Accounting conservatism and uncertainty in business environments; using financial data of listed companies in the Tehran stock exchange

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Abstract

Purpose – Applying conservatism to the preparation of financial statements has been considered not only as a natural mechanism to protect the interests of the stockholders but also as a practical way to assist managers to deal with uncertainty in business environments. This study aimed to determine if increasing uncertainty can lead to raising the level of conservatism used in preparing financial statements. The result of the study could provide a better understanding of the factors that influence the level of applying conservative methods in accounting and financial reporting.

Design/methodology/approach – The model introduced by Basu (1997) was used to measure accounting conservatism. Business strategy and alertness were considered as two proxies for classifying companies according to their level of uncertainty. By adding each proxy of uncertainty to the model and using the financial data of 183 companies for five years (from 2013 to 2018), the multiple regression models were estimated through EViews. It was assumed that inert companies and those with prospector strategy face a higher level of uncertainty. Consequently, they were expected to report their financial status conservatively.

Findings – Findings revealed that companies, which adopted a prospector strategy, applied more conservative methods in their financial reports. This indicated that facing wider uncertainty results in reporting more conservatively, which could not be said about inert companies.

Originality/value – The current research is the first research undertaken in a developing country such as Iran, and the study's results may benefit other developing countries.

Keywords Accounting conservatism, Uncertainty, Strategy, Alertness

Paper type Research paper

1. Introduction

According to Iranian National Accounting Standards (INAS), the term prudence is interchangeable with conservatism which refers to applying a degree of caution to make a judgement about accounting estimations in uncertain circumstances. This approach prevents both the overestimation of assets and incomes and the underestimation of liabilities and losses. Based on this definition, accounting conservatism could be perceived as a response to uncertainty in business environments.

In the study of IASB (2006), which was a joint project reviewing and revising conceptual framework for financial reporting, prudence or conservatism has been removed from
qualitative characteristics of financial reporting in favour of neutrality. This removal was due to a deliberate underestimation of net income and asset that can be understood as a bias against neutrality (IASB, 2006). Some opponents of conservatism argued that conservative accounting could violate the matching principle, as it anticipates and recognises future costs and losses while postponing the recognition of income due to uncertainty (Chen et al., 2014). Using financial data from listed companies in Iran, Mojtahedzade (2002) found that conservative procedures and methods such as “instalment sales”, “lower of cost or market” and “considering R&D expenditures as a cost rather than as an asset” were contrary to the principles of historical cost, matching and full disclosure. By investigating the amount of allowance considered for uncollectible earnings, Jackson and Liu (2010) found that conservative accounting could help earnings management. Several scholars have been arguing that conservatism biases numbers in financial statements which leads to inefficient decision making (Ruch and Taylor, 2015).

However, conservative financial reporting has its proponents. Watts (2003a) stated that there are four main reasons companies prefer to adopt conservative methods in accounting and financial reporting. These reasons include contractual basis (contracts between internal and external stakeholders such as managers, stockholders and creditors), costs of litigation and prosecution against companies, reducing current income tax and regulatory incentives. According to accounting conservatism, recognition of incomes requires more reliability compared to losses. Following such conservative methods leads to restricting opportunistic behaviour of management, providing more assurance for creditors, offering higher quality performance and lower litigation costs. Devine (1963) noted that being optimistic in calculating net income could have severe consequences in comparison with being pessimistic, meaning that reported net income based on an optimistic view could cause investors to face actual losses while conservative reporting would just deprive them of good investment opportunities. Additionally, it is more likely for companies to be prosecuted for overestimation and exaggeration of their net assets not for undervaluing them. Considering the consequences of aggressive reporting, assuring users of financial statements that these statements are showing the minimum amount of net assets is a necessity. The users need a safety margin to protect them against the implications of aggressive accounting. Although conservative reporting has drawn criticism, its advocates emphasise applying conservative accounting in practice (Watts, 2003b). In addition, researchers have shown that conservative accounting has been demanded by investors, auditors, authorities, vendors, buyers and creditors in order to minimise agency costs by reducing information asymmetry and promoting corporate governance. Accounting conservatism, along with facilitating corporate governance of a company, increases investment performance and decreases investment risk. Furthermore, it is impossible for managers to inflate profits or net assets if earnings are identified with high verifiability (Zhong and Li, 2017). Solichah and Fachrurrozie (2019) argued that to prevent management behaviour, which is overly optimistic with financial statements, and to prepare financial statements that can be accounted for external parties, the company chooses accounting methods conservatively.

Considering both proponents and opponents’ views, accounting conservatism can work as a response to uncertainty by recognising costs and liabilities promptly and deferring the recognition of incomes and assets until the elimination of uncertainty. Therefore, the present study aims to determine whether conservatism could act as a rational reaction to uncertainty as a protective means for investors’ interests. Moreover, due to positive aspects of conservatism, we want to investigate if the uncertainty can be considered as a factor driving the use of conservative methods in preparing of financial statements to provide users of financial statements with a safety margin. To do so, the regression model, which has been developed to measure accounting conservatism by Basu (1997), was expanded through the
use of business strategies and alertness considered as the proxies for uncertainty. The expanded model was then estimated using five years of financial data from 183 companies (from 2013 to 2018) via EViews software to investigate the relationship between accounting conservatism and uncertainty. The results of this study can show whether conservative accounting is practically used irrespective of these negative aspects, which could conclude that its benefits outweigh its drawbacks.

The current study contributes in three ways to the literature. First, to the best of the authors’ knowledge, this research is the first in a developing country, like Iran, to explore the role of conservative accounting in mitigating uncertainty. The Iranian business environment is different and unique since Iran has experienced strong, persistent cycles of inflation and currency volatility in recent years (Monfared and Akin, 2017). Consequently, Iranian companies have faced higher uncertainty compared to companies in other countries. Second, whereas previous studies investigate demands for conservatism and the beneficial effects of conservatism, there is no deal of information on the contribution of accounting conservatism to mitigate uncertainty. Finally, conservative accounting has been questioned because conservatism places accounting information in question in terms of qualitative features (Thomas and Aryusmar, 2020). Therefore, further study is warranted to shed light on the importance of conservatism in financial reporting.

2. Literature review
This section introduces the variables of the study and provides a review of the literature, which encompasses previous studies on the effect of applying conservative methods in accounting and financial reporting.

2.1 Background and hypotheses development
The background includes a clear statement of the topic and parameters including conservatism and its practical usage in preparing financial statements, uncertainty, strategy and alertness and further develops the hypotheses.

2.1.1 Accounting conservatism. Basu (1997) described conservatism as a method that shows a different reaction to bad news and good news, meaning that bad news is promptly considered as a loss in financial statements while recognition of good news as a profit is postponed. Watts (2003a) emphasised the degree of gain and loss verification in the definition of conservative accounting, in which there is a higher degree of verifying of gains compared to losses. Givoly and Hayn (2000), Smith et al. (1987) defined conservatism as choosing a method which, under conditions of uncertainty, leads to fewer assets and incomes. There are various conservative methods used in preparing financial statements such as employing FIFO method for inventory valuation, using accelerated depreciation methods, adopting policies resulting in recognition of a high amount of allowance for bad debts (Penman and Zhang, 2002).

Future uncertainty causes accounting conservatism to arise, which can clearly be perceived as an act of caution or pessimism in the reporting of financial statements. This caution causes the numbers to be recorded lower or higher than the actual values in financial reports (Thomas and Aryusmar, 2020). As per the FASB Statement of Concept No. 2, conservatism is a prudent reaction in the face of inherent uncertainty to try and ensure that uncertainty and risk are already deemed adequate within the competitive market (Zubaidah and Nasrizal, 2019). Conservative accounting is a precautionary concept for dealing with uncertainty in conducting financial statements by not identifying earnings as early as possible and speeding up cost identification (Solichah and Fachrurozzie, 2019).

Accounting conservatism, previously accepted in the US GAAP, is projected to reduce the degree of implementation or will be abolished and substituted by prudence (Sholikhah and...
However, on the basis of prior conservatism study, it can be inferred that conservatism has remained as one of the most significant features of financial reporting that it warrants further studies and cannot be removed from accounting principles (Zhong and Li, 2017).

2.1.2 Uncertainty, strategy and alertness. Various definitions related to uncertainty have been proposed by scholars. Knight (2012) indicated that certainty for a company means that it has an assurance of outcomes in the future. For example, the company would be certain of the fall or rise in the value of a currency. On the other hand, he defined uncertainty as a future situation in which it is difficult to estimate the probability of every possible event. In such situations, a company can determine the possible future scenarios, but cannot calculate the probability of each scenario. Heinsalu (2011) mentioned that it is necessary to distinguish between risk and uncertainty. Risk is considered as determined probability, while uncertainty refers to the unknown probability. Knight (2012) highlighted that risk is measurable through the determination of the probability of each output, while uncertainty cannot be measured since there is no detailed information to assess and determine the probability. A situation, in which a company can predict three possible scenarios for the value of a currency in the future including rising, fall, stable and can allocate a probability to each scenario (for example 60%, 30 and 10% respectively), is called risk or adventure. If allocating probability to each scenario is impossible, this situation is known as uncertainty or ambiguity.

In terms of uncertainty, the approach introduced by Hsieh et al. (2019) was used to classify companies according to their level of uncertainty in the current study. This approach categorised companies based on two factors, namely types of strategies and the level of alertness to business environments. These two factors are described in details as follows:

Uncertainty in business environments stems from internal and external factors, including the unpredictable nature of the overall economy, vendors, clients, sales volume, demand for products and technological innovation, which have a direct effect on the company’s strategy and management decisions (Bastian and Muchlish, 2012; Lopez et al., 2017). Economic uncertainty is a key element in strategy development and execution. Business strategy is the way the organisation wants to tackle uncertainty in the business environment (Latan et al., 2018; Younis and Sundarakani, 2019)

A strategy is described as a forward-looking plan and is designed to help an entity achieve its goals. In the field of management science, developing a strategy is known as part of managers’ duties, and it provides a framework for vital decisions which are taken to ensure the survival of a firm and achieve sustainable growth (Armenakis and Bedeian, 1999). Miles et al. (1978) introduced four types of strategy including defenders, analysers, reactors and prospectors. In the face of environmental changes, companies usually apply one of the strategies to mitigate negative consequences and to seize opportunities. Miles et al. (1978) explained that defenders and prospectors are opposite ends of the spectrum.

Companies with prospective strategies are described as highly creative companies looking to explore new technologies and business prospects because they are strongly focused on R&D and marketing. Companies with prospector strategy face a higher level of uncertainty in comparison with defender companies since prospectors formulate an aggressive strategy, which, in turn, increases their business risk (Mirza and Ahsan, 2019). Firms adopting defender strategies have a small market share that delivers limited goods and services. Small market share firms tend to have a stable position in the market and do not attempt to expand their market share; therefore, they usually ignore changes beyond their territories, facing lower uncertainty. In other words, there is a clear link between uncertainty and types of strategy. Companies with defender strategies are not vulnerable to environmental changes, while users of prospector strategies have a flexible structure. This structure varies in accordance to environmental changes which increases uncertainty (Amoako-Gyampah, 2003; Bordia et al., 2004; Hoque, 2004).
To sum up, defender-strategy companies make little to minimal efforts to explore new business opportunities that are being offered through environmental changes. Consequently, uncertainty about changes in business environments is not a source of concern for those companies. On the other hand, companies with prospector strategies promote innovation rather than emphasise profitability. They are actively endeavouring to be informed of changes in business environments and to identify new market opportunities. Thus, it is of great importance for prospective firms to anticipate the changes which could bring a higher level of uncertainty. High level of uncertainty in business environments raises the risk of accurate assessment of future earnings and promotes asymmetry in information. In this environment, the demand for accounting conservatism to mitigate information asymmetry is becoming more pronounced (Habib and Hossain, 2013). Based on the above descriptions, the following hypothesis can be formed:

**H1.** Prospector-strategy companies, which come across a higher level of uncertainty, apply more conservative methods in accounting and financial reporting compared to defender-strategy companies.

Another factor to be discussed is alertness. Due to the fast pace of the world today, business environments are confronted with rapid changes that provide challenging and complex environments for businesses. The complexity of business environments is derived from factors such as technology advancement, an increase in the speed of information transition and competitive markets. Uncertainty plays an important role in such complex business environments. Under uncertain situations, staying flexible and alert facilitates adaptation to changing conditions. Thus, flexibility and alertness can be used as a strategic response (Cunha, 2006).

Tang, Kacmar and Busenitz described alertness as a combination of three distinct components, namely scanning and information searching, linking previously different information and assessing the presence of profitable opportunities (Indrawati et al., 2015). Frequent and comprehensive environmental scanning will allow businesses to capture market patterns reliably and develop their understanding of emerging business structures to identify opportunities. By improving environmental screening, businesses can gain access to more information and knowledge about technical progress and product enhancement from outside their business environment, thus reducing environmental uncertainty (Liao, 2018).

In terms of alertness, Hsieh et al. (2019) classified companies into two groups, namely alert and inert companies. Dayan et al. (2019) argued that alertness provides a valuable opportunity which develops desirable capabilities for producing sustainable products and processes. They indicated that where market turbulence’s moderating role is negligible, regardless of how volatile the market is, the capabilities of the company are an important element of sustainable products and processes. Therefore, alert companies may benefit from a lower level of uncertainty compared to inert companies.

In the word of Hsieh et al. (2019), alert companies perceive all changes in business environments to identify issues as soon as they arise. Such alertness enables them to have sufficient time to assess the possible consequences of the issues and the company’s resources to deal with them. Thus, they are provided with the chance to turn uncertainty into risk. This means alert companies face less uncertainty in comparison with inert companies that make no effort to identify emerging issues and therefore have a higher level of uncertainty. In an environment with greater uncertainty, the manager or accountants may look for more conservative methods in the preparation of financial statements (Silva et al., 2019). Based on these descriptions, the following hypothesis can be formulated:

**H2.** Alert companies face a lower level of uncertainty and apply less conservative accounting methods compared to inert companies in their financial reporting.
2.2 Previous studies

Ahmed et al. (2002) highlighted the role of conservative reporting in minimising debt costs and mitigating conflicts between bondholders and shareholders over dividend policy. Beekes et al. (2004) demonstrated that there is a correlation between conservative accounting and the composition of the board of directors. Their results indicated that board composition is a significant factor in reporting profits conservatively. Kim and Jung (2007) suggested that taxation is a determining factor in the implementation of conservative financial reporting. The study of Ahmed and Duellman (2007) showed that conservative reporting after controlling such variables as industry, size, leverage, growth, institutional and inside ownerships and non-observable characteristics of company help managers minimise agency costs. Similarly, Yunos et al. (2010) found that applying conservatism in accounting and financial reporting serves as a mechanism of governance in order to mitigate agency conflict.

Kousenidis et al. (2009) indicated that a non-linear relationship exists between conservative accounting and value relevance of earnings. In fact, by moving from low-conservative companies to medium-conservative companies, value relevance rises and declines by going further to high-conservative companies. Hui et al. (2009) argued that conservative accounting, which reports bad news on time, serves as a replacement for management forecasts by mitigating information asymmetry and decreasing future lawsuits. Lee (2010) highlighted that while companies enjoy lower debt-contracting costs through conservative reporting, they are forgoing some flexibility in potential access to capital, impacting their financial choices. Houq et al. (2013) presented the clear evidence of the correlation between business strategy and conservatism suggesting that prospector-strategy companies are associated with higher levels of accounting conservatism compared to firms with a defender strategy.

Dai and Ngo (2020) noticed that companies tend to report more conservatively when they face a high level of political uncertainty during US gubernatorial elections. Wang (2019) showed that firms reporting risk factor disclosure with a tone of greater uncertainty apply less conservative accounting in their reports. Bu et al. (2019) observed that political uncertainty is considerably related to reducing conservatism in accounting. Hsieh et al. (2019) examined whether conservatism in accounting and financial reporting can be interpreted as a logical answer to uncertainty. Their study’s results indicated that companies facing greater uncertainty are adopting more conservative accounting methods. The empirical findings of the Haque et al. (2019) showed that accounting conservatism decreases earnings management during uncertainty and improves firm value. The study of Salehi and Sehat (2019) suggested that there is no significant relationship between accounting conservatism and debt maturity structure as well as institutional ownership.

3. Methodology

This study used all listed companies in the Tehran Stock Exchange. Organisations related to banks, financial institutions, foreign companies, investment and insurance companies were not included in the study as these types of companies operate in specific regulatory accounting environments. Additionally, observations related to the companies which failed to meet the following criteria were removed from the population:

(1) Companies should be registered to the Tehran Stock Exchange before the year 2013 and should not cancel the registration until the year 2018.

(2) The data required to define the variables of the study should be available in the financial statements.

As a whole, the total number of companies listed in the Tehran Stock Exchange (TSE) and sample size (915 firm-year) in the current study through the use of purposive sampling method based on the above criteria were shown in Table 1.
Different approaches have been used to assess accounting conservatism. Measures including market/book value, earnings/accruals, accruals/cash flows and earnings/return are commonly used in the literature. The measure proposed by Basu (1997), which is based on the relationship between earnings and stock returns, has been by far the most frequently used in accounting conservatism study (Zhong and Li, 2017). Therefore, in the present study, the Basu model Eqn (1) was used to measure the level of conservatism in accounting and financial reporting.

Basu (1997) indicated that returns present both good news and bad news, whereas net incomes, which is reported conservatively, just consider bad news. Since by applying conservative methods, companies recognise costs and losses promptly and delay recognition of incomes and profits. Hence, the relationship between negative returns and conservative net incomes is expected to be strong.

\[
NI_t = \beta_0 + \beta_1 \text{NEG}_t + \beta_2 \text{RET}_t + \beta_3 \text{NEG}_t \times \text{RET}_t + \epsilon_t
\]  

(1)

In the above equation, \(NI_t\) and \(\text{RET}_t\) are net income and annual return in year \(t\), respectively. \(\text{NEG}_t\) is a dummy variable. It will be equal to 1 if the annual return is positive (indicating good news). If the annual return is negative (indicating bad news), \(\text{NEG}_t\) will be considered as zero. Based on the Basu (1997) definition, a positive correlation between net income and negative return is expected. So, the positive coefficient \(\beta_3 (\text{NEG}_t \times \text{RET}_t)\), which significantly differs from zero, shows that the financial statements are prepared conservatively.

In the current study, the Basu model was expanded by adding types of strategies employed by companies Eqn (2) to investigate the first hypothesis. Market to book ratio (MB), the market value of equity (SIZE), leverage (LEV) and return volatility (STDR) were used as control variables (Hsieh et al., 2019).

\[
NI_t = \beta_0 + \beta_1 \text{NEG}_t + \beta_2 \text{STRATEGY}_{t-1} + \sum_{i=3}^{6} \beta_i \text{CONTROLS}_{t-1} \\
+ \beta_7 \text{NEG}_t \times \text{STRATEGY}_{t-1} + \sum_{i=8}^{11} \beta_i \text{NEG}_t \times \text{CONTROLS}_{t-1} + \beta_{12} \text{RET}_t \\
+ \beta_{13} \text{RET}_t \times \text{STRATEGY}_{t-1} + \sum_{i=14}^{17} \beta_i \text{RET}_t \times \text{CONTROLS}_{t-1} + \beta_{18} \text{RET}_t \times \text{NEG}_t \\
+ \beta_{19} \text{RET}_t \times \text{NEG}_t \times \text{STRATEGY}_{t-1} + \sum_{i=20}^{23} \beta_i \text{RET}_t \times \text{NEG}_t \times \text{CONTROLS}_{t-1} 
\]  

(2)

The scoring system, which has been introduced by Bentley, was used to classify companies based on their strategies. The scoring system encompasses six variables, including

1. R&D to Sales.
2. Total Sales Ratio for one year.

| No | Description | Total |
|----|-------------|-------|
| 1. | The firms listed in TSE over the period of 5 yrs (from 2013 to 2018) | 221 |
| 2. | The listed firms that meet the criteria | 183 |
| 3. | Years of the study | 5 |
| 4. | Sample size in the current study (year-firm) | 915 |

Table 1. Sample size
(3) Selling, General and Administrative Expenses to Sales.

(4) Net Property, Plant and Equipment to Sales.

(5) The Number of Employees to Sales, and

(6) The Standard Deviation of Total Numbers of Employees (Hsieh et al., 2019).

In the current study, due to the lack of some data disclosed in the financial statements, three out of the six variables were available to categorise the companies based on their strategies. These variables were

(1) Total Sales Ratio for one year.

(2) Selling, General and Administrative Expense to Sales.

(3) Net Property, Plant and Equipment to Sales. For each firm-year, the variables were calculated and then ranked into quintiles. Observations in each group were given the quintile-based score. For example, the companies in the first quintile received a score of one, and the companies in the fifth quintile got a score of five. The strategy score was calculated as the sum of the scores. The maximum, minimum and mid-range values were 15, three and nine, respectively. Companies receiving a higher score (more than midrange score ≥ 9; maximum plus minimum divided by two) were called prospectors. Otherwise, they were known as a defender company. In the expanded regression model Eqn (2), a dummy variable was used for the types of strategy, meaning that it was equal to 1 if the score is greater than 9 (prospectors) and 0 otherwise. In the regression, the coefficient $β_{19}$ shows the relationship between conservatism in accounting and the type of strategy. A positive coefficient ($β_{19}$), which is statically significant, indicates that prospector-strategy companies employ a higher level of conservative methods in the preparation of financial statements.

The second hypothesis was related to the relationship between alertness and conservative accounting. The expanded Basu model Eqn (3) by adding alertness and control variables, including market-to-book ratio (MB), the market value of equity (SIZE), leverage (LEV) and return volatility (STDR) was applied to test the second hypothesis.

$$\text{NI}_t = \beta_0 + \beta_1 \text{NEG}_t + \beta_2 \text{ALERT}_{t-1} + \sum_{i=3}^{6} \beta_i \text{CONTROLS}_{t-1} + \beta_7 \text{NEG}_t \times \text{ALERT}_{t-1}$$

$$+ \sum_{i=8}^{11} \beta_i \text{NEG}_t \times \text{CONTROLS}_{t-1} + \beta_{12} \text{RET}_t + \beta_{13} \text{RET}_t \times \text{ALERT}_{t-1}$$

$$+ \sum_{i=14}^{17} \beta_i \text{RET}_t \times \text{CONTROLS}_{t-1} + \beta_{18} \text{RET}_t \times \text{NEG}_t + \beta_{19} \text{RET}_t \times \text{NEG}_t \times \text{ALERT}_{t-1}$$

$$+ \sum_{i=20}^{23} \beta_i \text{RET}_t \times \text{NEG}_t \times \text{CONTROLS}_{t-1}$$

(3)

In the extended regression model Eqn (3), the coefficient $β_{19}$ shows the relationship between conservatism and alertness. Based on the second hypothesis, alert companies are expected to apply less conservative methods in the preparation of financial statements since alert companies are seeking for information; therefore, they face less uncertainty. A negative coefficient ($β_{19}$), which is statically significant, means that a lower degree of accounting conservatism is employed by alert companies. Hsieh et al. (2019) mentioned that alert
companies devote a considerable budget on seeking information about emerging issues. By increasing uncertainty, they reduce discretionary expenses to spend this money to minimise uncertainty. Hence, they introduced a regression model for classifying companies in terms of alertness based on discretionary expenses. In this model Eqn (4), the discretionary expense (DISX) is the sum of the expenses for R&D, advertising and SGA and A and S are total assets and sales, respectively. After estimating this model for each company in a particular industry, if the companies’ residuals are negative and less than 33% of the residual average in each industry, these companies’ alertness score will be equal to one otherwise the company will receive a score of zero.

\[
\frac{\text{DISX}}{A(t-1)} = \alpha_0 + \alpha_1 \frac{1}{A(t-1)} + \alpha_2 \frac{S(t-1)}{A(t-1)} + \epsilon
\]  (4)

4. Empirical results
In time series regression models, before estimating the models, the stationary of time series should be determined first. In the current study, the stationary was investigated through the use of LLC (Levin, Lin and Chu) panel unit root test. The results are shown in Table 2.

In this test, the null and alternative hypotheses were defined as below. According to the probability (p-value), which is very small and less than 0.05, the null hypothesis was rejected in favour of the alternative hypothesis. It suggested the time series did not have a unit root, meaning that it was stationary.

(1) \(H_0\): Panel contain unit roots.
(2) \(H_a\): Panels are stationary.

The second step was to conduct the poolability tests. These tests help a panel model to be estimated within the framework of fixed-effects models. To do so, the F-Limer test (Redundant Fixed Effects Test) and Hausman test were used. The F-Limer test indicates that if there are individual effects, or it is preferable to ignore them and to estimate by pooled OLS. The results of F-Limer test shown in Table 3 suggested that the panel model should be estimated:

Hausman test was applied to verify which of the models, fixed effect or random effect model, was acceptable. According to the results of the Hausman test, shown in Table 4, the p-value was less than 0.05. So, the null hypothesis was rejected, and fixed-effects model was appropriate.

(1) \(H_0\): Random-effect model is appropriate.
(2) \(H_a\): Fixed-effects model is appropriate.

| Variables | Statistic | p-value |
|-----------|-----------|---------|
| NI        | -1645.96  | 0.000   |
| RET       | -184.86   | 0.000   |
| STRATEGY  | -10.27    | 0.000   |
| ALERT     | -5.42     | 0.000   |
| NEG       | -5.37     | 0.000   |
| SIZE      | -937.34   | 0.000   |
| STDR      | -416.10   | 0.000   |
| MB        | -91.31    | 0.000   |
| LEV       | -152.93   | 0.000   |

Table 2. LLC panel unit root test
At the final stage, the expanded regression model \( Eqn (2) \) was estimated. Based on the first hypothesis, the coefficient \( \beta_{19} \) was expected to be positive as it was assumed that prospector-strategy companies employ a higher level of accounting conservatism. Therefore, null and alternative hypotheses were defined as follows:

(1) \( H_0: \beta_{19} \geq 0 \).

(2) \( H_a: \beta_{19} < 0 \).

The results of estimating the expanded model, regarding the first hypothesis, are shown in Table 5.

According to the above table, the coefficient \( \beta_{19} \) was positive and statistically significant. Thus, it was failed to reject the first hypothesis “prospector-strategy companies, which experience a higher level of uncertainty, apply more conservative methods in accounting and financial reporting compared to defender-strategy companies”.

Adjusted \( R \)-squared suggested that 92% of the variance of the depended variable was explained by independent variables. \( F \)-test was relatively high and statically significant, which means the model was meaningful. Durbin–Watson statistic showed that there was no autocorrelation detected in the sample.

In the expanded model for the second hypothesis, the assumption was that alert companies, which are facing with less uncertainty, employ less conservative methods in their financial reporting. Thus, the coefficient \( \beta_{19} \) was expected to be negative. The null and alternative hypotheses are as follows:

(1) \( H_0: \beta_{19} \leq 0 \).

(2) \( H_a: \beta_{19} > 0 \).

The results of the expanded model estimation, regarding the second hypothesis, are shown in Table 6.

According to the above table, the coefficient \( \beta_{19} \) was positive and statistically significant. Therefore, the second hypothesis was rejected, which presumed that “alert companies facing a lower degree of uncertainty use fewer conservative methods in their financial reporting in comparison with inert companies”.

Adjusted \( R \)-squared suggested that 92% of the variance the dependent variable was explained by independent variables. \( F \)-test was relatively high and statistically significant. Durbin–Watson statistic indicated that autocorrelation was not observed in the sample.

### Table 3.

| Model no. | Effects test     | Statistic | Df    | Prob. |
|-----------|------------------|-----------|-------|-------|
| 1         | Cross-section    | 1.2361    | –182.702 | 0.0314 |
| 1         | Cross-section Chi-square | 252.426 | 182 | 0.0004 |
| 2         | Cross-section    | 1.2630    | –182.693 | 0.0201 |
| 2         | Cross-section Chi-square | 257.5932 | 182 | 0.0002 |

### Table 4.

| Model no. | Test summary        | Statistic | Df | Prob. |
|-----------|---------------------|-----------|----|-------|
| 1         | Cross-section random | 55.2024   | 23 | 0.000 |
| 2         | Cross-section random | 58.8656   | 23 | 0.000 |
5. Conclusion

Financial statements are the final product of the accounting system. The purpose of financial statements is to provide users with brief and classified information about the financial situation, performance and flexibility of an entity in order to help users make economic decisions. These statements should possess qualitative characteristics which are considered as a base for decision making. According to Iranian financial conceptual framework, accounting conservatism is categorised as one of the qualitative characteristics. This study aimed to investigate the use of conservative methods as a qualitative characteristic by companies in uncertain situations to enhance the usefulness of financial statements. In order to meet the aims of the study, the Basu model was expanded through the use of uncertainty. Two factors, including strategy and alertness, were used to identify companies based on their level of uncertainty.

The first expanded regression model, which assesses the relationship between accounting conservatism and uncertainty based on types of strategy, showed a positive correlation between the variables. This means that by increasing uncertainty, the level of conservatism in accounting and financial reporting increases, which is consistent with previous studies (Bu et al., 2019; Dai and Ngo, 2020; Kanagaretnam et al., 2014; Lobo and Zhou, 2006). Further, the positive relationship between the level of conservatism and prospector strategy is in line with Hsieh et al. (2019) study. Their study argued that prospector companies experience explosive growth in income as they invest a considerable amount of money in research and development. Engaging in such an explosive situation motivates companies to manage their...
reported incomes using more conservative methods. The main reason for applying more conservative methods and representing less income is to show steady growth. From investors’ prospects, the achievement of steady growth indicates a lower risk. Hence, the market price for companies that entail fewer risks is higher than those with more risks. By comparison, defender-strategy companies usually operate in a stable situation; consequently, they have no motivation to report conservatively.

The second hypothesis of this study was based on the assumption that inert companies face a higher level of uncertainty and prepare their financial statements conservatively. This approach was considered as a rational response to the reduction of uncertainty which leads to the increase in reliability of financial statements. The empirical results have failed to prove the validity of this assumption. Such unpredictable findings could be a defensive response of alert companies to the fragility in the Iranian market compared to other countries. Iranian business environment faces a high level of uncertainty due to a high rate of inflation and currency volatility in recent decades (Monfared and Akin, 2017). Alert companies are more aware of the high level of uncertainty existing in the business environment compared to inert companies; therefore, they prepare their financial statements conservatively.

Overall, the empirical results indicated that companies with a higher level of uncertainty (prospective companies) prepared their financial statements conservatively. However, inert companies that faced a higher level of uncertainty did not use more conservative accounting in their financial reporting as a response to uncertainty. These controversial results may be attributed to the weaknesses of the method used for measuring accounting conservatism (the
Basu model) in the current study. Among various accounting conservatism measures, many researchers have begun their study on the base of the accounting conservatism measure developed by Basu (1997) that has been crucial to accounting conservatism study. However, this measure is invalidated and also highlights the potential cause of measurement error; hence, it is not advised to rely on a single measure to assess accounting conservatism (Neag and Mașca, 2015). Based on these descriptions, using methods other than the Basu model can provide an opportunity to better understand the role of using more conservative accounting methods to mitigate uncertainty. In addition, the controversial results may be inferred from the proxies, which were used to identify companies based on their level of uncertainty (types of strategy and alertness), thus, further study is suggested to find other proper proxies for uncertainty.

In this study, several limitations can be considered. Firstly, the sample consisted of companies listed in the Tehran stock exchange. For further studies, more comprehensive samples could be of help. Secondly, this study used strategy and alertness as variables that influence conservatism in accounting. A future study could involve variables such as the structure of organisation, technology and culture. Finally, in the current study, variables such as size, market to book ratio, leverage and return volatility were selected as control variables; other control variables may also be taken into consideration.

The study findings have the following implications:

1. Companies should consider the level of environmental uncertainty and the role of conservatism to mitigate uncertainty when choosing accounting methods.

2. Accounting standard-setting bodies, such as the FASB and IASB that have recently removed conservatism from their conceptual framework, could use the findings.

An important issue in the debate is the extent to which certain characteristics of financial reporting, such as conservatism, should be included in the GAAP (Kothari et al., 2010).

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