

Conservatism and stock crash risk: An investigation in a frontier market

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Abstract: This study investigates the influence of accounting conservatism on stock price crash risk. Our research data is collected from 328 non-financial listed companies on the Ho Chi Minh City Stock Exchange (HOSE) in Vietnam over a 5-year period (2019 to 2023). We employ various statistical econometric models to test our research hypothesis and enhance the accuracy of regression results. Our findings reveal a negative impact of accounting conservatism on stock price crash risk. Empirical evidence shows that higher accounting conservatism lowers stock crash risk by promoting timely loss recognition and reducing earnings manipulation. Additionally, increased profitability further diminishes crash risk, and its effect is even stronger when combined with conservative accounting, thereby stabilizing outcomes and boosting investor confidence. This study provides practical insights into the advantages of applying prudence in accounting for businesses. The findings can assist listed companies in formulating effective accounting strategies to safeguard their stock value. Additionally, they offer valuable guidance for policymakers in enhancing Vietnam's accounting regulations and financial reporting standards.

Keywords: Accounting conservatism, Firm profitability, Foreign ownership, Managerial ownership, Stock price crash risk.

1. Introduction

Financial statements are classed as an important product of financial accounting, which provide essential information for managers and various stakeholders, including external parties such as investors, creditors, banks, employees, and regulatory authorities. This will ensure the reliability of financial statements is one of the top priorities. All accountants need to follow these set regulation, principles and guidelines to keep a high reliability when preparing financial reports.

Prudence is a key accounting principle that helps make financial information more accurate and reliable. The International Accounting Standards Board (IASB) states that many countries, both developed and developing, use this principle. Prudence means businesses are required to record expenses, income, assets, and provisions honestly to give a more reliable picture of their finances. It can be applied because of either legal requirements or management decisions.

The prudence principle improves the reliability of financial information for stakeholders and helps businesses manage financial risks better. A numerous amount of international studies has examined how prudence can affect business performance. For example, Aminu and Hassan [1]; Ahmed and Duellman [2] and Sana'a [3] has found that using prudence, it is possible to increase business efficiency. Other research shows that companies using prudence may have a lower risk of stock price declines.

Research in Vietnam on prudence in accounting is still new so therefore limited. With the majority of studies focusing on how businesses implement and measure prudence. For example, Le, et al. [4]

explored how ownership structure influences prudence in Vietnamese companies. Nguyen [5] and their studies show how corporate governance affects the use of prudence in listed businesses.

Because there has not been much research on the benefits of prudence in Vietnam's accounting practices, this study attempts to fill that gap with both theory and practical insights. It concentrates on how prudence impacts the risk of stock price drops in companies listed on Vietnam's stock market.

The study also helps explain how prudence in accounting ties into market risks, especially falling stock prices. In Vietnam's developing financial market, which follows both international and local accounting rules, learning more about prudence's role can add useful insights to research in accounting and finance.

This study offers practical evidence of how using prudence in accounting can benefit businesses. It gives useful information for investors, companies, and regulators. The results can help listed companies develop smart accounting strategies to protect their stock value. They can also guide policymakers in improving Vietnam's accounting rules and financial reporting.

2. Literature Review

2.1. Accounting Conservatism

Under the International Financial Reporting Standards (IFRS), the principle of prudence in accounting is understood as the necessity for accountants to exercise judgment when making estimates in conditions of uncertainty. This means avoiding the overstatement of revenues or assets and ensuring that expenses and liabilities are not understated.

In contrast, under the Vietnamese Accounting Standards (VAS), as outlined in Circular 200/2014/TT-BTC, prudence is defined as the careful consideration, assessment, and judgment required to make accounting estimates in uncertain economic conditions.

According to Vietnamese Accounting Standard (VAS) No. 01, the principle of prudence entails:

- Establishing provisions without excessive overstatement;
- Ensuring that assets and income are not overstated while liabilities and expenses are not understated;
- Recognizing revenues and income only when there is sufficient evidence of economic benefits, whereas expenses must be recognized as soon as there is evidence of their occurrence.

Therefore, prudence in accounting significantly impacts the quality of financial information. It is regarded as a crucial constraint affecting financial reporting, particularly when accountants must choose between alternative accounting treatments [3].

The principle of prudence has gained increasing attention as financial information becomes more relevant to stakeholders. The level of conservatism in financial reporting remains a contentious issue in modern accounting thought. While the primary objective of accounting conservatism is to protect the interests of shareholders, creditors, and other stakeholders, it has faced significant criticism for conflicting with key qualitative characteristics of financial information, such as objectivity, faithful representation, and fairness—especially with the emergence of fair value accounting concepts [3].

There are two primary forms of accounting conservatism: conditional conservatism and unconditional conservatism. Conditional conservatism refers to recognizing bad news more quickly than good news, while unconditional conservatism involves consistently undervaluing net assets regardless of the nature of the news [6].

2.2. Accounting Conservatism and Stock Crash Risk

Conflicts of interest between managers and stakeholders arise because ownership and control in companies are separate. According to Ahmed and Duellman [2] since contracts alone cannot fully resolve these conflicts due to high costs and practical limitations, corporate governance mechanisms help address them.

According to Watts [7] accounting conservatism requires stricter verification for gains than for losses, leading to the early recognition of losses and an understatement of assets. As a result, bad news is reported quickly, while good news is recognized later [8, 9]. To avoid dismissal, managers may try to delay reporting losses through aggressive accounting. However, studies suggest that conservatism helps prevent this by promoting timely disclosure of negative information [10]. By limiting the buildup of undisclosed bad news, conservatism reduces the risk of sudden stock price crashes. Research also shows that conservatism influences investment decisions [11, 12]. By recognizing losses early and delaying gains, it exposes poor investment choices sooner, discouraging managers from continuing unprofitable projects. This further reduces the likelihood of stock price crashes.

Kim and Zhang [13] specifically examine how conditional conservatism affects future stock price crashes (SPCR), finding a negative relationship between the two. However, previous studies have not directly linked both conditional and unconditional conservatism to SPCR. Balakrishnan, et al. [14] argue that conservative firms face fewer funding and liquidity issues during crises, benefiting firms with higher information asymmetry. While unconditional conservatism has been shown to reduce risk, Kim and Zhang [13] suggest that only conditional conservatism lowers information asymmetry by ensuring faster disclosure of bad news. This aligns with studies favoring conditional conservatism for improving financial transparency [15]. However, Biddle, et al. [16] and Toksoz [17] argue that unconditional conservatism also reduces risk by limiting earnings management and strengthening a firm's financial position through better cash flow management. As a result, unconditional conservatism may also lower the likelihood of future stock price crashes.

Based on these studies, we propose the following research hypothesis:

H₁: Accounting conservatism negatively impacts stock crash risk



Figure 1.
Illustration of Hypothesis 1.

3. Research Methodology

3.1. Research model

To test Hypothesis 1 (H1), which posits that earnings management (CONSER) has a positive impact on stock crash risk (CRASH_R), we design the following baseline regression model:

$$\text{CRASH}_{R_{i,t}} = \beta_0 + \beta_1 \text{CONSER}_{i,t} + \beta_2 \text{CONTROLS}_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where CRASH_R represents Stock Crash Risk, which is the dependent variable. It is measured by the standard deviation of stock returns or other similar metrics that capture significant downward movements in stock prices. CONSER refers to accounting conservatism, typically measured using an accrual-based approach like the Basu [18] model, or other measures that reflect the timing of profit and loss recognition. CONTROLS represents all control variables, including: ROE, which is calculated as the ratio of net income to total ownership equity; VOLA, measured by the standard deviation of stock returns over a specific period; LEV, the ratio of total debt to total equity; MB, the market-to-book ratio; MWNC, which represents the percentage of shares owned by managers and their family; FWNC, which represents the percentage of shares owned by foreign investors. RET, indicating the stock return of the firm.

This model controls for firm-specific variables that could influence stock crash risk, allowing us to isolate the impact of earnings management on crash risk. Besides the main model to test the direct impact of accounting conservatism on stock crash risk, we devise the second model (Model 2) to further explore the moderating effect of accounting conservatism on the relationship between firm profitability

on stock crash risk. To do so, we extend the baseline model by including an interaction term between accounting conservatism (CONSER) and firm profitability. The modified regression model is as follows:

$$CRASH_{R_{i,t}} = \beta_0 + \beta_1 CONSER_{i,t} + \beta_2 ROE_{i,t} * CONSER_{i,t} + \beta_3 CONTROLS_{i,t} + \varepsilon_{i,t} \quad (2)$$

Where *CONSER* captures accounting conservatism for firm *i* at time *t*; The interaction term *ROE* × *CONSER* allows for an examination of whether accounting conservatism moderates the relationship between firm profitability and stock crash risk.

3.2. Measure For Stock Crash Risk

We use extended market model to estimate the firm-specific, then measure stock price crash risk in two ways: the negative conditional return skewness (NSKEW) and the asymmetric volatility of firm-specific weekly returns (DVOL) [19-23]. The model is expressed as:

$$r_{i,t} = \alpha_0 + \alpha_1 r_{mk,t-2} + \alpha_2 r_{mk,t-1} + \alpha_3 r_{mk,t} + \alpha_4 r_{mk,t+1} + \alpha_5 r_{mk,t+2} + \varepsilon_{i,t} \quad (3)$$

where $r_{i,t}$ represents the return of stock *i*, while $r_{mk,t}$ denotes the market return.

The first crash risk measure is NSKEW. The formula is as follows:

$$NSKEW_{i,t} = \frac{n(n-1)^2 \sum (w_{i,t} - \bar{w}_{i,t})^3}{(n-1)(n-2) (\sum (w_{i,t} - \bar{w}_{i,t})^2)^{3/2}} \quad (4)$$

Where $w_{i,t}$ is the natural logarithm of one added to the residual return from the earlier calculation.

The second crash risk measure is DVOL, which is measured according to Chen, et al. [19] and Jin and Myers [24]:

$$DVOL_{i,t} = \text{Log} \frac{(n_{up}-1) \sum_{down} (w_{i,t} - \bar{w}_{i,t})^2}{(n_{down}-1) \sum_{up} (w_{i,t} - \bar{w}_{i,t})^2} \quad (5)$$

3.3. Measure for Accounting Conservatism

This research adopts the C-Score as a proxy for accounting conservatism of publicly listed companies. This model is designed as indicators to detect potential manipulation in financial statements. According to the conservatism index approach, accounting conservatism entails recognizing bad news more promptly while delaying the recognition of good news [18, 25]. The model is expressed as:

$$E_{i,t} = \alpha_0 + \alpha_1 D_{i,t} + \alpha_2 RETURN_{i,t} + \alpha_3 D_{i,t} RETURN_{i,t} + \varepsilon_{i,t} \quad (6)$$

where, $E_{i,t}$ is dependent variable, measured as the net income before extraordinary items, deflated by the market value of equity; $RETURN_{i,t}$ represents the stock return; $D_{i,t}$ is a dummy equal to 0 if $RETURN_{i,t}$ is positive, and 1 otherwise.

The C-Score and model is are presented in the following equations:

$$C - score = \gamma_0 + \gamma_1 FZ_{i,t} + \gamma_3 MB_{i,t} + \gamma_3 LEV_{i,t} \quad (7)$$

4. Results

4.1. Descriptive Statistics

Data for this research was gathered from listed companies on the “Hochiminh” Stock Exchange in Vietnamese. We exclude all financial firms from our data sample. The final sample has 328 companies with total 14,593 observations. Sources to collect data includes financial statements, stock price databases, and firm-specific reports. The study spans 5 years from 2019 to 2023, capturing relevant financial and stock data for each firm.

Table 1 presents the descriptive statistics for the variables in the study, based on a sample of 14,593 observations.

Table 1.
Variable Description.

| Variable | N | Min. | Max. | Mean | Median | Sdt. Dev. |
|------------|--------|--------|--------|--------|--------|-----------|
| NSKEW | 11,593 | -2.351 | 4.019 | 0.012 | 0.095 | 0.883 |
| DVOL | 11,593 | -1.472 | 3.725 | 0.010 | 0.036 | 0.607 |
| CONSER | 11,593 | -0.388 | 0.841 | 0.119 | 0.128 | 0.062 |
| ROE | 11,593 | -3.060 | 5.153 | 0.038 | 0.017 | 0.285 |
| VOLATILITY | 11,593 | 0.032 | 0.141 | 0.046 | 0.033 | 0.016 |
| MB | 11,593 | 1.241 | 13.086 | 1.151 | 0.791 | 1.204 |
| FWNC | 11,593 | 0 | 76.069 | 14.088 | 11.904 | 12.209 |
| MWNC | 11,593 | 1.219 | 89.341 | 27.661 | 42.082 | 47.524 |
| RETURN | 11,593 | -0.925 | 4.818 | 0.068 | -0.007 | 0.533 |

The distribution of NSKEW, which measures the skewness of stock returns, is showing significant asymmetry with values ranging from -2.351 to 4.019 and a mean close to zero (0.012). This is similar to DVOL, that is representing fluctuations in the trading volume that exhibits considerable variation across firms, with a mean of 0.010 and a range from -1.472 to 3.725, reflecting differences in market liquidity and trading intensity. Meanwhile, CONSER, which measures accounting conservatism, has a relatively low standard deviation (0.062) and a mean of 0.119, indicating that firms generally adhere to a stable level of conservative financial reporting practices.

Table 2 shows the correlation between each pair of variables in the research. We can see that all the values are generally smaller than 0.5, which means that there is no serious multi-linearity among variables.

Table 2.
Correlation Matrix

| | CONSER | ROE | VOLA | RET | MB | FWNC | FWNC |
|--------|---------|---------|--------|--------|--------|--------|------|
| CONSER | 1 | | | | | | |
| ROE | 0.206** | 1 | | | | | |
| VOLA | 0.070** | 0.084** | 1 | | | | |
| RET | -0.025 | -0.047 | -0.017 | 1 | | | |
| MB | 0.006 | 0.047 | 0.037 | -0.033 | 1 | | |
| FWNC | 0.052* | 0.141** | .049* | 0.003 | 0.017 | 1 | |
| MWNC | 0.030 | 0.011 | 0.009 | 0.043 | -0.012 | 0.062* | 1 |

Note: **. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

5. Results and Discussion

5.1. Results for Model 1

Table 3 presents the baseline model results, evaluating how firm-specific factors influence the dependent variable stock crash risk, NSKEW and DVOL.

5.1.1. Impact of Accounting Conservatism (CONSER) on Stock Crash Risk

The coefficient of CONSER is 0.008 for NSKEW and 0.018 for DVOL, making both of these statistically significant at the level of 1%. Indicating is the results that accounting conservatism (CONSER) is seen negatively when associated with stock crash risk. So firms with higher levels of accounting conservatism experience lower crash risk. The negative link implies that conservatism may prevent earnings manipulation and promote the timely recognition of losses, thereby limiting the accumulation of hidden risks. By enforcing more prudent accounting practices, firms reduce asymmetry in the information between investors and management, improving transparency and also mitigating the potential for sudden, severe stock price declines. Showing conservative accounting serves as a way to

dissuade an opportunistic accrual management and also contributes to overall market stability by bolstering investor confidence.

5.1.2. Impact of Firm Profitability (ROE) on Stock Crash Risk

Return on equity (ROE) associated with NSKE is significantly negative showing that firms with high profits are less likely to experience stock price crashes. On the other hand, its relationship with DVOL is statistically insignificant, implying that profitability's influence on downside volatility is weaker. This orients with the expectation that higher profitability reduces the likelihood of severe negative price movements by enhancing investor confidence and financial stability.

Table 3.
Results for the baseline model (Model 1)

| | Model 1 | | | |
|--------|-----------|---------|-----------|---------|
| | NSKEW | | DVOL | |
| | Coeff. | t-stat. | Coeff. | t-stat. |
| CONSER | -0.008*** | -2.61 | -0.018*** | -2.57 |
| ROE | -0.219** | -2.24 | -0.039 | -1.23 |
| VOLA | 0.015*** | 3.09 | 0.253*** | 3.20 |
| RET | 0.749*** | 2.82 | 0.192* | 1.74 |
| MB | 0.042* | 1.67 | 0.052 | 1.53 |
| FWNC | -0.016*** | -2.58 | -0.057** | -2.37 |
| MWNC | 0.031* | 1.86 | 0.096 | 1.58 |

Note: *, **, and *** indicate statistical significance at 1%, 5%, and 10% levels, respectively.

5.2. Other Control Variables

Stock return volatility (VOLA) shows a greater positive relationship between NSKEW and that of DVOL. This means that a firm with higher price fluctuations will have a higher chance for crash in stock prices, as greater volatility shows an increase in the probability of large negative return shocks.

The market-to-book ratio (MB) is shown to positively associate with NSKEW, but its relationship with DVOL is shown to be insignificant. The weak significance implies that a firm with higher growth expectations have a higher chance for negative return skewness, possibly due to overvaluation corrections.

Foreign ownership (FWNC) is negatively associated with NSKEW and also DVOL, indicating that a firm with a greater foreign investor participation are likely to experience lower risk of crash in stock prices. Foreign investors may impose better governance and monitoring mechanisms, reducing the likelihood of extreme downside movements. However, Managerial ownership (MWNC) is shown to have a significant positive relationship to NSKEW but is insignificant for DVOL. Higher managerial ownership could increase crash risk, potentially due to opportunistic behavior by insiders who delay negative information disclosure.

Stock returns (RET) exhibit a positive and significant relationship with NSKEW and a weaker positive association with DVOL, meaning that firms with higher past returns are more susceptible to future stock crashes, likely due to overvaluation corrections when market expectations shift.

5.2.1. Results for Model 2

Table 4 shows the results for Model 2, which expands on the baseline model by including an interaction term between accounting conservatism (CONSER) and firm profitability (ROE). The objective is to assess not only the individual effects of CONSER and ROE on stock crash risk but also how their combined effect influences crash risk. So we can measure the crash risk using two proxies: NSKEW (negative conditional return skewness) and DVOL (downside volatility).

For NSKEW, the coefficients for CONSER is negative and statistically significant at the 1% level. For DVOL, the coefficient of CONSER is also negative but significant at the 10% level. These negative

signs indicate that, holding other factors constant, higher accounting conservatism is associated with a decrease in the risk of stock crash.

ROE has negative coefficients for both NSKEW and DVOL, significant at the 1% and 10% level, respectively, again confirming that more profitable firms tend to face lower crash risk when measured by DVOL. The interaction term (ROE*CONSER) is significant and negative across two models. These results indicate that the risk-reducing effect of profitability is increased more in firms with a greater accounting conservatism. This may suggest that conservative accounting practices might help in smoothing the recognition of bad news, enhancing the stabilizing impact of profitability on the prices of stock.

Table 4.
Results for Model 2.

| | Model 2 | | | |
|------------|-----------|---------|-----------|---------|
| | NSKEW | | DVOL | |
| | Coeff. | t-stat. | Coeff. | t-stat. |
| CONSER | -0.004*** | 2.54 | -0.109* | -2.44 |
| ROE | -0.292*** | -2.82 | -0.259* | -1.94 |
| ROE*CONSER | -0.311* | -1.97 | -0.759* | -1.83 |
| VOLA | 0.005** | 2.07 | 0.084** | 2.06 |
| RET | 0.548*** | 2.34 | 0.223* | 1.82 |
| MB | 0.005*** | 3.70 | 0.073 | 0.63 |
| FWNC | -0.007*** | -2.64 | -0.099*** | -2.81 |
| MWNC | 2.025* | 1.89 | 0.088 | 1.47 |

Note: *, **, and *** indicate statistical significance at 1%, 5%, and 10% levels, respectively.

6. Conclusion

During this study we examine the combined impact of accounting conservatism and firm profitability on the crash risk of stocks of companies listed in Vietnam, confronting an important concern in the limited existing research. With observing these findings, you can see those higher levels of accounting conservatism significantly reduces stock crash risk, as demonstrated by the negative associations with both two measures of stock crash risk. This then implies when prudent accounting practices are applied it has the potential to effectively decrease the hidden risks and improve the transparency of the market, by promoting the timely recognitions of losses and minimizing earning manipulation.

Furthermore, firm profitability (ROE) also contributes to lowering crash risk, with more profitable firms experiencing less drastic negative price movements. Especially when the interaction analysis shows when combining with conservative accounting practices the risk reducing effect of profitability is increasingly improved. By using the two, this reinforces the view that integrating robust performance with prudent reporting not only does it stabilizes financial outcomes but also it will bolster the investors' confidence.

In practical terms, this study sheds light on how conservative accounting can protect businesses in ever improving Vietnamese financial market. For both investors and corporate leaders, by using these methods they could create a safety net offering more security and stability in uncertain times. These insights may also inspire or even potentially force policymakers to rethink accounting standards, this could improve the market's resilience.

On a deeper level, this study strengthens the understanding of prudence in accounting and its application in reducing crashes in stock price. The findings add to the ongoing conversation about how thoughtful financial practices can create more stable markets and hopefully future studies could expand on this by exploring other influencing factors or comparing similar patterns in different emerging economies.

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Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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