An Investigation on Some Factors Affecting Accounting Accruals Persistence; Evidence From Tehran Stock Exchange (TSE)

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ABSTRACT: The article is going to investigate persistence of accruals in Tehran stock exchange listed companies from year 2008 to 2012. To this aim, a sample of 72 companies for a five year period has been provided. In this research, the accounting accruals is considered to the operational aspect and is decomposed into two parts of sale growth and accounting distortions. Their components are connected to accounting accruals. The first part is focused on the company’s output growth while the second part is focused on the efficiency using the net operating assets turn over. In order to examine research hypothesis, a multiple regression with estimated generalized least square method from the combined data are employed. The findings indicate that increasing accounting accruals decreases their persistence. Also there is a significant positive relation between two sets of sales growth and efficiency using the net operating assets turn over, and accounting accruals persistence. It is also showed that their increasing will increases accruals persistence. However, there is a significant negative relation between the interaction of these component and accounting accruals persistence.

Keywords: Accounting accruals persistence, Sales growth, Efficiency using the net operating assets turnover, Accounting distortions, Net operating assets, Tehran stock exchange

INTRODUCTION

One of the accounting methods that makes the relation of financial statement variables more complicated and also causes different reaction among investors is accrual accounting. Along revenue realization principle, the revenues should be recognized when they are earned, not in the time of collecting its cash. This causes that some financial statements items show appropriate performance and growth of the business which also enable anticipating future returns (Hribar and Collins, 2002). One of the important information which is available to investors that they react to its changes is the companies reported profit. They anticipate future stock return of companies by reported profit and controlling its component, accruals and operating cash flow. Accruals are created directly by accrual accounting based on accounting and financial reporting. Accounting literature has been determined accruals as working capital changes. Therefore accruals are a representative for companies' growth and investment. To prove this claim there should be a correlation between invest in working capital and other business activities related to the company's growth. Understanding the properties and characteristics of accruals is almost one of the main goals of financial accounting research. One of the accruals features is the persistency of these item. When investors state their expectations of companies’ profit, they generally tend to evaluate the persistency of accruals more than reality and the persistency of cash flows less than reality. According to the mentioned properties of accruals, measuring the amount of reduction or increasing their persistency by decomposing the accruals and the component effects is expected. Even managers and investors use the results to focus on time recognition and prediction of accruals when evaluating companies' performance, liquidity and solvency.

Theoretical Foundations

The main base of accrual accounting is identifying, measuring assets and liabilities and also representing their non-cash changes. One of the most important aims of financial accounting researches is to investigate how accruals can help investors to make decisions. According to this research, accruals components are decomposed into companies' activity growth and accounting distortions. The components of growth and
accounting distortions are connected to accruals. The first part is the company's output growth while the second one is considered the efficiency using the net operating assets turn over.

Growth factors of a company are sales growth, assets growth, production growth and etc. Sales growth is considered as a growth factor in this article. Accounting distortions also include showing inventories more than reality, overstatement in accounts receivable and intentional manipulation of financial statement items by management. In order to reduce these accounting distortions, an efficient usage of assets could be effective. Determining a relation between accruals decomposed into two parts of sales growth and the efficiency using the net operating assets turn over would be a notable issue. Therefore the aim of this research is to investigate the effects of sales growth components and the efficiency using the net operating assets turn over on persistence of accruals based on new findings in Tehran stock exchange listed companies from 2007 to 2013.

Research History

Fairfield et al. (2003) did not find any statistical difference in negative relationship between working capital accruals and long term accruals with future earnings performance and stock returns. According to these findings, they guessed the interaction of company's growth and low rate of economic profit with decreasing final return in new investment caused less persistence of accruals. Otherwise less persistency of accruals is related to growth component of a company.

Most studies have been done by Richardson et al. (2006) about companies' growth and accounting distortions for accounting accruals and profitability. They investigated the possibility of growth component by investment growth is high. Against companies with the greatest reduction in efficiency are among those companies with the highest accounting distortions in assets component. The results showed that both component of growth and efficiency effect on less stability of accruals, although the efficient ratio is more.

Haghighat and Iranshahi (2010) examined investors reaction to the aspects of accruals persistence. Their findings indicate that there is a wrong reaction to accruals from investors in Iran stock market. They also indicate that accruals persistence is not the reason of this aberration. They showed that companies with higher accruals may use them in order to swell the current year profit, opportunistically. Besides, a negative relation between accruals and future profit growth happens because of low persistence of accruals and accruals reversal in future years.

Kim and Qi (2010) made a research on quality of accruals, stock return and macroeconomic conditions. Their estimates resulted that there is no fundamental risk on a potential relationship between accounting distortions and future returns. Companies with high (less) accounting distortions should relate to future returns negatively (positively) which is based on lower (higher) risk. However, the evidence of literature research shows that companies with higher accounting distortions includes higher risk than companies with lower one.

Rezazadeh et al. (2011) considered the role of temporary accounting distortions in reduction of accruals persistence. Their results indicated that accounting distortions are an important reason in reducing persistence of accruals. On the other hand, the results demonstrated that persistence of accruals are increased by sales growth and are decreased by efficient using of assets.

Khani and Sadeghi (2013) studied the effect of accruals reversal, persistency and anomaly on earnings. They separated the accruals into good and bad accruals. Then they tried to examine the effect of each one on accruals persistence and stock earnings and return predictability. Their findings indicate that there is a significant relation between accruals and working capital fluctuations. Also they found that sales growth, inventories and its writing down allowance are negatively related to accruals. On the other hand they did not find any significant relation between accruals assessment error and accruals persistency.

Donglin (2014) discussed about the complementary components of accruals accounting, including accounting distortions and the company's growth on accruals persistence. Unlike Richardson's results, His evidence proved less persistency of accruals not related to accounting distortions and both have a positive impact on future earnings and not to future profitability.

Doukas and Papanastasopoulos (2014) considered the effect of persistency and anomaly of accruals on future performance of companies in the U.K. stock market. The results illustrated a significant negative relation between accruals and future profitability and the stock return. These researchers also demonstrated that the effects of accruals on performance of future profits is only by the components which are related to accounting distortions. The effects of accruals on the stock price performance is related to both operational components of accruals including sales growth and accounting distortions.

Statistical analysis

Data used in this article are collected from Tehran stock listed companies' databases including financial statement and its notes, Stock Exchange Website and a financial software (named Rahavard Novin).

Statistical analysis of this research are done by Eviews7 econometric software. The statistical sample includes Tehran stock exchange listed companies from year 2008 to 2012. Estimating most of the variables
need the information of last year and future one. Therefore data of financial year of 2007 and 2013 were collected.

Companies of this sample need to contain the following conditions:
Samples have to exist in Tehran stock exchange listed companies from 2007 to 2013 and did not egress it in this time. Also their financial statement should be available entirely.
Fiscal year of the samples end to the March of each year (last month of solar year) and the company did not change it.
Samples should not be including investment companies, financial intermediary, bank and Insurance companies, holdings and leasing.
Operating income and net operating assets of the sample companies should be positive.
According to these conditions, in this study 72 companies and 360 observations were sampled for each variable.

Research hypothesis
According to theoretical and literature foundations, following hypothesis are proposed:

The first hypothesis (H1)
There is a negative significant relation between accruals and their persistence.

The second hypothesis (H2)
There are significant relations between sales growth, efficiency using of assets, and interaction of these components and persistence of accruals.

Based on the studies made on previous research and their statistical findings, the role of current year’s return of net operating assets on stating future year’s one and making stronger relation between current and future year’s return of net operating assets which has a negative relation with accruals is considered as the persistency of accruals.

RESEARCH METHOD

According to the goal of this article, its application and the method of collecting the data, current research method is descriptive and correlation method. To test the first and second main hypothesis multivariate regression models is used.

To test the first hypothesis of this study, according to researchers’ point of view as Richardson et al. (2006), Donglin (2014) and Doukakis and Papanastasopoulos (2014), multivariate regression model is used as following:

\[ RNOA_{t+1} = y_0 + y_1 RNOA_t + y_2 ACC_t + u_{t+1} \]

Where:
- \( RNOA_{t+1} \) is Return on Net Operating Assets in year \( t+1 \).
- \( RNOA_t \) is Return on Net Operating Assets in year \( t \).
- \( ACC_t \) is All the operating accruals in year \( t \).

To test the second hypothesis of this study, according to researchers’ point of view as Richardson et al. (2006), Donglin (2014) and Doukakis and Papanastasopoulos (2014), multivariate regression model is used as following:

\[ RNOA_{t+1} = y_0 + y_1 RNOA_t + y_2 SG_t + y_3 AT_t - \Delta + y_4 (SG_t * AT_t) + u_{t+1} \]

Where:
- \( RNOA_{t+1} \) is Return on Net Operating Assets in year \( t+1 \).
- \( RNOA_t \) is Return on Net Operating Assets in year \( t \).
- \( SG_t \) is Sales growth in year \( t \).
- \( AT_t \) is Ratio of net operating assets turnover (efficiency using the net operating assets turnover) in year \( t \).

The method of calculating variables
In this study, operational approach is used to calculate the accruals based on presented relation by Richardson et al. (2006).

The following table shows approach of calculating the variables.
Table 1. Definitions and calculating method of variables

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Variable name</th>
<th>Calculating method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RNOA</td>
<td>Return on net operating assets</td>
<td>operating income</td>
</tr>
<tr>
<td>ACC</td>
<td>Accounting accruals</td>
<td>net operating assets of year t - net operating assets of year t - 1</td>
</tr>
<tr>
<td>SG</td>
<td>Sales growth</td>
<td>sales of year t - sales of year t - 1</td>
</tr>
<tr>
<td>AT</td>
<td>Efficiency using of assets</td>
<td>net operating assets of year t</td>
</tr>
</tbody>
</table>

Findings and research results

Descriptive statistics

Table (2) presents descriptive statistic of all the variables.

Table 2. Descriptive statistic of variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RNOA_t</td>
<td>360</td>
<td>0.0096</td>
<td>6.6752</td>
<td>0.3671</td>
<td>0.5302</td>
</tr>
<tr>
<td>RNOA_t+1</td>
<td>360</td>
<td>0.0060</td>
<td>6.6752</td>
<td>0.3869</td>
<td>0.5696</td>
</tr>
<tr>
<td>ACC_t</td>
<td>360</td>
<td>-0.7296</td>
<td>3.5294</td>
<td>0.2187</td>
<td>0.4556</td>
</tr>
<tr>
<td>SG_t</td>
<td>360</td>
<td>-0.9054</td>
<td>7.7851</td>
<td>0.2387</td>
<td>0.5866</td>
</tr>
<tr>
<td>ΔAT_t</td>
<td>360</td>
<td>-0.9100</td>
<td>6.6353</td>
<td>0.1140</td>
<td>0.6649</td>
</tr>
</tbody>
</table>

Reporting results of statistical tests

Lymer’s F-test results showed that multivariate regression technique of cross-sectional data (data panel) should be used to all the research models. On the other hand, Hausman test is used to choose the methods of random and fixed effect to estimate regression model in using panel data. The results showed that fixed effects panel data methods should be used.

The results of hypothesis testing

The results of first main assumption

Table (3) shows the result of first research hypothesis estimate used fixed effects model.

Table 3. The result of analysis of testing first hypothesis

<table>
<thead>
<tr>
<th>Description</th>
<th>First hypothesis- first pattern</th>
<th>Coefficient</th>
<th>T- Statistic</th>
<th>P- Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td></td>
<td>0.326584</td>
<td>13.58978</td>
<td>0.0000</td>
</tr>
<tr>
<td>RNOA_t</td>
<td></td>
<td>0.179688</td>
<td>2.734946</td>
<td>0.0066</td>
</tr>
<tr>
<td>ACC</td>
<td></td>
<td>-0.025569</td>
<td>-2.937262</td>
<td>0.0036</td>
</tr>
<tr>
<td>R²</td>
<td></td>
<td>0.870</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adj. R²</td>
<td></td>
<td>0.837</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DW</td>
<td></td>
<td>1.889</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F- Statistic</td>
<td></td>
<td>26.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P- value</td>
<td></td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dependent variable</td>
<td></td>
<td>RNOA_t+1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 indicates the results of first hypothesis which estimate by fixed effects model. ACC coefficient is negative because of a negative relation between all operating accruals (ACC) and return on net operating assets. So that increasing the amount of operating accruals decreases their persistence. Durbin-Watson statistic of this model is 1.889 which shows there is no autocorrelation problem. F-Statistic and its significance level indicate that fitted regression model on 99% confidence level is significant.

According fitted model Adj.R², one can claim 83.7% of dependent variables’ changes (Return on Net Operating Assets) proved by Explanatory variables. Therefore the main hypothesis of the article is accepted and there is a significant negative relation between accruals and their persistence.

The result of second main hypothesis

Table (4) shows the results of second hypothesis (pattern) and the relationship between sales growth, efficiency using of assets and their interaction with amount of accruals persistence.
Table 4. The results of analysis of testing second hypothesis

<table>
<thead>
<tr>
<th>Description</th>
<th>Second hypothesis- second pattern coefficient</th>
<th>T- statistic</th>
<th>P- Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.199</td>
<td>17.446</td>
<td>0.000</td>
</tr>
<tr>
<td>RNOA_t</td>
<td>0.434</td>
<td>21.883</td>
<td>0.000</td>
</tr>
<tr>
<td>SG</td>
<td>0.146</td>
<td>55.765</td>
<td>0.000</td>
</tr>
<tr>
<td>∆AT</td>
<td>0.026</td>
<td>11.029</td>
<td>0.000</td>
</tr>
<tr>
<td>SG * ∆AT</td>
<td>-0.005</td>
<td>-4.138</td>
<td>0.000</td>
</tr>
<tr>
<td>AR(1)</td>
<td>-0.358</td>
<td>-9.511</td>
<td>0.000</td>
</tr>
<tr>
<td>R²</td>
<td>0.795</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.757</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DW</td>
<td>2.179</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F- Statistic</td>
<td>23.673</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P- value</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dependent variable</td>
<td>RNOA_{t+1}</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table (4) presents the results of second hypothesis' estimate by fixed effect model. The variables' coefficient SG and AT are positive, because there is a direct relation between sales growth and also efficiency changing in using assets and return on net operating assets. So that increasing sales growth and efficiency changing in using assets increase the amount of persistence of accruals.

The interaction component coefficient of operating accruals (sales growth and efficiency) is negative and it indicates that there is a negative relation between interaction of sales growth and efficiency components and return on net operating assets. On the other hand increasing (decreasing) of accruals component interaction decreases (increase) their persistence. Durbin-Watson statistic of this model is 2.179 which shows that there is no autocorrelation problem.

F-Statistic and its significance level indicate that fitted regression model on 99% confidence level is significant. According fitted model Adj.R², it is proved that 75.7% of dependent variables' changes (Return on Net Operating Assets) stated by Explanatory variables. Thus the main hypothesis of the article is accepted and there is a significant relation between sales growths and efficiency changing in using assets and Return on Net Operating Assets.

To correct and complete Durbin-Watson statistic and also to determine autocorrelation of rth order, autocorrelation Breusch-Godfrey test is done for all of research models. Time autocorrelation of first model have solved by weighted least square (WLS) and the second one by AR(1).

CONCLUSION

This article examined persistence of accruals in Tehran Stock Exchange listed companies on the implications of sales growth and accounting distortions. The results of first fitted models showed that there is a negative significant relation between accruals and their persistence.

The negative coefficient of accruals variable proved the negative relation of accruals with its persistency. So that the increasing (decrease) the amount of accruals decrease (increase) its persistency.

As it mentioned in research hypothesis section, the role of current year’s return of net operating assets on stating future year's one and making stronger relation between current and future year's return of net operating assets which has a negative relation with accruals is considered as the persistency of accruals.

The first model results indicated that stronger relation between the current and future returns prove the persistency of accruals. Therefore the lower amount of accruals shows more persistency. The results of this model are consistence with the results of researchers such as Richardson et al. (2006), Rezazadeh et al. (2011), Donglin (2014) and Doukakis and Papanastasopoulos (2014).

The results of the second fitted model demonstrated that there is a significant relation between accruals components, their interaction and the persistence of accruals. Being positive of mentioned components' coefficient suggest that sales growth and changing efficiency using of assets are related directly to the future return on net operating assets. As well increasing sales growth and also change in efficiency using of assets increase persistence of operating accruals.

The interaction component coefficient of operating accruals is negative and it shows a negative relation between interaction of sales growth component and efficiency and future return on net operating assets. In Other words increasing (decreasing) of interaction components of operating accruals decrease (increase) their persistency.
The results of efficiency component and its effect on increasing the amount of persistence of accruals are compatible with Rezazadeh et al. (2011) and Doukakis and Papanastasopoulos (2014); while the results are incompatible with Richardson et al. (2006) research’s results.

The results of sales growth component are incompatible with the results of Richardson et al. (2006), Rezazadeh et al. (2011) and Doukakis and Papanastasopoulos (2014) researches and sales growth has been increased accruals persistence during research period.

To sum up, the interaction component coefficient of sales growth and efficiency are negative in this research and proved an inverse relation between interaction components and the amount of accruals persistence. The results are compatible with Richardson et al. (2006) and are incompatible with Rezazadeh et al. (2011) and Doukakis and Papanastasopoulos (2014) research results.

Suggestions

An important factor in reducing persistence of accounting accruals companies is accounting distortions. According to the results of this article, it is suggested to managers of exchange listed companies that use assets, especially operating assets, more efficient. It will reduce accounting distortions of assets and inventories, make accruals more persistence. So that they can make proper decisions about accruals.

It is suggested to futuristic researchers that by considering new researches and providing a pattern which includes operating loss for calculating return of net operating assets extend their sample to the companies with operating loss.

REFERENCES


