The Effect of Discretionary and Non-discretionary Accruals on the Value of Listed Companies in the Tehran Stock Exchange

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ABSTRACT

Assistance to investors is considered as primary aim of financial reporting for economic decisions. Investors determine value of the company they have invested in or will invest in to make economic decisions. Financial accounting standards board (FASB) about this aim in conceptual statement number 1 say financial reporting must provide information which is needed for potential and actual investors, creditors and other users, so they can make decisions about investment, financing and the same matters. Although the financial accounting standard boards (FASB) have understood the importance of financial statement data, the conceptual statement does not offer any guidance on how to use it. In this paper, we studied the role of accruals in determining firm value from 2004 to 2008 and we used Tobin Q ratio to determine the value of the listed companies in the Tehran Stock Exchange. Moreover, to estimate α1, α2 and α3 parameters and determine accruals based on adjusted Jones model, we used Excel and Eviews software, and regression models for panel data. According to the results:

1. Discretionary accruals do not have a significant impact on firm value.
2. Discretionary accruals do not have a significant impact on firm value.
3. Non-discretionary accruals have a significant impact on firm value.

Generally, the results indicate accruals do not play an important role in Iran Capital Market.

INTRODUCTION

The creation and development of big industrial and commercial enterprises is a specific feature of our age. Transparent and comparable financial information is the basic pillar of accountability and informed economic decisions. Owners of capital, creditors and other users need relevant and understandable financial information for making decisions about buying and selling, keeping stock, loaning, estimating managers’ performance and other important economic matters. Achieving long-term and ongoing economic growth requires mobilizing and allocating resources at the national economy level and obtaining this is not easy and possible without help of financial markets, especially a broad and efficient capital market. An efficient financial system in the distribution of capital and financing play a fundamental role in a healthy economy; hence, capital market (stock exchange) is a complete and an official market that activities such as buying and selling shares of companies or government bonds are under certain rules and regulations. Legal protection of holders of savings and frozen assets and regulatory requirements for applicants of capital is an important characteristic of stock exchange. On one hand, stock exchange is collection center of savings and liquidity of the private sector in order to finance long-term investment projects and on the other hand, it is a safe, official reference for owners of frozen savings (investors) to seek a relatively good and safe place for investment and operate their surplus funds for investing in companies. Efficient allocation of capital is one of the primary roles of stock exchange; to make resource allocation happen, investors need information to make decision about buying and selling shares. This information usually exists in financial statements that are being prepared by accountants. Hence, investors can maximize their revenues when they have such information. To maximize revenue, investors must use valuation models. Valuation models try to facilitate investors’ decision-making process by relating accounting data to market value.
Statement of the problem:

Shareholders for making decisions about selling and buying shares of company need information to determine the values of securities. The main role of accounting is providing necessary information for users, especially for valuing companies. Users can use accounting data to determine the value of their shares. Hence, information provided by accountants supposedly must meet information needs of users who want to determine the value of firms and forecast future earnings and operating cash flow of their companies. In this case, we can say accounting information is useful. Accounting must utilize the base of accrual accounting in order to offer shareholders useful information. Accrual accounting is one of the bases of accounting that provides financial reporting and management performance assessment. Accrual accounting by giving information on earnings, book value of equity, dividends, etc. helps us to determine the value of our firms. For the first time, financial analysts stated the idea of the ability of accounting data in determining the value of firms. Analysts use fundamental analysis and technical analysis to assess securities. Fundamental analysts are trying to determine the intrinsic value of stock by studying factors that are related to the value of a company. Securities analysts and assessors, based on fundamental analysis for determining the intrinsic value of shares of companies, use several models such as dividend discount model and price-earnings (P/E) ratio [3].

Tobin Q ratio is being used for estimating investment projects. When the index of Q is more than one, there is plenty of incentives to invest and it shows valuable investment opportunities. When index of Q is less than one, invest will be stopped. There are several methods for calculating Q and the simplest method is the ratio of short-term debt, long-term debt and the market value of equity to book value of assets.

Usually, using accrual basis leads to difference between reported operating income and net cash flows caused by operations, and report of some accruals in financial statements. A part of accounting profit is cash, i.e. cash from operations of a firm (cash flow) is in this profit and accruals (the difference between profit and cash flows) create one part of it. Accrual part of earnings is more important in assessing a company performance than its cash part. Achieved cash during a financial period does not count as related information because it has problems such as accordance and schedule that may lead to incorrect measurement of company performance. Generally accepted accounting principles have some guidelines to lessen such problems, increase accuracy in measuring corporate performance by using accruals, and correct scheduling problems and determine cash flow in accounting earnings. Accruals of accounting income are divided into two components: discretionary and non-discretionary. Discretionary accruals are those ones that management can manipulate them. Accruals cause difference between profit and cash flows; thus, if we assume cash flows are not being manipulated, the only way to manipulate them is increasing or decreasing discretionary accruals. Results of some studies indicate accrual of income and its components have an impact on stock returns of firms, their market value and their cost of capital [4].

Capital markets are suitable for investors with different interests. Investors need some special tools to estimate potential and actual investments that exist in these markets.

A firm size determines the volume and extent of activities of the company. Bigger companies due to more access to product markets and economies of scale of production have lesser business risk and show more resistance to adversities of business. Several indices determine a firm size. Some of them are value of assets, amount of sell, value of stock market, etc. In this paper, by firm size, we mean the total value of the assets of the company [2]. Profitability is another variable that we will study its relation with value of a company in the article.

Research objectives:

Since resources and investment opportunities are limited, investment decisions should be based on scientific principles and should be made carefully; therefore, any investment will face an analysis and each investment analysis requires financial information. The main purpose of financial reporting and accounting is providing information that leads to beneficial trade and economic decisions. We explained accounting information and accruals in the state of the problem. Given the mentioned factors, the main objective of this research is to study the correlation between accruals and valuation of stock of firms. Herby, investors of capital market could apply a more detailed analysis on investment. Other objectives of the research are as follows:

1-Providing some conditions for investors to make a better and more rational investment decisions
2-Providing one of the conditions of an efficient market, that is rational decision-making in long run

Research background:

Dechow and Dichev [8] for estimating the performance of firms in a time-series, studied the role of accruals. Since accruals require sales and forecast of future cash flows, if errors of prediction of accruals increase, the quality of accruals and profit lessens. They concluded, the features of a company such as absolute value of accruals, length of operating cycle, standard deviation of sell, operating cash flows and profit, and firm size can be used as some tools for assessing the quality of profit. Kordestani and Roodmehshin [5] studied the relevance of cash and accrual components of accounting profit to the value of a company market. Accounting
earnings of financial statements can be divided into two components: cash and accrual. For this paper, we considered operating cash flows as cash component of earnings and changes in accounts receivable, changes in inventories and changes in account payable as three main components that comprise accrual part of interest. We considered book value of equity and return on equity as variables that show the interaction between financial statements, as control variables. For the hypotheses testing, we used two statistical methods, combination and cross-sectional data of financial information of 102 listed companies in the Tehran Stock Exchange from 1998 to 2003. According to the results, cash components of accounting earnings are able to forecast and explain the value market of a company, but three accrual components of accounting profit (changes in accounts receivable, changes in inventories and changes in account payable) of the research, are unable to predict and explain the value of a company. Hence, there is no correlation between accrual components of accounting profit and the market value of a company; however, there is a correlation between cash components of accounting profit and the market value of a firm and it has greater benefit than accrual components.

Research methods:
Since the main objective of this research is explanation of the impact of accruals on firm value, we can say it is an applied research. Moreover, its method is cross-correlation, because on one hand it studies the current situation and describes the previous situation regularly and systematically, and on the other hand, discovers or determines the correlation between different variables by regression analysis.

We used F-Limer test to determine the kind of data, and Fisher’s F-test, Student’s t–distribution and adjusted coefficient of determination for the hypotheses testing.

Research variables:
Dependent variable:
One of the variables for the hypotheses testing is \( TQt \), the ratio of market value to book value of assets in year \( t \). When the calculated index of a company is more than one, there are many incentives for investment, but when it is less than one, the investment will be stopped.

Equation (1)
\[
TobinQ = \frac{(M.VofEquity + B.VofAssets) - B.VofEquity}{B.VofAssets}
\]

\( M.VofEquity \): market value of equity \\
\( B.VofAssets \): book value of assets \\
\( B.VofEquity \): book value of equity is return of equity.

Independent variables:
1. Total accruals (TA):
\( TA_t \): total accruals in year \( t \) and it will be achieved from net income minus cash flows resulting from operating activities.

Equation (2)
\[
TA_t = NI_t - CFO_t
\]

2. Non-discretionary accruals (NDA):
They are those components that management cannot manipulate. It means these items are imposed during ordinary activities.

We use modified Jones model to calculate non-discretionary accruals.

Equation (3)
\[
NDA_t = a_1 \left( \frac{1}{A_{t-1}} \right) + a_2 \left( \frac{\Delta REV_t - \Delta REC_t}{A_{t-1}} \right) + a_3 \left( \frac{PPE_t}{A_{t-1}} \right)
\]

NDA\(_t\): non-discretionary accruals in year \( t \) and they are being calculated based on logarithm of assets. \\
REV\(_t\): is revenue in year \( t \) minus revenue in year \( t-1 \). \\
PPE\(_t\): it is property, plant and equipment at the end of the year \( t \). At-1: assets at the end of year t-1.

3. Firm size (size):
According to some studies, when the size of a firm is bigger, the predictions its management offers, are more credible and they have more credibility to analysts and investors. Management of big companies offer information that is more detailed because they are under surveillance and subjected to investigations that are more detailed. Hence, investors rely on their predictions with greater peace of mind.

The size of companies is an index to create data. There is a positive correlation between firm size and predictions of companies’ management and their values [7].
Companies with larger dimensions offer information that is more accurate and due to that, their information is considered as more reliable [10].

4. Profitability (PROF):
   Profitability in year \( t \) that is being measured based on rate of return on assets. This criterion occurred in a system called the DuPont system and have considered as a basis of performance of companies.
   Equation (4)
   \[
   \text{Ratio of return on asset} = \frac{\text{net income/assets}}{\text{income/assets}}
   \]

5. Dividends:
   They are financial constraints that have measured by dividend payments. If a company pay dividend, the amount is one, otherwise, it is zero.

The research hypotheses:
We used three models for the data analysis.

Equation (5):
Model 1
\[
\text{TQ}_t = \sigma_1 + \sigma_2 (\text{TAt}) + \sigma_3 (\text{PROF}) + \sigma_4 (\text{FC}) + \sigma_5 (\text{Size}) + \varepsilon
\]
Model 2
\[
\text{TQ}_t = \sigma_1 + \sigma_2 (\text{DA}) + \sigma_3 (\text{PROF}) + \sigma_4 (\text{FC}) + \sigma_5 (\text{Size}) + \varepsilon
\]
Model 3
\[
\text{TQ}_t = \sigma_1 + \sigma_2 (\text{NDA}) + \sigma_3 (\text{PROF}) + \sigma_4 (\text{FC}) + \sigma_5 (\text{Size}) + \varepsilon
\]

TA: total accruals
DA: discretionary accruals
NDA: non-discretionary accruals
PROF: profitability
Size: firm size

Table 1: Results of the estimation of the first model.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Standard error</th>
<th>t-static</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total accruals (TA)</td>
<td>0.037008</td>
<td>0.035288</td>
<td>0.481970</td>
<td>0.5834</td>
</tr>
<tr>
<td>Profitability (PROF)</td>
<td>-2.296628</td>
<td>0.724064</td>
<td>-3.171857</td>
<td>0.0033</td>
</tr>
<tr>
<td>Financial constraints (FC)</td>
<td>0.629601</td>
<td>0.259050</td>
<td>2.430419</td>
<td>0.0029</td>
</tr>
<tr>
<td>Firm size (Size)</td>
<td>-1.062310</td>
<td>0.234559</td>
<td>-4.528960</td>
<td>0.0003</td>
</tr>
<tr>
<td>First-order autoregressive variable AR(1)</td>
<td>-0.323183</td>
<td>0.034101</td>
<td>-9.477287</td>
<td>0.1298</td>
</tr>
<tr>
<td>Constant value</td>
<td>15.05055</td>
<td>3.003256</td>
<td>5.010490</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

The coefficient of determination (R2) 0.471047, Adjusted coefficient of determination (R2) 0.317185

Durbin–Watson statistic 1.926285

Table 2: Results of the estimation of the second model.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Standard error</th>
<th>t-static</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discretionary accruals (DA)</td>
<td>-0.013959</td>
<td>0.025445</td>
<td>-0.548631</td>
<td>0.5834</td>
</tr>
<tr>
<td>Profitability (PROF)</td>
<td>-2.341697</td>
<td>1.098557</td>
<td>-2.131612</td>
<td>0.0343</td>
</tr>
<tr>
<td>Financial constraints (FC)</td>
<td>0.6334912</td>
<td>0.212436</td>
<td>2.988723</td>
<td>0.0029</td>
</tr>
<tr>
<td>Firm size (Size)</td>
<td>-1.060616</td>
<td>0.291392</td>
<td>-3.633812</td>
<td>0.0007</td>
</tr>
<tr>
<td>First-order autoregressive variable AR(1)</td>
<td>-0.323761</td>
<td>0.213467</td>
<td>-1.516862</td>
<td>0.1298</td>
</tr>
<tr>
<td>Constant value</td>
<td>15.04290</td>
<td>3.746327</td>
<td>4.015374</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

The coefficient of determination (R2) 0.490857, Adjusted coefficient of determination (R2) 0.317102

Durbin–Watson statistic 1.921599

Table 3: Results of the estimation of the third model.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Standard error</th>
<th>t-static</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-discretionary accruals (NDA)</td>
<td>0.475541</td>
<td>0.194211</td>
<td>2.448574</td>
<td>0.0314</td>
</tr>
<tr>
<td>Profitability (PROF)</td>
<td>-2.056717</td>
<td>0.976493</td>
<td>-2.106238</td>
<td>0.0355</td>
</tr>
<tr>
<td>Financial constraints (FC)</td>
<td>0.571531</td>
<td>0.205290</td>
<td>2.784016</td>
<td>0.0055</td>
</tr>
<tr>
<td>Firm size (Size)</td>
<td>-6.931189</td>
<td>0.254139</td>
<td>-3.113213</td>
<td>0.0019</td>
</tr>
<tr>
<td>AR(1)First-order autoregressive variable</td>
<td>-0.318324</td>
<td>0.212508</td>
<td>1.522938</td>
<td>0.0005</td>
</tr>
<tr>
<td>Constant value</td>
<td>11.35822</td>
<td>3.224076</td>
<td>-0.497938</td>
<td>0.1346</td>
</tr>
</tbody>
</table>

The coefficient of determination (R2) 0.499438, Adjusted coefficient of determination (R2) 0.324444

Durbin–Watson statistic 1.921285

Conclusion:
We tested hypotheses about 230 companies and the results are as follows:
1. Accruals do not have a significant impact on the value of the firms.
2. Discretionary accruals do not have a significant impact on the value of the firms.
3. Non-discretionary accruals have a significant impact on the value of the firms.

Recommendations:
1. According to the results of the third hypothesis, non-discretionary accruals have an impact on the value of firms. Hence, we recommend creditors, investors, analysts and other stakeholders to pay more attention to the quality of non-discretionary accruals and consider them in their decision-making models.
2. According to the results of the three hypotheses, we recommend you to design a mechanism for evaluating and disclosing the quality of discretionary and non-discretionary accruals; then, investors will be able to invest more carefully.
3. Since some managers and investors may not be very familiar with Tobin Q ratio, non-discretionary accruals and their estimation methods, we suggest the Tehran Stock Exchange to present seminars and training courses.
4. The Tehran Stock Exchange should start creating a database to provide information on discretionary accruals, non-discretionary accruals, Tobin Q ratio, replacement asset value and other necessary information for applicants; then, they can use this information to determine the wealth creation of companies for shareholders.

REFERENCES