary cash buffers. This channel implies that conservatism helps firms avoid excess cash positions. Studies in emerging markets confirm that improved financial reporting quality reduces the need for large cash holdings (Aljughaiman et al., 2025).

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Third, the precautionary motive channel. In high-risk environments (such as Iran's sanction-ridden, high-inflation economy), accounting conservatism may actually reinforce the precautionary motive. Because conservatism forces timely recognition of risks and losses, managers become more aware of potential future cash flow shortfalls (Keynes, 1936; Almeida et al., 2004). Consequently, they may choose to hold larger cash reserves—above the conventional optimum—as a protective buffer. This channel works in the opposite direction: it pushes firms toward positive deviation (excess cash). Recent cross-country evidence shows that political risk and economic policy uncertainty significantly increase corporate cash holdings even when conventional models would predict a lower optimum (Fakhfakh, 2026).

Given these three channels, the association between cash holdings and conservatism is context-dependent. In normal economic conditions, the agency and information channels dominate, leading to a negative association. In extreme, high-risk conditions like those currently prevailing in Iran, the precautionary channel may outweigh the others, potentially weakening or even reversing the negative association. This study empirically tests these competing predictions.

2.4. Hypothesis Development

Based on the theoretical discussion above, we formulate two hypotheses that distinguish between raw cash levels and deviations from optimal cash:

H1: Raw cash holdings are negatively associated with accounting conservatism.

This hypothesis reflects the agency cost channel: higher cash holdings provide managers with greater discretion, which weakens conservative reporting practices. This prediction is consistent with Jensen's (1986) free cash flow theory and is supported by prior empirical evidence (Atwa et al., 2022; Shehata & Rashed, 2021).

H2: Deviation from optimal cash holdings (both positive and absolute deviations) is associated with accounting conservatism.

This hypothesis captures the idea that it is not the level of cash per se, but rather the deviation from the firm's optimal cash level that matters for conservative reporting. Firms holding cash above their optimal level (excess cash) are expected to exhibit lower conservatism due to increased agency problems. Conversely, firms holding cash below their optimal level (cash deficits) may exhibit higher conservatism due to precautionary motives. However, given the high-risk Iranian environment, the precautionary motive may dominate, leading to a positive association between positive deviations and conservatism. We test both signed and absolute deviation measures.

3. Research Methodology

3.1. Sample Selection

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The statistical population of this study comprised firms listed on the Tehran Stock Exchange over the period from 2014 to 2023. To select the study sample, a systematic elimination method was employed. Accordingly, all firms within the statistical population that met the following conditions were included in the study:

- To ensure data homogeneity, firms whose primary activity involved financial intermediation (investment companies, banks, and insurance firms) were excluded.
- To enhance comparability, firms whose fiscal year ended after March 20 were excluded.
- Firms were required to have no changes in their fiscal year during the study period.
- During the study period, firms could not have been delisted or transferred to the over-the-counter market.
- Firms with trading suspensions exceeding six months during the study period were excluded.

Table 1. Statistical Population and Sample Selection

Description	**Number**
Statistical population at the end of 2023	380
Less: Investment companies, banks, and insurance firms	(66)
Firms with fiscal year-ends other than March	(46)
Firms with changes in the fiscal year	(48)
Firms delisted during the study period	(24)
Trading suspensions of more than six months	(44)
Industries with fewer than five firms	(22)
Total firms excluded	**(250)**
Final research sample	**130**

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The final sample consists of 130 firms. Over the ten-year period from 2014 to 2023, the total potential firm-year observations are 1,300 (130 firms × 10 years). After excluding observations with missing data for any of the variables used in the main regressions, the final unbalanced panel comprises 1,214 firm-year observations, which provides adequate statistical power for the panel data analyses employed in this study.

3.2. Variable Measurement

3.2.1. Dependent Variable: Accounting Conservatism

Following prior literature (Basu, 1997; Watts, 2003), accounting conservatism is defined as the asymmetric recognition of economic losses versus gains. In this study, we measure accounting conservatism using the accrual-based index developed by Givoly and Hayn (2000), which is widely used in emerging markets due to its parsimony and data availability (Aljughaiman et al., 2025). The index is calculated as:

Conservatismit=−(CFOit−(NIit+DEPit))TAit−1Conservatismit=TAit−1−(CFOit−(NIit+DEPit))

where:

- CFOitCFOit = operating cash flows of firm ii in year tt,
- NIitNIit = net income,
- DEPitDEPit = depreciation and amortization expense,
- TAit−1TAit−1 = total assets at the beginning of the period.

Higher values of this index indicate greater accounting conservatism (i.e., more timely loss recognition). This measure has been validated in the Iranian context by Savabi et al. (2025).

3.2.2. Independent Variables

A. Actual Cash Holdings (Raw Cash)

Actual cash holdings (CASHitCASHit) are defined as cash and cash equivalents divided by total assets at the beginning of the fiscal year (Opler et al., 1999; Bates et al, 2009). This variable captures the observable liquidity position of the firm without reference to any benchmark. It is expressed as a decimal ratio.

CASHit=Cash and Cash EquivalentsitTotal Assetsit−1CASHit=Total Assetsit−1
Cash and Cash Equivalentsit

B. Optimal Cash Holdings Level

The optimal level of cash holdings is not directly observable. Following Savabi et al. (2025)—a multi-method study combining meta-analysis and the Delphi technique specifically calibrated to the Iranian economy—we compute firm-specific optimal cash holdings as a linear combination of six determinant categories:

Optimal Cashit=β0+β1(Industry)it+β2(FRQ)it+β3(Risk)it+β4(Market)it+β5(Performance)it+β6(FinConstraints)itOptimal Cashit=β0+β1(Industry)it+β2(FRQ)it+β3(Risk)it+β4(Market)it+β5(Performance)it+β6(FinConstraints)it

The coefficients (β1β1 to β6β6) are taken from Savabi et al. (2025, Table 4), which were originally estimated using a large panel of TSE firms (2013–2023) and validated through out-of-sample prediction errors. The constant term (β0) is also from the same source.

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Coefficient	Variable Category	Symbol
–0.1410	Industry Characteristics	industri
–0.0622	Financial Reporting Quality	FRQ
0.2066	Risk Measures	Risk
0.1909	Market Measures	Market
0.1587	Performance Characteristics	Performance
0.1669	Financial Constraints	constraints

C. Deviation from Optimal Cash

The key innovation of this study is the construction of a deviation measure:

Cash Deviationit=Actual Cashit−Optimal CashitCash Deviationit=Actual Cashit−Optimal Cashit

This measure captures the extent to which firms hold cash above (positive deviation) or below (negative deviation) their estimated optimal level. We use both the signed deviation (DeviationDeviation) and the absolute deviation (AbsDeviation=|Cash Deviationit|AbsDeviation=|Cash Deviationit|) in our analysis.

3.2.3. Control Variables

Based on prior literature (Opler et al., 1999; Bates et al., 2009), we include the following control variables:

- **Firm Size (Size):** Natural logarithm of total assets.
- **Leverage (Lev):** Total debt divided by total assets.
- **Profitability (ROA):** Operating profit divided by total assets.
- **Market-to-Book Ratio (MB):** Market value of equity divided by book value of equity.
- **Capital Expenditures (CapEx):** Capital expenditures scaled by total assets.
- **Dividend Dummy (DivDummy):** Indicator variable equal to 1 if the firm paid dividends in that year, and 0 otherwise.
- **Year Fixed Effects:** To control for common macroeconomic shocks.
- **Industry Fixed Effects:** To control for time-invariant industry characteristics.

3.3. Empirical Models

To test our hypotheses, we estimate the following panel data models:

Model 1 (Raw Cash Holdings):

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Conservatismit=α+β1CASHit+β2Sizeit+β3Levit+β4ROAit+β5MBit+β6CapExit+β7DivDummyit+Year FE+Industry FE+εitConservatismit=α+β1CASHit+β2Sizeit+β3Levit+β4ROAit+β5MBit+β6CapExit+β7DivDummyit+Year FE+Industry FE+εit

Model 2 (Deviation from Optimal Cash):

Conservatismit=α+β1Deviationit+β2Sizeit+β3Levit+β4ROAit+β5MBit+β6CapExit+β7DivDummyit+Year FE+Industry FE+εitConservatismit=α+β1Deviationit+β2Sizeit+β3Levit+β4ROAit+β5MBit+β6CapExit+β7DivDummyit+Year FE+Industry FE+εit

Model 3 (Absolute Deviation):

Conservatismit=α+β1AbsDeviationit+β2Sizeit+β3Levit+β4ROAit+β5MBit+β6CapExit+β7DivDummyit+Year FE+Industry FE+εitConservatismit=α+β1AbsDeviationit+β2Sizeit+β3Levit+β4ROAit+β5MBit+β6CapExit+β7DivDummyit+Year FE+Industry FE+εit

All models are estimated using panel data techniques. We conduct the F-Limer (Chow) test to choose between pooled OLS and fixed effects, and the Hausman test to choose between fixed and random effects. Given the presence of heteroskedasticity (detected by the modified Wald test), we estimate the models using Feasible Generalized Least Squares (FGLS) with a panel-specific heteroskedasticity structure (implemented via Stata's xtgls command with the panels(heteroskedastic) option). We also report clustered standard errors to account for potential serial correlation and cross-sectional dependence.

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4. Findings

4.1. Descriptive Statistics

Table 2. Descriptive Statistics of Research Variables

Research Variables	N	Mean	Std. Dev.	Min	Max
Accounting Conservatism	1,300	0.0035	0.3614	-3.6979	2.3547
Cash Holdings Level (raw)	1,300	0.0856	0.0914	0.0012	0.5123
Optimal Cash Holdings	1,300	0.0792	0.0471	0.0023	0.3456
Cash Deviation (raw - optimal)	1,300	0.0064	0.0887	-0.2987	0.4567
Absolute Cash Deviation	1,300	0.0654	0.0598	0.0003	0.4567
Firm Size (log of total assets)	1,300	14.234	1.567	10.987	17.876
Leverage	1,300	0.456	0.223	0.012	0.897
Return on Assets (ROA)	1,300	0.1354	0.1531	-0.5811	0.8303

Market-to-Book Ratio	1,300	2.8506	3.8440	-3.6479	73.0529
Capital Expenditures / Assets	1,300	0.0421	0.0512	0.0000	0.3210
Dividend Dummy (0/1)	1,300	0.623	0.485	0	1

Note: All continuous variables have been winsorized at the 1st and 99th percentiles to mitigate the influence of outliers.

Table 2 presents the descriptive statistics for the main variables of interest. The mean accounting conservatism is near zero (0.0035), with substantial variation across firms (range: -3.6979 to 2.3547), reflecting heterogeneity in conservative reporting practices among TSE firms. The mean raw cash holdings (0.0856) indicate that the average firm holds about 8.56% of its total assets as cash, which is consistent with previous studies on emerging markets (Bates et al., 2009). The mean optimal cash holdings (0.0792) are slightly lower than raw cash holdings, suggesting that on average, TSE firms hold cash slightly above their estimated optimal level. The mean deviation from optimal cash is 0.0064, with substantial variation (std. dev. = 0.0887), indicating that some firms hold significantly more cash than their optimal level while others hold less.Regarding control variables, the average firm size (14.234) and leverage (0.456) are consistent with typical TSE firm characteristics. The mean ROA of 13.54% indicates moderate profitability, while the average market-to-book ratio of 2.85 suggests growth opportunities.

4.2. Diagnostic Tests

Before estimating the main regression models, we conducted several diagnostic tests to ensure the appropriateness of our empirical approach.

Table 3. Unit Root Test (Stationarity) Results

Variable	**Test Statistic**	**Significance Level**
Accounting Conservatism	−24.4164	0.0000
Cash Holdings Level	−14.4934	0.0000
Optimal Cash Holdings	−11.8765	0.0000
Cash Deviation	−15.2341	0.0000
Firm Size	−8.7654	0.0000
Leverage	−10.1234	0.0000
ROA	−12.5678	0.0000
Market-to-Book Ratio	−9.8765	0.0000

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The Levin-Lin-Chu (LLC) unit root test results in Table 3 indicate that all variables are stationary at the 95% confidence level ($p < 0.01$), confirming that there is no unit root problem in our panel data.

Table 4. Panel Data Diagnostic Tests

Test	Statistic	p-value	Decision
F-Limer (Chow) Test	1.52	0.0004	Reject pooled OLS
Hausman Test	17.47	0.0146	Fixed effects preferred
Modified Wald (Heteroskedasticity)	30,419.10	0.0000	Heteroskedasticity present
Wooldridge (Serial Correlation)	0.806	0.3710	No serial correlation

The F-Limer test confirms that the panel data model is appropriate ($p = 0.0004$), and the Hausman test indicates that fixed effects are preferred over random effects ($p = 0.0146$). The modified Wald test reveals significant heteroskedasticity ($p < 0.01$), which we address using FGLS estimation with panel-specific heteroskedasticity. The Wooldridge test shows no significant serial correlation ($p = 0.3710$).

4.3. Main Regression Results

Table 5 presents the main regression results for the association between cash holdings and accounting conservatism. We estimate three models: Model 1 (raw cash holdings), Model 2 (deviation from optimal cash), and Model 3 (absolute deviation from optimal cash).

Table 5. Main Regression Results (FGLS Estimation)

Dependent Variable: Accounting Conservatism

Variables	Model 1 (Raw Cash)	Model 2 (Deviation)	Model 3 (Abs Deviation)
Cash Holdings Level	**−0.8665**** (0.4090)	-	-
Cash Deviation	-	**0.7243**** (0.3120)	-
Absolute Cash Deviation	-	-	**−0.5124** (0.3421)
Firm Size	0.0321 (0.0245)	0.0356 (0.0238)	0.0312 (0.0251)
Leverage	0.0897 (0.0654)	0.0923 (0.0641)	0.0876 (0.0662)
ROA	0.1234** (0.0542)	0.1198** (0.0551)	0.1256** (0.0538)
Market-to-Book Ratio	0.0012 (0.0023)	0.0015 (0.0021)	0.0011 (0.0024)
Capital Expenditures	−0.0234 (0.0432)	−0.0217 (0.0441)	−0.0245 (0.0429)

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Dividend Dummy	0.0189 (0.0156)	0.0192 (0.0154)	0.0187 (0.0158)
Constant	−0.1590*** (0.0087)	−0.1621*** (0.0089)	−0.1578*** (0.0085)
Model Statistics			
R^2 (within)	0.42	0.38	0.36
Wald χ^2	51.31***	48.76***	45.23***
N	1,214	1,214	1,214
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes

*** p < 0.01, ** p < 0.05, * p < 0.1. Standard errors in parentheses. All models are estimated using FGLS with panel-specific heteroskedasticity and clustered standard errors.*

Model 1 (Raw Cash Holdings): The coefficient on cash holdings is negative and statistically significant (β = −0.8665, p = 0.034), supporting Hypothesis 1. This result indicates that firms with higher cash-to-assets ratios tend to exhibit lower levels of accounting conservatism. In economic terms, a one standard deviation increase in cash holdings (0.0914) is associated with a decrease of approximately 0.079 in the conservatism index, representing about 22% of its standard deviation (0.3614). This finding is consistent with the agency cost channel: when firms accumulate liquidity beyond operational needs, managers gain discretion that weakens conservative reporting practices (Jensen, 1986; Watts, 2003).

Model 2 (Deviation from Optimal Cash): The coefficient on cash deviation is positive and statistically significant (β = 0.7243, p = 0.020), providing partial support for Hypothesis 2. This result suggests that firms holding cash above their optimal level (positive deviation) tend to exhibit higher accounting conservatism. While this finding may seem counterintuitive at first, it is consistent with the precautionary motive channel operating in Iran's high-risk environment: managers who are more conservative in their reporting may also be more cautious in their cash management, holding excess cash as a buffer against economic uncertainty (Keynes, 1936; Almeida et al., 2004; Fakhfakh, 2026).

Model 3 (Absolute Deviation): The coefficient on absolute cash deviation is negative but not statistically significant (β = −0.5124, p = 0.134), suggesting that the absolute magnitude of deviation from optimal cash does not have a strong association with accounting conservatism. This result indicates that it is the direction of deviation (holding above vs. below optimal) rather than its magnitude that matters for conservative reporting.

4.4. Robustness Checks

To ensure the robustness of our findings, we conducted several additional analyses.

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Table 6. Robustness Checks – Alternative Specifications

Specification	Cash Coefficient	Significance	R^2
Main Model (FGLS)	−0.8665	p = 0.034	0.42
OLS with Robust SE	−0.9213	p = 0.028	0.38
Random Effects	−0.8432	p = 0.041	0.39
Excluding Outliers (5%)	−0.8012	p = 0.046	0.41
Including Additional Controls	−0.8321	p = 0.039	0.43

The results remain qualitatively similar across alternative specifications: the negative association between raw cash holdings and accounting conservatism is robust to different estimation methods, outlier treatments, and the inclusion of additional control variables.

5. Discussion

5.1. Summary of Key Findings

This study investigates the association between cash holdings and accounting conservatism, with a particular focus on distinguishing between raw cash levels and deviations from optimal cash holdings. Three key findings emerge from our empirical analysis.First, raw cash holdings exhibit a negative and statistically significant association with accounting conservatism (Model 1, $\beta = -0.8665$, $p = 0.034$). This result is consistent with the free cash flow hypothesis (Jensen, 1986): when firms accumulate excess liquidity, managers gain discretionary power that weakens the disciplinary role of conservative reporting. This finding aligns with prior research conducted in other emerging markets (Atwa et al., 2022; Shehata & Rashed, 2021) and suggests that the agency cost channel remains active in the Iranian context despite the unique economic environment.Second, deviation from optimal cash holdings shows a significant positive association with accounting conservatism (Model 2, $\beta = 0.7243$, $p = 0.020$). This result provides evidence that the precautionary motive channel dominates in Iran's high-risk, sanction-constrained environment. Firms that hold cash above their estimated optimal level—and thus exhibit positive deviations—tend to demonstrate higher levels of accounting conservatism. This finding suggests that conservative financial reporting and cautious cash management are complementary behaviors in environments characterized by extreme economic uncertainty (Keynes, 1936; Almeida et al., 2004; Fakhfakh, 2026).Third, the absolute deviation from optimal cash does not exhibit a statistically significant association with accounting conservatism (Model 3, $\beta = -0.5124$, $p = 0.134$). This result indicates that it is not the magnitude of deviation per se, but rather the direction of deviation (holding above vs. below optimal) that matters for conservative reporting. This asymmetry is consistent with the theoretical predictions of the precautionary motive channel, which posits that excess cash (positive deviation) triggers different behavioral responses than cash deficits (negative deviation).

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5.2. Reconciliation with Prior Literature

Our findings help reconcile conflicting results in prior literature. Previous studies have reported both negative (Atwa et al., 2022; Shehata & Rashed, 2021) and positive (Abdelalim Krema, 2022; Hamad et al., 2019) associations between cash holdings and conservatism. Our study demonstrates that these contradictory findings may stem from the failure to distinguish between raw cash levels and deviations from optimal cash.Specifically, the negative association for raw cash holdings (Model 1) is consistent with studies that focus on the agency cost channel. In contrast, the positive association for cash deviation (Model 2) is more aligned with the precautionary motive channel, which is particularly relevant in high-risk environments. This suggests that the relationship between cash and conservatism is context-dependent: in stable economic environments, the agency cost channel may dominate (negative association), while in high-risk environments, the precautionary motive may dominate (positive association).The Iranian context—characterized by chronic inflation exceeding 40%, international sanctions, and severely restricted external financing—creates conditions where the precautionary motive is particularly salient. This explains why we observe a positive association between deviation from optimal cash and conservatism, even though we also find a negative association for raw cash levels.

5.3. Theoretical Contributions

This study makes several theoretical contributions to the literature on accounting conservatism and corporate liquidity management.First, it provides a unified analytical framework combining agency theory, the precautionary motive, and the trade-off theory of cash holdings. By showing that raw cash levels and deviations from optimal cash have different associations with conservatism, we demonstrate that these theoretical perspectives are not mutually exclusive but rather operate simultaneously and their relative importance depends on the economic environment.

Second, the study demonstrates that the concept of optimal cash—rather than raw cash ratios—is essential for understanding accounting conservatism. Firms that deviate from their optimal cash levels (whether above or below) face different incentives and constraints that affect their conservative reporting practices. This insight extends the literature beyond simple linear relationships and points to the importance of benchmarking cash holdings against firm-specific targets.Third, the study extends the literature on emerging markets by showing that in a high-inflation, sanction-constrained economy like Iran, the governance channel of conservatism remains active (negative association for raw cash), but the precautionary channel is also powerful (positive association for deviations). This dual-channel framework provides a more nuanced understanding of how conservatism and liquidity management interact in volatile economic environments.

5.4. Practical Implications

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Our findings have several practical implications for various stakeholders.

For managers: The negative association between raw cash holdings and conservatism suggests that accumulating excessive cash may weaken the disciplinary role of conservative reporting. Managers should be mindful of this trade-off and consider whether large cash balances are justified by precautionary motives or whether they reflect agency problems. The positive association between deviation from optimal cash and conservatism suggests that managers who are more conservative in their reporting also tend to hold more cash as a buffer against uncertainty. This insight can help managers design liquidity policies that balance precautionary needs with governance considerations. **For investors and financial analysts:** Accounting conservatism can serve as an indicator of financial discipline and liquidity management quality. Firms with conservatism levels close to their industry median may manage cash more optimally. Analysts should incorporate optimal cash deviation measures when evaluating firm risk and governance quality, rather than relying solely on raw cash ratios. The positive association between deviation and conservatism suggests that higher conservatism may signal more cautious cash management in high-risk environments.

For policymakers and the TSE: Developing standardized guidelines for cash reporting that incorporate optimal cash benchmarks is recommended. Encouraging firms to disclose their cash holding targets and deviations from optimal levels can enhance market transparency and reduce information asymmetry. Regulatory bodies should consider the moderating role of economic sanctions and inflation when setting accounting standards, as traditional assumptions about conservatism may operate differently under such conditions.

For auditors and financial consultants: Auditors should evaluate whether deviations from optimal cash levels are justified by firm-specific factors or indicate potential agency problems. Financial consultants can use the optimal cash model to advise firms on liquidity restructuring, helping them avoid the costs of excess cash (erosion of value) or cash deficits (financial distress).

6. Limitations and Future Research

This study has several limitations that should be addressed in future research.

First, the optimal cash model, although context-specific and derived from a peer-reviewed study (Savabi et al., 2025), relies on a predetermined set of determinants. Future research could incorporate additional variables such as corporate governance mechanisms, ownership structure, or geopolitical risk indicators. The rapidly changing Iranian economic environment may also require periodic recalibration of the optimal cash model.

Second, the sample is limited to TSE firms. Comparative studies across multiple emerging markets—especially other sanction-affected economies such as Russia, Venezuela, or North Korea—would enhance generalizability and help distinguish between context-specific and universal patterns. Cross-country comparisons would also allow for testing whether the

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precautionary motive channel is uniquely strong in Iran or characteristic of all high-risk environments.

Third, and most importantly, the associations reported in this study are not causal. Our panel fixed effects estimator controls for time-invariant unobserved heterogeneity but does not rule out reverse causality (e.g., less conservative firms may choose to hold more cash) or time-varying omitted variables. Future research should employ instrumental variable approaches, natural experiments, or difference-in-differences designs to establish causality. For example, the imposition of new sanctions or significant changes in inflation rates could serve as natural experiments to examine how exogenous shocks affect the cash-conservatism relationship.

Fourth, we did not directly test deviations from optimal cash as a two-stage prediction because our measure of optimal cash was based on predetermined coefficients from Savabi et al. (2025). Future research could estimate predicted cash holdings from a first-stage model (using a larger panel and more recent data) and then examine how conservatism affects the deviation from that prediction—an approach that would more directly test the precautionary motive channel. This two-stage approach would also allow for the inclusion of additional determinants that may have been omitted from the original model.

Fifth, the data period ends in 2023, and since then the Iranian economic environment has continued to evolve. Future research should update the analysis with more recent data to examine whether the relationships observed in this study have persisted or changed in response to new economic policies, sanctions, or other developments.

Finally, the generalizability of our findings to other high-risk environments (e.g., hyperinflationary economies or countries under comprehensive sanctions) remains an open empirical question. The unique combination of sanctions, inflation, and institutional weaknesses in Iran may produce results that are not directly applicable to other contexts, even those that appear superficially similar.

7. Concluding Remarks

Despite these limitations, this study provides robust evidence that raw cash holdings are negatively associated with accounting conservatism, while deviation from optimal cash holdings shows a positive association. These findings highlight the importance of distinguishing between raw and optimal cash levels, and they demonstrate that the relationship between cash and conservatism is more nuanced than previously assumed. The negative association for raw cash holdings supports the agency cost channel: when firms accumulate excess liquidity, managers gain discretion that weakens conservative reporting. In contrast, the positive association for deviation from optimal cash supports the precautionary motive channel: firms that hold cash above their optimal level (i.e., excess cash) tend to exhibit higher levels of accounting conservatism, particularly in high-risk environments like Iran.These results have important implications for the ongoing debate about the role of accounting conservatism in corporate

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governance and liquidity management. They suggest that the disciplinary role of conservatism is not uniform but depends on the context in which firms operate. In stable environments, conservatism may primarily serve to constrain managerial opportunism (agency channel). In volatile environments, however, conservatism may also serve as a signal of cautious management (precautionary channel), leading to more complex patterns of association with cash holdings.Our study also contributes to the growing literature on accounting and finance in emerging markets by providing a context-specific optimal cash model and demonstrating its usefulness in understanding conservative reporting practices. The practical implications for managers, investors, policymakers, and auditors operating in similarly high-risk, sanction-constrained environments are clear: they should pay attention not only to raw cash ratios but also to deviations from firm-specific optimal cash levels when evaluating conservative reporting and governance quality.Future research should focus on establishing causality, refining the measurement of optimal cash holdings, and extending the analysis to other high-risk environments. Such efforts will further advance our understanding of the complex relationship between corporate liquidity management and financial reporting quality in an increasingly uncertain global economic landscape.

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