A Survey of the Role of Earnings Quality in Accurately Forecasting of Cash Flows from Operational Activities of Companies listed on Tehran Stock Exchange

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Abstract

Earnings quality of business unit is one of the most important information as the foundation of most of decisions and judgment of financial information users. The accuracy of financial forecast of a business unit is one of the interesting issues of financial information users. The present study aimed to evaluate the relationship and role of earnings quality in accuracy of prediction of cash flows from operations of companies listed on TSE. To achieve the study purpose, we selected 25 active industries during 5 years (2009-2013). A study sample of 50 companies is selected by Cochran’s formula. Based on the results of study, we can say by increase of earnings quality, accuracy of prediction of financial statement items namely cash flows from operations can be increased. Thus, earnings quality is a reliable criterion for accuracy of financial predictions as accuracy of annual financial performance of business units.

Keywords: Earnings quality, Operating activities, Financial variables prediction, Financial reporting.
1. Introduction

Shareholders, creditors and other people associated with companies at micro level (micro shareholders) or macro level (investment and credit companies) analyze the companies mostly to make the best decisions about the accuracy of prediction of financial variables, stock holding or selling, continuing or cancelling borrowing contract, etc. This causes that company solvency and its liquidity are of great importance. On one hand financial shareholders and analysts follow accuracy of prediction of financial variables and future cash flows of companies to use it in stock pricing of companies, on the other hand creditors predict future cash flows of companies for decision making regarding continuing, canceling or increasing their credits. The role and importance of forecast accuracy of financial variables has caused wide researches in accounting as researches in this section are separated branch in accounting. This study attempts to evaluate earnings quality and predict operations based on model in this field and by pooled regression.

Theoretical Foundations and Literature Review

1- Statement of problem

Earnings quality

The earnings quality theory was raised for the first time by financial analysts and stock brokers. They felt that reported earnings didn’t show ability of earnings of a company as imagined. They found that future earnings forecast based on reported results was difficult. Also, the analysts found that analysis of financial statements of companies was difficult due to various weaknesses in measurement of accounting information.

The basic question shows why financial analysts didn’t use reported net earnings or earnings per share (without adjustment) and they were careful in this regard. The answer is that in determining value of company, only earnings quantity is not viewed and its quality is also taken into attention. Earnings quality is potential earnings growth and probability of fulfillment of future earnings. In other words, value of each share is not dependent only on earnings per share of current year of company and it depends upon our expectations of future of company and profitability of future years and reliability coefficient to future earnings.

Financial analysts attempt to evaluate earnings perspective of companies. Earnings perspective refers to the combination of suitable and unsuitable features of net earnings. For example, the company with stable items in profit and loss has high earnings quality compared to the company with unstable elements and items in profit and loss. This allows the analysts to predict future earnings of company with high reliability.

Suitable grounds for “earnings manipulation” arising from benefits conflict and some intrinsic accounting limitations have caused the follows: a) existing shortcomings in process of future predictions and estimations, b) Using various accounting methods caused that actual earnings of a business unit is different from the reported earnings in financial statements. Researchers and experts of accounting in earnings significance as one of the most important criteria of
performance evaluation and determination of value are obliged to evaluate reported earnings by business units. To evaluate this earning, earnings quality is used. Various papers on earnings quality refer to two features to determine earnings quality: One of them is usefulness of decision making and another factor is the relationship between two concepts and economic earnings of Hicks. In other words, earnings quality is honest expression of reported earnings of the earnings considered by Hicks. Honest expression is consistency between description and what claiming it. It means that high earnings quality is usefulness of earnings information for decision making of users and its consistency with economic earnings of Hicks. People use information in different decisions; it is not possible to present a comprehensive definition of earnings.


The special interest of financial statements stakeholders is evaluation of net future cash flows of business units to estimate expected return (Francies, 2005). To increase forecast of future cash flows, disclosed earnings should be of high quality. The public dissemination of high quality information by management leads to information asymmetry reduction between management and other users. Based on the studies, reduction of information asymmetry leads to reduced capital cost, reduced information risk, increased forecast of cash flows, improving company value and increase of stock liquidity (Ardestani, 2007). Investors search their benefits in earnings information. Accounting earnings is a sign by which can change the beliefs and investors behavior. The evidences have shown that accounting earnings is a good index for stock return and future cash flow forecast. Due to using conservatism limitations and significance in accounting earnings, some analysts have found that economic profit compared to accounting profit is a good index to predict future cash flows. Economic profit was defined for the first time by Adam Smith and then it was extended by Hicks. He defined profit as the price a person can use in a period and at the end of period, he has the same wealth in the first period. In order to use reported earnings in performance evaluation and evaluation of profitability to users and stakeholders and investors estimate their expected return based on earnings information, information quality should be as past performance evaluation is possible and be effective in evaluation of profitability and prediction of future activities. The reported earnings is of great importance for investors and is effective on their decisions and earnings quality as one of the dimensions of earnings information is taken by investors.

3-Review of Literature

Ghasemi (1998) evaluated the relationship between earnings, working capital from operation and cash flows from operation in companies listed on TSE. The study time scope is 5 years from 1993-1997. The study population is all companies listed on TSE to the end of 1992 as classified in the form of 12 different industries. The study hypotheses include the followings:
a. There is a significant relationship between operating profit and working capital of operations.

b. There is a significant association between operating profit and cash flows from operation. The correlation test showed that there was a strong relationship between operating profit and working capital from operation. There is a weak relationship between operating profit and operating cash flow. We cannot say that these two variables present similar information. In his study, he concluded that cash flow information disclosure is necessary.

Costigan (1985) conducted a study “The marginal predictive ability of accrual accounting information with respect to future cash flows from operations”. In this study, cash flow from operations was selected as dependent variable. To do this, Costigan applied fit regression model and cash flows from operations was used as initial independent variable.

Besides, in each regression model, the second independent variable is applied:

1- Total accruals, 2- Adjusted profit of depreciation (cash earnings), 3-Current accruals

Each model has two independent variables. The first variable is current cash flow and second variable is each of the mentioned items above. The results of study show that working capital and profit before depreciation can increase ability of current cash flows from operations to predict future cash flows from operations. Based on the findings, Costigan found that operational working capital and profit before depreciation predicted future cash flows from operations compared to current cash flow from operation.

Barth et al., (2001) tested the ability of total accruals and their components to predict future cash flows from operations. The accrual components include:

1- Changes in accounts received
2- Changes in accounts paid
3- Changes in inventory
4- Tangible assets depreciation
5- Intangible assets depreciation
6- Other accruals

Barth et al. applied Dechow, Kothari, and Watts to develop the role of accruals in prediction of future cash flows and found that the relationship between cash flow of next year and current cash flow and each of accruals components was of great importance. Also, they found that long-term accruals as fixed assets depreciation and intangible assets depreciation predicted future cash flows. These evidences are inconsistent with the results of previous studies that stated depreciation didn’t predict future cash flows. The results of study show that accrual components (six main components) with profit can increase future cash flows from operations. They stated that cash flow and accruals of current earnings intrinsically showed high prediction compared to non-divided profit. This showed that accrual components predicted cash flow. Namely, long-term assets depreciation and intangible assets depreciation increase prediction capability. In addition, separated profit (cash component with accrual component) significantly increase predictability compared to non-separated profit. Accrual components alone predicted next period cash flows.
In addition, the opinion of managers in selection of accruals reduced reliability of profit as an alternative of cash flow from operations (Dechow and et al, 1995; Guay and et al, 1996). Ghosh et al., (2004) investigated earnings quality and earnings response coefficient during stable earnings increase and sale. The results of their study showed that the companies with growth of sale had high earnings quality and earnings response coefficient compared to the companies with earnings growth with costs reduction.

Chan et al., (2004) evaluated the relationship between accruals (difference between earnings and cash flows) with future stock return and showed that companies with high accruals in the next period of financial information reporting reduced stock return. One interpretation of results shows that companies with low earnings quality (the companies with high accruals) in period after earnings reporting had low return as investors found about low earnings quality of companies and adjusted stock price based on it.

3. The Development of Hypotheses and the Meaningful Pattern

To achieve study purpose, a hypothesis is formulated as follows:
There is no relationship between earnings quality and cash flows from operations (H0).

Study method

The study method is applied in terms of purpose and descriptive –correlation study in terms of nature and method. The data collection is done via stock market by Rahavardnovin, Tadbipardaz software and financial statements, explanatory notes and common general assembly reports.

In case of incomplete existing data in this database, we referred to the existing archives in library of stock market and internet site of research management, development and Islamic studies, stock market organization (http://rdis.ir). For data analysis and extraction of descriptive statistics, SPSS software is used. For results of inferential statistics, Eviews software is used. By data collection, the study is ex post factor. For data analysis, descriptive, inferential, multi-variate regression methods are used. The place scope of study is companies listed on TSE. The time scope is 2009-2013 (5 years).

Statistical sample and population

The study population is companies listed on TSE.
To select sample, stratified and systematic random sampling methods are used. In this study, at first companies listed on TSED are classified under various groups and industries and 25 active industries in 5 years (2009-2013) are selected. Then, by Cochran’s formula \[ n = \frac{Nz^2p(1-p)}{d^2(N-1) + z^2p(1-p)} \] is selected and by systematic random sampling method, a sample of 50 companies is chosen. For hypothesis test, regression analysis based on statistical model as followings is used:

Cash flows from operations
1) \( \text{CFO}_{i,t} = \beta + \beta_{\text{EARN}}\text{EARN}_{i,t} + \beta_{\Delta\text{AR}}\Delta\text{AR}_{i,t} + \beta_{\text{INV}}\Delta\text{INV}_{i,t} + \beta_{\Delta\text{AP}}\Delta\text{AP}_{i,t} + \beta_{\text{DEPR}}\text{DEPR}_{i,t} + \mu_{i,t} \)

All variables are homogenized based on mean total assets.

**Study variables**

In this study, cash flows from operating activities is dependent variable and earnings quality is considered as independent variable in two levels of high earnings quality and companies with low earnings quality. Among accruals (change in accounts received, change in accounts paid, change in goods inventory and depreciation), three first cases are short-term accruals but depreciation is long-term accrual. In a study done by (Ben-Hsien. And Bao, 2004) in “Income Smoothing, Earning Quality and Firm Valuation” applied three following indices to determine companies with high earnings quality:

1. Cash content of earnings (cash flow from operations per share to earnings per share) is more than the mean of this ratio in total sample.
2. Cash flow of each share from operations is positive.
3. Earnings per share is positive (earnings per share before unexpected items)

If a company has three mentioned features, it is the one with high quality income and if a company doesn’t meet one of the above conditions, its income has low quality.

**4. Methodology**

Methodologically, this study is practical in terms of its aim, and is scientific in terms of data collection. In this study, the organizational citizenship behaviour is the dependent variable, and personality and its dimensions are independent variables. To collect the data, the two questionnaires, which are, organizational citizenship behavior and personality, where utilized. The organizational citizenship behaviour questionnaire was designed based on the Morgan scale in 1995, it contained 15 items. To explore the personality and its dimensions the five-factor questionnaire by Nio (2004) was used which included 60 items. Both questionnaires make use of a Likert-Scale with five alternatives.

In order to assess the validity of the questionnaire, by conducting several interviews with the experts, the necessary changes and adjustments were applied as the questionnaire addresses all those notions that the experts mentioned to. Cronbach's alpha was used to determine the reliability of the questionnaire which was .89 and .83 for organizational citizenship behavior and personality, respectively. Since the Cronbach's alpha of both questionnaires were greater than .7, the reliability of both was appropriate.

The population of this study consists of all the managers in Abadan refinery who were 155 persons. The chosen sample was based on the Morgan formula who were 108 persons selected randomly using stratified sampling. The share of each manager was determined among the operational managers, then, the questionnaire was distributed among them, and the data were
gathered. To test the hypotheses in the investigation of effects of personality (its dimensions) on the organizational citizenship behaviour, the structural equation pattern and Lisrel software program were utilized.

Values are shown in Table 1-4. As shown, the mean changes of accounts received, change of inventory, changes of accounts paid, depreciation cost and other accruals are 0.032, 0.026, 0.016, 0.024, 0.033, respectively. The results show that majority of accruals in balance sheet of other accruals and lowest value is regarding accounts paid changes.

Table 4-1 Descriptive statistics of study variables

<table>
<thead>
<tr>
<th>Median</th>
<th>SD</th>
<th>Variance</th>
<th>Mean</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.125</td>
<td>0.159</td>
<td>0.025</td>
<td>0.158</td>
<td>EARN&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.077</td>
<td>0.170</td>
<td>0.029</td>
<td>0.107</td>
<td>CFO&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.033</td>
<td>0.122</td>
<td>0.014</td>
<td>0.051</td>
<td>ACCRUALS&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.029</td>
<td>0.173</td>
<td>0.029</td>
<td>0.032</td>
<td>ΔAR&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.028</td>
<td>0.169</td>
<td>0.028</td>
<td>0.026</td>
<td>ΔINV&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.008</td>
<td>0.108</td>
<td>0.011</td>
<td>0.016</td>
<td>ΔAP&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.020</td>
<td>0.019</td>
<td>0.036</td>
<td>0.024</td>
<td>DEPR&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.006</td>
<td>0.240</td>
<td>0.057</td>
<td>0.033</td>
<td>OTHER&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

5. Data Analysis and Findings of the Research

There is no relationship between earnings quality and cash flows from operations.

The results of estimation of model are shown in Table 4-2 and they show that intercept (-0.001) is not significant and earnings coefficient (0.524) and coefficient of changes of accounts received (-0.329) and coefficient of inventory changes (0.055), coefficient of changes of accounts paid (-0.175) and depreciation cost coefficient (1.092) significant at levels 1%, 10%. The adjusted coefficient of determination is 29.1%.

Table 4-2 Results of model estimation

<table>
<thead>
<tr>
<th>Significance</th>
<th>T statistics</th>
<th>Coefficient</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.954</td>
<td>0.057</td>
<td>-0.001</td>
<td>Constant</td>
</tr>
<tr>
<td>0.000</td>
<td>8.327</td>
<td>0.524</td>
<td>EARN&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.011</td>
<td>-3.324</td>
<td>-0.329</td>
<td>ΔAR&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.188</td>
<td>0.337</td>
<td>0.055</td>
<td>ΔINV&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.350</td>
<td>-1.001</td>
<td>-0.175</td>
<td>ΔAP&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.002</td>
<td>3.610</td>
<td>1.092</td>
<td>DEPR&lt;sub&gt;t&lt;/sub&gt;</td>
</tr>
<tr>
<td>0.291</td>
<td>R&lt;sup&gt;2&lt;/sup&gt; Adjusted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.871</td>
<td>Durbin-Watson statistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.351</td>
<td>F statistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.000</td>
<td>Significance level</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Based on results of hypothesis test, Fisher and T-student tests show that there is a significant relationship between dependent and independent variables. The function has no auto-correlation effect. Durbin-Watson statistics is about 2.

6. Conclusions and Suggestions

As the company manipulates accounting information to regulate reported profits about analyst predictions, earnings quality is reduced. Thus, the difference between prediction and reduction of actual reported profits shows actual predictions. Thus, this study aimed to evaluate the relationship between earnings quality on validity of operational activities of companies listed on TSE to help the financial analysts and users. Cash flow forecast is of great importance for investors helping them in economic decision making and it causes that investors and analysts can valuate companies carefully. The effect of various factors on these models and their prediction capability caused that previous review of literature included different responses and misled the users.

The claim of board of financial accounting standards in 1978 regards the fact that earnings to cash flows provided better index than future cash flows forecast. Some researchers as Greenberg et al., (1986), Bowen et al., (1987), Barth et al., (2001), Al-Attar and Simon Hussain (2004) and Wing Yan (2005) and others performed some studies in comparison of earnings ability and current cash flows for future cash flows forecast. The inconsistent results of these studies caused that the researcher investigated the role of earnings quality in accuracy of financial predictions. The results of test of this study supported the claim of accounting standards board and are totally consistent with the researches of other researchers as Greenberg et al., (1986), Barth et al., (2001), Al-Attar and Simon Hussain (2004) and Wing Yan (2005) but are not consistent with the study of Bowen et al., (1987). Thus, investors shouldn’t only resort to earnings and earnings quality as one of its criteria is earnings stability can be considered to avoid misleading.

It is real that managers have some motivations for earnings manipulation. The method leading to profits with low quality is considered as opportunistic result of managers. Using some increases can be used for misleading users. There are various investigations of the relationship between different profit features and financial variable forecast. This study presents expectations that high earnings quality (by providing useful information for analysts) can enable the analysts to present correct predictions.

The estimation results of model as there is a significant association between earnings quality and cash flows from operations and adjusted coefficient of determination of model is 29.1%.

Suggestions

1- Based on the effect of various factors as company features on future cash flows forecast by models are not investigated and it is required that users considered the effect of these factors on prediction to use cash and accruals to predict cash flows and they can present exact predictions, based on most efficient models.

2- Based on extra power of accrual models in future cash flow forecast compared to cash models, it is recommended that investors and financial analysts consider accruals mostly.
Also, it is recommended to financial statement users, market analysts and investors to consider cash flow statement. Most of required information to predict future cash flows is hidden in cash flow and comparative statement of cash flows from operations. Using cash flow prediction models and considering financial statements namely cash flow statement can lead to logical decisions of users.

3- It is recommended to investors in TSE to invest in companies with high quality profit.
4- Investors should consider that earnings quality of companies in prediction of financial variables namely future cash flows is based on effective funding.
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