

## The Relationship between Non-Financial Innovative Management Accounting Tools and Risk and Return of Iranian Stock Market Listed Companies

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### ABSTRACT

Financial management is strongly deal with maximization of shareholder's wealth by financing, investment and dividend investment decisions of the company. It is well accepted that selecting performance measures in financial management is a challenge and performance measurement play a key role in running an organization. For a long time, managers had firstly used accounting-based data and indicators for doing their obligations. However, with the apparition of new competitive actualities many have claimed that performance measurement based on accounting systems are no more sufficient. Main goal of study is to examine and emphasize the efficacy of non-financial measures in reducing the risk of companies and improving their return amongst middle sized manufacturing firms in Iran. The other objective of this study is to identify and justify any significant relationship between using non-financial management accounting techniques (including TQM, TC, CB, ABC, BSC, and JIT) and risk and return of companies in the stock markets. We also seek to explain to how extent Iranian managers are familiar with Non-Financial Management accounting Tools, and the role these techniques play in their decision-makings.

**Keywords:** innovative management accounting tolls, total quality management, target costing, capital budgeting, activity based costing, balanced score card, Just in Time

### INTRODUCTION

Financial management is strongly deal with maximization of shareholder's wealth by financing, investment and dividend investment decisions of the company with some general objective in the mind, financing decisions converse with the firm's optimal capital formation in terms of debt and equity. Decisions about dividend relate to the form in which profit achieved by the company are transferred to shareholders. Any decisions about Investment deal with the method of use the funds elevated in financial markets are used in profitable activities to achieve the firm's general goals; question is, how much and where should be invested. It should be mentioned that in the last decade, a wide variety of measures and systems have been projected and implemented to prevail over the claimed limitations of accounting-based measures. A leading example of these new approaches is integrated performance measurement systems, such as the balanced scorecard.

Managers must be alert what success is because of their functions; otherwise they will not have the signs which they need to maximize their effect on performance. Because many non-financial indicators are less sensitive to external changes than accounting measures, their use may develop managers' efficiency by giving more exact assessment of their functions. This also lowers the risk forced to managers when defining pay. By completing

accounting indicators with non-financial measures, for strategic performance and execution of strategic plans, companies can discuss goals and give motivations for managers to remark long-term plan. On the other hand, critics of traditional index claim that factors of success in many industries are “intangible asset” like intellectual capital and customer loyalty, more over the “hard assets” permissible on to balance sheets. Though it is difficult to measure intangible assets in financial terms, non-financial measures can give indirect, quantitative scale of a firm’s intangible assets.

There are many innovative Non-Financial measures that some of the most important of them are defined below. One of the most important Non-Financial measures is Activity-Based Costing, which is related to the processes of identifying appropriate output measures of activities and resources (cost drivers) and their effects on the costs of making a product or providing a service. Statement of the problem: For a long time, managers had firstly used accounting-based data and indicators for doing their obligations. But with the apparition of new competitive actualities such as increased customization, and quick response to customer expectations, flexibility, as well as new manufacturing methods like total quality management and Just in Time, many have claimed that performance measurement based on accounting systems are no more sufficient. Recent coverage of performance measures has criticized periodic financial measures as being too aggregated, too late, and too backward-looking to help managers understand the root causes of performance problems.

Significance of the study: This study is important from different aspects. On the one hand, managers are willing to know how efficient and effective are the techniques they make use of, and how shareholders and other market participants weigh using these techniques as a factor in management performance measurement. Main goal of study is to examine and emphasize the efficacy of non-financial measures in reducing the risk of companies and improving their return amongst middle sized manufacturing firms in Iran, and also providing useful recommendations in this respect for both managers and users of financial statements.

### **Scientific Novelty**

As explained earlier, managers are in charge of maximizing the value of their companies. In doing so, they make use of various resources and techniques for their decision making purposes. As any other decision maker, managers need not only relevant, reliable and timely information for their decision-making purposes; but also appropriate decision-making techniques for purposes of coming to a conclusion in their decisions. In the recent decades, management accounting has helped managers with newly developed innovative non-financial management accounting techniques; providing managers with better information and techniques for their decision-making purposes. Although managers these days use more of these techniques and spend more on management systems to support them, shareholders are not aware of how these techniques influence their wealth.

The main scientific result and the novelty of this study are revealed in the following topics:

1. The efficacy of management accounting tools and techniques could be measured by their effects on operational and economical results of a corporation. Developing NFMTs needs spending resources of the company; and hence, shareholders need to make sure that such expenditures add to the value of their company. Although corresponsive benefits of using such techniques is not well defined and consequently hard to measure, in the absence of reliable measures, the well-known proxies of such measures are market risk and return of the company. Theoretically, the more the usefulness of such techniques, *ceteris paribus*, the higher and the market return and lower the risk of the company in capital market.
2. Relationship between Non-Financial management accounting techniques used by managers, and market risk and return of the companies revealed. The extant literature provides little evidence on the impact of managerial accounting techniques on risk and return of the companies. In fact, thus far, accounting scholars have not examined the effectiveness of management accounting techniques in terms of their impact on market risk and return of the companies’ stock. Having realized this gap in the management accounting literature, we tested the relationship between non-financial management accounting techniques used by managers and risk and return of the companies. Our results in this regard in summary show that:
  - There is a significant correlation between using some of NFMTs under study (TQM and BSC) and risk and return of the companies.
  - There is no significant relation between using some of NFMTs under study (TC, CB, ABC and JIT) and risk and return of the companies.
3. Our survey on the ideas and viewpoints of Iranian managers regarding the NFMTs, specifically from those who had experiences on application of these techniques, revealed following results:
  - Iranian managers, although to different extents, are agreed on efficiency and effectiveness of NFMTs.
  - Based on our descriptive statistics, there is a significant relationship between managers’ characteristics (namely their age and experience) and their tendency to use these techniques.
  - There is significant relationship between the manager’s familiarity with NFMTs and the extent to which they intend to apply them in action.

Based on the above mentioned findings we can conclude an economical rationality in development and implementation of some particular NFMTs. From a normative point of view, it can be concluded that encouraging the use of NFMTs can lead to promotion in return and to rebate the level of company's risk.

## METHODOLOGY

Our methodology in twofold: (1) in the first part, we surveyed the attitudes, knowledge, and ideas of Iranian managers about innovative non-financial management accounting techniques through a standard questionnaire which designed by Scholar and approved and confirmed by my supervisor (2) in the second part, we examined the correlations between NFMTs and market risk and return of sample companies. For this purpose, after a thorough review of the extant literature on management accounting techniques, six innovative NFMTs chosen, as follows: 1) TQM (Total Quality Management), 2) TC (Target Costing), 3) CB (Capital budgeting), 4) ABC (Activity Based Costing), 5) BSC (Balanced Score Card), 6) JIT (Just in time)

Main Hypothesis: There is significant relationship between using nonfinancial management accounting techniques and risk and return of companies.

Sample Selection, Our criteria for sample selection is as follows:

- As this study is focused on management accounting techniques, which are mainly used by manufacturing companies, our sample is limited to manufacturing companies listed in Tehran Stock Exchange.
- To obtain a sufficiently large sample for statistical testing purposes, using the Iranian official database in the ministry of commerce, we collect data on Iranian firms with middle sized, annual sales calculated from the official database in Iran.
- Our sample is also limited to firms that their head office is located in Tehran (capital), as most active firms are in this city.
- The average number of employees in the manufacturing department should be about 100 personnel,
- The annual average production value (sales) in the manufacturing department should be selected based on the official data in a way that the at least middle-sized, rather than small, operations will be contributed in this study.

After obtaining preliminary eligibility for contacting with these firms, invitations were sent for their managerial boards to obtain their consent for participating in our survey. Through a general survey we send a letter to all companies in manufacturing sectors and ask them whether they have used one of the Non-Financial methods in their management accounting techniques or not. If yes, what type of them (TQM, TC, CB, ABC, BSC and JIT) has been used by those companies in recent years? Among the positive answers, we will make a data bank and then we will select numbers of companies in, each group with one Non-Financial management accounting technique, based on statistic equations. Preferably, we will try to select those companies with minimum 1 year of experience with Non-Financial techniques. Then the risk and return for each company for the target year were calculated (when they started to use Non-Financial management accounting techniques).

Within each firm, we direct our survey to the financial manager of companies. The first section of the survey asks participants to indicate the specific measures currently used for evaluating manufacturing performance. The following steps will be performed:

1. Calculation of the return of companies;
2. Calculation of the risk of companies;
3. Designing a questionnaire to obtain information regarding the usage of above techniques in each company with mentioned techniques, the managers viewpoints regarding the efficacy of Non-Financial measures.
4. To investigate the relation between various degree of usage and familiarity with Non-Financial innovative management accounting techniques with return and risk of those companies by applying in appropriate regression model;
5. Analysis of research finding and propose some additional research in this field.

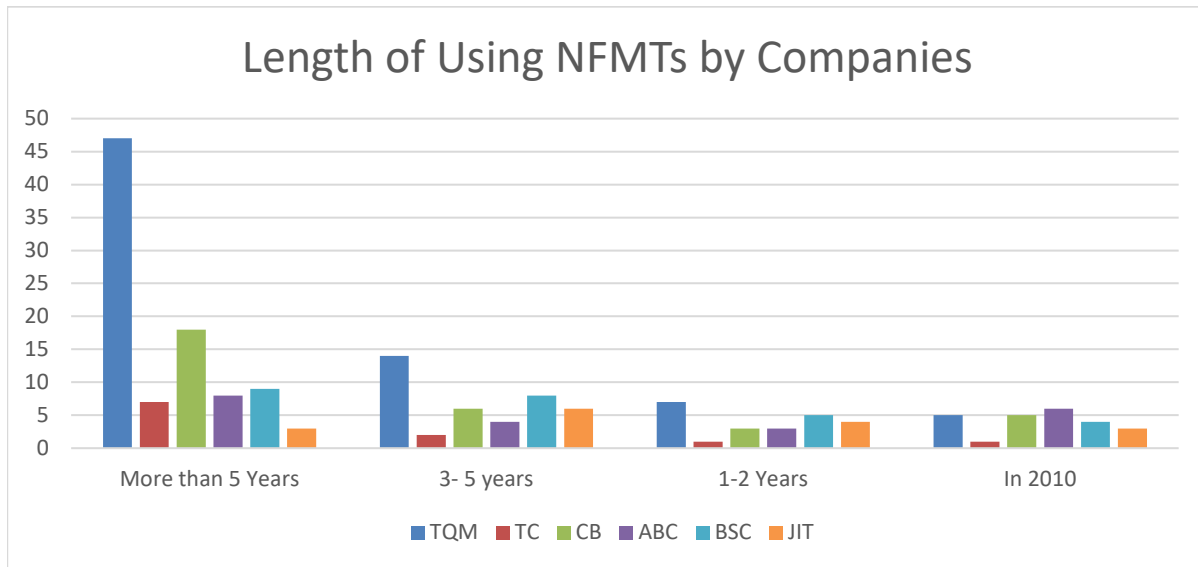
In this study we utilize two distinct statistical approaches: Descriptive Statistics and Correlation analysis.

## RESULTS

In this study the questionnaire, interview and observation have been used to gather data. In the library method, the information existed in Tehran Stock Exchange were used. In the field research, totally, the data is gathered by using the questionnaire and it is completed in company (observation) and before that an interview with managers of the companied performed. To preparing the some section of Introduction part and chapter 1 of this thesis, the library method has been used that is done by having recourse to the libraries and science centers of universities and web searching. It should be stated that in Iran the most of researches on the same subject, that is few in

**Table 1.** Distribution of using the type of innovative Non-Financial management accounting tool and the duration of its usage

| Type of innovative Non-Financial management accounting tool which used by named company and for how long they are using: |       |                   |            |           |         |       |
|--|-------|-------------------|------------|-----------|---------|-------|
| No:  | NFMTs | More than 5 Years | 3- 5 years | 1-2 Years | In 2010 | Total |
| 1  | TQM   | 47                | 14         | 7         | 5       | 73    |
| 2  | TC    | 7                 | 2          | 1         | 1       | 12    |
| 3  | CB    | 18                | 6          | 3         | 5       | 32    |
| 4  | ABC   | 8                 | 4          | 3         | 6       | 21    |
| 5  | BSC   | 9                 | 8          | 5         | 4       | 26    |
| 6  | JIT   | 3                 | 6          | 4         | 3       | 16    |



**Figure 1.** As a result, the highest rate of (more than 5 years usage) is related to TQM and lowest rate is related to JIT

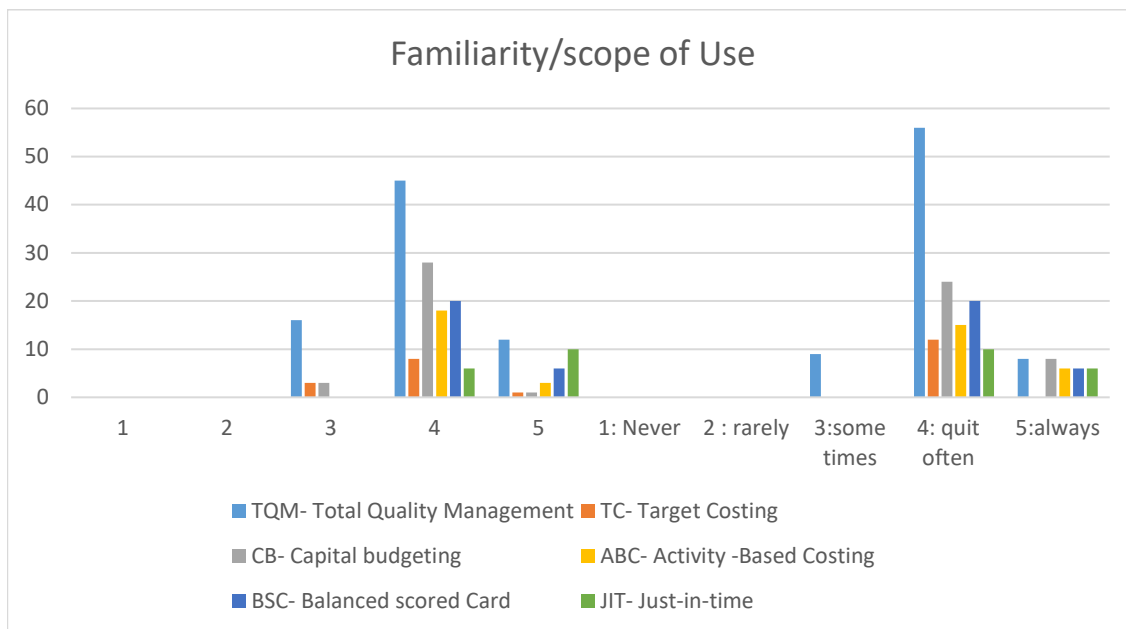
number, have been done imperfectly and there is no research comparing the same tools with the factors which selected, therefore, this research can be an innovation and have considerable scientific novelty. Based on (1) the quantitative calculations performed for the variables related to Non-Financial management accounting techniques and (2) surveys performed for evaluating the relationship between using of innovative Non-Financial techniques and risk and return. Descriptive results of this study include the data on usage of innovative Non-Financial management accounting tools (see **Table 1**).

Questionnaire; the questionnaire which used in this research includes the demographic information of companies general information, finance manager profile information including 31 main and subsidiary questions.

Managers, demographic profile shows the relationships between age and gender of managers, and the extent to which they tend to use NFMTs. Managers aging between 41 to 90 years old show more tendency to use these techniques, in general. As far as gender of managers is considered, males use more NFMTs than females. Managers are more familiar with TQM, CB and BSC. We, therefore, expect to find a more significant relationship between these techniques and market risk and return of the firms, based on the rationale that more aged and more experienced managers have found these techniques more effective and/or more practical, so do the capital market participants. **Table 1** shows that most of managers in Iranian companies are working less than 5 years in the current company. Also above date shows there is a significant relationship between the experience of managers and their tendency toward using NFMTs.

**Table 2.** Managers' degree of familiarity with the Non-Financial Management Accounting Techniques (NFMTs) and scope of usage

| NFMTs                         | The Degree of Familiarity |   |    |    |    |       | The Scope of Use |           |              |                |           |       |
|-------------------------------|---------------------------|---|----|----|----|-------|------------------|-----------|--------------|----------------|-----------|-------|
|                               | 1                         | 2 | 3  | 4  | 5  | Total | 1: Never         | 2: Rarely | 3: Sometimes | 4: Quite often | 5: Always | Total |
| TQM- Total Quality Management | 0                         | 0 | 16 | 45 | 12 | 73    | 0                | 0         | 9            | 56             | 8         | 73    |
| TC- Target Costing            | 0                         | 0 | 3  | 8  | 1  | 12    | 0                | 0         | 0            | 12             | 0         | 12    |
| CB- Capital budgeting         | 0                         | 0 | 3  | 28 | 1  | 32    | 0                | 0         | 0            | 24             | 8         | 32    |
| ABC- Activity -Based Costing  | 0                         | 0 | 0  | 18 | 3  | 21    | 0                | 0         | 0            | 15             | 6         | 21    |
| BSC- Balanced scored Card     | 0                         | 0 | 0  | 20 | 6  | 26    | 0                | 0         | 0            | 20             | 6         | 26    |
| JIT- Just-in-time             | 0                         | 0 | 0  | 6  | 10 | 16    | 0                | 0         | 0            | 10             | 6         | 16    |
| Other (specify)               | 0                         | 0 | 0  | 0  | 0  | 0     | 0                | 0         | 0            | 0              | 0         | 0     |

**Figure 2.** Familiarity / Scope of Use**Table 3.** Managers' expectations from using innovative Non-Financial system

|   | TQM | TC | CB | ABC | BSC | JIT | Total |
|---|-----|----|----|-----|-----|-----|-------|
| 1) Increased transparency and trust of investors.   | 11  | 4  | 3  | 2   | 3   | 2   | 25    |
| 2) Easy calculation system.                         | 0   | 0  | 2  | 0   | 11  | 1   | 14    |
| 3) Possibility to use better the Computer programs. | 10  | 0  | 3  | 2   | 0   | 1   | 16    |
| 4) Increasing the return of the company             | 27  | 5  | 10 | 10  | 8   | 7   | 67    |
| 5) Decreasing the risk of the company.              | 25  | 3  | 14 | 7   | 4   | 5   | 58    |
| Total   | 73  | 12 | 32 | 21  | 26  | 16  | 180   |

**Figure 2** shows these figures in a schematic form.

This data show results regarding our survey on the familiarity of managers with NFMTs and the frequency of their usage. Degree of familiarity with techniques is generally high, with the most frequency for TQM and CB, respectively. Also, most of studied managers mentioned that they use TQM, CB, and BSC quite often. Comparing the two responds regarding the extent of familiarity with and usage of NFMTs, one can conclude that the higher the familiarity of managers with NFMTs, the higher the rate of its usage.

Overall, based on **Table 3**, it can be concluded that most decreasing company's risk while increasing its return, seem to be the most eminent aspects in which NFMTs can play a role. See more details in Appendix. Managers' viewpoints regarding the necessity of using NFMTs and efficacy shows the ideas of managers both on their preference between traditional techniques and advantages of NFMTs techniques.

**Analytic Results:** In this step, we present the statistical analysis regarding the questions and goals of this study, in order to show any relationship (correlation) between the usage of NFMTs and the risk and return of the companies. Detailed calculations of the risk and return of all 180 companies are presented in appendices.

According to **Table 4**, there are only significant correlation between TQM and BSC groups and the return of the companies. Other four NFMTs did not show any significant correlation with the return of sample companies.

**Table 4.** Correlations between the NFMTs and return

| NFTM | Result: Asymp. Sig. (2-sided) | There is a significant correlation with return | There is not a significant correlation with return |
|------|-------------------------------|--|--|
| TQM  | 0.040                         | 0.040<0.05                                     | -  |
| TC   | 0.090                         | -  | 0.090>0.05   |
| CB   | 0.070                         | -  | 0.070>0.05   |
| ABC  | 0.080                         | -  | 0.080>0.05   |
| BSC  | 0.040                         | 0.040<0.05                                     | -  |
| JIT  | 0.065                         | -  | 0.065>0.05   |

**Table 5.** Correlations between the NFMTs and risk

| NFTM | Result: Asymp. Sig. (2-sided) | There is a significant correlation with risk | There is not a significant correlation with risk |
|------|-------------------------------|--|--|
| TQM  | 0.030                         | 0.030<0.05                                   | -  |
| TC   | 0.067                         | -  | 0.067>0.05                                       |
| CB   | 0.089                         | -  | 0.089>0.05                                       |
| ABC  | 0.099                         | -  | 0.099>0.05                                       |
| BSC  | 0.050                         | 0.050= 0.05                                  | -  |
| JIT  | 0.075                         | -  | 0.075>0.05                                       |

According to **Table 5**, the only significant correlations found are the relationship between risk and TQM and BSC from listed NFMTs. Other four NFMTs did not show any significant correlation with the risk of sample companies.

## DISCUSSION AND CONCLUSION

The main result of this study is that there is a significant correlation between the TQM and risk and return and also there is a significant correlation between the BSC and risk and return. As per the result of this study, rather than the TQM and BSC other four NFMTs have no significant correlation with risk and return of the selected samples. In other words, answers to questions remarked in chapter one of this study are proved here, that among the six NFMTs mentioned in this study only TQM and BSC were significantly effective as innovative non- financial measures.

Following conclusions can be drawn based on found statistical correlations:

There is a significant correlation between using TQM and BSC in companies, and their risk and return in the capital markets;

There is a significant correlation between manager's familiarity with NFMTs and the extent to which they are willing to utilize such techniques;

The more managers are familiar with NFMTs, the more their tendency for using them, and, in turn, the more their impact on the market risk and return of the companies;

There is no doubt on the efficacy of NFMTs, once managers have enough knowledge about them;

Iranian managers turned up to show enough skill in using accounting techniques, provided they are familiar with these techniques;

In Iran there is no obstacles against managers for using NFMTs, except their familiarity with them; and therefore,

Academic and professional trainings play a role in helping companies taking the advantage of newly advanced accounting techniques for purposes of improving their market return while mitigating their market risk. Just like our study, the efficacy of TQM was also approved by Martínez-Costa and Martínez-Lorente who analyzed both the effect of a TQM system and the ISO 9000 implementation in company performance (2004). Their results showed a positive relationship between TQM application and hard and soft results while only an improvement in hard results after the ISO 9000 implementation has been found. Nosakhare (2000) also in his study suggested that most organizations that have implemented TQM engaged the services of external consultants and the success rate have been high. The efficacy of BSCs was also approved by Kapanen (2011) and also by Dietschi and Nascimento (2008), that indicate that BSC characteristics are more adherent to public than to private companies, with financial aspects prevailing in companies whose shares are negotiated in the Stock Exchange. Kaplan and Nagel, also suggested the efficacy of BSCs in their study. Our study is not consistent with the study conducted by Novičević and Antić (1999) which concludes that, special attention is to be paid to activity-based costing, being compatible with total quality management. The findings of studies performed by Byrne and Stower (2010), indicate that Australian organizations that have fully implemented ABC view it as successful compared with traditional cost management systems, the results being similar but stronger than those found in the US study. This result was not achieved in this study.

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