The Evaluation of Accounting Earnings Components Ability in Predicting Future Operating Cash Flows:
Evidence from the Tehran Stock Exchange

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ABSTRACT

The main objective of this study is to evaluate the ability of accounting earnings and accounting earnings components (operating cash flow and accruals) in predicting future operating cash flows in the companies listed in Tehran Stock Exchange. According to the theoretical literature and conducted research, four models is considered for predicting operating cash flows with independent variables (1) operating earnings, (2) operating cash flows, (3) operating cash flows and aggregate accruals, and (4) operating cash flows and accruals components. To test the research hypotheses is used from the financial information of 80 companies listed in Tehran Stock Exchange during the years 2006 to 2010. The results indicate that statistically there is a significant positive relationship between all the independent variables and future operating cash flows (dependent variable), except changes in payable accounts, which has a negative and significant relationship with the dependent variable. Also, findings indicate that the model is based on the disaggregation of earnings into six components of cash and accrual can predict future operating cash flows better than the other tested models.

KEYWORDS: operating earnings, operating cash flows, accruals, Tehran Stock Exchange.

1.   INTRODUCTION

One of the important objectives of financial reporting is to provide useful information for decision making. Accounting information users evaluate profitability and predicting future operating cash flows of company based on reported information in financial statements and then evaluate company's value by linking rational relationship between profitability and future cash flows and decide based on these predictions (Kordestani and Roodneshin, 2006). Accounting earnings as a worthy figure in the collection of Financial Statements, which is considered one of the most important information source for evaluation of profitability power and future cash flows of business unit, for users of financial statements, particularly investors and shareholders, as a criterion for evaluating corporate performance and subsequently making a rational decisions is considered further. Because the main purpose of these people to investing in these companies is increasing their wealth. Therefore, they pay special attention to the reported earnings in financial statements. But they should consider this point when evaluating the profitability of companies that only the amount of profitability shown in the financial statements does not mean the performance utility of that company. Rather there should be a relationship between profitability of the company and its capabilities in creating cash. Since the cash dividend is required to cash payment, if the company has accounting earnings, but has not enough liquidity, it will face to the problem in the earning payment.

Indeed, profitability and liquidity are both the same coin. A company that it is not profitable, it is patient and even if continues its activity, it will lose its value in the stock market of company, but company without liquidity cannot survive and is dying (Pouraghajan and Emamgholipour, 2012). There are some companies that their financial statements show high profitability, but due to the lack of adequate liquidity, they are only able to distribute a small part of their accounting earnings. Thus, for users of accounting information, in addition to information related to profitability, cash flow information is also high important and these people before any judgment and decision about companies are interested to know more about future cash flows of these companies (Afshari, 2000). Therefore, we can be said that investors and shareholders for taking investment decisions and assessing business unit performance,

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In addition to considering the level of profitability in that unit, have more attention to the liquidity and cash flows in the current year and future.

Because of the worthy importance of cash flows in the success and survival of business units, nowadays cash flows prediction, most of the other factors have been considered by users of financial information and know it as one inseparable component of financial planning. Cash flows predicting is the important issues that not only investors and shareholders have particular interest to it, but the managers of business units used from it for predicting future activities results of company, especially for making operating, investment and financing optimal decisions (Modares and Diyanati, 2003).

Because of the importance of cash flows and its predicting, in the theoretical framework of financial accounting that is determinant of financial reporting purposes, they defined it as one the objectives of accounting and financial reporting. In the Statement of Financial Accounting Concepts No(1) from financial accounting standards board (FASB) said that "financial reporting should be provide information to help investors, creditors and other potential and present users, in estimating amount, time and risk of future receipts. Perspective of these cash receipts is affected by business unit ability in creating adequate cash to pay its commitments in maturity date and other cash operating requirements including investments in operations, paid cash dividends and also is affected by opinion of investors and creditors about its ability to its impact on stock price" (FASB, 1978).

Also, in the article 19 of accounting standard No (2) of Iran about operating cash flows of business unit is expressed that "The amount of cash flows from operating activities is one of the main indicators of evaluating this issue that business unit operations in what amount lead to adequate cash flows to reimbursement loans, reserving operating power of business unit and dividend payment and provides new investments without resorting to financial resources outside of business unit. And also providing information about operating cash flows details, along with other information, to predict future cash flows, would be useful" (Audit Organization, 2007).

According to the accounting Standard No (2) of Iran (which is expressed in the above), operating cash flows is considered one of the main indicators of evaluating business unit operations. Investors and shareholders can predict future operating cash flows from variables and other accounting information including accounting earnings.

But accounting earnings is measured and reported based on accrual. Therefore, the use of accrual base causes that create differences between accounting earnings and operating cash flows reported in cash flow statement. Therefore, accounting earnings can be divided into two parts of cash and accrual.

Accounting earnings = Cash component + Accrual component

Accounting earnings = Operating cash flows + Accrual

And also accrual part of earnings (accruals) will be divided into other components (Kordestani and Roodneshin, 2006). In most studies related to predict future cash flows has been emphasized to the usefulness of accounting earnings as a criterion for predicting future operating cash flows that for example we can refer to Greenberg *et al.* (1986), Dechow *et al.* (1998), El-Sayed Ebaid (2011) researches and so on. In this study, also we used accounting earnings as a criterion for predicting future operating cash flows.

Indeed, the main objective of present study is investigation of accounting earnings ability, the cash component of earnings (operating cash flows), cash and accrual component of earnings (operating cash flows and aggregate accruals) and cash component and accruals components of earnings in predicting future operating cash flows. Which accruals components of earnings include, changes in accounts receivable, changes in accounts payable, changes in inventory, depreciation and other accruals. In this study, first the similar research is reviewed, and then formulate hypotheses, the realm of research was determined and by using descriptive statistics, Pearson correlation and regression, data are analyzed and hypotheses were tested and finally the research results are presented.

2. LITERATURE REVIEW

In this section, the results of some of the most important researches that have been made in the field of predicting future cash flows are described.

Seng (1997) in his study studied the ability to predict earnings and cash flow measures to predict future cash flows in the 213 companies listed on the New Zealand Stock Exchange during 1989 to 1992. In this study, for cash flows were selected three measures of cash flows from operations, cash flows from investment activities and cash flows from financing activities. The research results showed that operating cash flows have more ability to predict future operating cash flows than earnings.

Telmoudi *et al.* (2010) examined financial information on 52 companies in Tunisia during the period 1998 to 2008 to predict operating cash flows. Their research results showed that operating cash flows are better predictor than earnings in predicting future operating cash flows.

Finger (1994) studied the ability of earnings to predict earnings and future cash flows during 1935 to 1987. In this study, 50 companies listed on the New York Stock Exchange were selected as samples. In his study, he considered three time intervals of 2, 4 and 8 years for the investigation of predicting ability. The research findings indicate that at short-term intervals cash flows can better predicted future cash flows than accounting earnings. But at long-term intervals, earnings and cash flows in predicting future cash flows act the same.

Barth *et al.* (2001) investigated the role of accruals in predicting future cash flows during the period 1987 to 1996. In this study, 10164 firm-year observations as sample were selected. They disaggregated earning into a cash component and five main accrual components to investigate the role of these components in predicting future cash flows. Results indicate that the disaggregation of accounting earning into two components of cash and accrual in predicting future cash flows has more power than accounting earnings. Also, research results revealed that the accrual components of earnings can increase predicting power to much more than before.

Kim and Kross (2005) studied the ability of operating earnings in operating cash flows predict in the time interval 1973 to 2000. Results showed that the relationship between operating earnings and operating cash flows of next year is increasing with time. But the best prediction from operating cash flows perform when operating earnings information related to the three years ago place as a base of the operating cash flows prediction.

Al-Attar and Hussain (2004) examined the ability of current accounting data (accounting earnings, cash flows and accruals) in predicting future cash flows of U.S. companies during 1991 to 2000. Research findings suggest that accounting earnings have less power than cash flows in predicting future cash flows. Also, results showed that the simultaneous use of cash flows and accrual components of earnings have more ability than cash flows in prediction.

Zhao *et al.* (2007) in their research investigated future operating cash flows prediction using the two accounting variables, current operating cash flows and current earnings. This study was performed on 350 Australian companies in an 11-year period from 1995 to 2005. The results indicate that the current operating cash flows are superior predictor than current earnings in the future operating cash flows prediction. Also, they said that operating cash flows have higher incremental information content than accounting earnings.

Habib (2010) in his study tested the relative ability of operating cash flows and earnings in predicting future operating cash flows during the time interval 1992 to 2007 for companies listed on the Australian Stock Exchange. In this study is used from two models for hypotheses testing which in both models dependent variable was future operating cash flows(from 1 to 3 future years) and independent variables are operating cash flows (for the first model) and current accounting earnings (for the second model). Research findings showed that first model i.e. current operating cash flows is superior to the second model i.e. current accounting earnings in future operating cash flows prediction.

El-Sayed Ebaid (2011) in his study investigated the ability of operating cash flows, current accounting earnings and accounting earnings components in predicting future operating cash flows. In this study, accounting earnings components is disaggregated into two cash and accrual components and then the accrual component of earnings is divided to other components such as changes in accounts receivable, changes in accounts payable, changes in inventory and depreciation expense. Also in this study is used from the financial information of 74 companies listed on Kuwait Stock Exchange during the period 1999 to 2007 to test hypotheses. The results show that accounting earnings has more ability than operating cash flows in future cash flows prediction. Also, the results indicate that accrual components have more power in predicting than accounting earnings.

Greenberg *et al.* (1986) in a study conducted to predict operating cash flows; they concluded that for predicting future operating cash flows, accounting earnings is better than operating cash flows. Also, Dechow *et al.* (1998) in their study investigated the relationship between earnings and cash flows in the New York Stock Exchange. Their research results indicate that historical earnings are better predictor than historical cash flows in future operating cash flows. But the research findings of Bowen *et al.* (1986) showed that, contrary to the Financial Accounting Standards Board opinion, cash flows have more power than earnings in predicting future cash flows.

3. RESEARCH METHODOLOGY

3.1. Statistical Society and Sample

Statistical society of this study includes all companies listed in Tehran Stock Exchange. Timeframe of this study is limited to the years 2006-2010. In the next stage, companies that have not the following conditions have been deleted from the target society:
  1. Companies must be listed before 2006.
  2. They should not be financial, investment institutions and banks.
  3. The end of fiscal year lead up to December 31.
  4. Financial period have not changed in the course of study.

5. Required financial information is available.

In the present study is used the following general formula (Formula Cochran) to select the given sample firms (Cochran, 1977). To get the maximum number of samples, p and q equal to 0.5 and estimation error is considered 10%.

$$n = \frac{NZ_{\frac{a}{2}}^2 p(1-p)}{\varepsilon^2(N-1) + Z_{\frac{a}{2}}^2 p(1-p)}$$

In the above formula:

N: the size of statistical society; n: sample size; Z: standard variable of normal distribution; p: success ratio; q: the ratio of failure; ε: estimation error.

According to the above formula, 80 companies in various industries are selected. To data collection was used from documentary method. It is worth noting that the source of required data collection is financial statements of companies which to extract them has been used from the site of Tehran Stock Exchange (Note 1) and CDs of financial data in companies listed in Tehran Stock Exchange.

3.2. Research Hypotheses

In order to evaluate the ability of accounting earnings components in predicting future operating cash flows and according to expressed theory bases, hypotheses are developed to test as follows:

Hypothesis A (H1): There is significant relationship between operating earnings and future operating cash flows prediction.

Hypothesis B (H2): There is significant relationship between the operating cash flows and future operating cash flows prediction.

Hypothesis C (H3): There is significant relationship between cash component (operating cash flows) and accrual components of accounting earnings (aggregate accruals) and future operating cash flows prediction.

Hypothesis D (H4): There is significant relationship between cash component (operating cash flows) and accrual components of accounting earnings and future operating cash flows prediction.

3.3. Methods of data analysis and Hypotheses testing

This study in the light of purpose is the type of applied research and according to the nature and method is descriptive-correlation type and its main objective is to determine the existence, amount and type of relationship between variables. Hypothesis testing is collected using the combined data. In order to establish a logical link between gathering evidence and hypotheses is used from descriptive statistics, Pearson correlation test and simple and multivariate regression. In this study, tests are performed at the level of error prediction 5%. Pearson correlation test hypotheses are as follows:

$$\begin{cases} H_0: r_p = 0 \\ H_1: r_p \neq 0 \end{cases}$$

Hypothesis H_0 means that there is not a significant correlation between individual independent variables with the dependent variable. However, hypothesis H_1 means that there is a significant correlation between individual independent variables with the dependent variable.

To test the significance of estimated coefficients of independent variable (variables) of used regression models is used from T test. Which its hypothesis testing is as follows:

$$\begin{cases} H_0: \beta_i = 0 \\ H_1: \beta_i \neq 0 \end{cases}$$

Hypothesis H_0 means that there is no significant relationship between independent and dependent variables. And Hypothesis H_1 means that there is a significant relationship between independent and dependent variables.

To test the significance of regression model in overall is used from F test. If F statistic significant is less than 5% (Sig F <5%), there are signs of significant relationships in the model. To test the predictive power of models is used from adjusted determination coefficient (adjusted R^2) and each of the models that have higher adjusted determination coefficient (adjusted R^2); it will have better predictive power.

If the regression residuals ($\varepsilon_{i,t}$) follow a certain order or show systematic and remarkable pattern, there will be Specification Error. In other words, it shows the correlation between dependent variable and model error. Simply, this correlation reflects the fact that some variables that are owned by the original model have been found in disruption that should be removed from it and as a correct explanatory variable go to the model. That for investigation of Specification Error in the regression model is used from Durbin-Watson test (DW).

Recognition of Specification Error using the statistic Durbin-Watson (DW) statistic is in this case, that if relevant statistic (DW) is larger than the upper limit of Durbin-Watson determined amount, then there is no serial correlation (Hardi, 2003). In other words, there is no autocorrelation between variables.

To test the Durbin-Watson (DW) test, hypothesis is as follows.

$$\begin{cases} H_0: p = 0 \\ H_1: p \neq 0 \end{cases}$$

Hypothesis P=0 means that there is no serial correlation and opposite hypothesis p≠0 means that there is serial correlation.

Finally, for final analysis and statistical tests is used from SPSS.19 and EXCEL software.

3.4. Research Variables and how they are calculated

Independent variables in this study include operating earnings and cash and accrual parts of accounting earnings. The variable of cash part of earnings is current operating cash flows and the variable of the accrual parts of earnings is aggregate accruals. Aggregate accruals or accrual parts of earnings are disaggregated into the five other components such as change in receivables, change in accounts payable, change in inventory, depreciation expense and other accruals. Dependent variable of study is cash flow from future operating activities or in other words cash component of earnings in the next year. These variables were calculated on the basis of financial statements information and are defined as follows:

Operating cash flows: Including net increase or decrease in cash amount from main and continuous activities creating operating income in business unit. Also some of operating cash flows that naturally cannot be connected directly to other classes of cash flows of cash flows statement are considered as cash from operations. Operating cash flows number has been extracted from audited cash flows statement of studied companies.

Operating profit: Net operating profit (loss) has been selected as representative of accounting earnings. Net operating profit (loss) number has been extracted from audited income statement of studied companies.

Aggregate accruals: Aggregate accruals equals to operating earnings minus cash flow from operations.

Five components of accrual part of earnings are calculated as follows:

Change in accounts receivable: It is obtained from difference in accounts receivable balance at the end of period and the first of period.

Change in accounts payable: It is obtained from difference in accounts payable balance at the end of period and the first of period.

Change in inventory: It is obtained from difference in inventory balance at the end of period and the first of period. Obtained numbers in these three components has been extracted from audited balance sheets of studied companies.

Depreciation expense: In this study, depreciation expense means depreciation expense of fixed assets that are extracted from notes accompanying the financial statements.

Other aggregate accruals: It is equal to operating earnings - (operating cash flows + change in accounts receivable + change in inventory - changes in accounts payable - depreciation expense).

It should be noted, all study variables are homogeneous using average total assets of the company.

3.5. Models used to test the Research Hypotheses

Models used to predict future operating cash flows are like the studies of Barth *et al.* (2001), Kim and kross (2005), Al-Attar and Hussain (2004) and El-Sayed Ebaid (2011). In this study, to test hypotheses, models (1) to (4) are estimated:

In order to test the first hypothesis is used from the model (1):

$$CFO_{i,t+1} = \beta_0 + \beta_1 EARN_{i,t} + \varepsilon_{i,t} \tag{1}$$

In order to test the second hypothesis is used from the model (2):

$$CFO_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \varepsilon_{i,t} \tag{2}$$

In order to test the third hypothesis is used from the model (3):

$$CFO_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \beta_2 ACCRUALS_{i,t} + \varepsilon_{i,t} \tag{3}$$

In order to test the forth hypothesis is used from the model (4):

$$CFO_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \beta_2 \Delta AR_{i,t} + \beta_3 \Delta INV_{i,t} + \beta_4 \Delta AP_{i,t} + \beta_5 DEPR_{i,t} + \beta_6 OTHER_{i,t} + \varepsilon_{i,t} \tag{4}$$

That in these models:

$CFO_{i,t+1}$ = future operating cash flows of company i

$CFO_{i,t}$ = operating cash flows of company i in the year t.

$EARN_{i,t}$ = operating earnings of company i in the year t.

$ACCRUALS_{i,t}$ = aggregate accruals of company i in the year t = EARN - CFO

$\Delta AR_{i,t}$ = change in accounts receivable of company i in the year t.

$\Delta INV_{i, t}$ = changes in inventory of company i in the year t.

$\Delta AP_{i, t}$ = change in accounts payable of company i in the year t.

$DEPR_{i, t}$ = the depreciation expense of fixed assets of company i in the year t.

$OTHER_{i, t}$ = other aggregate accruals of company i in the year t = EARN – (CFO + ΔAR + ΔINV – ΔAP – DEPR)

$\varepsilon_{i,t}$ = a disruption component (residual) of company i in the year t.

β_0 = constant coefficient (intercept) and β_1 to β_6 = coefficient of independent variables (explanatory).

All variables are homogeneous with average total assets of the company.

4. EMPIRICAL RESULTS

4.1. Descriptive Statistics

Descriptive statistics of main variables are presented in table 1. As it can be seen, mean and median values for operating earnings variables, operating cash flows and accruals components of earnings are positive. And aggregate accruals and other accruals have negative mean and median. Negative median and mean for total accruals reflect the fact that operating earnings is smaller than cash flow from operations. Standard deviation of operating cash flows (0.129) is higher than the standard deviation of total accruals (0.104) that indicate operating cash flows during the study period have greater variability than accruals.

As in table (1) is observed, the mean of changes in accounts receivable, changes in inventory, changes in accounts payable, depreciation expense and other accruals are respectively 0.023, 0.018, 0.014, 0.027 and - 0.030. That depreciation expense among accrual component of earnings has the highest mean and we can say that investigated companies have significant depreciable fixed assets. And even we can say that studied companies randomly were selected among big companies listed in Tehran Stock Exchange. And also distribution of depreciation expense is lower than accrual component of earnings and it is indicated that companies use a specific way to depreciate fixed assets.

Table 1: Descriptive statistics of research

Statistics / variable	Mean	Median	Maximum	Minimum	Standard deviation
CFO_{t+1}	0.157	0.135	0.768	-0.217	0.157
CFO_t	0.147	0.126	0.652	-0.189	0.129
$EARN_t$	0.118	0.087	0.605	-0.314	0.128
$ACCRUALS_t$	-0.029	-0.026	0.328	-0.410	0.104
ΔAP_t	0.014	0.006	0.212	-0.156	0.048
ΔAR_t	0.023	0.020	0.416	-0.356	0.088
ΔINV_t	0.018	0.016	0.228	-0.177	0.060
$DEPR_t$	0.027	0.024	0.126	0.001	0.020
$OTHER_t$	-0.030	-0.039	0.370	-0.428	0.111

CFO = Cash flow from operations; EARN = operating earnings; ACCRUALS = aggregate accruals = EARN - CFO; ΔAP = change in accounts payable; ΔAR = change in accounts receivable; ΔINV = change in inventory; DEPR = depreciation expense; OTHER = other aggregate accruals = EARN - (CFO + ΔAR + ΔINV - ΔAP - DEPR); all variables are homogeneous using average total assets of the company.

4.2. Correlation analysis

In table 2, the test results of Pearson correlation coefficients are presented. The results show that there isn't a multiple linear correlation between study variables. Because obtained correlation coefficients are less than 70%. Moreover, the results suggest that the correlation between current operating cash flows (CFO_t) and future operating cash flow (CFO_{t+1}) is positive and significant at 1% level. Also correlation coefficients between future operating cash flow (CFO_{t+1}) with variables of operating earnings (EARN) and depreciation expense (DEPR) are respectively 0.590 and 0.314, which shows a significant and positive correlation at 1% level between these variables.

The results of the correlation between future operating cash flows (CFO_{t+1}) with variables of changes in accounts payable (ΔAP) and other aggregate accruals (OTHER) indicate that the correlation between them is negative and significant at 1% level. But correlation between variables of aggregate accruals (ACCRUALS), changes in accounts receivable (ΔAR) and changes in inventory (ΔINV) with the dependent variable of study i.e. future operating cash flows (CFO_{t+1}) isn't significant. Among independent variables, a significant correlation between operating earnings and cash flow from operations (0.672) and between aggregate accruals and other aggregate accruals (0.551) is observed.

Table 2: Pearson correlation test

variable	CFO_{t+1}	CFO_t	$EARN_t$	$ACCRUALS_t$	ΔAP_t	ΔAR_t	ΔINV_t	$DEPR_t$	$OTHER_t$
CFO_{t+1}	1	0.644**	0.590**	-0.070	-0.160*	0.008	0.068	0.314**	-0.122*
CFO_t	0.644**	1	0.672**	-0.409**	0.018	-0.101**	-0.038	0.227**	-0.235**
$EARN_t$	0.590**	0.672**	1	0.401**	-0.055	0.085	0.178**	0.135*	0.212**
$ACCRUALS_t$	-0.070	-0.409**	0.401**	1	-0.090	0.230**	0.266**	-0.114*	0.551**
ΔAP_t	-0.160*	0.018	-0.055	-0.090	1	0.170**	0.167**	-0.047	0.116*
ΔAR_t	0.008	-0.101**	0.085	0.230**	0.170**	1	-0.071	0.026	-0.457**
ΔINV_t	0.068	-0.038	0.178**	0.266**	0.167**	-0.071	1	0.096	-0.147*
$DEPR_t$	0.314**	0.227**	0.135*	-0.114*	-0.047	0.026	0.096	1	-0.023
$OTHER_t$	-0.122*	-0.235**	0.212**	0.551**	0.116*	-0.457**	-0.147*	-0.023	1

** Correlation is significant at 1% level, * correlation is significant at 5% level; CFO = Cash flow from operations; EARN = operating earnings; ACCRUALS = aggregate accruals = EARN - CFO; ΔAP= change in accounts payable; ΔAR = change in accounts receivable; ΔINV = change in inventory; DEPR = depreciation expense; OTHER = other aggregate accruals = EARN - (CFO + ΔAR + ΔINV - ΔAP - DEPR); all variables are homogeneous using average total assets of the company.

4.3. The Results of Hypotheses Testing
4.3.1. Results of Testing H1

In the first hypothesis, the relationship between operating earnings and future operating cash flows will be investigated. As can be seen in Table (3), the results suggest that statistically there is a positive correlation (coefficient equals 0.725) and significant at 1% level between operating earnings and future operating cash flow. And this means that whatever current operating earnings are more, cash flow from future operations will be more. Also, the intercept of model is significant at 1% level. Thus the first hypothesis, as indicate that there is a significant relationship between operating earnings and future operating cash flows prediction, will be confirmed.

Table 3: Results of the first hypothesis test (model 1)

$CFO_{i,t+1} = \beta_0 + \beta_1 EARN_{i,t} + \varepsilon_{i,t}$			
Variable	**Coefficient**	**t-statistics**	**Sign.**
Constant	0.071	7.137	0.000
$EARN_{i,t}$	0.725	12.621	0.000
Adjusted R^2	0.346		
F-Statistics	159.285		
Prob(F-statistic)	0.000		
Durbin-Watson	1.714		

EARN = operating earnings, which is homogeneous with average total assets of the company.

As it is evident from the results of table (3), F statistic value for model 1 is equal to 159.285 and its p-value is equal to 0.000. And indicates that model 1 is significant in general. Also, adjusted determination coefficient (Adjusted R^2) shows that operating earnings describe 34.6% changes of future operating cash flows.

About autocorrelation test through Durbin- Watson, we can be said that because the value of this test is equal to 1.714 and this value is less than two, we can conclude that there is no autocorrelation between variables.

4.3.2. Results of Testing H2

The second hypothesis of research states that there is a significant relationship between current operating cash flows and future operating cash flows prediction. According to the results listed in table (4) is determined that there is a positive correlation (coefficient equals 0.789) and significant at 1% level between current operating cash flows and future operating cash flows. Thus, the second hypothesis of research is confirmed.

The F statistic is equal to 211.706, represents a general significant of model 2 at 1% level. Also, the adjusted determination coefficient (Adjusted R^2) is equal to 0.413. That indicate current operating cash flows explains 41.3% changes in future operating cash flows.

Table 4: Results of the second hypothesis test (model 2)

$CFO_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \varepsilon_{i,t}$			
Variable	**Coefficient**	**t-statistics**	**Sign.**
Constant	0.041	3.873	0.000
$CFO_{i,t}$	0.789	14.550	0.000
Adjusted R^2	0.413		
F-Statistics	211.706		
Prob(F-statistic)	0.000		
Durbin-Watson	1.864		

CFO = Cash flow from operations, which is homogeneous with average total assets of the company.

The calculated value of Durbin – Watson test is equal to 1.864. Therefore, we can conclude that disruption component of model 2 in the investigated course are independent. In other words, the disruption component values of model are random and autocorrelation assumption between variables can be rejected.

4.3.3. Results of Testing H3

In the third hypothesis, the relationship between cash and accrual component of earnings with future operating cash flows are investigated. As can be seen in table (5), the results indicate that statistically there is a significant positive correlation (coefficient 0.905 and 0.352, respectively) between cash component (operating cash flows) and accrual (aggregate accruals) of earnings and future operating cash flows at 1% level. Thus, the third hypothesis of research, which said there is a significant relationship between operating cash flows and aggregate accruals of accounting earnings and future operating cash flows prediction, is confirmed.

Table 5: Results of the third hypothesis tests (model 3)

$CFO_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \beta_2 ACCRUALS_{i,t} + \varepsilon_{i,t}$			
Variables	**Coefficient**	**t-statistics**	**Sign.**
Constant	0.034	3.316	0.001
$CFO_{i,t}$	0.905	15.834	0.000
$ACCRUALS_{i,t}$	0.352	4.979	0.000
Adjusted R^2	0.457		
F-Statistics	126.701		
Prob(F-statistic)	0.000		
Durbin-Watson	1.974		

CFO = Cash flow from operations; ACCRUALS = aggregate accruals = EARN - CFO, EARN = operating earnings of company that all variables is homogeneous using average total assets of the company.

About the overall validity of regression model 3, according to value and significant of F statistic (126.701 and .000, respectively) can be stated that the model is statistically significant. Adjusted R^2 in this model is equal to 0.457. This figure shows that if the effect of other variables being constant, only 45.7% changes of dependent variable (future operating cash flows) can explain by changes in the independent variables (operating cash flows and aggregate accruals) and other changes in the dependent variable is explained by variables other than the above. The Durbin- Watson value is 1.974, which indicates no correlation between disruption sentences.

4.3.4. Results of Testing H4

In the fourth hypothesis of research, the relationship between the six components of operating earnings (CFO, ΔAR, ΔINV, ΔAP, DEPR and OTHER) and future operating cash flows are investigated. According to the results listed in table (6) is determined that the relationship between operating cash flows, changes in accounts receivable, changes in inventory, depreciation expense and other accruals with future operating cash flows statistically is positive and significant at 1% error level. However, the relationship between changes in accounts payable and future operating cash flows statistically is negative and significant at the 1% error level. And represents this fact that whatever changes in accounts payable is more, operating cash flows of next year is less. It should be noted that the intercept is not significant in this model. Thus, the fourth hypothesis of research is confirmed.

Table 6: The results of the fourth hypothesis test (model 4)

$CFO_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \beta_2 \Delta AR_{i,t} + \beta_3 \Delta INV_{i,t} + \beta_4 \Delta AP_{i,t} + \beta_5 DEPR_{i,t} + \beta_6 OTHER_{i,t} + \varepsilon_{i,t}$			
Variables	**Coefficient**	**t-statistics**	**Sign.**
Constant	0.006	0.488	0.626
$CFO_{i,t}$	0.852	15.315	0.000
$\Delta AR_{i,t}$	0.398	4.360	0.000
$\Delta INV_{i,t}$	0.444	3.872	0.000
$\Delta AP_{i,t}$	-0.834	-5.770	0.000
$DEPR_{i,t}$	1.018	2.977	0.003
$OTHER_{i,t}$	0.283	3.831	0.000
Adjusted R^2	0.508		
F-Statistics	52.433		
Prob(F-statistic)	0.000		
Durbin-Watson	1.994		

CFO = Cash flow from operations; ΔAR= change in accounts receivable; ΔINV = changes in inventory; ΔAP = change in accounts payable; DEPR = depreciation expense; OTHER = other aggregate accruals = EARN - (CFO + ΔAR + ΔINV - ΔAP - DEPR), EARN = operating earnings of company that all variables is homogeneous using by average total assets of the company.

About the overall validity of regression model 4, according to the value of F statistics can be stated that model is statistically significant. Also, Adjusted R^2 shows that 50.8% changes of future operating cash flows are described by six components of operating earnings (independent variables). Durbin- Watson value is 1.994, which is indicative of residual independence.

5. CONCLUSION

For users of accounting information, in addition to information related to profitability, cash flow information is also high important and these people before any judgment and decision about companies are interested to know more about future cash flows of these companies (Afshari, 2000). Therefore, we can be said that investors and shareholders for taking investment decisions and assessing business unit performance, In addition to considering the level of profitability in that unit, have more attention to the liquidity and cash flows in the current year and future. This study investigated the ability of accounting earnings and cash and accrual components of earnings to predict future operating cash flows of companies listed in Tehran Stock Exchange. In order to investigate the independent variables of research in predicting future operating cash flows, four hypotheses were formulated and using four regression models were tested. The results of the first hypothesis test that is performed using model 1, indicates that statistically there is a significant and positive relationship between the current operating earnings and future operating cash flows. The second hypothesis was tested by model 2 and the results have shown that statistically there is a positive and significant relationship between current operating cash flow and future operating cash flows. Also, the adjusted R^2 value of model 2 is greater than model 1 which indicates that current operating cash flows have more ability to predict future operating cash flows than current operating earnings. The results of the third hypothesis test that obtained using Model 3 indicate that statistically there is a positive and significant relationship between cash and accrual component of earnings and future operating cash flows. Also, the adjusted R^2 value of the Model 3 has shown that this model compared with model 1 and 2 (use of cash and accrual components compared with the use of operating earnings and operating cash flows separately) has more explanatory power in predicting operating cash flows. The research results of Barth *et al.* (2001), Al-Attar and Hussain (2004) and El-Sayed Ebaid (2011) are consistent with the findings of this part of research.

Test results obtained from the fourth hypothesis test stating that statistically there is a positive and significant relationship between cash component of earnings and accrual components of earnings (model 4) with future operating cash flows, except changes in accounts payable that has negative and significant relationship. Considering that Model 4 has more adjusted R^2 than other models, can be noted that the simultaneous use of operating cash flows, change in accounts receivable, Change in accounts payable, Change in inventory, depreciation expense and other accruals cause the better predictions of future operating cash flows than other models. The results of this part of research are the same with the results of Barth *et al.* (2001), Al-Attar and Hussain (2004) and El-Sayed Ebaid (2011).

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Notes

Note 1. www.irbourse.com.