

## Providing a Basis for Rating of Firms Listed in Tehran Securities Exchange with Emphasis on Earnings Quality

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**Abstract:** Appropriate rating of firms listed in Tehran Securities Exchange is a way for making Iranian capital market more efficient and is a tool to help potential investors with identifying firms appropriate for their investment. In present survey research it is tried to provide a basis for rating of firms listed in Tehran Securities Exchange with emphasis on earnings quality. In order to present a rating basis, primary and secondary questions were raised through questionnaires completed by statistical population. Then using software SPSS and Chi square tests, hypotheses and sub-hypotheses of research were tested at confidence interval 95%. Results from test of hypotheses showed that there was a significant difference between observed frequency and expected frequency and also questions on disclosure and providing financial statements, generated cash flows and inventories were of higher average scores compared to other primary questions influential in providing a rating basis. Secondary questions with scores higher than 4.75 were selected so that the basis provided for rating is of high reliance. It is necessary to note that from original 83 questions 40 ones had mentioned features and comprised our final rating basis.

**Key words:** Basis • Rating • Securities Exchange • Earnings Quality

### INTRODUCTION

Given the economic evolution in today world, developing countries need to find appropriate strategies to solve their economic problems and make a better use of wealth and resources available to them. One of such substantial strategies is to extend investments because it results in attracting and channeling people's capitals towards production sector on one hand and on the other hand, given the orientation of investors (based on risk and return), investments are channeled to industries having higher earnings and lower risks and this finally leads to optimal allocation of resources.

Also net earnings reported in financial statements is accepted as the most important basis for decision making on investment and is an appropriate criterion for appraisal of firm performance and determining firm value and is always used by a wide range of users e.g. professional accountants, financial managers, stock market analysts, investors and shareholders. Thus appropriate and timely disclosure of earnings by management of the reporting entity provides a transparent and clear picture of situation and performance of the firm.

But since calculation of net earnings is influenced by accounting methods and estimations, so earnings manipulation by firm management is likely to occur. Motivation of management for earnings manipulation is to achieve its own aims which are not necessarily along with those of shareholders and in fact they are opposite to corporate aims. Therefore earnings value as one of the most important goals for performance reporting and firm valuation is questioned and its validity is weakened.

Thus in determining firm value earnings quality as well as quantity should be considered. Earnings quality refers to potential basis for earnings growth and the extent of future earnings realization. In other words share value is not only dependent upon corporate earnings for current year but also is dependent upon expectations for firm future, future profitability and confidence coefficient for future earnings. Therefore reporting earnings merely from a quantitative standpoint does not meet needs of financial statement users and does not provide an appropriate disclosure. Appropriate disclosure of information, particularly that of earnings, leads to

increased transparency of firm financial statements and in turn results in more efficient capital markets, precise and accurate measurement of securities prices and optimal and favorable allocation of capital.

According to research conducted in Iran, it is identified that Tehran Securities Exchange is not of even a weak efficiency. By providing a basis for rating of firms listed in Tehran Securities Exchange with an emphasis on quality it is possible for real and legal investors to distinguish more efficient firms from others easily and finally make more rational and plausible investments; on the other hand efficient firms acquire the required financial resources in a more efficient and less costly way. This possibility means shifting of capital market towards efficiency; in developed countries this role is played by rating agencies. But in Iran the capital market has no rating agencies and the only popular rating of firms is that of Securities Exchange which should be revised.

Thus in present study it is tried to overcome some problems resulted from rating deficiencies and lack of rating agencies in Iranian capital market and help the market to be more efficient. Therefore this study aims to provide a basis for rating firms listed in Tehran Securities Exchange with emphasis on earnings quality and also to increase transparency of ratings provided by Tehran Securities Exchange.

### Research Theoretical Literature

**Reporting Quality:** At first it should be noted that investors want to acquire extensive information and ask many questions on financial situation and reporting quality of firms. Reporting quality means the degree of usefulness of financial statements for investors, creditors, managers and other parties. Rayball [1] argued that one of the most important features of reporting quality is timely recognition of economic losses. Timely recognition of earnings and loss leads to timely revision of all financial variables and in turn financial ratios [2]. On the other hand earnings reflect final performance of firm and a high level of it shows favorable corporate performance. Thus the reality behind these figures should be explained to the investors [3]; therefore in the following earnings quality is discussed from this viewpoint.

**Earnings Quality:** Word of Earnings is perceived in different ways by accountants and analysts. Financial analysts usually consider reported earnings as different from actual earnings because they believe that earnings can be manipulated by managers. This manipulation can

be done using various methods e.g. changing the methods of valuating goods inventory, good will depreciation, current cost or capitalization of R and D costs.

There is no consensus on definition of earnings quality; rather earnings quality is a relative concept dependent upon attitudes and viewpoints in relation to it. Though there are no definite criteria for evaluation of it but there are many factors which should be considered in evaluation of earnings quality [1].

Hant, financial manager of General Millers Co, believes that in evaluation of earnings quality two elements are evaluated: first, proportionality of present earnings of firm relative to previous ones and the other is market perception about earnings quality reflected in P/E ratio. Also Aboody *et al.* [4] believed that earnings quality is a part of accounting earnings which is sensitive to management caution and insight. From his viewpoint accounting earnings can be divided into cash flows can be observed objectively and accruals which should be managed. Thus earnings quality is summarily related to degree of earnings liquidity, the extent of conservatism in earnings presentation, earnings predictability, normal components of earnings, employed estimations and approximations, earnings reproducibility and earning measurement precision and accuracy. In present research two following approaches are considered:

- Earnings quality is inversely related to the extent of judgments and estimations of producers of financial statements.
- There is an inverse relation between Earnings quality and the extent of benefits gained by producers of financial statements from estimation and judgments.

From Deloitte and Touche [5] perspective, evaluations of earnings quality help users to judge about the reliability of current income and future prospects; they suggest some measures for earnings quality e.g. general matters, disclosure and presentation of financial statements, non-recorded recommended adjustments by internal and external auditors, receivables and income, costs, inventories, fixed and intangible assets, debts and reserves, generated cash flows and finally corporate governance and structure of internal control and it should be noted that it is not allowed to use a single certain measure, but it is better to use all of them. In fact there is not a single perfect measure for earnings quality.

**Generation of Cash Flows:** One of the most important measures for earnings quality is the level of cash flows produced by the firm. Simply speaking, though earnings can be manipulated, it is impossible to manipulate cash flows. One way for understanding of the importance of cash flows is to divide net earnings into operational cash flows and accrual items. It means that net earnings equals operational cash flows plus accrual items.

Academic research shows that earnings quality is dependent upon three levels of accrual items reflected in earnings. Operational cash flows reported in cash flows statement is a great measure for earnings quality. Some important measures to examine cash flows consists of (1) ratio of operational cash flows to operational earnings; (2) ratio of floating cash flows to net earnings.

**Quality of Receivables and Income:** Analysis of corporate receivables and income quality provides a clear view of one of the major components of earnings quality (income quality). Generally income recognized based on conservatism leads to a high earnings quality. While income recognized based on aggressive accounting leads to low quality of earnings, some of the most important items should be studied in the process of evaluating receivables quality consist of: (1) level of and change in receivables relative to earnings; (2) level of and change in reserves for bad debts; (3) level of and change in reserves for sales returns; (4) method for estimation of bad debts and the way in which reported earnings is influenced by it and (5) method provided by firm for income recognition compared to other firms in the same industry.

**Quality of Inventory Stock Measurement:** Quality of inventory stock measurement is directly dependent upon conservatism and objectivity exercised in calculation of cost price of sold goods. Particularly if cost price of corporate sold goods is presented at a level lower than actual cost, then profitability of entity is reported at a level higher than actual one and vice versa. While evaluating quality of inventory stock measurement, the most important items should be considered consist of: (1) level of and change in total inventory stock relative to sales; (2) sales margin trend; (3) method for evaluation of inventory stock and its influence on reported earnings; (4) relationship between various types of inventory stock accounts including raw materials, goods in process and finished goods and (5) method used for measurement and presentation of inventory stock compared to other firms in the same industry.

**Quality of Fixed Asset Account:** Conservatism and objectivity in corporate fixed asset account may have an influence on the reported earnings. For example, considering a high shelf life for fixed assets can influence corporate earnings without any influence on actual profitability of the firm. While evaluating quality of fixed asset account the most important items should be considered consist of: (1) adequacy of depreciation costs; (2) change in methods of depreciation; (3) evidence of deficient assets; (4) shelf life of corporate fixed assets and (5) exploited capacity.

**Quality of Debts and Disclosure:** Quality of debt accounts is also critical for understanding earnings quality. In particular debts should be reported objectively and without any biases. Otherwise quality of earnings is affected. While evaluating debts some most important issues to consider consist of: (1) assumptions on realized but non-recorded debts; (2) evidence of off-balance sheet financing and complete disclosure of realized but non-recorded debts; (3) procedures being used in treating capital costs; (4) evidence of litigations.

**Evaluation of Quality Management Activities:** Most firms employ at least one of the earning management techniques in order to meet management goals with respect to financial reporting. With respect to this fact it seems critical to evaluate the importance and magnitude of earnings management activities relative to net earnings or total assets. While evaluating importance of earnings management activities some of the major items are considered consist of: (1) change in relationship between realized and non-realized incomes; (2) frequency and timing of stock trading with guaranteed purchase which may lead to increased dividend per share and (3) transfer of costs to other parts of income statement with the aim of increase in operational earnings or sales margin.

**Corporate Governance and Control Structure:** Corporate governance and control structure refers to control mechanisms and procedures in the firm (with the aim of ensuring alignment of activities and convergence of shareholders' and management' interests). Thus when that corporate governance and control structure are ineffective earnings management is possible. While evaluating corporate governance and control structure some important issues should be considered consist of (1) composition and experience of directing boards especially corporate audit committee; (2) audit institution and

auditor opinion; (3) factors of options and bonus schemes; (4) evidence of shareholders dissatisfaction and evidence of weak internal control.

**Competitive Environment:** Environment in which a firm competes may have a potential positive or negative effect on earnings quality. For example fast growth of technology in computer industry may lead to increased obsolete and unfavorable items. Contrary to this, change in technology in some other industries is not so fast, therefore for these industries technology change is not considered as a major factor in quality earnings evaluation. Thus firms operating in industries with high technology growth are most sensitive to earnings quality problems compared to those operating in industries with almost fixed growth of technology. Some of the most important issues should be considered in relation to competitive environment consist of: (1) competitive status of industries; (2) economic conditions and (3) pace of change in technology which may influence corporate products.

**Quality of Earnings and Rating of Firms:** With respect to the fact that earnings quality discussion challenges various ingredients of earnings, it can be an appropriate criterion for rating of firms. Thus in this way investors can be provided with a proper view from firms so that they are able to make more precise and accurate decisions. Also transparency of financial statements can be enhanced in this way. In rating of firms based on earnings quality we seek to answer questions like the following:

- Is corporate cash flow is consistent with earnings quality? Answer to this question is a good benchmark for evaluation of earnings quality because cash flow manipulation is harder and more difficult than earnings manipulation. Thus percentage difference between them can be a good criterion. In this way a high growth of earnings compared to cash flow growth is an alarm for its quality.
- Are there any particular, abnormal or non-reproducible items in corporate earnings? Answer to this question shows the extent of earnings reproducibility in the future.
- Is growth of receivables is faster than sales growth? Answer to this question express the amount of credit sales of firm and in some way shows sales liquidity.
- Are earnings inflated because of some reasons e.g. R and D costs, low tax rate and reduced tax expenditures? Answer to this question addresses to defend ability of earnings.

- Are profitability margin or investment return reduced? This question addresses profitability potential of the firm.

**Research Hypothesis:** According to reviewed literature and viewpoint of Deloitte and Touche [5], we seek to provide a basis for rating of firms listed in Tehran Securities Exchange with emphasis on earnings quality so that real and legal investors are easily able to distinguish between more efficient firms from other ones and finally make more plausible and rational decisions. Therefore based on the following hypotheses we seek to identify factors may be used in rating of firms.

**H1:** Earnings quality with emphasis on general matters has effect on rating of firms listed in Tehran Securities Exchange.

**H2:** Earnings quality with emphasis on disclosure and presentation of financial statements has effect on rating of firms listed in Tehran Securities Exchange.

**H3:** Earnings quality with emphasis on non-recorded adjustments recommended by internal and independent auditors has effect on rating of firms listed in Tehran Securities Exchange.

**H4:** Earnings quality with emphasis on receivables and income has effect on rating of firms listed in Tehran Securities Exchange.

**H5:** Earnings quality with emphasis on costs has effect on rating of firms listed in Tehran Securities Exchange.

**H6:** Earnings quality with emphasis on inventories has effect on rating of firms listed in Tehran Securities Exchange.

**H7:** Earnings quality with emphasis on fixed and intangible assets has effect on rating of firms listed in Tehran Securities Exchange.

**H8:** Earnings quality with emphasis on debts and reserves has effect on rating of firms listed in Tehran Securities Exchange.

**H9:** Earnings quality with emphasis on generated cash flows has effect on rating of firms listed in Tehran Securities Exchange.

**H10:** Earnings quality with emphasis on corporate governance and internal structure has effect on rating of firms listed in Tehran Securities Exchange.

### Methodology

**Questionnaire Design and Procedure:** Based on study of books and articles on earnings quality, measures of earnings quality and firm rating, shares and bonds a questionnaire was developed which had eighty three 7-choice questions (corresponding to 83 sub-hypotheses) under ten class (corresponding to 10 hypotheses). It should be noted that the questions or sub-hypotheses are aligned with opinions of Deloitte and Touche [5] and other earnings quality experts. After distribution of questionnaires, respondents were asked to indicate relative importance of each earnings quality measures in Iranian context. In order to check questionnaire validity, opinions of Iranian accounting professors and experts were sought so that the final questionnaire is prepared after some modifications in early version. In order to match the questions with purposes of present study it was tried to create a balance between number of questions and hypotheses. Reliability of questionnaire was determined using Cronbach  $\alpha$ . In this way after distribution of 50 questionnaires among a number of individuals from statistical population and analysis of data with software SPSS after collection of completed questionnaires, Cronbach  $\alpha$  was obtained as 0.96 which demonstrated high reliability of the questionnaire.

**Statistical Population and Research Sample:** Statistical population of present research consisted of faculties of accounting departments of Iranian universities, doctorate students of accounting and other accounting analysts and experts. Thus using Cochran sampling formula, sample size for present study was 120. After distribution of 150 questionnaires to statistical population, finally 122 questionnaires were obtained for test of hypotheses.

**Data Analysis:** After collection of data and information about research subject, at first sub-hypotheses of research (83 questions on earnings quality) were tested using Chi square test. If significance value (Sig.) was lower than error coefficient value of the study (0.05) and the resulted mean was larger than the mean accepted by earnings quality experts (i.e. 4), then that sub-hypothesis was supported. Supporting or rejecting of a sub-hypothesis also can be determined by comparison of  $X^2$  value and its correspondent value in  $X^2$  distribution table with respect to related degree of freedom (df). At last if

total mean obtained with respect to sub-hypotheses associated with each hypothesis is larger than the mean accepted by earnings quality experts (4) it can be concluded that earnings quality with emphasis on that measure can be of influence in rating firms listed in Tehran Securities Exchange and in this way that hypothesis is supported.

$X^2$  test is a statistical test usually being used to compare observed data with expected ones (which we expect to be obtained based on a particular hypothesis). When study variables are of class type and researcher wants to test presence of a probable relation between them using some hypothesis, then a negotiated table can be formed using "observed" and "expected" frequencies and each variable forms a dimension of the table (regardless it is a single or multiple class variable) and in this way the intended relationship can be tested for the random sample obtained from statistical population. In each cell there should not be less than 5 subject ( $n > 5$ ) and total  $n$  should not be larger than 30. Of course it should be remembered that each of two variables in this test may be more than a 2-class one. This test examines lack of dependency between variables and presence of a significant relationship between them can be determined based on this test.

## RESULTS AND DISCUSSIONS

### Hypothesis Testing

**Hypothesis 1:** In order to test H1, 16 questions related to general matters associated with earnings quality were examined as sub-hypotheses. According to results shown in Table 1, with a confidence of 95% it can be concluded that all questions (sub-hypotheses) can be incorporated in the table for rating of firms listed in Tehran Securities Exchange and finally with respect to the resulted total mean (4.7090), it can be concluded that earnings quality with emphasis on general matters is influential in rating of firms listed in Tehran Securities Exchange. Thus H1 is supported.

**Hypothesis 2:** In order to test H2, 8 questions related to disclosure and presentation of financial statements associated with earnings quality were examined as sub-hypotheses. According to results shown in Table 2, with a confidence of 95% it can be concluded that all questions (sub-hypotheses) can be incorporated in the table for rating of firms listed in Tehran Securities Exchange and finally with respect to the resulted total mean (5.1496), it can be concluded that earnings quality with emphasis on

disclosure and presentation of financial statements is influential in rating of firms listed in Tehran Securities Exchange. Thus H2 is supported.

**Hypothesis 3:** In order to test H3, 4 questions related to non-recorded adjustments proposed by internal and independent auditors associated with earnings quality were examined as sub-hypotheses. According to results shown in Table 3, with a confidence of 95% it can be concluded that all questions (sub-hypotheses) can be incorporated in the table for rating of firms listed in Tehran Securities Exchange and finally with respect to the resulted total mean (4.8197), it can be concluded that earnings quality with emphasis on non-recorded adjustments proposed by internal and independent auditors is influential in rating of firms listed in Tehran Securities Exchange. Thus H3 is supported.

**Hypothesis 4:** In order to test H4, 17 questions related to receivables and income associated with earnings quality were examined as sub-hypotheses. According to results

shown in Table 4, with a confidence of 95% it can be concluded that all questions (sub-hypotheses) except for question 11 can be incorporated in the table for rating of firms listed in Tehran Securities Exchange and finally with respect to the resulted total mean (4.7560), it can be concluded that earnings quality with emphasis on receivables and income is influential in rating of firms listed in Tehran Securities Exchange. Thus H4 is supported.

**Hypothesis 5:** In order to test H5, 4 questions related to costs of financial statements associated with earnings quality were examined as sub-hypotheses. According to results shown in Table 5, with a confidence of 95% it can be concluded that all questions (sub-hypotheses) can be incorporated in the table for rating of firms listed in Tehran Securities Exchange and finally with respect to the resulted total mean (4.7664), it can be concluded that earnings quality with emphasis on costs is influential in rating of firms listed in Tehran Securities Exchange. Thus H5 is supported.

Table 1: Results of testing sub-hypotheses of H1

	Sub-hypotheses	n	mean	Standard deviation	Min	Max	Chi-square	df	Sig.
1	Accounting principles being used are aligned with those employed by industry.	122	4.541	1.2139	1.00	7.00	85.705	6	0.00
2	Return expected by analysts are close to actual one	122	4.3934	1.19612	1.00	7.00	105.443	6	0.00
3	Non-repeated transactions have influenced current period return	122	4.6885	1.35501	1.00	7.00	77.443	6	0.00
4	Variation between actual return and management expectation is rational	122	4.1311	1.40219	1.00	7.00	66.885	6	0.00
5	Accounting principles are changed compared to previous period	122	4.5738	1.53697	1.00	7.00	35.672	6	0.00
6	Changes in accounting principles have been of major influence with respect to firm income	122	4.7213	1.48970	1.00	7.00	60.459	6	0.00
7	Motivation of firm management for changing accounting principles was earnings improvement	122	4.6557	1.59426	1.00	7.00	38.328	5	0.00
8	bonuses are based on earnings	122	5.0164	1.57975	1.00	7.00	55.410	6	0.00
9	Return trend of the firm is different from that of other ones in the same market and industry	122	4.4426	1.09883	1.00	7.00	132.525	6	0.00
10	Repeated transactions had effects on current period return	122	4.9836	1.35441	1.00	7.00	41.475	5	0.00
11	There were some insider-related transactions	122	5.2295	1.52547	1.00	7.00	65.508	6	0.00
12	Pace of change in technology had effects on value of firm products	122	5.2459	1.28122	1.00	7.00	71.377	5	0.00
13	Earnings from insider-related transactions formed a significant part of total earnings	122	4.7705	1.49261	1.00	7.00	105.443	6	0.00
14	Management used a great deal of judgment, estimation and approximation in preparation of financial statements	122	4.7377	1.45343	1.00	7.00	35.574	5	0.00
15	There were some unjustifiable changes in accounting methods	122	4.2787	1.38625	1.00	7.00	24.951	5	0.00
16	Accounting methods used by firm was among conservative ones	122	4.9344	1.53061	1.00	7.00	22.590	5	0.00

Table 2: Results of testing sub-hypotheses related to H2

	Sub-hypotheses	n	mean	deviation Standard	Min	Max	Chi-square	df	Sig.
1	Income statements have classified into operational and non-operational	122	5.7541	1.13043	1.00	7.00	104.033	5	0.00
2	Notes and disclosures clearly express the adequacy of accounting policy and estimations	122	5.2951	1.16908	1.00	7.00	80.33	5	0.00
3	Accounting modifications have properly been disclosed	122	5.3934	1.16815	1.00	7.00	69.016	5	0.00
4	Insider-related transactions have properly been disclosed	122	5.6230	1.13784	1.00	7.00	93.803	5	0.00
5	Complicated and non-repeated transactions have adequately been disclosed	122	5.0492	1.38976	1.00	7.00	41.475	5	0.00
6	Popular accounting methods were used to determine fair value	122	4.7869	1.27422	2.00	7.00	43.049	5	0.00
7	There are some assets and debts recorded at fair value	122	4.4918	1.38018	1.00	7.00	70.557	6	0.00
8	recording assets and debts at fair value had significant effect on corporate return	122	4.8033	1.11814	3.00	7.00	37.836	4	0.00

Table 3: Results of testing sub-hypotheses related to H3

	Sub-hypotheses	n	mean	Standard deviation	Min	Max	Chi-square	df	Sig.
1	All adjustments recommended by internal and independent auditors were recorded	122	5.0984	1.36914	1.00	7.00	68.721	6	0.00
2	Proportion of adjustments recommended by auditors will have a major effect on return	122	4.9508	1.31647	1.00	7.00	85.246	6	0.00
3	Recommended adjustments have a strong relationship with meeting expectations of managers and analysts in relation to 6bonuses, scheme obligations, earnings, etc.	122	4.6066	1.35181	1.00	7.00	55.410	6	0.00
4	There were significant reasons for not recording adjustments of internal and independent auditors	122	4.6230	1.53379	1.00	7.00	50.361	6	0.00

Table 4: Results of testing sub-hypotheses related to H4

	Sub-hypotheses	n	mean	deviation Standard	Min	Max	Chi-square	df	Sig.
1	Much abnormal sales were done before period end	122	5.0492	1.72896	1.00	7.00	42.098	6	0.00
2	Income was recognized conservatively	122	5.0328	1.62590	1.00	7.00	22.984	5	0.00
3	Adequate reserves were obtained for credit sales	122	4.8033	1.48624	1.00	7.00	81.115	6	0.00
4	Much abnormal sales were done before period end	122	4.1639	1.62806	1.00	7.00	31.082	6	0.00
5	There are requirements related to sales e.g. right for returns, customer ability to resale, etc.	122	4.6393	1.24692	1.00	7.00	95.344	6	0.00
6	Methods used by firm to recognize income are equal to those of other firms in the same industry	122	4.9836	1.21277	2.00	7.00	56.426	5	0.00
7	Method of estimating bad debts influenced reported earnings	122	4.9180	1.09537	2.00	7.00	91.049	5	0.00
8	Level of and change in receivables were significant relative to sales	122	5.1148	1.44426	1.00	7.00	88.000	6	0.00
9	Level of and change in reserves for sales return were significant	122	4.5738	1.74828	1.00	7.00	47.148	6	0.00
10	Level of and change in reserves for bad debts were significant	122	4.7705	1.81266	1.00	7.00	83.869	6	0.00
11	There is some income related to trust items	122	3.8689	1.65120	1.00	7.00	37.049	6	0.00
12	Firm has after sale obligations	122	4.4098	1.73802	1.00	7.00	30.623	6	0.00
13	Not-repeated and great income sources were disclosed	122	5.0164	1.60054	1.00	7.00	66.885	6	0.00
14	Bad debts of receivables has an abnormal trend	122	4.7213	1.64775	1.00	7.00	47.607	6	0.00
15	There is a vagueness or uncertainty in relation to receipt of debt	122	4.8197	1.36676	1.00	7.00	66.885	6	0.00
16	A change in the relationship between realized and non-realized income was appeared.	122	4.4098	1.30323	1.00	7.00	74.689	6	0.00
17	Firm income is of reproducibility (repeatability).	122	5.5574	1.31771	2.00	7.00	52.098	5	0.00

Table 5: Results of testing sub-hypotheses related to H5

	Sub-hypotheses	n	mean	deviation Standard	Min	Max	Chi-square	df	Sig.
1	One great abnormal cost was incurred after period end.	122	5.0492	1.83110	1.00	7.00	38.426	6	0.00
2	There are accrued charges	122	4.9836	1.06781	2.00	7.00	80.820	5	0.00
3	In some cases repeatable costs were mistakenly appeared as non-repeatable ones	122	4.6230	1.46771	1.00	7.00	65.967	6	0.00
4	In order to increase operational earnings or earnings margin, costs were transferred to other parts of earning statement	122	4.4098	1.52529	1.00	7.00	28.429	5	0.00

Table 6: Results of testing sub-hypotheses related to H6

	Sub-hypotheses	n	mean	deviation Standard	Min	Max	Chi-square	df	Sig.
1	There was a long-term abnormal relationship between inventories and sales	122	4.7213	1.54418	1.00	7.00	46.689	6	0.00
2	Some variations were observed in warehouse counting	122	4.8033	1.56215	1.00	7.00	43.934	6	0.00
3	Adequate reserves are obtained for returns waste and support inventory	122	4.8689	1.39035	1.00	7.00	76.984	6	0.00
4	Methods of inventory stock evaluation influenced reported earnings	122	5.3770	1.18061	2.00	7.00	61.934	5	0.00
5	Level of and changes in total inventory stock were significant relative to sales	122	5.0164	1.34216	2.00	7.00	55.639	5	0.00
6	Method used by firm to measure and provide inventory stock was correspondent with other firms in the same industry	122	5.0820	1.26354	2.00	7.00	59.967	5	0.00

Table 7: Results of testing sub-hypotheses related to H7

	Sub-hypotheses	n	mean	deviation Standard	Min	Max	Chi-square	df	Sig.
1	Some changes occurred in lifetime of fixed and intangible assets	122	4.6393	1.53238	1.00	7.00	54.951	6	0.00
2	Changes occurred in depreciation or capital procedures	122	4.4426	1.56959	1.00	7.00	42.557	6	0.00
3	Good will is tested periodically or annually	122	4.2167	1.66114	1.00	7.00	39.600	6	0.00
4	Some tests were conducted to support repair of long-term assets	122	4.2459	1.66297	1.00	7.00	52.656	6	0.00
5	Shelf life of fixed assets were estimated rationally.	122	4.6393	1.49967	1.00	7.00	51.738	6	0.00
6	Major changes occurred in procedure for depreciation of fixed assets.	122	4.3770	1.54453	1.00	7.00	67.803	6	0.00
7	There is some evidence of defect assets	122	4.3770	1.54453	1.00	7.00	40.721	6	0.00
8	Fixed assets were reevaluated	122	4.3279	1.87829	1.00	7.00	42.098	6	0.00
9	Reevaluation of fixed assets was adequately disclosed	122	4.2951	1.82131	1.00	7.00	26.033	6	0.00

Table 8: Results of testing sub-hypotheses related to H8

	Sub-hypotheses	n	mean	deviation Standard	Min	Max	Chi-square	df	Sig.
1	Abnormal trend is observed in reserves	122	4.7213	1.36219	1.00	7.00	86.164	6	0.00
2	Reserves were disclosed appropriately	122	5.0164	1.17117	2.00	7.00	98.918	5	0.00
3	Debts and probable estimations were recorded	122	5.0820	1.21008	2.00	7.00	77.672	5	0.00
4	In current period some reserves were added.	122	4.7705	1.32856	1.00	7.00	73.770	6	0.00
5	Firm has off-balance sheet debts	122	4.5082	1.64264	1.00	7.00	30.164	6	0.00
6	There is some non-realized and non-recorded debts	122	4.3770	1.52298	1.00	7.00	64.131	6	0.00
7	There are some realized and non-recorded debts	122	4.7541	1.39249	2.00	7.00	39.508	5	0.00
8	Procedures being used in relation to capital expenditure is according with ones accepted in accounting	122	5.0492	1.31647	1.00	7.00	65.049	6	0.00

Table 9: Results of testing sub-hypotheses of H9

	Sub-hypotheses	n	mean	deviation Standard	Min	Max	Chi-square	df	Sig.
1	Ratio of reflected accrual items to net earnings has decreased	122	4.8500	1.56458	1.00	7.00	47.533	6	0.00
2	Ratio of operational cash flows to net earnings has increased	122	5.1833	1.31560	2.00	7.00	50.000	5	0.00
3	Ratio of floating cash flow level to net earnings has increased	118	5.1864	1.30055	1.00	7.00	130.441	6	0.00
4	Reported cash flows has disclosed in an appropriate and accurate way	122	5.2034	1.41759	2.00	7.00	60.780	5	0.00



Table 10: Results of testing sub-hypotheses of H10

	Sub-hypotheses	n	mean	deviation Standard	Min	Max	Chi-square	df	Sig.
1	Directing board especially accounting committee is of adequate composition and experience	122	4.6230	1.50112	1.00	7.00	45.311	6	0.00
2	Some evidence exists on dissatisfaction of shareholders	122	4.4262	1.44838	1.00	7.00	59.541	6	0.00
3	Some evidence exists on weakness of internal control	122	4.4262	1.44838	2.00	7.00	59.541	5	0.00
4	Firm has been audited continuously and timely	122	4.9836	1.57975	1.00	7.00	44.393	6	0.00
5	Independent auditors auditing the firm are being changed frequently	122	5.000	1.43164	1.00	7.00	60.459	6	0.00
6	There are rational relationships between audit and non-audit services fees	122	4.9180	1.43504	1.00	7.00	59.082	6	0.00
7	audit and non-audit services fees have been disclosed appropriately	122	4.9344	1.32202	1.00	7.00	107.279	6	0.00

**Hypothesis 6:** In order to test H6, 6 questions related to inventories associated with earnings quality were examined as sub-hypotheses. According to results shown in Table 6, with a confidence of 95% it can be concluded that all questions (sub-hypotheses) can be incorporated in table for rating of firms listed in Tehran Securities Exchange and finally with respect to the resulted total mean (4.9782), it can be concluded that earnings quality with emphasis on inventories is influential in rating of firms listed in Tehran Securities Exchange. Thus H6 is supported.

**Hypothesis 7:** In order to test H7, 9 questions related to fixed and intangible assets associated with earnings quality were examined as sub-hypotheses. According to results shown in Table 5 with a confidence of 95% it can be concluded that all questions (sub-hypotheses) can be incorporated in the table for rating of firms listed in Tehran Securities Exchange and finally with respect to the resulted total mean (4.3956), it can be concluded that earnings quality with emphasis on costs is influential in rating of firms listed in Tehran Securities Exchange. Thus H7 is supported.

**Hypothesis 8:** In order to test H8, 8 questions related to debts and reserves associated with earnings quality were examined as sub-hypotheses. According to results shown in Table 8 with a confidence of 95% it can be concluded that all questions (sub-hypotheses) can be incorporated in the table for rating of firms listed in Tehran Securities Exchange and finally with respect to the resulted total mean (4.7848), it can be concluded that earnings quality with emphasis on debts and reserves is influential in rating of firms listed in Tehran Securities Exchange. Thus H8 is supported.

**Hypothesis 9:** In order to test H9, 4 questions related to generated cash flows associated with earnings quality were examined as sub-hypotheses. According to results shown in Table 9 with a confidence of 95% it can be concluded that all questions (sub-hypotheses) can be incorporated in the table for rating of firms listed in Tehran Securities Exchange and finally with respect to the resulted total mean (5.1058), it can be concluded that earnings quality with emphasis on generated cash flows is influential in rating of firms listed in Tehran Securities Exchange. Thus H9 is supported.

**Hypothesis 10:** In order to test H10, 7 questions related to corporate governance and internal control structure associated with earnings quality were examined as sub-hypotheses. According to results shown in Table 10, with a confidence of 95% it can be concluded that all questions (sub-hypotheses) can be incorporated in the table for rating of firms listed in Tehran Securities Exchange and finally with respect to the resulted total mean (4.8103), it can be concluded that earnings quality with emphasis on corporate governance and internal control structure is influential in rating of firms listed in Tehran Securities Exchange. Thus H10 is supported.

## DISCUSSIONS AND CONCLUSION

It is known that Tehran Securities Exchange is a place for trading shares of firms listed in this Exchange. Also it is known that investors need information guiding them in decision making in the best and most reliable way. One way to help investors and users of financial statements in choosing the most efficient firms for their investment is to provide a basis for rating of firms and show realities in a clear way.

Table 11: Prioritization of selected secondary questions based on their means

Row	Secondary Questions	Mean
1	Are income statements classified into operational and non-operational?	5.7541
2	Are insider-related transactions disclosed properly?	5.623
3	Is firm income reproducible?	5.5574
4	Are accounting modifications disclosed properly?	5.3934
5	Does methods of inventory stock evaluation influence reported earnings?	5.377
6	Do notes and disclosures clearly express the adequacy of accounting policy and estimations?	5.2951
7	Does Pace of change in technology have effects on value of firm products?	5.2459
8	Are there some insider-related transactions?	5.2295
9	Are reported cash flows disclosed in an appropriate and accurate way?	5.2034
10	Has ratio of floating cash flow level to net earnings increased?	5.1864
11	Has ratio of operating cash flows to net earnings increased?	5.1833
12	Are level of and change in receivables significant compared to sales?	5.1148
13	Are all adjustments recommended by internal and independent auditors recorded?	5.0984
14	Is method used by firm to measure and provide inventory stock correspondent to that of other firms in the same industry?	5.0820
15	Are debts and probable estimations recorded?	5.0820
16	Are complicated and non-repeated transactions disclosed adequately?	5.0492
17	Was much abnormal sales occurred before end of period?	5.0492
18	Was one great abnormal cost was incurred after period end?	5.0492
19	Are procedures being used in relation to capital expenditure correspondent to ones accepted in accounting?	5.0492
20	Is income recognized conservatively	5.0328
21	Are there some assets and debts recorded at fair value?	5.0164
22	Are non-repeated and great income sources disclosed?	5.0164
23	Are level of and changes in total inventory stock significant relative to sales?	5.0164
24	Are reserves disclosed appropriately?	5.0164
25	Are independent auditors auditing the firm being changed frequently?	5.000
26	Did repeated transactions have effects on current period return?	4.9836
27	Are methods used by firm to recognize income equal to those of other firms in the same industry?	4.9836
28	Are there accrued charges?	4.9836
29	Has firm been audited continuously and timely?	4.9836
30	Will Proportion of adjustments recommended (not recorded) by auditors have a major effect on return?	4.9508
31	Are accounting methods used by firm among conservative ones?	4.9344
32	Are audit and non-audit services fees disclosed appropriately?	4.9344
33	Is method of estimating bad debts influenced reported earnings	4.9180
34	Are There rational relationships between audit and non-audit services fees?	4.9180
35	Are adequate reserves obtained for returns waste and support inventory?	4.8689
36	Is ratio of reflected accrual items to net earnings decreased?	4.8500
37	Is there a vagueness or uncertainty in relation to receipt of debt?	4.8197
38	Do recording assets and debts at fair value have significant effects on corporate return?	4.8033
39	Are adequate reserves obtained for credit sales?	4.8033
40	Are some variations observed in warehouse counting?	4.8033
41	Are popular accounting methods used to determine fair value?	4.7869
42	Does some evidence exist on weakness of internal control?	4.7869
43	Do earnings from insider-related transactions form a significant part of total earnings?	4.7705
44	Are level of and change in reserves for bad debts significant?	4.7705
45	Are some reserves added in current period?	4.7705
46	Are there some evidence of litigation?	4.7541

Present study is a step towards providing useful information to investors and users of financial statements to help them with identifying firms with higher quality earnings. Users of financial information of firms are one of the main bases of capital market and may change their decisions based on rating of firms in Exchange. Present research tries to provide a basis for rating of firms listed in Exchange using variables effective in earnings quality

so that it can be used together with other ratings provided by some institutions and organs in order to help in choosing the best firms and portfolios.

After analysis of data and results of present survey research, appropriate questions related to earnings quality were selected to provide a basis for rating of firms listed in Tehran Securities Exchange in Iranian context. In general term, according to tables 1-10, first to third

priorities based on means are as follows: disclosure and presentation of financial statements with a mean of 5.1496, generated cash flows with a mean of 5.1058 and inventories with a mean of 4.9782 and fixed and intangible assets with a mean of 4.3956 was placed at the end of priority order. Finally in order to provide a more reliable basis for rating of firms listed in Tehran Securities Exchange, secondary questions (sub-hypotheses) with a mean higher than 4075 were chosen as questions to be incorporated in rating basis. Thus among 83 secondary questions, 46 ones were chosen as final questions in present research and are provided in Table 11 and it is expected that answering to these questions would be a great help for evaluation of firm earnings and provides an appropriate basis for rating of them.

#### Research Limitations

- People adequately familiar with earnings quality are not readily accessible.
- Multiplicity of earnings variables which led to great volume of operations.
- In present research information required for proving hypotheses were collected from questionnaires. Thus one of the limitations of present study was inherent limitations of questionnaires. One essential and unavoidable limitation of every questionnaire research is that the results to a great extent are based on perception, interpretation and analysis of researcher and respondents with respect to research subject and this can influence research results.
- According to the fact that present research was done in Iranian context it is possible that opinions of responders are changed with a change in research context. Therefore present research is valid to the extent that factors influencing environmental context do not influence the content.
- Focus of present research was only the questions which should be asked. Therefore measurement and scoring of firm earnings quality need to be addressed in future studies

#### Managerial Recommendations

- Formation of independent rating institutions in order to rate firms listed in exchange
- Encouraging investors to pay attention to earnings quality in the process of decision making.
- Invitation from accounting experts and financial analysts and holding seminars on rating of listed firms

#### Future Research Directions:

- Rating of firms based on other variables are not included in rating basis provided in present study
- Study of scales for ratings being used by Tehran Securities Exchange compared to those being used by other Exchanges across the world.
- Study of the relationship between earnings quality and capital market.
- Study of the relationship between earnings quality and extent of its effect on decision making by investors.

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