

An Analysis of the Effect of the reduction of the Profit Rate in the Mining and Industry Sector on Profitability of Sana't & Ma'dan Bank

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ABSTRACT

In this research, the effect of decreasing the profit rate during 2003-2010 in the mining and industry sector on profitability of Sana't & Ma'dan Bank was studied. Determining whether interest rates have affected profitability of banks, and, consequently, determining whether bank managers have been able to reduce the effect from this paper's goals. The answer to research question was developed through calculation of interest indexes in five groups: (1) average output for shareholders, (2) average output of assets, (3) the incomes related to profitable properties resulted from banking interests to the average of these assets, (4) the costs of the debts (including banking interest) to average of these debts and, (5) the net interest margin were studied in this paper. For analysis of Regression Line Simple Coefficient in variants the SPSS software was used. The study shows that in Sana't & Ma'dan Bank there is a direct and significant relation between profitability and the reduction of interest rate decrease in industry and mining sector. This means that the bank has failed to develop its investments so variously as to prevent decrease in bank profitability due to the reduction of interest rate, although other factors had been potentially effective in this issue.

Keywords: Profitability, interest rate in export and industry and mining, banking interactions, bank, banking facilities.

1. INTRODUCTION

As the largest financial intermediaries and monetary agencies in attracting savings and supplying financial sources for businesses, productive projects and different industrial plans, banks play an important role in each country's economy and, due to the importance of this role, it is necessary to study national banking system to shed light on strengths and weaknesses and the opportunities and threats. (Banking Report in 2003).

2. PERFORMANCE STANDARDS FOR BANKS

To Evaluate performance of banks, previous research have used different criteria, the commonest of which are follow:

Profitability Measures: These measures include the average return of shares, the average return of assets, the income derived from interest-earning assets operations, the cost of interest-bearing debt to the debt collector, transparent spread rate of bank, net profit margin and, the income not derived from bank interest to operation incomes.

Liquidity criteria: advantages granted to the total profitable assets caused by interest rate, advantages granted to customers and the total of deposits to shareholders' portions.

Performance criteria: Total sum of non-operating costs and operating income, personnel expenses to sum total of operating income.

Capital criteria: shareholders' portions to total assets, shareholders' total portions to total advantages.

3. INTERNAL FACTORS

Internal factors affecting bank profitability are as follow:

Interest rates, loan fees and different forms of the deposit interest income and interest costs are the factors affecting the profitability of banks. Other internal factor that can be expected to have a significant effect on profitability is cost management efficiency. The relationship between costs and revenues may turn out to be a direct link.

4. EXTERNAL FACTORS

In addition to internal factors, a bank's profitability is affected by external factors.

Deposit and loan market, for example, may be affected by slow economic growth and this mainly affects bank profitability. An external factor affecting the profitability of a bank is share of the market in total banking network (Bagheri, 2006, p 10). Share of the market can be a measure of competition among banks. Then a change in market share can be effective on bank profitability.

Perry (1992), in an analysis of banks' losses and incomes due to inflation, concluded that if inflation is fully anticipated and interest rates are set according to that, revenue growth results in faster growth of the rates than costs and this has a positive effect on profitability. Size of a bank is also a deciding factor in that large banks have access to certain markets to which small banks do not and that is a positive effect on profitability (Hjstad and Arnold Research, 1977). Expansive monetary policies and imposed wars can also be taken as external factors affecting the profitability.

Following criteria are also used to evaluate the profitability of banks:

- a) Average return on shares
- b) Average return on assets

- c) Incomes derived from interest rates on income-earning assets to average of these assets
- d) Cost of interest bearing debt (interest) to average debts
- e) E - Net profit margin

5. INTERNAL INVESTIGATIONS

Hasanzadeh et al. (2009) studied e-banking and the use of banking cards as an improvement and they looked at profitability criterion and customers' satisfaction and concluded that the use of banking cards may influence bank's customer satisfaction and profitability.

Hibati et al. (2009) compared the performance of Iran's private banks against banks Arabic countries around Persian Gulf. Here the criteria of bank profitability, efficiency, liquidity and capital were considered and it was found that during the initial years, private banks had worked satisfactorily. Abassgholi Poor (2010) examines the factors which improve the performance of banks and pinpoints four major factors for improving the performance of the banks: strengthening financial sources in modern banking, considering the World Bank standards, risk management and optimization.

Ghaemi et al. (2009) declare the seasonal incomes and liquidity of shares and results indicate that during the study and after declaring the incomes, liquidity didn't increase significantly. Samty et al. (2008) examined the decisive relationships between macroeconomic variables which are set to reduce the interest rate in Iran and found that with reduction of inflation rate and expected inflation rate, management of cash volume and credits and government budget deficit, Interest rates would decrease. Meher Ara et al. (2010) examine the linear relationship between real interest rates and private investment and concluded that after reaching a certain minimum, interest rate influences private investment positively.

Karami et al. (2010) examined the economic extra value and liquidity in stock market and concluded that there exists a positive, significant relationship between the economic extra value and liquidity of the stock market. Bazrafshan (2011) examined the effect of liquidity on the performance of companies in stock market and found a positive relationship between the level of liquidity and long-term performance of the companies.

Bagheri (2007) analyzes the factors affecting the profitability of commercial banks (Refah Bank was his case study), and the research findings suggest that efficient management is a significant distributive agent for profitability of the banks. Furthermore, manageable properties and proper management of the commitments are significantly influential. Economic growth, among other external factors, has a positive effect on bank profitability and on the other hand, inflation rate has a significantly lower but adverse effect on profitability.

Seifi Por et al.(2005) examined the effect of interest rates on investment loans on the economy of Iran and came to the conclusion that although changes in interest rates theoretically would affect the level of investments, but, since interest rates in iran's economy are set officially regardless of the intents of the people working in financial markets and also since at present interest rate, demand for financial resources is much more than the supplies, reduction of interest rate facility wouldn't lead to the increase in investments. Estimates (from the function of the demand for investment which uses OLS method) and also self-regression vector confirm this. Therefore freeing the financial markets and creating a competitive financial system and hence, the effective monetary measures can influence the level of investments.

Mohammadi (2006) examined the relationship between interest rates on nongovernmental investments in the industrial and mining sector and concluded that the demand for loans were high, regardless of changes in interest rates and even before reduction in the sector. Lowering interest rates on bank loans have increased the demand for bank loans, which, regardless of other factors, would lead to imbalance between demand and supply and also to changes in form of the deposits.

6. RESEARCH CONDUCTED IN RECENT YEARS

Nori, (2011) investigated the factors affecting the profitability of commercial banks, and used linear regression model for the period (1989 to 2010). He studied the factors affecting profitability of Melat bank. In this study, the effect of the bank's internal factors, of the banking internal factors and of macroeconomic factors on Melat bank profitability (ROA index) have been studied. Eviews software was used and it was concluded that internal factors had affected the bank profitability far more greatly than the external factors had .Meanwhile, the relationship between bank profitability and gross domestic production, bank shares and the relation of the income to the property are direct and are inversely related to the cost of property. Coefficient of the error correction model shows that, in each period 59% of the imbalance between long-term and short-term relationships has been removed, showing that the speed of adjustment is high.

Farokhnezhad (2010) examined the effects of exchange rates on bank profitability well paid workers. He used error correction method and also Eviews for data entrance and analysis. The results showed that with escalation of the exchange rate in the short-term period the reaction had been extraordinarily large and profitability over the long term had been more than balance. Another result of this study indicates a stable and significant model of effect (for long-term and short-term behavior) of exchange rates on bank foreign profitability.

Araghi (2011) examined the effect of the risk of interest rates on profitability of Maskan Bank during the years 1380 till 88. This study examines the factors

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influential on profitability indexes of Maskan Bank which change according to the changes in interest rates and change the profitability of the bank. In this context and through using seasonal data, econometric methodology, and the (OLS) method, a model was estimated and developed whose results indicate a significant and direct relationship between bank margin profits, the gap between assets and liabilities sensitive to interest rate, and also an inverse relationship between to legal deposit rate and the bank interest.

7. FOREIGN RESEARCHES

Brooke and Short (1979) studied the relationship among interest rates of 60 banks in the local banking market in each country, and concluded that more intensity would lead to higher interest rates. But small coefficients of the intensity variables show that large-scale changes in banks' intensity may reduce interest rates very little.

Burke (1989) examines the profitable performance of banks in 12 countries in Europe, North America, taking into account internal and external effective factors and this study confirmed the risk evasion of banks in a high level of market capacity. Molyneux & Thornton (1992) examined the decisive factors in banks of 18 European countries between 1986 and 1989. This study was also similar to that conducted by Burke and focused more on large banks.

Other methods for performance evaluation of banks are complementary methods of fuzzy AHP and TOPSIS. Secme et al. in 2009, examined the performance of Turkish bank using these methods.

Several studies, such as Daraby (1975), Feldstein (1976), Mundel (1936), Tobin (1965), Nelson & Schewer (1977), and Mishkin (1981,1988), Gibbson (1982) have emphasized the positive relationship between interest rates and inflation. However, some studies have shown that for different time periods the relationship between interest rates and inflation is not maintained and there is no significant relationship between these two variables. These studies include Barsky (1987), Huizinga & Mishkin (1886), Mishkin (1992) and Ghazali, (2003).

8. RESEARCH METHODOLOGY

In this study Excel software was utilized to develop the research question. All calculations were carried out by SPSS 19 software. Before realizing the tests and proving the hypothesis, Kolmogorov-Smirnov (KS) test was conducted to determine normal/non-normal status of collected data and then given the normality of data the parametric test were conducted. To evaluate the effect of interest rates and profitability independently, fitted simple regression line was calculated between two variables in each bank: interest rate and profitability (including profit margin, return on assets, income, shareholders' equity and the cost of interest bearing debt to total debt). Using T-Test, we tried to confirm the significance of the slope of the regression line and then, using the correlation coefficient and intensity coefficient, we determined this

relationship and appropriateness of the regression model. All tests were calculated with reliability index of $\alpha \leq 0.05$.

9. PERIOD OF INVESTIGATION

The research covers the years 2003 to 2010.

10. POPULATION

Population consisted of the financial statements of Sana't & Ma'dan Bank for 2003- 2010 years which were distributed by Central Bank of the Islamic Republic of Iran and by Center of Statistics of Iran.

11. METHODS AND ASSUMPTIONS

In order for us to evaluate the hypothesis, first we examined the profitability measures that have been used in this research to calculate hypothesis:

a. Return on Average Equity

Return on Average equity is an important indicator of profitability and show the increase of wealth of bank shareholders. This indicator is developed when the Bank's net income is divided by average total equity over the years.

$$ROAE^1 = \frac{NI}{AE}$$

NI: Net profit

AE : Average Equities

The study will examine whether there is a relationship between this ratio and reduction of interest rates!

To calculate this measure, the net income of banks was derived from the financial statements and entered in EXCEL Software and then the average equity was calculated for each bank and eventually we get the ratio.

b. Return on Average Assets

This ratio is also an important indicator of the profitability and shows banks' profitability with respect to the value of their assets. According to this, more diverse the combination of banks' assets the lower will be the risk for them. This relation doesn't depend on whether assets produce revenue or not and it considers the assets on the whole. Average return on assets is obtained if we divided net income by average assets of the bank.

$$ROAA^2 = \frac{NI}{AE}$$

NI: Net profit after tax

TAA: Total average total assets

The study will examine whether there is a relationship between this ratio and reduction of interest rates!

¹ - return on Average Equity

² - return on average assets

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In this criterion, the net profit is obtained as in the previous criterion and average asset is obtained by division of the values of assets at beginning and end of the period.

c. Interest Income to Average Interest Earning Assets

This ratio results from the division of assets of interest income to average assets. Assets resulted from interest income are those assets whose income is brought about by interest. Bank advantages, amounts received from other banks from banks and institutions, investment in form of shares and or other assets with interests are considered earning assets. In Iran the most important influential factor is the interest rates on loans. This is the most important ratio in this study, since it exactly checks the changes in bank profitability caused by interest rate. This is one of the two ratios effective on spread rates and has a direct impact on the spread rate.

$$RIITAIEA3 = \frac{II}{AIEA}$$

II: Interest Income

AIEA: average interest earning assets

The study will examine whether there is a relationship between this ratio and reduction of interest rates!

d. Interest Expense to Average Interest bearing Liabilities

This ratio also represents a major element of the financed sources of banks. The lower values of this ratio mean that banks have access to inexpensive resources.

The most important factor affecting this ratio is the interest rate on bank deposits. In calculating this ratio only the interest-bearing liabilities are taken into account. In economies based on market, interest rate on loans and the interest rate paid to depositors are set according to the inflation rate. In the Calculation of this standard, if this standard falls during the years under research, that shows a significant, direct relevance between interest rates and this standard. In the next chapter results are clear and are calculated as follow:

$$RIETAIBL^4 = \frac{IE}{AIBL}$$

IE: Interest expenses (deposits)

AIBL: Average interest bearing liabilities

e. Net Profit Margin

Net profit margin is obtained by dividing the profit margin to value of sales but profit margins in the banking are calculated by dividing bank's net income by total of profitable assets. Higher values of the ratio doesn't mean necessarily mean profitability bank since bank may earned profit through interest-free activities while it really hasn't earned a considerable profit.

Anyhow, high amounts of the standard mean greater profitability for bank in regard to the values of profit earning assets. If the standard increases during the studied period it means a significant, inverse relation between the reduction of the interest rate and the profit margin which is calculated as follow:

$$NIM^5 = \frac{NI}{TIEA}$$

NI: Net Interest

TIEA: Total Income Earning Assets

12. HYPOTHESIS TESTING

At this stage, the criteria obtained in the previous steps are analyzed by using SPSS software to see if the criteria and reduction of the interest rate in industry and mine sector are related or not.

13. EXAMINING THE HYPOTHESIS

Reduction in interest rates in the industrial sector has certain effect on profitability of Sanat-Va- Madan bank.

First Criterion: the effect of interest rates on bank margins in Sana't & Ma'dan bank

According to the results, it is observed that: in this case the test statistic t equals 3/567 and, considering the significance level ($p\text{-value}=0/012 < \alpha=0/05$), this test is of a significant level; therefore, it can be said that there is a significant positive relationship between the reduction interest rates in industry and mine sector and profit margins in the Sana't & Ma'dan Bank.

Second Criterion: the impact of interest rates on the bank's return on equity in Sana't & Ma'dan Bank.

According to the results, it is observed that: the test statistic t is 2/771. and, considering the significance level ($p\text{-value}=0/032 < \alpha=0/05$), the test is of a significant level; therefore, it can be said that there is a significant positive relationship between reduction in interest rates in industry and mine sector and equity in the Sana't & Ma'dan Bank.

Third Measure: the impact of interest rates on the return on assets in the Sana't & Ma'dan Bank.

According to the results, it is observed that: in this case the test statistic t equals 3/021 and, considering the significance level ($p\text{-value}=0/023 < \alpha=0/05$) the test is of a significant level; therefore, it can be said that there is a significant positive relationship between the reduction in interest rates in industry and mine part and return on assets in the Sana't & Ma'dan Bank.

Fourth Criterion: the effect of reducing the interest rate on ratio Interest Income to average interest earning assets.

³ - Ratio Interest Income to Average Interest Earning Assets

⁴ - ratio Interest Expense to Average Interest bearing Liabilities

⁵ - Net Interest Margin

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According to the results, it is observed that: in this case the test statistic t equals 2/749 and, considering the significance level ($p\text{-value}=0/033 < \alpha=0/05$) the test is of a significant level; therefore, it can be said that there is a significant positive relationship between the reduction in interest rates in industry and mine sector and ratio Interest Income to average interest earning assets.

Fifth Criterion: The effect of interest rates on the cost of interest-bearing debt at Sana't & Ma'dan Bank.

According to the results, it is observed that: in this case the test statistic t equals 0/307 and, considering the significance level ($p\text{-value}=0/769 < \alpha=0/05$) the test is of a significant level; therefore, it can be said that there is not a significant positive relationship between the reduction in interest rates in industry and mine sector and the cost of bank debt in the Sana't & Ma'dan Bank.

14. RESEARCH FINDINGS

After examining hypothesis it was found that only one criterion of profitability does not hold for the relation of Sana't & Ma'dan Bank to the reduction in interest rates in industry and mine sector. Results indicate that reduction of interest rate in the industry and mining sector has no effect on the measure of profitability of interest-earning liabilities plus the total debt. This fact is understandable with respect to the instability of amount of the ratio of the liabilities to the total interest bearing debt during the period of the study and this instability is the result of incongruous increase in the average debt during the period. Sana't & Ma'dan Bank lacks only one standard and there are significant effects.

Therefore it can be concluded that the reduction in interest rates in the industrial sector heavily impacts the profitability of Sana't & Ma'dan Bank and has caused a reduction in the bank's profitability over the years 2003 to 2010. On the other hand, it can be claimed that the management of the investments has been done improperly and the management could neutralize the effect to zero if it had diversified the investments.

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