Investigating the Stability Difference between Current Operating Accruals and Cash Items and Net Return on Assets in Future Period

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Abstract: Previous studies have provided evidences that, higher accrual profitability obligation in comparison with accrual profitability in each period is associated with lower profitability performance in future periods. These findings were interpreted as an increase in operating accruals adversely affect operating profit in future periods, thus decreasing the profitability of coming period. In this study, we demonstrated that, accrual profitability has no adverse effect on the operating profitability of the next period and lower stability of current accrual profitability to cash profitability in relation with operating profit of the next period lies beneath the stronger correlation between current accrual profitability and cash profitability with net operating assets.
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1. Introduction

Operating profit is one of the financial statement items that are regarded by all decision makers. The ratio of operating profit to capital is one the tools to measure performance of the company and managers, based on the results of past researches, extract discretionary accruals improve this ratio. In previous researches (Sloan, 1996; Barth, 1999; Colin and Hribar, 2011, Xie, 2001; Chan, Jegadeesh and Lakonishok, 2005; and Soliman and Tuna, 2006), they have concluded that, since accrual profitability has lower stability with profitability performance than current cash profitability of the future period, thus current accrual profitability has an adverse effect on operating profit of the future period. The result was an incentive for managers to increase operating profit of the coming period and improve profitability performance via manipulating the current operating accruals. Based on the results of Fairfield et al. (2007) and Jennifer and Smith (2007), the results of previous researches were not confirmed and this was concluded that, accrual profitability has no adverse effect on operating profit of the future periods and large manipulation of current accruals and extraction of discretionary items not only will not increase the operating profit of the next period but also reduces the quality of profits. Manipulating accruals and degrading its quality disables profit from estimating actual performance of the company (Deco, 1994; Deco et al., 1998, Liu, Nisim and Thomas 2002) and misleads the users (Haley and Wallen, 1999).

Sloan first introduced profitability performance. In his 1994 paper, he defined profitability performance as the ratio of operating profit to operating profit to capital. Sloan was not included liquidity of balance sheet in calculation of capital or net assets. Sloan, after several researches have concluded that, in relation with profitability performance of the next year, the components of accrual profitability have lesser stability than cash components.

Companies in which, working capital is increasing, have increase in total assets and accruals unless they face offsetting investments in non-current assets that generally seems unlikely (whisenant and yohn, 2007).

Moreover, since accruals reflect the growth in the net current assets of current liabilities, the accruals, in general, will increase total assets. In contrast, that is cash items affect total assets lesser than possible limit is acceptable, because cash profitability is not re-invested in the company.

Instead of investing money in the company, they usually used to pay off debts and interest, therefore, cash flow does not necessarily reflect in the total assets of the year's end. Therefore, we accept that, accruals have more impact on the total assets than cash items but they have disproportionation in total assets. Research hypotheses were formed based on the above. The main objective of this study is correcting the perspective of managers regarding the manipulation and extracting discretionary current operating accruals to increase operating profitability of the coming period. Ketary (2001) has stated that, to improve profitability performance of the future periods, operating accruals must be reduced.

However, in the following we will show that, the lower stability of accrual profitability with net return on assets of the future periods comes from the strong correlation of these items with net asset (denominator of the net return on assets) not from the adverse effect of current accrual profitability to the operating profitability of the next period.

Many recent studies have concluded that, higher levels of relative accruals relative to cash flow have an inverse process regarding the profitability of the next period, so it can be a guide for profitability management (Penman and Zhang 2001; Richard, 2001). In this study we have shown that, high levels of relative accruals to cash flow has no inverse relationship with operating profit of the next period, but it only reduces the profitability performance of the next period via increasing the denominator of these ratios.

Many recent studies have concluded that, higher levels of relative accruals relative to cash flow have an inverse process regarding the profitability of the next period, so it can be a guide for profitability management (Penman and Zhang 2001; Richard, 2001).

Fairfield and colleagues (2007) in their study found that, after controlling the net returns on the current assets, the growth in non-current net operating assets and operating accruals, in an equivalent manner, decline the net returns on assets. Based on their results, we are trying to find out that, discovering the lower stability of accruals to cash flow in relation with operating profitability of the next fiscal period must provide compelling evidence for profitability management. In other words, the relationship between accruals and employed capital (denominator of net returns on asset) must provide another argument for lesser stability of accruals for net returns on asset.

Based on the research of Fairfield and colleagues (2007), we will examine that, whether the differences in the stability of accruals and cash flow for the net return on assets of the coming financial period is resulted from different relationships with operating profit of the coming financial period, growth in net operating assets, or both of them. We are trying to reach the conclusion that, operating accruals have a stronger association with the growth in net operating assets than operating cash items. In contrast, we are going to show that, regarding the operating profit in the next fiscal period, operating accruals have not lower stability than operating cash items.

Researches have shown that, selecting a deflator has an important impact on experimental researches. Researchers often use the words profitability or profit to measure the net return on operating assets (Richardson et al, 2001; Penman and Zhang, 2001; Xie, 2001; and Colin and Hribar, 2011). Therefore, the net return on assets, accordingly, measures returns on employed capital to produce profit. Researchers should be cautious while interpreting the results of measuring the return on capital in relation with profitability.

Previous research had expressed market mispricing of accruals (Sloan, 1996; Xie, 2001 and Fairfield et al., 2007). The results of Trapli (2011) shows that, the market mispricing of accruals will not lead to inability of investors to correct management profitability but it leads to the inability of investors to understand the growth rates will or as Fairfield and colleagues (2007), Desay and colleagues (2002), and Lokonishok and colleagues (1994) expressed, causes of disability in including the effects of the secondary or marginal returns or leads to the old and conservative accounting towards new investments.

Sloan (1996) for the first time, divided profit into accrual and cash parts and conducted his research on the relative stability of cash and accrual components of current profits in order to predict future profits and have used an elementary (simple) prediction model based on fundamental accounting process to predict current profits, (for the first time, he did not used time-series) and concluded that, the cash part of current profit has more stability than the accrual part of current profits. Sloan (1996), through the relative rate of deviation from the mean has concluded that, deviation from the mean occurs faster in companies in which, have higher accruals than companies with higher cash flow.

Most of the previous researches (Sloan, 1996; Colin and Hribar, 2011; Xie, 2001; Sloan, 2002; Chan, Jegadeesh and Lakonishok, 2005; Richardson 2005; Soliman and Tuna 2006) using correlation coefficient concluded that, the correlation between accruals and profits of the next year is lower than the correlation between cash items and profits of the next year. However, in a 2007 study by Jennifer and smith, they conducted a comprehensive in this field and the weaknesses of past researches in this area were revealed. They showed that, for more than 85% of companies, there are no evidences indicating that, the correlation of accruals is lower than cash items.

Jennifer and Smith (2007) showed that, in previous researches that had shown that, accrual and cash items have stability differences with operating profit, non-commercial transactions of the period have caused a descending deviation in the stability of accruals and ascending deviation in the stability of cash items. In addition, they showed that, in the cases in which, non-commercial transactions of the period have been extracted in measuring these items; the stability difference in accruals and cash items was

very low. One of their other reasons was that, a part of the difference in accruals and cash items was due to the abnormal accruals.

2. Material and Methods

The statistical population of this study to collect data and calculate variables is the companies listed on the Tehran Stock Exchange. In the present study, to determine the statistical sample, we did have not used a special relationship to estimate sample size and sampling, instead, we used exclusion method. In other words, those companies that meet the following criteria were selected as sample, and the rest was excluded.

1. Companies must have financial statements, including balance sheets, profit and loss, and cash flow accounts.
2. Companies must have cash flow accounts in a balance sheet or indirect form.
3. Companies that their main purposes are financial services were excluded, since they lack accruals.
4. Companies must be active throughout the fiscal year.
5. The company's fiscal year end must be Esfand (March) 29.

Based on these restrictions, 118 companies were selected in the period of 1379 to 1386. At the following we will define the dependent and independent variables as well as hypotheses.

First hypothesis:

The stability of accrual profitability with the returns on capital of next period is always lower than the stability of current cash profitability.

Second hypothesis:

The correlation between accrual profitability and capital is always more than the stability of cash profitability.

Third hypothesis:

Lower stability of accrual profitability with returns on capital of next period is due to the denominator of return on capital.

Accrual profitability is one of the key variables of the research. The model we benefitted to measure accruals is Sloan's model.

Sloan (1996) defined and measured accrual as follows:

$$Accruals = \Delta CA - \Delta CL - DEP$$
$$Accruals = (\Delta AR + \Delta INV + \Delta OCA)$$
$$- (\Delta AP + \Delta OCL) - DEP$$

Where,
ΔCD is change in non-cash current assets
ΔCD is change in current liabilities excluding short-term liabilities and payable taxes
DEP is depreciation of tangible and intangible assets
ΔAR is change in accounts receivable

ΔINV is change in inventories of goods
ΔOCA is change in other current assets
ΔAP is change in accounts payable
ΔOCL is change in other current liabilities

Another independent variable is the cash profitability that is calculated based on the Sloan's model by following equation:

$$CFO_t = Operating\ Income_t - ACC_t$$

The dependent variable is the return on employed capital after one year $RNOA_{t+1}$ that is the ratio of operating profit of next year $Operating\ Income_{t+1}$ to current employed capital NOA_{t+1}:

$$RNOA_{t+1} = \frac{Operating\ Income_{t+1}}{NOA_t}$$

Regarding this relation, we will investigate the stability difference between accruals and cash items with its numerator in order to show that, the stability difference between independent variables comes from return on assets to denominator, i.e. net assets excluding cash assets that Sloan (1996) called it employed capital and as a result, resolve the flaws of previous researches (Barth, 1999; Colin and Hribar, 2011; and Xie, 2001) claiming that, lower stability of accruals toward cash items is due to the numerator and subsequently, the increase in accruals adversely affect operating profit of the next year. Moreover, the control variable to prove the hypotheses associated with return on capital is $OPINC_{t+1}$ which is defined as follows:

$$OPINC_{t+1} = \frac{Operating\ Income_{t+1}}{NOA_{t-1}}$$

In order to calculate NOA_{t-1} the following models were used

$$GrNOA_t = NOA_t - NOA_{t-1}$$
$$NOA_t = Operating\ Assets_t (OA_t)$$
$$- Operating\ Liabilities_t (OL_t)$$
$$OA_t = AR_t + INV_t + CAO + PPE_t + INT_t + AO_t$$
$$OL_t = AP_t + CLO_t + LO_t$$

Where,
AR is receivable accounts
INV is inventory
CAO is other current assets
PPE is properties, plant, and equipment
INT is intangible assets
AO is other long-term assets
AP is accounts payable
CLO is other current liabilities
LO is other long-term liabilities

3. Results

In this section, initially, the correlations between all variables are summarized in the following table, then the results will be interpreted and finally the research hypotheses will be tested.

Table 1: Correlation matrix

	RNOA	OPINC	GrNOA	CFO	ACC
RNOA	1	0.673	-0.060	0.434	0.123
OPINC	0.673	1	0.347	0.559	0.300
GrNOA	-0.060	0.347	1	0.187	0.235
CFO	0.434	0.559	0.187	1	-0.448
ACC	0.123	0.300	0.235	-0.448	1

According to the above table, the desired results based on the theoretical framework of the research were obtained. As it can be seen I the table, in relation with return on capital at the future periods ($RNOA_{t+1}$), the correlation of current operating accruals (ACC_t) is lower than operating cash items (CFO_t) which are 0.123 and 0.434, respectively. Therefore, as expected, the correlation between current accruals and return on capital at the future period is lower than current cash items. But it is important to get to the result that, lower stability of current accruals with return on capital is not due to the adverse effect of these items on the operating profit of the coming period, but it is a result of high correlation of them with net assets, i.e. the capital of future period. We also conclude that, in order to calculate ($RNOA_{t+1}$), we divided operating profit of the next year by current year's equities, but to calculate the variable of $OPINC_{t+1}$, we divided operating profit by last year's year equities.

Since we want to attach the lower stability of current accruals with return on capital of next period to the capital, then, consequently, by reducing the capital that can be obtained by comparing $OPINC_{t+1}$ and $RNOA_{t+1}$, the correlation between current accruals and $OPINC_{t+1}$ must be more than its correlation with $RNOA_{t+1}$, that the same result was obtained; the correlation of current accruals was raised from 0.123 to 0.300.

Since the influence of company's operating accruals on increasing capital is more than the influence of operating cash items (Fairfield, whisenant and yohn, 2007), then, logically, the correlation of operating accruals with capital growth ($GrNOA_t$) should be more than the correlation of cash items that, according to the table, this result is obtained. The correlation between operating accruals and operating cash items with capital growth is 0.23 and 0.18, respectively.

Testing first hypothesis

The results of hypotheses test are presented, summarized, and interpreted in the following tables.

Table 2: Estimation of first hypothesis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
α_0	0.376896	0.042884	8.788811	0.0000
CFO	0.662155	0.044150	14.99781	0.0000
ACC	0.509040	0.052212	9.749465	0.0000
R-squared	0.315866	Mean dependent var	0.8457	
Adjusted R-squared	0.313194	S.D. dependent var	0.8133	
S.E. of regression	0.674021	Akaike info criterion	2.0546	
Sum squared resid	232.6036	Schwarz criterion	2.0794	
Log likelihood	-526.0844	F-statistic	118.19	
Durbin-Watson stat	1.959435	Prob. (F-statistic)	0.0000	

The coefficient of current cash profitability is equal to 0.66 and the coefficient of cash profitability is equal to 0.50, which clearly shows that, the correlation of cash profitability with return on capital of the next period is relatively higher than operating accruals. It should be noted that, the correlation difference between accruals and operating cash items with return on capital of the next period in the researches that conducted in USA is more than the correlation difference obtained in this study. Therefore, logically, in the rest of hypotheses, we must conclude that, the increase of capital by operating accruals is not more than operating cash items.
According to the table, the coefficient of current accrual profitability (ACC_t) with return on capital ($RNOA_{t+1}$) is equal to 0.50 and coefficient of current cash profitability (CFO_t) is equal to 0.66.

Table 3 shows the interpretation of the results.

Table 3: Results of the testing first hypothesis

Test Statistic	Value	df	Probability
F-statistic	8.987906	(1, 512)	0.0028
Chi-square	8.987906	1	0.0027
Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
$\alpha_1 - \alpha_2$		0.153115	0.051073

Based on the p-value and Fisher tests at 0.05 of significance level (Table 2), the $H_0:\alpha1=\alpha2$ hypothesis is rejected and the inverse hypothesis i.e. $H_1:\alpha1\neq\alpha2$ is confirmed; therefore, the first hypothesis is confirmed.

Based on the results of Fisher and Wald tests we have shown that, the difference in stability between accruals and current cash items with return on capital of the future period is true. Therefore, the stability of accrual profitability with return on capital in the future period is always lower than current cash profitability. The desired result is that, the lower stability of current operating accruals with return on capital of coming period originates from the denominator of this profitability ratio. In the following we will test this.

Testing second hypothesis

In this regard, the H_0 hypothesis must be rejected.

Table 4: Estimation of second hypothesis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Y_0	0.798195	0.038425	20.77284	0.0000
CFO	0.320767	0.039560	8.108410	0.0000
ACC	0.413549	0.046783	8.839624	0.0000
R-squared	0.162915	Mean dependent var		1.067432
Adjusted R-squared	0.159645	S.D. dependent var		0.658815
S.E. of regression	0.603942	Akaike info criterion		1.835131
Sum squared resid	186.7498	Schwarz criterion		1.859854
Log likelihood	-469.5461	F-statistic		49.82311
Durbin-Watson stat	1.826439	Prob(F-statistic)		0.000000

According to this table, the coefficient of ACC_t is more than CFO_t, therefore, the impact of accrual profitability on capital growth is more than cash profitability, but this difference is not considerable. Furthermore, in the following we will investigate the permanence of this premise that, the stability of accruals in relation with capital growth is more than the stability of cash items.

Table 5: Results of testing second hypothesis

Test Statistic	Value	df	Probability
F-statistic	5.110603	(1, 512)	0.0431
Chi-square	5.110603	1	0.0426
Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
y_1-y_2		-0.092782	0.045763

Based on the p-value and Fisher tests, the second hypothesis is significant at $\alpha=0.05$ level. Comparing the f statistic with table, the $H_0:y_1=y_2$ hypothesis is rejected and the inverse hypothesis i.e. $H_1: y_1\neq y_2$ is confirmed and the coefficients difference in Wald test confirms the test. Therefore, we can conclude that, the correlation between operating accruals and capital is always more than its correlation with operating cash items.

The result is that, despite the fact that, in Iranian companies, managers re-invest the operating cash in the company, but according to the results of Wald test, we conclude that, the amount of re-investment in operating accruals is more than operating cash items (y_1-y_2=-0.09). The other tests confirm this. The first hypothesis was confirmed by this difference and that, the stability of current operating accruals with return on capital in the next period is more than the stability of and operating cash items with return on capital in the next periods.

Testing third hypothesis

Table 6: Estimation of third hypothesis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
B_0	0.111844	0.032246	3.468484	0.0006
CFO	1.055620	0.033198	31.79772	0.0000
ACC	0.991168	0.039260	25.24621	0.0000
R-squared	0.694196	Mean dependent var		0.904635
Adjusted R-squared	0.693001	S.D. dependent var		0.914714
S.E. of regression	0.506820	Akaike info criterion		1.484485
Sum squared resid	131.5154	Schwarz criterion		1.509208
Log likelihood	-379.2548	F-statistic		581.1371
Durbin-Watson stat	2.142052	Prob(F-statistic)		0.000000

The coefficients of accrual profitability and cash items, based on the following table, are 0.99 and 1, respectively. It can be said that, the impact of these items on operating profit in the next period is identical. Therefore, we can conclude that, the lower stability of the current accrual profitability with return on capital in the next period is due to its strong correlation with capital and has no adverse effect on the operating profit of the future periods.

Table 7: the results of testing third hypothesis

Test Statistic	Value	df	Probability
F-statistic	2.816708	(1, 512)	0.0939
Chi-square	2.816708	1	0.0933
Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
β_1- β_2		0.064452	0.038403

Based on the p-value and Fisher tests, and comparison of f statistic with the table, the hypothesis of H_0: $\beta_1 = \beta_2$ at $\alpha=0.05$ level of significance is accepted and the inverse hypothesis of H_0: $\beta_1 \neq \beta_2$ is rejected and then, the third hypothesis is confirmed. Comparing the coefficients differences of Wald test, the differences of coefficients is very low and confirms the result of Fisher test. Therefore, we can conclude that, the operating accruals and cash items profitability have identical relationship with operating profitability of the coming period. Therefore, all of the managers who think current accrual profitability has adverse effect on operating profit of the coming period and try to increase future operating profit through manipulating, reducing, and extracting discretionary of accrual profitability, not only will not achieve their goal but also reduce the quality of profit.

5. Conclusion

Previous studies attached the lower stability of current accruals with net return on assets in the future periods to lower stability of current accruals, but in this work, we have showed that, the lower stability of current accruals with net return on assets in the future periods is due to the stronger correlation of current accruals with net assets. Therefore, current operating accrual and cash items profitability, both have identical relationship operating profit of the next period and extracting discretionary accruals with the expectation that, it will increases the operating profit of the future periods, is not acceptable and not only does not increase the operating profit of the future periods, but also accordingly reduces the quality of profits.

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