INVESTIGATING THE IMPACT OF CORRELATION BETWEEN THE OWNERSHIP OF STATE BANKS BEFORE AND AFTER THE PRIVATIZATION ON THEIR ECONOMIC VALUE ADDED (EVA) AND INTELLECTUAL CAPITAL

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ABSTRACT

This study aims at investigating the effect of correlation between the ownership of state banks before and after the privatization on their economic value added and intellectual capital from financial aspects through financial and quantitative variables (economic value added) and their intellectual capital. Using the economic approach, we measure the performance of bank management in order to investigate the results of privatization policy performance in the field of creating the return. The banks, which are transferred in accordance with the decision of the Cabinet (Eghtesad Novin Bank, Tejarat Bank, Parsian Bank, Bank Mellat, Bank Saderat, Ansar Bank, and Bank Refah Kargaran) and have assigned more than 50% of governmental stock to the private sector, make up the statistical population. The sampling method is done on the whole bank samples since the statistical sample is limited to private banks in this research. The results of statistical tests indicate that the privatization has not been able to increase the return and value creation in studied banks. Furthermore, the privatization has not led to increased return on capital. Finally, it can be concluded that the privatization has failed to affect the economic value added of banks and in fact it has not changed the performance and return.

Keywords: Privatization, economic value added, rate of return on capital

INTRODUCTION

The privatization policy of Iran is introduced to adjust the economic programs and reforms in line with the goal of increasing the efficiency, improve the resource allocation, increase the innovation and dynamic entrepreneurship, determine the prices competitively and far from the exclusive decisions and ultimately reduce the financial obligations of public companies mainly as the budget deficit. [1].

The privatization project was first introduced for our country in 70s. The main purpose of this project has been the reduction of governmental administration in economic field. Therefore, it will be certainly valuable and important to provide the appropriate strategies in this thesis because the privatization and reduction of governmental intervention are the only ways of surviving in today's economic and social situation of our country. On the other hand, the privatization will not be achieved unless the appropriate infrastructures and relevant mechanisms are provided. Furthermore, the mentality of society and especially the relevant staff should be ready for change in order to implement and follow the privatization as a long term process by staff empathy and support[1].

Legally, the firms with more than 50% shares available to the government are the state companies, but those with less than 50% of shares available to the government are the private companies [3].

Therefore, given the importance of issue, the main objective of this study is to determine the effects of correlation between the ownership of state banks before and after the privatization on the economic value added and intellectual capital of banks included in privatization after transfer.

MATERIALS AND METHODS

In this study, the economic value added of banks is first calculated as a criterion for evaluating the economic performance of companies, and then the influence of bank privatization on the performance and financial status of privatized banks can be investigated according to the financial aspects through their financial and quantitative variables (economic value added) and intellectual capital by comparing the economic value added of banks during three years before and after the privatization. Furthermore, we compare the rate of return on capital and rate of capital cost in the same banks in three years before and after the privatization process in order to investigate the cause of change or no change in economic value added.

Statistical population and sampling method:

The banks, which are transferred in accordance with the decision of the Cabinet (Eghtesad Novin Bank, Tejarat Bank, Parsian Bank, Bank Mellat, Bank Saderat, Ansar Bank, and Bank Refah Kargaran) and have assigned more than 50% of governmental stock to the private sector in 2007 to 2011, make up the statistical population. The sampling method is done on the whole bank samples since the statistical sample is limited to private banks in this research.

Data analysis:

This research investigates the performance and financial status of privatized banks are investigated according to the financial aspects through financial and quantitative variable (economic value added) as well as the effect of changing the economic value added on the qualitative variable (privatization). Therefore, we use the following model (Steward) in order to calculate the economic value added in this study.

RESULTS

Main hypothesis:

"There is a significant difference between the mean economic value added of banks before and after the privatization".

In summary, the necessary data can be collected in the following table 1: According to the table 1 ($-1.96 < -1.087 < +1.96$), it can be concluded that the null hypothesis is accepted at the error level of 0.05 and confidence level of 0.95 based on the equal accepted means and according to the insignificant difference and change between the mean economic value added before and after the privatization.

Sub-hypothesis 1:

Sub-hypothesis 1 is as follows:

"There is a significant difference between the mean rate of return on banks' capital before and after the privatization".

Like the main hypothesis, this hypothesis is tested according to the following table and it can be concluded that both groups of return of capital have not normal distribution before and after the privatization, and both sig are less than 0.05, thus the null hypothesis based on the normality of data is rejected. Therefore, Wilcoxon test is utilized to compare them (Table 2).

The results of Wilcoxon test are as follows:

In summary, the necessary data is collected in the following table:

According to the table 3, it can be concluded that the null hypothesis is accepted at the error level of 0.05 and confidence level of 0.95 based on the equal accepted means and according to the insignificant difference and change between the mean rate of return on capital before and after the privatization ($-1.96 < -1.381 < +1.96$).

Sub-hypothesis 2:

Sub-hypothesis 2 is as follows:

"There is a significant difference between the mean rate of capital cost in banks before and after the privatization".

Like the previous hypotheses, this hypothesis is tested according to the same way. According to the table, it can be concluded that both rates of capital cost have not normal distribution before and after the privatization, and both sig are less than 0.05, thus the null hypothesis is rejected. Therefore, Wilcoxon test is utilized to compare the rates of capital cost before and after the privatization.

In general, the results of three hypotheses can be summarized in the following table. According to the results (Table 4) of three hypotheses and the equation of $EVA = R - C$, it can be concluded that no change or a small change in the mean rate of return on capital and mean rate of capital cost after the privatization of these banks, have made no significant change in the mean economic value added; and the return and performance of privatization are not improved according to this index.

Despite the fact that we cannot clearly and definitively comment on the major policy such as the privatization only by measuring the performance and return of banks, but its results can be effective as a guide or significant point in proper implementation of this policy.

Analysis of results

According to each main hypothesis, the generalized least square is obtained according to the model above by regression test and correlation between the intellectual capital and its components with five indices of financial performance of banks:

$$Y_{it} = \beta_0 + \beta_1 VAIC_{it} + \varepsilon_{it}$$
(1)

$$Y_{it} = \beta_0 + \beta_1 VAHU_{it} + \beta_2 SCVA_{it} + \beta_3 VACA_{it} + \varepsilon_{it}$$
(2)

Accordingly, Y_{it} is the financial performance index of banks and is tested in the form of two main equations of test. The equation (1) tests the impact of intellectual capital on the financial performance index and the equation (2) tests the impact of each component of intellectual capital on the financial performance index. The following tables summarize the results of regression test on each of five indices of financial performance. It should be noted that each of these models are estimated as the retrospective regression.

In testing the model (1) for equity as the dependent variable according to the significance test of β coefficient between two variables of intellectual value added coefficient and the rate of return on equity in statistical population of research, the significance level is smaller than the error level (0.002). Therefore, this indicates a direct correlation between the intellectual

capital and return on equity at the confidence level of 95 percent.

On the other hand, the results of testing the model (2) indicate a significant direct correlation between the variables, namely the human capital and physical capital with return on equity. Since the beta coefficient of human capital index is higher than other variables, this index has the maximum portion of intellectual capital impact on the return on equity.

According to the table 6, in testing the model (1) for return on assets variable and since the significance test is less than 0.05 and the standardized β coefficient is measured equal to 0.536, the results of linear regression indicate a significant direct correlation between the intellectual capital and return on assets.

On the other hand, among the components of intellectual capital, there is a significant direct correlation between the human and physical capital with return on assets in testing the model (2) for return on assets as the dependent variable.

The results of regression test for model (1) indicate a significant direct correlation between the intellectual capital and employee productivity. The intellectual capital with standardized beta coefficient of 0.640 has a positive impact on the employee productivity index.

Furthermore, among the components of intellectual capital, the structural capital variable with standardized beta coefficient of 0.645 and the human capital variable with standardized beta coefficient of 0.597 are two independent variables which are explained in model (2).

Given the significance level of testing the model (1), it can be argued that there is a significant direct correlation between the intellectual capital and market to book value index at the confidence level of 95 percent. According to the test of model (2), there is a significant direct correlation between the physical and structural capital with intellectual capital. Furthermore, since the physical capital index has the maximum beta coefficient (0.791) among the independent variables, the largest impact of intellectual capital on the market to book value belongs to the physical capital index.

According to the Table 6, since the significance level of regression test for model (1) is less than the error level, there is a significant correlation between the intellectual capital and earnings per share. On the other hand, there is a significant direct correlation between all components of intellectual capital with earnings per share performance index according to the tested model (2).

Table 1: Summary of test results

Accepting or rejecting the null hypothesis	Significance value	Test statistic value	Mean after privatization	Mean before privatization	Number and branches of private banks
Accepting the null hypothesis	± 1.96	-1.087	0.15	0.95	77

Table 2: Status of banks before and after the privatization

Banks	Mean a year before privatization	Mean a year after privatization
Eghtesad Novin Bank	87.5	89.4
Parsian Bank	52.3	50.3
Bank Refah Kargaran	86.1	87.3
Ansar Bank	63.3	65.5
Bank Pasargad	72.3	75.6
Bank Saderat	85.1	82.36
Resalat Bank	63.75	72.36

Table 3: Summary of test results

Accepting or rejecting the null hypothesis	Significance value	Test statistic value	Mean after privatization	Mean before privatization	Number and branches of private banks
Accepting the null hypothesis	± 1.96	-1.381	0.19	0.29	77

Table 4: Summarized results of hypotheses test

Hypothesis	Value of test statistic	Significance value	Accepting or rejecting the null hypothesis
Main hypothesis	-1.087	± 1.96	Accepting the null hypothesis
Sub-hypothesis 1	-1.381	± 1.96	Accepting the null hypothesis
Sub-hypothesis 2	-0.852	± 1.96	Accepting the null hypothesis

Table 5

Dependent variable	Independent variable	Calculated T	Standardized coefficient	Significance level	Error level	Test result
Return on equity (ROE)	VAIC	3.516	0.568	0.002	0.05	Rejected H_0
	VAHU	3.361	0.572	0.001	0.05	Rejected H_0
	VACA	2.614	0.411	0.015	0.05	Rejected H_0
F statistic	136.45					

Table 6

Dependent variable	Independent variable	Calculated T	Standardized coefficient	Significance level	Error level	Test result
Return on assets (ROA)	VAIC	3.112	0.536	0.001	0.05	Rejected H_0
	VAHU	4.118	0.403	0.030	0.05	Rejected H_0
	VACA	3.182	0.628	0.000	0.05	Rejected H_0
F statistic	144.69					

Table 7

Dependent variable	Independent variable	Calculated T	Standardized coefficient	Significance level	Error level	Test result
Employee productivity (EP)	VAIC	4.251	0.640	0.000	0.05	Rejected H_0
	VAHU	3.832	0.597	0.000	0.05	Rejected H_0
	SCVA	4.299	0.645	0.000	0.05	Rejected H_0
F statistic	147.155					

Table 8

Dependent variable	Independent variable	Calculated T	Standardized coefficient	Significance level	Error level	Test result
Market to book value (MV/BV)	VAIC	3.047	0.513	0.005	0.05	Rejected H_0
	SCVA	4.582	0.509	0.000	0.05	Rejected H_0
	VAHU	3.985	0.496	0.000	0.05	Rejected H_0
	VACA	4.708	0.791	0.000	0.05	Rejected H_0
F statistic	167.142					

Table 9

Dependent variable	Independent variable	Calculated T	Standardized coefficient	Significance level	Error level	Test result
Earnings per share (EPS)	VAIC	3.785	0.689	0.000	0.05	Rejected H_0
	VAHU	3.826	0.698	0.000	0.05	Rejected H_0
	SCVA	3.211	0.574	0.000	0.05	Rejected H_0
	VACA	3.652	0.654	0.000	0.05	Rejected H_0
F statistic	138.64					

CONCLUSION

The conclusion on the main hypothesis requires indicating the result of testing the first and second sub-hypotheses as follows respectively.

According to the results of statistical tests for this hypothesis and accepting the null hypothesis based on the equal economic value before and after the privatization and since the that EVA is a criterion for evaluation of management performance and given that this criterion is not changed after privatization with an aim of increasing the return of company, this criterion has remained unchanged, thus it can be pointed out that the privatization has not been able to increase the return and value creation in studied banks.

Conclusion of the sub-hypothesis 1:

Since the results of this hypothesis indicate the equal rate of return on capital before and after the privatization, and also this rate measures the applied return on capital regardless of financing method and the accounting deviations and is obtained from the net operating profit after deduction of tax on capital, it can be concluded that the privatization has not led to an increase in capital productivity.

Conclusion of the sub-hypothesis 2:

Given the results of this test and equal rate of capital cost before and after the privatization, it can be concluded that the privatization has not led to a reduction in this rate. In fact, with regard to the above results we can conclude that the privatization has not have an impact on the economic value added in banks and has created no significant change in performance and return.

It happens due to transferring the shares to non-governmental public organizations such as the Social Security Organization, the Civil Servants Pension Organization, and the Islamic Revelution Mostazafan Foundation for government debt or reducing the government support policies (supply of currency and cost-effective funds) of banks

after the privatization or the lack of foreign investment in the economy and granted banks.

Even if the results of sub-hypotheses are not considered, if we assume that r (return on capital) is increased, c (the rate of capital cost) is increased as much as an increase in r (or vice versa) and this prevents a significant change in EVA. In fact, even if we assume that the net operating profit after tax (NOPAT) is increased, the costs of capital and firm financing are increased due to the reduced supporting policy of government.

It should be noted that the privatization is a long-term economic policy, and thus the results of short-term measures cannot be generalized to the whole results of this policy. Furthermore, the mentioned results do not indicate the wrong policy and privatization principle and private property theory, but they refer to the problem in the way of privatization.

In the field of intellectual capital, after evaluating the intellectual capital index and its components by value added intellectual capital (VAIC) model introduced by Palik, their impact is examined on five performance indices defined in this study including the return on equity, return on assets, the employee productivity rate, the market to book value per share, and earnings per share by the regression, and it is found that all five indices of financial performance have direct correlation with intellectual capital of banks.

We can recommend the more attention and emphasis on the intellectual capital in the organizations and understanding the impact and importance of this factor in overall performance of organizations and its positive impact in the process of value creation in organizations as an effective factor in improving the financial performance of organizations. Since the human capital plays the role as a key factor in measuring the intellectual capital, providing a competitive space for determining the employees' levels of payroll greatly increases the efficiency of research model.

The significant direct correlation between the human capital and all five indices of performance is the remarkable point about the components of intellectual capital in this research model. This confirms the important impact of human capital on the financial performance of studied banks, and in other words, confirms the central role of human capital in intellectual capital and consequently in financial performance.

Comparison of results with findings of previous research

Naturally, numerous studies have been conducted on the privatization, for instance, the research by Jean-Claude Cosset and

Narjes Bobakari [2],is the most comprehensive research in which 79 out of 21 developing countries are selected and their operational and financial performance is studied in three years before and after the privatization during 1992 to 1980. The purpose of this research was to determine whether the implementation of privatization policy was desirable in developing countries and resulted in improved performance or not? Its findings reveal that the privatization of companies increases their profitability.

Ali Shahsavari [5],has investigated the effect of privatization on the efficiency of financial performance of manufacturing companies. His results indicate that the privatization has no impact on the stock return, return on sales and return on assets of private companies except for the motor vehicle industry. Furthermore, the privatization is effective only in manufacturing industries of motor vehicle and paper products, but has no impact on other industries.

According to above-mentioned studies, despite the fact that the results of foreign research indicate the increased efficiency of companies and banks after the privatization, like the results of some local studies the results of this study indicate the lack of improved efficiency and performance of banks after transferring; for instance the research by Mehdi Taghavi [6],or the thesis

by Ali Shahsavari by the guidance from Dr. Naghi Bahramfar (2006), or the article by Mr. Heider Mohammadzadeh Salteh by the guidance from Dr. Ghodratollah Talebnia (2004) who investigated the stock return before and after the privatization.

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