

Comparative Evaluation of Information Content of Fluctuations of Profits and Cash Flows

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ABSTRACT

From and information perspective, the concept of profit expresses result of economic activities. But it is still questioned as the fundamental criterion of measurement. Experimental studies confirm that accounting profit contains information content. Researchers' findings state that investors prefer smooth and low-fluctuation profit in investment decisions. In this regard, managers try to smooth profit and its growth rate. The aim of this study is to investigate information content of profit (with respect to profit fluctuations) and flows in Iran market. Statistical population of the study is companies accepted at Tehran Stock Exchange that 120 companies were selected during the period 2007 to 2011. Regression technique based on combined data has been used for data analysis. The study results suggest that accounting profit has information content; and profit information content in companies with smooth profit is more different from other companies.

KEYWORDS: Information content, Stock returns, Profit fluctuations, Cash flows, Investors.

1. INTRODUCTION

One of the important questions on accounting research is the role of accounting profit in pricing securities. Previous evidences indicate that accounting profit plays an important role in the valuation process, because it doesn't have scheduling problems and lack of compliance underlying the cash figures [4]. However, reliability and usefulness of accruals is questioned, because managers can manipulate them to adjust the reported profit consistent with accepted accounting principles and in accordance with their own desire. If the management manipulates the profit opportunistically, this management authority can distort the reported profit. On the other hand, management can increase profit information load through allowing spreading confidential information [8].

Profit smoothing is the efforts of management entity to reduce abnormal fluctuations of profit to the extent that reasonable and logical principles of accounting and management allows. Profit smoothing phenomenon can potentially be effective in the behavior of financial statements' users. Many investors prefer investing in companies with a proven profitability process. Also, investors believe that companies that report volatile profits have a higher risk that those reporting smooth profits [15]. Goel and Thakor (2003) also state that high profit volatility leads to more information benefits for aware investors than unaware investors. Unaware investors prefer that managers report smoother profit as far as possible [5].

The relationship between stock returns and accounting profit and the issue that how and when capital market reacts to information related to profit is of special importance in order to study the usefulness of the information contained in basic financial statements. Investors, creditors and other users of financial statement use the information reflected in accounting profit to evaluate the potential profitability, net cash inflow and anticipate future profits [13]. The usefulness of the information reflected in accounting profit to evaluate the potential profit will be approved when the accounting profit can help investors and creditors in forecasting cash flows in terms of amount, access time and level of uncertainty [11]. Securities yield is the main motivation for investing in the stock market, and evaluating and predicting the market returns can be an effective aid in making rational decisions of investors, which results in optimal allocation of limited resources of society. The aim of this study is to investigate information content of profit (regardless of profit fluctuations and regarding profit fluctuations) to cash flows [6].

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2. REVIEW OF LITERATURE

Several studies have been conducted on the information content of profit and cash flows, that some results emphasize profit information content and some other emphasize cash flows information content. It is summarized as follows:

2.1. Profit information content

Ashiq Ali (1994) studied incremental information content of profit, working capital from operations and cash flows. In this study, he confirmed incremental information content of profit on working capital from operations and cash flows. In this experiment, incremental information content of working capital from operations on profit and cash flows was also confirmed. But about the incremental information content of cash flows from operations on other factors, two cases were observed: in case that the studied companies have low changes in cash flows from operations, the incremental information content was not observed than others [1].

Dechow (1994) reported that profit based on a commitment is superior scale for measuring the company's performance than cash flows [4]. Subramanyam and Venkatachalam (2007) beside confirming the existence of incremental information content in cash flows and a commitment to each other, presented evidences that based on them in the capital market of America, the issue that discretionary accruals have incremental information content versus cash flows from operations was confirmed [14].

Haw et al (2001) studied information content of operational cash flows, profit and accruals in the Chinese capital market. The results indicate that information content of profit is more than operational cash flows. Also, in this study, incremental information content of discretionary accruals versus non-discretionary accruals was confirmed [7].

Hunt's et al (2000) findings indicate that for a certain level of profits, smoother profits are related to higher market value of shareholders' equity right. Results after controlling baseline fluctuations of operational cash flows indicate that profit fluctuations have incremental information content than cash flows fluctuations [9]. Tuker and Sarovine (2006) found evidences that indicated that profit smoothing lead to increased information content of profit [15]. Wei and Zhang (2006) demonstrated that there is a positive relationship between yield fluctuations and profit fluctuations. They argued that yield fluctuations are obtained from uncertainly about future profits [16].

2.2. Information content of cash flows

Bowen, Burg Stall and Daley (1987) studied incremental information content of accrual and cash figures. The results suggest that information related to cash flows has incremental information content than profit. Also, information related to cash flows has incremental information content than profit and working capital from the operation [2].

Charitou et al (2000) examined the relationship between cash flows and profit, and stock value in Japan Stock Market. This study indicates evidences that cash flows have more information content in explaining stock returns compared with profit. Also, when profit is not stable, cash flows play a more important role in the stock market than profit and are more important [3].

Khalid Elouafa (2012) studied information content of operational profit and cash flows in French companies. These criteria were tested in a linear and non-linear model for describing stock returns. The results indicate that in the linear model, cash flows have information content; and in the non-linear model, when fluctuations are high, cash flows have information content [12].

3. Research Hypotheses

According to the theoretical foundations and review of literature, the following hypotheses are proposed:

• The first hypothesis: regardless of fluctuations cycle, accounting profit have information content in the studied companies

• The second hypothesis: the information content of profit in companies with smoother profit is more than information content of companies in all studied companies

3.1. Research Variables

The research variables have been divided into two categories of dependent and independent variables. To study information content of profit fluctuations, the relationship between profit and stock returns is based.

3.1.1. Independent variable

• Accounting profit:

Net operating profit (loss) has been selected as representative of accounting profit. The figure of net operating profit (loss) has been extracted from audited annual financial statement of studied companies. The ratio of net operating profit to sum assets has been used to match net operating profit (loss) scale in various companies.

• Cash flows:

In this study cash flow means operating cash flow. To match operating cash flow scale, the ratio of operating cash flow to the sum of assets has been used. The figure of operating cash flow has been extracted from audited annual cash flow statement related to studied companies.

3.1.2. Dependent variable

• Stock returns:

Currently, one of the most important criteria for evaluating the performance of organizations is stock returns rate. This criterion alone contains information content for investors, because performance evaluation based on market value reflects information of investors very well, and is calculated as follows:

$$R = \frac{(1+\alpha)(P_1+D) - P_0}{P_0}$$
(1)

In this relation:

R: sock returns of the company

P₁: stock market price of the company at the end of period

P₀: stock market price of the company at the beginning of period

D: cash profit, received priority right, stock splits, share profit belonging to each share of the company

α: capital increase percentage

4. RESEARCH METHODOLOGY

This study sought to investigate information content of profit of companies accepted in Tehran Stock Exchange between 2007 and 2011. Therefore, this is an applied research and its design is quasi-experimental and uses post facto and correlation approach. 120 companies were selected to be examined in this study. The statistical method used for this purpose will be of pooled data-based regression techniques. In this study, Excel 2010 and SPSS 16 software have been used for data analysis and extracting results. So that the first software has been used for organizing information and performing basic calculations (such as classifying sample companies in terms of smooth profit), and the second software has been used for fitting error components models and calculating descriptive statistics.

The following index has been used for classifying companies based on profit fluctuations and operating cash flow [13]:

$$ACEV_{i,t} = Var(E_{i,t}) - Var(CF_{i,t})$$
⁽²⁾

In this relation:

ACEV_{i,t}: commitment index of profit fluctuations for i th. companies in year t

Var $(E_{i,t})$: operating profit variance

Var (CF_{i,t}): operating cash flow variance

Based on the above index, companies are divided into the two following groups (Table 1):

Table 1. Classifying companies bas	sed on profit fluctuations cycle
First Group	Second Group
$ACEV_{i,t} > 0 \Leftrightarrow Var(E_{i,t}) > Var(CF_{i,t})$	$ACEV_{i,t} < 0 \Leftrightarrow Var(E_{i,t}) < Var(CF_{i,t})$
More volatile operating profit than cash flows	Smoother operating profit than cash flows

Based on performed calculations, 58 companies have smother operating profit than operating cash flow which include 48% of total companies.

5. RESEARCH RESULTS

Before testing research hypotheses, it is required to examine normality of variables. The results indicated that stock returns variable was not normal and thus cannot be used to estimate regression model, therefore, a logarithmic convertor of stock returns was used. Also, in order to examine the self-correlation between observations, correlation coefficient of stock returns was calculated in different years which have been listed in Table 2.

	rear_ 2007	1 ear_ 2008	rear_ 2009	1 ear_ 2010	rear_ 2011
Year_2007	1.0000				
	120				
Year_2008	-0.1595 0.2685	1.0000			
	120	120			
Year_2009	-0.2955 0.0375	0.1060 0.4637	1.0000		
	120	120	120		
Year_2010	0.7404 0.0000	-0.2336 0.1025	-0.4257 0.0021	1.0000	
	120	120	120	120	
Year_2011	-0.0457	0.0568	-0.1570	0.0146	1.0000
	120	120	120	120	120

Table 2	. Output relat	ted to correlation	1 coefficient	between stoc	k returns in	different ye	ears

Numbers on the original diameter, according to the Pearson correlation coefficient (that correlation of each variable with itself is equal to one) are all equal to one. In each table home, three numbers can be seen. The first number is the correlation between relevant row and column variables. The second number presents level of test significance related to $H_0: \rho = 0 \text{ vs } H_1: \rho \neq 0$ hypothesis; and the third number is the number of observations used for calculating correlation coefficient. Among 10 calculated correlations, only 3 of them were significant a 0.05 level (stock returns correlation of years 2007-2010, 2009-2007, 2009-2010). This result indicated that there is not self-correlation between observations of various years. Therefore, pooled data-based regression model can be used to examine the effect of accounting profit on stock returns.

First hypothesis: without considering fluctuations cycle, accounting profit contains information content in the studied companies.

The null and contrast hypotheses are determined as follows:

 H_0 : without considering fluctuations cycle, accounting profit doesn't contain information content

H₁: without considering fluctuations cycle, accounting profit contains information content

Test results of the first hypothesis based on pooled data-based regression model has been presented in table 3.

Table 3. Output of the first hypothesis

Variable	Non-standardized Coefficients	t	Sig.	R Square	Durbin-Watson
(Constant)	4.314	71.125	.000	0.272	2.222
Net operating profit	1.595	4.569	.000		

According to the obtained outputs, regression coefficient of operating profit has been estimated 1.60 which is significant at 0.05 level (t=4.57, P<0.05). Therefore, the research hypothesis on having information content of operating profit in all companies is accepted. R^2 statistic equals to 0.272 which means that independent variable, net operating profit (loss), explains 27.2% of changes in stock returns.

One of assumptions that are considered in regression is independence of errors (the difference between actual values and predicted values by the regression equation) from each other. If hypothesis of independence of errors is rejected and errors are correlated with each other, it will not be possible to use regression. In order to examine independence of errors from each other, Durbin-Watson test is used. Statistical assumption of independence of errors model from each other is as follows:

H₀: lack of correlation between errors

H1: correlation between errors

The obtained statistic of Durbin-Watson test is 2.22. If Durbin-Watson statistic is between 1.5 and 2.5, H_0 hypothesis, lack of correlation between model errors is accepted. Therefore residues are independent of each other and will not disrupt the model. The following time series diagram shows that the residues of the fitted model don't have time self-correlation (diagram 1).



Diagram 1. Time series diagram of the errors of the first hypothesis

Second hypothesis: information content of profit in companies with smoother profit is more than information content of profit in all studied companies

The null and contrast hypotheses are determined as follows:

- **H**₀: Information content of profit in companies with smoother profit is not more than information content of profit in all studied companies
- H_1 : information content of profit in companies with smoother profit is more than information content of profit in all studied companies

Test results of the second hypothesis based on the pooled data-based regression model have been presented in Table 4. Table 4. Output of the second hypothesis

Variable	Non-standardized Coefficients	t	Sig.	R Square	Durbin-Watson
(Constant)	4.290	60.430	.000	0.312	2.248
Net operating profit	1.763	3.513	.001		

According to the obtained outputs, regression coefficient of operating profit has been estimated 1.76 which is significant at 0.05 level (t=3.51, R<0.05). Therefore, the research hypothesis on having information content of profit in companies with smoother profit is confirmed. R^2 statistic equals to 0.312 which means that the independent variable, net operating profit (loss), explains 31.2% of changes in stock returns.

The obtained Durbin-Watson test statistic is 2.24. If Durbin-Watson statistic is between 1.5 and 2.5, the hypothesis of lack of correlation between model errors is accepted. Therefore, residues are independent of each other and will not disrupt the model. The following time series diagram indicates that residues of the fitted model don't have time self-correlation (diagram 2).



Diagram 2. Time series diagram of the errors of the second hypothesis

6. Conclusion

Studying information content of profit versus cash flows is considered by many investors for taking decisions. The present study investigated information content of accounting profit considering profit fluctuations cycle and cash flows. Therefore, first, information content of profit was tested without considering profit smoothness than cash flows. The obtained results indicate that accounting profit is for predicting stock returns containing information content. The obtained result is consistent with studies by Ashiq Ali, Dechow and Haw [1, 4, 7].

Next, information content of profit was tested on companies that during the studied period had smoother operating profit than operating cash flows. The obtained results indicate that accounting profit still contains information content. Also, information content of profit has increased than before (R^2 is 0.272 in the first hypothesis and 0.312 in the second hypothesis), this means that investors have always considered profit as a positive advantage. The obtained results are consistent with studies by Hunt, Tuker and Sarovine [9, 15].

Accordingly, it seems that accounting profit is still interpreted as one of factors driving stock returns. These results indicate that Iranian investors in Iran capital market mostly rely on operating cash flow in stock evaluation process. It is suggested that a similar study be conducted considering control variables such as company size and industry type. Also, instead of dependent variable of stock returns, other evaluation criteria of companies' financial performance can be used.

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