Effect of the Complexity of Financial Reporting Standards and Level of Investment Income on the Investor Sentiments (Case study: The Tehran Stock Exchange market)

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ABSTRACT:

This research measures the complexity of the financial reporting standard and the factors affecting the investor's sense of security in making investment decisions with less risk in the Tehran Stock Exchange. It is an applied and quantitative research and a descriptive survey. Thus, 106 companies were selected and investigated empirically. Theoretically, it supposes that the amount of investors' sentiments to use financial information will increase or decrease with an increase in the complexity of the financial reporting standard. As the empirical findings show, there is a significant and inverse relationship between the complexity of the financial reporting standard and the investor sentiments in making decisions at a certain level of income and the said sentiments are higher for companies that have more non-professional investors. These findings can be practical from the point of view of protecting the amount of income requested for investors, especially for investors and observers of capital markets.

Keywords: complexity measurement, financial reporting, income level, investor sentiments

INTRODUCTION:

Individuals' attention, with the expansion of the desire of different countries to use international financial reporting standards (IFRS), was drawn to whether the compilation of financial reporting standards could improve the level of understanding of investors in reading financial reports and information, or whether such standards are nothing more than specifying some new accounting methods and procedures without any other achievement regarding the complexity of financial reporting.

Most companies that get more funding prefer to process and prepare more complex financial reporting and information to gain these resources from suppliers and investors (Graili, 2017). These arguments encourage our testable hypotheses; companies with relatively high financial statements have relatively higher complex financial reporting. Standard complexity of financial statements can arise because of observing the principles and standards of financial reporting or the discretion of the manager. As Christens et al. (2008) stated, because so far no research has investigated the improvement through applying accounting standards for institutions, this subject has remained an attractive and unanswered question until now (Hassas Yeganeh, 2016).

Investment decisions are not only under the influence of economic indicators and rationality but also categories such as investment horizon, risk tolerance, self-confidence and confidence the investor has in that option and investment process in the market also have a significant impact on the behavior of investors and the type of decisions they make (Shekar Khah, 2017). Financial reporting should provide information about the economic resources of the business unit, the rights to the benefits, investment decisions and granting credit, evaluation, timing, and uncertainty about the prospects of cash flow to the business unit, etc. clearly to the investors, existing and potential creditors, managers, and other individuals who use financial information and reports for investment. If the objectives are fulfilled, financial reporting will be considered as a means through which the management fulfills its accountability to the users. Public preservation requires reliable financial reporting on time and the financial health of companies (Nikbakht, 2016). The question is: Whether the accounting standards observed in the process of applying financial reporting standards for preparing financial statements of companies admitted to the Tehran Stock Exchange Organization could improve investment decision-making on the level of confidence of investors and creditors according to their understanding of this information (You, 2009).

Therefore, this research measures the complexity of financial reporting standards and the level of

investment income on investor sentiments in the Tehran Stock Exchange market. The main difference between this research and the previous ones is the scope of the standards under study. In other words, the present research evaluates the financial reporting standards and financial information published by the authorities that prepare these reports, which can be used by users and creditors. It has gone beyond a limited variable to evaluate the level of complexity of financial reporting standards and has considered another variable to measure the level of investment income (the desire to invest) and the emphasis of these two on the level of emotional inclinations of investors.

Theoretical foundations of research
The complexity of financial reporting standards
The necessity of similar standards at the international level caused accounting experts from Australia, Canada, France, Germany, Japan, Mexico, the Netherlands, England, Iceland, and the United States to form the International Accounting Standards Committee (IASC) in an agreement in 1973. This committee also later, by forming the International Accounting Standards Board, entrusted the responsibility of preparing international accounting standards to the last mentioned board. The efforts of the committee began in 1973 in the direction of unifying accounting standards at the international level and are continuing (Moradzadeh Fard, 2014, 6-7).

Various research has investigated the factors of the possibility of companies' fraudulent reporting. As they have shown, one of these factors is the style of presentation and readability of financial reports, which provides valuable information about the company's financial performance. Therefore, the readability of financial reporting plays a significant role in increasing the ability to predict the distortion of financial statements. The readability of financial reporting reduces the probability of company accounting fraud (Zarei, 2018).

Preparing consolidated financial statements by the company will increase the delay in submitting the auditor's report. The reason can be that the auditors of the companies that prepare the consolidated financial statements must also have sufficient supervision over the audit process of the secondary companies because the distortion in the financial statements of the secondary companies can cause impairment of the consolidated financial statements. This can cause an increase in the delay in submitting the auditor's report. An increase in low transparency in financial reporting can cause an increase in the delay in presenting the auditor's report. The low transparency of financial reporting causes the auditor to allocate more time to test the content to be sure of the items included in the financial statements, which can cause an increase in the delay in the presentation of the auditor's report.

Investor sentiments
Investor sentiments (emotional inclinations of investors), in behavioral finance, explain to theorists, analysts, and market participants that stock price changes do not rely solely on stock fundamental values (rational value); rather, they also depend on the irrational behavior of investors, which is measured by the investors' inclinations (Sarhangi, 2014). The emotional inclinations of investors often originate from held mental beliefs or information that is not relevant to the stock value; they can cause extreme reactions or low reactions to good or bad news, flexible expectations such as the tendency to speculate, and optimism or pessimism about the real value of stocks (Aghaei, 2017). The most common definition of investors' tendencies, which is given more attention in the behavioral finance literature, is the definition of Baker and Wurgler (2006). They defined investors' tendencies as the tendency to speculate, which results in cross-sectional effects on the stock price (Li, 2008; Bloomfield).

The emotional behavior of investors changes the growth of expected earnings and then affects the stock prices of companies admitted to the Tehran Stock Exchange (Salehi, 2017).

Research background
Lee (2008) investigated in research the impact of the readability of financial reporting on company performance and profit stability during the years 1993 to 2003. This research used two indices of fog and text length as readability measurement indices. The results showed that the financial reports of companies with lower profits are more complex. Companies with more readable financial reports have more stable earnings.

Lawrence (2013) examined the effect of the quality of financial disclosure on the holding of shares by retail investors for a sample of 91,228 companies-years of observation during the years 2005 to 2008. This research used two fog indices and a text length index to measure the quality of financial disclosure. As the research results showed, retail investors are willing to invest in companies with more readable annual reports.

Haifeng (2009) investigated the application of logistic regression in identifying fraudulent financial reporting during the years 2005 to 2007. The results showed the usefulness of the proposed model in identifying fraudulent financial reporting.

Loughran (2011) investigated the effect of audit variables on the possibility of fraud in the financial statements of companies listed on the Tehran Stock Exchange during the years 2000 to 2014. As the results of the research hypotheses test showed, there is a significant relationship between the size of the auditor, the tenure of the auditor, and the probability of fraud in financial statements.

Thus, we have identified and examined obstacles and problems, advantages and disadvantages from the perspective of different individuals. We have extracted six factors with variables for each one, by studying theoretical texts, reviewing related texts, articles, inquiries, interviews, and opinions of experts. Figure (1) presents the conceptual model of the research.
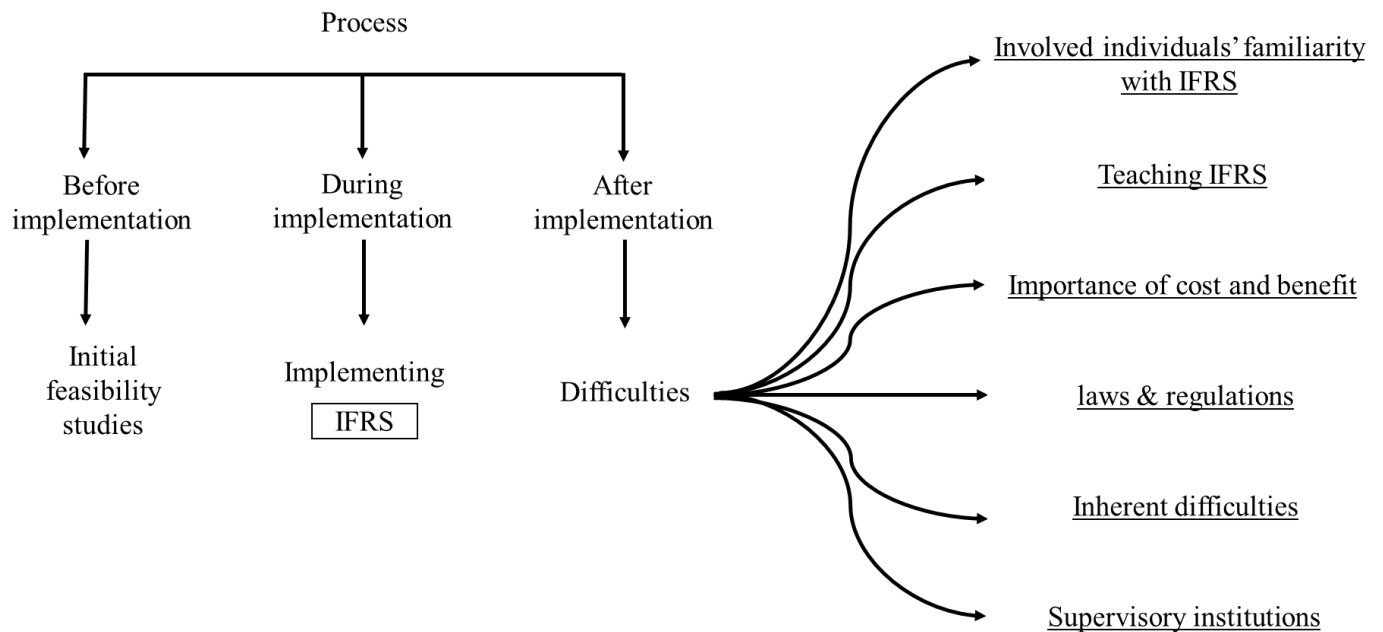
Figure 1: Conceptual model of IFRS

RESEARCH METHOD

This research is of semi-experimental design that uses a post-event approach (through past information). It was descriptive-correlational and used deductive-inductive reasoning. The reason for using the correlation method is to discover correlations between variables. Its statistical population includes companies admitted to the Tehran Stock Exchange.

Variables and model

$$EMSI_{t.i} = \beta_1 + \beta_2 Read_{i.t} + \beta_3 Tq_{i.t} + \beta_4 Size_{i.t} + \beta_5 Gwth_{i.t} + \beta_6 Roe_{i.t} + \beta_7 Rf_{i.t} + \beta_8 Turn_{i.t} + \beta_9 Ripo_{i.t} + \beta_{10} Tipo_{i.t} + \varepsilon_{i.t}$$

Here:

EMSi: is Investor sentiment index in company i in year t; READ: To measure the complexity of the financial reporting standard, which is the readability index of financial reporting in company i in year t; TQ: Q Tobin's investment income level evaluation index; SIZEi, company size, equivalent to the natural logarithm of annual sales of the company i in year t; GWTH: growth opportunities of the ratio of market value to the book value of equity of company i in year t; ROE: Profitability resulted from the division of net profit by the market value of equity of company i in year t; Rf: risk-free rate of return; TURNt: turnover rate (volume of transactions) of company i's market in year t.

RIPOt and TIPOt: They express the average yield of the first day and the amount of turnover on the first day. The company i in year t.

Dependent variable

Investor sentiments:

The emotional decision index of investors is the dependent variable of the research. The capital market sentiment index measures it, which was expanded by Bandopaths and Jones (2005) by modifying the model of Prsavd (1996). EMSI: Investor Emotional Tendencies Index: It is a combined measurement method, the most famous of which is the combined index of Baker and Wurgler (2006). The capital market sentiment index (EMSI) is used to measure the emotional tendencies of investors. It is gained by the following relationship.

$$EMSI_{i,t} = \frac{\sum (R_{it} - \bar{R}_r)(R_{iv} - \bar{R}_v)}{[\sum (R_{it} - \bar{R}_r)^2 (R_{iv} - \bar{R}_v)^2]^{1/2}} \times 100$$

$-100 \leq EMSI \leq 100$

The result of the calculation of the above equation determines the class of investors' inclinations.

R_{it}: monthly return rating of company i shares in month t (annual return of company i shares in year t)

R_r: average monthly return rating of the portfolio company's shares

R_{iv}: historical volatility rating of company i's stock returns, as the average standard deviation of returns 2 years before t.

R_v: average historical volatility rating of the stock of the sample companies.

Readability of financial reporting

(READ) is the independent variable of the present study. We used the following two indicators whose validity and reliability were confirmed by Fazl Alahi (2010) and Diani (2000) to measure the readability of Persian texts under the research of Yu and Zhang (2009), Ellorens (2013), Ajina et al. (2016), and Fakharinia and Diani (2014). The first indicator of financial reporting readability is the Fog index (IND FOG) which is defined as a function of two variables: sentence length (by words) and complex words (as the number of words with three or more parts). It is calculated as follows:

Fog Index = 0.4 (Average number of words in each sentence + percentage of complex words)

Control variables

Company size: This research has considered company size, which is measured by the natural logarithm of the company's net annual sales, as a control variable.

Profitability: This research included the return on equity, which is gained by dividing net profit by the market value of equity, in the model as a measure of profitability and another control variable. The company's equity is calculated by dividing the net profit by the market value and is also controlled in the research of Brazel et al. (Brazel J F, Jones K L, and Zimbelman M F, 2009) and Chen et al. 2014.

Growth opportunities: The present study entered into the model the ratio of market value to the book value of equity as a criterion of growth opportunities and another control variable, following Khajavi and Ebrahimi (2016) and Blanco and Dhole (2017).

FINDINGS:

Table (1) presents descriptive statistics of the studied variables. It contains research variables. It gives the minimum, maximum, average, median, standard deviation, skewness, kurtosis, and Jarque-Bra test of all variables.

Table 1: Descriptive statistics of research variables

Variable	Observations	Mean	Median	Maximum	Minimum	standard deviation	Skewness coefficient	Kurtosis coefficient	Jarque-Bra statistic	Probability
EMS	634	-17.883	-69.10	80.603	-83.078	69.870	0.532	1.290	107.46	0.000
TQ	634	2.249	2.557	2.776	1.415	0.457	-0.661	2.223	62.139	0.000
read	634	5.500	5.070	8.230	3.420	1.572	0.362	2.143	33.249	0.000
SIZE	634	6.280	6.228	6.593	5.993	0.204	0.047	1.757	41.053	0.000
GWTH	634	0.024	0.022	1.215	-0.497	0.064	9.368	206.264	1100715	0.000
ROE	634	0.161	0.149	0.204	0.137	0.023	0.679	2.247	63.703	0.000
Rf	634	0.345	0.240	0.981	0	0.327	0.523	1.784	68.002	0.000
Turn	634	1.286	0.970	7.502	0.084	1.044	1.711	6.823	695.66	0.000
RIPO	634	1.567	0.404	28.650	-2.193	3.493	3.182	17.790	6849.09	0.000
TIPO	634	155.37	21.141	5422.5	0.161	510.93	5.901	43.292	46565.28	0.000

As the results of descriptive statistics show, the score of companies in EMS as emotional tendencies of investors is -17.883 on average. The highest score for investor's emotional tendencies is 603.80 and the lowest is 078.83. The TQ index is 249.2 on average, the highest value is 776.2, and the lowest is 1.415. The variable Read represents the readability index of financial reports with an average of 500.5. There are assumptions for linear regression and we will examine some of them below.

First hypothesis: there is a positive and meaningful relationship between the level of investment income and the investor sentiments in making appropriate decisions.

Testing this hypothesis has occurred through the estimation results of the model given in table (2). The probability value of the F statistic is equal to 0.000 and since this value is less than 0.05, the null hypothesis is rejected at the 95% confidence level. The value of the Durbin-Watson statistic is 2.504852, which shows the absence of autocorrelation between the error values. As the results of the adjusted coefficient of determination show, approximately 85% of the changes in the dependent variable are explained by the independent and control variables of the model. The coefficient of the level of investment income (Tq) Q Tobin was 184338.8, which shows the positive effect of the level of investment income on the investor sentiments of confidence in his investment.

Table 2: Results of the estimation of the research model

$$EMSI_{t.i} = \beta_1 + \beta_2 Read_{i.t} + \beta_3 Tq_{i.t} + \beta_4 Size_{i.t} + \beta_5 Gwth_{i.t} + \beta_6 Roe_{i.t} + \beta_7 Rf_{i.t} + \beta_8 Turn_{i.t} + \beta_9 Ripo_{i.t} + \beta_{10} Tipo_{i.t} + \varepsilon_{i.t}$$

Variable	Probability	t statistic	standard error	estimated coefficient
C	0.0000	-22.19028	5.870241	-130.2623
READ	0.0000	-4.947953	0.050396	-0.249357
TQ	0.0000	14.901577	0.549226	8.184338
SIZE	0.0000	8.274223	0.543250	4.612172
RIPO	0.0000	15.97640	0.009310	0.148744
TURN	0.6343	0.475958	0.028903	0.013757
ROE	0.0000	8.274223	9.870038	81.66690
TIPO	0.6997	0.385881	2.7205	2.2105
RF	0.6622	0.437145	0.089594	0.039166
GWTH	0.4289	-0.791543	0.453233	-0.358753

Coefficient of determination	0.855152	
Adjusted coefficient of determination	0.853063	
Durbin-Watson test	2.504852	

Second hypothesis: There is a significant relationship between the complexity of financial information and the investor's sentiments to make appropriate decisions.

Testing this hypothesis has occurred through the estimation results of the model given in table (3). The probability value of the F statistic is equal to 0.000 and the value of the Durbin-Watson statistic is 2.504852, which indicates the absence of autocorrelation. As the results of the coefficient of adjusted determination show, approximately 85% of the changes in the dependent variable are explained by the independent and control variables of the model. The variable coefficient of financial reporting complexity (readability) (Read) is -0.249357, which shows the negative effect of the complexity of financial reporting by the reporter and the readability of these reports by investors and creditors on the amount of investment in stock companies. The above information and the results of the estimation of the research model confirm the second hypothesis.

Table 3: Results of the Cointegration test in the data - Kao test (adjusted Johansson)

Pattern	t-statistic	Error probability	Residual variance	Variance HAC	Kao test	Hypothesis test results
Pattern 1	-11.66014	0.0000	1.019668	0.805312	Null hypothesis (H_0): the linear relationship between the variables in the long term does not have co-integration.	Rejected
					Null hypothesis (H_0): The linear relationship between the variables in the long term has co-integration.	Confirmed

As the results of the test reveal, if the significance level of the desired statistic in each of the tests is less than the tolerable error level of 5%, the linear relationship of the variables will be co-integration. Kao test results show (Table 3) that the null hypothesis is rejected in the test and the linear combination of the variables under study has co-integration (Prob > 5%). Therefore, it is possible to estimate the desired model at the level of values with confidence of not creating a false regression.

Table 4: Results of durability test in data - Levin, Lin, and Chiu test

Variable	Symbol	Statistic	Error probability	Null hypothesis (H_0): There is a unit root and the desired variable is not durable.	Null hypothesis (H_1): There is a unit root and the desired variable is not durable.
Investor sentiments	EMS	-206.306	0.0000	Rejected	Confirmed
Q. Tobin (investment income level)	TQ	-10.2112	0.0000	Rejected	Confirmed
The complexity of financial reporting (readability)	read	-17.0669	0.0000	Rejected	Confirmed
Company size	SIZE	-33.0188	0.0000	Rejected	Confirmed
Growth opportunities	GWTH	-188.842	0.0000	Rejected	Confirmed

Profitability	ROE	-3.33669	0.0000	Rejected	Confirmed
Risk-free rate of return	Rf	-723.744	0.0000	Rejected	Confirmed
Volume of market transactions	Turn	-42.3922	0.0000	Rejected	Confirmed
Average return on the first day	RIPO	-102.893	0.0000	Rejected	Confirmed
Turnover on the first day		-33.0760			

As Table (4) shows, the probability (p-value) in all the variables is smaller than 0.05, which reveals that the variables are durable. This means that the mean and variance of the variables over time and the covariance of the variables have been constant during different years.

Table 5: Results of the F-Limer test for the research model

Pattern under study	Probability	Statistic	df
Section F	0365.0	1.295719	105.519
square period	0039.0	147.600562	105

Table 8: Results of the two-way Granger causality test

Hypothesis H$_0$	Observation	F-statistic	Probability	Test result
TQ variable is not the Granger cause of the EMS.	424	3.49258	0.0313	Null hypothesis is rejected.
EMS variable is not the Granger cause of TQ.	424	18.9058	0.008	Null hypothesis is rejected.
READ variable is not the Granger cause of EMS.	424	2.76325	0.0642	The null hypothesis is rejected.
EMS variable is not the Granger cause of READ.	424	3.50125	0.0310	The null hypothesis is rejected.

CONCLUSION:

This research measures the complexity of financial reporting standards and the level of investment income on investor sentiments in the Tehran Stock Exchange market. The results show that investors and creditors continue to play their role as capital providers and informed investors in the changing economy, which is characterized by the growing complexity of financial reporting standards and innovation in reporting and reporting programs. Measuring the complexity of financial reporting and managing the level of complexity in financial reporting will create a feeling of confidence in investment and the flow of investment in Tehran Stock Exchange companies. The results of the hypothesis test were analyzed at a confidence level of 95%. Another relationship that reveals the increase in the level of investment income in Tehran Stock Exchange companies shows the increase in the amount of investment opportunities in these companies. Its result is an increase in the level of confidence of investors in maintaining investment or increasing investment or reinvestment in these companies. Since the emotional tendencies of investors and their factors have important reasons in the decision taken by creditors and investors in the amount of investment, so the more interesting and attractive the financial report is for review, the better. There is convincing evidence that the current financial reporting is acceptable, but the results of implementing the international financial reporting standards are important because applying and implementing these standards and creating the basis for using them to prepare more transparent and reliable financial reports at the international level creates an opening for international investment and attracting international lenders and develops investment of companies admitted to the Iranian stock market. The announced points and results reveal that the low level of complexity of financial reporting is a sign of the transparency of the report, so the investors and creditors can make decisions to determine the amount and duration of investment in optimal companies. Therefore, the compilers of accounting standards should improve the financial reporting standards by emphasizing transparency and better understanding to provide the necessary conditions for investors and creditors to better understand the results of these reports and to provide more transparent and readable financial reports for the producers of these financial reports.

The accounting and auditing standards compilation committee should review and consider the accounting standards under the international reporting standards and emphasize the level of reporting transparency created by the application of the international accounting standards.

The current research, because of the limitations in implementing international financial reporting standards in Iran, has considered domestic financial reporting based on the currently established standards. This is a limitation that exists in this research.

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