Journal of Scientific Research and Development 2 (6): 27-31, 2015
Available online at www.jsrad.org
ISSN 1115-7569

The relationship of cash flow prediction and accruals on the return of book value to market value in food industry listed in Tehran Stock Exchange

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Abstract: The prediction of cash flow is very important for internal and external users. Most important aim of financial reporting is presenting information for predicting cash flow. Some experts and authorities in the formulation of the theoretical principles and objectives of financial reporting believe that cash flow can be predicted by accounting interest and its components. The main objective of this research is the effect of cash flow prediction and accruals on return of book value to market in food industry listed in Tehran Stock Exchange during the period of 1999 to 2013. The results of this research indicate that there is relationship between the cash flow prediction and accruals with return of book value to market value.

Key words: Cash flow prediction; Accruals; Return of book value to market; Food industry listed in Tehran Stock Exchange

1. Introduction

Related information to cash flow can be useful to evaluate profitability quality of unit profit and profitability quality points to cash flow and solidarity with it. As the correlation between earnings and cash flows associated with that is higher, the profitability quality will be higher. Cash flow caused by operational activities is one of the main indexes to evaluate the power of trading unit in order to repay loans and keep the operational power of trading unit and repay shares interest without external resources. If some cash flows cannot be limited in one specific rubric, such items are classified as cash flows caused by operational activities (Tariverdi, 2010). On the other hand, one of the effective factors in deciding is suitable information related to decision issue. It can be caused different results for unit issue when required information is distributed among people asymmetrically (transfer information unequally among people). Therefore, before the information being important for decision-maker, the quality of distributing information should be evaluated. Intrinsic value will be different with the value that investors consider in capital market for preferred shares when lack of information asymmetry increased in relation with one company's shares. As a result, real value of companies' shares is different with stockholders expected value (Dyamond and Verchia, 1991).

Future cash flow prediction is an evaluation and analysis method of investment in companies (Krishnan and Largay, 2000). Financial Accounting Standards Board (FASB) and International Accounting Standard Board (IASB) have observed that presenting information to help financial statement users in predicting future cash flow of companies is one of the main objectives of financial reporting (International Financial Reporting Standard, 1987, (IFRS), 2010). In addition, it is recommended generally to present financial statement in direct method.

Standard firms mention that direct method of cash flow components in prediction of future cash flow of companies is better than the method of total operational cash flow (International Accounting Standards Committee, IASC, 1992; FASB, 1987). While a few studies have been dealt with this issue (Cheng and Hollie, 2008; Krishnan and Largay, 2000; Orpurt and Zang, 2009) those are often for limited companies in USA. Cash flows can be presented in two direct and indirect methods. In direct method, major gross operating cash flows and outflows are reported. In direct cash flows components method usually received cashes from customer, cash payment to row material suppliers and employees, pay for other operational costs, received interests and tax payment are reported. These cash flows components might be extracted directly from accounting system and or indirectly from setting income, costs and other items in financial statements (IASC, 1992). In discussions related to pricing, shares markets are not able to predict the low attendance of accruals. If incorrect pricing of accruals is stimulus for abnormal accruals, better information about future expected accruals should be weakened same as incorrect pricing. When analysts predict cash flows in addition to interest, they also have predicted accruals implicitly. If they predict accruals correctly

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in their prediction, then this related information to cash flows can be useful in reducing incorrect pricing of accruals.

According to the presented discussions, the aim of this research is to response to the question as follow:

Is the cash flow prediction and accruals effective on return of book value to market in food industry listed in Tehran Stock Exchange?

2. Experimental background

Partha S. Mohanram (2014) in an article entitled "analysis of cash flow prediction and reducing abnormal accruals" has been dealt with to study this issue. Showed accruals by Sloan (1996) continuously has produced a significant excess returns until 2002, however, after this year, this process has decreased. It is argued that one of the related factors to this reduction is the increase of happened prediction related to cash flows that analysts have done with the prediction of future accruals. In this purpose, negative relationship between accruals and future return in condition of existence of cash flows prediction is weakened. This relationship will be weakened by prediction of primary cash flows. In addition, the effect of reducing cash flows prediction is for prediction related to bigger accruals. These results are based on improving the quality of accruals which reduces manipulation in especial items and cash flows prediction by analysts in evaluating shares is very important in this field.

Shadi Farshadfar and Reza Monem (2013) in an article entitled "further evidence in effectiveness of direct method of liquidity flows components for future cash flows prediction" have been dealt with this issue. They mention that based on previous data before receiving financial reporting standards in the country of Australia, more evidence are presented those show that de-aggregation of operating cash flow to its components increases and improves the ability of general flows of operational liquidity to predict future cash flows. The main findings of this research also show that received cash from customer and paid cash to suppliers and employees are complement each other in increasing the ability for general predict of cash flows components. The results of sensitive tests contain control of membership in industry, company size, profitability, and negative cash flow and duration of operating cash cycle are also confirmed. Generally, the main findings of this research mention this point that direct method cash flow statement should be compulsory.

Radhakrishnan and Wu (2013) have been dealt with the effect of cash flows predictions on incorrect pricing the accruals and they have shown that reduction in incorrect pricing the accruals leads to improve the quality of accruals.

Green et al (2011) mention that due to the evidence related to investment by financing boxes, there are evidences based on the issue that there is relationship between the increases Turnover in excess accruals and managed assets level by financing boxes.

Thaghafi and Hashemi (2004) have been dealt analytically the relationship between operational cash flows and accruals with presenting model to predict operational cash flows. Their findings show that there is significant relationship among operational cash flows and accountant interest and its components. Totally, their findings have coordination with the theory of accountant interest ability and its components in prediction of operational cash flows and also theory of interest ability preference in prediction of cash flows to cash flows.

3. Research method

This research is functional in terms of goal and it is correlation regression in terms of kind of analysis.

The research statistical society is all food industry companies accepted in Tehran Stock Exchange during period of 2008 to 2013.

4. Information analysis

Before estimating model and due to the fact that the method has been used in this model is panel data, therefore, there is variance anisotropy possibly that to solve this problem, adjusted least normal square is used to estimate the model. Also after estimating the model, in order to study the absence of autocorrelation in residuals of model, Durbin Watson statistics and Breusch-Godfrey test are used which the results indicate the absence of autocorrelation in residuals. For this purpose, to study the effect of independent variables on dependent variable in this research, used model in Mohanram's article (2014) is used and it is as follow:

$$RETSB_{t+1} = \alpha_0 + \beta_1 * ROA_t + \beta_2 * \Delta NOA_t + \beta_3 * \Delta FIN_t + \varepsilon$$

and

$$RETSB_{t+1} = \gamma_0 + \delta_1 * ROA_t + \delta_2 * \Delta WC_t + \delta_3 * \Delta NCO_t + \delta_4 * \Delta FIN_t + \varepsilon$$

Dependent variable

Return of book value to market

Independent variables

Operational and financial accruals (operational assets changes, financial assets changes), operational income divided to the average of total assets, changes in working capital WC, changes in non-current operational assets NCO.

$$RETS_{t+1} = \alpha_0 + \beta_1 * ROA_t + \beta_2 * \Delta NOA_t + \beta_3 * \Delta FIN_t + \alpha_1 * CFF + \beta_{21} * \Delta NOA_t * CFF + \beta_{31} * \Delta FIN_t * CFF + \varepsilon$$

and

$$RETS_{t+1} = \gamma_0 + \delta_1 * ROA_t + \delta_2 * \Delta WC_t + \delta_3 * \Delta NCO_t + \delta_4 * \Delta FIN_t + \gamma_1 * CFF + \delta_{21} * \Delta WC_t * CFF + \delta_{31} * \Delta WC_t * CFF + \delta_{41} * \Delta FIN_t * CFF + \varepsilon$$

CFF is the prediction of cash flow, (if companies have had the prediction of cash flows, the number is one and otherwise is zero)however, in the situation of lack of prediction, the year t+1 is used as prediction to study the effect of cash flows prediction.

5. Research findings

5.1. Normal distribution test of research dependent variable

To estimate the parameters of the model, normal least square is used and this method is assumed that dependent variable of research has normal distribution, in a way that abnormal distribution of dependent variable leads to violate from assumptions of this method for estimation and it does not present correct results. Therefore, it is required to test normal distribution of this variable. The normality of residuals of regression model is one of the regression assumptions which show the authenticity of regression tests. Therefore, the normality of dependent variables causes the normality of model residuals (the difference of estimated amount from real amount). So, it is required to control the normality of dependent variable before estimating parameters and if this condition is not established, the appropriate solution for normalizing them should be adopted. This issue in this research is investigated by Kolmogorov-Smirnov (K_S). Zero hypothesis and contrast hypothesis are as follow:

$$\begin{cases} H_0 : Normal \quad Distrbuton \\ H_1 : Not \quad Normal \quad Distributi \quad on \end{cases}$$

If the statistic significant level of this test is more than 0/05 (Prob>.05), H0 hypothesis based on normality of variable distribution is accepted. In Table 1, the results of K_S test for the variable of book value to market in selected companies are presented.

Table 1: The results of normality test of research dependent variable

Significant level) Sig(	Statistics (K_S)		Variable
0/000	3/856		Return of book value to market

The significant level of statistics (K_S) is less than 0/05 for dependent variables of this research, therefore, the hypothesis of H0 based on normal distribution of variables is rejected in confidence level of 95% and it indicates that dependent variables of this research have no normal distribution.

The normality of dependent variables is the necessary condition for regression models; therefore, it is required to normalize the variable before testing hypotheses. In this research, Johnson Transformation is used to normalize data and it is analyzed by Minitab 16 software. The obtained results from K_S test after data normalizing process are as follow:

Table 2: The results of research dependent variable normality after normalize process

Significant level) Sig(	Statistics (K_S)		Variable
0/845	0/751		Return of book value to market

Source: research findings

According to the Table 2, since after normalizing data, the significant level (Sig) of K_S statistics for dependent variable is higher than 0/05, therefore, H0 hypothesis in confidence level of 95% is confirmed and it indicates that dependent variables have normal distribution after normalizing process.

To determine whether using of panel data method in estimating the preferred model is efficient or not, F Limer test and in order to determine which method (Fix effects or accidental effects) is more suitable to estimate, Hasman test is used. The obtained results of these tests are presented in Table 5.

As it is observed in Table 3, the results indicate the rejection of zero hypotheses. Consequently, panel data with fix effects has been accepted. Therefore, to select the method among panel data methods with fix effects and accidental effects method, Hasman test is done. The results related to this test are presented in Table 4.

Table 3: The results of F Limer test

Accepted method	Error level	Statistics
Panel data method	0/000	35/841

Table 4: The results of Hasman test

Probability	Freedom degree	Square statistics	The results of test
0/05	6	30/14	Fix effects

As it is observed in Table 4, the results indicate the rejection of zero hypotheses; therefore, panel data method with fix effects is accepted. Finally, according to the results of F Limer and Hasman tests, the research model is estimated by panel data method with fix effects from equation 1.

To measure the authenticity of model and study the classic regression hypotheses in addition to study the absence of auto linear among inserted variables in model, some test are done in relation with residuals normality, homogeneity of variances, independence of residuals and the absence of clear error model (linear model). Varieties of tests are used to test the normal residual. One of these tests is Jarque-Bera test which is used in this research. The results of Jarque-Bera test indicate that the obtained residuals from model estimation has normal distribution in confidence level of 95%, in a way that the related probability to this test is bigger than 0/05. Another hypothesis of classic regression is homology variance residuals. Is the variances are not homogeneous, linear estimation has not been unbiased and it will not have minimum variance. Breusch-Pagan test is used to study the variances homogeneity in this research. According to the significant level of this test which is smaller than 0/05, zero hypothesis based on the existence of variance homogeneity is rejected and it can be said that the model has variance anisotropy problem. To solve this problem, generalized least square (GLS) is used to estimate. Also, in this research to test non-correlation the residual which is one of the assumptions of regression analysis and it is called autocorrelation, the Durbin-Watson (D_W) test is used. According to primary results of estimating model, the amount of Durbin-Watson statistic has been equal to 1/8 and since it is between 1/5 and 2/5, it can be concluded the residuals are independent from each other. In addition, to test whether the model has linear relationship or not and also whether the preferred model is determined in terms of linear or non-linear correctly or not, Ramsey test is used. According to the results of significant level of Ramsey test (0/7845) which is bigger than 0/05, therefore, zero hypothesis based on linear model is confirmed and model has no stipulated error. The summary of results from above tests is presented in Table 5.

Table 5: The results of tests related to statistical hypotheses of model 1

Statistics Ramsey		Statistics Durbin-Watson	Statistics Breusch-Pagan		Statistics Jarque-Bera	
$P-Value$	F	D	$P-Value$	F	$P-Value$	χ^2
0/7845	0/2427	1.8	0/0097	32/841	0/3394	1/4672

According to the obtained results of F Limer and Hasman tests and also the results of classic regression hypotheses tests, model is estimated by panel data method with fix effects. The results of model estimation are presented in Table 6.

Determine coefficient shows the good estimation of model and used variables shows the power of explanation of model in amount of 48 percent and due to the fact that the method has used in model is panel data method, it is a good number. Durbin-Watson also shows the lack of autocorrelation and it shows the number 1/8. F statistics in this estimation rejects the equality of zero for coefficients. Coefficients signs are also based on presented theory and theoretical framework and based on probability, coefficient indicates the effectiveness of all used variables in this research and they are significant.

6. Conclusion and recommendation

The results show that the effect of independent variables of operating accruals and financial (operational assets changes, financial assets changes), operational income divided to average of total assets, changes of cash flow, non-current operational assets changes have significant effect on the average of dependent variable of book value to market value. On the other words, the effect of increasing operational assets and financial assets on dependent variable of return of book value to market have been significant and negative and it shows that increasing operational and financial assets reduce the lack of confidence and financial risk of stock companies and this issue reduces the crack between market value to book.

Also the results show that the increase of operational income index divided to the average of total assets, the increase of cash flow and the increase of non-current operational assets have had negative and significant effect on the ration of book value to market and it shows the decrease of stock companies' risk and the decrease of differences of book value to market considers as one financial risk index.

Table 6: The results of research first hypothesis test with fix effects method

Probability	t statistic	Standard deviation	Coefficient	Variable
[.000]	8.5534	.043774	.37442	Changes in operational assets
[.002]	3.4463	.047644	.16419	Changes in financial assets
[.000]	9.7999	1.5669	.152156	Operational income divided to the average of total assets
[.000]	7.1156	.1305E-6	.9286E-6	Changes in working capital
[.000]	18.8928	.0029020	.054826	Changes in non-current operational assets
[.000]	15.4514	.4143E-6	.6401E-5	Cash flows prediction
Determine coefficient (R^2)	%48			
Adjusted R^2	%45			
F Limer statistics32/841=		Prob F	0/00	

Source: research finding

The results also indicate that the prediction of cash flows will have negative and significant effect on dependent variable of the ratio of book value to market and it shows that if companies have prediction of cash flows, lack of confidence in financial index will be reduced which causes to attract investment and reduces financial risk and finally, the ratio of book value to market and the crack between book value to market will be reduced.

According to the results which show the effect the increase of financial and operational assets on dependent variable of book value to market has been negative and significant, it is recommended that in order to reduce book value to market, the policies should be made based on increasing financial and operational assets by management.

Also, with considering the results which show the increase of operational income indexes divided to the average of total assets, the increase of cash flow and non-current operational assets have had negative and significant effect on the ration of book value to market, it is recommended that in order to reduce the book value to market, the policies should be made based on increasing the operational income index divided to the average of total assets, the increase of cash flow and the increase of non-current operational assets by the management of stock companies.

With considering the results of research which indicate that the prediction of cash flow also has negative and significant effect on dependent variable of book value to market, it is recommended that the prediction of cash flow should be considered by the management of stock companies.

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