SMOOTHING EARNINGS AND EARNINGS INFORMATIVENESS

Svetoslav Velinov BORISOV¹

¹ Department of Finance, University of Economics – Varna, Bulgaria. E-mail: svetoslav_borisov@ue-varna.bg

Abstract

The impact of smoothing earnings over earnings informativeness depends on the reasons for practising it on the part of company management. If smoothing earnings is done for opportunistic purposes, it is expected to reduce earnings informativeness. In contrast, if by means of smoothing earnings the management targets the transmission of internal information about future corporate results, it is expected to increase informativeness. By applying the approach of informativeness following the example of Tucker and Zarowin (2006), this survey examines how smoothing earnings influences earnings informativeness across a sample of Bulgarian public companies.

Keywords: smoothing earnings, informativeness, CKSS approach.

Introduction

Corporate scandals, such as Enron (Katanov 2002), Ahold (The Economist 2003), Worldcom (Brickey 2003), etc., are the reasons why financial accounting practices and their complications are a hot topic on a global level. Financial information and its interpretation have been gaining special importance, which stands out in light of the global economic crisis that started in 2009. This is connected with the degree to which financial information delivered by financial reporting provides reliable indicators of the financial situation and operations of the business unit and the realization of expected cash flow.
Scientific literature explores two opposite effects stemming from smoothing earnings (Zarowin 2002, Tucker and Zarowin 2006, pp. 251-270). The first one is that executives apply smoothing earnings to disclose their inside information about future corporate earnings (Ronen and Sadan 1981, Chaney and Lewis 1998, 103-135, Tucker and Zarowin 2006, pp. 251-270). Therefore, this effect should lead to more information about future earnings, which in turn are reflected in stock prices. The alternative effect implies that smoothing earnings distorts information and makes stock prices less informative. The presence of less information on future earnings will be reflected by stock prices, hence smoothing earnings will have a negative impact (Tucker and Zarowin 2006, pp. 251-270).

The up-to-date nature of the issue of smoothing earnings, performed by the management of Bulgarian public companies, is to resolve whether there is a positive or negative effect on informativeness as a result of this practice.

The object of this research is the smoothing earnings among Bulgarian public companies. The subject of the survey is the informativeness of earnings. This work applies Tucker and Zarowin’s (2006) research design to Bulgarian market and verifies whether their conclusions are valid for Bulgaria. Emerging stock markets, one of which is the Bulgarian stock market, are characterized by lower transparency and investor protection due to the more inefficient supervisory institutions, even in the conditions of equal nominal regulations (Naidenov 2016), which leads to poor information environment (Morck et al., 2000, pp. 215-260). The influence of smoothing earnings over income informativeness depends on the information environment of the market. In particular, better information environment makes relevant information more accessible to the average investor. It reduces the cost of acquiring information and facilitates more effective investment decisions. Therefore, for companies located in markets with rich information environment (for example, the US market), investors can use all sources of information to better interpret the managers' motives to smooth their earnings in conveying their inside information about Future earnings (i.e. smoothing earnings improves earnings informativeness). Nevertheless, in a market with low information environment (for example, Bulgaria), where information is incomplete and information uncertainty high, investors are not able to use smoothing earnings to forecast future earnings (i.e., smoothing earnings has no impact on informativeness). Expectations in this survey are consistent with the conclusions of Cheng et al. (2014), which provide evidence of a large pattern of US companies, so that the relationship between smoothing earnings and ERC / FERC depends on the company's level of the information environment. They find that the information environment plays a substantial role in evaluating the quality of financial reporting through ERC and FERC.
For these reasons, the following will be investigated: \textit{Hypothesis: Smoothing earnings decreases informativeness of past and current income about future income.}

The intention of this survey is to establish the result of smoothing earnings on income informativeness under the conditions of Bulgarian stock market.

Defining informativeness

Informativeness refers to the "accuracy of information" in the report, statement, or position. As an illustration, if an investor is looking for a new attractive investment opportunity, they will use several sources of information. The investor can contact brokers, read prospectuses, and also analyze financial statements. In addition, the investor will analyze the company's historical data. Some sources of information will be more valuable than others. This means that one source ensures extraordinary informativeness, compared with others. In addition, statements made by the company’s management which are related to the performance of the company, could also provide valuable information for current and future investors. In particular, with regard to this study, informativeness is related to the company's income. Tucker and Zarowin (2006) define earnings informativeness as follows: "The information worth of past and current income when they provide information about future earnings" (Tucker and Zarowin 2006, pp. 251-270).

This definition for earnings informativeness implies that analysts and other consumers of financial statements can derive certain information elements from financial statements that provide information to forecast future earnings. This, of course, is particularly applicable to quarterly reports. Since the reported annual earnings in the company's financial statements are a projection of the four quarters of earnings, therefore reported quarterly earnings may provide data onto the annuals. Thus, the informativeness of earnings can be defined as its ability to forecast future earnings. Based on current annual earnings, analysts and other users of the financial statements can prepare forecasts for future earnings.

There are benefits to company management if users of financial statements are capable of producing satisfactory forecasts for the company's future earnings. This contributes to the recognition of the company by its stakeholders as financially sustainable. One of the benefits for the company from the greater predictability of its results is the lower cost of capital for it, while for management the risk of job loss decreases and there is a growing likelihood of actually getting the agreed bonuses in their compensation plans.
Measuring informativeness

To test the informativeness of earnings the CKSS (abbreviated by Collins, Kohthari, Shanken, and Sloan) approach established by Collins et al. (1994) is used. Based on EMH (efficient-markets hypothesis), the CKSS approach examines the quantity of information on future earnings of the company, which is reflected by an alteration in current stock prices. According to EMH, all available information is reflected in stock prices. Therefore, based on stock prices, the CKSS approach considers both public and internal information about the company. The CKSS uses changes in income as independent variables. It is also implicitly assumed that annual earnings follow a random walk. Lundholm and Myers (2002) manage the past, current and future income levels, assuming a more common form of the model on income expectations (Lundholm and Myers 2002, pp. 809-839). To increase the strength of the test, they combine three types of income in the variable $X_t$ and return for three future years $R_{t+3}$. The applied regression model of the CKSS approach in the Tucker and Zarowin survey (2006) is defined as follows:

$$R_t = b_0 + b_1 X_{t-1} + b_2 X_t + b_3 X_{t+3} + b_4 R_{t+3} + \varepsilon$$  \hspace{1cm} (1)

Where: $R_t$ = Ex-dividend stock returns for year $t$.  
$X_{t-1}$ = Earnings per share for year $t-1$.  
$X_t$ = Earnings per share for year $t$.  
$X_{t+3}$ = Sum of earnings per share for years $t+1$ to $t+3$.  
$R_{t+3}$ = The aggregate stock return for years $t+1$ to $t+3$.

Consequently, coefficient $b_2$ corresponds to the earnings response coefficient (ERC) and coefficient $b_3$ is the future earnings response coefficient (FERC). All the EPS variables are based on EPS, adapted for stock splits and stock dividends, and according to Christie (1987), deflated by the stock price at the beginning of year $t$ (Christie 1978, pp. 231-258). $R_{t+3}$ is the cumulative stock return in year $t+1$ to $t+3$ with annual compounding. The coefficient on past earnings ($b_1$) is anticipated to be negative, the ERC ($b_2$) is anticipated to be positive, the FERC ($b_3$) is anticipated to be positive, and the coefficient on future returns ($b_4$) is anticipated to be negative.

In order to answer the research question, regression is expanded by adding the measure of smoothing earnings IS and its interaction with the independent variables. If a company is recognized as a smoother, the variable for the use of smoothing earnings is 1, and if the company is recognized as a non-smoother, the variable for the use of smoothing earnings is 0. The regression equation (2) expresses the basic empirical model for examining the association between smoothing earnings and income informativeness:

\hspace{1cm}
The regression equation (2) is calculated by pooled cross-sectional, time-series data. If the magisterial result of smoothing earnings is to transmit information about future earnings, then the coefficient $b_8$ should be positive.

It is found that using stock price has a benefit over assessing the relationship between current earnings and future earnings. Regardless of the distinctness, the two regression models (2) and (3) are associated. If smoothing earnings enhances earnings’ informativeness, then it must enhance the relationship between future earnings and current earnings — i.e. it must strengthen the earnings’ steadfastness. To confirm this, we evaluate the relationship between current and future earnings in regression (3)

$$EPS_{t+3} = a_0 + a_1 EPS_t + a_2 IS_t + a_3 IS_t * EPS_t + \varepsilon_t \quad (3)$$

Where: $EPS_t$ = Earnings per share for financial year $t$.

$EPS_{t+3}$ = Earnings per share for financial year $t+1$ to $t+3$.

Accordingly, variables $EPS$ and $IS_t$ are independent variables and $EPS_{t+3}$ is dependent variable. If the magisterial result of smoothing earnings is to transmit information about future earnings, then the coefficient on $IS_t * EPS$ should be positive. If the counterfeiting effect of smoothing earnings rules, then the earnings would be less informative and hence the coefficient is anticipated to be negative.

To test whether this is appropriate for the selected sample of data, a generalized linear model was applied in SPSS.

**Results**

This research uses a sample of public companies which belong to the BSE Premium and Standard segments. There are two objective reasons for constructing the sample with the most liquid public companies traded on the Bulgarian stock market. The first is that in agreement with the hypothesis of the political costs of Watts and Zimmerman, high income is a substitute variable for political and public concentration (Watts and Zimmerman 1978, pp. 112-134)\(^2\). Consequently, the management has an incentive to smooth income and reduce political costs. The second reason stems from the need to analyze the relation between smoothing earnings and stock prices. The sample consists of 66 companies and includes data for the period from 2010 to 2015, in testing the research hypothesis using cross-sectional data.
In this study, companies are segregated to smoother and non-smoother by applying the income volatility approach. It is replicated by the example of Leuz, Nanda and Wysocki (2003), Francis, LaFond, Olsson, and Schipper (2004) and LaFond, Lang and Skaife (2007). The income smoothing variable – IS in the LNW model is measured by calculating the following ratio $\frac{\text{Std (CFO)}}{\text{Std (NI)}}$ over a 5-year period. CFO is the operating cash flow and NI is net income, and both variables are weighted by TA (total assets at the beginning of the year). The benefit of this measure is that it uses the cash flow of the company to control the increase in volatility due to the nature of the company's business. Therefore, this indicator can be elucidated as the impact of smoothing earnings resulting from the utilization of accruals. Since the measure is strictly positive and highly skewed, a natural logarithm is used in the empirical tests, which significantly decreases the impact of the distortion. Scaling with the variability of the operating cash flow measures the magnitude to which accrual reporting smooths the variability of core business operations. Higher values of the variable IS indicate smoother income.

$$IS = \ln \left( \frac{\sigma(CFO)}{\sigma(\text{Netincome})} \right)$$

(4)

The advantage of measuring smoothing earnings in the years immediately before the period used to form the sample of companies is that it eliminates the possibility of synchronizing the obtained results. The similar concern would arise if managers smoothed earnings as a reaction to the stock return. Rather, this measure should be interpreted as the historical earnings observed by market participants just prior to the time of data sampling.

Applying the model to sample data enables companies to rank according to the degree of smoothing earnings. The outcomes are applied in the model of Tucker and Zarowin (2006), which measures the informativeness of smoothing earnings. To calculate $IS$, data for NI, CFO and TA are derived from the company's annual financial statements for the period 2010-2014. The companies in the main sample are sorted according to the $IS$ indicator. Those which receive positive values for $IS$ are defined as income smoothers. Consequently, from the main sample (66 companies) two sub-samples were formed. Companies which are in sub-sample with positive values of the $IS$ indicator qualify as Smoothers (42 companies), while those in sub-sample values for $IS = <0$ are defined as Non-Smoothers (24 companies).

In order to check whether smoothing earnings improves the informativeness of earnings, it is important to test the company's income correlation from the selected sample. This implies that this research tests the relationship between $EPS_i$ and
As a consequence, the relationship between the current year earnings and the future year earnings is tested. To test the correlation, the EPS research data from 2011 is applied for $EPSt$, and the EPS research data from 2012 to 2014 is applied for $EPS_{t3}$. The tested bivariate correlation of these two variables in SPSS provided the following empirical research results:

**Table 1**

<table>
<thead>
<tr>
<th></th>
<th>$EPSt$</th>
<th>$EPS_{t3}$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>$EPS_{t3}$</td>
<td>Pearson Correlation</td>
<td>,928**</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>66</td>
<td>66</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (1-tailed).

*Source: author’s own calculations.*

Table 1 displays the outcomes of Pearson’s one-tailed correlation test. A one-tailed test is applied instead of a two-tailed test, because this research expects that the current year earnings are positively correlated with the future year earnings. If this is not the case, a two-tailed test should be applied.

Pearson’s correlation coefficient in Table 1 for the variables is 0,928 and the significance value is 0,000 ($p = 0,01$). Based on this significance value, it is clear that a relation exists between the two variables. There is an intensely high probability ($r = 0,928$) for the existence of correlation between the two variables in a sample of data for 66 companies. *As a consequence, these empirical results prove that current income is strongly correlated with future income. This suggests that if current income rises, future increases will also be expected.*

To add more explanatory power to the research results, Pearson’s correlation coefficient can be squared. According to Fields (2009), $R^2$, additionally referred to as coefficient of determination, is a method to measure the amount of variability that is applicable for the two variables (Fields 2000). The two variables have a correlation of 0,928. Consequently, the value of $R^2$ is calculated as $(0,928) = 0,861$. The 0,861 can be interpreted as 86,1%. Consequently, 86,1% of the variability in $EPS_t$ is in conformity with the variability of $EPS_{t3}$. The two variables are therefore not only highly correlated, but additionally, a high percentage of variability of the two variables is
shared. Additionally, Fields (2009) states that although measuring the essential importance of an effect is a very powerful method, it cannot be applied to measure the causal relationship between the two variables. This implies that even if 86.1% of the variability in one variable is shared by the other variable, the variability in one variable is not necessarily based on the variability in the other variables. These research results prove that a relation exists between the current year earnings and the future year earnings. Additionally, the relatively high percentage of variability in the current year earnings is shared by the variability of the future year earnings.

Next, the CKSS approach is applied by computing the model of equation (1). The CKSS approach examines whether current stock prices contain information about future earnings. $R_t$ is the annual stock return for 2011 in regression (1), $R_{t3}$ is the annual stock return for the period 2012-2014, $X_{t-1}$ is EPS for 2010, $X_t$ is EPS for 2011. And $X_{t3}$ is the sum of EPS for the period 2012-2014. The hypothesis of the adequacy of the evaluated regression model is first tested. The estimation of the model in Table 2 shows that $\alpha = 0.05$ is less than $\alpha_{emp.} = 0.972$. Therefore, the model is not adequate.

**Table 2**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>0.155</td>
<td>4</td>
<td>0.039</td>
<td>1.28</td>
<td>0.972</td>
</tr>
<tr>
<td>Residual</td>
<td>18,478</td>
<td>61</td>
<td>0.303</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18,633</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), $R_{t3}$, $X_{t-1}$, $X_t$, $X_{t3}$

b. Dependent Variable: $R_t$

**Source:** author’s own calculations.

Table 3 demonstrates that only 9.1% of the variance of the dependent variable is caused by the independent variables.

**Table 3**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.091</td>
<td>0.008</td>
<td>-0.057</td>
<td>0.55038</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), $R_{t3}$, $X_{t-1}$, $X_t$, $X_{t3}$

**Source:** author’s own calculations.
Then it is essential to examine the hypothesis for a reliability of the individual regression coefficients. Table 4 shows that, assuming a reference level of significance of $\alpha = 0.05$, all regression coefficients are not statistically significant.

**Table 4**

**Estimates of regression coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>,017</td>
<td>,071</td>
<td>,241</td>
</tr>
<tr>
<td></td>
<td>Xt1</td>
<td>,008</td>
<td>,014</td>
<td>,105</td>
</tr>
<tr>
<td></td>
<td>Xt</td>
<td>,017</td>
<td>,043</td>
<td>,136</td>
</tr>
<tr>
<td></td>
<td>Xt3</td>
<td>,002</td>
<td>,015</td>
<td>,053</td>
</tr>
<tr>
<td></td>
<td>Rt3</td>
<td>,000</td>
<td>,009</td>
<td>,009</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Rt  
b. Xt1 is the variable Xt-1 because of the impossibility of entering the original appearance in SPSS.  
c. Predictors: (Constant), Rt3, Xt1, Xt, Xt3

*Source: author’s own calculations.*

The CKSS approach is also applied in the case of Zarowin (2002), which uses a shorter one-year sampled period ($t + 1$) for the variables $Xt_3$ and $Rt_3$ in the regression equation. According to Zarowin (2002), if there is a correlation between smoothing earnings and stock prices, it is more probable to be discovered in the following year than in the second or third quarter of the reporting period (Zarowin 2002).

**Table 5**

**Verification of the adequacy of the model**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>,384</td>
<td>4</td>
<td>,096</td>
<td>,321</td>
<td>,863</td>
</tr>
<tr>
<td>Residual</td>
<td>18,249</td>
<td>61</td>
<td>,299</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18,633</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predictors: (Constant), Rt2012, Xt1, Xt2012, Xt  
Dependent Variable: Rt

*Source: author’s own calculations.*
Table 6

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-.023</td>
<td>.071</td>
<td>-.318</td>
<td>.752</td>
</tr>
<tr>
<td>Xt</td>
<td>.012</td>
<td>.021</td>
<td>.092</td>
<td>.557</td>
</tr>
<tr>
<td>Xt1</td>
<td>-.009</td>
<td>.013</td>
<td>-.113</td>
<td>-.686</td>
</tr>
<tr>
<td>Xt2012</td>
<td>.013</td>
<td>.016</td>
<td>.105</td>
<td>.825</td>
</tr>
<tr>
<td>Rt2012</td>
<td>.068</td>
<td>.212</td>
<td>.041</td>
<td>.320</td>
</tr>
</tbody>
</table>

Source: author’s own calculations.

Tables 5 and 6 present the outcomes of the Zarowin (2002) model, with $X_{t3}$ being EPS for 2012, and $Rt_{3}$ being the stock return for 2012. The results are identical to those obtained with the CKSS approach, following the example of Tucker and Zarowin (2006). From the application of the CKSS approach, it is established that for the selected sample of public companies in Bulgaria, current stock prices do not include information on future income. This is confirmed by the statistical insignificance of regression coefficients (ERC) and (FERC).

Then, having proved that current earnings are positively correlated with the future ones, it is required to examine the impact of income smoothing over income correlation. This is tested through the presented regression model represented by formula (3). The assessment of this model examines whether smoothing earnings increases or decreases the informativeness of current income in regard to future earnings. In the regression models except for the two variables $EPS_t$ and $EPS_{t3}$, for which the correlation above was calculated, a variable for smoothing earnings is added in order to examine the impact of smoothing earnings over income informativeness. If a company is recognized as a smoother, the variable for the use of income smoothing is 1 and if the company is recognized as a non-smoother the variable for the use of income smoothing is 0. Consequently, the variables $EPS_t$ and $EPS_{t3}$ are entered as scale variables and in SPSS the variable for the use of smoothing earnings IS is entered as a categorical variable in SPSS.

The model presented in equation (3) is a multiple regression model. There, the variable $EPS_{t3}$ is dependent, whereas $EPS_t$ and IS are independent variables. If smoothing earnings improves income informativeness, coefficient $a_3$ of interaction of factor variables $IS_t \times EPS$ must be positive. In order to test whether this is appropriate to the basic research sample, the linear model of the formula (3) (Tucker and Zarowin model (2006)) is calculated by SPSS.
Tables 7, 8 and 9 introduce the results of the estimation of the regression model (3) which establishes how smoothing earnings affects informativeness.

The hypothesis of the adequacy of the evaluated regression model is first tested. The null hypothesis and the alternative one are defined. \( H_0 \) states that the variance in the dependent variable is not caused by the independent variables or, in other words, the regression model is not adequate. \( H_1 \) states that the variance in the dependent variable is caused by the independent variables or, in other words, the regression model is adequate. The significance level \( \alpha = 0.05 \) is assumed. The assumed reference level of significance \( \alpha = 0.05 \) and the calculated level of significance \( \alpha_{\text{emp.}} \) are compared. While calculating the model in Table 7, it was found that \( \alpha = 0.05 \) is greater than \( \alpha_{\text{emp.}} = 0.000 \). Therefore, the alternative hypothesis is assumed, i.e. the model is adequate.

### Table 7

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>9264.556</td>
<td>3</td>
<td>3088.185</td>
<td>135.533</td>
<td>0.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>1412.704</td>
<td>62</td>
<td>22.786</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10677.260</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), EPSt IS, EPSt, IS
b. Dependent Variable: EPSt3

**Source:** author’s own calculations.

Table 8 displays that 93.1% of the variance of the dependent variable is caused by the independent variables.

### Table 8

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.931*</td>
<td>0.868</td>
<td>0.861</td>
<td>4.77342</td>
</tr>
</tbody>
</table>

Predictors: (Constant), EPSt IS, EPSt, IS

**Source:** author’s own calculations.

Next, it is essential to verify the hypothesis of a reliability of individual regression coefficients. Most importantly, the null hypothesis and the alternative one are defined. \( H_0 \) states that the evaluated regression coefficients are statistically insignificant. \( H_1 \) states that the regression coefficients are statistically significant.
Table 9 reveals that, assuming a reference level of significance of $\alpha = 0.05$ and a calculated level of significance, $\alpha_{\text{emp.}} = 0.000$ the coefficient is statistically significant and has a positive value $B = 2.909$. The calculation of the regression equation (3) confirms the already established relationship between $\text{EPS}_t$ and $\text{EPS}_{t3}$, that is, $\text{EPS}_t$ has a high predictive value for $\text{EPS}_{t3}$. At the assumed reference level of significance of $\alpha = 0.1$ and calculated level of significance $\alpha_{\text{emp.}} = 0.098$ coefficient of an interaction of factor variable is statistically significant. The negative value of the regression coefficient ($B = -1.481$) confirms the formulated hypotheses that smoothing earnings decreases informativeness of past and current income about future earnings. It follows that smoothing earnings aggravates the relationship between future and current earnings.

### Table 9

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-0.488</td>
<td>1.009</td>
<td>-0.483</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.909</td>
<td>0.146</td>
<td>19.860</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.871</td>
<td>1.295</td>
<td>0.943</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-1.481</td>
<td>0.882</td>
<td>-1.679</td>
</tr>
</tbody>
</table>

a. Dependent Variable: EPSt3  

*Source:* author’s own calculations.

By proving that smoothing earnings has an adverse effect on income informativeness, it is also established that the opportunistic motives of managers doing it prevail. Therefore, its primary purpose is to falsify the information conveyed to the company’s stakeholders.

### Conclusion

The conclusions of calculating of the regression model (3) show that smoothing earnings reduces the informativeness of past and current income concerning future income. It follows that with smoothing earnings, current EPSs are not good predictors for future EPS of the companies. Therefore, income smoothing aggravates the relationship between future and current income, thus rejecting the formulated research hypothesis.

Demonstrating the negative impact of smoothing earnings over income informativeness confirms the evidence of Cahan, Liu and Sun (2008) that in countries with poor investor protection and low transparency (as is Bulgaria), companies’ management is expected to smooth earnings in the name of its own interests, while in coun-
tries with strong investor protection regulations, management performs income smoothing in order to signal its insider information about future earnings. From the evidence presented, it follows that income smoothing in Bulgaria is mainly done for opportunistic purposes or the primary motive for its application by the management of the company is the maximization of their own wealth.

Confirming the adverse effect of smoothing earnings upon income informativeness in Bulgaria places the following question on the agenda of the policy makers - is there a need for such a great deal of discretion on the part of company management in the field of accounting, which can provide for them opportunities to apply manipulative accounting practices and thus reduce income informativeness? Obviously, since opportunistic motives for smoothing earnings prevail in Bulgaria, the answer should be negative.

**End Notes**

1. Payment of interest, which is simultaneously calculated on both the amount and the interest in previous periods.

2. The political costs hypothesis is associated with the attention that the company receives from external parties such as environmental groups and competitors. According to this hypothesis, the relatively larger companies are expected to choose accounting standards that reduce the company's revenue, unlike the aspirations of the smaller ones. This hypothesis suggests that the size of the company and the level of income are considered variables that indicate political or public attention. As a result, company managers tend to choose accounting standards that reduce companies' earnings in order to minimize, as much as possible, the attention focusing on them.

**References**