



Relationship between financial reporting and forecast of cash flows from financing through the issue of shares: A case study of firms listed in tehran stock exchange (TSE)

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Abstract

One of the primary purposes of financial reporting is to provide information regarding the performance of a business unit through evaluation of earnings and other detailed information. The forecast of cash flows can provide important information for both intra-organizational and extra-organizational users. The purpose of the present research is to determine the role of earnings quality in forecast of cash flows from financing. To that end, the information regarding 50 firms active in 25 industries listed in TSE in a 5-year time-period (2009-2013) has been collected and analyzed using correlation and regression analysis and panel data method. The results suggest that the enhancement of earnings quality improves the forecast of financial variables especially future cash flows from financing.

Keywords: earnings quality, finance, forecast of financial variables, financial reporting

1. Introduction and Statement of Problem

Financing and its related strategies are among the most important issues in financial management. Application of suitable finance strategies can considerably affect growth rate, profitability, future returns, and continuation of an economic unit's activity. The most important features of suitable financing are imposing the least possible costs for finance and diversity of capital structure which in turn would lead to performance improvement and increase of firm value. Budgeting, planning, and management of cash flows are also sensitively important. This requires managers to have an appropriate forecast of cash inflows and outflows, devise proper short-term and long-term plans, and spend it most effectively in different sections. Policies concerning cash flow and its management and control are highly influenced by various factors such as management's conservative or adventurous approach to management of working capital; however, it should be noted that cash flow forecast still remains as the basic principle underlying a firm's future planning.

On the other hand, earnings quality and financial reporting are important factors in decision-making regarding trade and investment. Earning is an appropriate criterion for evaluation of a business unit and its management, giving rewards to managers, and decision-making by creditors. This concept is also used in development planning, limitation, or termination of activities. Appropriate and real earnings reporting can contribute to optimal resource allocation to required activities; on the other hand, untruthful and low-quality earnings reporting can lead to waste of resources through flawed allocation to low-priority activities which subsequently reduces the creditors and investors' trust in the firm.

Earnings have characteristics which determine past conditions or forecast future events for users of financial statements. Earnings are also considered in determining a criterion called authentication value.

This value represents a quality which allows users of financial statements to adjust their past and future expectations for financial decision-making, especially decisions about cash flows. The results of the study by Dechow (1994) [17] suggest that current-year earning is usually a suitable predictor of future cash flows.

Earnings stability and its impact on liquidity especially in new markets such as Tehran Stock Exchange (TSE) are important to managers and investors for economic decision-making. The results of studies on stock liquidity in stock exchange markets in Iran indicate that investors are highly concerned with the risk of illiquidity [Yahyazadefar & Khoramdin, 2008: 113] [6].

In recent years and after the financial crisis, the issue of earnings quality has attracted a great deal of attention. Earnings quality is a multi-dimensional concept, and hence it has been defined in various ways. An important definition of earnings quality is based on earnings sustainability; earning sustainability means the repeatability of earnings. More sustainable earnings enables a firm to keep and maintain current earnings and therefore the earnings quality is said to be higher [Saghafi *et al.* 2011: 2] [3].

A lot of studies have focused on concepts such as earnings quality, quality of financial reporting, and cash flows; however, the main effort in the present research is to determine whether earnings quality can forecast cash flows from financing. Can a more suitable program be developed for management of cash flows based on financial reporting and earnings quality? To that end, the theoretical basis of the studied concepts, research methodology, results, and findings are discussed in next chapters.

2. Theoretical basis and research background

The concepts being studied in this research are cash flows from financing, earnings quality, and financial reporting. For that purpose, a summary of previous studies is presented below.

2.1 Finance and forecast of cash flows from financing

Financing profitable projects plays an important part in a company's success and growth. A firm's ability to identify potential (internal or external) resources which provide capital for investment and finance is one of the main factors to growth and progress in a company [Shiprusi, 1994].

Internal financing is mostly made possible through limitation of dividend distribution, increasing operational activities, and sometimes by selling assets. Of course, in short-term finance, the role of sales and collection cycle is very important. Also, some short-term resources such as dividends payable and solvency policies can be used temporarily. External financing refers to provision of financial resources from extra-organizational sources. These sources are usually in the form of issuing new shares, borrowing from creditors, bank loans, margin purchase, and etc. Without a doubt, type, extent and quality of acquired resources, the expected interest or return, provided guarantees, repayment periods, and cash flows from financing methods are of utmost importance and can affect all financial decisions especially investment, future performance, returns, and firm value. Various factors determine the extent of resources needed by a firm and the methods of financing. Company's life cycle, development plans, growth in sales or market share, increase of competitive power, survival in the market, and solvency and payment obligations are among the most important factors determining the extent of resources required by a business unit. Factors such as financing costs, accessibility limitations, owners' decisions, commitments and guarantees, and similar issues are also effective on methods of finance.

One of the most important issues in financial management is the decision-making and judgment in selecting the best method of finance for increasing the value of shareholders' stocks [Nikoumaram *et al.* 2007]^[5]. In order to increase shareholders' stock value, increasing the return on investments and reducing capital costs are considered to be two suitable solutions. Usually, all stakeholders in a firm consider future cash flow to be a determining criterion in estimation of the returns [Francis, 2005]. Considering what has been discussed so far, forecast of future cash flows is important both for firm managers and for other stakeholders. Hence, identification of factors contributing to this forecast is of utmost importance. It seems that earnings quality can to a great extent predict future cash flows.

In order to improve forecast of future cash flows the disclosed earnings should have high quality. Public disclosure of information by management reduces information asymmetry between management and other users. According to studies, reducing the information asymmetry in turn leads to a reduction in the cost of capital, risk mitigation information, Increase the projected cash flows, improve the valuation of the company and increase the liquidity of shares [Ardestani, 2007]^[1].

Studies regarding the predictive capability of accounting information are very important, because predictability is a prerequisite for a decision [Ashton, 1974]^[9]. Moreover, Beaver *et al.* (1968)^[11] believe that a forecast can be made without any decision, but a decision cannot be made without a forecast. The main assumption of the information content of earnings and profit forecasts is that the accounting earnings are good alternatives to future cash flows. However, since accounting earnings include accruals and are separate from investment activities, then only in

a specific (or non-existent) conditions they would be equal future cash flows [Watts and Zimmerman, 1986]^[29]. Moreover, the views and the opinions of managers selecting of accrual-based methods would reduce the reliability of earnings as alternative operating cash flow [Dechow and *et al.*, 1995; Guay *et al.*, 1996]^[18, 22].

The problems in forecast of future earnings and managerial manipulation of these earnings made the researchers attempt on direct forecasting of future cash flows and use the forecast of future cash flows without using a replacement called earnings.

2.2 Earnings Quality

The earnings quality has a special place in accounting theories and financial affairs. Various definitions are proposed for earnings quality most of which consider it to be a relative concept. Presentation of more accurate definitions in recent decades has made scientific studies and applied discussion more involved in earnings quality. Based on what has been discussed in theoretical basis and related background, it can be said that earnings quality revolves around earnings sustainability and low fluctuation. From a philosophical point of view it can be argued that this sustainability occurs when a major part of earnings from operating activities is normal and current in the firm. In a situation like this it is expected that earnings volatility and fluctuation is less and more logical. However, if a major part of earnings come from non-operating activities, it is expected that the earnings are more volatile.

Rosine *et al.* (1999) consider a more sustainable earning to have higher quality. According to Richardson *et al.* (2001), earnings quality is the degree of stability of earnings performance in future period. Behnisch and Vargas (2002) define the earnings quality as the possibility of sustainability of current earnings in the future. Penman & Zang (2003)^[25] define earnings quality as the ability to demonstrate future returns. Schipper and Vincent (2003)^[28] consider earnings quality to be related to Hicks idea of earnings; that is quality refers to an extent of honesty which demonstrate the reported earnings in Hicks' earnings report. According to them, earnings quality is defined based on the relationship between earnings, accruals, and cash; in fact earnings are high-quality when they are closer to cash and can be sustained and predicted. On this basis, it is believed that accruals reduce the quality of earnings. In this point of view, a criterion for measurement of earnings quality is the ratio of cash from operating to operating earnings $\frac{CFO}{OE}$ which has been mentioned in various researches such as that of Penman (2001)^[25]. This argument is based on that earnings are high-quality when they are closer to cash. All in all, it can be said that the closer the correlation between cash flows from operating and operating earnings, the higher would be the quality of earnings. Earnings quality is a statistical correlation between cash flows from operating and operational activities whose value varies from -1 to +1.

2.4 Earnings quality and the possibility of forecast

The earnings are divided into two parts: cash and accruals. It is expected that since the cash part of earnings contains more information, therefore it is a better predictor of future cash flows. Burgstahler and Eames (2013)^[15] conclude that although firms may get involved in earnings management, analysts are able to sufficiently predict such manipulation (frauds). Earnings

management could result in forecast flaw because the analyst's expectation of earnings management often causes them to reduce their estimates beyond actual earnings. That study by Dowdell (2010) [19] reveals that analysts have more difficulty when forecasting earnings for mature firms than they do for developing firms and developing firms are the most difficult in terms of earnings forecast. Ashbaugh and Pincus (2001) [8] suggest that the convergence in firms' accounting policies resulting from the application of IFRS reduces forecast errors by analysts. Also the uncertainty of financial and accounting information under different accounting systems would lead to reduction of forecast accuracy.

Hughes and *et al.* (2007) [23] conclude that information asymmetry due to poor quality of earnings, leads to wrong stock choice and leads to the reduction market liquidity. In the study of firms listed in New York Stock Exchange and NASDAQ, Bhattacharya *et al.* (2008) [13] demonstrate that low quality of earnings would lead to increase in information asymmetry and decrease in liquidity of the shares.

The study of TSE by Izadinia and Rasaeian (2009) [2] suggests that 27 percent of the change in recommended price of shares can be explained by the change in the quality of earnings. However, the Moradzadeh and *et al.* (2010) in the following year suggest that the management of accruals has a significant and negative impact on the company's stock liquidity; in this sense, more earnings management leads to information asymmetry and transaction costs and has a negative impact on the liquidity of the shares. Chan *et al.* (2004) [16] study examined the relationship between discretionary accruals (the difference between earnings and cash flows) and future stock returns; they indicate that firms with too much discretionary accrual would have less future stock returns. This can be interpreted in that firms with low-quality earnings (firms with too many discretionary accruals) would have a decrease in returns in the immediate period following earnings reporting. That is because the investors will find out about the low quality of earnings and adjust the stock prices accordingly.

3. Research Hypotheses

In order to achieve the purposes of the present research, the following hypotheses have been developed:

1. There is a significant relationship between earnings quality and future cash flows forecast.
2. In comparison to earnings, operating cash flows in the previous period are better predictors of future cash flows.

3.1 Research methodology

In terms of purpose, the present research is an applied study, and by nature and method it is a descriptive-correlational research. The required data has been collected from TSE database and also from financial statements and memos of the studied firms. Since the collected data pertains to the past, hence this is an ex-post-facto study. Also the data analysis has been carried out using multivariate regression analysis by the E-Views software program.

3.2 Statistical population and sample

The statistical population of the present study is consisted of all firms listed in TSA in the 5-year period 2009-2013. Sample members have been selected through systematic omission and using stratified sampling method.

In the end 50 firms (2 for each industry) have been selected as the sample group.

3.3 Research Models

In this study, future cash flow from finance is the dependent variable and earnings quality is the independent variable in two levels: firms with high earnings quality and firms with low earnings quality. On this basis, the general model for examination of research hypotheses is as below:

$$Cash\ Flow_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 (G_1 \times EPS)_{it} + \beta_3 Size_{it} + \beta_4 BM_{it} + \beta_5 Debt_{it} + \varepsilon_{it}$$

Where:

Cash flow: cash flows

EPS: earnings per share

G₁: earnings quality index (1 for firms with high earnings quality, and 0 for firms with low earnings quality)

The control variables in this model are:

Size: firm size measured as the logarithmic transformation of total assets which is considered to be an alternative to information environment

BM: book-to-market value, used to control the effect investment opportunities on cash flows, usually considered to be an index representing firm's growth opportunity

Debt: the ratio of debt to total assets

If a firm has all three mentioned qualifications, it has high-quality earnings; and if it misses even one of these three conditions, then its earnings have low quality.

Forecast of cash flows are imperatively important due to its impact on financial and investment decisions. Alattar and Hussain (2004) [7] believe that cash flows from operation can be predicted by operating earnings. This model has also been extended by Wing Yan (2005) [30].

1. $CFO_{i,t+1} = \beta + \beta_E EARN_{i,t} + u_{i,t}$
2. $CFO_{i,t+1} = \beta + \beta_{CF} CFO_{i,t} + u_{i,t}$

EARN: operating earnings

$CFO_{i,t+1}$: cash flow from operation of firm i for the period t+1

$CFO_{i,t}$: cash flow from operation of firm i for the period t

In order to measure the variable of earnings quality, the criteria mentioned in the study by Ben Haseen Bao (2004) have been used wherein the firms' information has been classified using the following components. If a firm has all three mentioned components, it has high-quality earnings.

1. Cash content of shares (each share's ratio of cash flow to earning) should be higher than the sample's mean.
2. Each share's cash flow from operational activities should be positive.
3. Earnings per share should be positive (income before extraordinary items).

4. Data Analysis

4.1 Descriptive statistics

Descriptive statistics is the expression of characteristics of the studied variables. For that purpose, the variables are first described by central and distribution indices; after providing this information, the hypotheses are examined. Table 1 demonstrates these indices for each variable separately.

Table 1: research descriptive statistics

Variables	Mean	Variance	Std. deviation	Skewness
Operating cash flows	0.107	0.029	0.170	-1.546
Cash flows	0.292	0.226	0.475	-1.935
Firm size	5.746	0.382	0.618	1.123
Earnings quality	0.04	0.0036	0.06	1.185
Earnings per share	795.42	880261.03	938.22	1.448
Book-to-market value	0.640	0.370	0.608	1.926
Debt ration	0.669	0.049	0.222	2.654
EARN _t	0.158	0.025	0.159	1.232

As demonstrate in the table above, the mean values for operating cash flow, cash flow, firm size, earnings quality, earning per

share, book-to-market value, debt ratio (financial leverage), and earnings are 0.107, 0.292, 5.746, 0.04, 795.4, 0.640, 0.67, and 0.16 respectively. It should be noted that firm size is measured as the logarithmic transformation of total assets, and earning per share is measured in I.R Rials.

4.2 Estimation of Model.1

In order to examine the first hypothesis i.e. earnings quality as a predictor of future cash flows, the following compound regression model has been used and the results are demonstrated in table 2

$$Cash\ Flow_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 (G_1 \times EPS)_{it} + \beta_3 Size_{it} + \beta_4 BtM_{it} + \beta_5 Debt_{it} + \varepsilon_{it}$$

Table 2: regression model estimation for the first hypothesis

Variables	Coefficient	Standard error	t-statistic	Sig.
Constant	7.03	1.02	6.892	0.000
Earnings per share	2.17	22.41	0.1	0.000
Low-quality earnings	-1.96	1.13	-1.07	0.090
Firm size	0.324	0.150	2.16	0.033
Book-to-market value	0.034	0.065	0.523	0.605
Debt ratio	0.056	0.197	0.2843	0.005
First-order autocorrelation	0.235	0.082	2.866	0.004
Coefficient of determination	0.533	Dependent variable's mean		-0.032
Adjusted coefficient of determination	0.472	Dependent variable's deviation		0.339
Regression std. deviation	0.319	Residual sum of squares		43.754
Fisher statistic	8.65	Durbin-Watson statistic		2.09
Level of significance	0.000			

The table above demonstrates the results of first hypothesis examination using panel data method and constant effects. As demonstrated, the coefficient of earnings quality is -1.96 (p=0.090) which indicates that the hypothesis is confirmed at the 90 percent confidence level. In other words, with the reduction of earnings quality in firms listed in TSE, the cash flow forecast becomes less accurate.

4.3 Results of models estimation

In order to examine the first hypothesis, i.e. comparison of operating cash flows and earnings in terms of prediction of future cash flows, two simple regression models have been employed the results of which are presented in table 3.

Table 3: results of estimation of models (1) and (2)

Model (1): earnings in current period				Model (2): operating cash flows in current period			
Variable	Coefficient	t-statistic	Sig.	Variable	Coefficient	t-statistic	Sig.
Constant	0.015	1.604	0.109	Constant	0.049	6.117	0.000
EARN _t	0.504	7.908	0.000	CFO _t	0.432	6.743	0.000
Adjusted R ²	0.205	f-statistic	132.363	Adjusted R ²	0.308	f-statistic	100.805
Durbin-watson statistic	1.862	Level of significance	0.000	Durbin-watson statistic	1.902	Level of significance	0.000

As demonstrated in the table above, for model 1, the intercept (1.604) is insignificant and the coefficient of earnings in current period is 0.504 which is significant at the 1%. The adjusted coefficient of determination for the model is 20.5 percent which indicates that earnings in current period can explain 20% of future cash flows. In addition, the whole regression model is significant (F=132.363; P=0.000). As for model 2, the intercept (0.049) and the coefficient of operating cash flow in current period (0.432) are significant at the 1%. The adjusted coefficient of determination for the model is 30.8% which is larger than that of model 1. Therefore, the first hypothesis (i.e. compared to earnings, operating cash flows are better predictors of future cash flows) is not rejected.

5. Conclusion and Discussion

Although the forecast of financial variables based on current earnings and profitability is justifiable, yet due to existing defects in earnings measurement (intangible estimation and financial predictions due to accrual-based accounting and managers' choice of accounting methods) there is the possibility of discrepancy between true financial variables and reported earnings. In a situation like that, the predictability of variables is reduced and use of such elements in forecast models becomes unreliable. The concept of earnings quality has been introduced to solve such problems. It is logical to assume that earnings quality can affect the decisions made by users of financial statements.

Lobo *et al.* (2012) ^[24] suggest that the services of financial analysts become more valuable to investors and in greater demand as earnings quality diminishes. However, it is also true that managers have motivations to attempt on manipulation (fraud) of earnings. Application of methods which may lead to low-quality earnings report is usually accompanied by managers' opportunistic inclinations. This research presents evidence that higher quality of earnings (by providing more useful information to analysts) enable analysts to provide more accurate forecasts. The results of present study reveal that managers' trust in low-quality earnings may create discrepancy between real reports and predictions made by analysts. When a firm manipulates accounting information in order to fill the gap between reported earnings and predictions made by analysts, the quality of earnings is reduced. As a result, the difference between the forecast and reduction of reported earnings made the forecasts seem true. On that basis, the purpose of present research is to study the relationship between earnings quality and accuracy of financial forecasts especially forecast of future cash flows from finance in firms listed in Tehran Stock Exchange in order to help financial users and analysts. After Financial Accounting Standards Board (FASB) asserted in 1987 that earnings are a better predictor of future cash flows than cash flows themselves, studies by researchers such as Greenberg *et al.* (1986) ^[21], Boone *et al.* (1987), Barth *et al.* (2001) ^[10], Alattar and Hussain (2004) ^[7], Wing Yan (2005) ^[30], and others yielded results opposite to that assertion. This contradiction motivated the present researcher to examine whether current cash flows are better than current earnings in terms of prediction of future cash flows. For that purpose, models (1) and (2) have been employed. Results of estimations reveal that the adjusted coefficient of determination for the model (2) is 30.8% which is larger than that of model 1 which is 20.5%. In other words, compared to earnings, operating cash flows are better predictors of future cash flows. The results of the first hypothesis examination reject the assertion of FASB and are in alignment with the results obtained in the studies by Greenberg *et al.* (1986) ^[21], Barth *et al.* (2001) ^[10], Alattar and Hussain (2004) ^[7], Wing Yan (2005) ^[30]; however these results are not in alignment with those of the study by Boone *et al.* (1987). Therefore, investors should not merely suffice to reported earnings; they should also consider earnings quality in their decision-making so that they would not be misled.

Based on hypotheses 2 and 3, firms with higher quality of earnings have higher chances of attracting investors for financing. Financiers are looking to invest in firms with high-quality earnings. In fact, entry of capital and finance in firms and institutions with high-quality earnings is easier. That is because the investors are confident of returns on their investment. On the other hand, firms with low-quality earnings have to provide higher rates of return in order to attract investors. In this way, return rate for investors and capital costs for firms and organizations will increase. The results obtained by examination of the two hypotheses confirm the above explanations. Therefore, concerning the obtained results (various factors such as firm characteristics affect the forecast of future cash flows), users of financial statements should take these factors in consideration when using cash and accrual-based models so that they would achieve more accurate forecasts and make their decisions more efficiently. Also, financial analysts are advised to use statistical models based on items of financial statement for prediction of

cash flows and consider their results as criteria for evaluation of their forecast and managerial performance. It is also suggested that accrual-based models are used for forecast of future cash flows; the obtained results should be used as a basis for determination of stock prices in stock markets. On the other hand, considering the greater ability of accrual-based models in prediction of future cash flows compared to cash-based models, it is suggested that investors and analysts pay more attention to discretionary accruals. Also, users of financial statements, market analysts, and investors are advised to pay more attention to cash flow statements. Most of the information required for forecast of future cash flows is implicated in cash flow statements. The use of cash flow forecast models and scrutiny of financial statements, especially cash flow statements would help investors and users make more logical and efficient decisions.

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