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The Assessing of Financial Performance of Accepted Banks in Stock Exchange Market by means of ELETERE Technique

Ali Sorayaei[1], Nahid Hassanpour [2],Seyedeh Maryam Karimzadeh Armaki [3] , Zahra Atf [4]

[1]*Professor and Faculty member of Islamic Azad University, Babol, Iran,*
[2]*Master of Management of Islamic Azad University, Babol, Iran*
[3] *Student of Management of Islamic Azad University, Babol, Iran*
[4] *Master of Management, lecturer of Payam Noor University,*

Abstract: - Bank managers are stakeholders of the data analysis for financial performance that these data are important for them. In this regard, they consider valuable financial information and evaluate the bank's situation and will decide according it. This paper presents a method for systematic assessing banks' financial performance. The analysis is based on a set of criteria related to the financial performance of banks.
The purpose of this research, ranking the bank listed in Tehran Stock Exchange, according to financial criteria. After a comprehensive review of the research literature and the idea of financial experts have been identified criteria to assess the financial performance of banks (liquidity factors, factors, profitability, and capital adequacy and risk asset structure factors). To increase the accuracy of the study, the weight of financial factors calculates with AHP-FUZZY method. Finally, the final weights obtained, the ELECTRE algorithm has been implemented to rank the banks. The results show that the KAR AFARIN bank is on top and ANSAR Bank, PASARGAD and the EGHTESAD NOVIN were ranked second, third and fourth and the MELAT bank, SADERAT and TEJARAT got the ratings from the eighth to the tenth.

Keywords: - *Assessing, financial, performance, stock exchange, banks, Ahpfuzzy, Electre.*

I. INTRODUCTION

The growth and prosperity of any country depend on the proper planning and investment and, and the industrial and economic development also depends upon considering to the more investment into the companies and listed banks in securities. Thus, proper guidance of cash flows and wandered funds to the manufacturing and businesses services give rise to the economic growth, increased GDP, employment and increased per capita income and finally, the general prosperity will follow. Undoubtedly, creation of proper environment for healthy and productive investment and strength of the capital market are one of the most important steps that can be taken by those involved in the economic fortunes of the country. It is clear that investment should be done in industries that

- ✓ Have more value-added
- ✓ Incur more income to invest

Evaluation of the listed companies and banks in exchanges demands identification of a number of factors, so that the decision-making process is combined with the complexity and difficulties. The decision has been always a difficult process and in the current conditions, that change will happen very fast, undoubtedly decision making has also a rapid pace (Qayy and Nikoomaram, 2005). Rating of accepted banks in Tehran Stock Exchange, based on the financial criteria, has been the important issues that, unfortunately, so far little research has been done respect with it. The aim of this research which has been conducted in Tehran Stock Exchange is ranking of the banks according to financial criteria.

II. RESEARCH HYPOTHESIS

Descriptive studies often have no hypothesis, for the researcher seeks information that is not already there and there is no theoretical basis for predicting of variables and its distribution. Since the state of variables changes over time, so previous research cannot be used to predict them accurately. As mentioned before, in descriptive - analytical study which was carried out with the aim of investigating the states, hypothesis has no fundamental need and instead of making assumptions, we can conduct the research through setting the research questions (Azkia, Darban Astaneh, 2003).

III. DEFINITION OF CONCEPTS AND TERMINOLOGIES

Assessment of performance: the assessment shows how things are not moving forward as planned and objectives. The assessment also shows what good work is going on. Therefore, the next opportunities will be achieved based on these conditions. This reveals the necessity of attention to performance evaluation. Performance appraisal is the process by which the performance of employers is measured with it and when done properly, employees, supervisors, managers, and ultimately, the organization will benefit it (Madanie Mohammadie, 2006).

Ranking: ranking of banks is one of the most important tools to identify the strengths, weaknesses, opportunities and threats for external companies. Ranking of companies follows some inner and outer organizational purposes (Qdrtyan Kashan and Anvari Rostami, 2004).

Capital: capital means investment funds and from the savings which is operated or spent in the form of machinery, buildings, tools, skills, or cash. In economy, the wealth that is used to produce more wealth is called capital (Momenie and Najafi Moghadam, 2004).

Capital adequacy: capital adequacy is from the direct capital to the sets of assets. Therefore, firstly, since the ratio of capital adequacy is the most important quantitative indicators to evaluate the performance of small banks and credit institutions, and secondly, achieving to a specified minimum capital adequacy ratio is seen as an indicator of the bank's credit position, and as different aspects of performance (such as changes in portfolio risk, profitability, size, etc.) can affect and thus, should be given the necessary attention to it and think of some strategies for its improvement (Rahmani and Haider, 2007).

Financial performance: the degree of involvement of a company for achieving financial goals of shareholders for increasing their wealth. Operative goals which the director manager follows them mainly for increasing the wealth of shareholders and includes indicators and criteria which can be used for measurement of financial performance of a business firm (Devinney and et all, 2004).

IV. REVIEW OF LITERATURE

- Reza Zadeh (2010) evaluated the performance of the portfolio management in investment companies listed in Tehran Stock Exchange. Data used in this research has been collected through monthly data of investment companies published by the Stock Exchange. The population of the study consisted of 14 investment companies in the form of 188 investee companies that their share has been studied from April 2002 to March 2003. The main variables of the study include returns, systematic risk and unsystematic risk beta and indicators of Termyz, Jensen, Sharpe, M2, appraisal ratio for investment enterprises. Research hypotheses were tested through using mean and median and Kendall correlation coefficient tests and findings were analyzed through these tests. The results of the findings indicate that investment firms haven't had a better performance than the market portfolio for evaluation of the performance of investment companies considering that both systematic and non-systematic risk are essential.
- Momenie and Najafie Moghaddam (2013), calculates approximately 170 companies in 13 different industries for the assessment of the economic performance of listed companies in Tehran exchange and according to the values, the weights of each index are calculated by of Shaown entropy technique and finally, the rank of each company was determined by the technique TOPSTS.
- Wang and Lu (2008) investigated assortment technique for determining of representing financial rates in their study. When companies evaluate their performance, using all (financial) tax rates for the investigation is impossible. For evaluation of financial performance of a company, only some available financial rates are investigated and selected as evaluation criteria. In general, tax rates are offered sequentially, first they are assorted, and then the first category of each representative is selected as evaluation criteria to be used. For classification of tax rates, a clustering method is proposed that tax rates of different companies are partitioned with the same species in the same category. In other words, a fuzzy relation is presented so that the number of categories can be set up. Once again, the rates are classified and the representative indicator for each cluster will be identified. Where N the number of categories is not clear, the proposed classified method classify tax rates in

categories. Thus, in the absence of number of categories, the clustering method is not applicable. In accounting, tax rates on the balance sheet or the income are divided into four main categories: solvency, debt and asset turnover, return on investment. In this study, 24 tax rates are divided based on four categories.

- Kalvgras et al[1], (2005), in their paper on evaluation of the financial performance of agricultural enterprises - businesses with multi-criteria decision-making systems approach examined 11 financial ratios of the three groups in terms of profitability, solvency power and performance management and for this they used PROMETHEE for this work. This article is an introduction to financial decision-making approach which is based on multi-criteria analysis technique PROMETHEE and reviews the financial performance of agriculture and business companies and finally, through the assessment of the production, processing and marketing will be greatly benefited. The result of this study increases our understanding about the financial viability of the tested companies, and can be the first step toward making a financial decision-making tool. Thus, financial managers can have clear signs whether the financial needs of their company strategies and market behavior may create modifications or not?

V. METHODOLOGY

The study is a descriptive survey research. Also, since the results of this research can be practically used, a case study research is applied. The inferential statistical tools have been used for data analysis. In addition, in the process of study, library and field research have been exploited as an integral component of scientific research.

The present population includes two categories:

The first set is expert and second is the listed banks in stock exchange:

First category: this category includes banking and financial experts who among these 18 experts were randomly selected and their views on the importance and calculation of measurement and benchmarks were applied using AHPFUZZY technique.

VI. DATA ANALYSIS

Data analysis was conducted in two parts, which it is as follows:

- AHP-FUZZY test has been used for ranking the factors and options for each of them.
- ELECTRE test has been used for the assessment of financial performance of banks and their ranking.

VII. AHP- FUZZY

technique is considered as a fuzzy multiple criteria decision making technique MADM[2] and has the advantage that they can evaluate

different options considering to the a variety of measures which lack the same units. This is a significant advantage over traditional methods that all criteria should be converted to the same units. The main advantage of MADM techniques is that they have the ability to simultaneously analyze and evaluate quantitative and qualitative criteria. AHP and TOPSIS are the most common techniques of MADM (Asgharpour, 2004).

VIII. ELECTRE METHOD[3]

ELECTRE method is the most important technique of compensation. This method is based on the concept of outranking relation[4]. The result is based on a set of ranks. In this method, $A_p \to A_q$, p and q options are not superior to other options, however the decision maker accepts Ap to Aq the preference risk, the procedure is in 8 step as follows:

First step: normalization

Second step: weighted normalization matrix[5]

Third step: Determination of concordance[6] and disconcordance[7] set

Fourth Step: Calculation of the coordinate matrix

Fifth Step: Calculation of the inconsistency matrix

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[1] . Kalogeraset al

[2] . Multi Attribute Decision Making

[3] . Elimination- Et Choice Translation Reality

[4] . Outranking

[5] . weighted normalization matrix

[6] . Concordance

[7] . Discordance

sixth Step: Determination of effective coordination matrix
Seventh Step: characterization of heterogeneity of matrix
Eighth step: Determination of the overall and effective matrix

IX. DATA COLLECTION

There are several ways to gather information appropriate to the period of study, time of the study.
Sources of data collection are divided into two categories: primary and secondary sources of information. The secondary sources of data are consisted of articles, books, research, studies and thesis done in this field (which has been collected by libraries and Internet sites). The primary data is also collected through using questionnaires and financial and banking statements.
Data analysis:
**Effective factors in the assessment of financial performance in banks
** In the next table of the next page, factors and associated options are given:

Table 1: Effective factors in the assessment of financial performance in banks

Name	Factors	options
Q1	Liquidity	total facilities on total deposits Cash holdings plus bonds + and total deposits
Q2		all facilities on total deposits
Q3	Structure of assets	Total of facilities to total of asset
Q4		ammunition claims by each facility
Q5		total earnings by total assets
Q6		fixed assets to total assets
Q7	**Profitability**	Return on Assets
Q8		Ratio of return on operating income
Q9		Return on equity on industry holders
Q10	**Capital adequacy**	Equity of shareholders on to total assets
Q11		The ratio of operating income to total assets

X. DETERMINATION THE WEIGHT OF ELEMENTS AND OPTIONS WITH AHP-FUZZY

After collecting data and calculating the geometric mean, we formed a matrix of pair wise triangle comparisons of criteria and P4, and then calculated weights and prioritize them. In the following, calculations of liquidity factor benchmark
are given as an examples.

Table 4-2 - Triangular paired comparison matrix of liquidity factor questions

Liquidity Factors	Q1	Q2
Q1	(1,1,1)	$(\frac{1}{2},\frac{2}{3},1)$
Q2	$(1,\frac{3}{2},2)$	(1,1,1)

After the formation of BL triangular paired comparison matrix for values of S_K, as the following products M_{IJ} inM_{KL}, we compute its coordination (I,M,U).

Table 4.7 - Calculation of S_K for liquidity questions matrix

Liquidity factor	$\sum_{J=1}^{N} M_{KL}$	×	$\sum_{J=1}^{M}\sum_{J=1}^{N} M_{IJ}$	=	S_K
Q1	(1.5,1.667,2)		(0.2,0.240,0.286)		(0.3,0.4,0.571)
Q2	(2,2.5,3)		(0.2,0.240,0.286)		(0.4,0.6,0.857)

Now, turn to the calculation of magnitude in the amount of SK cash index of SP compared to the rest of the index and then from each series, the smallest value is calculated and brought in a separate table.

$$V(S_1 \geq S_2) = \frac{u_1 - I_2}{(u_1 - I_2) + (m_2 - m_1)} = \frac{0/571 + 0/4}{(0/571 - 0/4) + (0/6 - 0/4)} = 0/4615$$

$$V(S_2 \geq S_1) = \frac{0/857 - 0/3}{(0/857 - 0/3) + (0/4 - 0/6)} = 1$$

When m2> m1, it is not necessary to compute a large degree and it suggests that we use the number 1, as well, to compute a large degree one Si on the other Si, we act as the following table, then we obtain normalized weight of index and finally the number of normalized weights of index $W_i = \frac{w'}{\sum w'l}$ relations based on the following table:

$$V(S_1 \geq S_2) = Min\, V(0.4615)$$

$$V(S_2 \geq S_1) = Min\, V(1)$$

The above numbers are normalized weight of liquidity index.

$$\sum w'l = (1.4615)$$

Now, based on the relation $W_i = \frac{w'}{\sum w'l}$ the number of weights normalized liquidity index is obtained.

$$W_i = [0.3158, 0.6842]^T$$

All of the above steps, namely the procedures for fuzzy calculation of as described above should be repeated for individual index and total index so that their normalized weights can be obtained as follows.

Factor matrix $W = (0.3918, 0.1336, 0.3331, 0.1416)^T$

Asset structure factor $W = (0.1784, 0.1865, 0.5452, 0.0898)^T$

Profitability factor $W = (0.2481, 0.2512, 0.5007)^T$

Capital adequacy factor $W = (0.6842, 0.3158)^T$

After obtaining the that is described in the following table.

Table 3- coefficients for criteria importance and options using AHP-FUZZY

Index	relative weights	options	relative weights	final weights	prioritization
Liquidity factor	0.3918	total facilities on total deposits Cash holdings plus bonds + and total deposits	0.3158	0.1237	2
		all facilities on total deposits	0.6842	0.2680	1
Asset structure factor	0.1336	Total of facilities to total of asset	0.1784	0.0238	3
		ammunition claims by each facility	0.1865	0.0249	2
		total earnings by total assets	0.5452	0.0728	1
		fixed assets to total assets	0.0898	0.0119	4
Profitability factor	0.3331	Return on Assets	0.2481	0.0826	3
		Ratio of return on operating income	0.2512	0.0836	2
		Return on equity on industry holders	0.5007	0.1667	1
Capital adequacy factor	0.1416	Equity of shareholders on to total assets	0.0968	0.6842	1
		The ratio of operating income to total assets	0.0447	0.3158	2

11. Ranking f banks using ELECTRE

The result of ranking of banks based on financial measures are as follows:

$$A6 > A7 > A10 > A5 > A1 > A3 > A4 > A9 > A2 > A8$$

Table 4.7 Ranking of banks based on financial performance

Row	Sign	Bank	Rating
1	A1	Post bank	5
2	A2	SADERAT bank	9
3	A3	PARSIAN	6
4	A4	SINA	7
5	A5	NOWIN EGHTESAD	4
6	A6	KAR AFARIN	1
7	A7	ANSAR	2
8	A8	TEJARAT	10
9	A9	MELLAT	8
10	A10	PASARGARD	3

XI. DISCUSSION AND COMPARISON

Inside the country, this kind of research has been conducted only by Rostamie and et al (2011). They assessed the financial performance of banks listed on the stock exchange of Tehran using TOPSIS technique. Their results show that the entrepreneur bank has had better financial performance than other banks, which it is consistent with the results of the present study.

XII. CONCLUSIONS

Commercial banks are financial institutions, which accumulate stagnant funds of people and will grant businessmen, industrialists and other facilities applicants**.**

In fact, bank provides the transfer of resources from those who will not invest for various reasons, such as lack of knowledge and technique, shortage of capital and fear of investment risk or unable to cooperate in economic activities to persons who need financial resources for investment and since the aim of commercial bank is gaining profit, it is natural that the bank should absorb more inexpensive sources ever more and offers with the highest interest rate to credit applicants.

Therefore, the basic and fundamental objective similar to other nonprofit organizations is to maximize the wealth of its owners. For the increasing wealth of the shareholders, bank Management must decide whether the bank should gain assets with lower quality and more income or assets to higher quality and less risk, or whether the bank should. Ranking of banks can mirror entirely the state of different banks relative to other competitors and identify strengths and weaknesses and the opportunities and internal threats to the banks, but an issue that is important is ratings model, criteria and appropriate mathematical techniques for ranking. What this study is to evaluate and rank its financial performance which has been accepted in Tehran Stock Exchange. The results show that banks of Ansar, Entrepreneur, Pasargard and modern economy ranked first, second and fourth, respectively, and Mellat, Saderat and Tejarat were acquired from the eighth to tenth, respectively.

REFERENCES

[1] Asgharpour, MJ, (2006), Multi-criteria decision making and, Tehran, Tehran University Press.
[2] Reza Zadeh, M., (2010), performance appraisal of portfolio management in investment companies in Tehran Stock Exchange, administration research, Second year, second edition, pp. 157.
[3] Momeni, M., Najafi Moghadam, A. (2004), evaluation of economic performance of listed companies in Tehran Stock Exchange by using TOPSIS? Economic Review Quarterly, Volume 1, Number 3.
[4] Qodratian Kashan, Seyed AbdolJabar and Anvarie Rostamie, Ali Asghar (2004), design of comprehensive model for evaluation of performance and ranking of the companies, Humanity instructor quarterly, winter (2004)
[5] Qayy, Nasrin , Alirezaei, MR and Nikoomaram, H., (2005), evaluating the performance of investment companies listed in Tehran Stock Exchange through data encapsulation mathematical benchmarking analysis , Economic Research, Spring (2004).
[6] Azkia, M., Darban Astaneh , AR, Functional methods in research, Kayhan publication, Tehran, first edition, 2002.