The Effects of Earning Smoothing on Earning Quality and Market Valuing in Environmental Uncertainty

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Abstract
The present article investigates the effects of earning smoothing on the earning quality and the yield of accepted companies in Tehran Security Exchange in the conditions of environmental uncertainty. This paper first, represents definitions of earning smoothing, earning quality, and environmental uncertainty and mentions different types of earning smoothing as well as some motivations for it. This study aims to investigate if environmental uncertainty removes the correlation between earning smoothing and current share yield or whether earning quality is more in the conditions of environmental uncertainty using earning smoothing. Exerting negative correlation between the changes of discretionary accruals and predetermined earning changes, earning smoothing was measured in 74 sample companies from 2004-2010. Using Tucker and Zarowin model, the relation between earnings and current yield was investigated from 2004-2010 entering environmental uncertainty index and earning smoothing in the model. With 95% significance level, the results showed that there is no correlation between environmental uncertainty and share yield and earning smoothing, rejecting the first hypothesis. So, H1 implies that earning smoothing in Iran was for the purpose of manipulation. H2 showed that the consistency of the companies using earning smoothing is not higher in the conditions of environmental uncertainty; so, H2 was also rejected.

Keywords: Earning smoothing, earning persistence, environmental uncertainty, common share yield, reaction to earning coefficient.

Introduction
Considering its quality as a tool for decision-makings, the concept of earning in accounting is of great importance. Reviewing accounting literature reveals that fewer concepts like earning have been discussed by theoreticians and different accountants. In statement 1 of Financial Accounting Standard Commission (FASC), it has been supposed that accounting earning is a good criterion for evaluating the performance of a public unit which can be used for the future reports. So, investors regard its amount with special scrutiny. They consider low or non-volatile earnings as more qualitative ones. In other words, they invest in the companies with more stable earning. So, reported earnings are as decision-making criteria considered by earning analysts as a key factor in their investigations and judgments (Moradi et al 2008).
The firms provide financial statements according to accepted accounting principals. GAAP should be rather flexible to enable managers to convey environmental information to their organizations and increase financial reporting. But, on the other hand, it creates the possibility of earning management (Healy et al 1999).

**Definition of earning smoothing**

Purposeful intervention in external financial reporting to meet one’s own interests is called earning management whose one aspect is earning smoothing; It refers to a purposeful action and using specific tools in accounting to reduce volatility in earnings by management. According to Leopold, earning smoothing is mostly sophistry and polite and is rarely based on clear lies because it results from different interpretations of accepted accounting principals and standards. For the movements in income and expenditure, the earnings of one or some financial periods are modified in earning smoothing. In fact, it can be said that earning smoothing is a deliberate action by the management (Habib et al 2011). Belkoui defines earning smoothing as representing the earning as common to reach favorite trends or levels.

**Different types of earning soothing**

Ghaemi et al (2004) identified different types of earning smoothing as follows:

1. Naturally smooth. This type refers to the earning flows resulting from naturally smooth and real operational processes. In the industries like, water and electricity with fixed prices or fixed growth rate, sale rate and prices are naturally smooth. In other words, their reported earnings are not manipulated by the managers.

Anand Mohan Jul and Anjan. V. Takor state that natural smoothing accompanies decisions affecting cash distribution and losing value in the company.

2. Earnings intentionally being smoothed by management. These earnings are smoothed as a result of management decisions in the unit which will be explained further in the following lines.

   a. Real smoothing (transactional or economic smoothing). This type of earning smoothing by the management controls some events and economic trends affecting cash flows like, early sales or delayed sale in the unit. Since controlling economic events impacts future earnings directly or in the other words, management decisions in recognizing incomes and costs affects future earnings directly, this type is called real smoothing.

   b. Artificial smoothing (accounting smoothing). With no effect on cash flows of the unit, this type results form the actions called accounting manipulations rather than economic events. Artificial smoothing causes transferring costs and incomes among financial periods. In this type, precedence or delay in
recognizing income and costs causes earning smoothing. This paper deals with artificial smoothing.

Joo (1991) mentions the following motivations for earning smoothing:

1. Increasing ease of shareholders
2. Facilitating earning predictability
3. Increasing management ease.

Tucker and Zarowin (2006) offer 2 motivations for earning smoothing:

1. Manipulation (manipulation approach)
2. Informing (information approach)

They are both at two sides of one continuum. Such a comment can simply summarize the goals and motivations of earning smoothing in the last 50 years (Tucker and Zarowin 2006).

Since the main focus of financial reporting is on predicting earning and yield as the indices of unit performance, smoothed earnings have high credit as decision-making criteria and are considered significantly in the investigations and judgments of analysts. So, recognizing the effects of earning smoothing on the share yield is very important (Ghaemi et al 2004). A factor changing the correlation between earning smoothing and current share yield is environmental uncertainty. 21st century accompanies complex, dynamic, and changing organizations with the property of environmental uncertainty. Managers adopt themselves with the environment by some processes indirectly, perform programs to lead the organization and impact the groups. Environmental uncertainty yields informational asymmetry among managers and shareholders; but, managers remove this asymmetry by earning smoothing (Habib et al 2011). The more the uncertainty, the less qualitative the reports will be (Olson 2008). Smoothing impacts unusual yields of the firms (Michelson 1997). This paper aims to investigate the reaction of share market to earning smoothing companies acting in high environmental uncertainty in Tehran Security Exchange. This study will consider earning consistency in the conditions of environmental uncertainty. It seems that preserving a consistent trend of earning is difficult for the lack of controllability of composing forces, their interdependence, business dynamism, complexity, and etc. So, the more a firm acts in the conditions of environmental uncertainty and the severe environmental changes, the more volatile it’s earning will be.

**Research background**

There is different literature on earning management, earning consistency, and environmental uncertainty.

Ghaemi, Gheytasvand, and Toojaki (2004) investigated the effects of earning smoothing on the yield of accepted companies in Tehran Security Exchange and concluded no correlation between them. They also observed the impact of smoothed industry on unusual yield of the company. Smoothing and company size were not correlated but smoothing and capital increase altogether had a significant effect on unusual yield of accepted companies in Tehran Security Exchange. Studying the relation between earning smoothing and the yield of accepted companies in America, Michelson, Wagner, and Wotton concluded a positive reaction of market to earning smoothing companies.
Booth (1996) stated that smoothing companies have higher unusual yield than non-smoothing companies. Habib, Hosein, and Jiang (2011) investigated the effects of earning smoothing on market pricing in environmental uncertainty in the sample from 1988-2006 and concluded a correlation between them. So, earning smoothing is exerted for informing and share prices show the most information about the future of the firms. In a study titled “environmental uncertainty and managers using non-discretionary accruals.

Goss and Olson (2008) concluded that informational uncertainty increases the risk of future earning evaluation and decreases report quality. It also motivates managers to use discretionary accruals for representing consistent earnings. Studying the effects of earning smoothing on earning quality.

Tucker and Zarowin (2006) concluded that the correlation between changes in future earnings and earning smoothing companies is higher. Earning consistency of earning smoothing companies in the past will be also higher in future.

In a study, Millican (1975) mentioned 3 types of mental uncertainty about the environment: a. State uncertainty, b. Effect uncertainty, and c. Response uncertainty. The first type is the focus of this paper.

**Research hypothesis**

This study had 2 hypotheses:

H1. Increasing environmental uncertainty, the correlation between earning smoothing and share yield gets higher.

H2. Earning consistency of earning smoothing companies is higher in environmental uncertainty.

**Data, statistical population and sample**

Statistical population of this study included all accepted companies in Tehran Security Exchange from 2004-2010. The selected samples had the following traits:

1) They were accepted in Tehran Security Exchange before 2003.
2) Their fiscal year ended in March
3) Needed information for calculating research variables was available.
4) During research period, their fiscal year didn’t change.
5) Firms with a 3-month pause in share transactions were removed from the sample.
6) For their different capital structure from manufacturing firms, investment, banks, holdings, insurance, pension and service companies were out of the sample.

The data in this paper are real and historical, collected from the site of Tehran Security Exchange, RAHAVARDNOVIN software, and financial statements of sample firms.
Variables were calculated by Excel spread sheets and data analysis was done by SPSS software.

**Variable calculation**

The variables of this study included:

1. Earning smoothing
2. Environmental uncertainty
3. Size
4. Earning coefficient per share
5. Ratio of market value to book value
6. Common share yield

Common share yield was considered as a dependent variable, earning smoothing and environmental uncertainty as independent variables, and others were control variables.

**Earning smoothing**

Earning smoothing is a deliberate action by management using specific tools to decrease earning volatility. This paper measures earning smoothing using Tucker and Zarowin model in the following way:

**Model 1**

1) \( A C C_{it} = O I_{it} - C FO_{it} \)

\[
AC C_{it} = a \frac{1}{T A_{t-1}} + b \frac{\Delta sale_{it}}{T A_{t-1}} + c \frac{\Delta PPE_{it}}{T A_{t-1}} + d \frac{Net profit}{T A_{t-1}} + e_{it}
\]

\[
ND A C_{it} = a \frac{1}{T A_{t-1}} + b \frac{\Delta sale_{it}}{T A_{t-1}} + c \frac{PPE_{it}}{T A_{t-1}} + d \frac{Net profit}{T A_{t-1}}
\]

\[DA_{it} = ACC_{it} - ND ACC_{it}\]

2) \( PD I_{it} = O I_{it} - DA_{it} \)

3) \( \Delta DA_{it} = DA_{it} - DA_{it-1} \)

4) \( \Delta PD I_{it} = PD I_{it} - PD I_{it-1} \)

5) \( IS = \frac{1}{r} \)

Total accruals result from the subtraction of cash flow operation (CFO) from operational income (OI), \( \Delta Sales \) is annual sale change, PPE are gross property, plant, and
equipment. Fitted values from Eq 1 provide non-discretionary accruals (NDAC) and discretionary accruals are NDAC minus real accruals. Predetermined discretionary income is calculated as net income minus discretionary accruals (PDI = OI - AP). The value of reversed earning smoothing is the correlation of discretionary accruals' change and predetermined discretionary earning calculated using information of present year and 4 previous years.

**Environmental uncertainty**

Causing disability at predicting probable results of a decision, environmental uncertainty is the changes in organizational phenomena consisting of the factors like government, competitors, technology, demand and supply of work unions, customers, and clients. Simon and March (1958) defined environmental uncertainty as the lack of internal control and Slocum (1975) defined it as a disability at predicting probable results of a decision. Here, environmental uncertainty is measured by the coefficient of sale changes.

\[
CV(Z_i) = \sqrt{\frac{\sum_{k=1}^{5} (Z_i - Z^-)^2}{z^5}}
\]

**Common share yield**

To calculate common share yield in this paper, the following model is used:

\[
R^* = \left[ \left( P_{it} - P_{it-1} \right) \left( 1 + \alpha + \beta \right) \right] + D_t - (I \times a)
\]

**Size**

Company size equals logarithm of market value of equities:

Company size = (Ln MVE)

MVE = current share number \* final share price

**Ratio of market value to book value**

Ratio of market value to book value equals the market value of company share to its book value.

\[
MTB = \frac{STOCK \ MV}{STOCK \ BV}
\]

**Earning coefficient per share**

To calculate this control coefficient, the following formula is used:
To measure those variables, all the firms’ activities in Tehran Security Exchange were classified in 5 industries including motor transportation vehicles, basic metals, non-metal minerals, chemicals, food and beverage products, and every industry.

Models for hypothesis test

The main model of this paper is Tucker and Zarowin model expanded by Callins (1994) model or CKSS. The following model is expanded by adding smoothing index and environmental uncertainty.

\[
RET_t = \eta_0 + \eta_1 X_t + \eta_2 X_{t-1} + \eta_3 X_{t+3} + \eta_4 RET_{t+3} + \eta_5 IS_t + \eta_6 IS_t X_t + \eta_7 IS_t X_{t+3} + \eta_8 IS \cdot RET_{t+3} + \\
\eta_{10} EU_t + \eta_{11} EU_t X_t + \eta_{12} EU_t X_{t-1} + \eta_{13} EU_t X_{t+3} + \eta_{14} EU_t RET_{t+3} + \eta_{15} EU_t IS_t + \eta_{16} EU_t IS_t X_t + \\
\eta_{17} EU_t IS_t X_{t-1} + \eta_{18} EU_t IS_t X_{t+3} + \eta_{19} EU_t IS_t RET_{t+3} + \text{error}
\]

Where,

\(RET_t\) annual share yield for present fiscal year

\(X_t\) earning per share for present fiscal year

\(X_{t-1}\) earning per share for previous fiscal year

\(X_{t+3}\) earning sum per share for future years from \(t+1 - t+3\)

\(RET_{t+3}\) expected share yield for future years from \(t+1 - t+3\)

\(EU_t\) Environmental uncertainty (for which sale change coefficient is used for measuring)

\(IS_t\) income smoothing for present fiscal year

In the above model, if environmental uncertainty increases the correlation between share yield and smoothing, \(EU_t IS_t X_{t+3}\) coefficient will be predicted as positive. This model was used to test first hypothesis.
The dependent variable may be affected by every factor rather than main variable; then, other factors entered the model as unwanted variables to increase reliability of the results.

So, model 1 was complemented as follows:

\[ RET_t = a_0 + a_1X_t + a_2X_{t-1} + a_3X_{t-3} + a_4RET_{t-3} + a_5IS_t + a_6IS_tX_t + a_7IS_{t-1} + a_8IS_{t-3} + a_9RET_{t-3} + a_{10}EU_t + a_{11}EU_tX_t + a_{12}EU_tX_{t-1} + a_{13}EU_tX_{t-3} + a_{14}EU_tRET_{t-3} + a_{15}EU_tIS_t + a_{16}EU_tIS_tX_t + a_{17}EU_tIS_tX_{t-1} + a_{18}EU_tIS_tX_{t-3} + a_{19}EU_tIS_tRET_{t-3} + a_{20}SIZE_t + a_{21}GROWTH_t + a_{22}ERNSSTD_t + a_{23}SIZE_tX_{t-3} + a_{24}GROWTH_tX_{t-3} + a_{25}ERNSSTD_tX_{t-3} + \text{error} \]

Smoothing earning causes them to be informationally useful or increase response coefficient of future earnings. A part of smoothing makes it possible to predict future earnings and a part of it distracts information and decreases response coefficient. If earning smoothing in environmental uncertainty fortifies the relation between present and future incomes (earning consistency), \( X_t*ISt*EU_t \) coefficient is predicted as positive and vice versa. The following model is used to test second hypothesis:

\[ X_{t-3} = \eta_0 + \eta_1X_t + \eta_2IS_t + \eta_3X_tIS_t + \eta_4EU_t + \eta_5X_tEU_t + \eta_6X_tIS_tEUt + \text{error} \]

\( IS_t \) income smoothing for present fiscal year

\( EU_t \) environmental uncertainty (for which sale change coefficient is used for measuring)

\( X_t \) earning per share for present fiscal year

So, this paper uses models 1 and 2 to test the hypotheses using time interval data series.

**Descriptive statistics**

In this part, Descriptive statistics of the study are reported. Table 1 shows variable values used in the main model.
Table 1. Variable values used in the main model

<table>
<thead>
<tr>
<th>Variable</th>
<th>number</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual share yield</td>
<td>444</td>
<td>7.88</td>
<td>9.86</td>
<td>20.15</td>
<td>-15.46</td>
<td>16.35</td>
<td>27.72</td>
</tr>
<tr>
<td>Compound yield</td>
<td>444</td>
<td>1.25</td>
<td>0.98</td>
<td>12.23</td>
<td>-1.40</td>
<td>4.77</td>
<td>42.45</td>
</tr>
<tr>
<td>Earning smoothing</td>
<td>444</td>
<td>-1.38</td>
<td>0.52</td>
<td>-1.20</td>
<td>-2.49</td>
<td>-1.45</td>
<td>0.51</td>
</tr>
<tr>
<td>Environmental uncertainty</td>
<td>444</td>
<td>1.4</td>
<td>0.39</td>
<td>3.3</td>
<td>0.45</td>
<td>5.44</td>
<td>7.25</td>
</tr>
<tr>
<td>Earning per share</td>
<td>444</td>
<td>1000.08</td>
<td>1111.46</td>
<td>4204</td>
<td>-3891</td>
<td>2.39</td>
<td>11.67</td>
</tr>
<tr>
<td>Size</td>
<td>444</td>
<td>26.83</td>
<td>27.41</td>
<td>31.09</td>
<td>23.83</td>
<td>0.57</td>
<td>0.13</td>
</tr>
<tr>
<td>Ratio of market value to book value</td>
<td>444</td>
<td>12.36</td>
<td>13.69</td>
<td>7.56</td>
<td>-13.56</td>
<td>8.3</td>
<td>5.23</td>
</tr>
<tr>
<td>Earning coefficient</td>
<td>444</td>
<td>81.48</td>
<td>24.12</td>
<td>31.00</td>
<td>21.33</td>
<td>6.93</td>
<td>65.33</td>
</tr>
</tbody>
</table>

All the variables of Table 1 are the data of years from 2004-2010. Environmental uncertainty variable has been divided by total assets of first year.

**Results**

H1 predicts that the more environmental uncertainty, the more share yield and income smoothing area will be correlated.

As shown in Table 2, Durbin-Watson value is 1.96 and since it is between 1.5 and 2.5 the hypothesis of error independence is accepted. Correlation coefficient is 0.391 that shows that dependant and independent variables are correlated. Standard coefficient is 0.102 so 10% change in dependent variable results from the changes in independent variable.
Table 2. The results of regression analysis

<table>
<thead>
<tr>
<th>Duration-Watson test</th>
<th>Standard deviation estimation</th>
<th>Standard coefficient</th>
<th>Determination coefficient</th>
<th>Correlation coefficient</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.962</td>
<td>104.026026</td>
<td>0.102</td>
<td>0.153</td>
<td>0.391</td>
<td>1</td>
</tr>
</tbody>
</table>

As seen in Table 3, significance level of F-test is less than 5%, so the null hypothesis implying no correlation between dependant and independent variables is rejected and a linear relation between them is confirmed.

Table 3.ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum squares</th>
<th>Freedom degree</th>
<th>Mean squares</th>
<th>F</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>811470.370</td>
<td>25</td>
<td>32458.815</td>
<td>2.999</td>
<td>.000</td>
</tr>
<tr>
<td>Remaining</td>
<td>4501708.248</td>
<td>416</td>
<td>10821.414</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5313178.618</td>
<td>441</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As seen in Table 3, significance level of F test is less than 0.05. So, null hypothesis implying no linear relation between dependant and independent variables is rejected and a relation between them is confirmed.
### Table 4: Test results of H1

<table>
<thead>
<tr>
<th>Model</th>
<th>Non-standard coefficient</th>
<th>Standard coefficient</th>
<th>T</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Standard error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-214.185</td>
<td>139.550</td>
<td>-1.535</td>
<td>.126</td>
</tr>
<tr>
<td>Xt</td>
<td>-.003</td>
<td>.019</td>
<td>-.035</td>
<td>-.181</td>
</tr>
<tr>
<td>xt-1</td>
<td>-.013</td>
<td>.019</td>
<td>-.129</td>
<td>-.663</td>
</tr>
<tr>
<td>xt3</td>
<td>.031</td>
<td>.030</td>
<td>.806</td>
<td>1.052</td>
</tr>
<tr>
<td>RETt3</td>
<td>52.128</td>
<td>19.422</td>
<td>.467</td>
<td>2.684</td>
</tr>
<tr>
<td>Ist</td>
<td>-34.149</td>
<td>24.821</td>
<td>-.163</td>
<td>-1.376</td>
</tr>
<tr>
<td>ISt Xt</td>
<td>.000</td>
<td>.012</td>
<td>.005</td>
<td>.021</td>
</tr>
<tr>
<td>ISt Xt-1</td>
<td>-.005</td>
<td>.014</td>
<td>-.075</td>
<td>-.338</td>
</tr>
<tr>
<td>ISt Xt3</td>
<td>.011</td>
<td>.005</td>
<td>.395</td>
<td>1.935</td>
</tr>
<tr>
<td>ISt RETt3</td>
<td>16.533</td>
<td>15.277</td>
<td>.229</td>
<td>1.082</td>
</tr>
<tr>
<td>Eut</td>
<td>4.872</td>
<td>.000</td>
<td>1.378</td>
<td>1.789</td>
</tr>
<tr>
<td>EUt Xt</td>
<td>2.861</td>
<td>.000</td>
<td>.840</td>
<td>1.078</td>
</tr>
<tr>
<td>EUt Xt-1</td>
<td>8.528</td>
<td>.000</td>
<td>.297</td>
<td>.507</td>
</tr>
<tr>
<td>EU Xt3</td>
<td>-2.690</td>
<td>.000</td>
<td>-1.991</td>
<td>-2.452</td>
</tr>
<tr>
<td>EUt RETt3</td>
<td>-2.877</td>
<td>.000</td>
<td>-1.283</td>
<td>-1.561</td>
</tr>
<tr>
<td>EUt Ist</td>
<td>4.410</td>
<td>.000</td>
<td>1.640</td>
<td>1.865</td>
</tr>
<tr>
<td>EUt ISt Xt</td>
<td>3.314</td>
<td>.000</td>
<td>.166</td>
<td>.272</td>
</tr>
<tr>
<td>EUt ISt Xt-1</td>
<td>-2.160</td>
<td>.000</td>
<td>-1.900</td>
<td>-2.459</td>
</tr>
<tr>
<td><strong>EUt ISt Xt3</strong></td>
<td><strong>-2.519</strong></td>
<td><strong>.000</strong></td>
<td><strong>-1.345</strong></td>
<td><strong>-1.493</strong></td>
</tr>
<tr>
<td>EUt ISt RETt</td>
<td>5.313</td>
<td>5.087</td>
<td>.068</td>
<td>1.044</td>
</tr>
<tr>
<td>SIZEt</td>
<td>-.198</td>
<td>.504</td>
<td>-.134</td>
<td>-.392</td>
</tr>
<tr>
<td>GROWTHt</td>
<td>1.654</td>
<td>.000</td>
<td>.036</td>
<td>.426</td>
</tr>
</tbody>
</table>
According to first model, if $\text{EU}_{t,\text{St},X_t^3}$ is positive $H_1$ will be accepted. As shown in Table 4, $b = -1.345$ and P-value $= 0.136$ for $T > 0.05$, significant correlation between earning smoothing and share yield is rejected.

Raising environmental uncertainty, $H_2$ predicts a higher correlation between earning smoothing and share yield;

<table>
<thead>
<tr>
<th>ERNSTD1</th>
<th>.000</th>
<th>.001</th>
<th>-.459</th>
<th>-.635</th>
<th>.526</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE3 $X_t^3$</td>
<td>8.207</td>
<td>.000</td>
<td>.104</td>
<td>.312</td>
<td>.755</td>
</tr>
<tr>
<td>GROWTH3 $X_t^3$</td>
<td>5.668</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
<td>1.000</td>
</tr>
<tr>
<td>ERNSTD3 $X_t^3$</td>
<td>-214.185</td>
<td>139.550</td>
<td>-1.535</td>
<td>.126</td>
<td></td>
</tr>
</tbody>
</table>

As seen in Table 5, Durbin-Watson test value is 1.9 and since it is between 1.5 and 2.5, error independence hypothesis is accepted. Correlation coefficient is 0.529 which reveals the correlation between independent and dependent variables. Standard determination coefficient is 0.270. So, 27% change in dependent variable results from change in independent variable.
As shown in Table 6, significance level of F-test is less than 0.05 so null hypothesis implying no linear relation between dependant and independent variables is rejected and a relation between them is confirmed.

As shown in Table 7, results of $H_2$ indicate that:

- The constant term has a non-standard coefficient of 615.034 with a standard error of 449.463 and a beta of 1.368, which is significant at the 0.172 level.
- The variable $X_t$ has a non-standard coefficient of 2.494 with a standard error of 0.289 and a beta of 0.986, which is significant at the 0.000 level.
- The variable $I_{St}$ has a non-standard coefficient of -596.168 with a standard error of 298.803 and a beta of -1.111, which is significant at the 0.047 level.
- The interaction term $I_{St}X_t$ has a non-standard coefficient of 0.841 with a standard error of 0.172 and a beta of 0.597, which is significant at the 0.000 level.
- The variable $E_u$ has a non-standard coefficient of -1.048 with a standard error of 0.000 and a beta of -0.115, which is significant at the 0.131 level.
- The interaction term $E_uX_t$ has a non-standard coefficient of 6.729 with a standard error of 0.000 and a beta of 0.077, which is significant at the 0.511 level.
- The interaction term $E_uI_{St}X_t$ has a non-standard coefficient of 7.846 with a standard error of 0.000 and a beta of 0.012, which is significant at the 0.081 level.

Table 6. ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Mean square</th>
<th>Freedom degree</th>
<th>Mean square</th>
<th>F</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>9.798</td>
<td>6</td>
<td>1.633</td>
<td>28.276</td>
<td>.000</td>
</tr>
<tr>
<td>Remaining</td>
<td>2.524</td>
<td>437</td>
<td>5775021.374</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.503</td>
<td>443</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7. Test results of $H_2$

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Model 1</th>
<th>Non-standard coefficients</th>
<th>Standard coefficients</th>
<th>T</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Standard error</td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>615.034</td>
<td>449.463</td>
<td>1.368</td>
<td>.172</td>
<td></td>
</tr>
<tr>
<td>$X_t$</td>
<td>2.494</td>
<td>.289</td>
<td>.986</td>
<td>8.640</td>
<td>.000</td>
</tr>
<tr>
<td>$I_{St}$</td>
<td>-596.168</td>
<td>298.803</td>
<td>-.111</td>
<td>-1.995</td>
<td>.047</td>
</tr>
<tr>
<td>$I_{St}X_t$</td>
<td>0.841</td>
<td>.172</td>
<td>.597</td>
<td>4.887</td>
<td>.000</td>
</tr>
<tr>
<td>$E_u$</td>
<td>-1.048</td>
<td>.000</td>
<td>-.115</td>
<td>-1.514</td>
<td>.131</td>
</tr>
<tr>
<td>$E_uX_t$</td>
<td>6.729</td>
<td>.000</td>
<td>.077</td>
<td>.511</td>
<td>.609</td>
</tr>
<tr>
<td>$E_uI_{St}X_t$</td>
<td>7.846</td>
<td>.000</td>
<td><strong>.012</strong></td>
<td>.081</td>
<td>.935</td>
</tr>
</tbody>
</table>
Table 7. Test results of H2. According to the second (above) model, if EUtIStXt coefficient is positive and significant, this hypothesis is accepted. But B coefficient being positive, p-value of T becomes more than 0.05 (0.935) and not acceptable. Then, a significant relation between income consistency and share yield in environmental uncertainty is rejected.

Conclusion

The results rejected and second hypotheses of this paper. The results of H1 test showed that increasing environmental uncertainty doesn’t yield higher correlation of earning smoothing of earning smoothing and share yield. Results of test H1 implying that earning smoothing has been for the purpose of manipulation. The results of test H2 showed that earning consistency of earning smoothing companies is not higher in environmental uncertainty. A similar study belong to Habib (2011) whose results contradict the results of this paper.

Suggestions

Considering above results, it is recommended to regard earning predictability, relation of earning to share value, due earning, and conservatism of earning smoothing companies in environmental uncertainty. For a better investment, it is also suggested that investors get informed about the impact of environmental uncertainty on yield. Because when the companies act in volatile conditions, predicting future is not possible properly.
References


