

An Analytical Investigation of Factors Affecting Persistent Profitability of Banks Listed on the Tehran Stock Exchange

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Abstract

The main objective of the present study is to investigate analytically factors affecting the persistence of profitability of banks listed on the Tehran Stock Exchange. In the present study, persistence of profitability is considered as the dependent variable and variables of market power, loss reserve ratio of past due loans and credit, bank size, capital adequacy ratio, the bank age, the number of bank branches, and the number of bank human resources were considered as independent variables. The population consisted of all banks listed on the Tehran Stock Exchange during 2005 to 2014. The sample size consisted of 21 banks. In the present study, panel data with fixed effects were used. The data was analyzed using multivariate regression at the significance level 95%. The results indicated that market power, the size of banks, and capital adequacy ratio have direct (positive) effects and the loss reserve ratio of past due loans and credit has reverse (negative) effects on the persistence of profitability of banks. In addition, these results indicated that the lack of significant effects of the age of banks, number of branches, and the number of human resources in banks on persistence of profitability of banks.

Keywords: persistence of bank profitability, market power, capital adequacy ratio.

Introduction and statement of the problem

One of the objectives of financial reporting is presenting suitable information about the financial performance of business units for an extensive range of users. Loss and profit sheet is one of the main financial statements realizing this aim. The income statement, net profit, is one of the very important financial information used by investors and other users of financial statements. Regarding the status of Stock Exchange Markets in the society, the researcher is to investigate analytically factors affecting the persistence of profitability of banks listed on the Tehran Stock Exchange. From among the outstanding characteristics of the contemporary competitive world is deep and rapid changes in scientific and technical fields and frequent challenges of socioeconomic systems in the international competition. Those

firms enjoy appropriate statuses in the competition which with maximum use of existing facilities and proper utilization of new resources for producing qualified and favorable goods and presenting services are customer-oriented, pure, and flexible firms. Competitive advantages are among components which guarantee persistence of organizations. Achieving competitive advantages is not random and overnight, but its requirements are making long-term strategies and planning for different dimensions of organizational activities. Conducting studies on persistent profits was conducted by Biuret et al. for the first time and it was experientially in relation with values of stock exchange. They used Ungarbled Earnings, i.e. persistent benefits, for predicting future expected profits and tried to link expected persistent earnings to a balanced model of stock exchange. In spite of the fact that Ohlson (1987) stated that the theory of expected persistent profits has no difference or preference over expected profits, they indicated that not only persistent profits have more expansive information content than flow of past profits, but they have effects dependent on the value for valuing companies. Earnings in banking activities is one of the main and most important factors of the philosophy of banks and contributes to policies of higher management of banks about important decisions which determine health, welfare, and advancement of banks in now and future periods of time (Khandani, 2011). Therefore, regarding the main mentioned issues, the present study is to investigate analytically factors affecting the persistence of profitability of banks listed on the Tehran Stock Exchange.

Significance of doing the research

Accounting profit is one of the important elements of financial statements which users employ its financial statements as bases for making economic decisions. Prediction profit based on management is one of the most important information resources of investors and other parties. In addition, investors, for their own investment decisions, rely on financial information mentioned in financial statements of their own economic unites particularly their reported profits. The quality of accounting profit and its degree of relatedness to predicting and valuing objectives depend on the degree of persistence of its components. Accessing the persistent flow of profit is suitable in increasing investors' predicting power and reducing risks of organizations. Some elements of profit are reasonably persistent over time. Revealing these persistent elements of profit helps users to predict future amounts of money related to these amounts. There are studies which were to investigate profit persistence and had motivations that more persistent profits result in better entrance for equity valuation model because calculating the final value which is the most important element in assessment of companies, is related to assumptions related relevant to growth and persistence of profits. Persistent profits are parts of existing profits which are persistent and their persistence continues. Kormendi and Lipe (1987) consider persistence of profits related to quality of profits and argue that their variations in current components of profits will be transferred to future values and this issue indicates the quality of profits (Kormendi & Lipe, 1987). Regarding the significance of the discussed issues, the aim of the present study is to investigate analytically factors affecting the persistence of profitability of banks listed on the Tehran Stock Exchange.

Research objectives

Main objective

The main objective of the present study to investigate analytically factors affecting the persistence of profitability of banks listed on the Tehran Stock Exchange.

Secondary objectives

To determine the effect of market power of banks on persistence of profitability of banks listed on the Tehran Stock Exchange

To determine the effect of loss reserve ratio of past due loans and credit on persistence of profitability of banks listed on the Tehran Stock Exchange

To determine the effect of bank size on persistence of profitability of banks listed on the Tehran Stock Exchange

To determine the effect of capital adequacy ratio on persistence of profitability of banks listed on the Tehran Stock Exchange

To determine the effect of bank age on persistence of profitability of banks listed on the Tehran Stock Exchange

To determine the effect of the number of bank branches on persistence of profitability of banks listed on the Tehran Stock Exchange

To determine the effect of the number of bank human resources on persistence of profitability of banks listed on the Tehran Stock Exchange.

Theoretical framework

The concepts of profit and its application

Profit is among the applied concepts in an economic unit. Therefore, regarding different aims of users, different definitions and measurement methods have been presented for it. Applying profit for particular aims such as measurement criterion of efficiency management, criterion for predicting future performance of companies or dividends in future, measurement criterion of success of companies, basis of determining taxes, basis of developing regulations of companies for supplying public benefits, and criterion of evaluation, and judgment about how to allocate resources by economists for benefits can be drawn (Clyde, 2007).

Comparing accounting profit and economic profit

To understand the difference between economic profit and accounting profit, it is necessary that the aim of the definition of these two concepts should be investigated. Accounting profit is defined with regard to its aim, i.e. presenting the report of companies' performance. Therefore, considering implicit costs in the balance sheet is not reasonable.

Since behavior analysis of economic units requires investigation of their profitability. Cost-profit analysis is very important. Thus, the criterion of decision making in analyzing the structure of markets and continuation of activities of a firms or its stop are based on cost-profit analysis and finally, positivity and negativity of economic profit (Kordestani and Hedayati, 2010).

Summarily it can be said that accounting profit is the difference between income and explicit costs of doing activities, but economic profit is the difference between income and implicit and explicit costs.

Accounting profit=income-explicit costs

Economic profit=income-(explicit costs+ implicit costs)

Persistence of profit

The profit caused by abnormal and unpredictable activities enjoy more persistence. In other words, it has the endurability and repeatability of profit is defined as persistence of profit.

Definition of commitment components

Commitment component states the difference between accounting profit and the cash flow obtained from operations. It means that great commitment components indicate the increase of reported profit compared to the cash flow produced by companies. This difference is the result of accounting conditions that when income and costs should be identified (the income realization principle and the principle of compliance). Commitment components can be divided into two voluntary and non-voluntary elements. Voluntary elements of commitment components refer to those components which management can apply some control on them. Non-voluntary elements are those commitment components which management cannot control them. Zay (2001) defines commitment components as the distance between operational cash flows

and accounting profits. Jones (1991) identified the differences between profit and cash flows obtained from operations as commitment components. Sloan (1996) defines commitment components as the change in capital of non-cash circulation minus depreciation costs.

Quality of commitment components

In the present study, following previous studies (Francis et al. 2005; Wordy, 2006; Ceur et al. 2008), the quality of financial reporting was defined as the power of financial statements in transferring information of company operation and specifically predicting expected cash flows to investors. The present study emphasizes the quality of commitment components as indicators of determining quality of financial reporting. This criteria was used in a lot of studies (Francis et al. 2005; Wordy, 2006; Batachria et al. 2007; Hilary and Wordy, 2008; Ceur et al. 2008; and Troval and Solano, 2009).

In spite of this superiority, commitment profit which is based on the principle of realization and identification of income, may not be compatible with real cash flows of companies (Dichu and Dichu, 2002). In fact, the degree of compatibility of companies' profits with the amount of made cash flows indicates the quality of commitment component; therefore, the difference between commitment profit and cash flows is considered as the criterion of quality of profit (Fakkhari and Taghavi, 2009). Accounting profit is measured and reported based on commitment bases. Therefore, there are differences between accounting profit and operational cash flows reported in the statement of cash flows, and accounting profit can be divided into two parts of cash and commitment.

Commitment part+ cash part= accounting profit

Commitment component+ operational cash flow= accounting profit (Kordestani and Roudneshin, 2006)

Persistence of profit

The profit of an economic unit is one of the components of financial statements enjoying particular significance for all users. In statement 1, concepts of financial accounting is defined as "emphasizing financial reports of information which is about performance of companies which is presented via calculation of profit and its components" (Dastgir and Rastgar, 2011). Profit persistence means repeatability of current profits. The more the persistence profit, the more the power of companies for keeping current profits, and the higher the quality of companies' profit. In calculating persistence of profit, the main emphasis is on operational and current terms. Therefore, these two concepts are considered as values when they are current in the control of management and result from current decisions. But it is necessary that they should be regulated in order that the use of factors obtained in past periods can cover but be its use in the present time. Another aspect of persistence of profit is that the related changes are caused only by main activities in companies and therefore, comparing it with other operations in companies is possible and causes that management efficiency can be revealed better. Although non-persistent components related to non-operational activities are influenced by management, determining standards which can be compared with them is difficult (Sloan, 1996).

Methodology

According to the aim of the study, the research is applied and according to data collection and method of the research, it is descriptive. In addition, it is correlational in terms of data analysis methods.

The present study is positivistic research, and in terms of testing hypotheses, it uses historical data. Its design is quasi-experimental. The present research is inductive and ex post facto and its statistical method is hybrid correlation (time series and cross-sectional). It means that investigation of the existence of correlations among variables is via regression.

Population and sample size

Population: since the temporal scope of the research is from 2005 to 2014, the population included all banks listed on the Tehran Stock Market.

Sample size: because the population size is small, all banks listed on the Tehran Stock Market were considered as the sample using all enumeration method.

Research model

The regression equation was used for investigating and testing research hypotheses as follows:

Profit Persistence $it = \alpha + \beta_1 \text{Market Power } it + \beta_2 \text{ LLP } it + \beta_3 \text{ Size } it + \beta_4 \text{ CAR } it + \beta_5 \text{ Age } it + \beta_6 \text{ NBB } it + \beta_7 \text{ HR } it + \varepsilon it$

Dependent variable: persistence of profitability of banks was calculated via SD of assets (the ratio of net profit to the book value of assets of bank I during past five years).

Independent variables

Market power

In the present study, to calculate market power, Herfindahl-Hirschman Index was used (Amido and Harvey, 2014).

$$\text{HHI} = \sum_{i=1}^n \left(\frac{P_i}{P} \times 100 \right)^2$$

HHI: market power of the considered bank in time period t

P_i = The total sum of long-term and short-term savings in bank I and the time period t

P = The total sum of long-term and short-term savings in all Iranian banks and the time period t

LLP = the ration of Past due loans and credit loss reserve to the total loans and credits of bank I in time period t (Amido and Harvey, 2014).

Size: the bank size which is calculated via the natural logarithm of the book value of all properties of bank I in the time period t (Amido and Harvey, 2014)

CAR: ration of capital adequacy

Age: the difference in the year of establishing banks and the year of investigating the subject (Amido and Harvey, 2014)

NBB: the number of branches in year t (Amido and Harvey, 2014).

HR: the number of human resources in banks in year t

εit = indicates the random error of bank I at the end of year t .

Data analysis methods

Data analysis methods are as follows:

Descriptive statistics

To describe findings, the frequency table and also histograms are used. In addition, to describe the data appropriately, central tendency indices such as mean and mode, and also dispersion indices such SD were used.

Inferential statistics

Inferential analysis was conducted with regard to the data obtained from the website of Stock Exchange Organization, Rahavar Novin and Tadbir Pardaz software programs in SPSS and Eviews by employing statistical tests and research hypotheses.

Research findings

In the primary implementation of the model, first of all, using Chaw and Housman tests, the type of goodness of fit of the regression (panel data with fixed and random effects), and using Im-Pesaran-Shin, Lin and Levene's tests, reliability of variables was investigated. Then, in the second implementation of the model, the classical model of regression including distribution normality of variable, independence of error distribution, normality of error distribution, heterogeneity of variances and independence of the independent variables was investigated. Finally, in implementing the final model, regarding the significance of the whole mode and also the significance of each coefficient, the final model was extracted.

Table 1: the results obtained from goodness of fit of the regression equation

Profit Persistence it = $\alpha + \beta_1 \text{Market Power it} + \beta_2 \text{LLP it} + \beta_3 \text{Size it} + \beta_4 \text{CAR it} + \beta_5 \text{Age it} + \beta_6 \text{NBBit} + \beta_7 \text{HRit} + \varepsilon \text{ it}$					
Variable		Variable coefficient	Coefficient value	t-value	Sig.
constant number		β_0	1.709	2.909	0.002
Market Power	Market power	β_1	0.567	2.302	0.041
LLP	Past due loans and credit loss reserve ratio	β_2	-0.909	-2.654	0.034
SIZE	Bank size	β_3	0.452	2.823	0.019
CAR	Capital adequacy ratio	β_4	0.311	3.121	0.011
AGE	Bank age	β_5	0.991	1.121	0.341
NBB	The number of bank branches	β_6	0.678	1.432	0.255
HR	The number of human resources bank	β_7	0.843	1.112	0.366
The coefficient of determination		0.518	F-value		13.675
Adjusted coefficient of determination		0.449	Sig.)P-Value(		0.0015

		Durbin-Watson statistic	1.753
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First hypothesis

Market power of banks is effective on profit resistance of banks listed on the Tehran Stock Exchange.

Test results

According to table 2, significance level of the variable of market power of banks is less than the hypothetical sig. in the present study (5%). In addition, the absolute value of t-value related to this variable is bigger than the t-value in the table with the same df. Therefore, H_0 is rejected at the level 95% and H_1 stating that market power of banks is effective on profit resistance of banks listed on the Tehran Stock Exchange is confirmed.

Second hypothesis

Past due loans and credit loss reserve ratio of banks is effective on profit resistance of banks listed on the Tehran Stock Exchange.

Test results

According to table 2, significance level of the variable of past due loans and credit loss reserve ratio of banks is less than the hypothetical sig. in the present study (5%). In addition, the absolute value of t-value related to this variable is bigger than the t-value in the table with the same df. Therefore, H_0 is rejected at the level 95% and H_1 stating that past due loans and credit loss reserve ratio of banks is effective on profit resistance of banks listed on the Tehran Stock Exchange is confirmed.

Third hypothesis

Banks size is effective on profit resistance of banks listed on the Tehran Stock Exchange.

Test results

According to table 1, significance level of the variable of banks size is less than the hypothetical sig. in the present study (5%). In addition, the absolute value of t-value related to this variable is bigger than the t-value in the table with the same df. Therefore, H_0 is rejected at the level 95% and H_1 stating that banks size is effective on profit resistance of banks listed on the Tehran Stock Exchange is confirmed.

Fourth hypothesis

Capital adequacy ratio is effective on profit resistance of banks listed on the Tehran Stock Exchange.

Test results

According to table 1, significance level of the variable of capital adequacy ratio is less than the hypothetical sig. in the present study (5%). In addition, the absolute value of t-value related to this variable is bigger than the t-value in the table with the same df. Therefore, H_0 is rejected at the level 95% and H_1 stating that capital adequacy ratio is effective on profit resistance of banks listed on the Tehran Stock Exchange is confirmed.

Fifth hypothesis

Bank age is effective on profit resistance of banks listed on the Tehran Stock Exchange.

Test results

According to table 1, significance level of the variable of bank age is less than the hypothetical sig. in the present study (5%). In addition, the absolute value of t-value related to this variable is smaller than the t-value in the table with the same df. Therefore, H_0 is confirmed at the level 95% and H_1 stating that bank age is effective on profit resistance of banks listed on the Tehran Stock Exchange is rejected.

Sixth hypothesis

Number of bank branches is effective on profit resistance of banks listed on the Tehran Stock Exchange.

Test results

According to table 1, significance level of the variable of number of bank branches is less than the hypothetical sig. in the present study (5%). In addition, the absolute value of t-value related to this

variable is smaller than the t-value in the table with the same df. Therefore, H0 is confirmed at the level 95% and H1 stating that number of bank branches is effective on profit resistance of banks listed on the Tehran Stock Exchange is rejected.

Seventh hypothesis

Number of human resources is effective on profit resistance of banks listed on the Tehran Stock Exchange.

Test results

According to table 1, significance level of the variable of number of human resources is less than the hypothetical sig. in the present study (5%). In addition, the absolute value of t-value related to this variable is smaller than the t-value in the table with the same df. Therefore, H0 is confirmed at the level 95% and H1 stating that number of human resources is effective on profit resistance of banks listed on the Tehran Stock Exchange is rejected.

Table 2: summary of the results obtained from testing hypotheses

Test results	Sig.	Coefficient value	Variable		Hypothesis
Confirmed	0.041	0.567	Bank size	Market Power	1
Confirmed	0.034	-0.909	Capital adequacy ratio	LLP	2
Confirmed	0.019	0.452	Bank age	SIZE	3
Confirmed	0.011	0.311	The number of bank branches	CAR	4
Rejected	0.341	0.991	The number of human resources bank	AGE	5
Rejected	0.255	0.678	Bank size	NBB	6
Rejected	0.366	0.843	Capital adequacy ratio	HR	7

Conclusion and suggestions

Hypothesis 1

The first hypothesis, i.e. market power of banks is effective on profit resistance of banks listed on the Tehran Stock Exchange, was confirmed. The results of the present study are consistent with the results of

Almazari (2014), Arina and Lis (2013), Ralal (2009), Agha Babaei (2011), Nouri Boroujerdi et al. (2010), and Sabouri (2003).

Hypothesis 2

The second hypothesis, i.e. past due loans and credit loss reserve ratio of banks is effective on profit resistance of banks listed on the Tehran Stock Exchange, was confirmed. The results of the present study are consistent with the results of Almazari (2014), Almomani (2013), Ralal (2009), Agha Babaei (2011), Nouri Boroujerdi et al. (2010), and Sabouri (2003).

Hypothesis 3

The third hypothesis, i.e. banks size is effective on profit resistance of banks listed on the Tehran Stock Exchange, was confirmed. The results of the present study are consistent with the results of Almazari (2014), Arina and Lis (2013), Almomani (2013), Ralal (2009), Agha Babaei (2011), Nouri Boroujerdi et al. (2010), and Sabouri (2003).

Hypothesis 4

The fourth hypothesis, i.e. capital adequacy ratio is effective on profit resistance of banks listed on the Tehran Stock Exchange, was confirmed. The results of the present study are consistent with the results of Almazari (2014), Arina and Lis (2013), Almomani (2013), Ralal (2009), Agha Babaei (2011), Nouri Boroujerdi et al. (2010), and Sabouri (2003).

Hypothesis 5

The fifth hypothesis, i.e. bank age is effective on profit resistance of banks listed on the Tehran Stock Exchange, was confirmed. The results of the present study are consistent with the results of Almazari (2014), Arina and Lis (2013), Almomani (2013), Arina and Lis (2013), Ralal (2009), Agha Babaei (2011), Nouri Boroujerdi et al. (2010), and Sabouri (2003).

Hypothesis 6

The sixth hypothesis, i.e. number of bank branches is effective on profit resistance of banks listed on the Tehran Stock Exchange, was confirmed. The results of the present study are consistent with the results of Almazari (2014), Arina and Lis (2013), Almomani (2013), Arina and Lis (2013), Ralal (2009), Agha Babaei (2011), Nouri Boroujerdi et al. (2010), and Sabouri (2003).

Hypothesis 7

The seventh hypothesis, i.e. number of human resources is effective on profit resistance of banks listed on the Tehran Stock Exchange, was confirmed. The results of the present study are consistent with the results of Almazari (2014), Arina and Lis (2013), Almomani (2013), Arina and Lis (2013), Ralal (2009), Agha Babaei (2011), Nouri Boroujerdi et al. (2010), and Sabouri (2003).

Prioritizing factors affecting profitability resistance of banks listed on the Tehran Stock Exchange.

Results obtained from the table of regression equation indicate that from among factors affecting profitability resistance of banks listed on the Tehran Stock Exchange, past due loans and credit loss reserve (-909.0) is in the first rank (the highest effect), market power of banks (567.0) is in the second rank, bank size (452.0) is in the third rank, and capital adequacy (311.0) is in the fourth rank (the lowest effect).

Suggestions for further research

Regarding the results of the present study, it is suggested that in analyzing investment plans in financial assets and stock exchange, the factors affecting profitability resistance of banks should be specifically paid attention to because considering these important factors results in selection of optimal investment baskets with the minimum of hazards and the highest productivity. In addition, it results in clarity of decision making environment.

Considering the issue that past due loans and credit loss reserve has the highest effect on profitability resistance of banks; therefore, it is suggested that banks take steps with planning and presenting

mechanisms for minimizing this reserve and in line with profitability resistance. Banks exert efforts to increase resources and minimize capital adequacy by attracting more supports of shareholders.

Economic firms who neglect their social and moral tasks, also neglect their long-term objectives and benefits and their views are only towards their profitability. Therefore, they have no resistance status in their customers' minds and their effective life will be short. Therefore, in this line, the creation of corporate and private banking and special attention to the quality of these services provide this possibility that in addition to guarantee investment profit of banks, we can take steps in line with increasing market power, improvement of financial performance and profitability.

E-banking is a big competition in banking relations and is also a great opportunity for establishing relations among customers. For banks, the Internet is a way towards new opportunities in order that they can develop their scopes and customer-orientedness. Therefore, it is suggested that banks should develop their internet and electronic services.

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