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The relationship of accounting comparability between the profit value relevance and book value

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Abstract
This research tries to investigate the comparability between the profit value relevance and book value of the listed firms in Tehran Stock Exchange. The research sample was selected by using the systematic removal sampling method by applying the research variable, 138 variables, during 2012-2019. Furthermore, this research has two hypotheses. This research is applied and the method is correlational based on nature and content. The research was conducted in the framework of deductive-inductive reasoning and panel analysis was used to analyze the hypotheses. The results of hypothesis testing showed that value relevance of profit and value relevance of book value increase with accounting comparability.
Keywords: accounting comparability, value relevance of profit, book value

Introduction

The theoretical bases of financial accounting and reporting state that information with qualitative characteristics of financial information would be useful in financial statements, and comparability is one of the qualitative features of financial statements. Comparability is one of the features that the accounting system and financial statements of companies should have.

This research focuses on the comparability characteristics because of the emphasis of many developers of accounting standards on the importance of this characteristic to determine the quality of financial statements. Comparability has an important role in evaluating. Actually, all analyses of financial statements emphasize the importance of comparison of the firms' financial statements with each other in evaluating their performance. Some believe that increasing comparability reduces information asymmetry. Therefore, increasing comparability increases the likelihood of detecting manipulation and fraud in financial statements and reduces the motivation of managers to commit fraud. In other words, it is expected from firms with low comparability in their financial statements to fraud more than other firms (Chen et al., 2020).

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Problem statement

Accountability comparability is important for companies and investors.

Despite the concept of reliability which focuses on the predictability or verifiability of financial information, comparability makes it possible for users to identify similarities and differences of firms' financial performance. Therefore, the qualitative characteristics of financial information (comparability) are important for investors and creditors in the capital and debt market, because investment and lending decisions are based on evaluating alternative opportunities or projects, and no optimal decision can be made without this comparable information (Di Fuanko et al., 2011, 183).

Comparability is one of the qualitative characteristics of information in the theoretical bases of financial reporting and accounting which enables the users of financial statements to identify and perceive the similarities and differences between two data sets and mention them in their decisions. Financial reports should always provide reliable information to help users make decisions. Therefore, it is expected that comparability of financial information is one of the emphasized characteristics of accounting standardization bodies. This ability is considered a vital issue to enable the investor, creditors, and other decision-makers in conscious decisions. Comparability provides the ability to identify similarities and differences between different firms and better evaluation of their economic performance for users of financial statements and facilitate the optimal allocation of capital resources by improving the quality of financial information and information environment.

These studies include Colin's (1997) research. Colin et al. (1997) conducted experimental research about the relationship between book value and profit to the value of American companies over 40 years. The results of their research showed that the combined relationship between book value and profit with company value did not change significantly during the study period. However, the relationship between book value and company value has increased regularly while the relationship between profit and company value has been continuous in this review (Chen et al., 2020). The main objective of this research is to know whether the accounting comparability of profit value relevance increases profit book value or not?

The necessity and importance of research

The coders believe that comparability increases the usefulness of accounting information and enables users of financial statements to identify similarities and differences between economic phenomena (Chen et al., 2019, 27). The Financial Accounting Standards Board (1980) says that "investment and lending decisions cannot be rational if comparative information is not available".

In addition, the presence of transparent and comparable financial information is one of the important pillars of conscious decision-making and is effective in economic development and growth. Although financial information can be extracted from a variety of resources, financial statements are now the primary source of financial information resources, and almost all accountants are responsible for preparing and presenting these statements. The management report includes the firm's financial trends, important and effective events on the firm, the firm's future development plans, the effective events on the firm's liquidity, and so on. The auditor's report shows the independent auditor's statements about the fairness of the firm's financial statements.

The relationship between accounting comparability and value relevance of companies and book value of companies was examined by considering the relationship between comparability of accounting and value relevance of profit and book value to fill these gaps in the literature.

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Research background

Ghezelsefli et al. (2020) reported that there is a direct and significant relationship between the type of the auditing institutes and the quality control score of the auditing institute with the difference between the recorded figures in the audited and non-audited profit and cost statement. Furthermore, the results show that the size of auditing institute and the specialty of the auditor industry doesn't have a significant effect on the difference between the audited and non-audited financial statements.

Aghaei et al. (2018) investigated the comparability of accounting and its effect on investment efficiency. The results showed a positive and significant relationship between accounting comparability and investor efficiency. In other words, accounting comparability increases the availability of quality accounting information about investment projects and improves the quality of investor decisions.

Zareh Sheibani et al. (2015) examined the value relevance of profits from shareholder wealth view in Tehran Stock Exchange. Findings show that the results of this research show a positive and significant relationship between earnings changes and changes in stock market value.

Ahn (2020) in research to compare the financial statements and market value of cash assets in American companies from 1991 to 2013 showed the marginal value of cash assets for companies are more than the comparable financial statements to other industry peers. This result shows that comparing the financial statements with improving the information environment of companies and thus facilitating the supervision of managers reduces the problem of representation related to cash assets (for example, the problem of free cash flow). Choi et al. (2019) in research under the title of "comparability of financial statements and value relevance of stock prices for future earnings" found that comparability information can improve the current period return.

Yang et al. (2017, 323) studied the relationships between earnings management, annual growth, and accounting comparability. The results of their research showed that the annual published by the sample companies can indicate the errors disclosed or the profit management of the previous annual issues and as a result, the quality of the sensitive information will be improved.

Research objectives

The general objective of this research is to study the comparable relationship of accounting between profit value relevance and book value.

Specific objectives

1- Explaining and analysis of the value relevance of profit and book value
2- Identifying the comparable relationship of accounting of listed firms with value relevance and book value to make optimal decisions for investors.

Applied objectives

1- Promoting the information of current and potential investors including stock market investors, as well as people who intend to invest in capital markets.

2- Reinforcing the managers' knowledge of the listed firms in Tehran Stock Exchange
3- Financial creditors of firms
4- Helping the capital market analyzers

Research question

First question: does profit value relevance increase by accounting comparability?
Second question: does book value relevance increase by accounting comparability?

Research hypothesis

Main hypothesis

First hypothesis: profit value relevance increases by accounting comparability.
Second hypothesis: book value relevance increases by accounting comparability.
Research conceptual model

Research conceptual model

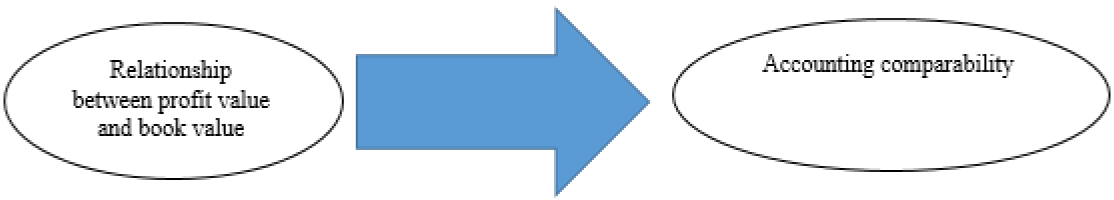

Fig. 1: Detailed conceptual model of Chen et al.'s (2020) Research

As observed, this research tries to answer the question, whether value relevance and book value are related to accounting comparability.

Research statistical model

The following statistical model in this research is used to analyze the hypothesis as by Chen et al. (2020) research:
The second model that researchers used extensively to measure value relationship is like the Elson (1995) model:

$$\Delta MV\ \mathbf{i},t=\beta_0+\beta_1\ COMP,t+\beta_2\ EPS\ i,t+\beta_3\ BVPS\ i,t+\varepsilon_{it}$$

In which,
Δeps: Earnings per share changes
$p\ t-1$: Price at the end of last year
EPS: Earnings per share
BVPS: Book value per share in company i in year t;
ΔMV: Changes in market value (earnings) per share
COMP: accounting Comparability of the company i in year t;
ΔR: Annual stock return changes
ε_{it}: regression equation error
β: Communication value of variables
This price model is used to evaluate the usefulness of accounting information in determining the value of stock prices and shows how the market value of companies depends on both the variables of book value and accounting profit. According to the mentioned model, accounting comparability as a measure of profit quality is expected to influence changes in market value.

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Operational definition of research variables

Dependent variable: profit relevance and book value

In this research, two models will be used to measure the value relationship. The first model is the returns of Easton and Harris (1991) model which consider two factors of earnings per share and changes in earnings per share. Earnings per share can be analyzed as follows:

$$\frac{eps\ t}{p\ t-1} = \frac{eps\ t-1}{p\ t-1} + \frac{\Delta eps\ t}{p\ t-1}$$

Since these two variables cannot be placed together in a regression model, a separate regression must be formed for each of the variables:

$$\Delta \mathbf{R}_{\ i,t} = \alpha + \beta_1 + \text{COMP} + \beta_2 \frac{eps\ t}{p\ t-1} + \varepsilon_{it}$$

$$\Delta \mathbf{R}_{\ i,t} = \alpha + \beta_1 + \text{COMP} + \beta_2 \frac{\Delta eps\ t}{p\ t-1} + \varepsilon_{it}$$

Profit value relevance is a measure of comparability based on the idea that accounting figures should explain stock return information.

Independent variable: Accounting comparability (COMP)

The presented model by Di Franco et al. (2011) is used to measure accounting comparability. According to this model, accounting comparability is defined as the degree of proximity of the accounting system of two companies. The accounting systems of two companies are comparable if they display similar accounting numbers for similar economic events. According to this research, stock returns are used as a summary of economic events and accounting profit is used as a representative of a company's financial statements. Accounting profit includes not only the company's accounting procedures, but also how these procedures are implemented at the company level.

Using the following cross-sectional regression model, the return on accounting profit of company i over 8 years is estimated:

Earning it = αi + βi Re turnit + εit

In this model, the dependent variable is the accounting stream of company i in year t, which is standardized with the market value of the first stock of the period, and the independent variable is the return on stock of company i in year t.

In this model, the dependent variable is the accounting profit of firm i in year t, which is standardized by the market value of the first stock of the period, and the independent variable is the stock return of firm i in year t. according to the mentioned equation, αi and βi are the indexes of firm i accounting system which show the economic events in the accounting profit. Similarly, the mentioned equation is estimated for firm j. If so, αj and βj are a representative for firm j accounting system.

The adjacency of the above accounting systems indicates the comparability of accounting between the two companies. If two companies experience the same set of economic events, comparable accounting systems produce similar financial statements.

Based on the mentioned equation, the stock price return of company i during 8 years, as similar economic events, enter the accounting system of companies i and j and their profits are predicted for 8 years, which is as follows:

E(Earnings) iit = $\hat{\alpha}$ i + $\hat{\beta}$i Re turnit

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$$E(Earnings)\ ijt = \hat{\alpha}\ j + \hat{\beta}\ j\ Re\ turnit$$

Variable E (Earnings) iit: The projected profit of the company i which is measured through the accounting system and the return of company i in period t.

E (Earnings) ijt: The projected profit of the company j which is measured through the accounting system and the return of company j in period t. The comparability between companies i and j in year t is measured as follows:

$$CompAcct_{ijt} = -\left|E(Earnings^{i}_{i,t}) - E(Earnings^{i}_{j,t})\right|$$

The absolute value of the difference between the expected profits of the two companies is multiplied by minus one. Therefore, larger values indicate higher comparability of the accounting system of companies i and j.

the average comparability of company i with all companies j is calculated which is used as the comparability measure of company i in year t in the hypotheses tested after estimating the comparability rate for each company i and its counterpart company j in the letter t.

Methodology

This research is in the field of positive theory and is considered correlational-descriptive based on the content and applied based on the objective. The method of this research is correlational-descriptive based on nature and content which analyzes the correlation relationship using secondary data extracted from the financial statements of listed companies in Tehran Stock Exchange. This research is conducted in the framework of deductive-inductive reasoning. The reason for using the correlation method is to discover the correlation relationships between the variables. The correlational research is a type of descriptive research. In this research, first the correlation between the research variables was tested and if there is a correlation between the research variables, the multiple regression model was estimated. On the other hand, this research is post-event (quasi-experimental) because it is based on the analysis of past and historical information (corporate financial statements). Moreover, this research is a kind of library and analytical-causal studies and is based on the analysis of panel data.

Data collection tool and method

In this research, data was collected using the initial information of companies. It means the data required for research are generally obtained from the library method using modern Rahavard software and by referring to the Tehran Stock Exchange Organization and studying the basic financial statements of the listed companies on the Tehran Stock Exchange during 2012-2019.

The relevant data to the financial statements from the stock exchange information site has been used in addition to studying the basic financial statements at this time.

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Sampling method and research statistical population

Table 1- sample selection method

Total number of listed companies at the end of 2019	522
Criterions	
Number of companies that were not active in the stock market in 2012-2019	185
A number of companies have been listed on the stock exchange since 2019	63
Number of companies that have been holding, investments, financial intermediation, banks, or leasing	52
Number of companies whose fiscal year did not end on the last day of winter or have changed fiscal year in the scope of the investigation	53
Number of companies that have had a trading break of more than 3 months	31
The number of companies whose information is not available in the realm of research	
Number of sample companies	138

After considering all the mentioned criteria, 138 companies remain as screened population. All of them have been selected as samples. Therefore, observation was been in 2012-2019 for 1104 companies-year (8 year* 138 companies).

Research field

This research concerns the field of management and accounting research theoretically which seeks to examine the comparable relationship of accounting with value relevance, profit, and book value. The place scope of the research includes the listed companies on the Tehran Stock Exchange. The time domain studied in this research is an 8 years in 2012-2019.

Research specialized terminology

Accounting comparability: comparability is one of the qualitative characteristics of financial information that enables users to investigate similarities and differences between items of financial statements. In addition, it makes a more rational assessment of the various investment or lending opportunities. (Di Franco et al., 2011, 13).

Profit value relevance and boo value: firms, as economic units, are always looking for profitability and achieving more wealth. In addition, firms are responsible for responding to people outside the company in addition to the task of conducting economic activity (Titilaio, 2011).

Table 2- descriptive statistics of research quantitative variables

Name and number of variables			**Central indexes**		**Kurtosis indexes**				
variables	Abbrev.	No.	mean	median	St.dev	skewness	kurtosis	min	max
Comparability	COMP	1104	-0.067	-0.044	0.11	-21.26	6.98	-0.811	-0.004
Annual stock return changes	**ΔR**	1104	0.66	0.28	0.13	2.76	8.54	-0.79	8.21
Earnings per share	EPS	1104	9.65	6.98	11.98	1.75	3.43	-34.89	123.87
Book value per share	BVPS	1104	2.14	4.21	7.54	-0.51	7.32	-7.65	9.76
Earnings per share changes	Δeps	1104	7.65	10.32	10.71	-0.34	2.87	-52.98	98.76

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Table 3- results of model 1 estimation

ΔR I,T = A + B1 + COMP + B2 (EPS T)/(P T-1) + EIT				
VARIABLE	Coefficients value	t-value	P-value	
COMP	1.49	2.17	0.034	
EPS	0.07	1.78	0.063	
C (CONSTANT)	3.93	17.09	0.000	
R^2	R^2 (adjusted)	F-value	F-alue	Durbin-Watson
0.2409	0.2134	28.65	0.000	2.07

According to Table (3), the significance of the model depends on the F-value and P-value which is calculated for each regression model. If P-value for this statistic is less than 0.05, H0 is rejected which says there is no significant relationship. In addition, there is a significant relationship at the 95% sig level, it is accepted because this value is less than 0.05. Furthermore, the model determination coefficient also indicates that 21.34% of the changes in the dependent variable are explained by the variables entered in the model. In addition, since the value of the Durbin-Watson statistic is between 1.5 and 2.5 (2.07), the independence of the remainder of the model is confirmed. Based on the results in Table 3, the P-value of the relevant t-value to the comparability variable is less than 0.05 (0.034). Therefore, it is significant, and its coefficient is negative (1.49) and its T-value is 2.17 which are in the H0 area. Thus, it can be claimed that profit value relevance is added by increasing the accounting comparability.

Table 4- results of model 2

ΔR I,T = A + B1 + COMP + B2 (ΔEPS T)/(P T-1)+ EIT				
VARIABLE	Coefficients value	t-value	P-value	
COMP	1.90	4.02	0.000	
ΔEPS	0.17	7.09	0.000	
C (CONSTANT)	2.76	9.32	0.000	
R^2	R^2 (adjusted)	F-value	F-value	Durbin-Watson
0.2632	0.2432	28.65	0.000	2.01

According to the significance table, the model depends on the F-value and its P-value which is calculated for each regression model. If P-value for this statistic is less than 0.05, H0 is rejected which says there is no significant relationship. In addition, there is a significant relationship at the 95% sig level, it is accepted because this value is less than 0.05. Furthermore, the model determination coefficient also indicates that 24.32% of the changes in the dependent variable are explained by the variables entered in the model. In addition, since the value of the Durbin-Watson statistic is between 1.5 and 2.5 (2.01), the independence of the remainder of the model is confirmed. Based on the results in Table 4, changes in earnings per share with a coefficient of 0.17 and T-value of 7.09 have a positive and significant relationship with changes in stock returns. It means if changes in earnings per share increase, the return per share will also increase. This means that if the earnings per share change from the previous year are positive, it is considered good news and has a positive effect on returns. Moreover, there is a positive and significant relationship between comparability with a coefficient of 1.90 and a value of 4.02 and changes in efficiency. Therefore, it can be claimed that if the comparability increases, the profit value relevance also increases.

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Conclusion

The results of this research showed that users of financial statements can identify the procedures by comparing the performance of a business in various years and predict the future condition according to the past results. This comparison will be valid and understandable when a business unit uses similar measurement technics in various years uniformly. Uniform application of accounting principles, procedures, and the same information increases the quality (comparability) of the provided information. For example, using the first method issued from the last time in the first year and the first issued from the first imported in the evaluation of the existing raw materials of the reported profit of the first two years would not be probably comparable because of non-uniformity in using the raw material inventory valuation method. Obeying uniformity does not mean non-changeability by selecting and applying a specific procedure by a business unit. Changing the accounting procedures and principles is a reaction against the changes in the accounting performance environment. The existence of different accounting procedures and methods and the possibility of selecting them can help the business unit to provide relevant information. Changes in the used accounting technics are necessitated to provide a clearer picture of the financial situation or results of operations and cash flows**.**
Third, this effect is for the fact that it increases the ability to compare the overall quality of the shared data in the company's financial statements. In particular, comparability can improve the accuracy of the information contained in financial statements and help investors better evaluate the company. Fourth, the ability to compare more with the proposed range of sales (spreads) is less associated with credit rating agencies which show that this ability to compare information asymmetry and uncertainty in debt markets is reduced. As a result, it increases the profit and book value relevance. Generally, since greater accounting comparability develops the investor information set, it improves information quality and reduces data collection and processing costs. Thus, the relational value of profit and book value increases. The results of this research are in agreement with the research of Chen et al. (2020), Choi et al. (2019), Chen et al. (2018), Kim et al. (2016), and Bayat et al. (2015). Chen et al. (2020) studied the comparable relationship of accounting with value relevance of profit and book value that show accounting comparison increases the value relationship of profit but does not increase book value.
However, the obtained results by testing the research hypotheses confirmed the direct and significant effect of comparability of the financial statements on the profit response coefficient with emphasis on audit quality in the listed firms on the Tehran Stock Exchange.

Suggestions

The adopted applied suggestions from the results of this research

1- One of the proper policies to prevent the managers' opportunism in profit management is using the introduced assessment models in this research for accounting information accountability. Compatibility is one of the qualitative characteristics of financial information which enables users to investigate the existed similarities and differences between the items of financial statement.
2- It is suggested to investors to consider the comparability of the financial statements of companies with other companies especially with their counterparts because it increases the value relevance of profit by considering the result of the first hypothesis that the relationship between accounting comparability and value relevance of profit.
3- It is suggested to investors to consider the comparability of the financial statements of companies because it increases the value relevance of profits based on the result of the second

hypothesis that the relationship between accounting comparability and value relevance, book value.

Suggestions for further research

1- It is suggested that the effect of information transparency on the relationship between comparability and value relevance of profit be investigated
2- It is suggested to investigate the effect of internal control weakness on the relationship between comparability and value relevance of profit.
3- It is suggested to investigate the auditor's expertise in the industry on the relationship between comparability and value relevance
4- It is suggested to investigate the financial statement comparability and value relevance of stock prices for future earnings.

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