EARNINGS MANAGEMENT

by

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CERTIFICATION OF THESIS PREPARATION

"I hereby declare that this particular thesis has been written by me, in order to obtain the Postgraduate Degree in Accounting and Finance, and has not been submitted to or approved by any other postgraduate or undergraduate program in Greece or abroad. This thesis presents my personal views on the subject. All the sources I have used for the preparation of this particular thesis are mentioned explicitly with references being made either to their authors, or to the URL's (if found on the internet)."

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Abstract

In my analysis, I find evidence which shows that firms in their effort to report attractive earnings to external parties, make use of earnings management activities. Firm use both accruals management and real earnings management, in order to distort earnings, while real earnings management attracts more interest as it is not easily detectable. For this reason, I concentrate my attention to the effect on production costs, discretionary expenses and cash flow from operations, as components which can reveal real earnings management tactics. Also, I find that the level of debt, the level of current liabilities, the amount of receivables and inventories accounts, and growth opportunities, are components that affect firm's decision to manipulate earnings through real earnings management.

Chapter 1 : Introduction

Creative Accounting is a phenomenon that has been observed and has occupied the academic community as well as market professionals, investors, regulators, and users of corporate financial statements worldwide. The term is relatively new, but the problem of deliberate interference in the company's financial statements is quite old. However, methods and accounting practices used by financial units to embellish profits are not always based on illegal actions but most of times they make use of the accounting standards and laws to manipulate and alter reported financial statements results.

A number of studies are concentrated on Earnings management which is becoming a matter of interest the last years. Earnings management methods can be separated into two main categories. Real earnings management contains all these business practices that take place during the suspect fiscal year which affect cash flows. On the other hand, accruals management is taking place after the closing of the financial statements, as the specific goals of the company have not been reached, up to this point and contains activities such as delayed write-offs and under-provisioning for bad debt expenses.

An increased leverage gives motivation to firms to engage in such activities as they want to improve their picture to debtholders as well as stockholders. A recent study

has shown that higher leverage induces a preference for real management rather than accrual management as the second one cannot be easily detected (e.g Seraina C. Anagnostopoulou- A. Tsekrekos).

According to other studies, the choice of real earnings management or accrual earnings management it is a complementary decision in high levered firms. The decision to engage in one form of management is accompanied with the decision to engage in the second form as the firm wants to reach a specific target. Real management activities are taking place during the financial year and it is a result of a pre-specified decision, while accruals management is taking place after fiscal year end and before the financial results.

As it was mentioned before, real management is not so easily detectable compared to accrual management manipulation. For this reason the first method of earnings management is becoming more prevalent as the scrutiny in financial statements increases for the firm. Also, it seems that accruals manipulation is more penalized by firm's interested parties for the reason we have just mentioned. In a short run, real management seems to result in a greater performance than accruals earnings management. In a long run, though it may be noticed the opposite effect and real management manipulation has a result a limited performance. However, the preference of real earnings manipulation as a method it is explained by another fact which contains the two different firm's interest parties. Shareholders and debt-holders are the main interest parties of the firm with different motives. Shareholders are interested in maximizing their value while creditors have an interest which regards the debt repayment. As real management contains activities which affect business cash flows it offers a better image to debt holders whose main worry is their capital repayment. From this point of view, such activities result in transfer of risk from debt holders to equity holders. However, both parties are interested in viewing and facing the original image of the firm and not the manipulated one from its internal management. Both parties are penalizing with different ways such activities. From creditors' perspective, they force firms to accept more strict covenants and may reject a further financing by making difficult for the firm to gather additional funds. From equity-holders aspect, they penalize such activities by reducing the demand on firms stock and in some cases sell the stock.

Real earnings management, becomes more and more prevalent according to what we have mentioned until know. The existing studies in earnings management

bibliography through real activities manipulation is more limited than the accrual based manipulation. However, it is worth examining more detailed as a strategy as it is considered more difficult to detect. In this paper, we examine the strategies that are used in real earnings management and how they can be detected through cash flows from operations, discretionary expenses and production costs. Moreover, we are in a cross-sectional level variables that are connected to the use of real management activities. Size, growth opportunities, debt, current liabilities and inventory and receivables amount, are some of these variables that have been argued to be connected in rea management activities.

Chapter 2 : Literature

Bartov(1993) found that firms sell fixed assets to avoid covenant violations.Accruals management and real management is a joint decision rather than a substitute decision and it is depend on the comparison of relative cost and benefits of each method of earnings management (Zang 2012). According to the same research, the external control increases the cost of engaging in accruals manipulation. Another point which has highlighted from this research is that the ability to get involved in upward accruals management the current period, sometimes is limited by accrual manipulation in previous periods. As the decision to engage in one of these two methods are joint, the more the manager chooses to engage in the one type, the less he engages in the other depending on the final earnings target.

A number of studies illustrate that firms use these two ways of earnings manipulation (upward management) in order to avoid covenant and contractual violations. However a number of studies (e.g. DeFound and Park 1997, Chung et al. 2005, Lee et al. 2007, Rodriguez-Perez and van Hemmen 2010) suggest that increased levels of leverage have a negative relation to accruals management. This is justified by the fact that increased external monitoring control to these firms, makes it easily detectable compared to other forms of earnings management. The main reason for this argument is that real management is based on regular firm's transactions, while accrual management is based on accounting which is standardized and more recognizable in firm's daily activities.

According to Cohen and Zarowin (2010), accruals management has been replaced by real management in many cases due to the increased ability of detection in the first case. As the external monitoring control increases, managers turn from the one method to the other one as a less costly action for the company. According to the same research accruals management it is preferable and less detectable as it contains accounting methods and practices, while real management involves business decisions and cash flow consequences.

The level of debt plays a major role in earning management as a main driving force. Leverage has a negative impact on stock market performance and for this reason, managers have an incentive to offer investors a better picture of firm.(Bradshaw 2006,Cohen and Lys 2006, Penman 2007, Dimitrov and Jain 2008, Gu 2008, Cai and Zhang 2011)

Prior studies provide strong evidence on the existence of real management. The use of those tactics by managers is supported by Graham et al. (2004) who surveyed financial executives about key factors that drive decisions about reported earnings and voluntary disclosure. They report that 78% of the executives illustrate an intention to sacrifice economic value to manage financial reporting credibility.

Graham and Cohen support than real management is more costly as a strategy than accruals management. Also, it is supported that real management is a more harmful strategy for business performance as the increased earnings today can have the opposite effect on cash flows in next years. For instance, some sale discounts which aim at increasing sales today, may result to greater expectations about sales discounts to customers in future, or even their persistence. This expectation leads to lower sales and lower profit margins in future sales. According to Graham, managers and executives give a high importance in meeting earnings targets, commonly zero earnings targets, or same earnings level as the previous financial year. The same study shows that managers are willing to engage in real activities manipulation to reach or beat these targets even thought firms value and performance is at risk of deteriorating.

There are also studies such as that of Bauwhede, Willekens and Gaeremynck (2003) which examine the effect of different factors such as normalization of profits the quality of external control and property ownership in the manipulation of earnings. While Chen, Ken Y., Lin, Kuen Lin and Jian Zhou (2005) using 367 companies in 1999-2002 investigated the correlation between quality of the auditors and the extent of Earnings Management.

Corporate governance and its mechanism play an important role to the reliability of the financial reporting system. According Farber (2005), which has conducted study in 87 US companies which, companies that engage in earnings manipulation are characterized by weak corporate governance system in relation to other companies.

Chapter 3 : Theoretical Background

Components in Earnings Management Activities

The Rezaee model (2002) highlights the factors that play a role in financial statements manipulation. The term CRIME comes from the initials of the words: Cooks, Recipes, Incentives, Monitoring and Results.

- **Cooks:** are those persons involved in manipulation of financial statements and in implementation of Creative Accounting practices .Usually, they are senior executives of businesses administration. Chief Executive Officers, CFOs (Chief Financial Officers), directors and presidents. A number of surveys in, have shown that, at a rate of up to 80% of the cases that firms distorted their true image, top executives were directly involved. Another results from these investigations is that not only accountants are involved to earnings manipulation activities.
- **Recipes:** refer to the potential forms that alteration of financial statements may take. The most common form is profit management and the most rarely we can say that they are Accounts Payable. Virtual trading is considered to be the most aggressive form of creative accounting.
- **Incentives**: The use of creative accounting and earnings management must followed by their corresponding incentives. These incentives have economic nature and are related, most of the times, to new investor's attraction, liquidity problems, etc. In his model, Rezaee notes that these motives may also be "psychotic", that is, the manipulation of the financial statements is due to the tendency of some executives to build up and engage in illegal actions. In motivation we can include the ideological background of the administration to create a strong prestige that will establish leadership in the industry.

- **Supervision:** It refers to the extent and quality of auditing in the financial statements, from both of internal control and external control perspective. In addition, an effort is being made to identify responsibilities of auditors as well as at the management level.
- **Results:** describes the impact of financial statements manipulation on the company's relationship with investors, creditors and financial institutions. The damage in company's brand name leads to a lack of credibility and consequently to a decrease in value of the stock and the company's surveillance for a long time. There are cases of fines as well as imprisonment penalties for the involved executives.

Thresholds & Incentives

Managers usually focus on thresholds of earnings, as external parties usually do in the process of business assessment. Executives also have incentives to manipulate earnings for their personal advantage. Bonuses and prestige that is given to executives are one of the strongest incentives for them to engage in such activities. Also, earnings reports are important to those people concerned with the firm's viability and profitability as part of their investments. Such parties are customers, suppliers, bankers, and workers. Most of these external parties illustrate what we call a threshold mentality.

Thresholds are changing over time according to different targets that both external parties and firm itself poses. Firms that marginally reach the threshold are very likely to have engaged in upward earnings management. It is proven though that the future performances of firms' just meeting thresholds seem to be worse than others which considered less probable to manage their earnings.

Earnings threshold can be classified into three different categories according to management targets when reporting earnings.

a. Managers care in presenting earnings above the zero, which means that they are interested in showings positive profits in financial statements at the end of the fiscal year.

b. Managers have an incentive to sustain recent performance which means that they want to achieve at least previous year's earnings instead of lowering profits.

c. As analysts have been employed to draw forecasts, managers have the incentive to reach these expectations or even make it better than forecasted.

Although executives try to report earnings that exceed analysts' forecasts, analysts anticipate this behaviour and the incorporate it in reported forecasted earnings. Managers have an intention to influence analyst's reports downward as they want to show to external parties that they performed better or as predicted. In the prospect of making use of upward earnings management activities to reach predictions, they prefer lower level of forecasts to avoid making use of these methods in a great extent.

Accounting Red Flags

Under the examination of the credibility of financial statements and results, auditors and other external parties can detect and spot firms that are suspect for making use of earnings management activities and creative accounting. Some of these parameters that can draw analysts and auditors attention are the following categories which are classified under a red flag. Indicated as "red flags" companies that:

1.) Perform merger activities 2.) They achieve results consistent with their targets. 3.) Follow the strategy of the "big bath". 4.) Which increase earnings per share but total returns revenue is downward. 5.) They do not respond with conservatism to the amortization rules of the fixed assets. 6.) They spend large amounts of wages on the administration. 7.) Recognize the revenues in their statements before their actual completion. 8.) They report exorbitant profits in one purpose.

9.) High accruals amount. Cash flows are difficult to manipulate, accruals can be easily distorted as they include subjective estimates and information. High accruals amount is compared to the total assets and the sales of a company, is an indicator of earnings management activities.

10.) Big difference in accounting income and taxable income. The taxable income is calculated according to tax law and there are no opportunities for manipulation. Accounting profits though, are calculated on the basis of General Acceptable Accounting Principles (GAAP) that offers the flexibility of accounting controls.

11.) Changes in firm's administration. When there is a mobility and changes in financial officers or regular auditors there is a warning of earnings handling which leads to internal conflicts in business.

12.) Large or frequent transactions with affiliated companies. Trading is probable existing not in market prices but there is an overpricing or underpricing.
13.) Frequent changes in business policy and accounting standards that they use. The frequent changes in accounting rules and standards must draw auditors and analyst's attention as a possible effort to distort earnings.

Mergers and acquisitions in earnings management.

From the perspective of the acquirer, earning management activities and incentives to engage in such activities are easily understandable. Acquirer firms use upward earning management in order to increase the price of the stock and offer an improved image of its financial position (Erickson & Wang 1999, Louis 2004).

The use of earnings management activities in target companies it depends on many components. Earnings management can be downward or upward depending on the incentives that the target firm has. Target firm make use of earnings management activities according to the following parameters:

a. Friendly or hostile takeover
b. Takeover takes place via auction or negotiations
c. Whether the target is a seeking buyer or not.

It has been found that in case of a hostile takeover, earnings are positively managed (Easterwood,1998), while in case of friendly takeovers evidence has shown that target firms earnings are managed downward (Ben Amar & Missioner Piera,2008; Eddey & Taylor,1998). Also a positive earning management has been proven in target firms which acquired through an auction rather than negotiations. Also, target buyers that are characterized as a seeking buyer firms, seem to attract interest for further investigation. These firms are more possible to engage in earnings management before the acquisition since they have both time and motivation to make use of such activities. At this point it, it is worth examining what are the incentives of announcing the willing of be acquired. Seeking buyer companies, share some common characteristics. Usually these firms illustrate: a. lower Zscores, b. lower growth, c. larger size by other firms, d. less profitable firms and e. more distressed.

In addition to these signs mentioned above, there are more signs that can draw attention for earnings management actions and financial statements distortion. In addition to these signs, models have been established in order to detect these actions like earnings management. Thought, it is worth separating earnings management into accruals manipulation and real activities manipulation as it has mentioned above.

Real management Strategies

Real earnings management contains all these business practices that take place during the suspect fiscal year which affect cash flows. Ewert & Wagenhofer (2005) and Roychowdhury (2006) state that when managers change time and the structure of their business activities to manage their profits, they deviate from normal business practices and that may negatively affect the future performance of the business. Manipulation of real activities brings concrete results. It affects cash flow, and sometimes even accruals. Nevertheless, the manipulation of operational activities does not necessarily leads to a significant future decline in its business operating performance.

If businesses engages in real management activities occasionally and after they return to the regular business practices in the following years, then a limited use of real earnings management activities does not necessarily lead to a negative impact on its future performance business. However, if businesses tend to manipulate their operations on a continuous basis, a quite possible outcome is a reduction in the company's future operating performance.

Graham et al. (2004) surveyed financial executives about key factors that drive decisions about reported earnings and voluntary disclosure. They report that 78% of the executives interviewed indicated a willingness to sacrifice economic value to manage financial reporting perceptions.

It is worth examining the implications of real earnings management to the stakeholders of the firm as well as accounting regulators. According to Ewert and Wagenhofer (2004) accounting regulations seem to contribute to the increase of real earnings management activities.

The most common strategies that have been described in real earnings management literature are the following:

1. **Sales manipulation:** Contains strategies like temporary discounts and better credit terms in order to improve sales margin during the financial year. These methods lead to lower cash flows from operation in current periods and higher production costs compared to sales.

2. **Discretionary expenditures reduction:** These expenditures consist of the sum of the R&D, SG&A, and advertising expenses. Firms decrease these expenses expensed in current year in order to manipulate earnings. In this way they increase reported earnings the current year. These practices are easier because the expenses mentioned above are not related to immediate revenues. If these expenses are cash expenses, then the reduction affects positively cash flows from operation. Despite the fact that in the year that earnings are managed, earnings and cash flows are represented more satisfactory, the reduction of these expenses may have opposite effects in future. These expenses happen in order to create earnings and are vital to firm's profitability and growth. This is the reason why cutting these expenses is not something desirable.

3. **Overproduction:** Higher production lead to lower fixed costs per unit since fixed overheads are distributed to greater in number units of goods. In this way firms that want to manage earnings, increase the amount of goods produced. "Costs of goods sold" is lower and company represents more desirable operating margins. On the other hand, increased production costs that company bares, are not compensated from sales during the period. This results to a lower level of cash flows from operation.

Sales manipulation and overproduction lead to abnormally high production costs, while discretionary expenses reduction drives to abnormally low discretionary expenses. The first case has a negative effect on cash flows from operations, while the second case has a positive effect on cash flows. When more than one of the above tactics are used it is difficult to forecast the net result in cash flows from operations.

Contributing components in real earnings management.

We can define some variables that affect the decision of engaging in real management activities.

a. Industry: Under industry classification we can detect firms that are more prone to engage in such activities. For instance, manufacturing industries tend to get involved more frequent in earnings manipulation, due to their ability to increase production, than other companies that do not produce. That means that overproduction as a strategy can be applied to manufacturing firms while the other strategies, which have been mentioned above, can be adopted by firms in different sectors. It is sensible though to note manufacturing firms as a suspect firm of using these earnings management methods.

b. Zero earnings target:

Debt: Leverage is one of the most important incentives to manipulate earnings. Companies with high leverage do not want to present losses to outside parties since they have some covenants to follow that restrict their activities. In order to avoid breaching the covenants or meeting more restrictions, firms manipulate their earning upward to reach a zero threshold. We conclude that high levered firms are more likely to use earnings management practices and for this reason we treat them as suspect firms.

Firm's growth: The P/B ratio reflects the value that market participants attach to a company's equity relative to its book value of equity. A lower P/B ratio probably means that the stock is undervalued.This ratio shows whether a company is a growth company or not. Past studies have shown that growth companies are more prone to the use of earnings management as a practice. A rational explanation for this is that stock market is more demanding to growth firms than the others, to meet or beat a specific earnings level or at least zero level of earnings, instead of present losses. For this reason growth firms must draw analyst's attention for altering their real earnings position.

Short term Liabilities: (Graham et al. 2005) Short term liabilities are the liabilities to suppliers, short term lenders and employees. These parties are interested in firm's prosperity and economic stability so they can preserve their trust against the company. If these parties lose their trust for the company due to economic problems

and losses, they may enforce more strict terms to the firm in order to insure their payments. More strict credit terms, for instance, can lead the firm in an unfavorable situation by affecting the operating cycle and some other measurements like cash conversion cycle and payables turnover. In the effort to avoid this situation, firm may choose to manipulate its earnings. This is why companies holding a large amount of short term liabilities are more suspect of making use of earnings management practices.

c. Flexibility of engaging in earnings management: The ability to engage in earnings management activities without detection is one of the most important factors that affect the decision of whether use or not manipulating activities. Some firms have the ability to use these activities more easily than others, since they are more unlikely to be detected by the external parties. For example, companies that already have as a strategy to hold a large amount of stock can more easily hide earnings management activities. In the same way, firms with a large amount of credit in sales can more easily to make use of these practices. Firms can propel sales when they hold high receivables stock, escaping the detection. In general, firms that hold as a strategy a large amount of inventories, receivables and other current assets are more likely that they will try to manipulate earnings under the cover of their usual operation.

d. Institutional ownership: The percentage of stock that is owned by mutual funds, pension funds, insurance companies, private foundations, investment firms and other large entities which manage funds determines the institutional ownership. Firms, with presence of institutional shareholders, desire to provide these shareholders with a good image of a firm by avoiding report of losses. In the presence of losses, institutional investors could sell their big share in the company which is unfavorable for the firm. Under these circumstances, companies would like to engage in earnings management activities but they face a problem that finally deters them. Rajopal et al. (1999) find a positive relation between earnings quality and institutional ownership. Institutional investors can easily detect these practices as they have a superior knowledge and they can use different methods to detect earnings manipulation. As a result, their presence in the firms capital, acts as a determinant factor to the use of earnings manipulation methods. The absence thought, of institutional investors is considered as a favorable for these methods to hold and be applied.

Accruals management Strategies

Under standard accounting rules, a company must record revenues and payments when it earns that revenue and when incur an expense (accrued) contemporaneously, not when it actually receives payment or pays money. These rules act as a benefit for companies to manipulate their accounts for earnings management purposes.

Accruals management can take place only after the closing of the financial statements, as the specific goals of the company have not reached up to this point and contain activities such as delayed write-offs, under-provisioning for bad debt expenses and sales acceleration. Total accruals can be split into two parts, discretionary and non discretionary part. The non discretionary part illustrates firm's conditions and characteristics like growth and length of operating cycle. Discretionary accruals contain management decisions and practices. For this reason, if we want to test for earnings management presence, discretionary accruals is the most appropriate measure as they do not involve business characteristics and normal business activities that could explain their presence. The only reason for their existence is management choices and that's the reason why discretionary accruals are a good proxy for earnings quality.

Detection Models

The Power of Existing Models in Earnings Management Detection

There are two types of models that are used to detect earning management activities, simple models and more sophisticated ones. Simple models use discretionary accruals as total accruals, while the others separate accruals into discretionary and nondiscretionary. Which model is more appropriate is given by a test statistics. Models are evaluated by the component of error that they bare. We separate the error of estimation model between error of type I and error of type II. When we test for models specification we test for the null hypothesis that earnings are not systematically managed. Models commit error of type I when the null hypothesis is rejected when the null is true. In this way models, shows that a firm manipulate its earnings when in reality does not. On the other hand, models include error of type II when a null hypothesis does not rejected while it has to be rejected. The power of

these models is examined with the frequency that these models commit error of type I and II. Another component that has to be taken into consideration is that models seem to be well specified when performed to a random sample of firm years. Also, all models are weak in detecting earnings management activities in a scale one to five percent of total assets. Earnings management detection models, also are affected by extreme financial performance. In case of extreme financial performance, tend to reject the null hypothesis and as a result, the frequency of error type I increases. This can be explained in case that non discretionary accruals that cannot be subtracted from the model, might be correlated to the performance causing error of type I.

Models in Accrual Management Detection

The most prevalent models that have been used in literature, are trying to estimate the non-discretionary part of total accruals. After distinguishing between the discretionary and non-discretionary part of accruals, analysts are able to examine whether a firm makes use of malicious earnings management activities or not. The majority of these models need at least one parameter to be estimated during the estimation period that no earnings management is forecasted.

The most prevalent models that are used in accruals management detections, are:

- De Angelo Model
- Jones Model
- Modified Jones Model
- Healy Model
- Industry Model

Empirical evidence, find that standard errors of De Angelo Model are the highest among the other models, in contrast with Jones and Modified Jones models which are more effective in estimating non-discretionary accruals with a greater precision. From expense perspective, empirical results has shown that De Angelo Model has lower power than Healy Model cause the first seem to present higher standard errors. In this case, Jones and Modified Jones seem to be more powerful than the other models by offering the lowest standard errors.

From the revenues perspective of manipulation, Jones Model seems to show the lowest power in detecting manipulation as it extracts some revenue based factors and biases downward earnings. From this perspective, Modified Jones Model seems to fit in better with the data. From margin manipulation perspective, the power of Jones Model is even lower due to downward biased estimate of earnings. Modified Jones model and industry model seem in this case to offer better results than the other models, with the power of industry model significantly above the others. Finally, we conclude that Jones and Modified Jones Model are better at explaining variation in accruals. Jones Model though lies behind Modified Jones Model. Industry Model also offers goods results as it offers lower standard error relative to Healy and De Angelo Model.

Real Earnings Management Estimation Models (Dechow Models)

Cash Flow from Operation model

This model is expressed as a linear function of sales and change in sales in the current period. In order to estimate the model parameters a cross sectional regression is performed every year and industry.

$$\mathbf{CFO_t/A_{t-1}=a_0 + a_1(1/A_{t-1}) + b_1(S_1/A_{t-1}) + b_2(\Delta S_t/A_{t-1}) + \varepsilon_t}$$

A_{t-1} :total assets at the end of period t-1

ΔS_t: (S_t-S_{t-1}) :the difference between sales of year t and year t-1.

CFO_t/A_{t-1} : Cash flows from operations.

This model is used to detect abnormal accruals which are stated as the difference between actual cash flows and estimated ones by the industry year model. A scaled intercept a1(1/At-1) is used in literature in order to calculate non-discretionary accruals. The intercept addition helps in avoiding spurious correlation between scaled cash flows from operations and scaled sales due to totals asset variation. Also the simple intercept is added to the model in order to prevent mean abnormal cash flows from operation, for every industry year, from being different than zero. The use of

these two intercepts, according to S.Roychowdhury, makes the mean CFO scaled by total assets for every industry year to be different from zero even though the other model variables have zero values.

Cost of Goods Sold model

Cost of goods sold is calculated in a similar way. Cost of goods sold are calculated as a linear function of sales

$$\mathbf{COGS_t/A_{t-1} = a_o + + b(S_1/A_{t-1}) + \varepsilon_t}$$

Inventory Growth model

In a similar way change in inventory scaled by total assets is calculated as a linear function of change in sales

$$\mathbf{\Delta INV_t/A_{t-1} = a_o + a_1(1/A_{t-1}) + b_1(\Delta S_t/A_{t-1}) + b_2(\Delta S_{t-1}/A_{t-1}) + \varepsilon_t\ ,}$$

Where $\mathbf{\Delta INV_t}$ the change in inventories at period t.

Production Cost Model

$$\mathbf{PROD_t/A_{t-1} = a_0 + a_1(1/A_{t-1}) + b_1(S_t/A_{t-1}) + b_2(\Delta S_t/A_{t-1}) + b_3(\Delta S_{t-1}/A_{t-1}) + \varepsilon_t}$$

Production costs are given by the equation: $PROD_t = COGS_t + \Delta INV_t$

Discretionary expenses Model

$\mathbf{DISEXP_t/A_{t-1} = a_0 + a_1(1/A_{t-1}) + b(S_t/A_{t-1}) + \varepsilon_t}$, where $DISEXP_t$ discretionary expenses in period t.

In case of positive sales management, regression can lead to low residuals from this model even though discretionary expenses do not be reduced. To settle for this problem the following model can be employed:

$$\mathbf{DISEXP_t/A_{t-1} = a_0 + a_1(1/A_{t-1}) + b(S_{t-1}/A_{t-1}) + \varepsilon_t}$$

Models Implementations

According to past researches, from these models discussed above which are used in real management manipulation, we can compare regression results after splitting the sample of observation into suspect and non suspect years. Conclusions can be drawn when we compare the mean values for suspect firm years with the total sample of firm years. Up to this point we have already state which firms are considered as a suspect firms according to different variables such as growth, industry, institutional ownership and other variables that are worth examining in our analysis.

Thresholds can be used in our analysis, more specifically zero thresholds is a good approximation in order to detect the suspect firm years. A number of firms are posing a zero threshold for earnings to be meat.

According to empirical findings, suspect firm years have lower mean equity to book ratio than all the sample of examined firm years. Also, suspect firm years present lower cash flows from operation mean as a percentage of assets than the others and mean scaled discretionary expenses of the suspect firms are lower that the mean for the whole sample. Mean production costs have been proven to be similar between suspect firm year and the total sample. Mean inventory turnover ratio has been found to be to be lower in years that are considered suspect than the total sample years due to overproduction as a method of earnings manipulation which causes cost of goods sold to be inflated. Moreover, the suspect sample exhibits lower mean value in suspect firm years than the others.

The emergence of real activities manipulation is an option which has prompted executives to engage in earnings management activities. The executives to a great extent have substitute accruals management with real activities management. When executives use interchangeably not continuously this option, then the actions related to the real activities manipulation of the actual activities do not present negative impact on the future value of the business.

Chapter 4 : Data Collection & Analysis

In my analysis I use Datastream to collect the data that I use in next section. I have concentrated my analysis to the part of real earnings management detection models cause real earnings management activities are more difficult to track compared to accruals management which cannot easily escape the scrutiny of external parties. For this reason I have concentrated in the already existing models and their ability in detecting manipulated earnings.

Data collection

I have taken data from different firms between 2001 and 2016. For these 16 years I took data from companies listed in US. All of data elements are counted in US dollars and for this reason any transformation in exchange rates is omitted for the present analysis. In my analysis I use annual data from my experimental tests as the primary focus of my analysis is on the zero target threshold. Zero target is more significant at the annual level because seasonal effects in business operating cycle causes earnings to fluctuate between the fiscal year and there is a greater probability of losses be presented for example in more frequent base. External parties on the other hand are taking into consideration annual losses during their assessment and this is why managers are pressured not to report annual losses.

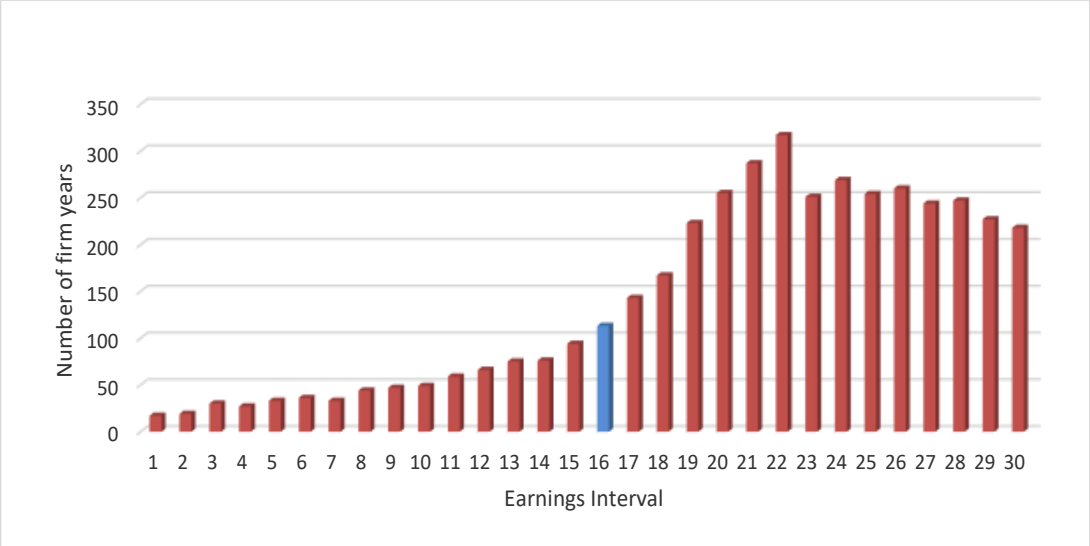
In this analysis I use 32 sectors, excluding banks, financial institutions and regulated industries. From each sector I have withdrawn the examined financial elements for 15 firms the period including years from 2001 to 2016. The models for normal or expected CFO, production costs, discretionary expenses and accruals are estimated for every industry and year.

As a first step of my analysis I separate firm years between those who are considered as suspect for engaging in earnings manipulation activities and those who do not draw analysts' attention of engaging in such activities. In order to complete the step, I had to rearrange my data output from datastream with the support of excel, in a way that each variable is represented in different column regardless the year, the industry and the firm. At this point it is worth mentioning that the use of programming

and data base can render it easier to classify and analyze the data in the way that I do in my analysis. Also a problem can be shown up because of the restriction imposed by the data availability. In the case of my analysis I had to exclude 1600 firm years from my analysis due to this restriction. At the end of this paper, a table is given with the variable descriptions which have been used and their labels in "Datastream".

Earnings classification histogram

After gathering all data the first step is to classify firm years we have collected based on net income scaled by total assets at the beginning of the year with the support of the Excel. All variables categories mentioned above, are classified by using "net income/A_{t-1}" as an indicative variable by shorting firm years from lowest to highest value of this variable. In this way we are able to plot histogram. The histogram which is constructed does not taking into account firm years that lie outside the range of [-0,075, +0,075]. In order to construct the histogram we have to separate our data in different earnings intervals. Each interval have a width of 0,005.



In this way we are creating 30 categories of earning intervals from -0,075 to +0,075.

There is an upward shift at the amount of firm years from left to the right. Interval 16, blue column represented in histogram, contains all the firm years with earnings scaled by total assets from zero to 0,005. Interval 16 is considered significant in our analysis since it is generally assumed that firms that illustrate earnings marginally

above zero are more probable of have been involved in earnings management activities. This can be verified from the fact that all firms that present marginal to zero losses, have the incentive to alter their reported earnings to reach or exceed the zero threshold depending their targets. In our analysis the 16th interval will be used to identify which firms are more probable to have been involved in earnings management activities, these firms are considered as suspect and they are used as comparison measure to the total sample of firms for the different financial elements we have gathered for each firm year. By highlighting these firms as suspect ones of making use of manipulation activities in earnings, unintentionally we ignore the possibility of other firm years outside the interval 16 to have taken part in such activities. That means that this classification of suspect firm years presents some possible problems. According to our previous reference about thresholds, every firm has different thresholds that want to reach according to their targets and their external parties expectations. In this way zero threshold it is not the only incentive that causes firms to engage in earnings manipulation. In addition to these firms, some firms whose earnings are significantly above zero may also manipulate their earnings downward to report earnings slightly above zero for reasons like decreased taxation or in order to gather reserves for future needs and plans. That practically means that our under examination interval, contain firms that have make use of manipulation activities to reduce their reported earnings rather than increase them which makes us unable to discrete them. Another problem that is arises is that managers have to specify and make use of real activities manipulation before the fiscal year ends.

Comparison between suspect firms and total sample

Our previous division between suspect firm years and non-suspect firm years is used in order to perform comparisons in descriptive statistics of the group of suspect firm years and the total sample of firms as presented in the table below.

Table1.

	Mean		Median		Differnece in		t- test in difference in means	
	Total Sample	Suspect Firms	Total Sample	Suspect Firms	Mean	Median	P(T<=t) two-tail	Statistical Significance
MVE ($)	11.702,13	7.647,65	1.260,79	618,33	4.054,48	642,46	0,084	*
Total Assets ($)	12.417.940,85	18.259.253,48	1.502.440,50	1.066.973,00	-5.841.312,63	435.467,50	0,346	-
BVE	36,37	420,84	10,55	8,99	-384,47	1,55	0,006	*

MTB	1,16	0,80	0,10	0,05	0,36	0,04	0,000	***
IBEI ($)	643.525,73	45.624,57	52.354,00	888,00	597.901,16	51.466,00	0,000	***
IBEI/A	-0,50	0,00	0,05	0,00	-0,50	0,04	0,161	-
CFO/A	0,13	0,08	0,12	0,07	0,05	0,05	0,001	***
CFO ($)	1.600.370,12	1.406.810,66	177.133,00	64.400,00	193.559,47	112.733,00	0,685	-
Accruals ($)	-956.155,06	-1.361.186,09	-119.773,00	-61.500,00	405.031,03	-58.273,00	0,380	-
Accruals/A	-3,759	-0,104	-0,076	-0,065	-3,65	-0,01	0,05	**
Cost of Good Sold ($)	5.281.438,93	5.302.060,85	839.796,50	566.885,00	-20.621,92	272.911,50	0,990	-
Total Inventories ($)	729.759,48	876.007,34	96.352,00	36.800,00	-146.247,86	59.552,00	0,639	-
ΔINV ($)	30.320,80	64.043,23	100,00	19,00	-33.722,43	81,00	0,591	-
Inventory turnover	7,24	0,17	5,51	6,03	7,07	-0,52	0,086	*
Production Costs ($)	5.311.765,07	5.366.104,08	841.374,50	582.609,00	-54.339,01	258.765,50	0,975	-
Production costs/A	0,43	0,29	0,56	0,55	0,13	0,01	0,231	-
Discretionary Expenses ($)	1.542.369,85	1.274.169,57	221.507,00	138.598,00	268.200,28	82.909,00	0,489	-
Discretionary Expenses/A	0,12	0,07	0,15	0,13	0,05	0,02	0,10	*
Sales ($)	8.654.830,70	8.263.742,20	1.466.000,00	767.900,00	391.088,50	698.100,00	0,879	-
Sales/A	0,70	0,45	0,98	0,72	0,24	0,26	0,199	-
Receivables turnover	19,48	17,84	7,33	6,81	1,64	0,52	0,781	-

Table representations: In the table 1, we extract information about some important statistical measurements of our under examination variables. In the first column there are the variables discerptions and abbreviations. In the third and fourth column is given the mean value of each variable for the separate two sample, total sample of firm years and suspect sample. In the next two columns it is presented the median for each variable in both samples. Last two columns gather information from the previous ones. They represent the difference in values between means of the samples. In the last column it is represented whether this difference is statistical significant or not according to the following signs:

***** : Significant at 10% level

****** : Significant at 5% level

*** : Significant at 1% level

- : Statistical insignificant

We perform t- test in order to state whether the difference in means is statistical significant in different levels. In the table 1, though, I have taken the P-values for each variable to reach in the same conclusion. P-values and critical t values can be used interchangeably without altering the results. The test is performed with the following way:

Ho: means of two samples are equal.

H1: means of two samples are not equal.

By comparing each P-value with the corresponding level of significance (1%, 5%, 10%) we whether reject or accept the null hypothesis. When P-value is smaller than the corresponding level then null hypothesis is not accepted in favor of the alternative one. While P-value is greater than the significance level we use to test it, then null hypothesis is accepted against the alternative hypothesis. According to the difference levels of significance we have a strong or weak indication of significance as it is indicated from the symbols above.

From the table 1 we draw the following information about the examined variables:

Market Value of Equity (MVE): The mean market capitalization of firm years that are considered as suspect is at $7.647,65 which is which is significantly lower, at 10% level, than the value of the total sample which has market capitalization of 11.702,13. The mean value of market capitalization of suspect years tends to be close to the half of the value of the total sample firm years as it is indicated from past research.

Total assets (A): As it is represented in the table, mean total assets for suspect firm years are interestingly above the mean total assets of the full sample. The difference thought from a statistical perspective seem to not to be statistical significant.

Market to Book Value of Equity (MTB): The mean value of "market-to-book value to equity", seems to have statistically significant difference for the years that are considered suspect to the full sample of firm years. Total sample have a value of market-to-book ratio which is larger than the value of the suspect firm years.

Cash flows from operations scaled by total assets (CFO/A): Scaling cash flows by total assets it's similar to using sales as a scaling variable cause these two variables seem to be correlated. In the table represented above we notice that the mean value of cash flow from operation scaled by total assets, for the suspect firms, is lower than the corresponding value of the total sample. Mean CFO for the full sample of firm years is 13%, the corresponding amount for suspect firms is 5% of total assets, a statistically significant difference as it is indicated from the table.

Accruals scaled by total assets: The mean value of accruals scaled by total assets is lower in absolute value for the sample of firm years characterized as suspect, than the total sample of firm years. The mean of suspect firm years is about 3,7% of total assets while the mean of total sample is at 0,1%. A difference statistically significant only at a level of 5% as it is indicated in the table.

Discretionary Expenses scaled by total assets: Suspect firm years present mean discretionary expenses scaled by total assets smaller in value than the contemporaneous one for the total sample of firm year observations. Mean discretionary expenses for firm years that are considered suspect, is at 7% of total assets, while the same value for the whole sample is at 12% according to the table which is almost the double and it is found to be statistically significant as a difference only at 10% level.

Production costs scaled by total assets: We have found that mean production costs scaled by total assets, are lower for firm years in firm years we have presumed as suspect than the total sample of firm years. However this difference does not considered as statistical significant.

Inventory turnover: Inventory turnover ratio illustrates how many times a company's inventory is sold and replaced over a period of time. Mean turnover ratio for suspect firm years is statistically smaller than the contemporaneous mean value for the full sample. According to our previous hypothesis, by making use of real activities methods such as overproduction, endings year's inventory must be increased. Simultaneously, cost of goods sold must be affected downwards according to the following equation:

COGS = initial inventory + purchases – ending inventory

As we notice from the table above, mean cost of goods sold for suspect firm years is slightly above the mean of the total sample which is not consistent with our previous statement. This result could be possibly explained by the fact that in our analysis we have include 16 years for every firm and in our analysis we have examined each year separately and regardless the previous one as we were talking for different firms. Firms that systematically make use of overproduction as a manipulating method of earnings, at a specific point of time to illustrate both increased initial and ending inventory if earnings are manipulated at a sequence of two or more years. In that way we cannot make sure in which direction costs of goods sold will move, according to the previous equation.

Receivables turnover: Its shows the ability of the company in extending credit and in collecting debts on that credit. Mean value of receivables turnover ratio, is statistically significant greater for the total sample than the firm years which are considered as suspect. Firm can propel sales when it holds a high receivables stock escaping the detection. In general, firms that hold, as a strategy, a large amount of inventories, receivables and other current assets are more likely that they will try to manipulate earnings under the cover of their usual operation. It is difficult though to relate earnings manipulation in zero target firms to the receivables amount.

Estimation Models

In this part of my analysis I make use of Dechow model in real earnings management activities detection. The models have been described in previous section.

The dependent variables in each case are cash flow from operations, discretionary expenses, production costs and accruals. The regression is estimated then for every industry firm year. More specifically, firm years are classified according to the industry they belong to. According to the availability of the data extracted by Datastream, there are 32 industries that I use in this part of my analysis. I have

exclude industries that include less than 9 firms. Each industry consists of almost 13 to 15 firms. The analysis that is made is a cross-sectional and it is performed for each year between 2001 and 2016.

Table 2 presents the mean coefficients across all industry years and in the parenthesis t-statistics are given. T- statistics have been calculated by using the mean standard error across firm years and the mean value of the counterpart coefficient of each variable. Also in table 1 it is given by the representation next to each variable, which variable is considered significant or not. The adjusted value of R-squared is used in order to testify whether the regression line approximates well the real data or not and it is also calculated as a mean value across each regression between years 2001 and 2016. The average across years R^2 adjusted is about 66% for CFO model and 96% for production cost model as it is illustrated in the table 2. These two models seem to have a high explanatory power while the other two models for discretionary expenses and total accruals seem to have lower power with adjusted R^2 values of 6% and 23% respectively.

Table 2.

	CFO_t/A_{t-1}		$DISEXPt/A_{t-1}$		$PROD_t/A_{t-1}$		$Accruals_t/A_{t-1}$	
Intercept	0,1386	***	0,1308	***	-0,2888	***	-0,0668	***
	(22,31)		(15,15)		(-23,97)		(-8,18)	
$1/A_{t-1}$	-5,8263	***	-8,7549	***	18,9917	***	5,4418	
	(-2,55)		(-2,76)		(4,05)		(1,88)	
S_t/A_{t-1}	-0,0062		0,0381	***	0,9821	***		
	(-1,15)		(5,09)		(94,12)			
$\Delta S_t/A_{t-1}$	0,1895	***			0,7114	***	-0,0098	
	(31,65)				(61,31)		(-0,25)	
$\Delta S_{t-1}/A_{t-1}$					0,0002			
					(0,38)			
PPE_t/A_{t-1}							-0,0461	**
							(-2,23)	
Adjusted Rsquared	**0,66**		**0,06**		**0,96**		**0,23**	

* : Significant at 10% level , ** : Significant at 5% level,

*** : Significant at 1% level

$$CFO_t/A_{t-1} = a_0 + a_1(1/A_{t-1}) + b_1(S_1/A_{t-1}) + b_2(\Delta S_t/A_{t-1}) + \varepsilon_t \quad (1)$$

$$PROD_t/A_{t-1} = a_0 + a_1(1/A_{t-1}) + b_1(S_t/A_{t-1}) + b_2(\Delta S_t/A_{t-1}) + b_3(\Delta S_{t-1}/A_{t-1}) + \varepsilon_t \quad (2)$$

$$DISEXP_t/A_{t-1} = a_0 + a_1(1/A_{t-1}) + b(S_{t-1}/A_{t-1}) + \varepsilon_t \quad (3)$$

$$Accruals_t/A_{t-1} = a_0 + a_1(1/A_{t-1}) + b_1(\Delta S_t/A_{t-1}) + b_2(PPE_{t-1}/A_{t-1}) + \varepsilon_t \quad (4)$$

According to Dechow model theory, the b_2 coefficient when scaled cash flows from operation are used as a dependent variable, should be negative and same in number with the equivalent one when scaled accruals are used as a dependent variable in the regression. In our results though, presented in the table 2, b_2 coefficient has a statistically significant positive value. The same coefficient with total accruals scaled by total assets as a dependent variable, has a significant negative value. Change on sales has the reverse impact on cash flow from operations and accruals according to the Dechow model. However, this statement it does not hold in reality as the assumption of net income being independent of previous year's income, does not happen. In our case b_2 coefficient for CFO model is found to be equal to 0,1895 and statistically significant which means that a positive change in sales affects in the same direction cash flow from operations.

Correlation table between variables

Table 3

	Abnormal PROD	Abnormal Disexp	Abno -rmal CFO	IBEI/ At-1	CFOt/ At-1	Accruals/ At-1	PROD/ At-1	Sales/ At-1	DISEXP/ At-1
Abnormal PROD	1,00								
Abnormal Disexp	-0,53	1,00							
Abnormal CFO	-0,30	0,31	1,00						
IBEI/At-1	-0,54	0,38	0,53	1,00					
CFOt/At-1	-0,67	0,33	0,51	0,87	1,00				
Accruals/ At-1	0,57	-0,13	-0,26	-0,35	-0,76	1,00			
PROD/ At-1	-0,23	-0,22	-0,12	0,01	-0,06	0,13	1,00		
Sales/At-1	-0,37	-0,06	-0,02	0,13	0,07	0,04	0,98	1,00	
DISEXP/ At-1	-0,60	0,94	0,30	0,43	0,36	-0,13	0,08	0,24	1,00

To test for our previous statements, it is worth performing a correlation table between variables. It is verified that cash flow from operations and accruals illustrate a negative correlation at the degree of 76%, as it is represented in table 3. This is consistent with a number of previous studies that have shown that real management manipulation and accruals manipulation are used alternatively depending on firm circumstances and opportunities. Net income seem to have a positive correlation with cash flow from operations but in our analysis negative with total accruals. This result though, is not consistent with previous analysis that have been performed. A possible explanation, though is that accruals are separated into discretionary and non-discretionary accruals, only discretionary accruals are related to accruals management activities that intend to increase income while the other part is due to business activities. Accruals have been calculated as the difference between net income and cash flow from operation. The negative coefficient between net income and accruals may be explained by the fact that cash flows present a greater degree movement than net income. Abnormal production cost and abnormal discretionary expenses illustrate

a negative correlation coefficient, approximately -53% and may be explained by the simultaneous use of real activities manipulation methods such as overproduction and reduction of discretionary expenses.

Testing suspect firm years to the rest sample

$$\mathbf{Y_t = a + b_1(SIZE)_{t-1} + b_2(MTB)_{t-1} + b_3(Net\ income)_t + b_4(SUSPECT\_NI)_t + \varepsilon_t} \quad . \quad (5)$$

Y_t: Abnormal CFO, Abnormal Production Costs, Abnormal discretionary expenses
In each different regression.
"SIZE": It is calculated as logarithm of market value of equity at the beginning of the year.
"MTB": market value of equity to book value of equity.
"SUSPECT_NI" : variable is taking the value of one when the firm year is classified in the earnings category right of the zero, as we have define suspect firm years in previous section, and zero otherwise. Firm years that fall into the category which have net income scaled by total assets among 0 and 0,005, are considered as suspect firm years.

"SIZE" and "MTB" are considered as control variables for variation in abnormal values. Also "Net income" is used in order to eliminate errors which have positive correlation with performance. From the literature it is known that models that are using non-discretionary accruals in the calculation of abnormal values illustrate this type of error.

The abnormal values of CFO, discretionary expenses and production costs, are calculated as deviations from their corresponding normal values. The coefficients calculated by the table 2 regressions are used to calculate the expected values of CFO, discretionary expenses and production costs respectively. After their calculation, we use the real sample values to find deviations from normal values calculated by the models above. Abnormal values give evidence of earnings manipulation activities. Any deviation from normal levels of production costs, CFO and discretionary expenses respectively, illustrates that such activities are used to affect earnings.

Table 4

	Abnormal CFO		Abnormal Disexp		Abnormal PROD	
Intercept	-0,0741	**	-0,1150	**	-1,0990	***
	(-2,39)		(-2,52)		(-4,26)	
size	0,0141	**	0,0247	**	0,1574	***
	(2,12)		(2,52)		(2,12)	
MTB	0,0000		0,0000		0,0146	***
	(-0,89)		(0,34)		(4,16)	
NET INCOME	0,0000	***	0,0000	*	0,0000	
	(3,56)		(-1,59)		(0,04)	
SUSPECT_NI	-0,0477	***	-0,0936	***	0,2630	**
	(-2,70)		(-3,60)		(1,95)	

***** : Significant at 10% level , ****** : Significant at 5% level,

*** : Significant at 1% level

Note that these numbers have been rounded. Eg. MTB coefficient has a very small positive value that has been rounded to zero.

In table 4, the results from 16 cross sectional regressions are represented. Coefficients for each model, have been calculated as a mean value of coefficients for each independent regression. In parenthesis, t statistic values are given.

In this table it is worth focusing on "SUSPECT_NI" coefficient values, as it gives evidence to our previous assumptions in our analysis. Suspect firm years illustrate lower abnormal cash flow from operations and abnormal discretionary expenses than the other firm years. The coefficient of "SUSPECT_NI" variable is negative when of abnormal CFO and discretionary expenses are used as a dependent variable in the regression model. On the other hand the same coefficient seem to have positive value when "Abnormal PROD" is used as a depended variable. As it is indicated from the table results, these coefficients are statistically significant at 5% level according to the table results. According to the table, suspect firm years have abnormal CFO that is lower by 4,7% of assets than the rest sample of firm years (-0,0477). Also, according to table 1 the median CFO scaled by total assets is about 5% for the total sample of firm years. That shows that the previous difference (4,7%) compared to (5%) is economically large. Similarly, when the dependent variable is abnormal discretionary expenses, the "SUSPECT_NI" coefficient has a negative value (-0,0936) which illustrates that suspect firm years present lower discretionary expenses at 9,3% of total assets than the rest firm years that are not considered as suspect for earnings

management activities. According to previous results, the median of discretionary expenses is 15% of total assets for the total sample of firm years. The difference in discretionary expenses between suspect and non-suspect firm years (9,3%) compared to the value of 15% which represents the total sample, is considered a significant difference.

The coefficient of "SUSPECT_NI" variable, when abnormal production cost are used as a dependent variable, has a positive and statistically significant value of 0,2630. This value illustrates that mean abnormal production costs for the years that are considered as suspect, is greater (+26%) than the rest firm years that we have assumed as non-suspect. As we can mention, 26% is a significant difference, bearing in mind that the median in production costs scaled by total assets is about 56% according to table1.

Residual analysis

In addition to our previous analysis, it is worth examining whether the results we have observed in previous sections about suspect firm years, are indicative of earnings management activities. More specifically, despite the significant results that have been found for suspect years cash flows from operations, discretionary expenses and production costs, it is important to omit other components like economic circumstances that may affect this results.

In the following diagrams, residuals have been plotted in respect to net income scaled by total assets intervals. I have use 14 intervals at this point of my analysis in order to observe more carefully the patterns of the residuals across these income categories.

Each category have a width of 0,01 and the total sample of firm years I have took, is between -70% and +70% of total assets. Category 8 is the earning interval right of the zero which up to now is examined as suspect.

In the first diagram residuals are withdrawn from the following regression:

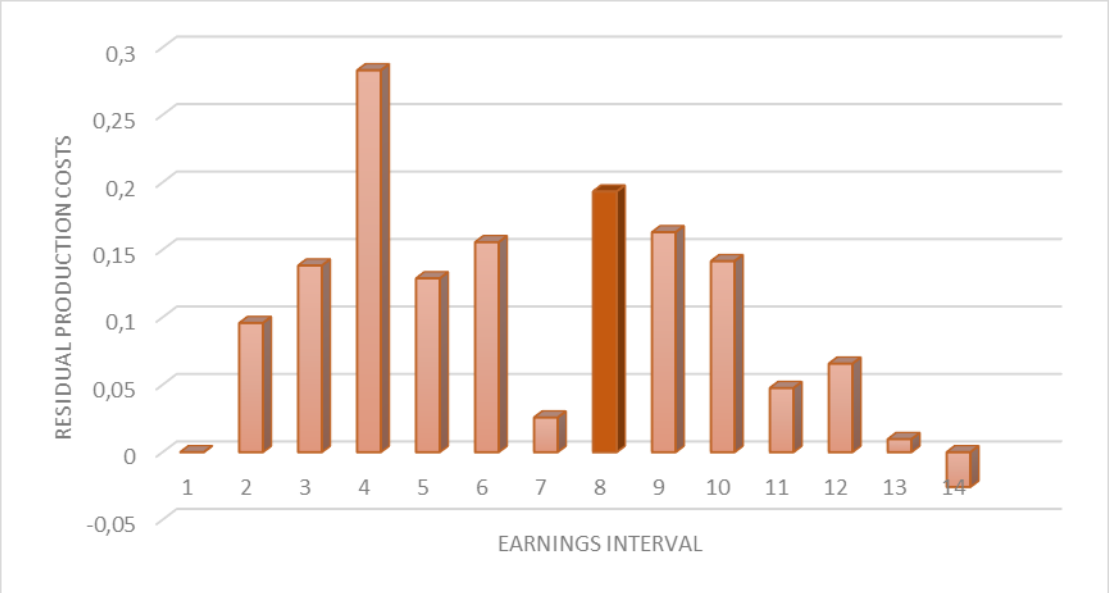
$$\textbf{Abnormal } CFO_t = a + b_1(SIZE)_{t-1} + b_2(MTB)_{t-1} + b_3(\text{Net income})_t + \varepsilon_t. \quad (6)$$

The mean residual CFO, as it is indicated from the diagram, it is more negative for the two intervals right and left of the zero (7,8). More specifically, it seems that interval left to the zero present more negative average residual CFO compared to other intervals. Despite that, interval 8 which contains all the suspect firm years, has the next more negative and significantly larger value than the rest earning intervals. These two intervals though, are linked to zero earnings thresholds rather than any bad economic conditions.

In a similar way, residual production costs are defined from the following regression:

$$\textbf{Abnormal PROD}_t = a + b_1(\text{SIZE})_{t-1} + b_2(\text{MTB})_{t-1} + b_3(\text{Net income})_t + \varepsilon_t \quad (7)$$

After we have collected residuals from the regression, we plot the following diagram in a similar way to the previous one, taking only firm years between intervals [-0,07,+0,07].



By observing the diagram, we can notice that the average residuals of production costs have a positive value. Intervals 8 and 4 seem to have the greatest value compared to the rest earning intervals. Interval 8 contain all these firms that have been defined as suspect according to zero threshold targets. Mean residuals of production costs in interval 8, seem to have relevant value to our previous assumption that these firms manage their earnings in order to avoid reporting losses. Interval 4 thought cannot be described by the same firm behaviour and it is worth examining.

As in the previous two cases, we gather residual discretionary expenses from the following regression:

$$\textbf{Abnormal DISEXP}_t = a + b_1(\text{SIZE})_{t-1} + b_2(\text{MTB})_{t-1} + b_3(\text{Net income})_t + \varepsilon_t \quad (8)$$

On average, residual discretionary expenses are negative, according to the diagram below, with intervals 4 and 8 representing the higher negative value of residual discretionary expenses. The results are similar to those of production costs. Interval 8 have mean residual discretionary expenses more negative than all the other intervals with the exception of interval 4. However, it seems that our assumptions that firms have an incentive to engage in earnings manipulation to exceed zero thresholds, holds and it is validated from the diagrams.

It is worth testing though, the statistical significance of these figures by running a regression including only the sample of firm years between the selected intervals [-0,070,+0,070] excluding the extreme values. In this way, our under examination variables are not affected that much by an extreme performance.

In the next table, suspect firm years are compared to firm years in the other intervals.

Table 5.

	Abnormal CFO		Abnormal Discretionary Expenses		Abnormal Production Costs	
Intercept	-0,0354		-0,1221	***	0,0136	
	(-0,47)		(-3,26)		(0,13)	
SIZEt-1	0,0056		0,0240	***	-0,0030	
	(0,37)		(2,88)		(-0,13)	
MTBt-1	0,0000		0,0000		0,0000	
	(-0,26)		(-0,61)		(0,78)	
NET INCOME	0,0000		0,0000		0,0000	
	(0,73)		(-1,19)		(0,30)	
SUSPECT_NI	-0,0275	**	-0,0208	**	0,0343	*
	(-1,75)		(-2,10)		(1,53)	

$$Y_t = a + b_1(SIZE)_{t-1} + b_2(MTB)_{t-1} + b_3(\text{Net income})_t + b_4(SUSPECT\_NI)_t + \varepsilon_t$$

***** : Significant at 10% level , ****** : Significant at 5% level,

*** : Significant at 1% level

According to the table results, the coefficient of "SUSPECT_NI" variable is negative (-0,0208) and statistical significant at 5% level (t-test = -2,10), when abnormal discretionary expenses is used as a dependent variable. The suspect interval has a mean abnormal discretionary expenses significantly more negative than the mean across the other intervals. The coefficient of "SUSPECT_NI" when abnormal production costs are used as a dependent variable, is found positive (0,0343) but statistical significant only at 10% level (t-test= 1,53). Suspect interval has mean abnormal production costs that are higher than the mean of all other intervals. Also the same coefficient with cash flow from operation as a dependent variable, is significantly negative, according to the table (-0,0275 , t-test= -1,75). Mean abnormal cash flows from operation are significantly more positive than the mean of all other intervals.

Indicative Variables in real activities manipulation

Other variables, can also be examined from the incentive perspective that they provide managers to engage in real earnings manipulation activities. The variables that I have used in my analysis determine debt, current liabilities of firm, accounts receivables, inventories, market to book ratio and the size of the firm as an indicators to earnings management.

In our models we can use binomial or dummy variables in order to test which are the main causes behind the decision to engage in earnings management manipulation. Such variables contain business characteristics like whether a firm is a manufacturing or not, if the firm has any short term or long term debt etc. Other variables can take the form of a binary rank. For example, they take the value of one if the industry year adjusted variable is above the median of the corresponding year and the value of zero in different case. In order to examine rank variables we have first to define their corresponding continuous ones that are expressed as deviations from their industry

year means. The most common used variables that correspond to each business factor are the following:

HASDEBT: a variable that illustrates whether a firm has a short term or long term debt outstanding. When there is a debt outstanding at the end or at the beginning of the year, it takes the value of one, otherwise the value of zero.

MTB_RANK: it is a binary rank variable that takes the value of one if market to book ratio is above the median value for the corresponding year and the value of zero in different case.

CL_RANK: a rank variable that illustrates if current liabilities (excluding short term debt) scaled by total assets, are below or above the median value for the examined firm year. When it is below the median it takes the value of zero and the value of one in other case.

INVREC_RANK: a rank variable that illustrates if the sum of industry year adjusted inventories and receivables as a percentage of total assets are above or below the median value for the year we examine. It takes the value of one when it is above and the value of zero otherwise.

SIZE_RANK: the size of the firm is expressed as the logarithm of the market value of equity. As the other rank variables, it takes the value of one if it is above the median value of the year examined, and the value of zero otherwise.

These variables are worth examining for whether they have any substantial relation with production costs, cash flows and discretionary expenses, in order to testify for earnings management activities.

In this part I use my total sample of firm years. The variables I use in this part are: a) HASDEBT b) MTB_RANK, c) CL_RANK, d) INVEC_RANK and SIZE_RANK whose definition is given above.

As a part of this analysis, it is worth determining the relation between the variables that I examine by finding correlation coefficients between them as it is presented in the next two tables.

Table 6.

	HASDEBT	MTB	CL	INVREC	SIZE
HASDEBT	1,00				
MTB	-0,01	1,00			
CL	0,02	-0,08	1,00		
INVREC	0,01	-0,12	-0,18	1,00	
SIZE	-0,01	0,46	-0,05	-0,62	1,00

Table 7.

	CL_RANK	MTB_RANK	INVREC_RANK	SIZE_RANK	HASDEBT
CL_RANK	1,00				
MTB_RANK	0,01	1,00			
INVREC_RANK	0,16	-0,26	1,00		
SIZE_RANK	0,06	0,43	-0,47	1,00	
HASDEBT	-0,04	0,04	-0,01	0,04	1,00

In the first table, are presented correlation coefficients when continuous variables are used, while in the second case their respective binary rank variables are presented.

Table 8.

	Abnormal CFO		Abnormal DISEXP		Abnormal PROD	
Intercept	-0,0140	*	-0,0116		-0,0365	**
	-1,31		-1,21		-1,99	
NET INCOME	(+)0,0000	***	(+)0,0000		(-)0,0000	***
	4,50		0,41		-3,83	
HASDEBT	-0,0053		0,0067	**	-0,0096	
	-1,05		1,42		-1,12	
MTB_RANK	0,0111	*	-0,0126	*	0,0003	
	1,45		-1,08		0,02	
CL_RANK	0,0062		-0,0032		-0,0064	
	1,03		-0,28		-0,44	
INVREC_RANK	0,0059		0,0068		0,0316	**
	0,86		0,54		1,90	
SIZE_RANK	0,0030		0,0109		0,0174	*
	0,44		1,12		1,43	
HASDEBT*SUSPECT_NI	-0,0206	***	-0,0235	**	0,0571	*
	-2,29		-1,77		1,57	
CL_RANK*SUSPECT_NI	0,0049	*	-0,0004		-0,0266	*
	1,55		-0,12		-1,33	
INVREC_RANK*SUSPECT_NI	-0,0203		-0,0071		0,0118	*
	-1,16		-0,78		-1,56	

SIZE_RANK*SUSPECT_NI	0,0103		0,0091		0,0094	
	0,84		0,71		0,42	

***** : Significant at 10% level , ****** : Significant at 5% level,

*** : Significant at 1% level

$Y_t = a + b_1(\text{Net income})_t + b_2(\text{HASDEBT})_{t-1} + b_3(\text{MTB\_RANK})_{t-1} + b_4(\text{CL\_RANK})_t + b_5(\text{INVREC\_RANK})_{t-1} + b_6(\text{SIZE\_RANK})_{t-1} + b_7(\text{HASDEBD})(\text{SUSPECT\_NI})_t + b_8(\text{CL\_RANK})_t(\text{SUSPECT\_NI})_t + b_9(\text{INVREC\_RANK})_{t-1}(\text{SUSPECT\_NI})_t + b_{10}(\text{SIZE\_RANK})_{t-1}(\text{SUSPECT\_NI})_t + \varepsilon_t$

Where Y_t = (Abnormal CFO, Abnormal PROD, Abnormal DISEXP)

***Note** that these numbers have been rounded. Some of them are presented like they have zero values but in reality they have been rounded to zero, their actual sign though is given in parenthesis.

It has been proven by the past research that when a company has short term or long term debt the coefficient between HASDEBT variable and discretionary expenses, with the latter as a dependent variable is negative. The coefficient with production cost as a dependent variable it is though positive. In practically, that means that firms with short term or long term debt outstanding are more prone to engage in earnings manipulation as it is illustrated by the decrease in discretionary expenses and the increase in production costs.

From the table results we found evidence of an existing relation between outstanding short-term, long-term debt and earnings manipulation activities. This is what b_7 coefficient illustrates. This coefficient seem to have a negative value, when abnormal discretionary expenses are used as a dependent variable, equal to (-0,0235) a statistical significant value at 5% as it is illustrated by the t-test value of (-1,77).

An explanation to this is that years defined as suspect for engaging in real activities manipulation, indeed they seem to engage more frequently in earnings management actions. Discretionary expenses for firms that have short term and long term debt outstanding seems to be lower for the suspect firm years, possibly as an action of earnings manipulation in these years.

On the other hand, b_7 coefficient has a positive value when the dependent variable is abnormal production costs (0,0571) , but statistically significant only at a level of 1% (t-test : 1,57). Suspect firm years with debt outstanding seem to affect positively production costs as an overproduction strategy of earnings manipulation. We verify in

this way that there is a positive relationship between the debt outstanding and real manipulation activities.

The same coefficient, b_7, when abnormal cash flow from operation, is used as a dependent variable, it is found to be significantly negative (-0,0206). Cash flows from operation though, seem to be affected in two different directions. Overproduction as a strategy of earnings manipulation, seems to decrease cash flows from operations. On the other hand the reduction of discretionary expenses as a strategy, increases the cash flow from operations the corresponding year. Our results found a statistically significant direction to overproduction as a strategy. Suspect firm years in presence of debt, illustrate a behaviour that verifies that an earnings manipulation activity exists. The fact that the net effect of these activities is negative in cash flows from operations, gives a possible evidence, that these companies make use of overproduction as a strategy to alter earnings.

Inventories and receivables as a percentage of total assets presents a positive correlation with abnormal production cost as a dependent variable. A firm with a higher amount of inventories and receivables in its accounts is more possible to make use of earnings management strategies as they are given the privilege to hide their activities considering the stock of inventories and receivables under their usual operation of taking high receivables and inventories account. This is what a higher production costs and a lower discretionary expenses presents in companies that are suspect for manipulating earnings. In our analysis though only b_9 with abnormal production costs if found to be statistical significant at 10%, while do not find evidence for discretionary expenses response to this variable. The relationship thought it has to real activities manipulation is given by the next table.

Current liabilities also show a positive correlation to earnings management tactics. More specifically, CL_RANK*SUSPECT_NI variable which have mentioned above, has a negative correlation coefficient with abnormal discretionary expenses as a dependent variable which is found to be statistically significant at 10% level. Also, we expected to find positive relation to abnormal production cost as a dependent variable. Interestingly we find a negative relation between abnormal production and the level of current liabilities. Some other factors that we fail to incorporate in our analysis may affect this result. This factor could be the nature of current liabilities which may discourage firms sometimes of making use of earnings management activities. The external parties that are connected to current liabilities accounts, may bare a superior

knowledge that discourage firms to use overproduction as a method of earnings alteration. The net effect on cash flow from operation seem to be significantly positive at 10% level (0,00491, t-test= 1.55). In general, firms with high current liabilities as a percentage of assets exhibit a higher possibility of making use of earnings management activities.

Market to book variable has been proven to have a negative correlation with abnormal discretionary expenses as a dependent variable and a positive correlation with abnormal production costs. That practically illustrates the fact that companies with growth opportunities (high market to book value) are more likely to engage in earnings manipulation at a certain time as lower discretionary expenses and higher production costs illustrate. However, cash flows from operation seem not to have any significant correlation to growth. That fact can be attributed to the different activities that whether increase or decrease cash flows from operations. However in the results of the table above does not prove a significant relationship for the suspect firm years and their market to book value and for this reason it has excluded by the model.

The next table is performed by using the continuous variables and not their corresponding binary rank that we have defined above.

Table 9.

	Abnormal CFO		Abnormal Disexp		Abrormal Prod Costs	
Intercept	-0,1502	***	-0,4344	***	0,1110	*
	-2,54		-6,37		1,33	
NET INCOME	(+)0,0000	***	(-)0,0000	***	(-)0,0000	***
	2,46		-3,61		-3,14	
HASDEBT	-0,0016		-0,0048	**	-0,0017	
	-0,52		-1,98		-0,34	
MTBt-1	0,0000	***	0,0000	*	0,0000	
	-2,47		-1,26		-0,27	
CL	0,0531	*	0,0528	**	-0,4950	***
	1,34		1,99		-5,04	
INVREC	0,0036	**	0,0086	**	-0,0147	*
	1,69		1,94		-1,54	
size	0,0282	**	0,0910	***	-0,0035	
	2,24		6,39		-0,18	
MTB*SUSPECT_NI	-0,0007	*	-0,0006	*	0,0006	**
	-1,44		-1,43		2,19	
INVREC*SUSPECT_NI	-0,0028	*	-0,0056	*	0,0137	*
	-1,41		-1,39		1,48	
SIZE*SUSPECT_NI	0,0171		0,0118		-0,0029	
	0,94		0,83		-0,59	

$Y_t = a + b_1(\text{Net income})_t + b_2(HASDEBT)_{t-1} + b_3(MTB)_{t-1} + b_4(CL)_t + b_5(INVREC)_{t-1} + b_6(SIZE)_{t-1} + b_7(MTB)_{t-1}(SUSPECT\_NI)_t + b_8(INVREC)_{t-1}(SUSPECT\_NI)_t + b_9(SIZE)_{t-1}(SUSPECT\_NI)_t + \varepsilon_t$

Where Y_t = (Abnormal CFO, Abnormal PROD, Abnormal DISEXP)

***Note** that these numbers have been rounded. Some of them are presented like they have zero values but in reality they have been rounded to zero, their actual sign though is given in parenthesis.

According to table results, "MTB*SUSPECT_NI" coefficient has a weak statistically significant value of (-0,0006, t-test= -1,43) when abnormal discretionary expenses are used as a dependent variable and a statistically significant positive value of (0,0006, t-test=2,49) when abnormal production costs are used as a dependent variable. This results verifies our previous statements that we failed to give evidence with the previous table. The same coefficient has a negative and significant value at 10% when abnormal CFO is used as a dependent variable. The net effect on abnormal cash flow from operations is found to be negative in our case, equal to (-0,0007) but statistically significant only at 10% level.

In addition to the results of the previous table, this table has come to prove evidence that the previous one failed to give. "INVREC*SUSPECT_NI" coefficient with abnormal production costs used as dependent variable, has a weak - significant positive value (0,0137). Also, the same coefficient with discretionary expenses used as a dependent variable, is significantly negative (-0,0056) at 10% level. This verifies our previous assumptions that firms which hold receivables and inventory accounts as a firm policy, are more probable engaging in earning management activities. A firm with a higher amount of inventories and receivables in its accounts is more possible to make use of earnings management strategies.

The size of the firm thought, have been proven not to have any significant correlation with abnormal production costs but a negative correlation with discretionary accruals. The size of the firm plays a role in the decision to make use of earnings management. Firms that are larger in sizes seem to be more prone to engage in earnings management activities as they are more pressured to meet specific targets by the external parties. However in my analysis, the coefficient of size variable for the suspect firm years, it does not present statistical significant values. However the "SIZE" variable itself validates what we have discussed until now.

In addition to my analysis institutional ownership as an additional variable probably would give evidence for more results in real activities manipulation

attempts. Institutional ownership on the other hand has been proven not to have any significant relationship to production costs and discretionary expenses as well. That may be explained by the fact that the presence of institutional owners on the one hand gives the pressure to present attractive and satisfying earnings, but on the other hand because of their expertise they are more likely to detect malicious activities and earnings management tactics. In addition the use of a variable that determines whether the company is a manufacturing or not would give evidence of whether a company that is manufacturing is more prone to make use of earnings management activities.

Chapter 5 : Conclusions & Synopsis

This analysis has given evidence to prior studies which have been made in the field of earnings management activities and their detection. Earnings management is becoming more and more a matter of consideration in a continuous effort to eliminate distortion in financial statements. It is difficult thought to detect activities that distort the real firm's picture as they consist of a combination of strategies which are used by firm's management in an effort to disguise them. The final result in financial statements and results is a combination of strategies, rather than an independent strategy.

As it is suggested by the paper, firms usually engage in two different ways in earnings management activities according to their incentives and their opportunities. Accruals management is the most examined and discussed by the existing literature as a way to manipulate earnings to improve company's picture. However real earnings management, presents a great interest and is worth focusing as it more difficult to track into business regular operation. Firms use both accruals and real earnings management activities and their final use is a substitute decision.

The substitution between the two forms depends on the business circumstances and their convenience in distorting reported earnings. Prior studies have shown that real earnings management is more difficult to detect under a strict external control. That is why the present paper concentrates in the part of earnings management which is related to real activities manipulation.

The use of real activities strategies, affect discretionary expenses, cash flows from operations and production costs, in a way that can draw analysts attention when their values are not consistent with their normal values. By calculating their deviations from normal levels, with the use of Dechow model, we were able to define some other variables that possibly are connected to the decision and the motives to engage in real activities manipulation. After defining suspect firm years according to zero threshold, have clarified a pattern to those companies that are more probable of making use of manipulation activities. According to our results, suspect firm years present a significantly negative deviation, from normal values in discretionary expenses and CFO, and a positive significant deviation in production costs. That practically reveals that these firms make use of strategies like discretionary expenses reduction and overproduction that affect these variables in a great extent.

In addition, we have found evidence that some components like firm's size, the level of firm's current liabilities, debt presence and growth opportunities, are closely related to the real management activities. These results are consistent with previous analysis that have been made.

Further, it would be worth examining in future studies, other variables that may be indicative of real management activities and that could help in earnings management detection and prevention. Another part that is worth examining, are the effects of real earnings management in firm's future growth, future stock price and the stock market reaction. Moreover a great field worth analysing, has to do with accruals and real activities management as a substitutes and complementary ways to manipulate earnings. At which extent each form is used and at which point of time, are also important components in earnings management detection.

Variables Descriptions & Labels:

i. **Net income before extraordinary items:** extracted from datastream for each firm. (Label "net income before extraordinary items")

ii. **Cash Flows from Operation:** extracted from datastream for each firm. (Label "EBIT & DEPRECIATION")

iii. **Total assets:** extracted from datastream for each firm. (Label "TOTAL ASSETS")

iv. **Market Value of Equity:** extracted from datastream for each firm. (Label "MARKET VAL BY CO.")

v. **Book Value of equity:** extracted from datastream for each firm. (Label "BOOK VALUE-OUT SHARES-FISCAL")

vi. **Market Value of Equity to Book Value of Equity:** Market Value of Equity/Book Value of equity. Divide items iv by v items.

vii. **Sales:** extracted from datastream for each firm. (Label "NET SALES OR REVENUES")

viii. **Accruals:** are calculated by subtracting CFO from income before extraordinary items. (IBEI – CFO)

ix. **Inventory:** extracted from datastream for each firm. (Label "TOTAL INVENTORIES")

x. **Costs of Good Sold:** extracted from datastream for each firm. (Label "COST OF GOODS SOLD")

xi. **Production Costs:** is calculated by adding the change in inventory to costs of goods sold. (COGS+ΔINV)

xii. **Discretionary expenses:** R&D, Advertising, Selling General and Administrative expenses are added to calculate discretionary expenses. In datastream I found available only SG&A expenses (label: "SELLING, GENERAL & ADMINISTRAT" so I exclude the other expenses from the calculation of discretionary expenses.

xiii. **Inventory turnover ratio:** we use items found above to calculate this ratio. We divide the Cost of goods sold with the average of the beginning and ending inventory of the year. (COGS/[(Beginning inventory+Ending Inventory)/2]

xiv. **Receivables turnover ratio:** In a similar way we calculate receivables turnover ratio by dividing sales of year with the average of beginning and ending gross receivables.

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ΠΕΡΙΛΗΨΗ

Η λογιστική χειραγώγηση των κερδών αποτελεί ζήτημα ενδιαφέροντος τα τελευταία χρόνια καθώς οι οικονομικές τους συνέπειες στο εσωτερικό και εξωτερικό περιβάλλον της επιχείρησης είναι μεγάλες. Η μελέτη αυτή, έρχεται να συμβάλλει στην ήδη υπάρχουσα βιβλιογραφία μελετώντας τις μεθόδους χειραγώγησης λογιστικών κερδών.

Οι μέθοδοι χειραγώγησης των κερδών μπορούν να διαχωριστούν σε δύο κύριες κατηγορίες σύμφωνα με τη τρέχουσα βιβλιογραφία. Η διαχείριση πραγματικών κερδών περιέχει όλες εκείνες τις επιχειρηματικές πρακτικές που λαμβάνουν χώρα κατά τη διάρκεια της οικονομικής χρήσης και επηρεάζουν τις ταμειακές ροές. Από την άλλη πλευρά, η χειραγώγηση των δεδουλευμένων πραγματοποιείται μετά το κλείσιμο των οικονομικών καταστάσεων, καθώς δεν έχουν επιτευχθεί οι συγκεκριμένοι στόχοι της εταιρείας μέχρι εκείνη τη χρονική στιγμή. Η χρήση τους περιλαμβάνει δραστηριότητες όπως καθυστερημένες διαγραφές απαιτήσεων που δεν πρόκειται να εισπραχθούν και η αποφυγή αναγνώρισης επισφαλών απαιτήσεων για την αποφυγή αναγνώρισης ζημίας εις βάρος των λογιστικών κερδών .

Σύμφωνα με ήδη υπάρχουσες μελέτες παρατηρείται προτίμηση των χρήσης δραστηριοτήτων χειραγώγησης των πραγματικών κερδών, έναντι των δεδουλευμένων, σε επιχειρήσεις που εμφανίζουν μόχλευση από δανεισμό. Όπως έχει υποστηριχτεί, οι έμπειροι αναλυτές και πιστωτές που ενδιαφέρονται για την αποπληρωμή του χρέους, είναι σε θέση να εντοπίζουν στρατηγικές χειραγώγησης των δεδουλευμένων σε μεγαλύτερο βαθμό από ότι των πραγματικών κερδών. Λόγω της δυσκολίας εντοπισμού τους μέσα στις επιχειρηματικές δραστηριότητες, έχω επιλέξει να αφοσιωθώ στο πρακτικό κομμάτι της ανάλυσης μου στη χειραγώγηση μέσω των πραγματικών κερδών.

Παρόλα αυτά η χρήση των δύο τακτικών στη χειραγώγηση των κερδών γίνεται σε συνδυασμό για την επίτευξη του επιθυμητού αποτελέσματος και γι’ αυτό σε αυτή την ανάλυση έχει αφιερωθεί ένα μικρό κομμάτι στα που μοντέλα χρησιμοποιούνται στον εντοπισμό της χειραγώγησης των δεδουλευμένων, πέρα των πραγματικών κερδών. Η απόφαση να συμμετάσχει η επιχείρηση σε μια μορφή διαχείρισης συνοδεύεται από την απόφαση να συμμετάσχει στη δεύτερη μορφή καθώς η θέλει να επιτύχει

συγκεκριμένους στόχους. Η χειραγώγηση των πραγματικών δραστηριοτήτων πραγματοποιείται κατά τη διάρκεια του οικονομικού έτους και είναι αποτέλεσμα προκαθορισμένης απόφασης ενώ η διαχείριση των δεδουλευμένων δαπανών πραγματοποιείται μετά το τέλος της χρήσης και πριν από τα οικονομικά αποτελέσματα.

Στο πλαίσιο της εξέτασης της αξιοπιστίας των οικονομικών καταστάσεων και των αποτελεσμάτων, οι ελεγκτές και άλλα εξωτερικά μέρη μπορούν να ανιχνεύσουν και να εντοπίσουν τις επιχειρήσεις που είναι ύποπτες για χρήση δραστηριοτήτων διαχείρισης κερδών και δημιουργικής λογιστικής. Ορισμένες δραστηριότητες που μπορεί να χαρακτηριστούν ως ύποπτες είναι η εναλλαγή λογιστικών προτύπων, συχνές αλλαγές στη σύσταση της διοίκησης και των ελεγκτικών μελών, μεγάλες διαφορές μεταξύ φορολογητέου και λογιστικού εισοδήματος, καθώς και άλλες μη συνήθεις επιχειρηματικές δραστηριότητες.

Η χρήση στρατηγικών χειραγώγησης πραγματικών δραστηριοτήτων επηρεάζει τις διακριτές δαπάνες, τις ταμειακές ροές από τις δραστηριότητες και το κόστος παραγωγής, κατά τρόπο που μπορεί να προσελκύσει την προσοχή των αναλυτών όταν οι αξίες τους δεν συμφωνούν με το κανονικό επίπεδο τιμών. Με τον υπολογισμό των αποκλίσεών τους από τα κανονικά επίπεδα, με τη χρήση του μοντέλου Dechow, μπορέσαμε να ορίσουμε κάποιες άλλες μεταβλητές που ενδεχομένως συνδέονται με την απόφαση και τα κίνητρα των επιχειρήσεων να εμπλακούν σε χειραγώγηση πραγματικών δραστηριοτήτων. Επιπλέον από την τρέχουσα βιβλιογραφία, έχει γίνει αναφορά στο «μηδενικό κατώφλι» το οποίο θέτουν ως στόχο οι επιχειρήσεις κατά την παρουσίαση των λογιστικών τους κερδών. Η μελέτη αυτή επαληθεύει το κίνητρο των επιχειρήσεων να παρουσιάσουν μηδενικά είτε ελαφρώς θετικά κέρδη με τη χρήση μεθόδων λογιστικής χειραγώγησης.

Αρχικά ορίστηκαν τα «ύποπτα» εταιρικά έτη, με βάση το μηδενικό κατώτατο όριο, για τη χρήση πρακτικών χειραγώγησης λογιστικών κερδών. Σύμφωνα με τα αποτελέσματά μας, τα «ύποπτα» έτη παρουσιάζουν σημαντική αρνητική απόκλιση από τις κανονικές αξίες στα διακριτικά τους έξοδα και τις ταμειακές ροές από τις λειτουργικές δραστηριότητες, καθώς και μια θετική σημαντική απόκλιση στο κόστος παραγωγής. Αυτό πρακτικά αποκαλύπτει ότι οι επιχειρήσεις αυτές χρησιμοποιούν στρατηγικές όπως η μείωση των δαπανών και η υπερπαραγωγή που επηρεάζουν σε μεγάλο βαθμό αυτές τις μεταβλητές.

Παρακάτω, διαπιστώσαμε ότι ορισμένα στοιχεία όπως το μέγεθος της επιχείρησης, το επίπεδο των τρεχουσών υποχρεώσεων της επιχείρησης, η παρουσία του χρέους οι ευκαιρίες ανάπτυξης, το επίπεδο των βραχυπρόθεσμων υποχρεώσεων καθώς και το επίπεδο των αποθεμάτων και των εισπρακτέων λογαριασμών, συνδέονται στενά με τις πραγματικές δραστηριότητες διαχείρισης.

Σύμφωνα με τα αποτελέσματα της ανάλυσης, επιχειρήσεις μεγαλύτερες σε μέγεθος έχουν περισσότερα κίνητρα και είναι πιο πιθανό να συμμετέχουν σε πρακτικές αλλοίωσης αποτελεσμάτων σε σχέση με άλλες επιχειρήσεις μικρότερου μεγέθους. Αυτό συμβαίνει διότι οι επιχειρήσεις αυτές έρχονται αντιμέτωπες με μεγαλύτερες πιέσεις να επιτύχουν τους στόχους τους, καθώς η μη πραγματοποίησή τους ,τους φέρει αντιμέτωπους με αντιδράσεις των επενδυτών.

Επιπλέον, επιχειρήσεις οι οποίες χρησιμοποιούν δανεισμό είτε έχουν μεγάλα ποσά βραχυπρόθεσμων υποχρεώσεων προς προμηθευτές, εργαζόμενους κλπ. , είναι πιο πιθανό να κάνουν χρήση τεχνικών χειραγώγησης πραγματικών κερδών. Αυτό το αποτέλεσμα προκύπτει από τις πιέσεις που δέχονται από τα εξωτερικά ενδιαφερόμενα μέρη για την τήρηση κάποιον όρων (covenants) στη περίπτωση του δανεισμού, και στη διατήρηση σχέσεων εμπιστοσύνης με αυτούς τους εξωτερικούς συνεργάτες.

Άλλος ένας παράγοντας που συμβάλλει στη χρήση πρακτικών χειραγώγησης κερδών, είναι οι ευκαιρίες που έχει η επιχείρηση να συμμετάσχει σε αυτές διαφεύγοντας τον εντοπισμό. Για παράδειγμα, οι εταιρείες που έχουν ως πάγια στρατηγική τη διατήρηση μεγάλης ποσότητας αποθεμάτων μπορούν να κρύψουν πιο εύκολα δραστηριότητες χειραγώγησης κερδών. Με τον ίδιο τρόπο, οι επιχειρήσεις με μεγάλη πίστωση στις πωλήσεις μπορούν πιο εύκολα να κάνουν χρήση αυτών των πρακτικών. Οι επιχειρήσεις μπορούν να προωθήσουν την πρόωρη αναγνώριση των πωλήσεων όταν κατέχουν υψηλά ποσά εισπρακτέων λογαριασμών αποφεύγοντας την ανίχνευση.

Τέλος οι ευκαιρίες ανάπτυξης της επιχείρησης είναι ένας παράγοντας που επηρεάζει την απόφαση χρήσης μεθόδων λογιστικής χειραγώγησης κερδών. Οι αναπτυσσόμενες εταιρείες είναι πιο επιρρεπείς στη χρήση της διαχείρισης των κερδών. Μια λογική εξήγηση γι' αυτό είναι ότι η χρηματιστηριακή αγορά είναι πιο απαιτητική για τις αναπτυσσόμενες επιχειρήσεις από τις άλλες, στο να επιτύχει η επιχείρηση ένα συγκεκριμένο επίπεδο εισοδήματος ή τουλάχιστον ένα μηδενικό επίπεδο αποδοχών, αντί των εμφάνισης ζημιών.

Επιπλέον, αξίζει να εξεταστούν σε μελλοντικές μελέτες, άλλες μεταβλητές που ενδεχομένως να είναι ενδεικτικές πραγματικών δραστηριοτήτων διαχείρισης και που θα μπορούσαν να βοηθήσουν στην ανίχνευση και την πρόληψη της διαχείρισης των κερδών. Ένα άλλο μέρος που αξίζει να εξεταστεί είναι τα αποτελέσματα της πραγματικής διαχείρισης των κερδών στη μελλοντική ανάπτυξη της επιχείρησης, τη μελλοντική τιμή των μετοχών και την αντίδραση της χρηματιστηριακής αγοράς. Επιπλέον, ένα μεγάλο πεδίο που αξίζει να αναλυθεί, έχει να κάνει με τη χρονική στιγμή στην οποία γίνεται η χρήση αυτών των μεθόδων και η εναλλαγή τους και ο συνδυασμός τους με τη χρήση μεθόδων χειραγώγησης δεδουλευμένων.