



AENSI Journals

Journal of Applied Science and Agriculture

ISSN 1816-9112

Journal home page: www.aensiweb.com/jasa/index.html



## Studying the Relationship between Income Smoothing and Size of the Firms Accepted in Tehran Stock Exchange

<sup>1</sup>Parviz Saeidi and <sup>2</sup>Ghasem Kazemi Jelodar

<sup>1</sup>Department of Management And Accounting, Aliabad katoul Branch, Islamic Azad University, Aliabad katoul, Iran.

<sup>2</sup>Governmental Management M.A holder, Gha'emshahr Branch, Islamic Azad University, Aliabad katoul, Iran.

### ARTICLE INFO

#### Article history:

Received 23 January 2014

Received in revised form 25

February 2014

Accepted 26 February 2014

Available online 5 April 2014

#### Keywords:

Income smoothing, Eckle index, firm size

### ABSTRACT

**Background:** Smoothing income has recently been of great importance to the finance and accounting experts in the last half of the century. Belkoui (2005) believes that income smoothing is consisted of conscious coordination of income in a way that we can reach a desirable level or trend. Generally the researchers content that the firms managers often try to have income smoothing, since the size of income and its fluctuation is of great importance to stock holders and influences the firm's stock value. **Objectives:** The current research is mainly aimed at studying the relationship between income smoothing and the size of the firms accepted in Tehran stock exchange. **Results:** The results of the study indicates that there is a significant relationship between smoothing income and firm size, and this is a reverse relationship that is the bigger the firm size is, the smaller their tendency toward smoothing income. **Conclusion:** it is concluded that there is less probability the large firms managers can get added value through reporting smooth incomes, because other resources continuously convey informational signs to market. Large firms are exposed to more accurate observations, and it leads to the conclusion that the bigger firms can influence market behavior lesser because of lesser smoothing income.

© 2014 AENSI Publisher All rights reserved.

**To Cite This Article:** Parviz Saeidi and Ghasem Kazemi Jelodar., Studying the Relationship between Income Smoothing and Size of the Firms Accepted in Tehran Stock Exchange. *J. Appl. Sci. & Agric.*, 9(3): 1028-1035, 2014

## INTRODUCTION

Financial statements are useful instruments to show their supervision on the safe-kept resources they are responsible for which can cast light on the relationship between income smoothing and size of the firms (Koch, 1981). These statements are provided to transfer and present information relevant to financial situation, performance and cash flows of a firm. As stock holders have no access to accounting documents of an economic entity, to make any decision, they are highly dependent on these financial statements. That's why, the managers often like to insert their desirable accounting numbers and figures in these financial statements (Hunt *et al*, 2000).

Smoothing income has recently been of great importance to the finance and accounting experts in the last half of the century. Belkoui (2005) believes that income smoothing is consisted of conscious coordination of income in a way that we can reach a desirable level or trend. Generally the researchers content that the firms managers often try to have income smoothing, since the size of income and its fluctuation is of great importance to stock holders and influences the firm's stock value.

Barnea, Ronen and Sada (1976) maintain that smoothing income contains purposeful fall of income fluctuations which seems to be usual for the company. To reduce income fluctuations, and increase true prediction of future cash flow by investors, the managers take some measures for smoothing income. It is expected to have positive effects on stock value and manager performance.

The relationship between firm size and income smoothing and appearance of innovative accounting methods have made the managers able to manipulate their financial conditions by using the holes and exit doors of accounting methods. In these situations, because finance statements contain manipulated, deviated and false information, they have low level of reliability (Barnea, *et al*). Although manipulated accounting is not illegal, if it is in the hands of a less honest person, it can be turned into a very dangerous method of trickery. Finance statements users while deciding based on these manipulated finance statements, can be deceived. Manipulated accounting can endanger usefulness and effectiveness of finance statements. The current paper studies one of usual ways of manipulated accounting that is, smoothing income. Smoothing income is defined as purposeful

**Corresponding Author:** Parviz Saeidi, Department of management and Accounting, Aliabad katoul Branch, Islamic Azad University, Aliabad katoul, Iran.  
E-mail: dr.parvizsaedi@yahoo.com

manipulation and mediation of income fluctuations for a certain level of the income considered for the normal economic entities (Barnea, *et al*). On the other hand, Bidleman (1973) defined smoothing income as a manager's attempt to decrease unusual changes in income to the allowed extent based on the legal principles of accounting and management. Koch (1981) views smoothing income as an instrument used by the management to decrease the changes of trends of reported figures in relation to a justified target trend with manipulating hand-made variables. Smoothing income has been center of attention in academic and scientific writings for around 10 years. In majority of studies, smoothing income has been considered immoral, deceitful and deviating from the management of the agency. These studies support the idea that the firms' managers often smooth income (Kamarudin, 1999).

*Theoretical consideration:*

Ashari *et al* (1994) have mentioned the following as smoothing instruments:

1. Stock income interest
2. Change at accounting policy
3. Pension costs
4. Extraordinary items
5. Investment tax forgiveness
6. Fixed cost and depreciation cost
7. Arbitrary decision making in accounting from among two or some methods
8. Foreign exchange
9. Different classification in accounting
10. Sources and savings
11. Firm size
12. Reward
13. Industry part
14. Possession

Majority of accounting researches emphasize artificial smoothing. Koch (1981) expresses that smoothing happens by artificial variables. Real smoothing of this process brings about a smooth trend. In other words, smoothing income naturally happens without any conscious decision of managers for regulating income fluctuations.

Smoothing income is done with clear goals to provide stable rate of income. In smoothing income which is a kind of manipulation of account, the firms with high income in emergency situations, make some regulations to regulate its income trend and decrease its deviation.

Some experts of income smoothing believe that firms with stable growth rate mislead the market. These experts' belief is based on observing some abnormal cases and methods of estimating risk. They believe that income deviation is related with income, therefore, if there is deviation in income, stockholders' understanding of firm risk will change (Yazdani, 2004).

In table (1) various variables tested by researchers, are inserted:

**Table 1:** The summary of comments dealing with influential factors in smoothing income.

Various influential variables tested by researchers									The name of the researcher
Political costs	Ratios of profitability	The type of possession	Stock price	The type of industry	Income tax	Cultural values	Finance leverage	Firm size	
			✓				✓		Ali Ebrahimi
	✓	✓		✓				✓	Ahmad Badri
✓	✓	✓			✓			✓	Omid Pourheidari
	✓		✓	✓				✓	Allame Haeri
				✓				✓	Mahnaz Mollanazari
	✓				✓	✓		✓	Iraj Noravesh
				✓				✓	Ashari
				✓				✓	Balikoiei and Pikor
				✓				✓	Alber and Richardson
		✓						✓	Muses
			✓						Hunt
			✓						Taker and Zarodin

Regarding table (1) the variable with the highest amount of distribution is used to test in this research. This variable is firm size.

*Firm size:*

Firm size is among the factors which have been named in most researchers. Firm size can represent firm leverage, competitiveness advantage of the firm, management ability, information effectiveness and finally firm total risk. Relationship between smoothing income and firm size has always attracted the experts' accounting analyzers.

Generally, researchers who focus on the firm size, have provided this question: do the firms with different sizes show different reflections to smoothing income?

Regarding firm size, the researchers believe that as big firms are more likely to be exposed by a great deal of attention, they can have less motivation than smaller firms for smoothing income. In other words, it is less likely that big firms managers can additional income by reporting smooth income, because other resources continuously convey the informational signs dealing with the market (Mollanazari Mahnaz, 2007).

Theoretically speaking, some experts explain that bigger firms have more motivation for smoothing income, because their need to report smoothing income is bigger. In fact, the origin of this need is that bigger firms are more likely to respond to a wider range of claimers. On the other hand, bigger firms may have less tendency toward smoothing income, because these firms are exposed by more accurate examinations. The analyses that market conduct about these firms leads to this conclusion that bigger firms can affect market behavior less than what expected through smoothing income which means that informational content of smooth incomes is lesser form them.

Muses expresses that smoothing income has a relationship with firm size. He explains that bigger firms have higher security. In other words, as they are at the center of analyzers and investors' attention, they are more well-known. That's why, they have more tendency for smoothing income. For example, he showed that the variables such as firm size, the difference between real income and expected income and managers' awards have effects on smoothing income behavior. He also concluded that bigger firms are more well-known and therefore they have less motivation for smoothing income.

Albert and Richardson in their research concluded that the firms with higher size have more smoothing. Because of their higher financial ability, they have more power to transfer income or cost from one period to another period. Carlson and Batala have the same idea. They believe that bigger firms have a wider range of optional and un-repetitive costs. Therefore, regarding the different presented results, examining the effect of firm size on smoothing income in Iran has been considered as the main hypothesis.

Big firms are more politically sensitive than smaller firms. Positive fluctuations with importance of income in big firms can cause increase doubt about exclusive income. On the other hand, negative income with importance of income in smaller firms may cause concern about probable bankruptcy, and destroy the firm image in the business environment where that entity works. In addition, considerable fluctuations in big firms income increase the probability of producing unwanted political costs such as wage increase request by staff and limitations controlling by the government. Therefore, big firms have more motivations form smoothing income. Regarding what has been discussed above, this is the main research hypothesis:

There is a significant relationship between smoothing income and firm size.

*Review of the literature:*

Bolkui and Pikor (1984) tested this hypothesis that major industry firms have less smoothing degree than the firms in minor industries, by dividing the firms into two parts of major and minor industries. They maintained that firms in minor industries have more limited chances and a higher degree of lack of confidence. For these reasons, more readiness and chance is reported for income smoothing of operational flow of income has been reported. They tested their hypothesis by comparing change at operational income with change at normal income. They came into conclusion that firms at minor industries show a deeper smoothing income than the firms at major industries for both indexes of mentioned income.

Ashari, through research entitled "influential factors in smoothing income in firms accepted in Singapour", recognized relevant factors of smoothing income. The research contains four hypotheses which have been presented for to test the variables of profitability, size, industry and nationality. The findings obtained from studying four variables mentioned above has revealed that more smoothing is done in the firms with lower profitability. Industry has effects on smoothing and the firms with high risk are more likely to have smoothing income. Nationality has effects on smoothing income but firm size has no effects on smooting.

Hunt *et al* (2000) found out that smoothing income strengthens the relationship between price and income of each period. Therefore, they claim that income smoothing improves the degree of information of incomes (Takrozazodin).

Kanagartenal at al (2001) studied this question in their research that whether banks managers attempt to smooth income in their predictions for future losses. Their findings showed that when banks have an appropriate performance and predict a weak performance for the future, managers keep some part of income for the future, also when banks have a weak performance and predict a proper performance in the future, they increase current income by borrowing from future incomes.

Heater and Melomad (2002) in their paper entitled quality and smoothing income, showed that reported incomes have two duties. First, the level of reported incomes makes possible the estimating future cash flows level for investors, in addition, fluctuations of reported incomes decrease investors' confidence in estimation. Both of above-mentioned duties cause managers to smooth their incomes.

Archi Balad maintains that a good proportion of firms with lower profitability have a higher tendency to smoothing. White also presents some evidence that firms with lower profitability have a higher tendency for smoothing. As profitability rate has a strong relationship with profit per share, their correlation with smoothing income has been selected as peripheral hypothesis.

The type of industry (major or minor) is among the variables that researchers have studied their relationship with smoothing income. Orit divides industries into two parts of major and minor in industrial countries. He views major industries as those firms that function as economic muscle of the country and have political power. In terms of resources, this group is among the largest sectors and has high productivity and income and high number of workers. Orit defines minor industries as the firms with small size, no worker focusing, low wage, low productivity and income and no political power. Taker and Vezarodin (2006) showed that the current price of the firms which have more smoothing income contains more information about future conditions of the firm.

A research has been conducted by Karimizand (2006) entitled relationship between smoothing income and firm size and the type of industry in accepted firms in Tehran stock exchange. The first aim of the research is recognizing the firms that smoothed income and then recognizing artificial firms. The aims were in line with testing the research hypotheses which include examining the correlation between smoothing income and firm size, the type of industry the firm is dealing with, and also examining the correlation of artificial smoothing income and firm size and firm type. The findings showed that among 220 studied firms, 35 firms are at the level of non-particular income, 43 firms at the level of operational income, and 50 firms at the level of particular income attempted to smooth income.

Moradi (2007) in his study investigated the relationship between finance leverage and smoothing income in accepted firms in Tehran stock exchange. Statistical population of this study consists of manufacturing firms from 1998 to 2006. The findings of this study revealed that there is a negative significant relationship between finance leverage and smoothing income. That is, when debt increases, there is lesser smoothing income. In addition, in firms with high free cash flows there is a more significant negative relationship between finance leverage and smoothing income. In other words, the more the firm debt is, in a more disciplined way, the managers operate.

Mashayekhi *et al* (2007) in their research with the title of examining the relationship between finance ratios and stock return, studied the effect of smoothing income on the relationship between stock return rate and finance ratios from 2003 to 2007. The findings of the research proves the relationship between finance ratios and stock return in Tehran stock exchange and showed that the firms in the different levels of income including operational income, net income or gross income attempt to smooth income. The main finding of the research is that against the significant relationship between finance ratios and stock return in smoothing and non-smoothing firms, in terms of the relationship between finance ratios and stock return, there is no significant relationship between these two groups of the firms.

Haghighat *et al* (2008) in their research called the role of smoothing income in informational content of incomes dealing with predicting incomes, attempted to study management motivations for smoothing income in the population of accepted firms in Tehran stock exchange. In the research, smoothing income has been measured with the use of negative correlation between obligation items changes and income changes in 70 firms of the sample from 1997 to 2001. Then by using Kolinz *et al* model which has been expanded by Taker and Zarodin, the relationship between current incomes and returns has been studied by inserting the index of smoothing income in the model from 2001 to 2003. The obtained results indicated that the stock current price of the firms that attempted to smooth income more, contain less information about incomes and future cash flows. Therefore, income smoothing is done to deviate secret information of management not to convey it.

Noravesh *et al* (2009) in their research called the relationship between disclosure quality (confidentiality power and information being on time) and smoothing income, studied the relationship between these two variables from 2002 to 2007 in 51 firms accepted in Tehran stock exchange. The findings showed that there is a significant negative relationship between firm disclosure quality and smoothing income. This finding shows that the firms accepted in Tehran stock exchange which observe the necessities of information disclosure, manage less profit. In other words, the firms with high disclosure capability, income management is observed lesser. In addition, research findings showed that there is a negative significant relationship between firm disclosure being on time and smoothing income.

#### *The research hypothesis:*

There is a significant relationship between the size (sale) of the firms accepted in Tehran stock exchange and smoothing income.

*The research methodology:*

The current study is practical in terms of the goal, and survey in terms of the method. In the current research, the statistic models used can be divided into two parts:

**The first part:** ratio of changes coefficient model in time series of profit to changes coefficient for change in time series of sale to recognize artificial smoothing firms. This model first was offered by Eckle and then Albertchit and Richardson, Micklson, Jordan *et al* and Carlson and Batala have used it for artificial smoothing. In this model, if ratio of changes coefficient to change in time series of profit to changes coefficient in time series is smaller than 1. The firm is considered as smoothing income.

The firm is artificial smoother if  $\frac{CV\Delta I}{CV\Delta S} < 1$

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

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

=  $\overline{\Delta I}$  profit change in a period

=  $\overline{\Delta S}$  sale change in a period

=  $CV$  changes coefficient

=  $\overline{S}$  sale average

=  $\overline{I}$  profit average

**Second part:** statistic models to test hypotheses

To test hypotheses, Logit model has been used which is augmented model of regression. This model contains artificial and virtual variables. With this condition that explanatory variables can be quantitative, qualitative or both, while dependent variable should be quantitative. In Logit model dependent variable itself indicates two groups each of which gets the values of (0,1). In this study, the dependent variable is smoothing income. Logit model not only removes problems such as variance asymmetry and non-normality of data distribution, but also predicts the probability of occurring between 0 and 1 and makes its result satisfactory and pleasant. Logit function for true number P is as follows:

$$\text{logit}(p) = \log\left(\frac{p}{1-p}\right) = \log(p) - \log(1-p).$$

This function is used in logistic regression model.

Logit function is used by statisticians for various purposes. This function is usually used in the model logit which is in the simplest mood is as follows:

$$\text{logit}(p_i) = a + bx_i$$

In which  $x_i$  is a variable showing occurring or not occurring in  $i$  event and the probability of  $p$ .

*Statistic population:*

Statistic population of this study contains the firms accepted in Tehran stock exchange which have the following conditions:

1. They should be accepted in Tehran stock exchange at least from 2006 and their ending of financial year should be March 21.
2. The firm's stock transactions should be done continuously in Tehran stock exchange.
3. They should not be among the mediating firms and their financial information in the given time period should be accessible.
4. They should not be loss making.

Considering all features named above, statistic population consists of 168 firms.

*Findings:*

To determine and identify smoothing income firms from among population (168 firms accepted in Tehran stock exchange) true value mean of income changes deviation percentage obtained from changes mean has been used. To identify smoothing income index, changes coefficient value has been used, this value has been determined as identification point has been determined 0.384263

According to this number, 84 firms from among 168 firms have been selected as smoothing income firms.

The firms recognized as smoothing income firms, for each of which Eckle index has been obtained to identify the artificial smoothing income firms. After obtaining Eckle index for each of these smoothing income firms, any of the firms which has Eckle index lower than 1 is considered as smoothing income firm. Therefore, the smoothing income firms are 39 firms.

After identifying and separating smoothing income firms from non-smoothing ones, their financial information has been extracted and tested.

#### *Hypotheses testing:*

To test the hypotheses of the research, Logit model has been used. Before testing the hypotheses, Kolmogorof-Smirnov Test has been run to get assured of data normality.

#### *Kolmogorof-Smirnov Test for data normality:*

This test has been done for data normality with these hypotheses:

H0: data are normal.

H1: data are not normal.

The results are presented in the following table:

		SALE
N		39
Normal Parameters <sup>a,b</sup>	Mean	4.3E+08
	Std. Deviation	4.0E+08
Most Extreme Differences	Absolute	.199
	Positive	.199
	Negative	-.174
Kolmogorov-Smirnov Z		1.241
Asymp. Sig. (2-tailed)		.092

a. Test distribution is Normal.

b. Calculated from data.

The point is if sig is lower than 0.05 then H0 is rejected.

As sig is 0.092 which is higher than 0.05 therefore, we accept that data are normal.

#### *1.1 The research hypotheses testing:*

H0: there is no significant relationship between the size (sale) of the firms accepted in Tehran stock exchange and smoothing income.

H1: there is a significant relationship between the size (sale) of the firms accepted in Tehran stock exchange and smoothing income.

To test these hypotheses, Logit model has been used which is the augmented and advanced version of linear regression model. The obtained results from testing have been presented in the following table:

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	13.863 <sup>a</sup>	.000	0	.
sale	220.415	206.552	156	.004

Studying the relationship between firm size and smoothing income

(β)coefficient	(Sig) Sig level	variable
0.059-	0.092	sale

The point is at the sig level of 0.95, obtained sig should be lower than 0.05 so that the hypothesis is accepted.

Regarding Logit correlation test, obtained sig is 0.04, it shows that there is a significant relationship between smoothing income and firm size. H0 is rejected that is there is a significant relationship between smoothing income and firm size. In general, the results of this table indicate that in Iran there is a reverse relationship between smoothing income and firm size. Considering the sig level of 0.95, whenever sig level is lower than 0.05, the hypothesis is accepted. That coefficients of  $\beta$  are negative shows that this relationship is negative. Therefore, it is concluded that the smaller firms attempt more to smooth income. As seen, correlation between smoothing income and firm size has been proved with sig coefficient of 0.95

*Discussion and conclusion:*

The results of this study reveal that there is a significant relationship between firm size (sale) and smoothing income. This relationship is reverse, that is, when firm size increases, they tend lesser to smooth income.

Regarding firm size variable, the experts believe that as the big firms are paid more attention to, they may have less motivation to smooth income. In other words, there is less probability the large firms managers can get added value through reporting smooth incomes, because other resources continuously convey informational signs to market. Large firms are exposed to more accurate observations, and it leads to the conclusion that the bigger firms can influence market behavior lesser because of lesser smoothing income. It means that the informational content of smoothing incomes are always lesser for them.

The current research results are in line with the findings of Karimizand named "studying the relationship between smoothing income and firm size and the type of firm in the firms accepted in Tehran stock exchange". In other words, he concluded that there is a significant relationship between smoothing income and firm size (sale).

Alberchet and Richardson I their study concluded that the firms with bigger size, smooth more income, because of higher financial ability, they have a higher power to transfer income or cost from one period to another period. Carlson and Batala believe that firms with bigger size have higher smoothing income. They explain that bigger firms have a wider list of optional costs. Therefore they have different results.

**REFERENCES**

Albecht, W.D. and F.M. Richardson, 1990. "Income smoothing by economy sector", *Journal of business finance and accounting*, 17(5): 713.

Allame Haeri, F., 1998. "Studying the relationship between smoothing income and stockholders' capital" AZAD University, Phd dissertation.

Ashari, N., H. Koh, S. Tan and W. Wong, 1994. "Factors affecting income smoothing among listed companies in Singapore" *Accounting and Business Research* (autumn), pp: 291-301.

Badri, A., 1999. "Identifying effective factors on smoothing income in the population of accepted firms in Tehran stock exchange" Phd dissertation, Azad University.

Bamea, A., J. Ronen and S. Sadan, 1975. "The implementation of accounting objectives-An application to extraordinary items". *The Accounting Review* (January), pp: 55-68.

Barnea, A., J. Ronen and S. Sadan, 1976. "Classificatory smoothing of income with extraordinary items". *The Accounting Review* (January), pp: 110-122.

Beidleman, C.R., 1973. "Income smoothing: The role of Management". *The Accounting Review* (October): pp: 653-667.

Carlson, S.J. and C.T. Bathala, 1997. "Ownership differences and firms income smoothing behavior", *Journal of business finance and accounting*, 24: 179.

Ghaemi, M., 2003. "The effect of income smoothing on the return of the firms accepted in Tehran stock exchange" accounting and auditing examinations.

Healy, 1985. "The effect of bonus schemes on accounting decisions". *Journal of Accounting and Economics* (April), pp: 85107.

Herrmann, D. and T. Inoue, 1996. "Income smoothing and incentives by operating condition: An empirical test using depreciation change in Japan". *Journal of International Accounting, Auditing and Taxation*, 5(2): 161-177.

Irandoost, F., 2000. "The effect of accepting firms in Tehran stock exchange on smoothing income" M.A thesis. Allame Tabatabaei University.

Jones, J., 1991. "Earnings management during import relief investigations". *Journal of Accounting Research*, 29: 93-228.

Kamarudin, Khairul Anuar Bin, 1999. "Market perception of income smoothing practices: Malaysian evidence", University of technology Malaysia.

Karimizand, S., 2006. "Studying the relationship between income smoothing with firm size and industry type among the firms accepted in Tehran stock exchange".

Lev, B. and S. Kunitzky, 1974. "On the association between smoothing measures and the risk of common stocks". *The Accounting Review* (April), pp: 259-270.

Moses, A.D., 1987. "Income smoothing and incentives: Empirical tests using accounting changes". *The Accounting Review* (April), 358-377.

Nora Ni, H., 2003. "The effect of smoothing income on the firms return accepted in Tehran stock exchange" Shiraz University M.A thesis.

Noravesh, I., S. Sepasi, 2005. "Studying income management in the firms accepted in Tehran stock exchange" accounting journal.

Pourheidari, O., 2006. "Studying motivations of smoothing income in the firms accepted in Tehran stock exchange" accounting and auditing examinations.

Riahi, A., 2002. Accounting theories, first print, pp: 508-514.

Yazdani, M., 2004. "Studying different factors on income management in investing firms accepted in Tehran stock exchange".