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The Effects of the Predictive Ability of Accruals and Cash Flows on Earnings Quality: Evidences from TSE

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Abstract

This paper examines the effects of the predictive ability of accruals and cash flows on earnings quality in Tehran Stock Exchange (TSE). In this study we have used two methods: cross-section and pooled for testing hypothesis. The results show that Sloan model has the strongest ability to predict future earnings, and cash component earnings have more ability than accruals component earnings for predicting future earnings. Also this study indicats that prediction quality of earnings components affects on future earnings. Also this paper shows that the ability prediction of future earnings and persistence of earnings (as two assessment criteria of earnings quality) increases when earnings contain a stronger predictive ability of the accrual component and/or a cash flow component but, earnings-returns relation (as an assessment criterion of earnings quality) not increases.

Keywords: Earnings Quality, Components of Earnings, Accruals, Cash Flows.

JEL classification: G11, G14

Introduction

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As Lev et al. (2005) stated, balance sheet items such as net property, plant and equipment, goodwill and other intangibles, accounts receivable and inventories, deferred taxes and contingent liabilities, or key income statement figures, such as revenues, pension expense, in-process R&D or the soon-to-be-expensed employee stock options depend on management prediction. The results of the enterprise which are portrayed by quarterly and annual financial reports contain web of facts and conjectures that is impossible for the information users to divide them. With the increasing role of fair-value in measuring assets and liabilities, the role of estimates and projection in financial reports will greater increase. Thus, using from predictions is unavoidable in accounting today.

On the one hand, estimates are primary tools for managers to inform the investors from the forward-looking proprietary information. For example, if the bad debt provision properly estimates, the expected future cash flows from customers will inform investors (Lev & et al, 2005)

On the other hand, "in the current volatile and largely unpredictable business environment, due to fast-changing market conditions (deregulation, privatization, emerging economies) and rapid technological changes, it is increasingly difficult to make reliable forecasts or projections (forward-looking estimates) of financial information. Consider, for example, the estimated future return on pension assets—a key component of the pension expense: This estimate is essentially a prediction of the long-term performance of capital markets" (Lev & et al, 2005). For example, SFAS 121 has forced the managers to estimate future cash flows from tangible and intangible assets to determine the large impairment charges, while determining correct and truth asset cash flows for several years doesn't seem to be easy, and unknown degree of noise will clearly detract from their usefulness. So, the impact of the vast estimates and projections for creating useful information is an open question (Lev & et al, 2005), and this study has done for answering this question.

This paper investigates the effects of predictability of current earnings components on earnings quality. This approach provides new insights into the understanding of well-established claim that accruals are tradeoff between two essential conceptual frameworks: relevancy and verifiability. It also adds to the growing interests for prior research investigating the differential information content o the cash flow and accrual components of earnings by examining contemporaneous stock price.

This study extends Sloan's work (1996) and looks much detailed into the predictive behaviors of current earnings components in which Sloan generally implies the magnitude of accruals negatively indicating the level of earnings quality. Also this paper assesses whether quality of earnings components in predicting themselves improve earnings prediction and earnings persistence or not. So, our objective in this paper is to determine effects of the predictive ability of accruals and cash flows on earnings quality. In this paper we hypothesize that a stronger ability of current AC and CF to predict AC and CF is positively related to future earnings prediction, earnings persistence. In the next section the literature review is

described, then research hypothesis are discussed and next section is about analyze data and hypothesis. The last section is the conclusion.

Theoretical Background and Literature Review

Theoretical Background

"Earnings quality" (EQ) has different definitions and researchers have used different definitions about earnings quality. Earnings persistence means the continuous current earnings. When we have the more earnings persistence the more proposed earnings quality will comes, because it is assumed that the power for maintenance of current earnings increases.

Schipper and Vincent (2003) believe that earnings quality relies on both the kind and amount of accounting information. They explain earnings quality according to and the use of it to take decision making. Researchers have used different frameworks in the literature review of accounting which some of them are mentioned here:

The following framework has been presented for assessment of EQ by Cornell and Landsman (2003):

1- *Value relevance method.* In this method the relation between stock price (as a dependent variable) and accounting earnings (as an independent variable) are examined. If R^2 adjusted coefficient would increase, it is expected that EQ would increase too.

2- *Information content method.* The relationship between return changes or price changes and unexpected level of earning changes are tested in the present method. As much as R^2 adjusted would be closer to one, information content of earnings would be higher (and EQ increases).

3- *Predictability method.* In this method predict future earnings are discussed by post earnings. If absolute averages of prediction errors decrease, the model will has predicting power.

4- *Economic Income method.* A criterion which is used in this method is cost of capital. Economic value added number is also based on economic income.

Khajavi and Nazemi (2006) also introduce another framework:

1-"Time series of earnings characteristics (Components: earnings persistence, predictability and variability).

2- The relation between Earnings, Accruals and cash Flows (Components: ratio of operating cash flows to earnings, change in total accruals and predicting abnormal accruals by accounting variables).

3-Qualitative characteristics based on FASB framework (Components: Relevance and reliable)".

This paper, which uses the current accruals and cash flows in the assessment of future earnings, has some economic implication. For example, the predictive ability of accruals represents two essential behaviors of accruals: the ability to convert expected accruals into realized cash flows (i.e. realizably) and the ability to report timely and reliable information (i.e. timeliness and persistence).Also, accounting earnings containing predominantly higher predictive ability of earnings

components should presumably be more persistent and have a stronger associate with stock returns. As a result, in this paper assessment criteria of EQ contain earnings forecast, earnings persistence and earnings-returns relations.

Literature Review

Rayburn (1986) and Biddle et al. (1995) by testing a significant non-zero coefficient of cash flow on an earnings-returns relation show that market place different weight on cash flow and accrual components of current earnings.

As Neill et al. (1991) stated, the major research refines income disaggregation and adjusts holding period to investigate operation cash flows because cash flows provides incremental information beyond accrual earnings are mixed. Studies of Rayburn (1986) and Bowen (1987) on incremental information decompose accounting earnings into cash flow from operation, current accrual and noncurrent accruals and regresses stock return against each component of earnings.

Rayburn (1986) shows a significant association between abnormal returns with unexpected operating cash flows and unexpected aggregate accruals. He reports that the current accruals have incremental information content beyond other components of earnings but the results. In contrast, evidences of Bowen et al. (1987) show that cash flows and accrual earnings have mutual incremental information content each other on the pooled cross-sectional, time-series regression.

The first paper that directly analyzes the relative persistence of cash flow and accrual components of current earnings on future earnings forecast belongs to Sloan (1996). Based on coefficients from earnings forecast equation, he shows that cash flow component of current earnings is more persistent than accruals. Also his evidences show that the mean revision takes place more rapidly for firms with extreme accruals than those with extreme cash flows.

Findings of Sloan (1996) also show that earnings performance attributable to the accrual component of earnings exhibits lower persistence than that to the cash flow component of earnings. He finds that accruals have higher rates of mean reversion (i.e. less persistent) in earnings as compared to cash flow components. According to his observations, Sloan (1996) demonstrates that an increase in the accrual component of current earnings is negatively associated with earnings persistence.

Cheng et al. (1996) find that the incremental information content of cash flows from operation increase and that of accounting earnings decreases as the permanence of earnings decreases.

Sloan et al. (2001) results indicate that information in accruals about earnings quality is not limited to the current accruals analyzed by Sloan (1996), but extends to non-current accruals. They also show that while information in accruals originate almost exclusively from asset accruals, liability accruals play a useful role in helping to isolate information in asset accruals about earnings quality. They also find that information in accruals about earnings quality originates from both growth in the scale of operations and deterioration in the efficiency of asset usage.

Their results indicate that information in accruals about earnings quality is not attributable to a single factor, such as discretionary accruals or firm growth.

Chan et al. (2001) show that accruals (the difference between accounting earnings and cash flow) are reliably, negatively associated with future stock returns. Also they find that earnings increases that are accompanied by high accruals, suggesting low-quality earnings, are associated with poor future return.

Dechow and Dichev (2002) find that specific characteristics of firms such as absolute magnitude of accrues length of operating cycle, standard deviation of sale, cash flows and size can be used and earnings quality evolution.

Saghafi and kordestani (2003) find that reaction of market to increasing in dividend is positive and reaction of market to decreasing in dividend is negative. They also show that abnormal return increases (decreases) when dividend and abnormal earnings increase (decrease).

Bao and Bao (2004) show that quality earnings smoothers have the highest price-earnings multiple while non-quality non-smoothers have the lowest price-earnings multiple.

Yoder (2006) showed that the accrual models than the cash flow models, haven't more ability for anticipating the future flow (the next year). The researcher said about its cause, that the increasing ability of the accrual models anticipation has improved by decreasing the sale and income fluctuations and decreasing the fluctuations of the inventory to the future sale.

Arthour et al. (2007) considered the persistence of cash flow components into future earnings. Their results indicated that the operating cash flow separation to its direct components increased the ability of the future earnings prediction considerably. Also, they showed that the operating cash flow components which are related to the operating activities directly (core-components) are significant for predicting the future income much more. As, the operating cash flow component that aren't related to the operating activities directly (non-core components) aren't significant on the future earning prediction.

Name et al. (2007) indicated that adding the earning accrual components to the cash flows model increased the ability of it for predicting the cash flows. Also, adding the positive accrual to the cash flows improved its ability for anticipating the cash flows considerably.

Skiner and Soltes (2010) investigate whether the informativeness of payout policy with respect to earnings quality changes over this period. They find that the reported earnings of dividend-paying firms are more persistent than those of other firms and that this relation is remarkably stable over time. They also find that dividend payers are less likely to report losses and those losses that they do report tend to be transitory losses driven by special items

Yen and Miao (2011) examine whether dividend paying status is associated with the quality of earnings. They find dividend paying status is associated with (1) lower absolute values of discretionary accruals; (2) lower standard deviation and absolute magnitude of the errors associated with the mapping of accruals into cash flows; and (3) more value relevant earnings. They also find evidence that the

positive association between dividend paying status and earnings quality is stronger (weaker) when the size of dividend payouts is larger (smaller). Overall, our results suggest dividend paying status is indicative of firms' earnings quality.

Hypothesis

Such as previous, the present study argues that reporting earning components provides more relevant information rather than aggregate earnings alone. We guess that the segregated accounting earnings provide is a better proxy rather than aggregate earnings alone for future earnings expectation, thus we think the *model of Sloan* is the most accurate model, because this model considers both components of earnings and aggregate earnings simultaneously. Sloan (1996) shows that coefficient on accruals is smaller than cash flows and he get this conclusion that lower persistence of earnings performance is related to the accrual component of earnings. Base on Sloan' conclusion (1996) we guess that cash component of current earnings has more ability to predict the future earnings rather than accrual component, because management usually can't manipulate cash flow from operation very much. Therefore:

H1 (i): Sloan prediction model is the most accurate earnings prediction model among three earnings prediction models: the autoregressive, the Sloan model and the combined-earnings-components.

H1 (ii): Cash component of current earnings has more ability to predict to future earnings than accrual component**.**

Next question is related to investigate the effects of the predictive quality of accruals and cash flows on future earnings (as assessment criteria of EQ) .For examining this question two hypothesis are created:

H2 (i): The ability prediction of future earnings increases when current earnings contain a stronger predictive ability of future cash flows.

H2 (ii): The ability prediction of future earnings increases when current earnings contain a stronger predictive ability of future accruals.

Third question is related to the performance of earnings. Such as Sloan (1996) and Simon Shi-Mu Yang (2000) this paper proposes that the performance of earnings is positively related to the predictive ability of earnings components. If the accrual component primarily related to the low persistence of current earnings performance, the earnings which are containing a stronger predictive ability of earnings components are more probably persist .In the other words, aggregate earnings are more likely to persist if both the accrual and cash component of current earnings are more persistent. As a result:

H3: The persistence of earnings increases when current earnings contain a stronger predictive ability of the accrual component and/or cash flow component.

The last hypothesis investigates whether stock prices reflect the different predictive ability of earnings components contained in current earnings. Consistent with prior research, this paper predicts that contemporaneous relationship between stock prices and earnings increases when earning components possess a stronger predictive ability. As a result:

H4: The contemporary association between stock returns and earnings increases when current earnings contain a stronger predictive ability of the accrual component and/or the cash flow component.

Sample Selection and Definition of Variables

Similar to Chang et al. (1996) and Pfeiffer et al. (1998) and Simon Shi-Mu Yang (2000), the sample is not restricted to any industry. Table 1 provides a detailed description of eliminating observations due to the analysis restrictions. This study covers the time period from 2000 to 2006 because cash flows from operations of derived from the Statement of Cash Flows that was not mandated by national accounting standards in Iran until 2000, and the time of the present research the data related from 2006 until now has not been available.

TABEL 1: Description ofthe Sampel Selection for Analysis during the 2000-2006 Time Period

Steps	Number of Firm-Years	Firms
1. All Firm-years with available cash from operations and earnings	**3,031**	**433**
2. Deletion of Firms that End of their periods has not been at 20th March	**(700)**	**(100)**
3. Exclusion of observatios not having at least six consecutive years	**(665)**	**(95)**
4. Exclusion of observatios that have changed their year-ends	**(56)**	**(8)**
Total Sampel		**1,610**
230		

Variables used in the paper are defined as follows:

$$GFPS = \left(\frac{CFO}{NCSO \times BP}\right)$$

$$OFPS = \left(\frac{OE}{NCSO \times BP}\right)$$

$$TAPS = \left(\frac{OE - CFO}{NCSO \times BP}\right)$$

Where

CFPS=Cash flows from operations per share

CFO= cash flows from operations

NCSO=number of common shares outstanding

BP= beginning-of-year price

OEPS = operations earnings per share

OE=operations earnings

TAPS= Total accruals per share

OE-CFO= Total accruals= operations earnings -cash flows from operations

R_{jt} = Value-weighted market adjusted return; defined as the difference between the raw return (inclusive of dividends and any liquidating distribution) and the

value-weighted market return on firm j cumulating from the fourth month of fiscal year t to the third month of year t+1.

Earnings and all earnings components are scaled by the number of common shares and deflated by beginning-of-year share price.

Model Assumptions

For testing hypothesis 1(i) the below models have estimated:

Autoregressive model:

$$E_{t+1}= \alpha_0+ \alpha_1 E_t + \zeta_{t+1} \quad (1)$$

Sloan model:

$$E_{t+1}= \gamma_0 + \gamma_1 AC_t + \gamma_2 CFO_t + \zeta_{t+1} \quad (2)$$

Combined-earnings-components model:

$$(CFO_{t+1}+AC_{t+1}) =\gamma_0+ (\boldsymbol{\gamma_2 + \gamma_5}) AC_t + (\boldsymbol{\gamma_3 + \gamma_6}) CFO_t +\zeta_{t+1} \quad (3)$$

Cash flows model: $$CFO_{t+1} =\gamma_1+\boldsymbol{\gamma_2} AC_t + \gamma_3 CFO_t + \varepsilon 1_{t+1} \quad (3\text{-}1)$$

Accruals model: $$AC_{t+1} =\gamma_4+\boldsymbol{\gamma_5} AC_t + \gamma_6 CFO_t + \varepsilon 2_{t+1} \quad (3\text{-}2)$$

For testing hypothesis 1(ii) the Sloan model has been used.

For testing hypothesis 2(i) the below model has been estimated:

$$E_{t+1}= \gamma_1+\gamma_2 AC_t+\gamma_3 CFO_t+ \gamma_4 D_{CF} AC_t+ \gamma_5 D_{CF} CFO_t + \varepsilon \quad (4)$$

For testing hypothesis 2(ii) the below model has been used:

$$E_{t+1}= \gamma_1+\gamma_2 AC_t+ \gamma_3 CFO_t + \gamma_4 D_{AC} AC_t+ \gamma_5 D_{AC} CFO_t + \varepsilon \quad (5)$$

For testing hypothesis 3 and hypothesis 4 models 1 and 6 have been estimated.

$$R_{jt} = \alpha_0+ \alpha_1 E_t + \varepsilon \quad (6)$$

In above models:

Earnings is defined as operations earnings.

CFO_t : cash flows from operations in time t, CFO_{t+1}: cash flows from operations in time t+1,

AC: Accruals that is different between operations earnings and cash flows from operations

R_{jt} is value-weighted market adjusted return

D_{CF} is a proxy of cash flows model errors (3-1). If the absolute forecast errors be lie above the median, D_{CF} =1 and if it be below the median, D_{CF} = 0

D_{AC} is a proxy of accruals model errors (3-2). If the absolute forecast errors be lie above the median, D_{AC} =1 and if it be below the median, D_{AC} = 0.

Descriptive Statistics

Table 2 reports descriptive statistics on earnings, cash flows and accruals (Earnings, cash flows and accruals are scaled by beginning-of-year share price). The mean earnings is 0.136 and operating ash flows has a mean value of 0.171.The accrual component is difference between earnings and the operating ash flows that has a mean value of -0.025.The negative value is expected because some non-cash expenses like amortization and depreciation reduced earnings. The standard deviation of accrual (0.247) and cash flows (0.249) are higher than earnings (0.218).

TABLE 2 : Descriptive Statistics of Annual Earnings, Accruals and Annual Cash Flows from Operations

Total Sampel Firm-Years =1,610					
Variables	Mean	Q_1	Median	Q_3	Std. Deviation
Earnings (E)	0.136	0.045	0.119	0.204	0.218
Cash Flows (CF)	0.171	0.024	0.110	0.240	0.249
Total Accruals(AC)	-0.025	-0.117	-0.001	0.087	0.247

Tests of hypothesis

The Mean absolute deviation or absolute forecast errors defined as the difference between actual values and predicted values is used to compare the measure of predictive accuracy for different forecast models.

Analysing data and Testing hypo thesises

hypothesis 1(i)

The first hypothesis compares the predictive accuracy of cross-sectional and pooled for future earnings estimated by the autoregressive, the Sloan and the combined-earnings-components prediction models. Findings of this hypothesis show in Table 3. According to table 3 "between" 2001 to 2006, the mean absolute forecast errors of the Sloan model is lower than the autoregressive model and the autoregressive model is lower than the combined-earnings-components model.

The results in table 3 present the Sloan prediction model has the smallest forecast errors, so it is the most accurate prediction model and the combined-earnings-components model has the largest forecast errors and, so it is the least accurate prediction model in cross-section method.

Also the results in table 3 present the forecast errors in the combined-earnings-components model; the Sloan model and the autoregressive model are 0.204, 0.132 and 0.133 in pooled method. It means the Sloan model is the most accurate prediction models and the combined-earnings-components model is the least accurate prediction models in pooled method like cross-section method. As shown we conclude that the Sloan model is the most accurate prediction model among three models in cross-sectional prediction and pooled prediction methods.

TABLE 3: Comparisons of Predictive Accuracy for Earnings Predictions Based on the Autoregressive, the Sloan Earnings-Components and the Combined-Earnings-Components prediction Models

Year	Autoregressive model	Sloan model	Combined-earnings-components model
	Absolute Mean forecast errors	Absolute Mean forecast errors	Absolute Mean forecast errors
2001	0.078	0.077	0.106
2002	0.107	0.100	0.147
2003	0.098	0.096	0.162
2004	0.092	0.091	0.146
2005	0.099	0.095	0.163
2006	0.130	0.120	0.252
Pooled	0.133	0.132	0.204

hypothesis1 (ii)

Sloan (1996) documents the smaller coefficient on accruals is smaller than cash flows and concludes that the lower persistence of earnings performance is related to the accruals component of earnings (i.e. the coefficient on the accrual component of earning, γ_1 is 0.765, while the coefficient on the cash component of earnings, γ_2 is 0.855).

In addition, Simon Shi-Mu Yang (2000) reports that the coefficient on the accruals component of earnings, β_1 is 0.362, while the coefficient on the cash component of earnings, β_2 is 0.434, which is significantly larger than that of accrual component. Based on Sloan، s (1996) and Yang (2000) findings, in the present study the accuals component is less than the cash component in the cross-sectional method and pooled method and it shows that these components have different implications for the assessment of future earnings. So that according to table 4 Sloan model shows that cash flow component earnings has higher persistence than accruals component earnings in both methods, cross-sectional and pooled. Also table 4 shows that cash flows have more ability than accruals for predicting future earnings in both methods, cross-sectional and pooled, so this difference is significant according to F- Statistic. As a result the cash component of current earnings has more ability to predict of future earnings than the accrual component, so we can not reject the hypothesis1 (ii) based on the results of the present study.

TABLE 4: Comparisons of Predictive Ability Accruals Component Earnings and Cash Flow Component Earnings for Earnings Predictions: Earnings $_{t+1}$= γ_0 + γ_1 Accruals $_t$ + γ_2Cash Flows $_t$

Year	γ_0 (t- statistic)	γ_1 (t- statistic)	γ_2 (t- statistic)	Adj R^2	F-Statistic	P-value
2001	0.032 (3.156)*	0.558 (11.77)*	0.670 (20.673)*	66.3%	107.73*	0.000
2002	-0.017 (-0.908)	1.012 (15.372)*	1.016 (16.075)*	56.1%	201.24*	0.000
2003	0.058 (4.552)*	0.506 (9.916)*	0.509 (10.104)*	33.6%	65.46*	0.000
2004	0.039 (3.323)*	0.358 (6.897)*	0.465 (9.514)*	30.0%	30.66*	0.000
2005	0.025 (2.115)*	0.565 (12.143)*	0.617 (12.514)*	43.2%	109.7*	0.000
2006	0.029 (1.940)**	0.926 (15.020)*	0.979 (16.217)*	56.4%	210.22*	0.000
Pooled	0.030 (3.493)*	0.560 (20.388)*	0.618 (21.478)*	27.4%	7.927*	0.004

*: p-value achieves the significant of 0.0

hypothesis 2(i)

In the hypothesis 2(i) the effects prediction of cash flow on future earnings were surveyed. For this, purpose first the model 3-1 is estimated and then, the firms are divided into two groups based on whether the absolute forecast errors lie above or below the median. A dummy variable is used to classify the small forecast error group as a high-quality CF (D_{CF} = 0) and the large forecast errors group as a low-quality CF (D_{CF} =1). For testing this hypothesis variable of D_{CF} is entered in Sloan model and then the model 4 is estimated. Findings of this hypothesis are shown in table 5.

Based on the results of this table it is shown that there is significant difference between prediction ability of cash flows and accruals in firms that have the large forecast errors as a low- quality CF and prediction ability of cash flows and accruals in firms that have the small forecast errors as a high - quality CF (based on coefficients of D_{CF} AC_t and D_{CF} CFO_t). In the other hands coefficients of D_{CF} AC_t and D_{CF} CFO_t (i.e. γ_4 , γ_5) are negative therefore, prediction ability of cash flows and accruals in firms that have high - quality CF is higher than other firms in both cross-sectional and pooled prediction models. It means when current earnings has high ability for prediction future cash flows it has high ability for prediction future earnings.

TABLE 5: The Effects of quality prediction of cash flows on Future Earnings $E_{t+1}= \gamma_1+\gamma_2 AC_t+\gamma_3 CFO_t+ \gamma_4 D_{CF} AC_t+ \gamma_5 D_{CF} CFO_t + \varepsilon$

Year	γ_1 (t- statistic)	γ_2 (t- statistic)	γ_3 (t- statistic)	γ_4 (t- statistic)	γ_5 (t- statistic)	Adj R^2
2001	0.054 (6.048)*	0.535 (6.249)*	0.666 (18.52)*	-0.082 (-0.865)	-0.100 (-2.043)*	67.3%
2002	-0.035 (-2.906)*	1.131 (15.465)*	1.090 (16.907)*	-0.191 (-1.96)**	-0.162 (-2.040)*	70.4%
2003	0.093 (7.303)*	0.284 (3.814)*	0.305 (4.156)*	- 0.189 (-2.175)*	-0.186 (-2.253)*	7.90%
2004	0.052 (3.921)*	0.547 (6.324)*	0.530 (6.546)*	-0.395 (-3.554)*	-0.241 (-2.298)*	19.00%
2005	0.029 (2.257)*	0.796 (8.040)*	0.747 (7.567)*	-0.386 (-3.610)*	-0.309 (-2.768)*	35.5%
2006	0.081 (2.775)*	0.789 (5.237)*	1.039 (6.330)*	-0.420 (-2.356)*	-0.702 (-3.327)*	19.6%
pooled	0.027 (3.705)*	0.681 (11.754)*	0.697 (12.771)*	-0.178 (-2.870)*	-0.157 (-2.772)*	31.0%

*: p-value achieves the significant of 0.05 **: p-value achieves the significant of 0.1

hypothesis 2(ii)

In the hypothesis 2(ii) the effects prediction of accruals on future earnings are tested. The method for this hypothesis is similar to method used in the hypothesis 2(i). It means that D_{AC} is zero when the components earnings have high ability for predicting for accruals (absolute forecast errors lie below the median) and D_{AC} will be one when the components earnings have less ability for predicting for accruals (absolute forecast lie above the median). Findings of this hypothesis are shown in table 6.

According to coefficients D_{AC} AC_t and D_{AC} CFO_t in the cross-sectional method during all years except 2003 and in the pooled method are significant and negative, so it can be concluded that there is a difference between prediction ability of component earnings in firms where have the high prediction ability for future accruals than firms that have the less prediction ability for future accruals. Results of this section show that there is significantly difference between prediction ability of accruals and cash flows in firms that have the large forecast errors as a low-quality AC and prediction ability of accruals and cash flows in firms that have the small forecast errors as a high - quality AC exception 2003. Except this year, for other years in cross-sectional and pooled prediction models coefficients D_{AC} AC_t and D_{AC} CFO_t (i.e. γ_4 , γ_5) are negative , therefore it can be concluded that prediction ability of cash flows and accruals in firms that have high - quality AC is higher than other firms which have low quality for prediction accruals in both cross-sectional and pooled prediction models. In other words current earnings have high ability it also has high ability for prediction future earnings.

TABLE 6: The Effects of quality prediction of accruals on Future Earnings $E_{t+1}= \gamma_1+\gamma_2 AC_t+\gamma_3 CFO_t+ \gamma_4 D_{AC}AC_t+ \gamma_5 D_{AC}CFO_t + \varepsilon$

Year	γ1 (t- statistic)	γ2 (t- statistic)	γ3 (t- statistic)	γ4 (t- statistic)	γ5 (t- statistic)	Adj R^2
2001	0.019 (1.495)	0.896 (10.502)*	0.865 (9.558)*	-0.362 (-3.533)*	-0.249 (-2.734)*	63.0%
2002	-0.019 (-1.435)*	1.082 (13.791)*	0.947 (13.913)*	-0.371 (-3.046)*	-0.186 (-1.948)**	58.0%
2003	0.066 (4.220)*	0.745 (9.463)*	0.420 (5.100)*	-0.573 (-7.145)*	-0.201 (-2.421)*	30.5%
2004	0.037 (2.833)*	0.385 (3.947)*	0.466 (7.705)*	0.054 (0.520)	0.027 (0.401)	26.4%
2005	0.037 (3.475)*	0.402 (7.083)*	0.582 (10.908)*	-0.192 (-3.758)*	-0.114 (-2.245)*	43.9%
2006	0.071 (3.468)*	0.735 (6.209)*	0.710 (6.530)*	-0.439 (-3.389)*	-0.279 (-2.094)*	20.5%
pooled	0.028 (3.881)*	0.677 (11.774)*	0.670 (13.049)*	-0.194 (-3.149)*	-0.136 (-2.478)**	30.4%

*: p-value achieves the significant of 0.05 **: p-value achieves the significant of 0.1

hypothesis 3

The third hypothesis is related to the effects of the predictive ability of accruals and cash flows on the persistence of earnings. In panels A and B:

The group 1 is related to high quality accrual model or model (3-2) (absolute forecast errors is less than the median) and high quality cash flows model or model (3-1) (absolute forecast errors is less than the median).

The group 2 is related to high quality accrual model or model (3-2) (absolute forecast errors is less than the median) and low quality cash flows model or model (3-1) (absolute forecast errors is more than the median).

The group 3 is related to low quality accrual model or model (3-2) (absolute forecast errors is more than the median) and high quality cash flows model or model (3-1) (absolute forecast errors is less than the median).

The group 4 is related to low quality accrual model or model (3-2) (absolute forecast errors is more than the median) and low quality cash flows model or model (3-1) (absolute forecast errors is more than the median).

Panel A of table 7 groups are formed by relative magnitude of forecast to assess the relationship between earnings persistence and the predictive ability of earnings components. Based on panel A of table 7, adj R^2 in year 2001 falls from 58.5% for the group 1 with the lowest forecast errors to 32.8% for the group 4 with the highest forecast errors, for year 2002 from 43.5% to 29.5%, for year 2003 from 37% to 27.8%, for year 2004 from 58.9% to 12.4%, for year 2005 from 48.7% to 19.8%, for year 2006 from 56.9% to 21.1%. Therefore in the cross-sectional prediction models whenever the earnings persistence increases the predictive ability of earnings components goes up. On the other hand in panel B of table 7 for the pooled prediction models, adj R^2 falls from 54.9% for the group 1 with the lowest forecast errors to 30.7% for the group 4 with the highest forecast errors, thus in the pooled prediction models too, as the earnings persistence increases the

predictive ability of earnings components increase. As a result persistence of earnings increases when earnings contain a stronger predictive ability of the accrual component and/or cash flow component.

TABLE 7: Quality of Earnings Components, Earnings Persistence

Panel A: Earnings Persistence and Earnings Components Ranked by Forecast Errors Estimated by Cross-sectional Prediction Models

Year		2001			2002			2003		
Groups		α_0	α_1	**adj.R^2 (%)**	α_0	α_1	**adj. R^2 (%)**	α_0	α_1	**adj.R^2 (%)**
CF	AC									
High	High	0.019*	0.772*	58.5	0.000	0.884*	43.5	0.081*	0.465*	73
Low	High	0.080*	0.497*	42.9	0.049	0.560*	35.3	0.010	0.665*	28.3
High	Low	-0.004	0.643*	35.9	-0.094	0.908*	19	0.099*	-0.070*	18.8
Low	Low	0.043*	0.555*	32.8	-0.006	1.050	29.5	0.034	0.699*	27.8
Year		**2004**			**2005**			**2006**		
Groups		α0	α1	adj. R^2 (%)	α0	α1	adj. R^2 (%)	α0	α1	adj. R^2 (%)
CF	**AC**									
High	High	0.041*	0.642*	58.9	0.048*	0.424*	48.7	0.035*	0.739*	56.9
Low	High	0.054*	0.572*	13.6	-0.051	0.695*	37.4	0.035	0.960*	38.8
High	Low	-0.043	0.638*	37.0	-0.019	1.166*	45.3	0.083*	1.374*	42.3
Low	Low	0.046	0.427*	12.4	-0.029	0.405*	19.8	0.141*	0.662*	21.1

Panel B: Earnings Persistence and Earnings Components Ranked by Forecast Errors Pooled Prediction Models

Year		Pooled		
Groups		α_0	α_1	adj.R^2 (%)
CF	AC			
High	High	0.037*	0.605*	54.9%
Low	High	0.016*	0.722*	42.3%
High	Low	0.044*	0.700*	33.6%
Low	Low	0.025*	0.552*	30.7%

*: p-value achieves the significant of 0.05

hypothesis 4

Panel A of table 8 reports the relationship between the earnings-returns association and the predictive ability of earnings components from 2001-2006 in the cross-sectional prediction models.

Based on panel A of table 8, in 2001 and 2006 adj R^2 is the highest in group 3 (high -low) instead of group 1 (high-high) and from 2002-2005 adj R^2 is the highest in group 2 is the highest instead group 1 (high-high). Panel B of table 8 reports the relationship between the earnings-returns association and the predictive ability of earnings components for pooled prediction models. Based on panel B of table 8, for pooled prediction models adj R^2 is highest in group 3 (high - low) instead of group 1 (high-high) and group 1 (high-high) has the lowest adj R^2 instead of group 4 (low - low).

The results in table 8 show that stock returns do not appear to differentiate rationally the highest predictive ability from the lowest predictive ability of earnings components. The explanatory power of regression coefficients does not exhibit a stable tendency across group. As a result the contemporary association between stock returns and earnings does not increase when current earnings contain a stronger predictive ability of the accrual component and/or the cash flow component and it means that the hypothesis 4is rejected.

TABLE 8:

Panel A: Earnings Returns Relations and Earnings Components Ranked by Forecast Errors Estimated by Cross-sectional Prediction Models

Year		2001			2002			2003		
Groups		α_0	α_1	**adj.R^2 (%)**	α_0	α_1	**adj.R^2 (%)**	α_0	α_1	**adj.R^2 (%)**
CF	AC									
High	High	-0.111*	0.656*	9.3	-0.142*	2.014*	15.2	-0.299*	0.546*	4.4
Low	High	0.004	0.412*	8.06	-0.410	3.317*	30.4	-0.314	0.639*	11.2
High	Low	-0.196*	1.346*	35.9	-0.230	1.984*	15.1	-0.210	-0.866*	6.08
Low	Low	0.040	1.834*	28.8	0.101	1.328*	12.2	-0.450*	0.643*	2.02
Year		2004			2005			2006		
Groups		α_0	α_1	**adj.R^2 (%)**	α_0	α_1	**adj.R^2 (%)**	α_0	α_1	**adj.R^2 (%)**
CF	AC									
High	High	-0.537*	1.702*	11.2	-0.254*	1.616*	25.6	-0.093*	0.702*	12.5
Low	High	-0.451*	2.565*	31.7	-0.024	1.518*	29.5	-0.091	0.745	4.05
High	Low	0.124	2.013*	11.4	-0.381*	1.157*	11.8	0.009	0.468*	14.2
Low	Low	-0.142	1.500*	11.8	-0.144*	0.569*	6.06	0.073	0.103	0.8

Panel B: Earnings Returns Relations and Earnings Components Ranked by Forecast Errors Estimated by Pooled Prediction Models: $R_t = \alpha_0 + \alpha_1 Earnings_t$

Year		Pooled		
Groups		α_0	α_1	adj.R^2(%)
CF	AC			
High	High	-0.118*	0.171*	0.70
Low	High	-0.190*	0.831*	8. 0
High	Low	-0.194*	1.184*	13.2
Low	Low	0.067*	0.479*	4.03

*: p-value achieves the significant of 0.05

Conclusion

This paper analyzed the effects of the predictive ability of accruals and cash flows on earnings. increasing in prediction quality of accruals and cash flows lead to increasing earnings quality. This paper showed that Sloan model is the most accurate prediction model among the autoregressive prediction model, Sloan prediction model and Combined-earnings-components prediction model. It means that the segregation of accounting earnings provide more proxies for future earnings expectation, because this model considers both components of earnings and aggregate earnings contemporary. These findings are similar to the results of Sloan (1996), Yang (2000) and Name et. al (2007). According to this paper cash component earnings has more ability than accruals component earnings for predition future earnings in both method,the cross-sectional and the pooled, and this difference is significant according to F- Statistic. it may be related to management less cash flow from operation than accruals.These results are agreed to Sloan (1996), Yang (2000), Barth et.al (2001), and Arthour et al. (2007) results. Also we showed that the ability prediction of future earnings increases when current earnings contain a stronger predictive ability of cash flows or accruals. According to this paper when earnings contain a stronger predictive ability of the accrual component and/or cash component persistence of earnings increases but return-earnings relation does not increase. In addition, this paper documents that predict errors estimated by the forecast of components of future earnings have substantially negative effects on earnings prediction and stock returns. However, the performance in stock prices and earnings persistence does not fully reflect the predictive ability does not fully the predictive ability contained in accruals and cash flows components of current earnings. The findings suggest that the performance of future earnings components is attributable to the relatively predictive ability of current accruals and cash flows. So, the underlying reasons for stock prices and earnings persistence failing to reflect this differential valuation information await for further examination.

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