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A Review between Horizon Time of Predicted Profit by Managers and Fluctuations in Macroeconomic Variables

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***Abstract**: The purpose of this study is conducting a review of change macro-economic factors over predicted profit by managers. The population includes accepted companies in Tehran Stock Exchange and time period of study is from 2007 to 2014 years. For this purpose 85 companies among mentioned population were selected considering some criteria and the research hypothesis were examined according extracted information from sample corporations. The obtained results from research hypothesis test by using multiple regression analysis indicates that among independent variables which were evaluated during the study period(include changes in gross domestic product GDP, changes in the trade balance, changes in exchange rates and changes in inflation)only there is meaningful relationship between changes in two variables of exchange rate and annual inflation with horizon time of predicted profit by managers(long term and short term).thus ,it is clear that with the increasing fluctuations in exchange rate and inflation rate the managers prefer predict the short term horizon time for predict profit. On the other hand it was observed that other independent variables (include changes in GDP and changes in trade balance) have no meaningful relationship with predicted horizon time by managers. Results of this study reveals that macroeconomic variables can influence predicted horizon time (short –term and long-term) by managers.*

***Keywords:** Horizon time of predicted profit, macroeconomic variables, profit prediction of managers*

I. Introduction

One of the interaction tools of companies' managers with market is providing information about predicting the profit of the corporation. Hereby the companies could influence firm behavior. Now so many of the real shareholders are active in stock. And largely take decisions on the basis of published information. Although expected that the firm managers inform the market their predictions with high accuracy yet anyway the real performance of companies in many cases has significant difference with predicted financial information (Vahez, 1991).The profit as a guide of divided profit payment the effective tool of management performance measurement and prediction and a device for decision makers assessment has used always by investors, managers and analysts. Also accounting profit is the basis for so many legal and contractual relations thus it has the potential behavioral effects. Therefore accounting profit is so important for investors and they their investing decision makings are put based on the company's profits. Given that the real profit is determined in the end of the year the investors are suffice the declared predictions by firm managers about profit (Setayesh, 1994).

The main purpose of financial reporting is providing the sufficient information for decision making users of financial information. One of the required features for financial and economic information is usefulness in predicting. Prediction helps investors to improve the process of their decision making and decrease the danger of decision making so that Biro believes that the predictions can be done without take decisions yet the slightest decision making cannot be done without prediction (Mashaekhi and shahrokhi, 2007).

Financial reporting may be done in the form of financial statements and other data transfer tools. In addition to the provided information in the financial statements also the revealed information out of financial statements are broadly based on the predictions and management estimates. One of the revealed information out of financial statements is predicted profit by management which reflects management prediction about feature outlook. The studies indicated that management predictions influence stock price, stock market liquidity and analysts' predictions. These results indicate that predicted profit by firms includes information content and is of great importance for decision makers. So because of influence the predicted profit by managers over users decision making the review of dimensions of profit prediction and factors affecting it is of importance. To evaluate the predicted profits by managers we can investigate two following dimensions and factors affecting these two dimensions.

1-the accuracy of predicted profit by managers
2-horizon time of predicted profit by managers

Between these dimensions the accuracy of predicted profit was further taken into consideration by researchers (Moradzade et al, 2013, Haghighat et al, 2011, Kurdestani and Lotfali, 2010, Sarban ha and Ashtab, 2008).
Yet about another dimension less researchers has conducted. However we can divide horizon time of predicted profit by managers into long-term and short-term.
Many factors are influence horizon time of predicted profit by managers which overall these factors are divided into in-firm (nonsystematic) and out firm factors (systematic).in firm factors are the result of policies and strategies of the company and the management could control them. From the other hand outside firm factors are not under control of company management and influence all companies. one of the outside company factors is changes in macroeconomic variables which may influence horizon time of predicted profit by managers. Given the fluctuations in macroeconomic variables of our country during recent years which has done due to outrageous sanctions the review of impacts of these changes on time horizon of predicted profit by managers is more important. Thus it can be concluded that the main purpose of this study is answering to following question: Are fluctuations in macro-economic variables influence horizon time predicted profit by managers?

Theoretical Foundations of the research

Predicted profit by managers is one of the most important revealed figures by companies which in addition of investors has attracted attention of creditors, policy makers and academics. Provided information about country is according on previous events while users needed to future information of the company in addition to that. Management with having reliable and related information make prediction and increase financial efficiency. As a result identification factors that influence decisions related to data revealing by management is the main issue of researchers which can be useful for market policy makers and academics. He and Penman (1989) are believed that some fundamental variables are effective in predicting future earnings. According to researchers using of financial statements information can improve prediction of future earnings.in addition to ambiguity about which of the financial statement information can be an appropriate predictor for future performance of companies, another hypothesis has raised about a more accurate prediction profit by managers. This hypothesis which is provided by researchers such as Kim et al (2014) has referred to position impact of macroeconomic variables in such forecasts. For example in a country such as Iran which is suffering from an economic with high inflation the impacts of macro-economic variables such as interest rate, inflation, GDP on accuracy, frequency and horizon time of predicted profit by managers is clear.as a result according to this hypothesis it is better in countries with unstable economic situation give attention to effectiveness of macro-economic factors in the prediction profit by managers. In general, conditions and operational environment of a company can be influenced by several factors that in a general category these factors can be divided into systematic and unsystematic (Kim et al, 2014). Non-systematic factors are factors that are specific to a particular company. These factors such as new market entry and education and integration with a new company in best conditions can influence only these special companies. Also the most important issue that exists in relation with these factors is that companies has abilities to react to these unsystematic factors and even eliminate them (Naghdi,2014).
However, the systemic factors affect all firms in the economy. The main feature of systemic factors such as inflation and interest rates is that factors not under the control of a particular company. However, companies can respond to systemic factors yet they cannot eliminate them.in most researches in the field of prediction profit by managers there is one-dimentional view and profit prediction only considered in terms of its accuracy and a point which is decreased in this research is the horizon time of prediction profit. Some researchers such as Kim et(2014) are argue that uncertainty of the economic environment of a country could have a direct impact on the horizon time of managers. For example do manager of a stock company could have long-term horizon prediction in conditions that economy of country is influenced by severe fluctuations of exchange rate? Researchers such as Rogers and Van Buskirk2013 are believed that in conditions which quality information that managers possess in relation with future is low the managers are willing to decrease their predictions as much as possible because if manager prediction have lower accuracy their reputation and future career would be in danger. Thus the severe fluctuations of macroeconomic variables can create such an ambiguous situation for the managers. Of course there is another theory in this regard such that when there is uncertainty condition over the economic situation the investors are expecting that managers predict more information about company. Such expectation does additional pressure on managers in order that in addition to possible damage to its reputation consider investors expectations. According to this theory the managers managers which make predictions in conditions of economic uncertainty dictate a better imagination from their ability. However, despite these predictions because today's business environment is turbulent and is accompanied by uncertainty it is expected that these predictions have short-term horizon times. Thus it can be concluded that in uncertainty conditions it must be done appropriate exchange between inappropriate prediction costs and data transmission profit of market timely. Finally, it should be noted that in such a turbulent environment predictions with short-term predictions could be a proper response from the managers to investors demands and other decision makers. Although the managers should consider the risk of achieving an excellent reputation.

An overview of the history and literature of research

Ruland (1979) during of research concluded that large companies compared with small companies due to diverse activitis are able to react in relation to outside companies variables such as fluctuations in macroeconomic factors. Thus they consider long-term time horizon for profit prediction.

Bergman and Roychowdhury (2008) during a research with a title "investors tendencies and company revealing" and by using Michigan stock data concluded that company managers in conditions of economic uncertainty.

Rodgers et al (2009) in his research with a title" Policies of profit prediction by managers and market fluctuations "concluded that predicted profit by managers causes to increase in fluctuations of stock market.

Beyer et al (2010) while discussing the financial reporting environment referred to provide economic reasons predicted profit by the managers.

Bonsall et al (2013) in their research "how managers make predictions in uncertainty economic conditions" concluded that predicted profit by managers has contains useful information about economic situation.

Nikomaram and Gargaz(2009) by identifying factors and assess their impact on profit forecast accuracy by managers and its relationship with stock price fluctuations concluded that among four independent variables of debt ratio, debt ratio to the stock market, average sale and horizon time only two variables debt ratio and time horizon are meaningful in the proposed regression model.

Malakian et al (2010) by study efficient items on predicted profit accuracy concluded that predicted profit accuracy by managers has a reverse relationship with horizon time predicted profit.

Eskandari and Ghaemi (2013) by studying the behavior of corporate executives in profit anticipating concluded that previous performance is effective in the orientation of managers in predict profit.

II. Material and Methods

This research is goal and is of kind of Applied Research and correlation. And research method is after event kind. The statistical model used is multivariate regression which is applied for determine the relationship together factors.

The method of collecting and analysis of data

The required data for measuring dependent variables related to profit are extracted from financial statements and its annexes and information related to financial statement items from compact disks and comprehensive database of companies and Management Research web site and Development and Islamic Studies Stock Exchange are extracted. The data related to independent variables which includes GDP, trade balance, exchange rates and inflation rate are extracted from central bank web site. Also data analysis in two sections of descriptive statistics and inferential statistics and statistical calculations has done by using SPSS and EVIEWS software.

The population and research sample

The population of this research includes all accepted companies in Tehran Stock Exchange which were active in 2001 until 2013. Considering the information close to the time of research and their availability the time period of research is 8 years and has determined from 2007 to 2013.the data related to 2001 to 2006 are considered only to controlling uncertainty in operating environments of companies. The statistical sample was include 85 companies which were selected according to following standards:

- According to time period (2007-2013) the companies should be accepted before 2012 and their named should not be eliminated until end of 2013 from the mentioned list of companies.
- To enhance the contrast with the company elections the end of their financial period should be to the end of February.
- Due to the nature of the different economic industries such as banks, investment companies, financial intermediation from other companies these are eliminated from the list.
- The selected companies should not be stop their activities during research period.

Research model:

The research model is review the relationship between horizon time of prediction by managers and macro-economic variables as following:

Equation: 1

$$= \alpha_0 + \beta_1(\Delta GDP_t) + \beta_2(\Delta Trade\ Balance_t) + \beta_3(\Delta Exchange\ Rate_t) + \beta_4(\Delta In +$$

Which: is horizon time of profit prediction by managers

: Changes of GDP

: Changes of Balance of payments

: Changes of exchange rate

: Changes of inflation rate

Research variables and methods to measure them

The definition and method of calculate dependent variable and independent research variables which are referred in equation 1, is indicated in the following table:

Table 1: researches variables and methods of calculate

variables	Method of calculation
Dependent variable: horizon time of predicted profit by managers	The interval between annual prediction until providing financial statements (ate of the General Assembly) which is defined according to date and number of days are365 which the analysis are done by adjustment these variables.
Independent variable: changes of GDP	The data related to GDP are extracted from Iran Central Bank and these changes are calculated as following: $(\Delta GDP) = \frac{GDP_2 - GDP_1}{GDP_1}$ Which 2 =GDP in the end of financial year -GDP in the first year
Independent variable: changes of payments balance	For calculation trade balance the price export is deduct of import price and for doing this research the changes of payments balance is calculated from the following equation: $\Delta Trade\ Balance) = \frac{Trade\ Balance_2 - Trade\ Balance_1}{Trade\ Balance_1}$ Which in the above equation: =trade balance in the end of financial period = trade balance in the first of financial period
Intendant variable: changes of exchange rate	The data related to the average the exchange rate Dollar, euro and pound to rial for research period is extracted from central bank of Iran and these changes are calculated as following: $(\Delta Exchange\ Rate_t) = \frac{Exchange\ Rate_2 - Exchange\ Rate_1}{Exchange\ Rate_1}$ Which in the above relationship: = The average exchange rate at the end of the period = The average exchange rate at the first of the period
Independent variable: changes of inflation rate	Data related to inflation rate for research period are extracted from Central Bank of Iran and the changes are calculated as following: $(\Delta Inflation_t) = \frac{Inflation_2 - Inflation_1}{Inflation_1}$ =inflation rate at the end of period =inflation rate at the first of period

III. Results

To preliminary analysis of data descriptive statistics of the variables in the image (2) is provided

Most mean between the dependent variable and independent variables is belongs to trade balance and the lowest mean relates to changes of GDP**:**

Table 2: dependent variable and independent variables

Research variables	mean	middle	maximum	minimum
Changes of GDP	0/011	0/067	0/074	-0/067
Trade balance changes	0/27	0/20	0/33	0/14
Exchange rate changes	0/21	0/18	0/32	0/05
Inflation rate changes	0/21	0/19	0/35	0/15
Horizon time predicted profit by managers	0/18	0/11	0/25	0/09

The normality of the dependent variable test

Before test of research hypotheses it should be determine the normality of dependent variable**.** Non-normal distribution of these variables leads to violations of the assumptions of the classical regression model.thus it is necessary to investigate the normality of this variable which this is done through following equation:

Since the statistic calculated probability is less than 5% the null hypothesis of normality of the dependent variable is rejected.in this research for normalizing of data converter Box-Cox and Johnson transfer function is used .the results of Jarkko –Bra before and after data normalizing has given in table 3:

Table 3: the obtained results of Jark-Bra test

Meaningful level	Statistics	Dependent variable
0/003	2/007	Horizon time predicted profit by managers(before normalizing)
0/853	0/625	Horizon time predicted profit by managers(after normalizing)

The results of the research hypotheses

Results of statistical experiments related to used regression model for testing research hypotheses has provided in table 4.

It is necessary to test the lack of co-linearity between the independent variables before experiment. In this research the VIF index (Variance inflation factor) has used for this purpose. If the indicator for the independent variable average is would be nearly 10 it is likely that mentioned independent variable would be collinearity with other variables. Figures provided in table 4 indicate lack of collinearity among variables. However, the check table (4) specifies that amount of Durbin-Watson statistic relies between 1/5 to 2/5 intervals. And it can be concluded that statements presented regression error are not correlated with each other. as it can be seen that in table 4 the amount and probability of statistic F is indicating meaningfulness of regression equation in the 0/95 level. The amount of adjusted determination coefficient is equal to %40. This amount indicates that provided independent variables are able to explain 40% of variance in earnings forecast error by managers.
According to first research hypothesis research there is a meaningful relationship between changes of GDP and time horizon of predicted profit by managers. Given that statistic meaningful level is more than 0/05 there is no reason for Reject the null hypothesis at 95% confidence. Thus there is no meaningful relationship between changes of GDP and horizon time of predicted profit. According to second research hypothesis there is meaningful relationship between trade rate changes and horizon time of predicted profit by managers. Given that meaningful level of t statistics is more than 0/05 there is no reason for rejection null hypothesis at 95% confidence .in the other words there is no meaningful relationship between changes of trade rate and horizon time of predicted profit by managers.

Table 4: Regression model coefficients

=	$\beta + \beta_1(\Delta Trade\ balance_t) + \beta_2(\Delta GDP_t) + \beta_3(\Delta Exchange\ Rate_t) + \beta_4(\Delta I+$				
variable	Regression model	T statistic	Meaningful level		VIF statistic
The width from start	β	0/474	7/762	0/000	
Changes of GDP	β_1	−0/105	−1/301	0/122	1/375
Trade rate changes	β_2	−0/580	−1/264	0/207	1/385
Exchange rate changes	β_3	−2/226	−4/423	0/000	1/722
Inflation rate	β_4	−0/154	−3/254	0/001	1/443
determination coefficient		0/470	F statistics		16/236
Justified determination coefficient		0/400	Meaningful level of F		0/000
Durbin - Watson		1/877			

According to third research hypothesis there is statistically significant relationship between exchange rate changes and horizon time predicted profit by managers .given that meaningful level of t statistics is less than 0/05 there is no reason for confirm null hypothesis at 95% confidence. In other words there is meaningful relationship between exchange rate changes and horizon time of predicted profit by managers' .it means that by increasing fluctuations of exchange rate the managers select short-term horizon time for predict profit.
In the fourth hypothesis stated that there is meaningful statistical relationship between changes of inflation rate and horizon time of predicted profit by managers. Given that meaningful level of t statistics is less than 0/05 there is no reason for confirm null hypothesis at 95% confidence. It means that there is meaningful relationship between inflation rate changes and horizon time of predicted profit by managers. Thus it can be claim that the managers select short-term horizon time for predict profit due to increasing inflation rate.

IV. Conclusion and Discussion

For a long time accounting profit forecast and its changes as an economical change have been considered by analysts and investors. Article 44 of the constitution and privatization process in Iran from the other hand and increase in the number of shareholders and the formulation of the Securities Market Act has attracted the attention of so many people to investment and financial reporting. For these reasons the managers are trying decrease non asymmetry between investors and themselves through providing precise and indiscriminate information. However the most provided information by managers has futuristic nature. It is natural that futuristic reports and information is affected by several micro and macro factors. Except specific factors to the company that affects profit prediction of managers. Something that is hidden from the eyes of accounting researchers is the role of macroeconomic variables and its relationship with horizon time of predicted profit by managers. This study is of the first of researches performed in the field of examine the effects of fluctuations macro-economic variables on the horizon time of predicted profit by managers. This research and similar future studies can provide significant helps in more better perceives of effective factors on profit prediction of managers.in this study by investigate some macroeconomic effective variables such as GDP, trade rate changes, exchange rate changes and inflation rate changes some results obtained that only fluctuations of exchange rate and inflation rate have reverse and meaningful relationship with horizon time of profit prediction by managers. Among main reasons for relationship of exchange rate and manager's prediction we can refer to severe dependence of accepted companies in Tehran stock market to exchange. These companies, especially companies in the petrochemical and automotive industries in recent years were witnessed large movements in exchange rates. Thus managers of these companies have selected short-term horizon time in providing profit prediction of companies. About reverse relationship of inflation rate and horizon time of predicted profit by managers it can be claimed that in recent years due to injustice boycotts imposed to our country the rate of inflation has increasingly raised. Such that mentioned fluctuation in inflation rate has affected horizon time of profit prediction of managers and it causes that managers select short –term horizon time for providing profit prediction. These results are consistent with results of Kim et al (2014) research. However research findings indicated that other independent variables (including GDP, trade rate changes) have no meaningful relationship with horizon time of profit prediction by managers.

Suggestions

According to obtained results of research hypothesis tests and its analysis given to environmental conditions of our country we suggest following practical items;

- Findings of current research is a reason for inform policy makers and editors of accounting standards in order to have more attention to direct impact of some macro-economic variables on managers prediction.
- According to range of macroeconomic variables in our country due to economic conditions due to resulted from imposing injustice boycotts ,it is suggest to investors and other financial statement users that according to findings of current research ,take attention to horizon time of conducted predictions.

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