

## Standards of investments, income smoothing of central and peripheral industries

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**Abstract:** The income is one of the most significant indexes of the economic activities measuring; therefore, each process that changes the income is important. Income smoothing refers to a conscious behavior which occurs for the purpose of decreasing fluctuations of income cycles. In the present study, it's aimed to investigate the possible effect of Iranian Accounting Standard Number 15 (accounting for investments) on the income smoothing as one of the tools of smoothing based on the kind of the industry (core or Peripheral industries). This standard which authorizes use of "market" or "lower of cost or net sales price" for invest in marketable investments that can act as a tool for income smoothing and income manipulation. Actually this opportunity has been given to company managers to show current investments at cost and by their sale at a discretionary time (with fulfilling non-operational gains stemming from maintenance) perform income smoothing (or manipulation). In such case, it is possible that decisions based on unreal or manipulated information is made by users which can result in inappropriate allocation of resources and possible abuses. The findings of this study showed that the smoothing companies in the core industries class, didn't missus these tools for smoothing and in contrast the smoothing firms of the Peripheral industries class can smooth income by using the discretionary accounting in related to marketable investments. It implied that totally some of the smoothing firms of this accounting standard apply the investments as a tool of the smoothing and also the type of industry is important for using this tool.

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### Introduction

In the companies, the needed information for the sake of making decisions in financial relationship can be provided through accounting. This provided information by accounting would not create any problem if no difference of opinion be existed and all of the members in the company agree with each other. Yet the problem initiates when judgment is concerned. Because although some of the presented information by accounting has objective nature, "for example, cash of the company is in this condition", most of these information are not objective and providing them needs at least a little judgment by the provider; such as estimating allowance for doubtful accounts. This is when the border of informing and deception can be so close to each other that even sometimes it will not be distinguished.

Income smoothing phenomenon has been the favorite issue for many accounting and finance researchers during the last half-century. This phenomenon refers to a conscious behavior which is formed in order to decrease periodical variabilities of profit. Empirical evidence indicates that some of the investors have a great tendency in investment in the companies in which the management of them is able to present a fixed perspective of productivity (Badri, 1999). For this purpose, the managers try to present a fixed perspective of productivity process and higher revenue achievement for the sake of income

smoothing in flexible frameworks of the principles of accounting (Noorani, 2003).

By having a survey of the researches related to income smoothing, some basic pivots are identifiable for these researches which the most important of them are: the purposes and motivations of smoothing, smoothing tools and effective factors on smoothing. Many researches related to smoothing have been conducted in developed countries, but in interpretation of results, the users must pay attention to the existing differences in economic, social, and cultural structures.

### Literature Review

Some of the financial experts believe that in a situation that the market has efficiency, profit and its reporting do not have any extra information and as a result it has no effect on the decisions of the users. But this hypothesis is not acceptable in our country for two reasons; first because some of the researches and observations have indicated that profit and its reporting has had extra information and as a result has had effects on decisions of investors and finally on price of the share. Second, efficiency of capital market especially in our country comparing with the other financial markets is not acceptable due to not being developed enough. According to accounting theory, income smoothing phenomenon in behavioral approach is a remarkable issue. Moreover in action, accountants, auditors and financial analysts in process of financial reporting in which profit

reporting is one of the most important elements of them – are facing with this phenomenon and its consequences. Knowing different aspects of income smoothing is dependent on identifying features and limitations of accounting profit. If we face with income smoothing behavior in an economic environment, this question may pop into our mind that what factors can be effective in occurrence of this phenomenon. The subject of this research is studying the possibility of influencing of accounting standard in investments on income smoothing for those companies which have been accepted in stock market according to being central or peripheral industries. Due to the fact that outcome of sales profit in investments in readily marketable investments is important and effective, the effect of this element on income smoothing in companies is important as well. According to Article 29 of Accounting Standard 15 (Investment Accounting) “the basis of market value or principle of minimum cost and net value of sales for reflecting readily marketable investments which are kept as current asset, can be used in balance sheet.” In fact this possibility has been given to the managers that by keeping these investments to total cost and selling them when they want, through ascertaining profits and non-operational losses from keeping such kind of investments, act towards income smoothing.

#### **Income smoothing definitions**

Different definitions have been presented by accounting experts and researchers about income smoothing which most of them are similar according to their concept. Income smoothing according to accounting dictionary of Louis Kohler means: every designed method for eliminating data irregularities, such as unusual ups and downs in curve which can be a result of non-continuous operational conditions (Alizade, 2001). Beidelman has defined net income smoothing as the following: A conscious action for decreasing variabilities which have been the result of a change in net profit is in a way that at the present time it seems an ordinary issue for the company. By this concept, income smoothing represents an attempt by the manager to decrease unusual changes of profit so much that is allowed according to accounting principles and sound management (Riahi Belkaoui , 2002). Copeland (1967) believes that behavioral smoothing requires successive selection of regulations and measurement principles and also accounting reporting in a special pattern, in a way that its effect be decreasing variabilities of profit (Copeland and Licastro , 1968). Managers smooth income for different purposes. One of these purposes in income smoothing is creating a more fixed flow in order to support higher paid profit. More fixed profit flow can be considered as a lower risk which can lead

to higher share price and lower borrowed costs (Poorheidari and Aflatuni ,2006).

#### **Types of income smoothing**

Income smoothing can be the result of natural or intentional smoothing. Natural smoothing represents that profit process is inherently the creator of smooth flow of profit. Intentional smoothing refers to actions and tasks of management, in other words intentional smoothing is the result of the actions which have been conducted by the manager. Intentional smoothing is divided itself to two groups of smoothing, first real smoothing and second artificial smoothing. Dasher and Malcolm (1970) considered some differences between real and artificial smoothing and stated that: real smoothing focuses on actual trades which have had the target of creating effects on profits. On the other hand artificial smoothing is getting use of some accounting methods to which costs or incomes are transferred from one specific period to another.

Smoothing methods:

Ronen and Sadan (1981) believed that income smoothing can be possible through three methods:

1. Smoothing through occurring or identifying the events: this means that the managers can choose the time of occurring financial events in a way that the effect of decreasing periodical variabilities, be reported incomes. This is why occurrence of some financial events is an element of accounting principles for knowing them.

2. Smoothing through dedication: it means the managers can have supervision by means of controlling authorizations on dedicating monetary effects of some financial events during the time. This is when the results create a smooth process from reported profits. Such as choosing direct or descending method for estimating depreciation.

3. Smoothing through classification: in this method managers control the local arrangement of profit and loss through choosing some of the profit and loss statements. The result of it can be the effects on reported profit amount at different stages, such as considering some profit or loss of usual or unusual items.

#### **Incentives of income smoothing**

We can categorize former researches incentives and motivations into three groups:

Improving shareholder’s welfare: researchers have declared many reasons why the tendency of the management towards income smoothing is due to welfare of the value in company’s share. Pioneer researchers of income smoothing also believed that having a smooth flow of income for shareholders can be like a hopeful promise of a more fixed flow of income and lower systematic or non-systematic risk. As a result we can claim that managers believe the

shareholders are interested in paying more for the shares of the companies in which have a more smooth flow of profit.

Facilitating the predictability of income: Getting use of profits with high variability may make future's planning and budgeting face problems. Also from the aspect of external organizational, it seems motivation for reducing information asymmetry between managers and shareholders can lead to income smoothing behavior.

Enhancing the manager's welfare: The main reason of this issue is expanding accepting scopes of agency theory. Many experts believe that managers substitute needs of shareholders with their own needs and instead of increasing the wealth of shareholders, they want to increase their power, controlling on the company and finally increasing their own welfare to maximum.

Tucker and Zarowin (2006) believe that there are only two incentives for income smoothing:

1. Garbling
2. Informing

Which are apparently at the same step? Such kind of idea can easily summarized the whole mentioned targets and incentives for income smoothing during the past 50 years. Of course this kind of idea cannot solve the problem of those who are looking for an answer to the question of income smoothing, but definitely can indicate the borders between for and against opinions.

#### **Different approaches to identifying income smoothing**

1) **Traditional approach:** In this framework which can be a description of all traditional models, there is a central assumption that any time income variability is reduced by means of a smoothing variable or based on an expected model; we can conclude that the income is smoothed. The first problem of this model is that tests require designing an expected model for smoothed incomes, which is a complicated and partially subjective task, because the expected model may not be able to describe the process of creating time series of income in a desirable and acceptable manner. The second problem of traditional models relates to testing just one smoothing variable for flows of smoothed incomes in a given time which may lead to biased results. Finally, in some studies, the effect of one potential smoothing variable just in one period is tested (Motasemi, 1997).

#### **2) Income variability approach:**

**A) Imhoff model:** By using traditional methods of studying about income smoothing, Imhoff presented a totally different framework for identifying income smoothing behavior. In this model, two criteria are defined for a specific

company in order for it to identify income smoothing:

1. Income smoothing occurs when there exists a smoothed flow of income and at the same time, there is a weak relationship between sale and income;
2. Or when there is a smoothed flow of income while (at the same time) an unsmoothed flow of income is observed.

The problem of this model is that it does not specify what is the smoothed flow of income? (i.e. How much smoothness should it have in order for it to be called "smoothed"?). Or what is a weak relationship between sale and income? Or what is the unsmoothed flow of sale?

**B) Eckel's model:** In the theoretical framework of Eckel's model, smoothing institution is defined as a unit which utilizes several accounting variables in a way that consequences of their effect minimize income variability. Income smoothing in this model is particularly artificial income smoothing since natural income smoothing is not principally related to any managerial action or decision. This model compares income variability with sale variability. The main logic of this model refers to costs behavior. In other words, fixed costs lead to a situation in which when conditions are normal (i.e. when no manipulation is done in income), income variability is more than sale variability. It means that when fixed costs increase, degree of operating leverage is also increased and they are separated more than before (Eckel, 1981).

**3) Dual economy approach:** One of the ways of studying about companies in an organized manner is done through dual economy standpoint. Averit (1968) and Bluston, Murphy and Stevenson (1973) argue that American capitalism (or in other words, capitalism of any country) is a two-part economy which is divided into central and peripheral parts of the industry. Central parts are devoted to industries that cover political and economic texture of any country and possess most financial resources. From among features of central parts of the industry we can mention activities for producing valuable goods, producing exclusive goods or original resources, mass exchanging of goods, and high productivity. Peripheral parts are applied to industries which do not have the above features completely. This type of industries includes low-yielding agricultural sections, valueless manufacturing, and non-technical or semi-technical services. Also, these companies do not have the required asset and power to be productive.

#### **Tools and factors affecting income smoothing in this research**

**Accounting standard:** One of the main objectives of codifying accounting standards is that users can make related and appropriate decisions

using income statements; therefore, accounting needs a reporting method which considers interests of all users optimally. Auditors are responsible for confirming utility of income statements based on accounting standards framework. Also, accounting standards untie managers' hands. In fact, the problem is that income management [income smoothing] sometimes misleads income statements, while income statements do not have any problem regarding adapting to accounting standards framework, and auditors cannot object to income statements (Mashayekhi and Safari, 2006).

The philosophy of income management is utilizing flexibility of standard methods and generally accepted accounting principles. Another reason for income management is different interpretations that can be inferred from procedures of an accounting standard. This flexibility is the main reason to varieties existing in accounting methods. When interpretation of a standard is very flexible, integration of data presented in income statements is reduced (Noorvash, 2005). This research considers one of the tools available for income smoothing in Iran, i.e. Article 29 of Standard 15 – "Investments Standard". In this standard, allowing the use of "market value and/or the principle of minimum cost and the net value of sales" as the basis for readily marketable investments has given to companies' managers the ability to smooth the income through holding these investments at their final cost, selling them when they want, and realizing non-operational profits and losses resulting from holding such investments.

**The type of industry:** Industry is also one of the factors that will be considered in this research. It seems that companies in different industries smooth their income differently. The theoretical support that is considered in some researches is based on theories of dual economy in which industry is divided into central and peripheral parts. Based on this theory, companies in peripheral industries have higher degrees of environmental unreliability and hence, they claim that they are more willing and have the possibility to smooth the income. For this reason, income smoothing in peripheral parts is significantly more than in central parts. Moreover, some scholars believe that the type of industry can be significantly influenced by economic circumstances of the studied society. Also, criteria for differentiation between industries are partially selective, while factors such as size and productivity are quantitative factors and are defined precisely.

#### **The history of researches about income smoothing**

##### **A) Research history in Iran**

In a research under the title of "Specifying Factors Affecting Income Smoothing" in companies

which have been accepted in the stock market of Tehran, Badri studied a sample consisting of 139 companies from the year 1990 to the end of 1996. In this study, 5 factors were investigated which include: company size, productivity ratio, type of industry, type of ownership, and inclusion or non-inclusion of the company in pricing regulations of products. Eckel's index was used for differentiating between smoothing and non-smoothing companies, and single variable tests such as ratios test, t test and chi-square test as well as Logit statistical analysis in two significant levels of 5% and 10% were conducted. Results of the above mentioned study indicates that there is income smoothing in the studied society and it will be significant in reliability levels of 5% and 10%. The share of smoothing companies in relation to the whole statistical sample was more than 30%. In single-variable tests and multi-variable regression models in significant level of 5%, the only factor which had affected income smoothing was productivity. In Logit regression model in significant level of 10%, factors such as company size, productivity ratio, type of industry, and inclusion or non-inclusion of product pricing as the effective factors remained in that model. In other words, the only non-effective factor in income smoothing was the type of companies' ownership.

In a study under the title of "Income Smoothing in Companies Accepted in Stock Market of Iran Using Accounting Standard No. 15", Tajik studied the effect of Article 29 of this standard on income smoothing. Statistical population of this research consisted of companies that have been accepted in stock market of Tehran and had readily marketable investment between years 2001 and 2003. In this research, 15 companies were chosen as the sample. Since the income resulting from selling readily marketable investments is reported in the section of non-operational incomes and it influences earnings per share, the researcher considered in his hypotheses the significance of difference between operating income and earnings per share as well as the significance of income amount resulting from selling investments (more than half of the companies' income is provided by selling investments) in reliability level of 95%, using the statistical T model. Hypotheses of the researcher were confirmed by the results of conducted tests.

##### **B) Research history out of Iran**

By dividing companies into central and peripheral parts of the industry, Belkaoui and Picur in 1984 investigated this assumption that companies in central parts show less smoothing than companies in peripheral parts of the industry. They argued that companies in peripheral parts of the industry have more limited opportunities and face with more

unreliability. Thus, they are more prepared and have more opportunities for smoothing the operational flow of the reported income rather than companies in central parts. By comparing changes in operating income and ordinary income in relation to changes in costs, they tested their hypothesis and concluded that companies in peripheral parts of the industry compared to companies in central parts show more smoothing behaviors for the two mentioned criteria of income.

In 1990, Albrecht and Richardson aiming at studying the effect of industry type (central and peripheral industries) on income smoothing behavior as well as a minor goal of studying the effect of size variable on income smoothing, conducted a research consisted of 512 companies. Regarding income smoothing and the size of the company, a sample was chosen and divided into four groups according to the average of sales, and total sale was selected as a criterion for company size. Smoothing criterion in this research is Eckel's index which measures income-sale variability ratio. In this study, no evidence was found indicating significant difference in income smoothing behavior between different parts of the industry or the size of the company (big or small).

In 1994, in a study about companies accepted in exchange market of Singapore, Ashari et al. specified factors related to income smoothing. In this research, companies were categorized into two groups of smoothing and non-smoothing companies based on Eckel's index and then the effect of four independent variables of company size, productivity, industry and nationality of companies were studied and Logit multi-variable statistical model was used for analyzing the relationship of variables. Results showed that company size does not influence income smoothing, and companies with low productivity and high risk (peripheral industries) were more willing to smooth income. Also, nationality has some effects on companies' smoothing.

### Hypothesis

We can use incomes of share sales for stabilizing incomes if the numeric value is significant and effective. Otherwise such a number cannot have a great effect on reported numbers and values. So if the number is inconsiderable, it will not have a way or tool of stabilizing. Therefore, design of the hypothesis is based on this point that the number related to the income of investment sales should be a significant and effective number so that it can be argued that it has been used for stabilizing. Income of the investment sales for the firms that share exchange is not their main ground activity, would be non-operating income and should be added to operating income, under the head of non-operating income

(loss), that finally, after adding some other items to operating income, gives the net income of the firm. If the income of investment sales is a significant, it will cause a significant difference between operating income and net income which with such a difference it can be examined at the level of income related to per share. So the significance of such a difference can be studied for operating income per share and earnings per share. So the hypothesis of the study can be characterized as this:

H1: there is significant difference between operating income per share and earnings per share in stabilizing firms of main industries.

H2: there is significant difference between operating income per share and earnings per share in stabilizing firms of peripheral industries.

H3: more than half of the non-operating income (loss) of the stabilizing firms in main industries comes from the income of the investment sales.

H4: more than half of the non-operating income (loss) of the stabilizing firms in peripheral industries comes from the income of the investment sales.

### Methodology

This research, from classification point of view, is divided in purpose, practical research and from data collecting point of view is descriptive research (non-experimental).

Studying society includes accepted firms in Tehran stock exchange between 2004 and 2006 which have had speedy trade investment and the number of firms is 41. After collecting required information, by considering research hypothesis, first we should specify firms done the income stabilizing by Eckel model. Eckel model measures potential impacts of the stabilizing variables by time. In this model, a firm is considered as a leveler when change coefficient ratio of income change time series to changes coefficient is less than one for changes in sale time series. In other words:

$$\frac{CV\Delta I}{CV\Delta S} = \frac{(\sqrt{\sum(\Delta I_i - \overline{\Delta I})^2 / n - 1} / \overline{\Delta I})}{(\sqrt{\sum(\Delta S_i - \overline{\Delta S})^2 / n - 1} / \overline{\Delta S})} < 1$$

$\Delta I_i$  = difference of income per year to the last year

$\overline{\Delta I}$  = income difference average in consecutive years

$\Delta S_i$  = sale difference per year to the last year

$\overline{\Delta S}$  = sale difference average in consecutive years

CV = coefficient of variance

Using Eckel model, it becomes apparent that from 41 firms of the statistical society only 27 firms have done the income stabilizing which all of these firm studied as statistical sample because of the limitation of their number. Main industries are those which are considered as main economic system of the

country and have political and fiscal powers and considering the monetary resources, are of the greatest departments. Peripheral industries are those which have small size, labor concentration, low salary and no political and fiscal power. By considering the definitions of the main and peripheral industries, of income stabilizing firms 16 are placed in main industry and 11 in peripheral industries.

### Normality test of first and second hypothesis variables

Hypothesis tests are conducted by the help of SPSS software. By considering normality or non-normality of the research variables, the type of data tests is varied. Kolmogorov–Smirnov test has been used for normality test. Results are shown in table (1).

**Table 1: results of Kolmogorov–Smirnov**

Type of Industry		Statistic of Kolmogorov–Smirnov	P Value Significance level	result	Proper test type
Main industry	EPS	1.29	0.07	Both variable have no normal distribution	Wilcaxon non-parametric test for dependent samples
	OPS	1.10	0.18		
Peripheral industry	EPS	0.988	0.283	Both variable have no normal distribution	Wilcaxon non-parametric test for dependent samples
	OPS	0.99	0.282		

Considering table (1) it can be observed that: in all cases ( $P > 0.05$ ), it means EPS and OPS distributions are not normal and paired T-test cannot be used for EPS, OPS average comparison. To compare the average of OPS, EPS we must use a nonparametric test to compare the dependent samples which is called signed ranks test and Wilcaxon. In this test, first the difference between each pair is computed and we leave aside the pair which its difference equals zero. Then without considering the difference signs, we rank them from low to high. Next we give each rank the sign of that difference.

Sum of the modulus of the negative ranks and the sum of the modulus of the positive ranks are computed and we call the smaller number T. Critical value is computed considering normal table and 5% error:

$$Z_{0/95} = 1/96$$

$$Z = \frac{T - \frac{n(n+1)}{4}}{\sqrt{\frac{n(n+1)(2n+1)}{24}}} \quad n > 30$$

If the statistic of the Z test is equal or less than critical value, the null hypothesis is accepted and if statistic of the Z test is larger than the critical value, the null hypothesis is rejected.

### Test of the first hypothesis

Alternative hypothesis: there is significant difference between EPS, OPS average in stabilizing firms of the main industries.

$$\begin{cases} H_0 : \mu_{OPS} - \mu_{EPS} = 0 \\ H_1 : \mu_{OPS} - \mu_{EPS} \neq 0 \end{cases}$$

### Test divided by the years of the study

**Table 2: results of the Wilcaxon test for dependent pair sample average comparison**

Year	Firm Number	Z Wilcaxon	Sum of the Wilcaxon Ranks	P level of significance	Critical value	result
2004	16	0.93	50	0.35	30	OPS and EPS have no significant difference
2005	16	0.62	56	0.53	30	OPS and EPS have no significant difference
2006	16	0.88	51	0.38	30	OPS and EPS have no significant difference

So by considering table (2) about main industries, as sum of the Wilcaxon ranks is larger than the critical value extracted from the Wilcaxon table with 5 percent error and (30)  $n=16$  in each of the study year, so the null hypothesis is rejected, in

other words it can be said with 95% confidence that there is no significant difference between EPS and OPS average in stabilizing firms of main industries (at each of the three years of the test).

**Test in a cumulative manner****Table 3: results of the Wilcaxon test for dependent pair sample average comparison**

Variable	Average	Standard deviation	Z Wilcaxon	P level of significance	Critical value	result
EPS	1277.35	1105.05	1.33	0.18	1.96	Null hypothesis is not rejected
OPS	1282.6	1401.3				

Considering table (3) about main industries, as the value of Wilcaxon calculated z (1.33) is smaller than the critical value ( $P > 0.05$ ) so the null hypothesis is not rejected, in other words it can be said with 95 percent confidence that there is no significant difference between EPS and OPS average in stabilizing firms of main industries.

Alternative hypothesis: there is significant difference between EPS, OPS average in stabilizing firms of the peripheral industries.

$$\begin{cases} H_0 : \mu_{OPS} - \mu_{EPS} = 0 \\ H_1 : \mu_{OPS} - \mu_{EPS} \neq 0 \end{cases}$$

Test divided by the year of the study

**Test of the second hypothesis****Table 4: results of the Wilcaxon test for dependent pair sample average comparison**

Year	Firm number	Z Wilcaxon	Sum of the Wilcaxon's ranks	P level of the significance	Critical value	result
2004	11	2	10	0.045	11	OPS and EPS have significant difference
2005	11	1.98	10.5	0.049	11	OPS and EPS have significant difference
2006	11	0.89	23	0.37	11	OPS and EPS have significant difference

So by considering the above table about peripheral industries, as the sum of the Wilcaxon ranks in years 2004 and 2005 is smaller than the critical value extracted from Wilcaxon table with 5 percent error and  $n=11$  so the null hypothesis is rejected, in other words it can be said that there is significant difference between EPS and OPS average in stabilizing firms of the peripheral industries in each year of 2004 and 2005.

But as sum of the Wilcaxon ranks in year 2006 is larger than the critical value extracted from Wilcaxon table with 5 percent error and  $n=11$  so the null hypothesis is not rejected, in other words it can be said with 95 percent confidence that there is no significant difference between EPS and OPS average in stabilizing firms of the peripheral industries.

**Test in a cumulative manner****Table 5: results of the Wilcaxon test for dependent pair sample average comparison**

Variable	Average	Standard deviation	ZWilcaxon	Plevel of significance	Critical value	Result
EPS	452.5	651.5	2.368	0.02	1.96	Null hypothesis is not rejected
OPS	544.1	619.2				

Considering the above table about peripheral industries, as the value of Wilcaxon calculated z (2.368) is larger than the critical value (1.96) ( $P < 0.05$ ) so the null hypothesis is rejected and it can be said with 95 percent confidence that there is significant difference between EPS and OPS average in stabilizing firms of the peripheral industries.

**Normality test of the variables of the third and fourth hypothesis**

Considering the variables of the third and fourth, like first and second hypothesis for testing distribution normality of the used variables in this hypothesis non-operating income of the firms and income earned by investment sales, we use Kolmogorov-Smirnov test. Results are summarized in the following table.

**Table 6: results of the Kolmogorov–Smirnov test**

Type of Industry	Variable	Kolmogorov–Smirnov statistic	P level of significance	Result	Proper type of the test
Main industry	Non-operating profit and loss	3.24	0.00	The variable have normal distribution	Parametric test On sample student t
	Income of the investment sale	3.27	0.00	The variable have normal distribution	
Peripheral industry	Non-operating profit and loss	2.77	0.00	The variable have normal distribution	Parametric test On sample student t
	Income of the investment sale	2.62	0.00	The variable have normal distribution	

Considering table (6), it can be observed that: as in each 4 cases ( $P < 0.05$ ), null hypothesis of non-normality of the variables is rejected and the alternative hypothesis of normality of the variables is accepted. Now one-parameter t test can be used. Here variable named P (proportion) is designed which is obtained from the result of income of investment sale by non-operating income. Formula used in the calculation of the test of this hypothesis is the following:

$$t = \frac{\mu_p - 0.5}{\frac{SD_p}{\sqrt{n}}}$$

$\mu_p$  : Average of variable P

$SD_p$  : Standard deviation of variable P

$n$  : Data numbers in variable P

Degree of freedom: in the test of hypothesis is: data number minus one.

Critical value: with the degree of freedom related to each hypothesis and 5 percent error, the necessary number is extracted by referring to the table t and considering being one-way.

#### Test of the third hypothesis

Alternative hypothesis: more than half of the non-operating income of the stabilizing firms in main industries is the result of the investment sale.

If we call the average of the variable P  $\mu_p$ , the statistical description of the null and alternative hypothesis is as follow:

$$\begin{cases} H_0 : \mu_p < 0.5 \\ H_1 : \mu_p \geq 0.5 \end{cases}$$

#### Test divided by the years of the study

**Table 7: results of the t test in main industry department**

Year	Test Value = 0/5						Level of significance, P
	Number	Average	Standard deviation	T	Degree of freedom	Critical value	
2004	16	0.69	0.2006	3.83	15	1.75	0.002
2005	16	0.64	0.165	3.38	15	1.75	0.004
2006	16	0.63	0.237	2.26	15	1.75	0.039

Considering above mentioned table it can be seen that in all three years of the study as the calculated value of t is larger than the critical value extracted from the table with degree of freedom 15 and 5 percent error (1.75) and in all cases ( $P > 0.05$ ), so the null hypothesis is rejected, in other words it

can be said with 95 percent confidence that in all three years of 2004, 2005 and 2006 more than half of the non-operating income of the stabilizing firms in main industries is the income obtained from investment sale.

#### Test in a cumulative manner

**Table 8: results from t test in main industry department**

P	Test Value = 0/5						Level of significance
	Number	Average	Standard deviation	T	Degree of freedom	Critical value	
Proportion of income from investment sale to non-operating income	48	0.655	0.2004	5.37	47	1.96	0.00

Considering the above table, as calculated value of t (5.37) is larger than the critical value with degree of freedom 47 and 5 percent error extracted from T table and ( $P < 0.05$ ), so the null hypothesis is rejected and with 95 percent confidence it can be said that in the three years period of 2004 to 2005, more than half of the non-operating income of the stabilizing firms in main industries come from the income of investment sale.

#### Test of the fourth hypothesis

#### Test divided by the years of the study

**Table 9: results from t test in peripheral industries department**

Year	Test Value = 0/5						Level of significance, P
	Number	Average	Standard deviation	T	Degree of freedom	Critical value	
2004	11	0.67	0.33	1.64	10	1.81	0.132
2005	11	0.71	0.26	2.72	10	1.81	0.022
2006	11	0.78	0.101	9.14	10	1.81	0.00

Considering table (9), it can be seen that in year 2004 calculated value of t is smaller than the critical value (1.81) and in each cases ( $P < 0.05$ ) so the null hypothesis is not rejected, in other words it can be concluded with 95 percent that in 2004 more than half of the non-operating income of stabilizing firms in peripheral industries is not resulted from the investment sale. In years 2005 and 2006 calculated

Alternative hypothesis: more than half of the non-operating income of the stabilizing firms in peripheral industries is the result of the investment sale.

If we call the average of variable P  $\mu_p$ , the statistical description of the null and alternative hypothesis will be as follow:

$$\begin{cases} H_0 : \mu_p < 0.5 \\ H_1 : \mu_p \geq 0.5 \end{cases}$$

value of t is larger than the critical value (1.81) and in each cases ( $P < 0.05$ ) so the null hypothesis is rejected, in other words it can be concluded with 95 percent that in two years of 2005 and 2006 more than half of the non-operating income of the stabilizing firms in peripheral industries is resulted from the investment sale.

#### Test in a cumulative manner

**Table 10: results from t test in peripheral industries department**

P	Test Value = 0/5						Level of significance, P
	Number	Average	Standard deviation	T	Degree of freedom	Critical value	
Proportion of income from investment sale to non-operating income	33	0.71	0.25	5.06	32	1.96	0.00

Considering the above table, as calculated value of t and of the table is larger than the critical value extracted by degree of freedom 32, 5 percent error (1.96) and ( $P < 0.05$ ) so the null hypothesis is rejected and it can be concluded with 95 percent confidence that in three-year period of 2004 to 2005 more than half of the non-operating income of the stabilizing firms in peripheral industries is resulted from the investment sale.

#### Conclusion

Refusal of the first hypothesis (there is no significant difference between operating income per share and earnings per share in stabilizing firms in main industries) means that firms placed in main

industries class would do no stabilizing, even if they are stabilizer from non-operating income and following that from the income of investment sale. In contrast the confirmation of the second hypothesis (there is significant difference between operating incomes per share and earnings per share) shows that non-operating income, which is the margin of earnings per share and operating income per share, is a significant amount that firms placed in peripheral industries can conduct stabilizing through this. Confirming the third and fourth hypothesis (in main and peripheral industries, income is resulted from the investment sale) indicates that in stabilizer firms having speedy trade investment, income resulted from investment sale consists significant amount of

the non-operating income of the firms which shows the importance of this amount in forming the total income of the firm and also specifies that firms can use this as a toll for stabilizing the income.

#### Research limitations

1. Loss of criteria to classify main and peripheral industries in stock exchange organization can be noted.

2. Difficulty in accessing the information (especially descriptive notes and financial statements) which make it possible only collect data by referring to stock exchange information resource.

3. Considering that in this research the classification of the present articles in the literature of the research has been used to classify the industries (developed country classification), if other researchers select another base for classification, they may obtain different result.

#### Suggestions for future researches

1. The impact of other accounting standards which suggest accounting selection methods can be studied as possible tool of income stabilizing.

2. Considering that the classification of the industries is varied by stock exchange organization, firms are divided by that classification and then the impact of the accounting standards (including investments standards) on stabilizing is studied.

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