



## Reputation Risk Management in the Framework of Enterprise Risk Management: Evidences from an Active Financial Institution in the Capital Market of Iran

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### ABSTRACT

Reputation risk as one of the most important risks in any competitive industry and market should be considered before all the risks of the enterprise which also affects other risks. This research aims to review and manage reputation risk in the framework of enterprise risk management. Considering the importance of the subject and lack of available studies in this field, the innovation of present research is in its general and partial format. The statistical society of this research has been an active financial institution in the Iranian capital market. Hence, three general criteria including financial metrics, customer metrics and staff metrics were used to measure and analyze the reputation risk. The research period has been from 2011 to 2016. Required data was collected from financial statements by Codal Website in order to analyze information. Obtained data was analyzed using Microsoft Excel. Results showed that reputation risk is at a low level for the financial institution under study. Some indicators, however represented higher levels of reputation risk. Finally, some suggestions were presented for better management of reputation and also mitigation of related risks

### Keywords:

Enterprise Risk Management; Reputation Risk; Iranian Capital Market

## 1. Introduction

Over the past two decades, enterprise risk management has evolved rapidly in organizations, and shareholders, legislators, professional institutions, and rating agencies have been used risk management and internal control to better manage corporate affairs. (Bhimani, 2009; Power, 2007; Soin and Collier, 2013). Enterprise risk management is still a relatively new phenomenon, and a number of studies are still trying to investigate how risk managers influence decision making processes in the organization (Meidell & Kaarbøe, 2016). Compared to traditional risk management, enterprise risk management examines a firm's set of risks in a comprehensive and integrated manner. This risk management approach is considered part of the overall business strategy and one of its main objectives is to increase the value of shareholders' wealth (Hoyt & Liebenberg, 2011; Meulbroek, 2002). All organizations need to identify and manage their risks to achieve their goals (Richter, 2014) because they are always faced with a wide range of potential malware risks and it seems that enterprises are successful only if they can fully and properly manage the risks they are exposed to (Banks, 2012). Risk management tries to identify, evaluate, and measure risks, and then take reciprocal actions to manage them rather than to eliminate them (Tarantino and Cernauskas, 2011). Reputation risk is one of the most important risks of the company (The Economist, 2005; ACE, 2013; Deloitte, 2014), while its management is more difficult than any other kind of risk (ACE, 2013). For example, when other risks may have direct (actual) costs, the potential consequences of a damaged reputation depend on factors such as the previous level of reputation or firm's ability to revive its reputation over time. Moreover, given that reputational risk includes all risks, it has a special role in risk management and should be managed in an integrated way through consideration of the main risks and their impact on company reputation (Tonello, 2007; Regan, 2008).

With regard to what has been said, it is clear that reputation management and its risks can significantly affect the company's overall and financial performance. This impact can be reflected in various aspects of finance, staff and customers. Therefore, the importance of the discussion can be justified on this basis. The study of research literature in relation to risk management of reputation shows that the nature of this

variable has attracted many researchers around the world (Dallaway, 2007; Christian, 2017; A, 2008; Arora & Lodhia, 2017; Davies, 2002; Eckert & Gatzert, 2017; Gatzert, Schmit, & Kolb, 2016; Grahame, 2006; Jan, Carlos, & M, 2008; Jan et al, 2008; Janine & Sumit, 2011; Jeffrey, 2008; Rasheed, 2014). However, the main gap in this regard is that reputation management has been underestimated by researchers based on the related risks, and has been neglected by theoretical and applied literature.

Since the loss of reputation in financial companies is generally the result of harmful events in the company's core operations, the research has focused on the company's operations from three different perspectives.

This study examines the effect of employing enterprise risk management on the reputation of the company from the perspective of various stakeholders. This approach is consistent with the fact that company reputation affects all business areas of the company. As Eccles, Newquist and Schatz (2007) pointed out, reputable companies take advantage of many benefits, such as loyal customers, better employees, better fixed income, higher future growth and lower cost of capital. Given all these benefits, it is assumed that the reputation of the company may be seen in many variables of the company. As long as the enterprise risk management helps in better management of company reputation, changes in company parameters can be seen in the implementation of enterprise risk management.

Therefore, this research seeks to analyze and evaluate the risk of reputation within the framework of enterprise risk management. The study examines an active financial institution in the capital market and one of the companies under the supervision of the Securities and Exchange Organization. In order to prevent a general bias towards the company's performance, the use of the company's main name in this research has been discarded and "active financial institution" is used instead of the main name of the company being studied, if needed.

The overall structure of this research consists of several sections. After the introduction of the research, the definition of the reputation and dimensions of the enterprise reputation risk is discussed and its effects on the value of the company are dealt with. In the next section, the research background is dictated in both national and foreign domain. Then, the methodology is

presented and finally, the results and suggestions are presented in the last section.

## **2. Literature Review**

### **2.1. Theoretical Background of Reputation Risk**

Although there are many articles about the company's reputation risk, the definitions are different. Definitions of reputation are presented in Fombrun et al. (2000), Rindova et al. (2005), Barnett et al. (2006), Walker (2010), Helm et al. (2011) and Clardy (2012). According to Wartick (2002) and Walker (2010), the definition of firm reputation is more widely used from Fombrun's view (1996). Fombrun (1996) defines the firm's reputation as "a perceptual representation of past actions and the firm's future prospects, which describes its overall appeal by taking into account key components of the firm in comparison with other leading market competitors." Brown and Logsdon (1997) enumerate three key components as below: (1) Firm reputation is perceptive, (2) it is a pure or general perception by all stakeholders, and (3) it is subject to certain standards (Wartick,2002). Recently, considering the above, Fombrun (2012) proposes a new definition of firm reputation that distinguishes shareholders: "Firm reputation is a general evaluation of the organization's attractiveness for a specific group of stakeholders relative to a reference group consisting of firms that compete for resources."

### **2.2. Reputation Measurement**

Given the various definitions of reputation, it's not surprising that its measurement is equally diverse. In general, an appropriate measure, depends on the type of attitude toward reputation. It also depends on the person perceiving the reputation (e.g. investor, employee, customer, legislator and etc.) (Lang et al., 2011). Many of the commonly used criteria for reputation is presented in Clardy's research (2012) that include surveys or questionnaires (about reputation as general knowledge or beliefs), external rating (about reputation as valuation judgments), interviewing (reputation as knowledge and belief about the brand or as a character), and criteria such as Tobin's Q, Goodwill's and Brand Equity (reputation as an intangible asset). Deephouse (2000) and Rindova et al. (2007) evaluated the media reputation based on the analysis of the content of printed media materials

about the firm, including coverage, popularity of coverage and coverage content. Finally, the appropriate measurement technique depends on the purpose of the organization and the field of work related to various stakeholders.

### **2.3. Reputation Risk**

This risk is about an action, trade, investment or event that reduces confidence in the integrity of the firm or its competence vis-à-vis customers, contractors, investors, legislators, employees, and the general public (J.P.Morgan Chase,2016). Risk of reputation is one of the most important risks of the firm (Economist, 2005; ACE, 2013; Deloitte, 2014). Reputation risk is generally defined as a risk of risks. For example, the Comité Européen des Assurances and the Groupe Consultatif Actuariel Européen (2007), define reputation risk in Solvency II as a risk, in which "bad reputation is associated with actions and business partners of insurer, regardless of its accuracy or inaccuracy, leads to a loss of trust in the correctness of the company's operation. Reputation Risk can emerge from other risks in the activities of an organization. The risk of losing credibility concerns stakeholders that includes existing, potential customers, investors, operators and supervisors". A more recent paper from the Basel II Bank regulation and standard, presents an updated definition of reputation risk that states it can be created as a risk that results from the negative perception of a group of customers, contracting parties, shareholders, investors, or legislators, and has unwanted effects on the ability of a bank to maintain existing business relationships or to create new business relationships and access to financial resources, for example through interbank interactions or securities markets. Reputation risk is multidimensional and reflects the perception of other market participants. In addition, this risk exists throughout the organization and principally the reputation risk exposure is a function of the bank's internal risk management processes adequacy, as well as the manner and efficiency of managing external effects on bank transactions ( Basel Committee, 2009). Other definitions of reputation risk merely point to a financial loss (Tonello, 2007).

Generally, the reputation risk can be seen as a causal chain of events in which a critical event leads to negative perceptions of the stakeholders (i.e. customers, contract parties, shareholders, employees,

and legislators), and thereby damages firm reputation. This potentially implies a change in the behavior of stakeholders (for example, customers who do not buy company products and talented employees who leave the organization) that can lead to financial losses beyond the actual cost of the underlying risk event (operational risk) for the organization, which seeks to bring about losses caused by the risk of reputation. Therefore, losses from reputational risk should be evaluated individually, which are called as the consequences of operating risk or critical event.

Since the measurement of these financial losses is not feasible, we follow past empirical literature, and we estimate it by the loss of market value beyond the loss from the underlying risk event (for example operating losses such as sanctions or fines). Therefore, we define the risk of reputation as a separate risk, although due to its specific structure, it requires a special place in risk management and should not be managed as a separate risk, rather than in a way that is integrated with the underlying risks to avoid the potential double effects of re-considering it. Since the financial industry, often considers losses due to reputation to be the result of operational losses, in this paper, we will focus on the reputation risk from the three domains. The risk of reputation resulting from other types of risks, such as credit risks, can also be considered in the same way.

#### **2.4. Stakeholders and Reputation Risk**

Eccles, Newquist and Schatz (2007) state that firms with greater reputation among the stakeholders are more valuable. This theory is also confirmed by Wang and Smith (2008), who found that having a higher reputation result in an averaged \$ 1.3 billion increase in value of the firm. It is difficult to measure credit and credit risk. Part of it is due to the very different definitions of reputation and reputation risks. As a result, the definition of the US Federal Reserve is considered to be the basis for defining the reputation risk. "The risk of reputation is the probable potential of a negative reputation for business actions of a company, whether true or false, and leads to reduced customers, costly legal claims, and reduced revenue."

It is important to consider that reputation is usually the result of managerial processes, not the result of a series of special events (Walker, 2003). All companies have the ability to deal with negative events, but it is the responsibility of the management to ensure that

these events do not lead to a negative impact on reputation. Therefore, the risk of good reputation is subject to all things that are under the control of management, such as company strategy, engagement with customer, engagement with staff, corporate leadership, and compliance with incentive rules and systems. Ultimately, losses from reputational damage leading to lower expected revenues may result in financial distress through loss of investor confidence or loss of customers.

We propose a survey about the impact of ERM on the reputation and reputation risk from the three groups of stakeholders' point of view: Users of financial statements such as investors, customers and employees. Each of these stakeholders plays an important role in the company's success and believes that the differences and changes in company reputation for these three categories will be recognizable. In addition, a strong and positive reputation among stakeholders in all areas will increase public reputation for the company (Eccles et al., 2007).

#### **2.5. Financial Statements Users**

Financial reports of a firm are the most important way of transferring organizational performance results to stakeholders. Users of financial reports are usually investors, but they are also used by business partners who are evaluating the financial strength of the organization before they begin to collaborate or develop business relationships with the organization. In addition, these stakeholders value the company's reputation through its financial statements. Specifically, higher-reputed companies are more motivated to provide more accurate financial statements without any mistakes.

The reputation quality can be assessed for these two groups of users through two general methods. At first, certain financial indicators such as the probability of bankruptcy are measured. These financial indicators determine the health of the organization. Secondly, the financial statements are evaluated by estimating the probability of manipulation in the company's revenue reports. Both indicators of reputation are being directly interested by investors. Indirectly, the quality of firm reputation amongst these stakeholders affects market liquidity, cost of capital and stock prices.

In addition to investors, customers and suppliers also pay close attention to the accuracy of the financial statements and the overall quality of those. For

example, Maksimovic and Titman (1991) talk about the impact of the organization's financial statements on the ability to participate in the provision of reliable quality products as well as the provision of after-sales services for those products. As a result, the financial indicators mentioned above can be used as indicators of reputation for customers and suppliers. Organizations that have lower financial health will suffer a loss in their reputation among customers who are worried about the status of service and product delivery.

Specifically, reputation indicators include a number of distinct financial ratios, such as profitability, return on assets, probability of bankruptcy (Zmijewski (1984)

Altman (1968), Springate (1978)), and the probability of manipulating income through the formula of Bench (1997), Amendment of financial statements, cash flow fluctuations, Tobin's Q, credit ratings and stock ranking. Due to the fact that the financial institution studied in this research was recently introduced in the stock market, market value calculation is limited and exposed to the effects of the initial public offering. Therefore, the Tobin's Q ratio cannot be calculated for this firm. Also, in the case of Zmijewski, Altman and Springate models of bankruptcy, they use standard models that have estimated beta. In the following, equations related to the calculation of each indicator are presented.

### Profitability Index

Equation 1)

$$\text{Profitability Index} = \frac{\text{Net Income}}{\text{Sales}}$$

### Return on Assets

Equation 2)

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}}$$

## 2.6. Possibility of bankruptcy

Possibility of bankruptcy are calculated by three Zmijewski, Altman and Springate models as following:

Zmijewski's bankruptcy model: Firms that have higher probability of bankruptcy may not only reduce their reputation for investors and creditors, but also for their suppliers and customers. We calculate the probability of bankruptcy using the Zmijewski method

(1984). This is an updated approach to the Altman classical method (1968). The probability of bankruptcy caused by this model is negatively related to the company's liquidity and the return of assets, and positively related to the financial leverage of the firm (Pagach and War, 2009). The calculations of the Zmijewski bankruptcy model is described in equation (3).

Equation 3)

Probability of Bankruptcy

$$= \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

Where:

$$X_1 \quad \text{Return on Assets} = \frac{\text{Net Income}}{\text{Sales}}$$

$$X_2 \quad \text{Financial Leverage} = \frac{\text{Total Debts}}{\text{Total Assets}}$$

$$X_3 \quad \text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Debts}}$$

According to Zmijewski (1984), coefficients and intercept is as following:

Equation 4)

Probability of Bankruptcy

$$= -4.3 - 4.5X_1 + 5.7X_2 - 0.004X_3$$

**Altman Bankruptcy model:** The Altman Z-Score is used to estimate probability of default. 5 variables in Altman model (1983) are used as below:

Equation 5)

$$Z = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$$

Where:

$$X_1 \quad \frac{\text{Working Capital}}{\text{Total Assets}}$$

$$X_2 \quad \frac{\text{Retained Earnings}}{\text{Total Assets}}$$

$$X_3 \quad \frac{\text{earnings before interest and taxes}}{\text{Total Assets}}$$

$$X_4 \quad \frac{\text{Market Value of Equity}}{\text{Book Value of Total Liabilities}}$$

$$X_5 \quad \frac{\text{Sales}}{\text{Total Assets}}$$

According to Altman (1983), Coefficients ( $\beta$ ) are obtained as below:

Equation 6)

$$Z = 0.717X_1 + 0.847X_2 + 3.107X_3 + 0.42X_4 + 0.998X_5$$

**Springate Bankruptcy Model:** This model was developed based on Altman's studies in 1978 by Springate. As with Altman, Springate used Multivariate analysis to select four appropriate financial ratios among 19 ratios that best suited to identify healthy and bankrupt companies. Springate's model (1978) is as follows:

Equation 7)

$$Z = \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4$$

Where:

$$X_1 = \frac{\text{Working Capital}}{\text{Assets}}$$

$$X_2 = \frac{\text{earnings before interest and taxes}}{\text{Total Assets}}$$

$$X_3 = \frac{\text{earnings before interest and taxes}}{\text{Current Liabilities}}$$

$$X_4 = \frac{\text{Sales}}{\text{Total Assets}}$$

According to Springate model (1978), Coefficients ( $\beta$ ) are extracted as following:

Equation 8)

$$Z = 1.03X_1 + 3.07X_2 + 0.66X_3 + 0.4X_4$$

According to Zmijewski (1984), Altman (1968) and Springate (1978) models, the range of bankruptcy, financial distress and financial health are presented in table 1.

**Table (1). Bankruptcy, financial distress and financial health ranges**

Model	Range	Springate (1978)	Altman (1968)	Zmijewski (1978)
		Range SP	Range Z <sub>2</sub>	Range ZM
Bankruptcy		SP ≤ 0.862	Z <sub>2</sub> ≤ 1.23	ZM ≥ 0.5
Distress		-	1.23 < Z <sub>2</sub> ≤ 2.99	-
Financial Health		SP > 0.862	Z <sub>2</sub> > 2.99	ZM < 0.5

## 2.7. Amendment of financial statements

If investors have a negative attitude towards the amendments, it may damage the reputation of the firm because investors will have less confidence in disclosing future information (Pagach & War, 2009).

## 2.8. Possibility of Earnings Manipulation

Generally, earnings manipulation is unpleasant for investors. Firms that do this are likely to have fewer organizational reputations (Pagach & War, 2009). This method looks at changes in key financial variables. The Beneish model (1997) is similar to the Altman bankruptcy index, with the difference that instead of predicting company bankruptcy, it is used to explore the earnings manipulation. Firms that have a high number in Beneish model, are likely to be manipulated. Beneish model can be calculated and

analyzed using the financial statements and numbers contained therein, and the comparison of the results of earning manipulating firms with other firms that didn't manipulate earnings. In each case, the measure is calculated and divided by the amount of the measure in the previous year, and thus an indicator is created that, if no change is made, it should be 1. If the calculated score is more than 1.76, then it is likely that the company is manipulating the earnings. The overall accuracy of the model was 76%. Beneish's model (1999) provides an opportunity for the users to assess the financial statements and firm's financial position. The variables used in the Beneish's model not only relate to manipulated transactions within the firm, but also relate to transactions that may be manipulated by the firm in the future. These variables can also be better suited for discovery of profit management and profit frauds. This model accurately illustrates the

financial information manipulation of companies with large uncritical accruals. In this regard, uncritical accruals can be used to manipulate financial information and strategic objectives of the company within the framework of operational activities. For simplicity, only the measurement formula is provided instead of the indicator.

Equation 9)

$$M - Score = \alpha + \beta_1 DSRI + \beta_2 GMI + \beta_3 AQI + \beta_4 SGI + \beta_5 DEPI + \beta_6 SGAI + \beta_7 TATA + \beta_8 LVGI]$$

The eight variables used in the Beneish model (1997) are presented in the following, and the calculations for each indicator are also presented in Table (2).

1) Days' sales in receivable index; 2) Gross margin index; 3) Asset quality index; 4) Sales growth index; 5) Depreciation index; 6) Sales, General and administrative expenses index ; 7. Total accruals to total assets index; 8. Leverage index.

**Table 2. Calculation of variables related to the probability of earnings manipulation**

Variable	Abbreviation	Measurement Formula	Description
Days' sales in receivable index	DSRI	$(\text{Net Receivables}_t / \text{Sales}_t) / (\text{Net Receivables}_{t-1} / \text{Sales}_{t-1})$	An increase in the index could be due to a change in credit policies to increase sales, but an increase in disproportionate demands would also result in an overestimation of earnings.
Gross margin index	GMI	$[(\text{Sales}_{t-1} - \text{COGS}_{t-1}) / \text{Sales}_{t-1}] / [(\text{Sales}_t - \text{COGS}_t) / \text{Sales}_t]$	If the GMI is greater than 1, the gross margin has declined significantly. The weakening of the margin of gross profit means a negative sign of the company's outlook and increases the likelihood of earning manipulation (Beneish, 1999).
Asset quality index	AQI	$[1 - (\text{Current Assets}_t + \text{PP\&E}_t + \text{Securities}_t) / \text{Total Assets}_t] / [1 - ((\text{Current Assets}_{t-1} + \text{PP\&E}_{t-1} + \text{Securities}_{t-1}) / \text{Total Assets}_{t-1})]$	If the AQI index is greater than 1, the company potentially increases deferred costs and intangible assets. Thus, the probability of earning manipulation also increases (Beneish, 1999).
Sales growth index	SGI	$\text{Sales}_t / \text{Sales}_{t-1}$	Sales growth does not necessarily indicate earning manipulation, but the probability of earning manipulation would increase with sales increases over the previous period (Beneish, 1999).
Depreciation index	DEPI	$(\text{Depreciation}_t / (\text{PP\&E}_{t-1} + \text{Depreciation}_{t-1})) / (\text{Depreciation}_t / (\text{PP\&E}_t + \text{Depreciation}_t))$	If the DEPI index is greater than 1, then the company has increased its estimates of property, machinery and equipment. Thus, the probability of earning manipulation also increases (Beneish, 1999).
Sales, General and administrative expenses index	SGAI	$(\text{SG\&A Expense}_t / \text{Sales}_t) / (\text{SG\&A Expense}_{t-1} / \text{Sales}_{t-1})$	Higher SGAI index is a negative sign of the company's future prospects. Therefore, there is a risk of earning manipulation (Beneish, 1999).
Total accruals to total assets index	TATA	$(\text{Income from Continuing Operations}_t - \text{Cash Flows from Operations}_t) / \text{Total Assets}_t$	The probability of earning manipulation is associated with increase in accruals (Beneish, 1999).
Leverage index	LI	$[(\text{Current Liabilities}_t + \text{Total Long Term Debt}_t) / \text{Total Assets}_t] / [(\text{Current Liabilities}_{t-1} + \text{Total Long Term Debt}_{t-1}) / \text{Total Assets}_{t-1}]$	A value greater than 1 for leverage index, indicates an increase in the probability of earning manipulation (Beneish, 1999).

According to Beneish model (1997), coefficients are as following:

Equation 10)

$$M - Score = -4.840 + 0.920 DSRI + 0.528 GMI + 0.404 AQI + 0.892 SGI + 0.115 DEPI - 0.172 SGAI + 4.670 TATA - 0.327 LVGI]$$

## 2.9. Volatilities of Cash flow

Deviation from the rate of cash profit is evaluated as standard deviation of the quarterly cash flow of the firm relative to previous quarter's cash flow. Operating earnings before the reduction of depreciation are used as a benchmark for quarterly cash flows. Depending on the level of available data, these volatilities are used

for 4 years period. Big volatilities in cash flow in the organization could reduce the reputation of the organization among investors who are willing to make money easily (Pagach and War, 2009).

### **2.10. Customers**

The ranking based on various sites and the market share of a company are used to assess the reputation among customers. The market share also indirectly measures customer satisfaction. Absolute market share cannot show differences in quality strategies versus quantity ones in different industries. However, a change in the company's market share can provide important information about the customer's perspective on products and services. For customers looking for a long-term relationship with a company, the firm's financial sustainability is also important. Customers care about the quality of the services provided by the company and the company's future ability to provide the same services and support. Therefore, the customer's exposure to reputation risks can be measured in two dimensions. First, the absolute decline in the quality of products and services is a sign of the risk that a customer faces. Secondly, the financial health of a company's future is important for current customers, as reducing the company's financial information credibility can affect the ability of the company to meet its obligations to the services provided. In this study, credit rating from the viewpoint of capital adequacy and market share of the services offered to calculate the risk of reputation from the customer's point of view has been used.

### **2.11. Staff and Operators**

For many companies, the value of a company depends on the amount of intellectual capital that exists in the company's employees. According to a recent study by the Conference Board (2007), the most important factors for the reputation of a company are how they deal with employees, their salary and the second factor is the quality of the company's services. In this study, these factors were determined based on the company's ability to attract and retain labor, as well as the willingness of the staff to work with that company. In another research, Human Resource Management will be investigated in five different dimensions.

Ballou, Godwin and Shortridge (2003) state that reputation from the labor's perspective is a function of the growth of salaries and the growth of labor. With the help of these findings, we will be able to examine the labor-related reputation risk by measuring variables related to labor and wages. Firms that attract more labor and have higher growth in wages for them, are assumed to have a lower degree of reputation risk among the staff. In order to calculate the salary index of employees, the salary at the end of the fiscal year is adjusted according to the number of employees in order to calculate the real growth (or decrease) in the salary.

### **2.12. Experimental Background**

There is no research about reputation risk in Iran. Hence, only foreign researches can be mentioned here. The results of the research by Gatzert and Schmit (2016) illustrate several important ideas that arise from the strong connection between organizational risk management and reputation risk management. Meanwhile, important results are: Identifying and understanding the goals of key stakeholders, understanding the multidimensional and layered effects of events on organizational reputation and monitoring the impact of technological advances. The results of Eckert & Gatzert's research (2017) show that losses caused by reputation can be far more than the main operating losses. Also, based on results of Bebbington et al. research (2008), the concept of reputation risk management can help in understanding the reporting function of corporate social responsibility. According to Delgado Garcia et al. (2011), in particular, the company's reputation level only affects the company's non-systematic risk. Echeverry Botero's research (2015) has shown that although some companies consider corporate social responsibility policies to be insignificant, this can be a way of reducing the risk of reputation, creating competitive advantage and new forms of competition, increasing stock value and becoming a sustainable business.

## **3. Methodology**

Considering that the purpose of this research is to identify, analyze and evaluate the risk of reputation in an active financial institution in the capital market in Iran, in order to identify the risk of reputation, the



methods of checklists, mental inversion (brain storm) and focus group were used. Then, in order to measure and analyze the risk of reputation, three criteria, including financial metrics, customer metrics and staff metrics have been used based on the indicators presented in Pagach and War (2009). Considering the ability of these measures in Iran's capital market, among mentioned criteria in the theoretical background section, this research has used following ones:

Profitability index, return on assets, probability of bankruptcy, amendments of financial statements, probability of earning manipulation and volatilities of cash flows, are criteria used as financial metrics. In order to measure customer's metrics, the market share index and credit rating index have been used in terms of capital adequacy in the industry. Also, the indicator of wage growth has been used to measure employees' criteria.

Statistical sample is the firm that provide financial services in Iran financial market and it is a professional firms like that investment banks at the world. Microsoft Excel is used to calculate all indexes based on the formulas presented in the research theoretical background. The study period is from 2011 to 2016. To collect research data, financial statements have been used for the firm under study at the Codal website.

#### 4. Results

Based on the analysis, the indexes are presented in the table 3.

The results of Table (3) show that the firm has enjoyed a good profit margin over the period covered

by the study. Return on assets also increased over this period. Based on possibility of bankruptcy with Altman's approach, the firm was financially distressed in 2014, but it had full financial health during the other years. Based on Springate approach, considering that the calculated index for all years was larger than 0.862, it has had a financial health. The latest model based on the Zmijewski model indicates full financial health for all years (the obtained index for all studied years is less than 0.5).

The probability of earning manipulation is another financial index to be evaluated. Based on the Beneish (1997) model, if the obtained index is larger than -2.22, the probability of earning manipulation is high. Therefore, the results of the data analysis in Table (5) show that earnings were manipulated between 2014 and 2016. Volatility of cash flows is also positive for the years 2013, 2015 and 2015 and is negative in 2014. Regarding the amendment of financial statements, the firm has published corrective financial statements each year. In terms of market share index with customer approach, market share of the firm is in the average position relative to the entire industry. Another indicator of customer criteria is the credit rating in terms of capital adequacy, in which the firm is one of the best among the industry. The index of staff and operators salary is appropriate and higher than inflation rate over the studied years.

**Table (3). Indexes from data analysis**

Fiscal Year Index		2011	2012	2013	2014	2015	2016
Net profit margin (%)		71.06	86.42	81.84	68.35	63.65	87.68
Return on assets (%)		0.95	16.78	16.29	17.52	18.7	23.56
Possibility of Bankruptcy	Z <sub>2</sub> Altman	3.22	3.17	3.44	2.17	4.63	5
	Springate model	1.19	3.88	5.95	1.83	3.39	4.67
	Zmijewski model	-6	-8	-5	-7	-7	-7
Possibility of earning manipulation				-3.06	7.45	-0.14	-1.95
Cash flow volatilities*				139493	-2847395	1824087	840904
Salary and wage of staff	Salary and wage*		13387	10859	33071	41129	47849
	Increase (Decrease)		18%	25%	25%	17%	14%

\* values are in Million IRR

## 5. Discussion and Conclusions

The results of the research findings show that the firm is in a good position in terms of the net profit margin and return on assets, and therefore, they are not exposed to risk in these two indexes. Therefore, in terms of these two indicators, there is no risk of reputation for the firm. A comprehensive and general look at the bankruptcy probability indexes from the perspective of the three models of Zmijewski, Altman and Springate shows that the firm under study also has a very low risk profile. Another indicator that identifies the risk of reputation is the volatilities of cash flows that are negative for 2014 and positive for other years. So in 2014, there is a risk of reputation and in other years this risk is minimal. Regarding the amendment of financial statements, since the company has published corrective financial statements in some cases in each year, so it can damage the reputation of the company.

The market share index from various aspects (marketing, underwriting, issuance of debt securities, etc.) is at an average position in the customer's criteria, therefore the firm's reputation risk is moderate in this regard. In terms of credit rating based on capital adequacy, the firm is facing the least risk, as it has the highest rating among the industry.

In the staff and operator criteria, the salary index is a sign for lack of reputation risk because the value is positive and higher than annual inflation rates. Of course, given the fact that the index has declined over the past three years, it could bring some kind of risk to the firm's reputation. On the other hand, due to the definition and implementation of the personal and professional rating system of the personnel in the firm, which has recently been done, the salary level of the employees has improved and thus can reduce the risk of reputation.

According to the results of this study, it is found that the company studied as an active financial institution and as one of the financial intermediaries has a good reputation among the relevant industry companies and the brand image of the firm has a favorable score.

Successful management of reputation requires understanding the nature and methods of measuring it as well as identifying stimuli or preliminaries through which reputation develops and knowing that what can contribute to the creation and rebuilding of reputation. If these stimuli and preliminaries have a negative (or

positive) effect, in turn, damage (improve) the reputation of the organization. In terms of risk management, these may be considered to be risks that increase the likelihood or amount of losses. Also, based on the research results, following suggestions can be made in particular:

- Exercise careful consideration in the preparation of financial statements and prevent the restatement of these forms to reduce the risk of their amendment.
- A comprehensive comparison of the salaries and wages for the firm's employees with the relevant industry companies and the revision of the salary with the industry average and standard.

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