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Reviewing and Presenting Executive Solutions for Improving Financial Ratios and Banks Profitability (Case study: Parsian Bank)

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Abstract: *This study aims to review and present executive solutions for improving financial ratios and banks profitability (Case study: Parsian Bank). The statistical population of this research is Parsian Bank Branches of Tehran Province.*
The statistical method used in this study is multi-variable regression method. The results of this research show that indices of capital adequacy ratio, granted facilities, and cost management do not have a positive and significant effect on return on assets and net interest income margin of the Parsian bank. Also, the results showed that factors of credit risk and interest rate cut have a negative and significant effect on assets return and net interest income margin of Parsian bank.

Keywords: *Financial Ratios, Capital Adequacy, Granted Facilities, Credit Risk, Assets Return*

INTRODUCTION

Banks have a special position in the capital market of the country as the most important source of providing financial needs of economic firms. The ability of banks to meet the financial needs has a significant impact on economic activities and the performance of firms in the country. Hence, paying attention to the efficiency and effectiveness of these financial systems is of particular importance in the economy of the country. Regarding the importance of this financial system, unfortunately, in recent years, we have witnessed a growing trend of manufacturers' dissatisfaction with liquidity shortages and the inability of banks to meet their financial needs (Tajik, 2013).

Market prices reflect changes in asset value at a time when those changes occur, whether those changes include losses or benefits in asset value. Hence, it can be said that the return on assets is always on time. As conservatism predicts the basis for identifying accounting losses is being on time more than earnings, thus, it is expected that accounting losses will be more symmetrical than accounting outcomes with return on assets (Watts, 2003).

In this study, the effect of some internal factors affecting the profitability of the Parsian bank, including the ratio of capital adequacy, granted facilities, credit risk, cost management, focusing on market and interest rate will be examined. Meanwhile, in this research, the ratios of return on assets and net interest income margin are used as an indicator of profitability.

Financial statements

Financial statements are important source of information about the financial situation and operation results of an enterprise.

Any financial statement report specific information about the financial performance of the company and, in accordance with the accepted accounting principles, the preparation of these three reports is required for each economic unit (Chashemi, 2011).

Financial ratios represent the strength or weakness of firms compared to other companies of the same industry, leading companies and performance of the same company last year. Financial ratios are simply calculated, although their interpretation is often difficult and controversial, especially when two or more ratios show conflicting signs to each other (Malhoutra, 2008).

The main problem that enters into ratio analysis of financial statements is that each of the financial ratios evaluates one aspect of the organization's financial performance, so that a group of them evaluates the ability of liquidity, another group evaluates the ability of profitability, another group evaluates the ability to grow, and finally the last group evaluates the organization operation method (Adanassopoulos, 1995).

One of the consequences of the evolution of accounting is the use of financial ratios for analysis and decision making. Since the late 19th century, analysts have developed and promoted financial ratios that are based on corporate financial statements and historical data (Mehrani, 2003). Financial ratios are not only used to understand current and past performance of the company, but also they are used as a tool for planning and controlling the company's activities. For example, asset profitability and margin of net profit can be used as indicators of financial performance measurement. Of course, it should be kept in mind that these bases alone are not sufficient and we cannot express the opinion solely based on them (Duzaakin, 2007).

Profitability and earnings management

Earnings management occurs when it applies its judgment and recognition in financial reporting and transaction structure, so that it provides alternate and alternative reports in relation to the company's performance in order to mislead some stakeholders. Definition presented of earnings management is twofold. First, the ability to express personal opinion of manager is raised. This means that management has the choice for procedures and principles for reporting. Among significant examples in this field are different retirement plans, life expectancy estimate, and the value of long-term assets relief, deferred taxes, and common approaches to inventory valuation. The second point is to mislead some stakeholders, and this will happen when managers are placed in a position to access information that users are unaware of it (Hallio valen, 1999).

Therefore, earnings management provides an indicator of the reliability of profit. Unreliability of profit may reduce its relevance in the process of assessing the company's financial condition. In this case, the book value may be used as an alternative source of information for evaluation purposes. Since the optional component of profit accruals can give the opportunity to the manager in order to manipulate the profit, therefore, such items are used for earnings management index (Shoto, 2007).

In the accounting literature, earnings management uses various forms of profit manipulation in order to achieve expected profits align with meeting specific goals (Scott, 2003), and to interfere in the process of reporting financial statements in order to obtain a net profit (Dičo and Skinner, 2000), as well as a selection by the manager of accounting policies to achieve certain goals (Davani, 2004). In mentioned studies, the goal of earning management is to maximize rewards, to avoid a defect in bond debt that prevents dividend payments, and to minimize revenue report in order to minimize government intervention.

Cost management

Administrative, general, and sales costs have a significant relationship with the business operations level. Benker et al. (2011) believed that on average, the ratio of administrative and sales costs to total assets is 27%, while the cost ratio of R & D to total assets is 3%. Understanding and inference of administrative, general and sales cost behavior, and the role of managers in adjusting and reducing these costs attracts the attention of researchers and professionals. The experimental results of previous researches, including Chen et al. (2012), represent the asymmetric behavior of administrative, general, and sales costs; in other words, the increase in administrative, general, and sales costs when demand increases (sales) has more steep than its decrease when demand reduces.

One of the primary assumptions of management accounting indicates that cost changes are related to the increase and decrease of activity level. That is, the increase in costs by increasing the level of activity is greater than the reduction in costs in exchange for the same level of activity decline (Namazi and Davaniepour, 2010).

Return on investment

In any investment, an investor seeks to capitalize on investment. The investor is trying to obtain information about the future value of stock returns. On the other hand, one of the most commonly used methods for analyzing financial information is to provide financial ratios. The financial ratios are, in fact, a summary of companies` financial reports that provide a lot of information about the company's internal situation (Namazi and Rostami, 2006).

Research background

Table 1. Research background

Date	Researcher	Title	Results
2015	Seddiqi and Jalali	Investigating the relationship of credit risk and liquidity and performance of Iranian banks (Case study of banks listed in Tehran Stock Exchange)	The findings show a significant positive relationship between credit risk and deferred claims with equity returns, and there is a significant negative relationship between cash and equity returns, and finally, there is no significant relationship between the amount of doubtful claims and the return on equity return.
2013	Taghavie et.al.	The effect of some intra-organizational factors on the stability of banking system in developing countries (with an emphasis on bank ownership index)	Government ownership of banks has a larger effect on increasing deferred claims than private and foreign ownership. But foreign ownership is better than other types of ownerships in terms of bank's profitability ratios.
2013	Panahian and Abiak	Explaining the effects of risk on bank efficiency using efficiency calculation by data envelopment analysis	The ratio of default facilities to total granted facilities as a risk-of-credit indicator has a significant relationship with efficiency.

2012	Khosh Sima and Shahiki-Tash	The effect of credit, operational, and liquidity risks on Iranian banking system efficiency	There is a significant relationship between credit, operational, and liquidity risks and efficiency in Iranian banking system.
2011	Boroujerdi et. al.,	Investigating the effect of concentration and other factors in the banking industry on the profitability of public banks	There is a reverse and significant relationship between the focus and profitability of banks. In the case of other factors, factors such as efficiency, capital, national income level and interest rate have a direct relationship with profitability of state-owned banks. While the size of bank has an inverse relationship with profitability. In the meantime, no evidence was found that there is a relationship between the level of capital market and profitability of banks.
2015	Alhasen	Distribution of income and efficiency of bank in the emerging market	The efficiency of income and expense in large banks is more than that of small banks. In addition, it was found that there is a non-linear relationship between the income dispersion and the efficiency of under study banks.
2015	Al Manaseer et. al.,	The effect of intra-organizational factors on performance of Jordanian banks	There is a positive relationship between corporate governance indicators, i.e. the number of board members and foreign ownership, and performance of Jordanian banking system. The size of the board and the separation of ownership from the management have a negative relationship with performance of banking system of the country.
2014	Imbroichu Rach	Relationship between liquidity risk and credit risk in banks	There is a mutual positive, but weak relationship between credit risk and liquidity. Analyzes of liquidity within bank and credit risk outside the bank confirm the strong and positive relationship between these two factors. Finally, it was shown that both sources of risk affect not only individually but also together on the likelihood of bank default.

2014	Homma et. al.,	Corporate growth and efficiency in the banking industry: A new test of efficient structural hypothesis	The more efficient companies become bigger. In addition, it was found that the market focus would reduce the efficiency of the banks. On the other hand, the results of studies showed that there is a dynamic and significant relationship between growth and efficiency.
2014	Scott and Ophin	Investigating effect of openness of economics and inflation on the profitability of commercial banks in Nigeria	Inflation rate and openness of the economy have a negative and significant effect on the profitability of the sample. However, the size of bank has not a significant effect on profitability.

Research methodology

This study is applied in terms of objective type. The research method is correlation in terms of nature and content. The research is conducted within the framework of deductive-inductive arguments. Thus, the theoretical foundations and research background are derived from library studies, articles and sites in the form of deductive and data collection for confirmation and rejection of hypotheses by induction.

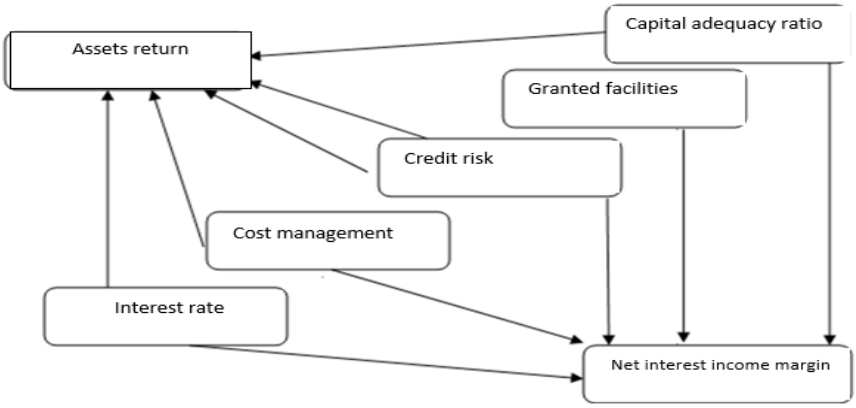
Hypotheses

According to the researcher's questions, the following hypotheses are explained:

1. The indicators of capital adequacy ratio, granted facilities, and cost management have a positive and significant impact on assets return of Parsian bank.
2. Indicators of credit risk and interest rate cut have a negative and significant effect on assets return of Parsian bank.
3. The indicators of capital adequacy ratio, granted facilities, and cost management have a positive and significant effect on net interest income margin of Parsian bank.
4. Indicators of credit risk and interest rate cut have a negative and significant effect on net interest income margin of the Parsian bank.

Conceptual model and research variables

Figure 1. Conceptual Model of Research (Qomchu, 2016)



Method of measuring the research variables and statistical models of research:

To test the first and second hypotheses of the research, the following model is used:

$ROA_{i,t} = \alpha_0 + \alpha_1 CA_{i,t} + \alpha_2 LOANS_{i,t} + \alpha_3 CR_{i,t} + \alpha_4 EXM_{i,t} + \alpha_6 IR_i + \varepsilon_{i,t}$

To test the third and fourth hypotheses of the research, the following model is used (Shahidul-Islam and Nishiam, 2016):

$NIM_{i,t} = \alpha_0 + \alpha_1 CA_{i,t} + \alpha_2 LOANS_{i,t} + \alpha_3 CR_{i,t} + \alpha_4 EXM_{i,t} + \alpha_6 IR_i + \varepsilon_{i,t}$

Where the variables are defined as:

Dependent variables

$ROA_{i,t}$= Parsian bank's return on assets in year t that is equal to the ratio of net profit to assets; and
NIMi, t = net interest income margin of the Parsian bank in year t, which is equal to the net profit to interest income ratio.

Independent variables

CAi, t = Parsian bank capital adequacy ratio in year t.
LOANSi,t = Parsian Bank's granted facilities in year t, which is equal to the ratio of granted facilities to total assets.
CRi,t = Parsian Bank's credit risk in year t that is equal to the ratio of deferred claims to granted facilities.
LRi, EXMi,t = Parsian Bank's cost management in year t that is equal to the ratio of operating costs to total assets.
IRt = official interest rate of one year facilities in year t.

Descriptive statistics of data

In order to study the general characteristics of the variables and to analyze them accurately, it is necessary to become familiar with descriptive statistics about variables. The following graph shows the descriptive statistics of the data relating to the variables used in the research. Descriptive statistics is related to Parsian Bank during the period of 12 years (2004 to 2015). The results of descriptive analysis of data can be summarized as follows:

As it is shown in this graph, the return on assets has an average value of 0.016552 and the maximum value of this variable is 0.045273 related to 12-month period of 2011 and its minimum value is -0.002051 related to the Parsian Bank's six month period of 2016. In investigating descriptive statistics of net interest income margin of Parsian Bank, an average of 0.135748 is seen whose maximum value of this variable is 0.371118 related to a period of nine months in 2004 and its minimum value of 0.01951 is related to a six months period of 2016. Looking at the descriptive statistics values, the variables of return on assets and the net interest income margin are observed that show the Parsian Bank was not in a good condition during the six months of 2016.

Table 2. descriptive statistics of research variables

Variable	Mean	Maximum	Minimum	S.d.	Skewness	Kurtosis
ROA	0.016552	0.045273	-0.002051	0.013557	0.876194	2.497165
NIM	0.135748	0.371118	-0.01651	0.07485	1.154633	5.737282
CA	9.303333	11.48	7.07	1.426613	0.006185	1.613765
CR	0.002365	0.012138	0.000234	0.003635	1.439945	3.955234
LOANS	0.584938	0.71235	0.000	0.171195	-2.872149	10.2688
LREXM	-0.01539	-0.001554	-0.049509	0.013272	-1.017933	2.948546
IR	17.16667	26	12	4.87867	0.657805	1.949942

ROA: Return on assets: NIM: Margin of interest income CA: Capital adequacy ratio LOANS: Granted facility CR: Credit risk EXM: expenditure management IR: Interest rate

Reviewing variables durability

According to Levine, Lin and Chu test, durability of variables in this study is shown in Table 3.

Table 3. reviewing durability of research variables

Variable	Durability test	Differential order	Significance level	Test statistic	Durable/ nondurable
ROA	Levin, Lin & Chu	No difference	0.0000	-7.96475	Durable I (0)
NIM	Levin, Lin & Chu	No difference	0.0000	-11.7865	Durable I(0)
CA	Levin, Lin & Chu	No difference	0.0118	-2.26378	Durable I(0)
CR	Levin, Lin & Chu	No difference	0.0000	-4.32868	Durable I(0)
LOANS	Levin, Lin & Chu	No difference	0.0000	-12.5176	Durable I(0)
LREXM	Levin, Lin & Chu	No difference	0.0088	-2.37344	Durable I(0)
IR	Levin, Lin & Chu	First order difference	0.0014	-2.99001	Durable I(0)

The information on the above Table shows durability test for research variables. All studied variables, due to Levin, Lin & Chu durable test, are durable without difference.

Time series application method

In the present study, the models mentioned in the third chapter are estimated using the time series related to periods of three months, six months, nine months and 12 months of Parsian Bank for 12 years.

Results of research hypothesis test

The results of Parsian Bank's asset yield model estimation are as defined in Table 4.

Table 4. statistical results of the research model test, dependent variable of return on assets

$ROA_{i,t} = \alpha_0 + \alpha_1 CA_{i,t} + \alpha_2 LOANS_{i,t} + \alpha_3 CR_{i,t} + \alpha_4 EXM_{i,t} + \alpha_6 IR_i + \varepsilon_{i,t}$					
Variable	Coefficients	Standard deviation	t statistics	Significance level	Relationship type and significance (5% error) * (10% error) **
constant	-0.013522	0.057458	-0.235341	0.8179	-
CA	0.008474	0.002927	2.894487	0.0135	Positive and meaningful *
LOANS	-0.064803	0.93454	-0.693422	0. 5012	No relationship
CR	0.310576	0.849053	0.365791	0.7209	No relationship
LREXM	-0.566566	0.231064	-2.451985	0.0305	Negative and meaningful *
IR	-0.000941	0.000907	-1.037655	0.3199	No relationship
F statistics (significance level)	4.331154 (0.017458)	Watson Camera Statistics		1.911237	
Determination coefficient	0.6434449	Adjusted coefficient of determination		0.464886	

In the study of being significance of total asset return model of Parsian Bank, considering that the probability of F statistics is less than 0.05 (0.017458), the overall model's significance is confirmed with 95% confidence. The adjusted determination coefficient also indicates that 49% of assets return variable is explained by the independent variables of the model.

In the following, we investigate the first and second hypotheses:

The first hypothesis of the research states that: capital adequacy ratio, granted facilities, and cost management have a positive and significant effect on assets return of the Parsian bank. As it is shown in the above graph, the estimated coefficient (0.008474) and t statistics (2.894487) related to capital adequacy ratio (CA) are positive and are statistically significant (0.0135). The estimated coefficient (0.064803) and t statistics (- 0.693422) related to granted facilities variable is negative and is not statistically significant (0.5012). The estimated coefficient (-0.566566) and t statistics (-2.451985) related to the cost management variable (LREXM) are negative and statistically significant (0.0305). Therefore, the first hypothesis of the research is confirmed in the positive state of the capital adequacy ratio.

The second hypothesis of the research states that indicators of credit risk and interest rate cuts have a negative and significant effect on assets return of Parsian Bank. As it is shown in the above graph, the estimated coefficient (0.310576) and t statistics (0.365791) related to credit risk variable (CR) is positive and is not statistically significant (0.7209). The estimated coefficient (- 0.000941) and t statistics (- 1.037655) related to the facilities interest rate variable (IR) are negative and are not statistically significant (0.3199). Therefore, the second hypothesis of the research is rejected.

The results of estimation of Parsian Bank's net margin interest income model are presented in Table 5.

Table 5. statistical results of the research model test, dependent variable of margin net income interest

$NIM_{i,t} = \alpha_0 + \alpha_1 CA_{i,t} + \alpha_2 LOANS_{i,t} + \alpha_3 CR_{i,t} + \alpha_4 EXM_{i,t} + \alpha_6 IR_i + \varepsilon_{i,t}$					
Variable	Coefficients	Standard deviation	t statistics	Significance level	Relationship Type and Significance (5% error) * (10% error) **
constant	0.032829	0.222324	0.147661	0.8851	-
CA	0.030207	0.011327	2.666785	0.0205	Positive and meaningful *
LOANS	-0.210013	0.361602	-0.580786	0.5721	No relationship
CR	1.030387	3.285254	0.31364	0.7592	No relationship
LREXM	0.219832	0.894061	0.24588	0.8099	No relationship
IR	-0.003974	0.003511	-1.13187	0.2798	No relationship
F statistics (significance level)	2.998883 (0.055263)	Watson Camera Statistics		1.404293	
Determination coefficient	0.555464	Adjusted determination coefficient		0.370240	

In reviewing the significance of total margin net interest income of Parsian bank, given that the probability of F statistics is less than 10% (0.055263), the significance of the whole model is confirmed with confidence of 90%. The adjusted determination coefficient of the model also indicates that 37% of net interest income margin variable is explained by the independent variables of the model.

In the following, we study the third and fourth hypotheses of the research:

The third hypothesis of the research states that: indicators of capital adequacy ratios, granted facilities, and cost management have a positive and significant effect on net interest income margin of Parsian bank. As it is shown in the above Table, the estimated coefficient (0.030207) and t statistics (2.666785) related to capital adequacy ratio (CA) variable are positive and are statistically significant (0.0205). The estimated coefficient (- 0.210013) and t statistics (- 0.580786) related to granted facilities (LOANS) variable is negative and is not statistically significant (0.5721). The estimated coefficient (0.219832) and t statistics (0.24588) related to the cost management variable (LREXM) are positive and are not statistically significant (0.8099). Therefore, the third hypothesis of the research is confirmed in the positive state of the capital adequacy ratio.

The fourth hypothesis of the research states that: indicators of credit risk and facilities interest rate cuts have a negative and significant effect on net interest income margin of Parsian banks. As it is observed in the above Table, the estimated coefficient (1.030387) and t statistics (0.31364) related to credit risk variable (CR) is positive and is not statistically significant (0.7592). The estimated coefficient (- 0.003974) and t statistics (- 1.13187) related to facilities interest rate variable (IR) is negative and is not statistically significant (0.2798). Therefore, the fourth hypothesis of the research is rejected.

Suggestions based on research findings

Suggestions in the field of policy making

1- According to first hypothesis: Due to the importance of return on assets in the bank issue, in the context of improving financial ratios such as capital adequacy ratio, granted facilities and costs management more measures should be taken in the current statistical population, because in these factors, no effect on return on assets is seen.

2- According to second hypothesis: in the present statistical population, due to the importance of return on assets in the bank and the negative and significant effect of credit risk, and interest rate cut and granted facilities on return on assets, it is suggested to review different measures for risk management and allocating granted facilities.

3. According to third hypothesis: Considering the importance of the issue of net interest income margin in the bank, in the context of improving financial ratios such as capital adequacy ratio, granted facilities, and costs management, more measures should be considered in the current statistical population, because in these factors, no effect is seen on the net income margin.

4- According to the fourth hypothesis: In the current statistical population, due to the importance of net interest income in the bank and negative and significant effect of credit risk and interest rates cut and granted facilities on net interest income margin, it is proposed to review various measures for risk management and allocating granted facilities.

Executive suggestions

1. Given the greatest negative impact of credit risk and interest rate cut and granted facilities on net interest income margin, it is suggested that in the scope of the present research, special measures should be taken regarding such financial ratios, because it results in a significant reduction in net interest margin.
2. Given the lowest negative impact of credit risk and interest rate cut and granted facilities on assets return, it is suggested that in the scope of the present research, special measures are taken regarding such financial ratios, because it leads to reduce the return on assets a little.

Suggestions for future research

Each research, although assumed comprehensive, is not able to address all aspects of the subject and it is not able to deal with it in different aspects, in terms of different limitations including subject matter and time. This research is not an exception to this; therefore, the following suggestions will be made for investigation in the future:

1- Perform this study in other statistical populations. In particular, it should be done in societies where profitability, such as return on assets and net interest income margin, is important and vital.

2- Investigate the effect of other financial ratios on profitability and compare it with current research.

3. Identify and prioritize non-profitability factors.

4- In the present research model, the relationship between factors of financial ratios and profitability are reviewed and in terms of relationships that are existed, these factors are prioritized.

5- Predict the effect of financial ratios on profitability with artificial intelligence techniques such as artificial neural networks and genetic algorithms.

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