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Manager Optimism Based on Environmental Uncertainty and Accounting Conservatism

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Abstract

It is expected that more accounting conservation (environmental uncertainty) reduces manager optimism. Prior research, however, has struggled to establish this relation empirically. Moreover, some evidence points to the possibility that the manager optimism is lower for firms with more accounting conservation. In this paper, the author examine the link between accounting conservation, environmental uncertainty, and manager optimism, as well as the link between accounting conservation, manager optimism, and the cost of capital. First, it is established that more accounting conservation could lead to a decrease in manager optimism. Second, I tried to show that manager optimism changes the cost of capital in the accounting conservation quintile. Consistent with a negative relationship between accounting conservation and manager optimism, and with the dominating effect of managers' optimism , the article documented a positive association between managers' optimism and the cost of capital for firms whose shares trade in low accounting conservation.

Keywords

Environmental uncertainty, Accounting conservatism, Manager optimism.

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Introduction

The flow of information in a market environment affects the behavior of market participants. Environmental change creates the conditions for market participants to have a different share of this information flow. Empirically, investors also have different information. Information that has influenced their behavior in many cases indicates the information asymmetry between the two parties of the transaction (Lowry, 2003). This information asymmetry is due to the different flow of information among market participants. The limitations of the information framework in theoretical models and the criteria used in empirical work have raised many ambiguities in the interpretation of the existing literature on the effect of information risk. Even so, what is almost common among studies is accounting information as the most crucial source of the information environment that is defined as a system of information transfer and uncertainty reduction, which is the information approach of accounting. Accounting information allows investors to evaluate the firm as well as the inherent risks involved. The heterogeneity between investor interpretations and information inequality caused by abnormalities in information gathering and processing as a result of the different approaches and skills used is another factor in the complexity of the accounting information environment (Dou, Hope, Thomas, & Zou, 2015).

The financial literature views conservatism as a targeted tool to limit managerial optimism (Ball & Shivakumar, 2005). In line with this view, Ahmed and Duellman (2011) concluded that conservatism improves the quality of long-term investment decisions. Managers tend to optimistically execute investment projects because overconfidence leads managers to overestimate their ability to control the status and make optimal decisions that eventually lead to problems that result from project implementation (Hirshleifer, Low, & Teoh, 2012). In other words, these executives make short-term investments based on unrealistic estimates and optimistic outlooks, which finally lead to disastrous results. Taking into account the economic approach and risk aversion of a large part of investors, postponing bad news by managers leads to opportunity costs and adverse selection for investors. The aim of this study examines the reflection of the attribute of quality of manager decision on prices. The study is based on

corporate accounting and financial literature and examines changes in manager behavior and its effect on return and cost of capital that can be applied to investors, managers, standardization committees, and legislators.

Hribar and Yang (2016) find that managers are overconfidently predicting profits based on personal information, and the estimated earning is highly optimistic, leading to a relatively high deviation from reality. As a result, the likelihood of information reassessment in future periods increases. Shareholders tend to be impartial and respond to bad news in the shortest possible time. Because of the managers' optimism, shareholder accountability is delayed, leading to a shift in investors' viewpoints and an increase in the cost of capital imposed on the firm and limitations in the supply of resources. (Hsu, Novoselov, & Wang, 2017). Investigating the factors affecting the control of managers 'psychological and personality behaviors reduces the risk of adverse selection for shareholders and, by increasing shareholders' perception of managers' behavior, reduces the time to respond to problems and bad news as a result of managers' prospector behavior. Conservative accounting leads to limiting these optimisms that have short-term output. Conservatism, by identifying bad news results in problems for shareholders, boards of directors, and supervisors, determines early-stage investment problems that encourage managers to reform their practices and take corrective action in conditions of environmental uncertainty due to the lack of symmetric information dissemination, fluctuation, and investment risk increase (Hsu et al., 2017). Understanding the effects of environmental uncertainty results in the transmission of information to shareholders to determine and select the optimal portfolio of investment and help shareholders control the behavior of managers that leads to return fluctuation.

The more conservative approach shortens response times and improves post-performance learning because of identifying bad news quickly (Zhang, 2000). In other words, firms need to control managers' prospector decisions in the short-term to access resources and improve performance. Firms have exclusive ownership of their information in a way that prevents transferring their added value to investors. In the face of reduced conservatism, trying to access information through other channels in the capital market results in

imposing unrealistic information risks onto the investor and the limited part of the expected return in the form of information acquisition costs. According to the information economy literature, information quality leads to the transfer of value from the firm to shareholders and reduces the cost of capital resulting from information competition (Dutta & Nezlobin, 2017).

Concerning accounting information, there are two main characteristics: the quality of this information and its distribution. The risk of accounting information in the context of the capital market environment can be divided into two parts: a part that is ambiguous about the accuracy of this information and another part that regards the distribution of information. Vague accounting information weakens the relationship between accounting figures and economic realities, thereby increasing opportunistic manager behaviors. Therefore, the existence of a favorable accounting information environment enhances the ability of financial reports to transmit firm information and, on the other hand, distributes this information more equitably to market participants. Accordingly, the goal of a favorable accounting information environment is to reduce uncertainty and eliminate confusion (Bushman & Smith, 2001).

In the research structure, unlike previous researches, this article seeks to examine managerial conditions and motivations to achieve personal interests and investigate the role of environmental uncertainty and conservatism in changing the opportunistic behaviors of managers. Environmental uncertainty, which indicates fluctuations in the company's operating environment, leads to motivation for capable managers and other managers. In times of uncertainty, managers are encouraged to engage in opportunistic behaviors to achieve self-interest, meet market expectations, and maximize rewards in the short term. In other words, in this study, the increasing (environmental uncertainty) and decreasing (conservative) risk factors of investors have been evaluated. In a way, investors' approach is to reduce risk and achieve sustainable returns through conservatism, but market conditions are not necessarily in line with investors' expectations. Therefore, in this study, by controlling external and internal factors, investors can make informed decisions to reduce the risk of adverse selection.

Hypothesis Development

Psychological literature has identified and presented three factors for overconfidence, which include the notion of control, a high degree of optimism about favorable outcomes, and abstract traits that make it challenging to compare performance between individuals (Moore & Healy, 2008). These factors are related to organizational decision making. Overconfidence facilitates decision making about establishing business units, entering new markets, introducing new products, or educating other business units (Ben-David, Graham, & Harvey, 2013). Overconfidence due to optimism and improbability of the company can lead to enhanced managerial commitment (Englmaier, 2011) and thus increase the manager's credibility as a business leader (Bolton, Brunnermeier, & Veldkamp, 2013).

Success in the business environment does not require the pursuit of opportunities that are not identified (March, 1991), but managers are often reluctant to pursue and identify these opportunities. However, incentive schemes can be used to encourage managers to take risks (Armstrong & Verrecchia, 2013) but the tendency to make key decisions is often limited by intrinsic motivations and financial incentives less important role (March & Shapira, 1987). Overconfidence is an important source of such intrinsic motivation and indicates that overconfident managers are more likely to implement innovative projects that are potentially profitable (Hirshleifer et al., 2012). However, bold investment projects alone are not sufficient for success because only a small percentage of these investments lead to the expected results (Lee, 2010).

Managerial optimism theory is behavioral finance's greatest achievement. It explains two prominent features of corporate financial behavior – overinvestment and pecking-order capital structure preferences – that otherwise require two different theories with mutually incompatible assumptions about managerial loyalties to shareholder-value maximization (Heaton, 2019). Information flow is a crucial parameter in economic activity and acts as a critical factor in the emergence, stability, and efficiency of markets (Stiglitz, 2003, 2004). The interaction between information and economic agents in price discovery suggests that information flow may also play an essential role in determining the dynamic rules of an economic system

(Frieden & Hawkins, 2010). Chordia, Roll, and Subrahmanyam (2000) suggest that the underlying information environment is potentially a significant driving force behind business behavior. Most research claims that if a favorable information environment prevails in the market, investors will reduce the degree of risk assigned to that information. By reducing the risk, they demand lower returns and thus lower the cost of capital for the company. But if the information environment is fluctuating, investors will be looking for mechanisms to assess information risk.

Environmental Uncertainty and Managers' Optimism

In efficient information environments, the symmetrical distribution of information reduces the opportunistic cash flows of managers for personal gain. Reducing environmental uncertainty improves the intrinsic value of the firm. On the other hand, the quality of the information environment changes the expected risk associated with cash flows and hence affects the firm's cost of capital (Lambert, Leuz, & Verrecchia, 2007). In uncertainty, the information content with the profits reported by companies operating in the market is reduced, resulting in low-quality profits (Diamond & Verrecchia, 1991). Ben Mohamed, Garoui, and Naoui (2020) prove that managerial optimism can largely explain corporate inefficiency. Also, find evidence that suggests that ownership structure and corporate governance can mitigate the effect of managerial optimism on firm value. Rostami, Rezaei, and Khalatbari (2019) show that financial knowledge deals with the behavior of investors and other users in the capital market. According to the financial knowledge, it is no longer expected that only factors such as accounting information and macroeconomic variables will affect decision-making but also a variety of behavioral variables including manager's optimism, information influence management, the patience of major shareholders, and other investors' biases can have an impact on the prices and stock returns. They found that managers' optimism has a significant effect on the relationship between the major shareholders' patience and information influence management.

Accounting accruals include items that represent management expectations of uncertain forthcoming events and, therefore, contain a measurement error. In the context of high environmental uncertainty,

pointed out that because accounting accruals are inaccurate and may have biased measurements of prospective events, investors must incur high information-processing costs. Environmental uncertainty is associated with the risk of adverse selection. Informed investors have a greater advantage in firms operating in volatile and ambiguous environments. Under these circumstances, the abnormal returns earned by informed investors will increase, but for other shareholders, there will be an increase in the risk of misstatement, resulting in increased cost of capital. Active firms in highly uncertain environments benefit from a combination of organizational learning and searching because of the uncertainty leading to increased value for improvement and development as a result of recognizing investing opportunities (Huchzermeier & Loch, 2001). Park, Byun, and Choi (2020) show that managerial overconfidence refers to managers' cognitive bias, according to which they demonstrate unwarranted belief in their judgments and capabilities. They found that CEO overconfidence was negatively related to corporate social responsibility (CSR) activities. Since overconfident CEOs are likely to consider CSR activities less important than their ability, they seem to reduce CSR activities. Also, CSR activities initiated by overconfident CEOs were negatively related to firms' long-term performance. However, CSR activities led to a positive long-term performance in firms that were financially constrained.

The effects of managers' overconfidence (encouraging exploration and exploration) are more significant in uncertain environments, as decisions must be made quickly, and the ability to identify issues promptly plays an important role (Hambrick & Crozier, 1985). Farcane, Deliu, and Bureana (2019) argued that empathetic leadership entails effective corporate governance and that companies have to grow emotional capital to handle issues of low morale, organizational stress, high staff turnover, and lack of work/life balance. Mohamed, Garoui, and Naouie (2020) investigate the effect of managerial optimism on firm value and prove that managerial optimism can largely explain corporate inefficiency. They also find evidence that suggests that ownership structure and corporate governance can mitigate the effect of managerial optimism on firm value.

To benefit from the knowledge gained as a result of research and exploration, the company modifies the investment made, which may appear as a change in the production process or the introduction of new products and services. In other words, in an environment of uncertainty, managers and shareholders increase and improve supervisory strategies to maintain investment risk at a certain level, and monitor the results of managers' decisions in different time periods in which the likelihood of opportunity costs and managers' optimism are reduced to the minimum possible (Shyti, 2013).

According to the rational expectations' model, the cost of capital depends on the gap between the amount of public information and private information, as well as how information is disseminated. Increasing the range of information dissemination reduces the cost of capital by increasing share price awareness. The reason is that informed investors can take advantage of their additional information to deal with uninformed investors and hold portfolios that weigh more on positive private stocks and low on negative private stocks. In low conservatism, the cost of capital is simply a function of the average investor awareness. When conservatism is high (the low adverse selection risk), every investor believes that his demand for a stock does not affect the price. Previous research has shown that conservatism reduces overall ambiguity by creating high-quality information and thus reduces the benefit that certain investors gain from acquiring private information. In the case of high conservatism, the effect of reduced liquidity due to the unwillingness of some specific investors to collect private information and participate in a firm's stock trading is negligible. However, in a weak conservative state, this effect can be significant and measurable.

Hypothesis 1: Environmental uncertainty has a significant effect on managers' optimism.

Accounting conservatism and managers' optimism

The literature on economic analysis and decision-making has outlined the nature of significant investment projects, with emphasis on decisions made in the middle stages of the project because of the challenges and opportunities that occur at the end of each phase. They are related to the previous stage and therefore cannot be predicted in

advance. The information gained at each stage of the project is needed to refine subsequent steps and provide feedback for ultimate success (Koussis, Martzoukos, & Trigeorgis, 2007). Even failure experiences provide valuable information to the business unit (Adner & Levinthal, 2004) because performance-based learning is critical to achieving long-term profitability in a competitive market (Ericson & Pakes, 1995) and failure-induced learning is more effective (Madsen & Desai, 2010). The problem arises when managers respond asymmetrically to successes and failures. Managers tend to interpret and present achievements in the middle stages of the project as confirmation of the optimality of the original investment plan and selective approach, but delay negative feedback and do not disclose inappropriate information (Astebro, Jeffrey, & Adomdza, 2007).

The signaling role of conservatism in reducing information costs and its strategic role in reducing investment risk is based on risk control and reducing information asymmetry between managers and individuals outside the organization. Conservatism can be seen as an alternative to a governance mechanism to control short-term managerial decisions and limit inefficient investment (Xu, Wong, & Han, 2012). Conservatism, by identifying and reporting bad news earlier to the board and investors, enables control and presentation of strategies and leads to improved performance by reducing capital costs and increasing investment levels. Ugwunta and Ugwuany (2019) examine the relationship between accounting conservatism and performance. The results suggest that accounting conservatism has an insignificant positive influence on firm performance. This indicates that firms tend to be less conservative in financial reports that provide low financial reporting quality.

The general prediction of the accounting literature is that the cost of capital is higher when information quality is poor (Francis, LaFond, Olsson, & Schipper, 2005). Prado, Saffi, and Sturgess (2016), among others, showed a strong negative relationship between information quality indicators and the cost of capital indices. However, this relationship has been indirectly tested by incorporating a less conservative index. This argument is based on the notion that a higher quality of information reduces information asymmetry (Akins, Ng, & Verdi (2012). In this situation, increasing the quality of publicly

available data can reduce the manager's overconfidence among investors and thus reduce the cost of capital. Nevertheless, this effect on the cost of capital occurs simply because increasing the quality of public information increases the average accuracy of investor information, not because it, in turn, reduces information asymmetry. Therefore, to the extent that poorer information quality can accommodate higher manager overconfidence, it should also be reduced by higher conservatism. Verdi (2005) showed that changes in the quality of the information provided, as well as the firm's operating environment, lead to changes or adjustments in the cost of capital.

Conservatism leads managers to avoid investing in negative future net present value projects and, by signaling deviations from investor expectations, brings about managerial corrections. Once business executives are aware of the bad news between periods, it will be impossible to delay the reaction and hide the consequences of management inefficiencies. Koussis et al. (2007) showed that by reducing the time required for reaction and correction, the value of corrective action increases. Accounting conservatism does exactly that. Conservatism increases the likelihood of finding a solution by speeding up the recognition of bad news and thus attracting the attention of managers, the board of directors, and other executives. Shareholders are less optimistic than managers about the lack of direct participation in the entity's operations and unwillingness to tolerate long-term losses and pursue deviations in investment expectations with greater sensitivity. Conservatism, by identifying and reporting bad news to shareholders, prevents the optimism of executives and allows for cost-effective solutions.

Hypothesis 2: Conservatism in accounting has a significant effect on managers' optimism

Research Method

Sample Selection

This research is based on firms listed on the Tehran stock exchanges in Iran. We begin with an initial sample of 4,983 firm-year observations from 2006–2016. Rahavard provides the relevant variables. A total of 1,067 firm-year observations relating to finance, investment, equity trust, and funds were excluded because of their

different practices. Also, financial institutions have distinct requirements to hold cash to meet operating and financing activities, so they were excluded from the sample. Further, I excluded all the unavailable firm-year observations of information asymmetry variables. Therefore, the final sample has 1,309 firm-year observations. Table 1 shows further details of the sample distribution across different industries.

Table 1. Sample Distribution Based on Industry

2-digit-SIC Code	Industry Name	Firm-years	%Sample
13	Mining	165	12.6
34	Automotive	297	22.7
42	Food	165	12.6
43	Pharmaceuticals and healthcare	165	12.6
44	Petrochemicals	88	6.7
49	Ceramic & Tile	99	7.5
53	Cement	110	8.4
-	Non-classifiable Establishments	220	16.9
Total		1,309	100

Dependent Variable Measure

Drawing on prior research, I measure the level of managers' optimism based on the projected seasonal profit difference of each share with its actual profit and is an indicator variable equal to one for firm-years with the number of projected profits exceeds the real profits. I use the managers' optimism (*MO*) as dependent variables to test both H1 and H2.

Independent Variables Measure

Our independent variables represent accounting conservation and environmental uncertainty. I follow Hsu et al. (2017) and construct *CONSER*. This measure is defined as the ratio of current earnings shocks to earnings news. Current earnings shocks and earnings news is estimated based on a parsimonious vector autoregressive (VAR) model with three variables consisting of the log of stock returns, log of one plus return on equity, and log of book-to-market ratio.

$$Return_{it} = logReturn_{it} + \log(1 + Roe)_{it} + \log(\frac{B}{M})_{it} + \varepsilon \quad (1)$$

I do not adopt the model in regression because, in this study, the multiple-way interactions among the negative return indicator, returns, information asymmetry, and uncertainty would generate multicollinearity problems. Also, prior literature has raised concerns about the bias in the Basu's (1997) measure (see Dietrich, Muller, & Riedl, 2007; Givoly, Hayn, & Natarajan, 2007; Patatoukas & Thomas, 2011, 2016).

The standard deviation of profitability that changes over three years is used to measure environmental uncertainty (*VIX*). The use of standard deviations to measure environmental uncertainty has been used by researchers such as Dichev and Tang (2009).

Models

Regression Specification for Testing H_1 and H_2

To investigate the managers' optimism based on conservative effect and environmental uncertainty, the following regression is run, to examine the linear impact of accounting conservation and environmental uncertainty on the managers' optimism.

$$\begin{aligned} MO_{it} = \alpha_0 + \ & \alpha_1 VIX_{it} + \alpha_2 CONSER_{it} + \alpha_3 INST_{it} \\ & + \alpha_4 MGO_{it} + \alpha_5 STDOCF_{it} + \alpha_6 SIZE_{it} \\ & + \alpha_7 LEV_{it} + \alpha_8 BTM_{it} + \alpha_9 ROA_{it} \\ & + \alpha_{10} STDRET_{it} + \alpha_{11} LOSS_{it} + \varepsilon \end{aligned} \quad (2)$$

Where *MO* is a measure of the managers' optimism, and *VIX* and *CONSER* are environmental uncertainty and accounting conservatism, as defined earlier, respectively. *Size* is the natural logarithm of the market value of equity in millions at the end of year t. *BTM* is the ratio of the book value of equity to the market value of equity at the fiscal year-end. *ROA* is the income before extraordinary items scaled by lagged total assets. *LEV* is total long-term debt plus total debt in current liabilities scaled by total assets. *LOSS* is an indicator variable equal to one for firm-years with negative income before extraordinary items. *STDRET* is the standard deviation of stock returns over the three past years. *STDOCF* is the standard deviation of operating cash flow over the three past years. *INST* is the percentage of shareholding by institutional investors, and *MGO* shows the percentage of stock

ownership by the management. Finally, regression analysis controls for the industry and year effect.

In the above regression, the coefficient to test the role of environmental uncertainty and conservatism in managers' optimism is the correlation coefficient between them. The coefficients of the variables of environmental uncertainty and accounting conservatism show the distinct effects of these variables. Based on research hypotheses, managers' optimism decreases with increasing conservatism and environmental uncertainty.

Results

Descriptive Analysis

Table 2 presents descriptive statistics for the sample. It summarizes the descriptive statistics for the accounting conservation and environmental uncertainty and other control variables used in multivariate regression analyses. The average managers' optimism is 0.013, indicating optimism of managers. The mean of the accounting conservatism variable is -0.052, which shows the level of conservatism among firms. The ownership structure of the firms consists of 71% institutional shareholders, and the mean variable of managerial ownership is 66.5%. An average of 18.4% of environmental uncertainty indicates volatility in the sales process of firms. The mean of leverage is 0.661, indicating that firms' resources are financed from debt, and the sample firms are highly leveraged. The mean of return on assets is 0.139, which indicates a return of 13 money unit on investment in 100 money unit assets. The *LOSS* variable indicates that 10% of companies have negative performance. The average value of 0.727 for the book-to-market ratio reflects a conservative approach in identifying assets across firms. The mean volatility of returns and cash flows is 0.335 and 0.016, respectively, indicating higher profitability changes than liquidity. By analyzing the coefficient of variation of the data, it can be stated that the independent and dependent variables have a normal distribution (Xu, Wang, & Han, 2012).

Table 2. Descriptive Statistics

Variable	N	Mean	Median	Min	Max	Std
MO	1309	0.013	0.007	-0.075	0.164	0.019
CONSER	1309	-0.052	-0.051	-0.895	0.896	0.318
VIX	1309	0.184	0.146	0.000	0.998	0.169
INST	1309	0.713	0.817	0.050	0.990	0.274
LEV	1309	0.661	0.662	0.040	1.824	0.220
LOSS	1309	0.101	0.000	0.000	1.000	0.302
MGT	1309	0.665	0.701	0.100	0.990	0.207
ROA	1309	0.139	0.067	-0.432	1.204	0.216
SIZE	1309	11.437	11.416	9.414	13.51	0.637
STDOCF	1309	0.016	0.011	0.000	0.165	0.017
STDRET	1309	0.335	0.262	0.006	0.980	0.245
BTM	1309	0.727	0.742	0.101	0.990	0.141

Correlation Analysis

Table 3 reports the correlation coefficients between managers' optimism and explanatory variables. The explanatory variables are not highly correlated, suggesting that multicollinearity is not a concern. These correlation coefficients also have expected signs. It can be seen that the managers' optimism of firms changed to the increase in environmental uncertainty and accounting conservation.

Table 3. Correlations

Variable	MO	CONSER	VIX	BTM	INST	LEV	LOSS	MGT	ROA	SIZE	STDOCF	STDRET	MO
MO		-0.005	-0.008	0.212	-0.026	-0.023	0.105	-0.056	-0.045	0.166	-0.032	0.007	0.025
CONSER	-0.005		0.031	-0.003	-0.012	0.003	0.001	-0.019	-0.031	0.040	-0.015	0.123	-0.068
VIX	-0.008	0.031		0.003	-0.032	0.050	0.004	0.029	-0.009	0.020	0.013	0.014	-0.023
BTM	0.212	-0.003	0.003		0.002	0.034	0.310	-0.001	-0.012	0.009	-0.071	-0.039	-0.030
INST	-0.026	-0.012	-0.032	0.002		0.167	-0.014	0.016	-0.098	-0.091	-0.076	-0.048	0.132
LEV	-0.023	0.003	0.050	0.034	0.167		0.020	-0.035	-0.318	0.038	-0.019	0.005	0.071
LOSS	0.105	0.001	0.004	0.600	-0.014	0.020		-0.008	-0.002	0.054	-0.100	-0.018	-0.043
MGT	-0.056	-0.019	0.029	-0.001	0.016	-0.035	-0.008		-0.054	0.140	-0.061	-0.083	0.240
ROA	-0.045	-0.031	-0.009	-0.012	-0.098	-0.318	-0.002	-0.054		-0.238	0.113	-0.031	0.029
SIZE	0.166	0.040	0.020	0.009	-0.091	0.038	0.054	0.140	-0.238		-0.144	0.029	-0.112
STDOCF	-0.032	-0.015	0.013	-0.071	-0.076	-0.019	-0.100	-0.061	0.113	-0.144		0.008	0.167
STDRET	0.007	0.123	0.014	-0.039	-0.048	0.005	-0.018	-0.083	-0.031	0.029	0.008		0.042
MO	0.025	-0.068	-0.023	-0.030	0.132	0.071	-0.043	0.240	0.029	-0.112	0.167	0.042	

This table contains pairwise Pearson correlation coefficients among important variables.

Regression Analysis

While descriptive statistics and correlation analysis are informative, more conclusive evidence can be obtained through multivariate

regression analysis that controls for many firm-specific variables (Bhuiyan & Hooks, 2019) affecting managers' optimism.

Table 4 presents the multivariate regression analysis for H1 and H2. Columns 1 and 2 present the findings for H_1 and H_2 where managers' optimism is the dependent variable, and environmental uncertainty and accounting conservation are independent variables, respectively. I used two different measures for independent variables, *VIX* and *CONSER*. Initially, baseline regression ran to test the impact of *VIX* on managers' optimism. Column 1 presents the baseline regression. The results show that *VIX* has a negative association with the measure of managers' optimism indicating that firms active in the un-stable environment have lower managers' optimism compared to firms which are active in the stable environment The coefficient of *VIX* (coefficient = -0.805, z-statistics = -1.646) shows a negative association with the managers' optimism. The result is statistically significant at the 10% level. The coefficients and the statistical significance of the findings support H1.

In column 2, include several and firm-specific control variables and test the impact of *CONSER* on managers' optimism. Column 2 presents the findings for H_2. In other words, it presents the test of the effect of accounting conservation on managers' optimism behavior and whether this association varies when there is a different level of conservation. The results indicate that firms that have more accounting conservation (*CONSER*) have low managers' optimism (coefficient = -0.633; z-statistics = -2.075), and the coefficients are statistically significant at the 5% level. Thus, H_2 is supported. In column 3, we can see the merged multivariate regression analysis. It confirm the H_2 result (coefficient = -0.653; z-statistics = -2.131) and, H_1 is significant (coefficient = -0.848; z-statistics = -1.685) indicating that environmental uncertainty reduces the managers' optimism.

In regards to the control variables, we found that large firms (coefficient = -0.034, -0.015 and -0.042; z-statistics = -0.023, -0.104 and -0.281) have higher managers' optimism, firms with more managerial ownership (coefficient = 0.128, 0.161 and 0.154; z-statistics = 0.238, 0.292 and 0.280) show a positive association, and book to market value (coefficient = -2.214, -2.269 and -2.180; z-statistics = -2.915, -2.950 and -2.829) shows a positive association

with managers' optimism. Also, *INST* shows a positive association (coefficient = 0.046, 0.029 and 0.017; z-statistics = 0.104, 0.064 and 0.037) which indicates that firms with a higher institutional ownership expect more managers' optimism. Firms with inappropriate performance (*LOSS*) also show a negative association with a managers' optimism, which indicates the inappropriate performance of firms caused fewer managers' optimism within the firms. Most of the discussed coefficients are statistically significant at better than the 10% level. Our results are robust, considering the industry and year effect. Our multivariate regression models show that the Pseudo R-square between the three approaches ranges from 21.1% to 21.5%.

Table 4. Regression Results

VARIABLES	VIX	CONSER	ALL	VIF
VIX	-0.805* (-1.646)		-0.848* (-1.685)	1.251
CONSER		-0.633** (-2.075)	-0.653** (-2.131)	1.170
BTM	-2.214*** (-2.915)	-2.269*** (-2.950)	-2.180*** (-2.829)	1.336
INST	0.046 (0.104)	0.029 (0.064)	0.017 (0.037)	2.012
LEV	-1.093*** (-2.759)	-1.149*** (-2.870)	-1.075*** (-2.662)	1.951
LOSS	-2.408*** (-10.050)	-2.432*** (-9.945)	0.154*** (-9.840)	1.561
MGT	0.128 (0.238)	0.161 (0.292)	0.154 (0.280)	1.645
ROA	1.519** (2.523)	1.510** (2.449)	1.484** (2.417)	1.920
SIZE	-0.034 (-0.233)	-0.015 (-0.104)	-0.042 (-0.281)	1.254
STDOCF	-15.836*** (-3.221)	-17.142*** (-3.453	-15.722*** (-3.129)	1.846
STDRET	1.005** (2.564)	1.070*** (2.653)	1.093*** (2.716)	2.124
Intercept	4.965*** (2.749)	4.653** (2.542)	4.988*** (2.706)	-
Observations	*1,309*	*1,309*	*1,309*	
Pseudo R-squared	*0.211*	*0.212*	*0.215*	
F-statistic	*216.492* *(0.000)*	*218.299* *(0.000)*	*221.058* *(0.000)*	

****, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. (z-statistics in parentheses).*

Additional Analysis

Overall, the results in our earlier analyses are consistent with our hypothesis that the managers' optimism changes with conservation and environmental uncertainty. In this section, we conduct some additional analyses. To test additional analysis regarding the managers' optimism based on Akins et al. (2012), I first sort firms into five quintiles based on accounting conservation. The quintile with the lowest (highest) value is expected to have lower (relatively higher) conservatism. Then, firms in every quintile are sorted into five quintiles based on managers' optimism. Although the result shows a negative relation between expected return, it is difficult to directly see the level of managers' optimism, the quintile with the lowest (highest) value is expected to have lower (relatively higher) managers' optimism. Given that the managers' optimism effect is not conditional on the level of accounting conservation, within quintile of lower accounting conservation, predict that the cost of capital increases as the move from quintile 1 (the lowest) to quintile 5 (the highest) of managers' optimism. In contrast, within quintile of higher accounting conservation, predict that the cost of capital is equal from quintile 1 (the lowest) to quintile 5 (the highest) of managers' optimism. Table 5 shows the classification.

Table 5. Portfolio Returns

Managers' optimism					**Hedge**	
Q_{50}	**Q_{40}**	**Q_{30}**	**Q_{20}**	**Q_{10}**		
Q_{51}	Q_{41}	Q_{31}	Q_{21}	Q_{11}	Q_{01}	
Q_{52}	Q_{42}	Q_{32}	Q_{22}	Q_{12}	Q_{02}	
Q_{53}	Q_{43}	Q_{33}	Q_{23}	Q_{13}	Q_{03}	Accounting Conservation
Q_{54}	Q_{44}	Q_{34}	Q_{24}	Q_{14}	Q_{04}	
Q_{55}	Q_{45}	Q_{35}	Q_{25}	Q_{15}	Q_{05}	

After sorting firms into 25 quintiles based on accounting conservation and managers' optimism, we estimate the Fama and French (1993) factors (α) for each portfolio. The primary advantages of this approach are that it does not assume that returns are linear in the variable of interest (i.e., the sort variable) and that it collapses the cross-section of returns (on a given date) into a single time-series observation, thereby alleviating concerns about cross-sectional

dependence and outliers (Gow, Taylor, & Verrecchia, 2011). For each portfolio, we calculate equal-weighted returns over the subsequent twelve months. Then we estimate the following equation based on the monthly variables return:

$$(R_p - R_f) = \alpha_H + \alpha_{mkt}(R_{mkt} - R_f) + \alpha_{smb}SMB_{it} + \alpha_{hml}HML + \varepsilon \quad (3)$$

where $p \in \{Q1, \ldots, Q5\}$, Rp is the monthly portfolio return, R_f is the riskfree rate, and $(R_{mkt} - R_f)$, *SMB* and *HML* are the three Fama and French (1993) factors. The coefficients of interest are the estimated intercepts (α).

Table 6 presents the distribution of variables used in our analysis by quintile of accounting conservation. It is evident in Table 6 that the associations between accounting conservation and measure of managers' optimism monotonically. Across all quintiles, the portfolio of firms with the highest accounting conservation (i.e., quintile 5) has significantly lower levels of managers' optimism than the portfolio of firms with the lowest accounting conservation (i.e., quintile 1).

Table 6. Distribution of Variables by Accounting Conservation Quintile

Variable			*Managers' Optimism* Quintile					Hedge	
			Q1	Q2	Q3	Q4	Q5	Q5-Q1	*p*-value
Accounting Conservation Quintile	Q1	Mean	0.0051	0.0114	0.0134	0.0204	0.0320	0.0269	<0.0001
		Median	0.0049	0.0114	0.0142	0.0207	0.0390	0.0341	
	Q2	Mean	0.0066	0.0134	0.0149	0.0223	0.0321	0.0256	<0.0001
		Median	0.0059	0.0128	0.0152	0.0225	0.0421	0.0362	
	Q3	Mean	0.0063	0.0134	0.0152	0.0217	0.0321	0.0258	<0.0001
		Median	0.0059	0.0129	0.0153	0.0218	0.0368	0.0310	
	Q4	Mean	0.0061	0.0119	0.0137	0.0218	0.0310	0.0249	<0.0001
		Median	0.0058	0.0117	0.0145	0.0212	0.0486	0.0428	
	Q5	Mean	0.0057	0.0130	0.0146	0.0208	0.0306	0.0249	<0.0001
		Median	0.0057	0.0125	0.0148	0.0212	0.0516	0.0460	

Table 7 presents estimates of the Fama-French model for each of the five managers' optimism quintile portfolios conditional on the level of accounting conservation based on Gow et al. (2011) approach. The result shows a negative relation between expected returns and managers' optimism for firms with low accounting conservation (*accounting conservation* quintiles 1, 2, and 3), and no evidence of relation for firms with high accounting conservation (*accounting*

conservation quintiles 4 and 5). Moreover, the result shows that the effect of managers' optimism on risk-adjusted returns decreases monotonically in accounting conservation. The difference in risk-adjusted returns between extreme managers' optimism quintiles is 0.01% and −0.22% in accounting conservation quintiles 1 through 5, respectively (*t*-statistics of 2.29 and −1.08, respectively). Consistent with our predictions, in high accounting conservation, there is no evidence of a relationship between managers' optimism and expected returns. These findings are consistent with earlier results that greater accounting conservation increases the information advantage of sophisticated investors. Importantly, the results suggest that accounting conservation has countervailing effects on expected returns, and increased information quality can increase expected returns.

Table 7. Fama-French Adjusted Portfolio Returns

Variable		***Managers' Optimism* Quintile**					**Hedge**
		Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q5-Q1**
Accounting Conservation Quintile	Q1	0.16	0.30	0.45	0.21	0.17	0.01
		(2.74)	(2.16)	(2.53)	(2.19)	(2.00)	(2.29)
	Q5	0.42	0.20	0.17	0.17	0.21	-0.22
		(2.34)	(1.64)	(1.32)	(1.32)	(1.04)	(-1.08)

Conclusions

This study examined managers' optimism based on accounting conservatism and environmental uncertainty. The first hypothesis of the study is that environmental uncertainty has a significant effect on managers' overconfidence. The results show that environmental uncertainty has led to negative changes in performance such that under environmental uncertainty, conservatism is not capable of moderating performance as a result of management behavior. The results of this hypothesis are consistent with those of Armstrong, Core, Taylor, and Verrecchia (2011). The flow of information in a market environment affects the behavior of market participants. Environmental change creates the conditions for market participants to have a different share of this information flow. The information environment in which investors trade is constantly changing with the dissemination of information. This change in information flow leads to a reassessment of risk by investors. What is more important is the

existence of an information environment that reduces ambiguity and uncertainty, thereby enhancing investor forecasting and analysis (Armstrong et al., 2011). Under uncertainty, due to changes in the forecasts and reactions of market players, leads to lower managers' optimism and resource outflows. Environmental uncertainty increases the need for information to protect prices and the risk of information asymmetry for retail investors. In this situation, conservatism leads to the realism of prices by providing reliable information and reducing the manager's optimism. In other words, changes in environmental uncertainty lead to firms reacting in the form of increasing conservatism in order to protect the interests of retail investors.

The results of the second hypothesis are similar to those of Xu, Wang, and Han (2012). Overconfidence is believed to lead to inefficient investment. This problem is due to managers' misuse of resources and over-investment in negative current value projects for personal gain (Jensen, 1986). Conservative accounting is used as a signaling factor and internal governance mechanism with regard to different circumstances and environments to influence investment decisions. They concluded that in order to prevent the development of inappropriate investing behaviors in companies, conservatism in disclosed information should be increased to increase negative information transmission and reduce agency costs. Proper conservatism improves the quality of accounting information and investment decisions, protects the interests of investors, and ultimately enables optimal sharing of resources in capital markets. Investors are more likely to invest in firms that have information transparency or judge that they have information transparency. If accounting conservatism increases, the firm's credibility increases, and the costs of processing company-specific public information are reduced, hence accounting conservatism leads to more trading by unsuspecting investors. Investors need clear and uniform information to identify optimal investment opportunities.

Increased accounting conservatism facilitates the analysis and identification of financial information to avoid adverse selection and evade the imposition of surplus costs. Information quality leads to a shift in information flow to shareholders, but with increased accounting conservatism across firms, transparency and quality of

financial reporting can be improved. So, this reduces information differences and investment risk. Under these conditions, accounting conservatism leads to an improvement in the effect of managers' optimism. However, in the case of poor accounting conservatism, this effect can be significant and measurable, especially for situations that require unique firm risk rather than market-level factors.

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