Research Article
The Incremental Information Content of Income Smoothing in Firm Listed in Tehran Stock Exchange (TSE)

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Abstract: This study aims at achieving the following objectives: examining the explanatory power of the income smoothing of future profitability, introducing evidence about the information content of income smoothing from the Iranian market and enriching the literature on income smoothing relationships in the capital market research. The study sample consists of (46) industrial companies listed in the Tehran Stock Exchange, during the period (2004-2011). Regression analysis is employed to examine the study's hypotheses (Four Models). Wald test and Adjusted-R2 was used to indicate the incremental information content for the study variables. The study found the following: 1. Current profitability predicts future profitability. 2. Income smoothing hasn't incremental information relative to current profitability when predicting future profitability. 3. Past profitability doesn't provide incremental information related to current profitability when predicting the future profitability. 4. Income smoothing hasn't incremental information content with respect to current and past profitability when predicting future profitability. These results mean that the lagged earnings is a good predictor to the future earnings and Iranian companies' managers can manipulate profitability trend in the future to achieve a target level in earnings by using income smoothing tools.

Keywords: Information content, income smoothing, profitability

INTRODUCTION

Income smoothening is practiced by some firms to improve its value (Wang and Williams, 1994). Firms' managers used to improve stockholders trust through financial statements produced by their firms as the stockholders do not have access to the firms' accounting records. Some authors connected between the practice of income smoothing and the low disclosure practices (Jiraporn, 2005). These practices will generate low trust between the firm and the investing community. The consequences of income smoothening practices are considered positive for the firm on the short run but it is negative on the long run.

To study the relationship between income smoothing on one hand and profitability in the other, the research problem can be expressed in the following questions:

- Does income smoothing have incremental information relative to current profitability when predicting future profitability?
- Does income smoothing have incremental information relative to current and past profitability when predicting the future profitability?

- This study aims to achieve the following objectives:
- Examining the explanatory power of the income smoothing to future profitability.
- Introducing evidence about the information content of income smoothing from the Iranian market.
- Enriching the literature on income smoothing relationships in the capital market research.
- Testing the relationship between past, current and future profitability.
- Showing the incremental information content of income smoothing relative to current profitability when predicting future profitability.

This study focuses on income smoothing and examines its role in the prediction of future profitability and risks. If it is found that income smoothing has incremental information content, then that will enhance our ability to explain market variable changes. Furthermore, it will affect disclosure requirement rated to on income smoothing. Income smoothing tools may be used to manipulate the earnings figure and to misrepresent the company risk so this can mislead the investors and affect their investment choices. So, the

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main parties that will benefit from this research are the investors in making their investment decisions, the researchers in explaining market variables and the managers in focusing on earnings quality.

By virtue of the management's motives of the trading department two views are proposed: One of them indicates that smoothing increases the information content to foresee the profit and future cash flows and the second one indicates that the leveled profit has been deformed and would mislead the users of market and fiscal statements (Tucker and Zarowin, 2006). If the directors benefit from their power transfer their assessment about future profits, the smoothing valid to foresee future profits; in other words, in such condition the companies can foresee better by virtue of previous profits when they level the profit and on the other hand, if the directors report false profits without any information about future company conditions, the smoothing creates some problems because the problems can be dangerous in the departments with weak function soon (Markarian and Gill-de-Albornoz, 2010).

LITRATURE REVIEW

The issue of income smoothing has been discussed in academic or the literature for a long period. Moses (1987) demonstrated that accounting changes are considered as income smoothing devices. He indicated that accounting changes can be used to minimize income fluctuation instead of maximizing or minimizing reported income. His research was bases on two tests. The first one examined those companies with a smooth income and the other one investigated the effects of motivational factors toward income smoothing. He found smoothing behavior as subject to management motivations.

In the Jordanian market, Jahmani (2001) aimed to study income smoothing trends in Jordan. He found on 42 industrial firms and 18 service firms in the period (1993-1996) that Jordanian companies exercised income smoothing and there was no relationship between income smoothing and company size.

Dechow *et al*. (2010) concluded that when transfer profits to other periods to level profit it improves or damages the useful information; for instance, smoothing instabilities of cash flows can improve the information usefulness. However when directors try to change permanently smoothing in cash flows the process decreases on time information and their sufficiency.

Mohhamad (2010) examined the increasing information content due to smoothing; they tried to find if current profitability and smoothing can foresee future profitability? Having used regression analysis they tested their study. Finally they concluded that the delayed profits can foresee well the future profitability and companies directors cannot manipulate profit by

managing device in order to reach the purposed profitability level. Huang (2009) concluded that smoothing has a great negative influence on the company's investment sensibility and shares price. Their findings showed that such negative influence provokes optional and non-optional smoothing elements. Also they found that smoothing improves company's investment efficiency by decreasing the influence of deceased investment market value.

Huang (2009) examined the potential influence of artificial and real smoothing on company value. Their findings showed that when artificial smoothing increases the company value decreases and when real smoothing increase the company value increases, too; they stated that companies can increase company knowledge abut profit by smoothing and at the same time, decrease the company representativeness expense.

Martinez and Castro (2011) examined the relation between smoothing and shares risk and output in Brazilian companies. They stated that smoothing includes normalizing profit according to one's aims. They said that their study was to create a criterion to measure companies smoothing policy in order to group them as the companies smoothing and the companies who do not smoothing profit. The study was on 145 companies in 1998-2007. They found that the Brazilian smoothers are non-smoothers when they have little criterion and systematic risk and vise versa. They supported the differences between the two groups through parametric, nonparametric, fragmental and time series tests.

In their research (Thomas *et al*., 2011) examined the special relation between executive contracts and smoothing and stated that smoothing is of two types: misleading and informative and finally their findings support the role played by undertaking items in improving the information in incomplete contracts.

Tokuga and Sakai (2011) consider smoothing as a form of the directors' accounting policies. They tried to have the ability to remove the deviation made by the fiscal statements and use proper situations of the companies as primary phase of analyzing fiscal proportions and define the company value and found that when the reported profits are less than the programmed ones the directors try to manipulate them and also at the end of the time if the gained profit is more than the programmed one, they try to decrease them. The studies show that significant relation between smoothing and profitability. When a company gained less profit, more motives would be reported regarding smoothing (Lai and Tesemg, 2011).

HYPOTHESES

To achieve the research objectives, four hypotheses will be tested. They will be expressed using the null form as follows:

H01: Current profitability cannot predict future profitability**.**

H02: Income Smoothing doesn't have incremental information relative to current profitability when predicting future profitability.

H03: Past profitability doesn't provide incremental information related to current profitability when predicting the future profitability.

H04: Income Smoothing doesn't have incremental information relative to current and past profitability when predicting future profitability.

Measuring income smoothing: This study focuses on total accruals as the source of Income Smoothing, because this approach is tested by many previous studies. The most common method used is the discretionary accruals method, which assumes that managers primarily rely on their discretion over certain accounting accruals as a means of Income Smoothing that is legal. The usual starting point for the measurement of discretionary accruals is total accruals (Dechow *et al.*, 1995). A particular model is then assumed for the process generating the nondiscretionary component of total accruals, enabling total accruals to be decomposed into a discretionary and a nondiscretionary component. Total accruals consist of discretionary accruals, which are management determined and non-discretionary accruals that are economically determined. Discretionary accruals are then used as the proxy for Income Smoothing (Jones, 1991). The discretionary portion of total accruals is used in this study to capture Income Smoothing rather than the discretionary portion of a single accrual because total accruals should capture a larger portion of managers' manipulation (Jones, 1991).

Total Accruals (TA) are defined as the difference between Net Income (NI) and cash flow from operating activities (OCF):

$$TA = NI\text{-}OCF$$

The following expectation model will be used for total accruals to control for changes in the economic circumstances of the firm (Jones, 1991):

$$TA_{it}/A_{it\text{-}1}=$$
$$a_1\left[1/A_{it-1}\right] + a_2\left[\Delta REV_{it}\right] + a_3\left[PPE_{it}\right] + e_{it}$$

TA_{it} =   Total Accruals in year t for firm i (difference between net income and cash flow from operating activities)

ΔREV_{it} =   Revenues in year t less revenues in year t-1 for firm i

PPE_{it} =   Gross property, plant and equipment in year t for firm i

$A_{it\text{-}1}$ =   Total assets in year t-1 for firm i

e_{it} = error term in year t for firm i
a_1, a_2 and a_3 = Model Coefficients
$i = 1,…, N$

    $t = 1,…, t_i$, year index for the years included in the estimation period for firm i.

In this equation, change in revenues and gross property, plant and equipment are included in the expectation model to control for changes in nondiscretionary accruals caused by changing conditions. All variables in the accrual expectation model are scaled by lagged total assets to reduce heteroscedasticity. A weighted least squares approach to estimating a regression equation with heteroscedastic disturbance term (i.e., the un-scaled regression equation) can be obtained by dividing both sides of the regression equation by an estimate of the variance of the disturbance term. In our case, lagged total assets ($A_{it\text{-}1}$) are assumed to be positively associated with the variance of the disturbance term.

Sample: The statistical population of the study includes all accepted firms in stock exchange in the time period between 2004 and 2011. Among them we selected the companies with following conditions so finally 46 companies were selected:

- Accepted in stock exchange before 2004.
- The end of their financial year is March 29th of each year and within the investigated time period, their financial year doesn't change.
- Their data is from the available software.

Research models and variables: To test the first hypothesis "Current profitability can't predict future profitability" model (1) will be used.

Model (1): $PROF_{it} = \beta_0 + \beta_1\ PROF_{it\text{-}1} + \beta_2 ASSET_{it\text{-}1} + e1_{it}$

where:
$PROF_{it}$ =   Future profitability of the firm i at year t which is measured by the ratio of net income to sales at year t.

$PROF_{it\text{-}1}$ =   Current profitability of the firm at year t-1 which is measured by the ratio of net income to sales at year t-1.

$ASSET_{it\text{-}1}$=   The natural log of the book value of total assets at the year t-1.

β =   Coefficients.

$e1_{it}$ =   Error term.

In this model, the relationship between current and future profitability will be investigated to examine the

Table 1: Descriptive measures before deleting outliers' observations

	Mean	S.D.	Max.	Min.
Net Income	0.635	0.299	1.06	-2.45
Income Smooting	-19148	202194	141779	-1242568

Table 2: Pearson (Spearman) correlation matrix for study variables

	Profit	Profit-1	Profit-2	Asset it t-1	Is it-1
Pearson correlation	1	0.626	0.548	-0.445	0.396
P-value		0.000	0.000	0.000	0.000
N	234	234	234	234	234

ability of current profitability to predict future profitability. This will be done by executing a simple regression and showing the significance of PROFit-1 and Adjusted-R2 factors.

Model (2): PROFit $= \beta_0 + \beta_1$PROFit-1$+\beta_2$IS it-1+ β_3ASSETit-1 +e2it

where:
ISit-1 = Income smoothing for firm i at year t-1.

In this model, the ability of income smoothing to predict future profitability will be investigated and to examine the incremental information relative to current profitability when predicting future profitability. This will be done by executing a multiple regression and show the significance of PROFit-1, ISit-1 and Adjusted-R^2 factors and compare Adjusted-R^2 factors in Models (1) and (2).

Model (3): PROFit $= \beta_0+\beta_1$PROFit-1$+\beta_2$PROFit-2$+ \beta_3$ ASSETit-1+ e3it

where:
PROFit-2 = Past profitability of the firm i at year t-2 which is measured by the ratio of net income to sales at year t-2.

In this model, the ability of past profitability in predicting future profitability will be investigated and to examine the incremental information relative to current profitability when predicting future profitability. This will be done by executing a multiple regression and show the significance of PROFit-1, PROFit-2 and Adjusted-R^2 factors and compare Adjusted-R^2 factors in Models (1) and (3).

Model (4): PROFit $= \beta_0 + \beta_1$ PROFit-1$+ \beta_2$ PROFit-2$+ \beta_3$ ISit-1 $+\beta_4$ ASSETit-1+e4it
In this model, the incremental information of income smoothing relative to current and past profitability when predicting future profitability will be investigated. To control for the ability of lagged profitability to predict current profitability, the lagged profitability measures are included in this model. The incremental information of income smoothing can be investigated by executing a multiple regression and show the significance of PROFit-1, PROFit-2, ISit-1

and Adjusted-R^2 factors and compare Adjusted-R^2 factors in Models (3) and (4).

Descriptive statistics: Table 1 shows the descriptive statistics for the main variables, the descriptive measures include the mean, median, standard deviation, minimum value, maximum value, percentile 1 and percentile 99.

Table 2 shows Pearson (and Spearman) correlation matrix, the strongest relationship was to current profitability 0.626, then past profitability 0.548, then income smoothing 0.936. These correlation results are normal and agree with previous studies such as Jones (1991) and Juha-Pekka and Martikainen (2003) and mean that there are strong relationships among company's profitability over the years.

THE RESULTS OF HYPOTHESES TESTING

Table 3 reports the results of regressing future profitability on the current profitability, lagged profitability and income smoothing of a firm.

Hypothesis number 1: Current profitability can't predict future profitability.
As shown in Table 3, current profitability coefficient**s** (PROFit-1) are significant in the entire period and Adj-R2 factor is quite high. The null hypothesis is rejected and the alternative one is accepted so current profitability can predict future profitability. As one would expect on the basis of previous studies, the current profitability predicts future profitability which agrees with. So, profitability figure is an important index to the company efficiency in Iran.

Hypothesis number 2: income smoothing doesn't have incremental information relative to current profitability when predicting future profitability.
In this hypothesis, income smoothing variable (IS it-1) has been added to Model (1) to study its explanatory power and to test its incremental information content relative to current profitability when predicting future profitability. To test this hypothesis, we show that income smoothing coefficient is significant in all year's regression and to assert this Adj-R^2 between Models (1) and (2) has been compared. Table 3 shows that Adj-R^2 for Model (2) increase,

Table 3: Relationship between future profitability and income smoothing-pooled data

Model	Constant	Profit-1	Profit-2	SIit-1	Assetit-1	F-statistic	Adj R^2
1	1.026	0.597			-0.080	104.052	0.469
	0000	0000			0.000	0.000	
2	1.019	0.534		0.004	-0.078	89.164	0.532
	0000	0.002		0.000	0.000	0.000	
3	0.848	0.472	0.343		-0.068	80.112	0.505
	0000	0.000	0.000		0.000	0.000	
4	0.902	0.46	0.227	0.00032	-0.071	70.659	0.545
	0000	0000	0000	0000	0.000	0.000	

Table 4: Wald-test

Regression model	Adj-R^2	F-statistic	P-value	Freedom grade
First model	0.47	7.335	0.0249	-1.230
Second model	0.533			

Table 5: Wald-test

Regression model	Adj-R^2	F-statistic	P-value	Freedom grade
Third model	0.502	6.494820	0.0012	-1.229
Fourth model	0.545			

which means that income smoothing, has incremental information content relative to current profitability when predicting future profitability. Does income smoothing increase incremental information relative to current profitability when predicting future profitability?

In this section, to answer this question Wald test between the first model and the second model we do. According to Table 4 Wald statistic for the test first and second model is significant, by coefficient of determination adjusted, we can say what we answer to the research first question is positive, because the significance level is less than 0.05. The null hypothesis is rejected and the alternative one is accepted, so income smoothing has incremental information relative to current profitability when predicting future profitability.

Hypothesis number 3: Past Profitability doesn't provide incremental information relative to current profitability when predicting the future profitability.
In this hypothesis, past profitability variable (PROFit-2) is added to Model (1) to study its explanatory power and to test its incremental information content relative to current profitability when predicting future profitability.

As shown from Table 3 PROFit-2 coefficient is significant in all year's regression and the Adj R2 between Models (1) and (3) has been compared. Table 3 shows that Adj-R^2 for Model (3) increase which means that past profitability has incremental information content relative to current profitability when predicting future profitability. So, the null hypothesis is rejected and the alternative one is accepted, so past profitability provide incremental information related to current profitability when predicting the future profitability.

Hypothesis number 4: income smoothing doesn't have incremental information relative to current and past profitability when predicting future profitability.

In this Hypothesis, income smoothing variable (IS it-1) has been added to Model (3) to study its explanatory power and to test its incremental information content relative to current and past profitability when predicting future profitability. These model coefficients are shown in Table 3. To test this hypothesis, Adj-R^2 between Models (3) and (4) has been compared. Table 3 shows that Adj-R^2 for Model (4) increased, income smoothing coefficient significance is taken in consideration (it was significant at any level), which means that income smoothing has incremental information content relative to current and past profitability when predicting future profitability. This result with hypothesis number 2 results asserts the income smoothing techniques that Iranian managers pursue to income smoothing affect the profitability trend.

Does smoothing increase incremental information content relative to current and past profitability when predicting future profitability?

In this section, to answer this question Wald test between the third model and the fourth model we do. According to Table 5 Wald statistic for the test first and second model is significant, By coefficient of determination adjusted, we can say what we answer to the research second question is positive, because the significance level is less than (0.05), which means that income smoothing has incremental information content relative to current and past profitability when predicting future profitability.

CONCLUSION

- Current profitability predicts future profitability. This expected result means that lagged earnings is a good predictor of future earnings in Iran. This means that investors in Iran give a high consideration to the bottom line in the income statement when making investment decisions.

- Income smoothing has incremental information relative to current profitability when predicting future profitability. This means that Iranian companies' managers can manipulate profitability trend in the future.
- Past profitability provided incremental information relative to current profitability when predicting the future profitability.
- Income smoothing has incremental information content with respect to current and past profitability when predicting future profitability. These results suggest that studies investigating the time-series behavior of the profitability or earnings of a company may benefit from the information involved in past earnings of a company.

These results mean that the lagged earnings is a good predictor to the future earnings and Iranian companies' managers can manipulate profitability trend in the future to achieve a target level in earnings by using income smoothing tools.

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