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Modification Of Earning Manipulation Prediction Model With Emphasis On Environmental Variables And Hybrid Artificial Neural Network And Meta-Heuristic Algorithms

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Extended abstract

1- INTRODUCTION

Earning of companies is one of the important factors in economic growth and development and earning manipulation is one of the main challenges of market efficiency that researchers often use accounting data to predict earning manipulation, while non-accounting data also play an important role in predicting earning manipulation. Due to the fact of the conducted research in order to develop the Beneish model has been formed solely because of accounting data, so the effects and consequences of non-accounting variables in all models have been ignored .This study tries to examine the nonlinear relationships of accounting and non-accounting

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variables and examine the effect of both variables simultaneously. The purpose of this study is to measure the predictive power of Beneish model and the development of the Beneish model (DBM) by non-accounting variables and to compare the accuracy of earning manipulation prediction of the research models using a hybrid Artificial Neural Network trained by Particle Swarm Optimization (PSO) algorithm and Imperialist Competition Algorithm (ICA).

2- THEORETICAL FRAMEWORK

The development of the Beneish model (DBM) was done through emphasizing non-accounting variables, including the Information Asymmetry (IS) and Product Market Competition (PMC). (Asgari Alouj et al, 2020). Another study by (Pourali & Kouchaki Tajani, 2021) was conducted to compare the accuracy of companies' profit manipulation predictions using colonial competition algorithm and genetic algorithm. The results showed that colonial competition algorithm with 93% accuracy and 7% error and genetic algorithm with 76% accuracy And 24% error could have predicted the coefficients of the variables of the profit manipulation model. The results also showed that the ability to predict the accuracy of profit manipulation model coefficients by colonial and genetic competition algorithms is more accurate than the prediction of the initial model of Banish (1999) and the modified model of Banish (Kurdistani & Tatli, 2016).

3- METHODOLOGY

This research has been developed the Beneish model (BM) with non-accounting variables including information asymmetry (IS) and competition in the product market (PMC). The data of 184 companies listed on the Tehran Stock Exchange during 2006-2017 has been collected and the prediction accuracy of research models has been compared by two algorithms in training of Artificial Neural Network (ANN): Particle Swarm Optimization (PSO) and Imperialist Competition Algorithm (ICA) in detecting and identification of earning-manipulator companies. In this research, the auditor's report has been used as an alternative solution and the review process has been done such that the audit report of the sample companies has been fully reviewed and studied and if there were the cases as an index of earning manipulation (regardless of the type of report acceptable - adjusted - rejected and no comment), the sample companies would be selected as the earning-manipulator firm and the number 1 would be allocated. Also, if there were no clauses as an index of earning manipulation, for example, the report is adjusted for another reason, it would be selected as a non-earning manipulator and the number zero would be allocated.

4- RESULTS & DISCUSSION

After reviewing and auditing the audit reports of the sample companies of 1840 data-year, 900 data-year companies has been classified at the low level of earning manipulator companies and 940 data -year companies has been classified at the high level of earning manipulator companies. In this study, the prediction power of earning manipulation companies has been investigated by hybrid Artificial Neural Network method and Particle Swarm Optimization (PSO) algorithm and also by hybrid Artificial Neural Network method and Imperialist Competition Algorithm (ICA) and a comparison has been made between the accuracy of the research models. The areas under Receiver operating characteristic (ROC) curve of the Beneish model have been estimated up to 0.6001 and 0.5538 using the hybrid neural

network trained by Imperialist competition algorithm and particle swarm optimization algorithm, respectively. The area under the ROC curve in the Beneish model has been estimated in the range of 0.5 - 0.6 and indicates the Beneish model test has been rejected in detecting and identifying earning manipulator companies.

Therefore, it can be seen that the separation of the two groups of earning manipulator and non-manipulator companies is not significantly different from the separation of the chance model and it can be said that the Beneish model is a completely random model in the Tehran Stock Exchange and cannot be used to identify earning manipulator companies. Also, the best prediction accuracy of the Beneish model has been estimated up to 57.55 and 55.71 percentages using the hybrid neural network method trained by the Imperialist competition algorithm and the particle swarm optimization algorithm, respectively.

5- CONCLUSIONS & SUGGESTIONS

Findings indicate that the prediction accuracy of the proposed model has increased from 57.55 to 63.86 percentages and 55.71 to 59.84 percentages by the ANN-ICA and ANN-PSO, respectively. Development of the model, area under curve (AUC) of ROC has been increased and the prediction error has been reduced to 6.31 percentages by the ANN-ICA and to 4.13 percentages by the ANN-PSO, but the test result is still poor. In fact, the accuracy of model prediction by the ANN-PSO has been improved compared to the ANN-ICA.

However, it can be seen that relying on these variables by itself could not easily identify earning manipulator and non-manipulator companies. Considering that the proposed model with the variables of Competition in the Product Market and Information Asymmetry has not significantly improved the accuracy of the prediction model, it can be seen that there is not a significant relationship between these variables and earning manipulation variable.

In order to judgement whether or not the results of ANN-ICA and ANN-PSO of research models are significantly different, the Wilcoxon test has been performed at a significance level of 5% as the statistical method of non-parametric. The results of Wilcoxon test show that the normal statistic of Wilcoxon test is more than the critical value of 1.64 and the significance level is less than 0.05 in both methods .Also, the average rank has been calculated up to 548.5 before the development of the model and has been calculated up to 5549.7 after the development of the model, so the research hypothesis is confirmed.

Key Words: Imperialist competiton Algorithm, Product competition market, Artificial Neural Network, Beneish Model, Information environment.
JEL Clasification: D53, G17,G3,C45,C61

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The Impact of Adverse Selection and Moral Hazard on Non-performing Loans of Iran's Banking System

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Extended Abstract:

1- INTRODUCTION

Playing the positive role of banks in the economic development of the country requires the health of the banking system. one of the most important criteria for measuring the health of the banking system is the ratio of non-performing loans to total loans. The higher value of this ratio can disrupt the role of banks as intermediaries. Non- Performing Loans (NPLs) are affected by various factors, including adverse selection and moral hazard.

High-risk customers are often willing to receive loans at higher interest rates, and banks due to lack of information about the level of risk-taking of those customers and in order to earn higher interest income, exposed at adverse selection risk by lending to high-risk customers. As a result, non-performing loans will increase.

Moral hazard occurs when bank managers ensure about the possibility of risk transfer of their activity to depositors or shareholders of the bank, so they usually take more risk and lend without proper checking credit of customers. In the other words bank managers do not the required care of choosing customers because they do not endure the consequences of additional risk. Thus, the likelihood of lending to high-risk customers increases, and consequently non-performing loans increase.

2- THEORETICAL FRAMEWORK

In this study we use the ratio of interest income to total loans to show the risk of adverse selection. Because as interest rates rise, the bank's interest income increases, but since high interest rate loans are usually chosen by high-risk individuals, the risk

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of adverse selection increases, and since high-risk individuals are more likely to not to be able to repay, so non-performing loans will increase.

In order to show the moral hazard risk between bank managers with depositors and shareholders of the bank, we use the indicators of liquidity ratio and capital adequacy of the bank, respectively. Regarding the reason for this, high liquidity ratio reduces liquidity risk and increases the ability of bank managers to provide more loans, since depositors do not have the necessary tools to monitor the behavior of managers and managers can transfer the risk of lending to them, so this leads to moral hazard risk.

3- METHODOLOGY

The model of the present study, which is taken from the study of Shahidul Islam & Nishiyama (2019), is presented as follows:

$$NPL_{it} = \alpha + \delta NPL_{i,t-1} + \beta IL_{it} + \varphi LR_{it} + \gamma ER_{it} + \boldsymbol{\omega X_{it}} + \varepsilon_{it}$$

Where i and t indices represent the bank and the time period (year), respectively, and the model variables are introduced as follows:

NPL: Ratio of non-performing loans to total loans.

IL: Ratio of interest income to total loans (adverse selection risk index)

LR: Ratio of cash assets to total deposits (moral hazard risk index between managers and depositors)

ER: Ratio of equity to total assets (moral hazard risk index between managers and shareholders)

X: A vector of other control variables include banking level variables such as return on assets ratio and cost to income ratio, variables within banks such as the concentration ratio index of the three largest banks and macroeconomic variables such as inflation and economic growth.

D: It is a dummy variable that if the bank has ordered facilities, its value is one and otherwise it is zero.

The above model is estimated using data of 19 public and private banks during the period 2008-2015, by system generalized method of moments (system GMM) offered by Arellano & Bover (1995) and Blundell & Bond (1998).

Based on the Arlano-Bond test, the null hypothesis that there is no second-order autocorrelation of disturbances cannot be rejected. Also, based on Hansen test and Hansen difference test, the null hypothesis that there is no correlation between instrumental variables and residual variables is not rejected. Therefore, instrumental variables used in the models are valid. Then, based on the result of the Wald test, the null hypothesis that all coefficients are zero is rejected, and as a result, the validity of the estimated coefficients is confirmed. Based on the above, the results of the estimated coefficients are statistically confirmed and interpretable.

4- RESULTS & DISCUSSION

The results show that during the studied period, the ratio of interest income to total loans has a positive and significant effect on the ratio of non-performing loans to total loans. The increase in the above variable, which indicates an increase in the risk of adverse selection in the Iran's banking system, shows that when lending rates of the bank increase, borrowers with higher risk were more willing to receive loans. Given that the main source of income for banks is their interest income, it is recommended that banks choose their customers with more information to avoid wasting their capital and income. Banks can also be encouraged not to participate in higher risk projects.

Also, according to the results, capital adequacy ratio has a negative and significant effect on the ratio of non-performing loans to total loans.of the studied banks. Therefore, it can be concluded that moral hazard risk between bank managers and shareholders is effective on non-performing loans of the Iran's banking system. It is while that, no evidence of the effect of moral hazard between bank managers and depositors on NPLs is observed. Hence it is recommended that the ratio of capital adequacy be increased by more investment of banks shareholders.

Keywords: Adverse Selection Risk, Moral Hazard Risk, Non-Performing Loans, Banking System, System GMM, Iran
JEL Classification: G21, C23, H81, E44

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Short-term and Long-run Effects of Income Inequality on Banking Crisis in Iran; ARDL Approach

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Extended abstract

1- INTRODUCTION

Banks in Iran, like other developing countries, have a more sensitive role in financing due to the limited activities of other financial institutions. Therefore, the occurrence of a crisis in this sector can jeopardize financial stability. One of the most important signs of a banking crisis is the sudden influx of depositors into banks to withdraw their deposits. Due to government support, the Iranian banking sector has never faced a sudden demand from depositors. However, under the influence of state ownership, the country's banks increased the volume of their loans from the mid-2001s, which led to a high volume of overdue debts, and the Iranian banking system, from the first quarter of 2005 to the second quarter of 2009, is constantly facing crisis.

2- THEORETICAL FRAMEWORK

Given that along with the money market as a tool for financing firms, the currency market is also active, so in a situation where due to high fluctuations in the recent market is an unsafe situation and full of uncertainty in the business environment. It happens that the credit risk of firms increases, and in these circumstances, firms that use credit and bank facilities as a source of financing for the development of production units may have difficulty in repaying these facilities and in As a result, due to the inability of firms to fulfill their obligations, the balance between assets and liabilities of banks is upset and the banking crisis is prepared**.**

3- METHODOLOGY

To investigate the relationship between income inequality and the banking crisis in Iran during the period 1980-2019, the following model, inspired by Ray and Kim's study, has

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been used. In this logarithm model, the ratio of domestic credit to adjusted GDP (real domestic credit) is considered as a dependent variable. The famous Gini index has also been used to show the degree of inequality. Explanatory variables of the model, in addition to the Gini index, include the logarithm of GDP, the logarithm of the volume of liquidity, the logarithm of real gross capital, the logarithm of the ratio of public debt to GDP, the logarithm of the real exchange rate and the output gap. In this study, to investigate the relationship between variables in the Iranian economy, the self-return model with wide interruption and boundary tests have been used.

4- RESULTS & DISCUSSION

The existence of a short-run relationship between the independent variables of GDP, real exchange rate and output gap with the dependent variable of the ratio of domestic credit to GDP is confirmed. In other words, in the short run, with increase in GDP and the output gap of its potential, the amount of domestic credit to production will increase, leading to a banking crisis**.**

In the long run, there is a relationship between all the independent variables of the model and the dependent variable. The results of the relationship between the Gini coefficient and the banking crisis index also show a positive and significant relationship that due to increasing income inequalities and people's demand for facilities, the volume of loans granted increases and debts can be expected to increase, so this issue it will lead to the escalation of the banking crisis in the country**.**

5- CONCLUSIONS & SUGGESTIONS

The results of the model estimate in the short run indicate that there is no significant relationship between income inequality and the banking crisis, but in the long run this relationship has shown a positive effect, so that with a one percent increase in the Gini coefficient, 1.39 percent increase in the ratio of domestic credit to production has led to a banking crisis.

Regarding other variables, it can be said that with increase of production, investment, production gap, banking crisis has intensified, but with increase of exchange rate and liquidity, this effect will have a decreasing trend.

Key Words: Income Inequality, Banking Crisis, Auto Regression Model with Border Distribution Intervals, Iran

JEL Classification: I32 ،G21 ،D31 ،C22

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The Effect of Monetary Policy Uncertainty on Insurance Premiums in Iran

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Extended abstract

1- Introduction

The relationship between the banking and the real sector of the economy has long been considered by economists. The banking sector as the main gateway to monetary policy and the real sector of the economy as the main gateway to the fiscal policy has a significant impact on the country's economic balance. The more coordination between the two sectors, the higher the economic growth. Given the relationship between the performance of monetary policy and the macro variables of the real sector of the economy, any uncertainty in the performance of monetary policy can have adverse effects on the real sector of the economy. One of the factors that monetary policy uncertainty can affect is insurance premiums. Since premium rates are usually based on projected investment income and expected losses (which are themselves exposed to business cycles), it is reasonable to expect a significant correlation between insurance premiums and macroeconomics. Therefore, this paper examines the effect of monetary policy uncertainty on insurance premiums in Iran.

2- Theoretical Framework

Economic theories do not clearly show the effects of monetary policy uncertainty on insurance premiums. Therefore, this is essentially an empirical problem. In general, many economic studies agree that economic policy uncertainty plays an important role in shaping real economic activities such as business cycles, inflation, investment, employment, and economic growth (Bloom (2019); Julio & Yook (2012); Jones & Olson (2013); Kang et al. (2014); Wang et al. (2014); Gulen & Ion

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(2016); Bloom et al. (2018)). For example, Baker et al. (2016) by constructing an index to measure economic policy uncertainty, found that this index harms investment, production, and employment in the United States. The key point that can be made here is that the uncertainty of economic policy has a real effect on the behavior of buying insurance if it has a significant effect on these economic activities. From the perspective of risk aversion behavior, political uncertainty is one of the basic components of insurance premiums to reduce risk. Park et al. (2002) believe that people's risk and uncertainty depend primarily on their understanding of their socio-political environment. Beck & Webb (2013) also believe that political instability may hinder the development of the insurance market, as this affects the economic horizons of potential buyers and suppliers of life insurance products.

3- Methodology

Following Balcilar et al. (2018) we have presented an empirical model to test the asymmetric effects of monetary policy uncertainty on per capita insurance premiums in Iran using the Non-Linear Autoregressive Distributed Lag (NARDL) model for 1971-2018. To measure the uncertainty of monetary policy, there are various indicators such as standard deviation of the moving average, deviation from the trend, and autoregressive conditional heteroskedasticity. Also, studies show that there is no theoretical basis for the preference of one indicator to measure real money supply fluctuations (as a measure of monetary policy uncertainty) over another. Therefore in this study, the monetary policy uncertainty was extracted using the EGARCH model and divided into positive and negative changes.

4- Results & Discussion

The results of the estimation of long-term coefficients for positive and negative changes in monetary policy uncertainty on per capita insurance premiums showed that both long-term coefficients are asymmetric, negative, and significant. Also, there is a positive and significant relationship between per capita income and total per capita insurance premiums in the long run. In the short term, there is no significant relationship between positive uncertainty changes and per capita insurance premiums in Iran, but with a time lag, this relationship is positive. At the same time, there is a negative and significant relationship between negative uncertainty changes and per capita insurance premiums, but with a time lag, this relationship is not significant.

5- Conclusions & Suggestions

The negative impact of uncertainty on insurance premiums suggests that in times of high economic uncertainty, people seek to reduce costs and maintain the value of their assets in the housing, foreign exchange, and gold markets, so their demand for Insurance is reduced. In conditions of economic stability, due to the uncertainty of the life expectancy of the head of the household and as a result of the uncertainty of income, the demand for insurance has increased, which increases the per capita insurance premium. Therefore, given the negative impact of monetary policy uncertainty on insurance premiums, the central bank's relationship with the financial markets must be well managed. The use of communication strategies can become a central bank policy tool in monetary policy. Proper management of these communication strategies can improve the effectiveness of the financial sector by reducing uncertainty in monetary policy. In other words, policymakers must

consider the effects of these decisions on financial markets when formulating monetary policy at the macro level.

Key Words: Monetary Policy Uncertainty, Per Capita Insurance Premiums, Non-Linear Autoregressive Distributed Lag Model.
JEL Classification: C32, G22, O16

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Evaluation of the Asymmetric Impacts of Fiscal Policy and Trade Development on Financial Development in Iran Using the NARDL Nonlinear Model

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Extended abstract

1- INTRODUCTION

Financial institutions play a crucial role in capital accumulation and financial development. These institutions by mobilization of savings; facilitation of trade, diversification and pooling of risks; monitoring of firms and exerting corporate governance; and facilitating exchange play an important role in achieving economic growth. In many empirical studies, the relationship between economic growth and financial development has been considered, and most researchers have identified the accumulation of physical and human capital and total productivity growth as the main channels for the impact of financial development on economic growth (Levine, 1997; Duramany-Lakkoh, 2020).

2- THEORETICAL FRAMEWORK

Empirical studies show that the government spending has traditionally been considered a counterproductive policy tool for stimulating credit. Standard Keynesian and neoclassical theories express that an increase in government spending raises interest rates, thereby lowering private-sector investment. But there is the number of evidence to support the notion that government spending makes it stronger credit markets (Murphy & Walsh, 2018). In contrast, growing evidence from the United States and other advanced economies suggests that government spending could lower long-term interest rates (Miranda-Pinto et al, 2019). These studies indicate a gap in economists' understanding of the relationship between financial stimulus and credit markets.

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Also, Nanforosh & Dizaji (2016) show that government spending has a negative and significant impact on financial development, as well as trade, financial globalization and the quality index of legal institutions have a positive impact on financial development.

3- METHODOLOGY

Considering symmetrical and asymmetrical effects of fiscal policy and trade development on financial development in Iran Using annual data over the period 1973-2017. That, the Johansen-Jocilus method was used to investigate the symmetric effects and the auto-regressive distributed lag (NARDL) model was used to investigate the asymmetric effects. In order to determine asymmetric pass-through of openness and government spending to financial development, we follow the approach of Shin et al. (2014). This approach requires the decomposition of the variable of interest. In this case, we decompose the LTARDE and LGOV variables into positive and negative sub-variables. The partial sums of positive and negative changes in openness are given by $LTRADE^{+}$ and $LTRADE^{-}$, also, partial sums of positive and negative changes in government spending $LGOV^{+}$ and $LGOV^{-}$. where LCREDIT is defined as financial development, LTRADE is degree of openness, LGOV is government spending and LCP is inflation.

4- RESULTS & DISCUSSION

In time-series analyzes, before considering the model's estimation, it is necessary to test the statics variables of the research. ADF test results show that ($LGOV^{+}$) and LTRADE variables is integrated at order zero I(0) and other variables are not stationary at the level. Also, PP test results show that ($LGOV^{+}$) variables is integrated at order zero I(0) and other variables are not stationary at the level (table 1). Therefore, their first-order difference should be used in the Johansen-Jocilus method and NARDL model. The results indicate that co-integration is present. This result is supported by the fact that F-static is higher than the upper bound critical value at 1% critical value. Hence, the null hypothesis of no co-integration can be rejected. The results of the symmetric method show that in the long run, the increase in Government Spending and inflation have a significant negative effect on financial development. The results show that trade development has a positive and significant effect. Also, the results of the VECM model indicated that in each period, 0.078 of the imbalance or short-run error is adjusted towards the long-run equilibrium. Also, the results of the NARDL method show that the positive shock of government spending has a negative effect and the negative shock of government spending has a positive and significant effect on financial development. The positive trade shock has a positive effect and negative trade shock has a negative effect on financial development. Also, the results show that inflation has a significant negative effect on financial development. Finally, the results of the Wald test show that the effects of government spending shocks and trade are asymmetric in both the short and long run. The step toward achieving the research objectives is to examine the stability of the long-run parameter of the NARDL model by using the Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUMSQ) tests following Pesaran et al., (1997). If the plots of these tests statistics stay within the critical bound of 5% level of significance, the null hypothesis of all coefficients of the regression are stable and cannot be rejected. Therefore, it implies that the coefficients in the error-correction model are stable. As observed in Figure (3), the

plots of CUSUM and CUSUMSQ statistics stay within the critical 5% bound for the period.

5- CONCLUSIONS & SUGGESTIONS

The present study evaluated the symmetrical and asymmetrical effects of fiscal policy and trade development on financial development in Iran Using annual data over the period 1973-2017. For this purpose, the Johansen-Jocilus method and (NARDL) model was used to estimate. The results show that in the long run, the increase in government spending (fiscal policy) and inflation have a significant negative effect on financial development. Also, the results show that trade development has a positive and significant effect on financial development.

Keywords: Financial Development, Financial Policy, Iran, Johansen- Juselius Method, Nonlinear Autoregressive Distributed Lags (NARDL)
JEL Classification: E62, E44, F10

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Identify the Earnings Management Tool Used in Free-Usury Banking in Iran: Comparative Evaluation of the Importance of LLP and STGL in the Cornett Approach

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Extended abstract

1- INTRODUCTION

Accounting information in financial markets is used as a basis for capital allocation decisions. As a result, the effects and consequences of accounting information quality are of interest to investors, managers, legislators, and standards developers. Separation of ownership from control in companies leads to information asymmetry between owners and managers. In addition, the theory of rational expectations and the theory of agency show that owners (investors) and agents (managers) have different interests that cause information asymmetry of the type of moral hazard. Control over the cost of borrowing contracts and debt deferral costs are effective incentives in earnings management. Opportunistic managers are therefore motivated to manipulate or manage profits to reduce the likelihood of breach of debt. Also, when business units fluctuate economically and are under adverse pressures, managers try to adjust the company's situation directly or indirectly to affect the amount of profit reflected in the financial statements and cause a positive outlook. Be users of financial statements, especially investors. The set of these measures is interpreted as profit management, which has both positive and negative aspects. The main question of this research, which has an exploratory approach, is which of the profit management tools in the banking system are mainly used by the managers of Iranian banks?

2- THEORETICAL FRAMEWORK

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The issue of profit management in accounting was formed from the beginning of the twentieth century onwards by various researches by accounting experts. Each of these researches has dealt with the subject from specific dimensions and with different expressions such as profit manipulation, profit smoothing and finally profit management. Jensen and McLean have proposed the theory of representation; they defined corporate executives as "agents" and shareholders as "agents". One of the main hypotheses of agency theory is that "agents" and "agents" have conflicting interests and that agents do not necessarily make decisions in favor of agents. According to them, management motivations are in the direction of personal interests, which are the opposite of maximizing the wealth of shareholders. Bank managers, like managers in other industries, have incentives to adjust profits and maximize the wealth of the bank or the manager himself. The only difference is in the methods used to employ the tools in profit management. Of course, since the banking industry is heavily controlled and supervised, it is less likely to manage profits. Nevertheless, concerns about the issue of profit management in banks have received widespread attention in recent years, following the revelation of the collapse and the banking crisis.

3- METHODOLOGY

This research is an applied research and in terms of inference method, it is a descriptive-analytical research. In this research, Kasnik model and special regression methods of unbalanced panel data have been used to calculate and evaluate earnings management in the banking system. In this study, the Cornet model has been used to identify the tools used by bank managers to manage profits. Summarizing the various views on earnings management, it can be interpreted that earnings management is any change, whether a decrease or increase in the reported earnings of the firm without creating appropriate cash flows by management and with the aim of influencing the decision of users of financial statements, including the government and regulatory bodies or investors and shareholders and the company's internal assemblies, financing institutions or other creditors and stakeholders.

4- RESULTS & DISCUSSION

In this section, the results obtained during econometric operations in accordance with the research stages are reported. Considering the continuous trend for each of the sample banks, it can be concluded that mainly bank managers use profit management in one direction for several consecutive years. Of course, this trend is not true for all sample banks; but most sample space banks have followed suit. After estimating the Cornet model, the overall significance of the model and the individual coefficients of the variables have been investigated and confirmed. According to the calculations, the variable cost of doubtful receivables with a coefficient (-0.81) compared to the variable income from investments with a coefficient (0.228) has a stronger effect on the earnings management index and to reduce it. Therefore, the cost of doubtful receivables is introduced as a major tool used by bank managers to manage profits in the Iranian banking system.

5- CONCLUSIONS & SUGGESTIONS

In this research, two goals have been pursued; The first goal, which was to study the earnings management index in the banking system, was estimated using the Kasnik model and by analyzing the trend of changes in optional accruals, the hypothesis of using earnings management methods by bank managers was confirmed. The second purpose of this study was to identify the tools used by bank managers to manage profits and to introduce the main variable used by managers. This goal was achieved by estimation the current model between earnings management index as a dependent variable and LLP and STGL variables as independent variables. The results indicate that the variable cost of doubtful receivables

(LLP) has much more application in earnings management by bank managers in the Iranian banking system than the variable income from investments and contributions (STGL). In view of the above, it is recommended that regulatory bodies in the banking industry, such as the Central Bank, the Monetary and Credit Council, as well as statutory auditors or internal auditors of banks and credit institutions, focus more closely on the reported amount of doubtful receivables. On the other hand, the owners of investment accounts do not have direct access to the bank's performance information, and yet their final return depends on the bank's performance. Therefore, depositors must also receive a separate report in order to perform the managerial duty of management.

Key Words: Accruals, Banking, Earning, Earnings Management, Loan Loss Provisions.
JEL Classification: M41, G24, G32

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