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İŞLETME ANABİLİM DALI
İNGİLİZCE MUHASEBE FİNANSMAN BİLİM DALI

**DETECTING INCOME SMOOTHING BEHAVIOUR OF
TURKISH LISTED COMPANIES THROUGH EMPIRICAL TESTS
USING ACCOUNTING CHANGES**

Doktora Tezi

ASUMAN ATİK

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Danışman: Prof. Dr. Necdet ŞENSOY

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ABSTRACT

Company managers have flexibility when selecting accounting methods that help to provide relevant, reliable and timely information about assets, liabilities, future cash flows, the real performance of their company. Sometimes this flexibility motivates managers to choose accounting methods or to change employed accounting methods in order to increase, decrease or smooth income figures.

Objective of this thesis is to detect income smoothing behaviours of Turkish listed firms through empirical tests using discretionary accounting changes. Parallel to Moses' (1987) study, income smoothing is accepted a motivation of discretionary accounting changes (DACs). The sample of the study is composed of the firms listed on ISE between 1998-2003 and made discretionary accounting changes. Using the smoothing behaviour index of Moses (1987), the sample firms are classified as smoothers and non-smoothers, and nearly 60 percent of the sample firms are smoothers and 40 percent of the firms are non-smoothers. Furthermore, relationship between smoothing behaviour and firm size, employee costs, ownership structure, industry, debt ratio, prechange earnings deviation and directional impact of the change is also analysed.

Most of the discretionary accounting changes were made in 1999 and 2001 that were the two big economical crises years. Managers who could not attain the expected earnings level with natural operations in those hard periods might have selected to arrange income figure with discretionary accounting changes. Analyses also show that the monetary effects of the discretionary accounting changes generally helped to decrease prechange earnings when they are higher than zero and to decrease losses of the firms.

In conclusion, income smoothing, the economical characteristics of the periods in which the discretionary accounting changes are made and the desire to have a net income close to zero are the possible motivations of the discretionary accounting changes.

ÖZET

Yöneticiler mali tablo kullanıcılarına sunulacak bilgilerin hazırlanmasında ve sunulmasında kullanacakları muhasebe metotlarını belirli sınırlar dahilinde serbestçe seçebilme esnekliğine sahiptirler. Asıl amaçları işletmenin varlıkları, borçları, gelecekteki nakit akışları, gerçek performansı hakkında, karar vericilerin kararlarıyla ilgili, zamanlı ve güvenilir bilgiler sunmaktır. Fakat bu esneklik yöneticilere kârlarının tutarını arttıran, azaltan veya düzleştiren¹ muhasebe metotlarını seçme veya kullanmakta oldukları metotları değiştirme seçeneği de sunmaktadır.

Bu tezin amacı İMKB firmalarının kâr düzleştirme davranışlarını isteğe bağlı muhasebe değişikliklerinin kullanıldığı ampirik testler vasıtasıyla saptamaktır. Moses'in (1987) çalışmasına paralel olarak, bu tezde de "kâr düzleştirme" isteğe bağlı muhasebe değişikliklerini motive eden bir faktör olarak kabul edilmiştir. Örnek kütleyi oluşturan 1998-2003 yılları arasında muhasebe değişikliği yapan İMKB firmaları, Moses'in (1987) kâr düzleştirme endeksi kullanılarak, "kâr düzleştiren" ve "kâr düzleştirmeyen" olarak sınıflandırılmışlardır. Firmaların yaklaşık % 60'ı kâr düzleştiren, % 40'ı ise kâr düzleştirmeyen firmalardır. Ayrıca firma büyüklüğü, işçi maliyetleri sahiplik yapısı, endüstri, toplam borç / toplam varlık oranı, muhasebe değişikliği öncesi kârın beklenen kârdan sapma miktarı ve muhasebe değişikliğinin etkisi gibi değişkenler ile kâr düzleştirme davranışı arasındaki ilişki incelenmiştir.

Çoğu isteğe bağlı muhasebe değişikliğinin iki büyük ekonomik krizin yaşandığı 1999 ve 2001 yıllarında yapıldığı görülmüştür. Ekonomik açıdan zor koşullarda doğal faaliyetleri ile hedefledikleri kâr rakamına ulaşamayan yöneticilerin isteğe bağlı muhasebe değişiklikleri yoluyla kâr rakamını ayarlamayı seçmiş olabileceği kanaatine varılmıştır. Analizler muhasebe değişikliklerinin parasal etkilerinin genellikle değişiklik öncesi kârı veya zararı azaltıcı yönde olduğunu da göstermektedir.

Sonuç olarak, kâr düzleştirme, isteğe bağlı muhasebe değişikliğinin yapıldığı dönemin koşulları ve sifıra yakın bir net kâr rakamına sahip olma isteği muhasebe değişikliklerini motive eden muhtemel etmenlerdir.

¹ Kâr düzleştirme, kâr rakamındaki keskin artış ve azalışların azaltılarak, yıllar itibarıyla istikrarlı hale getirilmesi olarak tanımlanabilir.

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LIST OF ABBREVIATIONS

AC	: Total Accruals
AICPA	: American Institute of Certified Public Accountants
BBA	: Big Bath Accounting
CA	: Creative Accounting
CEO	: Chief Executive Officer
CMB	: Capital Markets Board
CPA	: Certified Public Accountant
CV	: Coefficient of Variation
DA	: Discretionary Accruals
DAC	: Discretionary Accounting Change
DIR	: Directional Impact of Discretionary Accounting Change
EE	: Expected Earnings
EM	: Earnings Management
EPS	: Earnings per Share
FASB	: Financial Accounting Standards Board
FIFO	: First In First Out
GAAP	: Generally Accepted Accounting Principles
IAS	: International Accounting Standards
IPO	: Initial Public Offering
IS	: Income Smoothing
ISE	: Istanbul Stock Exchange
ITC	: International Trade Commission
LB	: The Lower Bound of Target Income
LIFO	: Last In First Out
MBA	: Master of Business Administration
ME	: Monetary Effect of Discretionary Accounting Changes
MNGOWN	: Managerial Ownership
NA	: Nondiscretionary Accruals
NOEMP	: Number of Employees

NPE : The group of the firms with negative prechange earnings
PE : Prechange Earnings
PED : Prechange Earnings Deviation
PhD : Philosophy of Doctorate
PPE : The group of the firms with positive prechange earnings
PUBOWN: Public Ownership
RE : Reported Earnings
R&D : Research and Development
ROA : Return on Assets
SB : Smoothing Behaviour
SEC : Securities and Exchange Commission
SFAS : Statement of Financial Accounting Standards
SINGLE: Single Largest Share
SRWM: Simple Random Walk Model
SSAP : Statement of Standard Accounting Practice
TASSETS: Total Assets
TD/TA: Total Debt to Total Assets
TOP3 : Total of Top Three Largest Shares
TSALES: Total Sales
UK : United Kingdom
UNION: Unionisation
US : United States of America
USA : United States of America

1. INTRODUCTION

Hepworth (1953, p.32) says that “fifty years ago principal attention of investors, financial analysts, employees, and the general public was on the balance sheet, however at the present time the focus is on the statement setting forth the periodic net income or earnings of businesses”. He talks about the first half of the twentieth century. When we look at the second fifty years of the century, we see that besides balance sheet and income statement, some other statements such as funds flow statement, cash flow statement and statement of changes in equity started to be prepared by companies.

Together with the other statements, income statement continues to be a very important tool generating information about firms and showing the success of their operations. Kieso and Weygandt (1997, p.137) say that the business and investment community use income statement to determine profitability, investment value, and credit worthiness. It provides investors and creditors the information that helps them predict the amounts, timing and uncertainty of future cash flows.

Kieso and Weygandt (1997, p.139) also point out one important limitation of income statement. Income amount is often affected by the accounting methods employed. For example, one company may choose to depreciate its plant assets on an accelerated basis, another may choose a straight-line basis. Assuming all other factors are equal, the income of the first company will be lower than that of the second even though the companies are essentially the same. Additionally, income measurement involves judgements. For example, one company in good faith may estimate the useful life of an asset to be 20-years while another company uses a 15-year depreciation period for the same type of asset.

Firms generally operate in very risky environments. The risks they face may be systematic, that is affecting all the companies operating in the same environment (same country, industry or sector) such as high inflation rate, high unemployment rate, economical recessions and unexpected political events. Other risks may emerge from the characteristics of firms (firm-specific risks), such as the capability of managers and employees, financial structure and growth potential of the firm, litigation against the firm, and so on.

Especially in Turkey, companies have been operating in a very risky economical environment. This high risk affects the operations and profitability of the firms and cause fluctuations in their income figures. Therefore the probability of attaining expected earnings level and having naturally smooth income streams are very low.

The most appropriate accounting methods for each situation are not (and can not be) described by the accounting rules and regularity bodies. Accounting managers have to choose the method that will help to present faithful, timely and clear information about the real performance, risks and opportunities of their firms. Especially for financial reporting purposes, judgement opportunity is given to accounting managers. However, this flexibility and opportunity to alter income amount with the accounting method used may motivate managers to employ accounting methods or to change the employed ones in order to increase, decrease or smooth income figures. Therefore their aim might be to manipulate income rather than to try to show real performance of their firms.

There are many incentives of accounting manipulations. For example, for tax purpose, in order to decrease tax liability a firm may want to decrease its income, or for book purpose, a firm that plans to make an initial public offering may try to increase its income in order to increase its share price. A manager who gains bonus as a percentage of net income may give accounting and even operational decisions, such as postponing advertising campaign to the next period or decreasing R&D budget to increase the income.

On the long term, accounting manipulations that provide a smooth income over the years are the most preferable ones for a manager and the general public because a smooth income stream is an indicator of a strong and stable company. A firm with smooth income is deemed as less risky and it has better relations with investors, creditors, suppliers, and workers.

On the other side, accounting manipulations deteriorate the usefulness of the financial statements. Investment and credit decisions are given by using manipulated financial information. This causes inefficient allocation of the resources and, weak and risky firms benefit more resources although they don't deserve.

The main objective of this thesis is “to detect income smoothing behaviour of Turkish listed companies through empirical tests using discretionary accounting changes”. Research methodology of this study is based on the study of Moses (1987). Moses (1987) accepted income smoothing as one of the motivations of making discretionary accounting changes (DACs) which are the voluntary changes in accounting policies and estimations made by management. He developed an index to determine smoother and non-smoother firms. The followings are the research questions of this study.

- (1) How many discretionary accounting changes did the Turkish listed companies make in the period 1998-2003?
- (2) What are the types and effects of the discretionary accounting changes?
- (3) According to the smoothing behaviour index of Moses (1987), how many firms that made DAC are classified as smoothers and non-smoothers?
- (4) What are the factors that affect the smoothing behaviour of the firms? Is there any relationship between smoothing behaviour and firm size, employee costs, ownership structure, industry, debt ratio, prechange earnings deviation and directional impact of the change?
- (5) Does “desire to have a net income (or loss) close to zero” motivate firms to make DACs?

Before deciding on the research methodology, an extensive literature survey is conducted and presented in part two and three. Part two summarises the literature related to financial reporting and accounting manipulations. Part three covers the subjects related to income smoothing which is the main subject of this thesis. Income smoothing is defined, the reasons (or motivations) of income smoothing and devices used to smooth income are explained. Empirical studies constituting income smoothing literature are classified and summarised.

Research design and methodology are presented in part four. The research objectives, sample of the research, smoothing measure, methods used to determine smoother and non-smoother firms, hypotheses and the variables that are used to test the hypotheses are explained in this part. Findings of the research are also presented in part four. Detailed explanations about discretionary accounting changes and the classification of smoother and non-smoother firms are given. The results of the statistical tests, which are conducted to find the factors affecting smoothing behaviour of the firms

and to find differences between the smoother and non-smoother firms, are summarised. Additionally, limitations of the study, comparison of the current study with similar two studies and recommendations for the further research, are presented in part four.

Last part of the thesis covers summary and conclusion. A general review is made and important points are emphasised again.



2. FINANCIAL REPORTING AND ACCOUNTING MANIPULATIONS

In today's world, quality financial reporting has gained much more importance, however incentives of managers to deteriorate the quality of financial reports through accounting manipulations have also increased. This part covers the two important subjects, which are financial reporting and accounting manipulations. Firstly, the definition and objectives of financial reporting will be explained and the importance of quality financial reporting will be emphasised. Then, accounting manipulations will be explained in detail. Studies that are related to each type of accounting manipulations including earnings management, big bath accounting and creative accounting will be summarised.

2.1. Financial Reporting

Financial information is provided to external parties through financial statements, however financial statements are not the only communication tool of the companies with the external parties. Presidents' letters, supplementary schedules in the corporate annual reports, prospectuses, reports filed with government agencies, news releases, management forecasts are examples of the other tools used while providing information (Kieso and Weygandt, 1997, p.6). Financial reporting is communicating and sharing the financial information of a company in many ways with the users of this information.

2.1.1. Objectives of Financial Reporting

According to Revsine (1991, p.21), the basic purpose of financial reporting is to provide a basis for contracting and decision making.

Meigs, et al. (2001, p.10) stresses the following three objectives of the financial reporting;

- The first objective of financial reporting is to provide information that is useful in making investment and credit decisions. The primary focus of external financial reporting is investors and creditors.

- The second objective is to provide information that is useful in assessing the amount, timing, and uncertainty of future cash flows. Investors and creditors are interested in the future cash flows to them, so it is important to provide information that permits that kind of analysis.
- The most specific objective of financial reporting is to provide information about the enterprise's resources, claims to those resources and how both the resources and claims to those resources change over time.

Miller and Bahnsen (2002, p.4) say that the management of a company has only two things to offer to investors and creditors; (1) opportunities to receive future cash flows and (2) information about these opportunities. Therefore managers need to focus their attention on enhancing both the real opportunities and the quality of the financial information provided.

2.1.2. Importance of Quality Financial Reporting

George (2003, par.5) says that different groups define financial reporting quality in different ways. In USA, the Financial Analysts Federation (FAF) provides summary evaluations of disclosure practices for a sample of companies, based on their aggregate disclosure efforts over a fiscal year. Companies are evaluated, based on various financial disclosures and statements, published information such as press releases and fact books, and direct disclosures to analysts. Analysts evaluate the timeliness, detail, and clarity of information presented.

FASB Concepts Statement 2, "Qualitative Characteristics of Accounting Information", defined quality as a hierarchy of accounting qualities. Relevance and reliability were the most important ones. In addition, the statement has a set of criteria, such as representational faithfulness, verifiability, neutrality, predictive value, feedback, comparability, consistency, and timeliness (George, 2003, par.6).

As a third group that George (2003, par.7) pointed out, the 1994 AICPA Special Committee on Financial Reporting (the Jenkins Committee) doesn't refer to the "quality of financial reporting" but rather the "quality of reported earnings". Quality is related to both the relevance of the information and the prediction ability of that information. In identifying quality, the Jenkins Committee used several concepts that emphasise users' needs, such as understanding the nature of a company's

businesses and performance, changes affecting the company, management's perspective, and others. In order to stress the importance of quality financial reporting, Miller and Bahnson (2002, p.8) uses the following links between financial information and security prices.

Figure 2.1. The Relationship between Financial Information and Security Prices

Incomplete information creates uncertainty	More complete information reduces uncertainty
⇓	⇓
Uncertainty creates risk for investors and creditors	Less uncertainty reduces risk for investors and creditors
⇓	⇓
Risk makes investors and creditors demand higher rate of return	Reduced risk makes investors and creditors satisfied with a lower rate of return
⇓	⇓
A higher rate of return for investors and creditors is a higher cost of capital for the firm and produces lower security prices	A lower rate of return for investors and creditors is a lower cost of capital for the firm and produces higher security prices

Source: Miller and Bahnson, (2002), Quality Financial Reporting, p.8.

Managers may object to provide more information because of the increasing preparation costs. However these additional costs are still less than the benefit provided to financial information users. Quality financial reporting reduces the efforts of financial information users because firms do it once and provide it to multitude of users who otherwise would individually have to replicate the firms' efforts. Another benefit will be that information users will reach the information from primary sources not from less reliable secondary sources (Miller, 2001, p.55).

On the other side, besides being object to provide more financial information, sometimes managers intentionally take actions to deteriorate the quality of financial reports that they provide. Some managers choose to mislead third parties through fraudulent financial reporting and accounting manipulations that may be in or out of the limits of accounting rules. In the near past, especially in USA many accounting scandals came to light and attracted the attention of the whole world. Some examples are Enron, Tyco, and Worldcom Cases.

Reinstein and McMillan (2004) studied the Enron Case. According to them, the erosion of the auditors' independence, the desire to create wealth rather than to ensure fairness, accuracy and transparency, the explosion of stock options and derivatives are the reasons of the slide toward the

dark side of the accounting (Reinstein and McMillan, 2004, p.956). Ronen (2002) also gives the following examples for the reasons of grey accounting; investors' irrational behaviour, decreased morality of CEOs, the failure of regulators (gatekeepers), and financial reporting standards that have encouraged auditors to accept accounting gimmicks.

Whatever the reasons, these types of wrong behaviours of managers, which lead low-quality financial reporting, cause enormous losses to firms, individuals and the whole society. Resources in the economy are allocated inefficiently, more risky and weak firms benefit from more resources although they don't deserve it. Investors' confidence to the financial reports decrease and efficient flow of the funds in the economy deteriorates.

2.1.3. Suggestions to Improve Quality of Financial Reporting

Miller (2001, p.54) suggests financial professionals to follow the accounting rules that are recommended by the accounting authority rather than those are permitted. Miller's (2001, p.54) second suggestion is to hire good auditors instead of cheap and easy auditors. It doesn't do any good to publish high and smooth earnings and a low debt/equity ratio if no one trusts the auditors.

Quality financial reporting must be the natural consequence of quality work performed by management, auditors, and accounting standards-setters; and in order to have quality financial reports, high-quality accounting standards should be developed (George, 2003, par.9). George (2003, par.11) also quotes Arthur Lewitt's description of accounting standards, "Good standards, like good cameras, produce sharper, more accurate pictures. Weak standards, like bad cameras, are unreliable, good photos are rare, most images are fuzzy and out of focus."

According to George (2003, par.25), another important factor that provides high-quality financial reporting is auditor independence. Firm managers hire, fire and pay both their internal and external auditors, and therefore auditors are not independent from managers. George's (2003, par.27) suggestion for the solution of this problem is that a third party, a public authority, should hire, fire and pay internal and external auditors. A mandatory fee, which may be determined as a percentage of a firm's revenues, assets or income, should be collected in order to pay the internal and external independent auditors.

Epstein and Palepu (1999) conducted a research in order to understand the type and amount of financial data that is needed by financial analysts who are one of the most important users of financial reports. This study shows that financial analysts want a better communication with the management of firms. Financial accountants and managers should pay more attention on the preparation of annual reports. Not only the needs of board of directors, the needs of all stakeholders (including institutional and individual investors, creditors, and employees) should be taken into consideration in the preparation stage (Epstein and Palepu, 1999, p.49, 50).

A company's strategy, the key elements of its business model, and its key success and risk factors should be communicated with stakeholders. According to the study of Epstein and Palepu (1999, p.51, 52), footnotes frustrate financial analysts the most, and more understandable and explanatory footnotes are also necessary for a better financial reporting.

2.2. Accounting Manipulations

Accounting rules don't describe the most appropriate accounting methods for each situation, rather accountants have to decide on the best method that will help to show the real performance, risks, opportunities and economical position of firms. However sometimes accountants choose accounting methods in order to increase, decrease or smooth income figure of their firms. In other words, they try to manipulate the appearance of the financial position of their firms.

With the purpose of altering income figure, managers also change their operations, for example they accelerate or delay sales, R&D, and advertising projects, make big investments or write offs. Even further, they apply some fraudulent accounting techniques.²

Gowthorpe and Amat (2004, p.8) broaden the perspective and categorise the manipulative behaviours of financial statement preparers as (1) macro-manipulation and (2) micro-manipulation. Macro-manipulation is defined as the lobbying activities of financial statement preparers when they feel a proposal to alter accounting regulation will be disadvantageous to them. Micro-manipulation

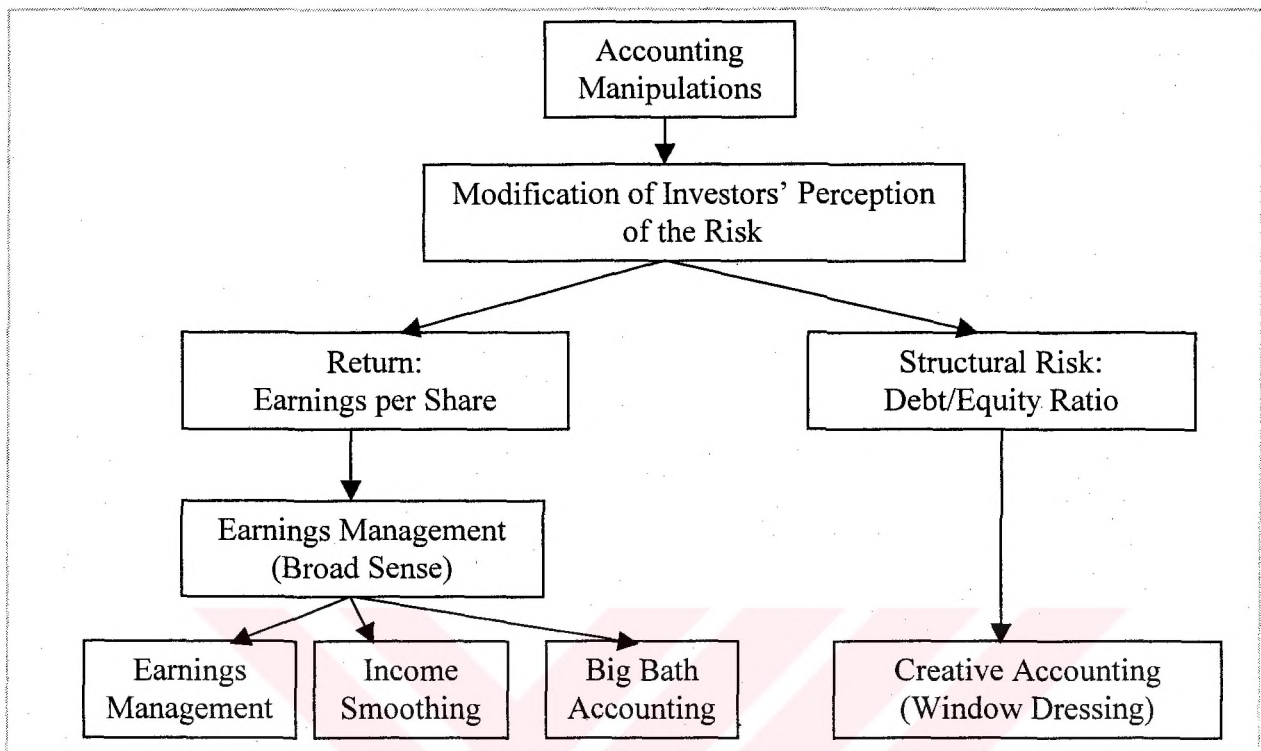
² There are many studies conducted to search the manipulative and fraudulent behaviour of accounting managers and these studies will be presented in the following parts of this literature review.

involves preparers' activities that are made in order to alter accounting disclosures at the individual entity level. In both cases, financial information providers are interested in changing the financial information to suit their own purposes.

In the academic literature, there is no consensus on the terminology related to accounting manipulations. Income smoothing (IS), earnings management (EM), big bath accounting (BBA) and creative accounting (CA) are the related concepts that are faced mostly while reviewing the literature. Some authors claim that there are clear distinctions between these concepts and some use them like all have the same meaning. Although there are many studies especially about income smoothing and earnings management, the studies that describe accounting manipulations and differentiate them from each other and from fraud are very rare.

Stolowy and Breton (2000) also recognised the need for the development of a framework for all these concepts. According to them, the desire to influence the market participants' perception of the risk associated with a firm is the main reason for the manipulation of accounts. On this basis, they developed a model dividing the risk into two components and identifying the related targets in the financial statements. The first component of the risk is associated with the variance of return, measured through the earnings per share. The second component relates to the risk associated with the financial structure of the company, measured by the debt/equity ratio (Stolowy and Breton, 2000, p.2). Their framework, shown in Figure 2.2, classifies the activities of accounting manipulations in relationship with the two aspects of risk.

Figure 2.2. A Framework for Classifying Accounting Manipulations



Source: Stolowy and Breton, "A Framework for the Classification of Accounts Manipulations", p.4.

As one of the rare studies, Dechow and Skinner (2000) try to show the distinction between fraud and accounting manipulations. According to them, clear conceptual distinction between fraudulent accounting practices (that clearly demonstrate intent to deceive) and the judgments and choices that fall within the accounting standards (and sometimes which may comprise earnings management) can be made according to intents of managers. However, it is very difficult to understand the real intents of the managers and distinguish earnings management from the legitimate exercise of accounting discretion. With the following figure, Dechow and Skinner (2000, p.239) explain the distinction between fraudulent accounting and manipulative but acceptable accounting choices.

Figure 2.3. The Distinction between Fraud and Earnings Management

	Accounting Choices	Real Cash Flow Choices
	<u>Within GAAP</u>	
↑	- Overly aggressive recognition of provisions	- Delaying sales
“Conservative” Accounting	- Overvaluation of acquired in-process R&D in purchase acquisitions	- Accelerating R&D or advertising expenditures
	- Overstatement of restructuring charges and asset write-offs	
“Neutral” Earnings	- Earnings that result from a neutral operation of the process	
	- Understatement of the provision for bad debts	- Postponing R&D or advertising expenditures
“Aggressive” Accounting	- Drawing down provisions or reserves in an overly aggressive manner	- Accelerating sales
	<u>Violates GAAP</u>	
“Fraudulent” Accounting	- Recording sales before they are “realisable”	
	- Recording fictitious sales	
↓	- Backdating sales invoices	
	- Overstating inventory by recording fictitious inventory	

Source: Dechow and Skinner, “Earnings Management: Reconciling the Views of Accounting Academics, Practitioners, and Regulators”, p. 239.

Buckmaster (2001) made an extensive literature survey on income smoothing and found studies and researches that were conducted at 1890s. On the other side, earnings management concept started to be used only after 1980s. EM quickly became a widely accepted and popular concept and many times used instead of IS. Buckmaster (2001, p.2) accepts IS and EM literature as a whole and says that IS literature is an important part of larger EM literature. In spite of that, he didn't include the EM studies in his literature survey. Similarly, Healy and Wahlen (1999) made an extensive literature survey on EM and excluded IS studies from their literature review. Therefore we can say that although IS and EM literatures are thought as parts of a whole, they differentiate from each other.

Big bath accounting is also one of the concepts faced in the related academic literature. On the other side, we see many other concepts which are widely used by journalists and financial analysts rather than academics in order to mean IS, EM or BBA practices. Examples for these concepts are creative accounting, aggressive accounting, cosmetic reporting, financial engineering and window dressing.

Stolowy and Breton (2000, p.2) point out the deficiencies of the existing literature as (1) failing to develop a general model comprising all the manipulating activities and (2) focusing only one category of accounting manipulations and ignoring others. Although main subject of this thesis is income smoothing, especially not to have the second deficiency, an extensive literature review about income smoothing, earnings management, big bath accounting and creative accounting will be presented in the following parts.

2.2.1. Income Smoothing

“Smoothing moderates year-to-year fluctuations in income by shifting earnings from peak years to less successful periods. Income smoothing involves the repetitive selection of accounting measurement or reporting rules in a particular pattern, the effect of which is to report a stream of income with a smaller variation from trend than would otherwise have appeared” (Copeland, 1968, p.101–102).

As understood from the definition, main aim is to decrease the fluctuations in the income figure and to create more stable earnings streams. In the literature, many incentives of income smoothing are explained, a few are;

- to have better relations with company owners, investors, creditors, suppliers, workers, and so on,
- to have higher security prices and lower cost of capital,
- to benefit from bonus compensation,
- to benefit from tax advantage (tax purpose),
- to create more stable capital markets.

Managers use different types of instruments to smooth income, such as changing accounting principles or estimates, shifting costs between expense and asset accounts, timing of sales of investments, advertising campaigns and R&D projects. Here, another important point is “to decide

on the income figure that will be smoothed". Income before extraordinary items, income before tax or net income may be chosen as the smoothing object.

In the income smoothing literature, we see that most of the studies and researches were conducted to develop models in order to detect IS and to find out the IS practices of firms. There are also many other studies that tried to find out the relationship between IS and firm value and the sector that firms operate in. The consequences of IS and IS behaviour of banks are also the other important subjects of the related studies.

Because income smoothing is the main subject of this thesis, more about income smoothing and the studies constituting the IS literature will be presented in Part 3.

2.2.2. Earnings Management

Earnings management refers to an intentional structuring of reporting or production/investment decisions around the bottom line impact. It encompasses income smoothing behaviour but also includes any attempt to alter reported income that would not occur unless management were concerned with the financial implications. For example, if management chooses not to undertake an advertising campaign because the campaign will not be cost effective given the revenue projections, this decision would not be considered earnings management, it is just a sound decision. In contrast, if a company has sufficient funds to undertake an advertising campaign and believes it is cost effective but decides not to conduct the campaign because it hits to earnings, such a decision is an example of earnings management (Ayres, 1994, p.28).

Accrual accounting differs from cash accounting by the timing. On the entire life of the firm there may be no difference between both methods. On the short term, the matching of revenues and expenses will create differences. There is a standardised way of treating these differences. Earnings management is just proposing another way of treating these differences, bringing the profits in the year in need while pushing the expenses away. It is essentially gambling, hoping that the profit will be better in the future to cover those delayed expenses (Stolowy and Breton, 2000, p.5).

Healy and Wahlen (1999, p.368) define earnings management (EM) as “using managerial judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers”.

After making a literature survey, Healy and Wahlen (1999, p.367) say that the primary focus of earnings management research has been on detecting whether and when earnings management takes place. In general the evidence found in these researches are consistent with that firms are managing earnings to window-dress financial statements prior to public securities’ offerings, to increase corporate managers’ compensations and job security, to avoid violating lending contracts and to reduce regulatory costs or to increase regulatory benefits.

According to Ayres (1994, p.29), there are three methods to manage earnings:

- (1) *Accrual Management*: Accrual management refers to changing estimates such as useful lives, collectability of receivables, and other year-end accruals to try to alter reported earnings in the direction of a desired target. While accrual management is often difficult to observe directly, analysis of patterns in accruals may reveal that the cash flow changes are moving in a different direction from accruals.
- (2) *Adoption of Mandatory Accounting Policies*: The FASB standards are enacted with a two to three-year transition period prior to mandatory adoption but early adoption is encouraged. Managers may choose adopting the standards earlier for the purpose of managing earnings. Early adoption of accounting standards that increase income may convey an impression that a company needs to find income from wherever possible. Early adoption can lower investors’ perception of earnings quality.
- (3) *Voluntary Accounting Changes*: Another method of managing earnings is to switch from one generally accepted accounting method to another. The use of voluntary accounting changes to manage earnings results in a signal similar to that associated with early adoption of mandatory standards. The company is viewed as managing earnings.

2.2.2.1. Models Developed to Detect Earnings Management

In earnings management literature, there are many studies that try to develop models to be used in detecting EM behaviour of firms. Most of these models use discretionary accruals, but as Dechow, et al. (1995, p.197) says, the starting point of the measurement of discretionary accruals is measurement of total accruals. Healy (1983) firstly used total accruals, therefore we start with the explanation of the Healy Model.

2.2.2.1.1. Healy Model

Healy (1983, 1985), as cited in DeAngelo (1986), has developed an empirical approach that uses the firm's operating cash flows as a proxy for what earnings would have been when there is no managerial income manipulation. His methodology estimates the extent of the manipulation as the total accounting accrual in the period of interest as the difference between reported earnings and operating cash flows in that period.

$$\text{Total Accounting Accruals} = (\text{Reported Earnings} - \text{Operating Cash Flows})$$

An important advantage of the accrual method is that it can potentially reveal the subtle income-reducing techniques that managers have incentives to employ because such techniques are less subject to detection by outsiders. For example, accounting accruals reflect managerial decision to write down assets, to recognise or defer revenues, and to capitalise or expense certain costs. They also capture the effect of accounting estimates, changes in those estimates, and changes in accounting methods. Healy (1983) also pointed out several limitations of this method. The most important one is that the total accrual contains both a discretionary and nondiscretionary component.

Total accruals (AC) in a given period (t) = discretionary accruals + nondiscretionary accruals

Symbolically,
$$AC_1 = DA_1 + NA_1$$

If NA_1 is large relative to AC_1 , then DA_1 measure is a poor proxy for the extent of income manipulation in period $t = 1$.

2.2.2.1.2. DeAngelo Model

In her study, DeAngelo (1986, p.400) examines conflicts of interest between insider-managers and outside stockholders of public corporations, and thinks that these conflicts are especially severe in a management buyout or going private transactions through which managers of a public corporation purchase all common stock held by outsiders. She examines the changes in accruals, in earnings and in cash flows of the 64 firms of which managers proposed to purchase all publicly held common stock and go private during 1973 – 1982.

DeAngelo (1986) bases her study on Healy's empirical approach, but she also makes some modifications and assumptions. She thinks that NA_1 might be both large and systematically negative for many companies, even absent systematic income manipulation. Therefore, $AC_1 < 0$ could generate a wrong inference that managers had deliberately understated earnings, when the correct explanation is that total accruals normally contain a negative nondiscretionary component. For example, total accruals may be negative because of depreciation expense which by itself implies a negative accrual and which is a major component of total accruals (DeAngelo, 1986, p.409).

DeAngelo (1986, p.409) takes the total accrual in the prior period as a benchmark for what the current accrual would be, absent expected income manipulation in the buyout period. She tests whether the average value of the "abnormal" accrual is significantly negative for her sample firms in periods before the buyout. If so, it can be interpreted as the evidence of a systematic earnings understatement. This interpretation bases on the assumption that the average change in nondiscretionary accruals, $(NA_1 - NA_0)$, is approximately zero, so that a significant average decrease in total accruals, $(AC_1 - AC_0)$ primarily reflects a significant decrease in discretionary accruals, $(DA_1 - DA_0)$.

$$(AC_1 - AC_0) = (DA_1 - DA_0) + (NA_1 - NA_0)$$

In her study, although accrual changes were negative as predicted, they were not significantly different than other years' accruals. Therefore the empirical evidence didn't support that managers of sample firms systematically understated earnings before management buyouts.

2.2.2.1.3. McNichols and Wilson Model

McNichols and Wilson (1988, p.2) also studied the relationship between discretionary accruals and earnings management. They say that their approach differs from previous earnings management studies in that they consider a single accrual, which is the “provision for bad debts”, rather than a collection of accruals and in that they use GAAP to model what this accrual should measure given no earnings management. They view manipulation of provision as one of several ways to manage earnings.

By modelling the provision for bad debts, first, they attempt to isolate a discretionary accrual proxy that is substantially free of nondiscretionary components. Second, although they do not detect manipulation of accruals other than the provision for bad debts, the results are more precise because if the discretionary accrual measure represents a small part of the total discretionary component of income, it can fail to reflect EM in situations where other discretionary components are manipulated. Results of their study showed that the discretionary component of the provision for bad debts is income decreasing for firms whose earnings are unusually high or low (McNichols and Wilson, 1988, p.2, 3).

2.2.2.1.4. Jones Model

Jones (1991, p.193) investigates whether firms that would benefit from import relief (such as tariff increases and quota reductions) attempt to decrease earnings through earnings management during import relief investigations by the US International Trade Commission (ITC). The import relief determination made by the ITC is based on several factors such as actual and potential decline in output, sales, market share, profits, productivity, return on investment and utilisation capacity, actual and potential negative effects on cash flow, inventories, employment, wages and so on. The use of accounting numbers in import relief regulation provides incentives for managers to manage earnings (or to decrease earnings) in order to increase the likelihood of obtaining import relief and/or increase the amount of relief granted.

The sample used in this study is restricted with the import relief investigations that require the ITC to make an inquiry determination. The empirical tests are based on the sample of 23 firms from five industries (Jones, 1991, p.204, 206). Jones (1991, p.206) says that EM can be achieved by various means such as the use of accruals, changes in accounting methods, and changes in capital structure. Her study focuses on total accruals as the source of earnings management.

Because Jones (1991, p.206, 207) thinks that total accruals should capture a larger portion of managers' manipulations, the discretionary portion of total accruals is used in this study to capture earnings management rather than the discretionary portion of a single accrual account as used in McNichols and Wilson (1988). Total accruals are calculated as the change in noncash working capital before income taxes payable less total depreciation expense. The change in noncash working capital before taxes is defined as the change in current assets other than cash and short-term investments less current liabilities and income taxes payable.

Jones (1991, p.210) says that DeAngelo's model supports the EM hypothesis if one assumes that the difference between current and prior year accruals is due to changes in discretionary accruals because nondiscretionary accruals assumed to be constant from period to period. To relax this assumption, she uses the following expectation model for total accruals and to control for the changes in the economic circumstances.

$$TA_{it} / A_{it-1} = \alpha_i [1 / A_{it-1}] + \beta_{1i} [\Delta REV_{it} / A_{it-1}] + \beta_{2i} [PPE_{it} / A_{it-1}] + e_{it}$$

Where:

- TA_{it} : total accruals in year t for firm i
 ΔREV_{it} : revenues in year t less revenues in year t – 1 for firm i
 PPE_{it} : gross property, plant and equipment in year t for firm i
 A_{it-1} : total assets in year t for firm i
 e_{it} : error term in year t for firm i
i : 1, ..., N firm index
t : 1, ..., T year index for the years included in the estimation period for firm i

In the equation, gross property, plant and equipment and change in revenues are included in the expectancy model to control for changes in nondiscretionary accruals caused by changing conditions (Jones, 1991, p.211). Ordinary least squares method is used to obtain estimates. The results of the empirical test support the earnings management hypothesis suggesting that managers make income-decreasing accruals during import relief investigations. Discretionary accruals are more income decreasing during the year the ITC completed its investigation than would otherwise be expected (Jones, 1991, p.212, 223).

2.2.2.1.5. DeFond and Jiambalvo Model

Other researchers in this area are DeFond and Jiambalvo (1994). They expect debt covenant restrictions to influence accounting choices in the year preceding and the year of violation. Opposite to the studies relied on leverage as a proxy for the existence and tightness of accounting-based covenants, in this study they examine the abnormal accruals of firms known to have violated debt covenants. They use two accruals measures; total accruals (equals to the difference between net income and operating cash flows) and working capital accruals (equal to the sum of changes in inventory, accounts receivable, and other current assets, less the sum of changes in accounts payable, income taxes payable and other current liabilities). Traditionally, working capital accruals are viewed as more susceptible to management manipulation than nonworking capital accruals (DeFond and Jiambalvo, 1994, p.145, 155, 158).

Two tests of accruals manipulation are performed for both total and working capital accruals. The first test involves a time-series approach as in Jones (1991). The second test uses the same independent variables as in Jones (1991) but the models of normal accruals are estimated cross-sectionally in the year prior to and the year of violation using the firms in the same industries with the violator firm. Both models indicate that violator firms have abnormal total and working capital accruals that are significantly positive. Thus, there is substantial evidence that is consistent with positive manipulation in the year prior to violation (DeFond and Jiambalvo, 1994, p.158, 174).

2.2.2.1.6. Modified Jones Model

The Modified Jones Model is proposed by Dechow, et al. (1995, p.199). The modification of Jones Model is designed to eliminate the conjectured tendency of the Jones Model to measure discretionary accruals with error when discretion is exercised over revenues. In the modified model, nondiscretionary accruals are estimated during the event period (e.g. during the periods in which earnings management is hypothesised) as:

$$NDA_t = \alpha_1 (1 / A_{t-1}) + \alpha_2 (\Delta REV_t - \Delta REC_t) + \alpha_3 (PPE_t)$$

Where:

- TA_{it} : total accruals in year t for firm i
 ΔREV_{it} : revenues in year t less revenues in year t – 1 for firm i
 ΔREC_t : net receivables in year t less net receivables in year t-1 scaled by total assets at t-1
 PPE_{it} : gross property, plant and equipment in year t for firm i
 A_{it-1} : total assets in year t for firm i
 e_{it} : error term in year t for firm i
i : 1, ..., N firm index
t : 1, ..., T year index for the years included in the estimation period for firm i

The estimates of α_1 , α_2 , α_3 and nondiscretionary accruals during the estimation period (in which no systematic earnings management is hypothesised) are those obtained from the original Jones Model. The only adjustment relative to the original Jones Model is that the change in revenues is adjusted for the change in receivables in the event period. The original Jones Model implicitly assumes that discretion is not exercised over revenue in either the estimation period or the event period. The modified version of the Jones Model assumes that all changes in credit sales in the event period result from earnings management. This is based on the reasoning that it is easier to manage earnings by exercising discretion over the recognition of revenue on credit sales than it is to manage earnings by exercising discretion over the revenue on cash sales (Dechow, et al., 1995, p.199).

2.2.2.1.7. Industry Model

The Industry Model, relaxes the assumption that nondiscretionary accruals are constant over time. However, instead of attempting to directly model the determinants of nondiscretionary accruals, the Industry Model assumes that variation in the determinants of nondiscretionary accruals are common across firms in the same industry (Dechow, et al., 1995, p.199).

Dechow, et al. (1995, p.194) evaluates alternative accrual-based models for detecting earnings management. They say that existing models range from simple models in which discretionary accruals are measured as total accruals, to more sophisticated models that attempt to separate total accruals into discretionary and nondiscretionary components. At detecting earnings management, they noticed the absence of systematic evidence bearing on the relative performance of these alternative models. Dechow, et al. (1995, p.201) chose the sample of 1000 randomly selected firm-years and each of the five discretionary accrual methods (the Healy Model, the DeAngelo Model, the Jones Model, the Modified Jones Model and Industry Model) were applied on these sample firm-years. This enabled them to make comparison between the methods. Findings of their study showed that although a modified version of the Jones Model provides the most powerful tests of earnings management, in general the tests are poor models to detect earnings management. They propose that further research to develop models that generate better-specified and more powerful tests will enhance the ability to detect earnings management (Dechow, et al., 1995, p.223).

2.2.2.1.8. Beneish Model

Beneish (1997, p.271) presents a model to detect earnings management among firms experiencing extreme financial performance, and compares the model's performance to that of discretionary accrual models. The experimental sample consists of non-regulated firms which were either charged by the Securities and Exchange Commission (SEC) with Generally Accepted Accounting Principles (GAAP) violation or which publicly admitted to violating GAAP in the period 1987-1993 (labelled as GAAP violators). The control sample consists of firms with large positive discretionary accruals (labelled aggressive accruers) (Beneish, 1997, p.272).

After the SEC sources and news media searches, 64 firms were identified as GAAP violators. Some examples for the type of GAAP violation are recording fictitious revenue, improperly using the percentage of completion method, fictitious inventory, failure to write-off uncollectibles and obsolete inventory, reporting non-existing assets and so on (Beneish, 1997, p.277, 278).

Beneish (1997, p.283) determined seven potential variables which proxy for incentives and / or ability to violate GAAP:

- (1) Capital Structure: Incentives to violate GAAP increase with leverage if managers seek to get less costly access to capital or possibly avoid debt covenant.
- (2) Prior Market Performance: Incentives to violate GAAP increase with declining stock prices.
- (3) Ownership Structure: Incentives to violate GAAP increase with the percentage of shares held by management. However, high manager ownership firms tend to have a smaller number of shareholders. If a smaller number of shareholders increases the likelihood that shareholders closely monitor management, managers may be less able to engage in practices which violate GAAP.
- (4) Time Listed: Financial statement manipulations are generally seen shortly after initial public offerings. Younger firms may thus be subject to closer scrutiny if SEC perceives them as higher risks. Such perception would be consistent with evidence that younger firms are more likely to experience financial distress.
- (5) Sales Growth: If stock price responses to declines in growth depend on the level of growth, then managers of growth firms facing a slowdown have greater incentives to violate GAAP.
- (6) Prior Positive Accrual Decisions: Incentives to violate GAAP may also increase if managers who have previously made income-increasing accruals either attempt to avoid accrual reversals or run out of ways to increase earnings.
- (7) Independent Auditors: There is a quality distinction between auditor firms. Independent auditors' relative abilities to detect GAAP violation may vary, so firms that violate GAAP are less likely to be audited by big 6 firms (now big 4).

Six of these seven variables were designated as indexes because they compare financial statement measures in the year of GAAP violation to the prior year. These six indexes are: (1) Days in receivables index, (2) Gross margin index, (3) Asset quality index, (4) Depreciation index, (5) Sales, general and administrative expenses index, and (6) total accrual to total assets.

The starting point while developing these variables and these indexes was that accounting is a double entry system and GAAP violators cannot inflate revenues or deflate expenses without simultaneously inflating an asset account. Beneish Model is written as follows:

$$M = \beta' X_i + \epsilon_i$$

Where M is a dichotomous variable coded 1 for violators and 0 otherwise; X is the matrix of explanatory variables, and e is a vector of mean zero independent and identically normally distributed residuals. Beneish (1997) estimated the model using unweighted probit³, under the assumption that the control sample of aggressive accruals would approximate the population from which GAAP violators were drawn (Beneish, 1997, p.282).

Beneish (1997, p.288) compares GAAP violators (43 GAAP violator firms) to both aggressive accruals (1764 firms) and aggressive accruals with increasing sales along the described variables. Comparisons indicate that GAAP violators are younger, more leveraged growth firms that experienced poorer stock market performance, a decline in receivables and inventory turnovers, and a deterioration of gross margins and asset quality. Additionally, their accruals were lower in the year of violation, but they are more likely to have had positive accruals in the prior year.

Beneish (1999) made some modifications in this model and replicated the study. The differences of the second study are; (1) 74 (instead of 64) sample firms were included into the study, (2) these firms were in the same industry, (3) the set of variables of that study provided a more parsimonious model than the previous model (Beneish, 1999, p.35).

After making the analyses, Beneish (1999, p.30) found that the probability of manipulation increases with (1) unusual increases in receivables, (2) deteriorating gross margins, (3) decreasing asset quality, (4) sales growth, and (5) increasing accruals.

³ Probit analysis is a form of regression analysis appropriate for cases in which the dependent variable is dichotomous (e.g. the firm either is or is not a manipulator) (Beneish, 1999, p.35). For example, 1 if it is a manipulator and 2 if it is a non-manipulator.

Küçüksözen and Küçükkocaoğlu (2004) used Beneish (1999) model in order to detect financial information manipulation of Turkish listed firms. They analysed the financial statements of 126 sample firms (financial institutions were excluded from the study) in the period 1992-2002. 1997 was selected as the base year because economical conditions were more stable in that year. 27 firms were determined as the financial information manipulators in 1997 and the control sample included 99 firms that were not manipulators or not determined as manipulators (Küçüksözen and Küçükkocaoğlu, 2004, p.33).

Comparison of the manipulator and non-manipulator firms shows that (Küçüksözen and Küçükkocaoğlu, 2004, p.34);

- (1) According to average total assets of these two groups, manipulator firms are smaller than control group firms,
- (2) Manipulator firms have less working capital, even average working capital is negative which means that they use short-term financing,
- (3) Manipulators have higher debt ratios,
- (4) Manipulators' sales growth is a little bit higher than the control group.

Küçüksözen and Küçükkocaoğlu (2004, p.38) use additional two variables, which were not included in the Beneish studies. They are (1) inventory to sales ratio and (2) financing expenses to sales ratio.

After analyses, they found that (Küçüksözen and Küçükkocaoğlu, 2004, p.33).;

- (1) Days in receivables index, gross margin index, depreciation index and financing expenses to sales index variables significant at 95 % confidence level,
- (2) Asset quality index and inventory to sales index variables are significant at 90 % confidence level.

Therefore, these variables can be used as indicators of financial information manipulators.

2.2.2.2. Motivations of Earnings Management

Many motivations for earnings management have been examined in the literature. They include motivations arising from: (1) Capital market expectations, (2) Contracts that are written in terms of accounting numbers, and (3) Anti-trust or other governmental regulations (Healy and Wahlen, 1999, p.370).

In fact, generally researches conducted to detect EM have hypotheses indicating the possible motivations for EM behaviour. For example, Jones (1991) thought that decreasing earnings to benefit from import relieves of government is one motivation for EM, and she conducted a study to investigate it. DeAngelo (1986) studied on management buyout cases, she thinks that before the buyout, managers have the motivation to decrease earnings and consequently the price of the firm. Other examples may be the studies of Teoh, et al. (1998), Rangan (1998), Roosenboom, et al. (2003), Yoon and Miller (2002), and Kinnunen, et al. (2000). These studies mainly focus on the share price of issuing firms and the motivation for EM was thought as the intention to rise stock prices before the issues. Some studies point out earnings based bonus plans for managers as the motivation for earnings management, such as Healy (1983, 1985) and Guidry, et al. (1999). Political costs proposed by Key (1997) and tax considerations proposed by Keating, et al. (2000) are other examples for incentives of EM.

In the following parts, the studies examining the motivations of earnings management will be summarised.

2.2.2.2.1. Desire to Improve the Relationship with Stakeholders

Burgstahler and Dichev (1997, p.99, 101) examine the frequencies of increases and decreases in earnings of firms excluding banks and financial institutions for the years 1976-1994. They hypothesise that earnings are managed in order to avoid earnings decreases and losses. There are many motivations to report higher earnings, such as (Burgstahler and Dichev, 1997, p.122);

- Customers are willing to pay a higher price for goods because the firm is assumed more likely to honour warranty and service commitments.

- Suppliers offer better terms, both because the firm is more likely to make payments due for current purchases and because the firm is more likely to make larger future purchases.
- Lenders offer better terms because the firm is less likely to either default or delay loan payments.
- Valuable employees are less likely either to leave or to demand higher salaries to stay.

Burgstahler and Dichev (1997, p.99) found unusually high frequencies of small increases in earnings and unusually high frequencies of small decreases in earnings and small losses. They also got evidence that two components of earnings, cash flow from operations and changes in working capital, are used to achieve increases in earnings.

Beatty, et al. (2002, p.547) expects that the shareholders of public banks rely more on earnings based measures while evaluating the performance of the bank than private banks' shareholders do. Therefore avoiding earnings decreases or providing earnings increases is more important for public banks. Similar to Burgstahler and Dichev (1997) study, they compare samples of publicly and privately held banks to examine whether the high frequency of small earnings increases relative to small earnings decreases reported by public firms is attributable to earnings management. Consistent with their expectation, they found that relative to private banks, public banks: (1) report fewer small earnings declines, (2) are more likely to use the loan loss provision and security gain realisations to eliminate small earnings decreases, and (3) report longer strings of consecutive earnings increases.

Kallunki and Martikainen (1999, p.249) investigate whether firms manage earnings to achieve industry-wide averages and hypothesise that the extent of earnings management of a firm cannot deviate too much from that of other firms operating in the same industry. They base their hypothesis on the assumption that investors compare the economic conditions of firms within the industry and if the extent of earnings management differs considerably from the industry-wide average, investors and other stakeholders may regard it as a signal of future success of the firm. They use Finnish data because Finnish accounting rules give much discretion to determine earnings. The Finnish firms have to report the amount of discretionary accruals in their financial statements, and so the level of earnings management of the Finnish firms can be directly measured from published financial statements. The results of the study support their hypothesis, firms seem to consider the industry-

wide average when determining the target level of earnings management (Kallunki and Martikainen, 1999, p.250, 257).

2.2.2.2.2. Desire to Affect Share Prices (or Firm Value)

Like DeAngelo (1986), Perry and Williams (1994) study managers' conflicting duties and incentives in management buyouts. They look for whether there is evidence of earnings management in the period(s) preceding a management buyout. They examine a sample of 175 management buyouts during 1981–1988 (Perry and Williams, 1994, p.157,159) and used Jones Model to measure accruals. Although DeAngelo (1986) didn't find support for her hypothesis, Perry and Williams (1994, p.159) got convincing evidence of manipulation of discretionary accruals in the predicted direction in the year preceding the public announcement of management's intention to bid for control of the company.

In EM literature, more recent studies focus on earnings management behaviour of firms that issue shares or make initial public offerings. Examples of these studies are Teoh, et al. (1998), Kinnunen, et al. (2000), Shivakumar (2000), Yoon and Miller (2002), Roosenboom, et al. (2003) and DuCharme, et al. (2004). Although these studies differentiate from each other in some aspects (such as the country which the study is conducted, the sample size, or the methodology), they commonly try to discover whether the firms making share offerings manage their earnings before the offerings in order to affect share prices.

Teoh, et al. (1998, p. 63) examines issuer firms before and after the issue, and finds that issuers who adjust discretionary current accruals to report higher net income prior to the offering have lower post-issue long-run abnormal stock returns and net income. The annual growth in the issuers' asset-scaled net income significantly exceeds that of the matched non-issuers by a median of 1.69 % in the issue year, but is significantly less than that of the matched non-issuers by a median of 1.60 % and 0.32 % in the two sub-subsequent years (Teoh, et al., 1998, p. 64).

Kinnunen, et al. (2000, p.209) studies a sample of 37 listed Finnish firms during the 20-year period 1970-1989. Their study provides evidence that firms issuing new shares at higher discounts and hence with larger expected dividend increases, use their opportunities for earnings management to

report larger earnings in excess of current dividend in the year of share issue than firms that issue shares at lower discounts or that do not issue shares at all.

Shivakumar (2000) also analyses whether firms overstate earnings before seasoned equity offerings and additionally whether investors recognise and undo the effects of such earnings management at offering announcements. According to Shivakumar (2000, p.240), since issuers cannot credibly signal the absence of earnings management, investors treat all firms announcing an offering as having overstated their earnings, and consequently discount the stock prices. Anticipating such market behaviour, issuers rationally overstate earnings prior to earnings announcements, at least to the extent expected by the market. Earnings management by issuers and the resulting discounting by investors is a unique Nash equilibrium in a prisoner's dilemma game between issuers and investors.

The results of the Shivakumar's (2000, p.369) study indicate that investors understand earnings management before equity offerings, and so earnings management by issuers is wasteful on average. However, using a rational expectations framework, this study shows that earnings management by issuers, rather than being intended to mislead investors, may actually be the rational response of issuers to anticipated market behaviour (after-issue price reversal) at offering announcements.

Other researchers studied in this area are Yoon and Miller (2002). They investigate 249 Korean seasoned offering firms during the period 1995 – 1997 to determine if the seasoned equity offering firms manage earnings in the year before a planned issue of seasoned equity stocks. The results of this study show that the seasoned equity-offering firms are more likely to manage earnings if the operating performances are poor and if the offer sizes are relatively large (Yoon and Miller, 2002, p.57).

Roosenboom, et al. (2003, p.243) studies earnings management behaviour of initial public offering firms in a European country. Using a sample of 64 Dutch initial public offerings, they investigate the pattern of discretionary accruals over time. They find that managers manage their company's earnings in the first year as a public company but not in the years before the initial public offering.

They also find a negative relation between the size of the discretionary accruals in the first year as a public company and long-run stock price performance over the next 3 years.

DuCharme, et al. (2004, p.29) calls attention to the lawsuit risk of firms that manage earnings before stock issues. If higher than average levels of abnormal accruals around stock offers reflect deceptive accounting by some offering firms, it would be expected that those firms are possible targets for subsequent offer-related lawsuits by misled investors. DuCharme, et al. (2004, p.30) studies the relations among earnings management, abnormal accruals, stock offers, post-offer stock returns, and shareholder lawsuits using a very large sample of offers made during the period from 1988 through 1997. Stock returns are much lower and reversals much more pronounced for firms that are sued in connection with their offers than for those that are not sued, and the incidence of these lawsuits is significantly positively related to abnormal accruals and significantly negatively related to post-offer stock returns.

2.2.2.2.3. Level of Investor Protection

Leuz, et al. (2003, p.505) examines systematic differences in earnings management across 31 countries. They classify countries into groups according to their characteristics and then show that earnings management varies systematically across these groups. Their analysis suggests that economies with relatively dispersed ownership, strong investor protection, and large stock markets exhibit lower levels of earnings management than countries with relatively concentrated ownership, weak investor protection, and less developed stock markets (Leuz, et al., 2003, p.506, 525).

2.2.2.2.4. Bonus Maximisation

Guidry, et al. (1999, p.113) tests the bonus-maximisation hypothesis that managers make discretionary accrual decisions to maximise their short-term bonuses. Opposite to previous researches that use financial information from publicly reported sources that are aggregated at the firm level, they use financial information of each business-unit of a multinational conglomerate. They say that given each business-unit's target and actual earnings measures, one business-unit manager may have incentive to make income-increasing discretionary accruals while the other manager may be motivated to use income-decreasing discretionary accruals to decrease reported

earnings. Aggregation of discretionary accruals by individual managers limits the power of tests, so evidence of earnings management is not likely to be detectable (Guidry, et al., 1999, p.117, 120).

According to Guidry, et al. (1999, p.120), previous studies (Trueman and Titman, 1988; Moses, 1987; DeFond and Park, 1997; Fudenberg and Tirole, 1995) suggest that managers have competing incentives to engage in income smoothing (reputation, stock ownership and stock based compensation) or bonus maximisation behaviour. When incentives to smooth earnings dominate incentive to engage in bonus maximisation behaviour, it is more difficult to detect an association between managers' short-term bonuses and their earnings management decisions. This is because the benefits from smoothing earnings outweigh the benefits from bonus maximisation.

Guidry, et al. (1999, p.124, 125) assigns business-unit-year observations to one of three portfolios (low, up, middle) based on the actual bonuses received by business-unit managers. Business-unit-years are classified as "low" when they earn no bonus for the current year, "up" when they earn maximum bonus, and "middle" when they earn some but less than the maximum available bonus. A modified version of Jones (1991) model is used to measure discretionary accruals. The results of the study show that managers of business units in the middle portfolio make income-increasing discretionary accruals relative to those in the up and low portfolios (Guidry, et al., 1999, p.140).

2.2.2.2.5. Political, Legal and Debt Contracting Costs

Key (1997, p.309) examines the role of accounting information in the political process surrounding regulation of the cable television industry. The question addressed by Key (1997, p.309, 310) is whether cable television managers make accounting choices to mitigate scrutiny and potential regulation. Earnings management is measured using discretionary accruals. The time period of expected scrutiny is identified and comparison of levels of accruals is made between the scrutiny period and other periods. The results are consistent with political costs hypothesis that says discretionary accruals are more income decreasing during scrutiny.

Hall and Stammerjohan (1997, p.47) study the relationship between the incidence of litigation events with potentially large damage awards in the oil industry and the accounting choices of managers. Managers of oil firms facing potentially large damage awards choose income decreasing

non-working capital accruals relative to managers of other oil firms. Additionally, the results also indicate that the management of these firms makes accounting choices that result in lower non-working capital accruals during the litigation period than in other years and these negative accruals appear to result from the under-estimation of new reserves.

Beatty and Weber (2003) study voluntary accounting method changes. They examine whether the provisions of a firm's bank debt contracts affect its accounting choices. The research sample is composed of firms that have bank debt and also voluntarily changed accounting methods. After controlling for some other motives for changing accounting methods, they find that borrowers whose bank debt contracts allow accounting method changes to affect contract calculations are more likely to make income-increasing changes. Incentives to lower interest rates through performance pricing or to retain dividend payment flexibility influence borrowers' accounting method choices (Beatty and Weber, 2003, p.119).

2.2.2.2.6. Ownership Structure

Koh (2003) examines the association between institutional ownership and firms' aggressive accrual management in Australia. Existing literature has two competing views on the effects of institutional ownership on corporate earnings management. The first argues that institutional investors are short-term oriented and create incentives for managers of their portfolio firms to manage earnings aggressively, as these institutional investors focus excessively on current earnings performance. In contrast, the long-term oriented school of thought posits that institutional investors are concerned with the long-term prospects of their portfolio firms and actively participate in their portfolio firms' corporate governance. Their long-term orientation and active participation limit managers' discretion and reduces their incentives to manage earnings aggressively (Koh, 2003, p.124).

Opposite to the existing literature, the study of Koh (2003, p.121, 124) shows that there is a non-linear association between institutional ownership and income increasing discretionary accruals. As institutional ownership increases, the sample firms engage in greater income increasing discretionary accruals, consistent with the short-term oriented institutional investor arguments. When institutional ownership reaches beyond 54.3 %, a negative association between institutional

ownership and income increasing discretionary accruals emerges and amount of discretionary accruals declines. This is also consistent with the long-term institutional investor argument.

2.2.2.2.7. Future Profitability

Kallunki and Martikainen (2003, p.311) investigate whether the level of current earnings management can be used to predict future profitability of Finnish firms. Earnings management is assumed to predict future profitability, because firms use discretionary accruals to manage this year's earnings upwards (downwards), if they believe that next year's earnings will be high (low). The results of the study show that the lagged earnings management is significantly related to the future profitability of a firm and contains incremental information relative to past profitability or stock prices when predicting future profitability.

2.2.2.3. Ethical Side of Earnings Management

In earnings management literature, we see a rising attention on the ethical side of EM behaviour. Some studies try to find different parties' (managers, accountants, auditors, shareholders, non-shareholders and students) perceptions about the ethicality and morality of earnings management. Examples for such studies are; Bruns and Merchant (1990), Clikeman, et al. (2001), Kaplan (2001), Özer, et al. (2003) and Geiger, et al. (2003).

In order to understand the morals of short-term earnings management, Bruns and Merchant (1990) prepared a questionnaire describing 13 hypothetical earnings management cases. 649 managers (general managers, finance and control, and audit managers) completed the questionnaire. The results of the survey show that operating manipulations are judged more favourably than accounting manipulations because earnings numbers show what actually happens. Additionally, earnings management is deemed more acceptable when the result reduces earnings rather than it increases, when the change is small and when it is made to meet an interim quarterly budget target rather than to meet an annual budget target.

According to Bruns and Merchant (1990), earnings management is an unethical behaviour and “the key to moral behaviour is the obligation to look beyond your own self-interest to the concerns of others (p.25)”. If companies do not establish clearer accounting and operating standards for all employees to follow, individuals who try to use the information reported may be unable to assess accurately the quality of that information.

Clikeman, et al. (2001) tries to find out whether gender and national origin influence accounting students' perceptions of earnings management. 115 accounting students (54 male and 61 female) from six different countries (USA, Hong Kong, Indonesia, Malaysia, Singapore and Taiwan) answered the questionnaire which was developed by Bruns and Merchant (1990) and composed of 13 questions describing earnings management practices. The findings didn't provide evidence that gender and culture significantly affect judgements about the ethical acceptability of earnings management.

Geiger, et al. (2003) expands the study of Clikeman, et al. (2001). They investigate whether national culture influences perceptions of the acceptability of EM. They also use the same questionnaire with Clikeman, et al. (2001). 898 accounting students from eight countries (Australia, Hong Kong, Indonesia, Malaysia, Singapore, Spain, UK and USA) answered the questionnaire. The results of the analyses show that individuals from different countries vary significantly in their general perceptions regarding EM. However, there is only minimal association between perceptions and the five cultural dimensions (individualism/collectivism, power distance, masculinity/femininity, uncertainty avoidance, long term orientation /confucian dynamism) of Hofstede (1980). The results also indicate the necessity of separately assessing different types of earnings management techniques. Participants from countries such as Australia and the United States objected much more strongly to accounting manipulations than operating manipulations, while participants from Indonesia and Malaysia perceived relatively little difference between the two types of manipulations.

Kaplan (2001) examines whether financial statement users' assessment of the ethicalness of earnings management is a function of intended benefit. 146 evening MBA students, assigned to the role of either a shareholder or non-shareholder, read three hypothetical scenarios involving a manager engaging in earnings management. Participants judged EM behaviour of managers and the

likelihood that shareholders will suffer financially from such behaviour. The results of the study show that earnings management is assessed less unethically by shareholders when the earnings management intends company benefit, however intent did not influence ethicality assessments of non-shareholders.

Another study investigating ethical side of EM belongs to Özer, et al. (2003). They examine ethical judgements of different groups of respondents (Undergraduate, MBA and PhD students, top executives and accounting staff) about earnings management. The respondents filled a questionnaire composed of several EM scenarios. Results of the statistical analyses show that significant variances exist among ethical judgements concerning not only type of the manipulations but also within and between the groups of respondents.

2.2.2.4. The Role of Auditors in Earnings Management

Studies about earnings management have risen the attention towards auditors and researchers started to investigate the role of auditors in earnings management practices of firms. The study of Nelson, et al. (2002), Chung and Kallapur (2003), Frankel, et al. (2002), DeFond and Subramanyam (1998) are just a few examples of such studies.

Nelson, et al. (2002, p.175) examines 515 specific experiences of 253 auditors from big 5 audit firms. These auditors described their experiences related to the clients who the auditors believe were attempting to manage earnings. With this approach, Nelson, et al. (2002, p.175) analysed managers' decisions about how to attempt EM practices and to prevent EM by requiring adjustment of the financial statements. The results of their study indicate that managers who are more likely to attempt EM practices are less likely to adjust EM attempts.

Chung and Kallapur (2003, p.931) examine the relationship between the auditor independence and client importance. Auditor independence is the probability that an auditor will report a discovered breach. Using the ratios of client fees and of non-audit fees divided by the audit firms' US revenues as the proxies of client importance, Chung and Kallapur (2003, p.931) investigate their association with Jones Model abnormal accruals. In a sample of 1871 clients of big 5 audit firms, they don't

find a statistically significant association between abnormal accruals and any of the client importance measures.

Frankel, et al. (2002, p.71) tries to find out whether auditor fees are associated with earnings management and the market reaction to the disclosure of auditor fees. Auditor independence rules require firms to disclose the amount of all audit fees and nonaudit fees paid to the auditor of their financial statements. They find evidence that nonaudit fees are positively associated with small earnings surprises and the magnitude of discretionary accruals, while audit fees are negatively associated with these earnings management indicators.

DeFond and Subramanyam (1998) are the other researchers who examine the relationship between the auditor changes and discretionary accruals. They analyse discretionary accruals for a sample of 503 firms that changed their auditors during the period 1990-1993. They find that discretionary accruals are significantly income decreasing during the last year with the predecessor auditor and insignificant during the first year with the successor auditor. They also find that the firms subject to the greatest litigation risk tend to report relatively larger magnitudes of negative discretionary accruals. These findings suggest that income decreasing accounting choice preference by the incumbent auditor, triggered by concerns about litigation risk, is an important factor explaining auditor changes (DeFond and Subramanyam, 1998, p.35, 64).

2.2.3. Big Bath Accounting

Big bath accounting has been used to describe large profit reducing write-offs or income-decreasing discretionary accruals in profit and loss statements. "Having a bath", "cleaning the stables" and "wiping the slate clean" are imagery words used in big bath accounting literature. Intuitively, big bath accounting is easy to understand. Every time the government changes, the new one announces that the expected deficit will be higher because it found many hidden expenses. Briefly it is taking the opportunity given by its arrival to clean the balance sheet and blame the poor result of its predecessor. It is working in the same way in a firm. When a new CEO is appointed he/she will clean the accounts to be able to use it in the future to smooth earnings (Stolowy and Breton, 2000, p.43).

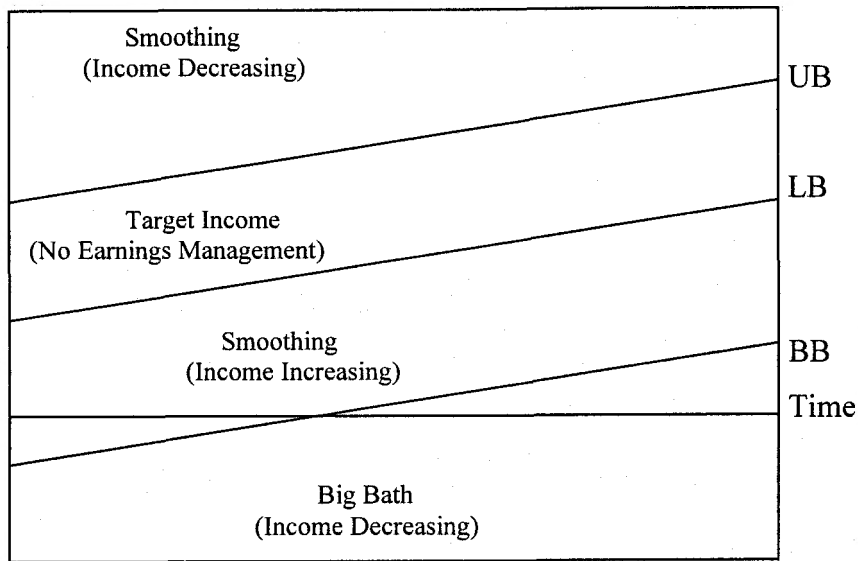
According to Walsh, et al. (1991, p.173), in most studies related to big bath accounting the attention has focused on proving the incidence of large write-offs. Managers have been observed making large write-offs more frequently in order to create an advantageous financial base conducive to enhancing rates-of-return in subsequent years.

One example of these types of studies belongs to Zucca and Campbell (1992). The objective of Zucca and Campbell (1992, p.35) is to find “when management decides the time the impairment should be recorded at and what might motivate them to make such a decision”. They examine income smoothing and big bath as possible explanations for the timing of and motivation for discretionary writedowns. Under income smoothing scenario, while trying to provide a smooth income stream, writedowns may be used to decrease earnings when earnings are above the expected or normal level. Under big bath scenario, the firm appears to save up discretionary losses or accruals and then record several in the same period or in a period in which the firm has already experienced below normal earnings. Management may undertake a big bath to signal investors that bad times are behind them and better times will follow (Zucca and Campbell, 1992, p.35).

In order to determine whether earnings management is a possible motivation in the timing of writedowns, a measure of expected earnings is compared to reported earnings for each firm in the period in which the writedown is recorded. Income smoothing is characterised by periods in which pre-writedown earnings are higher than expected. A big bath is characterised by periods in which pre-writedown earnings are already below expected earnings. The results indicate that 58 % of the sample firms are bathers and 29 % of the firms are smoothers (Zucca and Campbell, 1992, p.35, 36).

Buckmaster (2001, p.105) has the same view on this issue with Zucca and Campbell (1992). He says that when unmanaged earnings fall to a certain point, the incentives to eliminate future charges against income are much greater than the incentives to attempt to achieve target income. Income smoothing can be defined in such a manner to accommodate the existence of the big bath behaviour. Buckmaster (2001) explains the income smoothing and big bath behaviour with the following figure.

Figure 3.1. Income Smoothing and Big Bath Behaviour



Source: Buckmaster, D., *Development of the Income Smoothing Literature 1893-1998*, p.106.

Where:

UB: The upper bound of target income

LB: The lower bound of target income

BB: The point below target income at which there is little additional disutility to additional income reduction (or losses) and at which feasible income increasing tactics provide little welfare increases

Francis, et al. (1996) also examines whether earnings management purpose of managers and earnings based compensation plans are reasons of discretionary asset write-offs. They find that write-offs are more frequent and larger in magnitude if there has been a recent change in management and if the firm and/or its industry has taken write-offs in the past. Additionally, expected write-offs are decreasing in the poor performance of the firm and in the usually good performance of the firm. These results are opposite the relations predicted by the big bath and smoothing arguments (Francis, et al., 1996, p.133).

2.2.4. Creative Accounting

In contrast with earnings management and income smoothing, which are the concepts used by academics, creative accounting is an expression that has been developed mainly by practitioners and journalists of the market activity. Their concern came from their observation of the market, not from any theory. They determined the motivations of such an activity to mislead investors by

presenting what investors want to see, like a nice steadily increasing earnings figure (Stolowy and Breton, 2000, p.44).

Creative accounting is not a clearly defined concept. “Fiddling the books”, “cosmetic reporting”, “window dressing” and “cooking the books” are some examples for the terms that are used in the literature. Amat and Gowthorpe (2004, par.7) think that creative accounting is an umbrella concept and includes income smoothing, earnings management, financial engineering and cosmetic accounting. They give the definitions of income smoothing and earnings management as the definition of creative accounting.

Blake et al. (2000, p.136) also makes similar comments on this issue and says that accountants can use their knowledge of accounting rules to manipulate the figures reported in the accounts of a business. This process has come to be referred as “creative accounting” in UK. It is referred to as “earnings management” in the USA. One example for the studies that use creative accounting concept instead of EM is the study of McBarnet and Whelan (1999). They examined the advantages and disadvantages of creative accounting and the necessary regulations to prevent it in UK.

Other researchers that use creative accounting term are Breton and Taffler (1995). These researchers are also from UK and they also use window dressing to mean creative accounting. They define window dressing concept as “the results of the exercise by management of choices among different accounting principles or presentation methods with a view to misleading users of published accounts (Breton and Taffler, 1995, p.82)”.

In conclusion, we can say that creative accounting, window dressing, cosmetic reporting, financial engineering, cooking the books and many other concepts are mainly used by journalists and financial analysts rather than academics. However, authors from UK (including academics) generally prefer to use creative accounting instead of earnings management, income smoothing or big bath accounting.

There is also another important concept, “aggressive accounting”, which is mainly used by journalists and newly started to be used by academics. Aggressive accounting is defined as “attempting to increase revenue inappropriately, or the misconstruction of income statements for the purpose of pleasing investors and inflating stock prices” (<http://www.investopedia.com/terms/a/aggressiveaccounting.asp>).

Using off-balance-sheet companies to hide losses (Wayman, 2002, par.1), capitalising expenses or postponing the recognition of expenses to the next periods and recognising unrealised revenues (Küçükkocaoğlu and Küçüksözen, 2004) are only a few examples for aggressive accounting methods. Therefore we can say that aggressive accounting is opposite of big bath accounting, because while aggressive accounting practises are increasing the income, big bath accounting practises decrease the income number of firms.



3. INCOME SMOOTHING

Income smoothing is deliberate actions of management to prevent sharp decreases and increases in income figure. In the literature, there are numerous definitions of income smoothing. They are not completely different from each other. By including or subtracting some crucial elements, authors differentiate their definitions from others' (Buckmaster, 2001, p.7). Income smoothing definitions of several authors are presented in table 3.1.

Table 3.1. Income Smoothing Definitions of Several Authors

Copeland (1968, p. 101 – 102)	Smoothing moderates year-to-year fluctuations in income by shifting earnings from peak years to less successful periods. Income smoothing involves the repetitive selection of accounting measurement or reporting rules in a particular pattern, the effect of which is to report a stream of income with a smaller variation from trend than would otherwise have appeared.
White (1970, p. 62)	When faced with discretionary accounting decisions, the management of a business firm will select those alternatives that will reduce the variability of currently reported earnings per share in relation to some target earnings per share.
Beidleman (1973, p. 653)	Smoothing of reported earnings may be defined as the intentional dampening of fluctuations about some level of earnings that is currently considered to be normal for a firm.
Lev and Kunitzky (1974, p. 261)	A firm will therefore engage in various activities designed to buffer its internal core from environmental uncertainty and provide the smooth input and output series required for efficient operations.
Ronen and Sadan (1975, p. 62)	For the purpose of our study we operationally define smoothing as the observed dampening of fluctuations about some level of income assumed to be normal for the firm.
Koch (1981, p. 574)	Income smoothing can be defined as a means used by management to diminish the variability of a stream of reported income numbers relative to some perceived target stream by the manipulation of artificial (accounting) or real (transactional) variables.
Givolvy and Ronen (1981, p. 175)	Smoothing can be viewed as a form of signalling whereby managers use their discretion over the choice among accounting alternatives within generally accepted accounting principles so as to minimise fluctuations of earnings over time around the trend they believe best reflects their view of investors' expectations of the company's future performance.
Moses (1987, p. 360)	Smoothing behaviour is defined as an effort to reduce fluctuations in reported earnings.

Trueman and Titman (1988, p. 127)	It is widely believed that corporate managers often engage in income smoothing, taking actions to dampen fluctuations in their firms' publicly reported net income.
Ma (1988, p. 487)	Smoothing reported earnings may be defined as the intentional reduction of earnings fluctuations with respect to some normal level.
McNichols and Wilson (1988, p. 3)	Income smoothing hypothesis predicts that firms choose accruals to minimise the variance of reported earnings. In particular when income would otherwise be unusually high, they will choose income-reducing accruals and when earnings are unusually low, they will choose income-increasing accruals.
Brayshaw and Eldin (1989, p. 621)	Income smoothing is a voluntary management act motivated by behavioural aspects within the firm and its environment.
Ashari, et al. (1994, p. 291)	Deliberate voluntary acts by management to reduce income variation by using certain accounting devices.
Beattie et al. (1994, p. 793)	Smoothing can be viewed in terms of the reduction in earnings variability over a number of periods, or, within a single period, as the movement towards an expected level of reported earnings.
Fudenberg and Tirole (1995, p. 75)	Income smoothing is the process of manipulating the time profile of earnings or earnings reports to make the reported income stream less variable, while not increasing reported earnings over the long run.
Kieso and Weygandt (1997, p.139)	In some nations it is permissible to "smooth" earnings by creating balance sheet reserves. Such reserves are created by reducing income in good years. In less profitable years, previous income is "retrieved" from the reserves to increase the income in the current year.
Chaney and Lewis (1998, p. 2)	Income smoothing is a long-term strategy that allows managers to communicate a firm's "permanent earnings".

3.1. Income Smoothing Incentives

Hepworth (1953, p.33) says that the most compelling motivation for income smoothing is the existence of tax levies, and there may be distinct tax advantages of income shifting or smoothing. Hepworth (1953, p.33) also emphasises the advantage of a relatively stable level of periodic income in the area of management relations with investors and workers. The owners and creditors of an enterprise feel more comfortable when the company reports stable earnings. A sharp increase in reported profits is very likely to produce the feeling in the minds of workers that they should participate to a greater extent in such profits, and this may result wage increase demands and strikes (Hepworth, 1953, p.33). On the other side, highly fluctuating income figures may cause the workers to be pessimistic about the future well being of the firm and may lead them to look for new jobs

providing higher job security prospects. This may depress the high quality work force of the company.

Beidleman (1973, p.653) explains the motives of income smoothing based on the different uses of reported earnings. Reported earnings figure is used as (1) an important factor in the formulation of plans and budgets, (2) a basis for measurement and evaluation of past performance, and (3) an aid in making capital acquisition decisions. If reported earnings are highly variable, it will be difficult to establish plans and budgets for future periods. Additionally, after a peak year, it will be difficult to replicate it, however it requires no challenge to increase earnings after a poor year.

In the framework of the theory of capital asset values, Beidleman (1973, p.654) points out that the value of an asset can be viewed as the discounted or present value of the stream of expected cash flows which the asset is expected to generate. Discount rate used to calculate present value of future cash flows is positively related to uncertainty about the generation of these cash flows. Earnings variability is interpreted as an important measure of the firm and has a direct effect on investors' discount rates and thus adverse effect on the price of a firm's shares. Therefore management might be able to influence the value of a firm's shares favourably by smoothing earnings. Beidleman's (1973, p.654) second theoretical argument is that income smoothing tends to reduce the correlation of a firm's expected returns with returns of the market portfolio. Therefore income smoothing can raise the price of a security by reducing the systematic risk of that security.

Income smoothing enables managers to reduce estimates of various claimants of the firm about the volatility of its underlying earnings process and so lowers their assessment of the probability of bankruptcy. This decreases cost of capital and cost of borrowing, additionally favourably affects the terms of trade between the firm and its customers, workers and suppliers (Trueman and Titman, 1988, p.128).

Moses (1987, p.363) asserts that with the increase of firm size and political costs, incentives for income smoothing arise. Large fluctuations in earnings may attract the attention of regulators (Benston and Krasney, 1978). Exposure to scrutiny may be related to the firm size, and consequently larger firms have greater incentive to smooth.

According to Moses (1987, p.364), another incentive for income smoothing is bonus compensation. Incentives for management to enhance bonus awards by increasing earnings may vary with the level of income for several reasons; if earnings are above the upper bound, additional earnings increase provides no additional bonus. Low income is also to be avoided because it depresses the bonus. The net result of these influences may be the reduction of reported earnings when earnings are high and enhancement of earnings when earnings are low, that is smoothing.

There are two different views that are commenting on the possible effects of income smoothing practices to the general public and the economy. The first one is the view of Hepworth (1953, p.34). He says that smoothing of income fluctuations may be well for the entire economy. It is reasonably recognised by economists that psychological factors, particularly in the area of producers' expectations, are an important factor in the determination of economic activity.

Hepworth (1953, p.34) says: "Changes in psychological attitudes or expectations are significant in the explanation of cyclical upswings and downswings in business activity. Current conditions have very important influence on predictions of future events and expectations. Hence, a current condition of declining business income may cause expectation of further decline, bringing upon actions which make these expectations a reality, and a cumulative process is initiated resulting in substantial stagnation of business activity, employment and so on. The opposite process may occur in the other direction, when rising income appears. It would seem that the maintenance of relatively stable level of periodic income might reduce the effect of waves of optimism and pessimism on the level of business activity".

Second view belongs to Ayres (1994). Ayres (1994, p.29) looks from opposite direction and says that although at a first glance the favourable bottom-line earnings effect may appear to be a good reason to smooth or manage earnings, smoothing is not a good acting for capital markets. Investors' impressions that earnings have been manipulated can lower their perception of the quality of earnings, leading to lower market values and potential future problems in capital markets.

Trueman and Titman (1988, p.128) also point out the importance of cost-benefit analysis of income smoothing. For example, early recognition of income for financial purposes also requires early recognition of the tax liability and results a higher present value of the firm's tax bill. Fudenberg and Tirole (1995, p.76) also talk about the costs of income smoothing. Given examples are poor timing of sales, overtime incurred to accelerate shipments, disruption of the suppliers' and

customers' delivery schedules, time spent to learn accounting system to be able to alter the statements provided by this system.

3.2. Income Smoothing Devices (or Instruments)

Smoothing involves the use of some "smoothing device" to reduce the divergence of reported earnings from "expected earnings" of the firm (Moses, 1987, p.361). Therefore, the two important items while measuring smoothing is "smoothing device" and "expected earnings" ("normal" or "target" earnings). In this part, we examine the smoothing device concept and in the next part, expected earnings concept will be presented.

Early literature focuses especially on the characteristics of income smoothing device. According to Copeland (1968), an accounting practice or measurement rule must possess certain properties in order to be used as a manipulative smoothing device. The characteristics that a perfect smoothing device should have are (Copeland, 1968, p.102):

A. Once used, it must not commit the firm to any particular future action.

Practices which, once used, commit the firm to report particular amounts in the future may smooth current income; however, use of them may cause antismoothing in the future. Future freedom of an action is vital for long run smoothing. For example, the interperiod income tax allocation procedure has often been called a smoothing device. However, when a firm adopts interperiod allocations in one year, it commits itself to use the same procedure in the future periods. Future allocation may have undesired effects.

B. It must be based upon the exercise of professional judgement and be considered within the domain of "generally accepted accounting principles".

C. It must lead to material shifts relative to year-to-year differences in income.

Materiality refers to the net change in income caused by the alternative.

D. It must not require a "real" transaction with second parties, but only a reclassification of internal account balances. Accounting manipulation is a matter of form, not of substance. For example, the rejection of sales order just to lower revenue involves a real event, but delaying revenue recognition until cash is received is only an accounting event.

E. It must be used, singularly or in conjunction with other practices, over consecutive periods of time. Detection of income smoothing requires analysis of data for at least three periods. While

two year comparison may indicate that the second year's income had increased or decreased, it is not sufficient to determine the pattern of behaviour in any one firm.

Kirchheimer (1968, p.119) doesn't accept that the income smoothing instrument should not be a real transaction or require a real transaction. Instead, he thinks real transactions may be used as smoothing instruments. He supports his idea with the following example, income can be affected by management's decision to accelerate or defer the acquisition of fixed assets or its decision to hold back shipments. While criticising the "perfect" smoothing device concept proposed by Copeland (1968), Schiff (1968, p.120) also points out that in order to find smoothers, Copeland (1968) used some devices although they are classified under nonsmoothing devices according to his definition.

Copeland is also criticised by Beidleman (1973). Beidleman (1973, p.658) says that Copeland restricted his smoothing devices with accounting rules and practices, so failed to recognise alternative techniques. According to Beidleman (1973, p.658), the only criteria necessary for an effective smoothing technique are:

- (1) It must permit management to reduce the variability in reported earnings as it strives to achieve its long-run earnings (growth) objective.
- (2) Once used, it should not commit the firm to any particular future action.

Buckmaster (2001, p.67) asserts that both Copeland and Beidleman criteria fail to deal with two important issues: (1) the detectability of smoothing tactics, and (2) the distinction between short-run and long-run decisions.

At that point, Buckmaster may also be criticised, because Copeland talks about the detectability of smoothing device and says that smoothing instruments should be in conformity with GAAP and auditors should not recognise them. Lev and Kunitzky (1974, p.269) also point out the importance of undetectability of smoothing techniques and say that if performed techniques do not require disclosure in financial statements and can be obscured from investors, then income smoothing will be more efficient in the sense of affecting investor decisions.

Buckmaster (2001, p.9) defines income smoothing device as “the element, real or accounting, that is being used for smoothing or the element with which advocated or regulated methods are concerned”. With this definition, he points out the two types of income smoothing instruments, which are real and accounting. We see many examples for both types of IS instruments in the literature. Some of them are⁴;

- (1) change in accounting principles (such as a change from LIFO to FIFO, from accelerated depreciation method to straight line or from the completed-contract method to percentage-of-completion method),
- (2) change in accounting estimates (such as change in estimates related to pension liabilities, useful lives and salvage values of assets, periods benefited by deferred costs, liabilities for warranty costs and income taxes, reserves for losses, inventory obsolescence and bad debt),
- (3) shifting costs between expense and capital accounts,
- (4) timing of sales of investments,
- (5) timing of shipments of products at the end of an accounting period,
- (6) timing of discretionary expenses such as paying bonuses, performing repairs, undertaking an advertising campaign, and pursuing R&D projects.

The first three are examples for artificial smoothing instruments and the last three are examples for real smoothing instruments.

3.3. Target (Normal or Expected) Earnings

Most of the income smoothing definitions emphasise that there is an income number that firms try to smooth actual earnings figure towards it. This income number which is tried to be reached by decreasing or increasing the real income (normally generated income when there are no intentional adjustments) is named as “target” or “normal” or “expected” income by different authors.

Moses (1987, p.361) uses “expected earnings” concept and says that expected earnings is used as a reference point from which measures of the deviation of actual earnings can be developed. Beidleman (1973, p.655) also argues that effective smoothing requires specification of the

⁴ Godwin (1977, p.27), Kieso and Weygandt (1997, p.1182,1190), Fudenberg and Tirole (1995, p.76), Eckel (1981, p.28), and Ronen and Sadan (1975, p.134).

magnitude of desired adjustment. The magnitude of the desired adjustment depends on the level of current earnings relative to what is considered normal.

“How can we determine target (normal or expected) income?” is not an easy question to answer. Different models to determine target income take place in the literature. To specify normal earnings, Beidleman (1973, p.656) uses the value taken from a least-squares time trend. This method may not be appropriate for each sector because of cyclical earnings patterns of some sectors where it is normal for a firm’s earnings to fluctuate. However, trend values make it possible to test potentially smoothing variables across sequential time periods, and this advantage compensates the possible bias caused by the non-trend normal earnings in some firms (Beidleman, 1973, p.656).

Moses (1987, p.362) summarises the models used to determine “expected earnings” as:

- (1) Predicting earnings in any year as equal to reported earnings in the previous year (simple random walk model).
- (2) Prior year’s earnings plus average earnings growth over five preceding years (a random walk with drift).
- (3) Average return on assets over five preceding years.
- (4) Prior year’s earnings plus average growth in earnings within the firm’s industry.
- (5) Prior year’s earnings plus a growth factor contingent on the firm’s prior year price-earnings ratio.

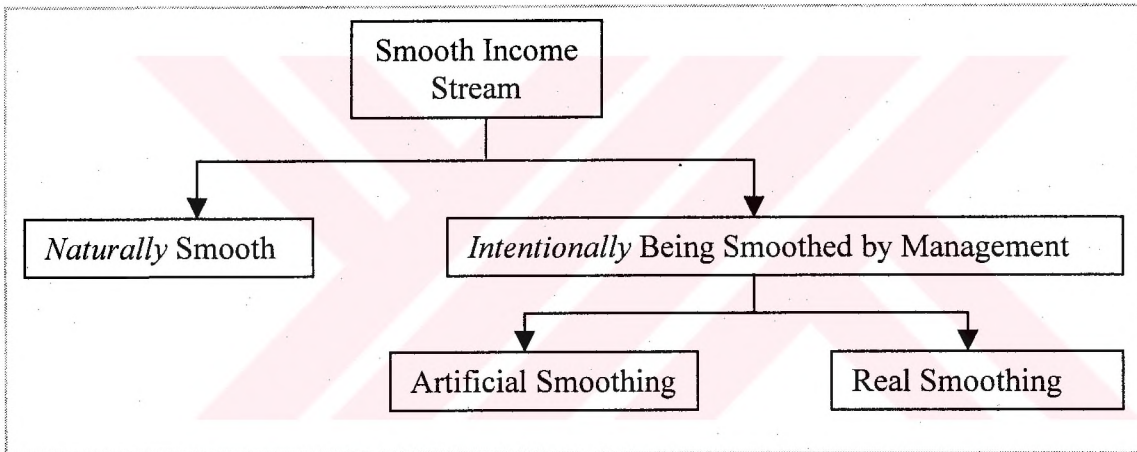
Eckel (1981, p.30) has a different perspective, and say that the specification of an expectancy model for normalised income is not an easy task. If the expectancy model does not adequately describe the process generating the income time series, the inferences made concerning the inclusion of a specific smoothing variable could be a function of random error. Eckel (1981, p.30) names the models predicting current period’s normal income as equal to the preceding period’s income ($E_t = E_{t-1}$) as naive models. He points out that Imhoff (1977) was the first to suggest that normalised earnings could be a function of an independent variable (sales) rather than being a function of time, a constant growth rate or pre-specified parameters.

The examination of one smoothing variable at a time on the normalised income stream could produce biased results. It may be possible that management's selection of some variables tends to smooth income, whereas the selection of other variables tends to work in the opposite direction, thereby affording no conclusive evidence for the income smoothing hypothesis (Eckel, 1981, p.30).

3.4. Types and Dimensions of Income Smoothing

After making a literature review, Eckel (1981, p.29) provides an alternative conceptual framework for detecting or identifying income smoothing behaviour of firms. He recognised the necessity for distinguishing between the different types of smooth income streams.

Figure 3.2. Types of Income Smoothing



Source: Eckel, N., "The Income Smoothing Hypothesis Revisited", p. 29.

A naturally smooth income stream implies that the income generating process inherently produces a smooth income series. Without any interference of management, there may be a natural co-movement of a smoothing device and earnings figure. Real smoothing represents management actions undertaken to control underlying economic events. For example, a firm might select capital projects on the basis of the co-variance of their expected income series. This represents the control of actual economic events that directly affect future income, and so it is called "real smoothing". Artificial smoothing represents accounting manipulations undertaken by management to smooth income (Eckel, 1981, p.29).⁵

⁵ While reviewing the literature, we see that, before Eckel (1981), real and artificial smoothing separation was made by Dascher and Malcom (1970, p.253).

Artificial smoothing decisions typically require changes in accounting estimates or procedures. Such changes might include changes in estimates relating to pension liabilities, investment tax credit treatment, or changes in amortisation methods or estimates. Real smoothing refers to timing of the occurrence or recognition of actual transactions such as advertising or R&D costs. Because real smoothing decisions are not subject to disclosure rules, they are more difficult to capture empirically (Bitner and Dolan, 1996, p.21).

Fudenberg and Tirole (1995, p.76) explain real and artificial smoothing concepts in other words. They say that there are two methods used to smooth earnings, the first is the use of flexibility allowed in the generally accepted accounting procedures to change reported earnings without changing the underlying cash flows. Examples include adjusting reserves for losses (inventory obsolescence and bad debt), altering the point at which sales are recognised, and shifting costs between expense and capital accounts. The second method is to change operations to smooth the underlying cash flows. Examples of this include altering shipment schedules, offering end-of-period sales, and speeding up or deferring maintenance.

According to Ronen and Sadan (1975, p.133, 134), income smoothing can be accomplished along several dimensions;

- *Smoothing through an event's occurrence or recognition.* For example, management can schedule actual transactions so that their effects on reported income would tend to dampen its variations over time. The planned timing of events' occurrences (primarily, discretionary items) is generally a function of the accounting rules governing the accounting recognition of the events. That is, the accounting method chosen affects management behaviour to the extent that it defines the events whose occurrence allows manipulation.

- *Smoothing through allocation over time.* Given the occurrence and the recognition of an event, management can determine the periods to be affected by the event's quantification. For example, management can choose between expensing and capitalising (and later amortising) research and development or employee training costs.

- *Smoothing through classification (hence, classificatory smoothing).* When income variables other than net income (net of all revenues and expenses) are the object of smoothing, management can classify intra-income statement items so that variations over time in those variables are reduced. For example, nonrecurring revenues and expenses could be classified as ordinary or extraordinary to provide a smoother appearance to the reported stream of ordinary income.

Smoothing dimensions and smoothing objects are closely associated. If the smoothing object is net income (net of all revenues and expenses) only the nonclassificatory variety of smoothing dimensions will be applicable (Ronen and Sadan, 1975, p.134).

3.5. Income Smoothing Object

Smoothing object refers to the series that is to be smoothed (Buckmaster, 2001, p.9). Different smoothing objects were determined by authors. Sometimes they explained why they had chosen that smoothing object. For example, White (1970, p.261) determined EPS as smoothing object because of the heavy emphasis placed on this measure in annual report presentation. Ronen and Sadan (1975, p.134) chose ordinary net income before extraordinary items because they thought that extraordinary items were ignored when income trends are assessed by investors and analysts.

Some authors determined more than one smoothing object, even some critics are made to the authors testing only one object. Buckmaster (2001, p.9) emphasises that although which specific series managers desired to smooth was an issue in the early income smoothing literature, it should not be any more, because modern research tools make it possible to extend the study to test all likely smoothing objects. Examples for smoothing objects are net income, net income before extraordinary items, operating income, earnings per share, and return on assets.

3.6. Empirical Studies Related to Income Smoothing

According to Copeland (1968, p.105), in order to find whether income smoothing is a goal of management or not, there are three types of empirical studies;

- (1) The researcher can directly ask managers by interviews or questionnaires. This method is difficult to apply, because managers may not wish to cooperate with the researcher.
- (2) The researcher may contact second parties such as CPAs who have knowledge of the process used by management to select among accounting alternatives. This also will be hard to realise. Because of rules of professional ethics, CPAs would not be eager to cooperate with the researcher.
- (3) The third type is examining financial statements, reports and each type of information provided by the companies to the general public. Nearly all of the researchers in the literature applied the

third type of tests in order to determine income smoothing behaviour because it is the most convenient method to use.

Another distinction between empirical tests (or researches) applied to detect income smoothing can be made according to smoothing devices. Some researchers try to bring out that there is only one smoothing device or they just try to find whether proposed device is really able to smooth income or not. Examples of such studies given by Copeland (1968, p.102, p.106) are Dopuch and Drake (1966) who investigated the effects of “alternative accounting rules for valuing nonsubsidiary investments”, and Archibald (1967) who examined financial data of 55 firms that changed from “an accelerated to a straight line method of depreciation”. There are many other examples of the studies that concentrate on only one smoothing device, they will be presented in the following sections.

Copeland (1968, p.116) criticises such studies and in his study, he tries to find appropriate number of variables to be studied in a given investigation and proper length of time series. He found that increasing both the number of variables and the length of the time series reduced errors associated with misclassifying firms as smoothers or non-smoothers.

In the following parts, researches composing income smoothing literature are summarised and classified according to common specifications and similarities in their methodologies. Chronology of the studies is also taken into consideration. In the following four parts (3.7.1 through 3.7.4), studies that try to develop models to detect income smoothing are explained. Then the studies investigating the relationship between the firm value and income smoothing, and the studies investigating income smoothing in banking sector are summarised. In the last part (3.7.7), other studies that can not be classified under the previous headings are presented.

3.6.1. Accounting Changes and Income Smoothing

One of the first studies that examine accounting changes as IS device is the study of Cushing (1969). In that study, changes in accounting policy, the direction and materiality of the change are analysed. Financial reports of 600 companies in the period of 1955 – 1966 are included in the survey. Accounting changes are classified according to the direction of their effects and materiality. Cushing (1969, p.203) says that results of his study offer little insight into the motives which may

have led managers to make a change in accounting policy, but support the notion that management chooses the periods in which to implement a change as to report favourable effects on current EPS.

In his study, Bird (1969, p.329) tests two hypotheses;

- (1) a relationship exists between declining corporate earnings and the incidence, or timing, of accounting changes which have the effect of increasing earnings, and the following corollary hypothesis which is
- (2) a relationship exists between increasing corporate earnings and the incidence of accounting changes that decrease earnings.

He analyses the annual reports of 140 companies for both 1965 and 1966. Test results only support the first hypothesis.

White (1970, p.262) examines the published annual reports covering 1957 – 1966 in order to identify discretionary accounting decisions, which are:

- (1) *Change and/or election of accounting procedures*; all such observed changes and elections were evaluated where a net income effect was involved. These decisions may be discretionary with respect both to the timing of the change and to the procedure selected.
- (2) *Nonprocedural accounting changes*; including such decisions as the change of depreciation and amortisation rates arising from revision of useful life estimates, timing decisions for adequate accruals and necessary adjustment for past under- or over- accruals.
- (3) *Discretionary decision opportunities*; that may take advantage of the related financial accounting structure (e.g. changes in the number of treasury shares).

The degree of smoothing (or nonsmoothing) in each year was determined by comparing the difference between actual EPS and the normal or target EPS with the net marginal effect of the discretionary accounting decision in the given year. The results don't provide evidence that the companies in the smooth sample significantly achieved their positive least-squares trends by their choice of accounting alternatives. This suggests that the smooth trends were achieved by chance or by controlling variables other than the accounting policy decisions included in the study.

One of the most important studies investigating accounting changes as income smoothing device is Moses' study. Moses (1987, p.360) explains the reasons of choosing discretionary accounting changes as smoothing device as follows; first, accounting changes can have a material effect on reported earnings and as a result are unlikely to be adopted without management's consideration of the effects. Second, no assumption needs to be made about the magnitude of the discretionary component of change. One could test other items, such as accruals or discretionary expenses as smoothing devices, but then the researcher must divide the total accrual or expense into a portion considered normal and remainder assumed to reflect the discretionary component. Findings in smoothing studies can be sensitive to the way the discretionary component is isolated. However, accounting changes provide a measure that is purely discretionary.

Moses (1987, p.360) also explains the deficiencies of using accounting changes as a measure of income smoothing behaviour. First, accounting changes are visible and it may be argued that management would prefer techniques that are more invisible and do not require disclosure. Second, there are nonsmoothing reasons of making accounting changes, for example using LIFO for tax purposes. In his study, Moses' assumption is not that accounting changes are made exactly for the reason of smoothing income. Rather, he assumes that the smoothing effect of a change may be one consideration while accepting this change.

Moses (1987, p.362) measures the smoothing behaviour as the degree which an accounting change shifts income towards expected earnings⁶.

$$SB = \frac{|PE - EE| - |RE - EE|}{Sales}$$

SB: Smoothing Behaviour
 PE: Pre-change Earnings
 EE: Expected Earnings
 RE: Reported Earnings

Since PE, RE, and EE are all undeflated measures and consequently dependent on firm size, sales is used as a deflator. Positive values of SB are consistent with smoothing (Moses, 1987, p.362).

⁶ In part 4.1.3, smoothing behaviour index of Moses (1987) will be explained in detail.

In Moses' (1987, p.358) study, it is hypothesised that various firm-specific factors (firm size, market share, degree of unionisation of the employees, bonus compensation, ownership control, and earnings variability before and after the accounting change) are incentives of making accounting choices to smooth earnings. T-tests and regression analysis are used to test the relation between smoothing and a set of explanatory variables. Results show that smoothing is associated with firm size, the existence of bonus compensation plans and the divergence of actual earnings from expectations.

Another important study related to accounting changes is the study of Pincus and Wasley (1994). Although the aim of their study is not to find the direct relationship between accounting changes and IS, they provide a great help for researchers who will study accounting changes. Pincus and Wasley (1994, p.1) analyse the time-series and cross-sectional patterns in 6,920 voluntary and mandatory accounting changes made over the 1969 – 1988 time period. They report on the types, frequency, and earnings effects of voluntary accounting changes, and the economic characteristics of firms making these changes. They structure their analysis of voluntary accounting changes around two perspective of accounting choice: “managerial opportunism / earnings management” and “efficient (optimal) contracting”.

Their findings show that (Pincus and Wasley, 1994, p.2):

- (1) adoptions of the LIFO inventory method are the most common accounting change, and they increase with the rate of inflation, providing further evidence LIFO adoptions are primarily tax driven,
- (2) holding companies make significantly more voluntary accounting changes than expected given their representation in the population, and
- (3) the typical non-LIFO voluntary accounting change is income increasing.

The firms making income increasing accounting changes have significantly lower sales and earnings growth prior to making a voluntary accounting change, lower interest coverage ratios, higher debt-to equity ratios, and tighter dividend constraints. These results are consistent with managerial opportunism / earnings management as managers change accounting techniques to mask poor operating performance and/or to reduce the probability of violating debt covenants (Pincus and Wasley, 1994, p.2).

Herrman and Inoue (1996, p.161) examine the incentives of Japanese managers to smooth income using depreciation method changes under different operating conditions. Sample is composed of 524 firms, 63 % of which is classified as smoothers. Regression analysis is used to test the relation between smoothing behaviour and the factors hypothesised to affect smoothing behaviour. The main finding of the study of Herrman and Inoue (1996, p.161) is that income smoothing by Japanese managers differs significantly by operating condition. Under certain operating conditions, firm size, income taxes, capital intensity, deviation in operating activities, and earnings variability represent significant incentives to smooth income using depreciation changes.

3.6.2. Classificatory Smoothing

Ronen and Sadan (1975, p.134) emphasise that ordinary income (income before extraordinary items) is a better predictor of future cash flows than net income. Therefore security analysts and investors may ignore extraordinary items and they may just analyse ordinary income. If extraordinary items are ignored, there may be little incentive for management to manipulate the actual timing of nonrecurring events or the allocation over time of nonrecurring receipts and expenditures. However there still exists the incentive to use extraordinary items in classificatory smoothing. By changing the place of extraordinary revenues and expenses in the income statement, management may be able to differentiate ordinary income number that is assumed to be more important for the investors and creditors.

Decision criterion of Ronen and Sadan (1975, p.137) for the existence of classificatory smoothing is that “if above-trend smoothed variables were associated with above-trend extraordinary revenue or below trend extraordinary expense; or if below-trend smoothed variables were associated with below trend extraordinary revenue or above-trend extraordinary expense, behaviour is consistent with the smoothing of ordinary net income before extraordinary items”. Conclusion of their study is consistent with the hypothesis that “firms’ management behave as if they classify items that potentially could be labelled as extraordinary to dampen the fluctuations over time (Ronen and Sadan, p.142)”.

Brayshaw and Eldin (1989) try to investigate classificatory smoothing in UK firms. They don't examine all the extraordinary items but only exchange rate differences which is also part of extraordinary items. Brayshaw and Eldin (1989, p.622) say that although management has no control over the occurrence of exchange differences since it can not control fluctuations in foreign exchange rates, management can use them for IS purposes along the two dimensions of allocation over time and classificatory smoothing (As stated before, 3 dimensions of IS are proposed by Ronen and Sadan, 1975, p.133, 134).

Prior to the introduction of SSAP 20 in April 1983, UK companies had discretion over the treatment of exchange differences in their accounts. This discretion underlies the first hypothesis proposed that "management of UK companies might have used their discretion over the accounting treatment of exchange differences to smooth reported ordinary income" and the second hypothesis of Brayshaw and Eldin (1989, p.622) is "taking exchange differences through the profit and loss account increases the volatility of reported income".

Forty UK companies, which disclosed the amounts of exchange rate gains and losses over the years 1975 – 1980, comprise the sample. The ways in which the forty companies disclosed the effects of exchange rate movements on their net income varied widely, not only across companies but also for the same company from year to year. Firms are inclined to show exchange differences by way of notes rather than classifying them in profit and loss statement before the line. Statistical tests are used to find out whether the inclusion of exchange differences caused greater variations in both the stream of ordinary income and the stream of net income. Results indicate that including exchange differences in either of the two streams of income (operating income and/or net income) results in greater variations. It is considered that management used its discretion over the accounting treatment of exchange differences to avoid variations in operating income (Brayshaw and Eldin, 1989, p.623, 624, 625, 629).

Other researchers studied classificatory smoothing are Godfrey and Jones (1999). They say that while US requirements have always required extraordinary gains and losses to be non-recurring, Australian accounting standards imposed the same requirement only from 1989, and therefore the Australian reporting environment provides a rich opportunity to examine the motivation for any classificatory smoothing via extraordinary items (Godfrey and Jones, 1999, p.230).

While examining the classificatory smoothing behaviour of Australian firms, Godfrey and Jones (1999) also search for the possible incentives of such behaviour. Suggested incentives are political costs (public scrutiny), industry, employee costs, executive remuneration and ownership structure. Australian accounting standards amended and clarified the definition of extraordinary items in 1989, and Corporation Law required the restatement of 1989 data related to extraordinary item classification in 1990 (Godfrey and Jones, 1999, p.232).

This event helped Godfrey and Jones (1999) to develop a smoothing measure. The results of their study showed that companies make wealth transfers via their classification of recurring gains and losses as extraordinary or operating. Additionally, firms with low ownership concentration appear more likely to engage in income smoothing than firms with high ownership concentration do (Godfrey and Jones, 1999, p.249).

Another study examining classificatory smoothing in UK is the study of Beattie, et al. (1994). They say that UK reporting regulations give managers the flexibility while classifying similar items as ordinary and extraordinary. They examine the classification of items either above "the line" or below "the line" (as extraordinary items) as income smoothing instruments. They call these items as discretionary classification items. Their study is based on Moses's (1987) study. The main difference is in smoothing index. They insert an earnings figure that represents the potential earnings amount given the number and magnitude of discretionary classification items. They find significant positive association between smoothing behaviour and earnings variability, dividend payout, managerial share options and diffuseness of share ownership. Results also indicate that the incentives to smooth are positively related to magnitude of the effect of classificatory choices, relative to expected earnings (Beattie, et al., 1994, p.792, 799, 807).

Min and Nyeen (1998) also make a study about the classification of extraordinary items. They say that until IAS 8 was reissued in 1992, the broad definition of extraordinary items had resulted in inconsistent treatment of extraordinary items among different companies or even among different periods of the same company. Different companies treated certain ambiguous income statement items differently. This has caused great difficulty in assessing and comparing financial performance across companies and over time. They also point out the more serious issue that the potential for abuse through extraordinary items adjustment in the income statement. A broad definition of

extraordinary items provides an opportunity for a company to use its discretionary power to report its performance in a more favourable light that may be misleading to users of financial statements (Min and Nyeen, 1998, p. 217).

Min and Nyeen (1998, p.218) also argue that beside using extraordinary items as income smoothing purposes, firms may use them to facilitate “big bath” accounting which usually refers to the practice of depressing the current year’s earnings (or increasing losses) in the hope that a rapid increase in income will be reported in subsequent years.

In this study, the data of 157 companies listed in Singaporean Stock Exchange in the period of 1992 – 1994 are examined. After making statistical analyses, the results show that there is no evidence of management using extraordinary items as an instrument to smooth income or reduce the volatility of earnings.

3.6.3. The Relation Between Sales and Income (Imhoff-Eckel Model)

Firstly, Imhoff (1977) offers regressing sales and income in order to detect income smoothing behaviour. If there is a weak association between sales and income streams, and/or if there is a smooth income stream but a variable sales stream, then he decides that there is income smoothing actions of firm management.

Eckel (1981, p.31) points out the following deficiencies in the application of Imhoff method;

- (1) Imhoff’s study is not clear in the identification of “how smooth is a smooth income stream, how weak is a weak association between sales and income, and how variable is a variable sales stream”. Shortly, Imhoff doesn’t give the cut-off points of his criteria.
- (2) Imhoff’s reliance of the R^2 s of regressions on time as the measure of variability.

Although Imhoff assumes that the three types of income smoothness (naturally smooth, real smoothed and artificially smoothed) are mutually exclusive, Eckel (1981, p.32) assumes them not to be exclusive and says, “an income smoothing firm is one that selects “n” number of accounting variables such that their joint effect is to minimise the variability of its reported income”.

Eckel (1981, p.33) assumes that (1) income is a linear function of sales, (2) the ratio of variable cost to sales remains constant over time, (3) fixed cost may remain constant or increase from one period to another, but may not be reduced, and (4) gross sales can only be intentionally smoothed by real smoothing, not by artificial smoothing.

As a result, the coefficient of variation method is developed based on the above assumptions. This method determines income smoothing when the coefficient of variation of sales is greater than the coefficient of variation of income ($CV_S > CV_I$ or $|CV_I - CV_S| < 1$).

In order to make a comparative analysis, Eckel (1981) uses the same sample with Barnea, et al. (1976). Although the study of Barnea, et al. (1976) indicate that between 50-94 % of 62 companies are exhibiting income smoothing, Eckel (1981, p.35, 37) found that just 2 of 62 companies seem to make artificial smoothing.

We see some other studies that follow the method proposed by Imhoff (1977) and improved by Eckel (1981). One of them is the study of Ashari, et al. (1994) which tries to identify factors associated with the incidence of income smoothing. Four hypotheses relating income smoothing to company size (total assets), profitability (net income after tax to total assets), industry and nationality (Singaporean and Malaysian companies) are tested. Ashari, et al. (1994, p.294) explains the reasons of choosing Eckel's index as being objective and statistically based, and having a clear cut-off between smoothers and non-smoothers. Additionally, unlike other measures of income smoothing, Eckel's index measures the incidence of income smoothing without resorting to earnings predictions, modelling of expected income, expense examination, or subjective judgement.

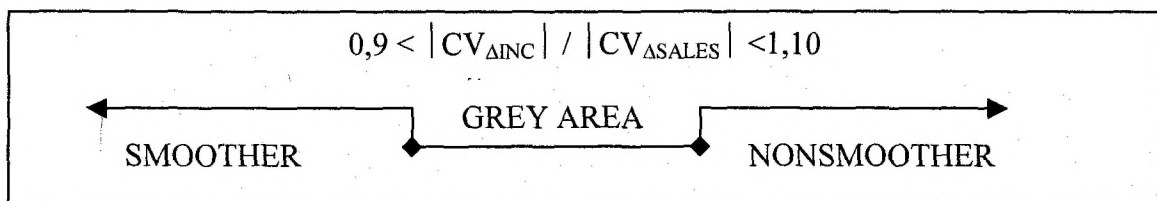
Eckel's index measures income smoothing by aggregating the effects of several potential smoothing variables (instead of just one variable at a time) and by investigating the pattern of income smoothing behaviour over a period of time. It compares income variability with sales variability to control for the effects of real smoothing and naturally smooth income streams (Ashari, et al., 1994, p.294).

Ashari, et al. (1994, p.295) says that differences in operating leverage may cause differences in income smoothing index even if no differences in smoothing behaviour exist. For example, the presence of a high level of fixed costs can increase the volatility of income measures such as income before extraordinary items and net income after tax. To control such operating leverage effects, they incorporated operating leverage variable in some statistical analyses. For this purpose, given the limited information contained in financial reports, operating leverage is approximated by the proportion of depreciation and amortisation expense to total expenses.

In this study, the sample comprises 153 companies listed in the Singapore stock exchange during the period 1980 to 1990. Descriptive statistics indicate that income smoothing is practised and that operational income is the most common income smoothing objective. T-tests, chi-square tests and logit analyses are used, and the primary findings are that income smoothers tend to be less profitable companies, companies in more risky industries and Malaysian companies (Ashari, et al., 1994, p.291).

Kamarudin, et al. (2003) conducted a research on companies listed on the Kuala Lumpur Stock Exchange (Malaysia). They have two hypotheses; the first one deals with whether income smoothing is associated with firm size, and the second one is to find out the association between income smoothing practices of a firm and its value (Kamarudin, et al., 2003, p.5, 6)⁷.

They used the coefficient of variation method developed by Eckel (1981). However they have made some modifications on this model in order to reduce classification errors. They classified the companies with $|CV_{\Delta INC} / CV_{\Delta SALES}|$ between 0,90 to 1,10 as under grey area.



⁷ Test results and analyses related to second hypothesis will be presented in part 3.6.5

Findings of this study show that 33 of 159 firms are classified as smoothers, 45 of them fall into grey area and 81 firms are non-smoothers. These findings that show the presence of income smoothing practices in Malaysia are consistent with the findings of Ashari, et al. (1994). However, the number of income smoothers is lower compared to nonsmoothers and total sample.

Another study that uses Eckel method to classify firms as smoothers and non-smoothers belongs to Carlson and Bathala (1997). In their study the main aim is not only to detect income smoothers and non-smoothers, but also to find out the factors influencing income smoothing. In that study, owner versus manager control, institutional ownership, debt financing, ownership dispersion, incentive mechanism, firm profitability and firm size are supposed factors which are effective in income smoothing behaviours of managers.

After excluding the firms from financial services, oil and gas industry because of accounting and reporting differences, 265 firms are included in the sample. Of the sample firms, 172 are identified as income smoothers and 93 are non-smoothers. This study shows that the lower the proportion of inside ownership the higher the probability of a firm being an income smoother. Firms with higher proportions of institutional ownership and debt financing are more likely to be in the income smoothing category. The wider the dispersion of stock ownership the greater the possibility of income smoothing (Carlson and Bathala, 1997, p.186, 194).

Abdullah, et al. (2002, p.60) also uses Eckel method to identify income smoother firms of Kuala Lumpur Stock Exchange. Main objectives of their research are to determine (1) the nature and disclosure practice of extraordinary items among Malaysian firms and (2) the relationship between extraordinary items and income smoothing.

Abdullah, et al. (2002) detects smoother and non-smoother firms by using Eckel method and then tests whether smoothers achieved their smoothing goals through extraordinary item classification. After examining their study, it can be said that their method is a combination of Eckel method and the method developed by classificatory smoothing literature. The results of their research show that the incidence of extraordinary items is very high in Malaysia, however there is no evidence about the usage of extraordinary items as income smoothing tools (Abdullah, et al., 2002, p.71, 72).

There are some other studies that detect income smoothing behaviour by using Eckel (1981) method. They are the studies of Albrecht and Richardson (1990)⁸, Michelson, et al. (1995), and Booth et al. (1996)⁹.

3.6.4. Accrual Models

Accrual models are actually developed in earnings management literature. As explained in part 2.2.2.1, the studies that use discretionary accruals or total accruals to detect earnings management behaviour of firms generally test whether firms try to increase or decrease their income. For example; Jones (1991) assumes that firms decrease earnings in order to gain import relieves from government, DeAngelo (1986) also think that managers decrease earnings before management buyouts in order to decrease the value of the firm they want to take over.

In the last decade, some studies started to use accrual models to detect income smoothing behaviour of firms. It can be said that the beginning points of such studies are the study of Fudenberg and Tirole (1995) and the study of DeFond and Park (1997).

DeFond and Park (1997) base their study on the theory of Fudenberg and Tirole (1995) which suggests that concern about job security creates an incentive for managers to smooth earnings in consideration of both current and future relative performance. The two assumptions of DeFond and Park (1997, p.116) are;

- (1) When current earnings are relatively low, but expected future earnings are relatively high, managers will make accounting changes that increase current discretionary accruals. Managers in this setting are borrowing earnings from the future.
- (2) When current earnings are relatively high, but expected future earnings are relatively low, managers will make accounting choices that decrease current year discretionary accruals. So managers are effectively saving current earnings for possible use in the future.

⁸ Because the main aim of Albrecht and Richardson (1990) is to detect the relation between IS and economy sector, their study will be presented in part 3.7.7.

⁹ The purpose of the study of Michelson et al. (1995) is to test the association between IS and market performance of the firms. In other words, this study deals with the value of the stock of the firms. Booth et al. (1996) extends the study of Michelson, et al. (1995) in Finland stock market. Consequently presenting these two studies under part 3.6.5 is more appropriate.

DeFond and Park (1997, p.116) examine the effects of current relative premanaged earnings and expected future relative earnings on the behaviour of discretionary accruals. They estimate discretionary accruals using a variation of Jones (1991) model. The sample consists of 13,297 firm-year observations, and DeFond and Park (1997, p.117) found support for their predictions. Overall, 3,636 (27.3 %) of the sample observations are predicted to have incentives to manage earnings. Of the 1800 observations with predicted incentives to decrease earnings, 92 % make income-decreasing discretionary accruals. Similarly, of the 1,836 observations with predicted incentives to increase earnings, 87 % make income-increasing discretionary accruals.

Another study belongs to Chaney and Jeter (1997). Main purpose of this study is to find out the characteristics of firms whose managers use discretionary accruals to smooth income. They use two approaches to classify firms as smoothers and nonsmothers. The first approach bases on “outcome” and the second approach bases on “behaviour”. For the outcome classification, the following ratio is calculated for each firm.

$$\frac{\text{Variance of cash flows plus nondiscretionary accruals}}{\text{Variance of reported earnings (computed over 5 years preceding the current year)}}$$

This study accepts that firms with high ratios are smoothers and firms with low ratios are nonsmothers (Chaney and Jeter, 1997, p.5, 6, 23).

According to behaviour approach, firms are classified as smoothers if they behave according to income smoothing approach and nonsmothers if they do not. According to Chaney and Jeter (1997, p.5), the income smoothing hypothesis suggest that if the current year’s income before discretionary accruals is lower than last year’s reported earnings, managers will report positive discretionary accruals. If the current year’s income before extraordinary accruals is already higher than last year’s reported earnings, discretionary accruals will be negative. A modification of the model developed by Jones (1991) is used to isolate discretionary accruals.

According to this study, firms that smooth income tend to be larger on average, have higher stock market returns and larger discretionary accruals. Additionally, leveraged firms may be more likely to engage in income smoothing, and income smoothing enhances firm value and helps investors to differentiate between high and low quality firms (Chaney and Jeter, 1997, p.44, 45).

Chaney and Lewis (1998, p.27, 28) investigate how the firms that made initial public offerings (IPO) of equity between 1975 and 1984 report their earnings. For a sample of 489 firms, they provide evidence of a positive association between a proxy for income smoothing and firm performance. They also use discretionary accrual model, they propose an industry-specific version of the Jones (1991) model for the determination of nondiscretionary accruals. Results show that firms that perform well tend to report earnings with less variability relative to cash from operations, while firms that perform poorly tend to report earnings with greater variability relative to cash from operations. Chaney and Lewis (1998, p.28) also find that for a sample of IPO firms, discretionary accruals are used to smooth income around the prior period's earnings and that IPO firms with higher variance ratios engage in this activity to a greater extent.

Basing the theory of Fudenberg and Tirole (1995) and consistent with the model of DeFond and Park (1997), Belkaoui (2003, p.99) hypothesises that the extent of income smoothing will vary with managers' job security concerns as proxied by the level of the investment opportunity set or growth opportunities.

Belkaoui (2003, p.100) thinks that managers of firms with lower growth opportunities are likely to have greater job security concerns than of other firms. The empirical analysis is based on a sample of 8,632 firm-year observations. For comparative purposes, he uses the same methodology for the measurement of accruals and the estimation of discretionary accrual used in previous research. The results of the study show that managers of firms with lower investment opportunity set engage to a greater extent in income smoothing.

Shaw (2003) is another researcher who uses the Jones (1991) model to measure discretionary accruals and so income smoothing. However the main purpose of Show's (2003, p.1043) study is exploring the interaction between corporate disclosure and recognition practices by examining the relation between financial analysts' ratings of disclosure quality, discretionary accruals, and the

earnings-return association. The results suggest that firms with higher quality disclosures use discretionary accruals to smooth earnings more aggressively than firms with lower quality disclosures do.

Lim and Lustgarten (2002, p.273, 286) name the methods using discretionary accruals in IS literature as “backing out”, and review and clarify the issues regarding the backing out method. The results of their study show that if one uses the backing out method, with any reported component of earnings, the results will be equally consistent with the three possibilities: (1) managers smooth earnings with a discretionary component, (2) managers smooth earnings with something other than a discretionary component, and (3) managers do not smooth earnings at all. Thus, according to Lim and Lustgarten (2002, p.286), results of the prior studies using the backing out method should have only a limited impact on the updating of prior beliefs about income smoothing.

A similar study belongs to Elgers, et al. (2003). They say that in light of knowledge about measurement error in discretionary accrual estimates, the method that is used by DeFond and Park (1997) to measure unmanaged earnings mechanically biases on the evidence in a manner consistent with anticipatory income smoothing. Using an approximate randomisation approach, they find that DeFond and Park’s (1997) results cannot be distinguished from those achieved when discretionary accruals are randomly assigned to firm-years. Overall, the results show that the “backing out” approach to measuring unmanaged earnings is ineffective in testing earnings management hypotheses (Elgers, et al., 2003, p.405).

3.6.5. Firm Value and Income Smoothing

Lev and Kunitzky (1974, p.262) hypothesise that the extent of smoothness of the firm’s operations will be negatively associated with its common stock risk, and consequently will be positively associated with its common stock price. They measure the overall riskiness of the stock by the standard deviations of periodic stock returns and the systematic risk of the stock by using capital asset pricing model. Average dividend payout ratio, average sales, average capital structure (measured by debt / equity ratio), growth rates of production and dividends, and average capital expenditures ratio (the average ratio of annual capital expenditures to the end of year net plant and equipment balance) are chosen as accounting based smoothing measures.

The financial statement variables are cross-sectionally correlated with the two common stock risk measures (systematic and unsystematic) by means of ordinary least squares regressions. The extent of smoothness of sales, production, capital expenditures, dividends and earnings series is found to be significantly correlated with both the overall and systematic common stock risk measures. Their findings are consistent with their hypothesis (Lev and Kunitzky, 1974, p.265, 269).

In an economic setting full of assumptions, Trueman and Titman (1988, p.139) try to explain why smoothing might be observed and how it can result in an increased stock price. After making long calculations and solving equations, they reach the conclusion that “smoothing reported income may have positive effect on the firms market value”. They also argue that it is very easy to show that the managers would have an incentive to increase reported income just prior to the sale of securities, regardless of whether or not it results in a smoother income stream. This would increase investors’ perception of the mean of the firm’s future economic earnings and raise the price of the security.

Wang and Williams (1994) are the other researchers studied the relationship between income smoothing and firm value (they prefer to use stockholder wealth instead of firm value). They make empirical tests (mainly least squares regression) which are based on the information from 3,756 firm-year observations for the period 1977 through 1986. The smoothness is measured by the magnitude of fluctuations of reported income numbers. All observations are classified into either a smooth income group or non-smooth income group based on the absolute value of the percentage change in the firm’s reported income. The results show that the market response to earnings for firms with a smooth income series is four times as large as that for other firms (Wang and Williams, 1994, p. 96, 98).

Like Wang and Williams (1994), Bitner and Dolan (1996) expand Trueman and Titman’s (1988) study in order to suggest equity market valuation as a motivation for smoothing. They try to answer the following two questions (Bitner and Dolan, 1996, p.17):

- (1) Do the equity markets pay a premium for smooth streams of income?
- (2) Do market valuations distinguish between earnings streams that are naturally smooth versus those that are managed?

Market valuation is measured by Tobin's q ratio. This ratio is a measure of financial market valuation premiums and defined as the market value of the firm relative to the replacement cost of its physical assets.

$$q = \frac{(P)(N) + D}{RPL}$$

Where:

- P : The price of the security
 N : The number of shares
 D : The value of outstanding debt
 RPL : The replacement cost of the firm's assets

A ratio greater than one implies that the firm is generating economic rents because the market value of the firm is greater than the cost of replacing the capital assets. If it is lower than one, it is cheaper to purchase existing assets in the financial markets than to build a comparable enterprise. If smoother income streams lead investors to apply a lower risk-adjusted discount rate to the future cash flows of the firm, then firms with smoother income streams should have higher q values, all else equal (Bitner and Dolan, 1996, p.17).

Bitner and Dolan (1996, p.21) use the following regression model to test their hypothesis.

q value for an individual firm = f (smoothness, growth, profitability, accounting changes, R&D expenditures, leverage, asset size, industry)

This model is used for the data of firms for the period of 1976 – 1980. The dependent variable is the firm's five-year average Tobin's q value. The results indicate that the market does value smooth income streams (Bitner and Dolan, 1996, p.22, 29).

Besides investigating the relationship between income smoothing practices of Malaysian firms and firm size, Kamarudin, et al. (2003, p.6) also investigates whether income smoothing practices would enhance the value of the firms. Although the efficient market theory claims that accountants would not be successful in deceiving the market using accounting techniques and transactions, some of the

previous researchers have come out different arguments on how income smoothing practices can give positive implication on the firm value.

To test the hypothesis which is “Income smoothing practices are positively associated with the firm’s value”, Kamarudin, et al. (2003, p.5, 6) uses the following model.

$$MVE_{jt} = \beta_0 + \beta_1 INC_{jt} + \beta_2 SMOOTH_{jt} + e_{jt}$$

MVE_{jt} : Market value of shareholders’ equity of firm j at year t

INC_{jt} : Profit before tax of firm j at year t

$SMOOTHER_{jt}$: 1 for smoother, 0 for nonsmoothing

β_0 : Intercept value

β_1, β_2 : Coefficient of Variable 1, 2

e : Error

The ordinary least square regression run on the model demonstrated that income smoothing practice is not associated with firm value. With due consideration of the econometric problems that may distort the accuracy of the results, further tests were conducted, but the results didn’t change. This study shows that valuation of firms is significantly associated with the magnitude of earnings rather than earnings stream (Kamarudin, et al., 2003, p.12).

Michelson, et al. (1995, p. 1179, 1180, 1181) examines (1) the tendency of major corporations to become income smoothers, (2) the difference in the mean returns on the common stock of smoothing and nonsmoothing companies, and (3) the relationship between perceived market risk and income smoothing. They analyse 358 stocks contained in the Standard and Poor’s 500 Index on December 31, 1991 and use the Eckel’s smoothing index to detect smoothing and nonsmoothing firms.

Michelson, et al. (1995, p.1183) uses the daily returns of stocks including distributions over the time period 1982 through 1991 to capture any market effect of smoothing measures. The daily return is the change in the total value of an investment in a common stock over a one-day trading period per dollar of initial investment. In order to test the difference in mean returns of smoothing

and nonsmoothing firms, they analyse the results of the difference of means test on the market value of the sample firms.

Results show that firms that smooth their incomes have significantly lower mean annualised return than firms that do not smooth income. They find lower returns, lower risk, and larger firm sizes for smoothing firms. This indicates that income smoothing lowers the actual or perceived riskiness of the firm, which in turn would lead to lower returns to those investing in the lower risk firms (Michelson, et al., 1995, p.1191, 1192).

Primary purpose of Booth, et al. (1996, p.1198) is to investigate whether the post announcement unexpected return behaviour differs between firms that smooth and do not smooth their income in Finland. Only natural smoothing is considered because, according to Booth, et al. (1996, p.1198), intentional smoothing should not affect firm's cash flows, and therefore should not affect stock prices. Natural smoothing is defined using the earnings series that is adjusted for the intentional smoothing actions carried out by firms' management. It is expected that the market reacts more strongly to the earnings announcements of firms that do not have smooth income streams than for the earnings announcements of firms that naturally smooth income.

This study extends the study of Michelson, et al. (1995) in two main respects. Firstly, while Michelson, et al. (1995) focused on realised returns using an association type of study, Booth, et al. (1996, p.1198) uses unexpected returns and event study methods. Secondly, that study investigates market reaction to smoothing in the Finnish market. This makes it possible to investigate whether the market reaction to income smoothing is an international phenomenon rather than peculiar to the US.

Using the approach of Eckel (1981), Booth, et al. (1996, p.1207) divides firms into smoothers and non-smoothers. Smoothing appears to be common in Finland, 40 percent of the firms in the sample are found to have a smooth income stream. Consistent with the previous US evidence, the results of this study suggest that the post-announcement period unexpected return of firms with positive earnings surprises is higher than the return of firms reporting negative earnings surprises.

3.6.6. Income Smoothing in Banking Sector

In the income smoothing literature, studies generally exclude the firms of banking sector because of financial reporting differences. However there are some studies which examine the income smoothing behaviour of banks. Examples for such studies are Ma (1988), Bhat (1996), Kanagaretnam, et al. (2003), and Rivard, et al. (2003).

Ma (1988, p.490) says that similar to any industrial enterprise, having stable earnings is also important for commercial banks because it minimises stock price volatility and maximises shareholders' wealth. Stable earnings become particularly important because bank management carries a unique responsibility of promoting a high degree of public confidence in the depository financial institution system. The agency conflict between managers and creditors/depositors is also more intensified. While the default risk of depositors is directly related to earnings volatility, the proper evaluation of bank statements might be distorted if management practices income smoothing.

The main goal of Ma's (1988, p.487, 490) study is to determine whether US commercial banks utilise the loan loss provision as a device to smooth reported earnings. Unlike other asset accounts, the reserve for loan losses is subject to a higher degree of managerial discretion, and it provides a possible source of flexibility to adjust reported earnings.

In this study, Ma (1988, p.492) hypothesises that if a commercial bank uses the loan loss provision account to smooth reported earnings, a high (low) loan loss expense would be booked in a period of high (low) operating income. The sample covers the 45 largest banks ranked by The American Banker for the period from 1980 to 1984. Quarterly announcements of financial statements are gathered from the annual reports. The data set contains 900 time-series, cross-sectional observations.

Analyses show that the US commercial banks have used loan loss provisions to smooth earnings. Therefore declaring provisions for loan losses does not fully serve the original intention of reflecting the actual quality of banks' loan portfolio.

Bhat (1996, p.505) emphasises that bank failures, declining earnings, erosion of reserves, hostile takeovers and tightened regulations have significantly increased pressures on banks to smooth their income. Like Ma (1988), Bhat (1996) uses loan loss provisions to detect income smoothing behaviour of US Banks. Unlike other studies, only regression analysis is used to evaluate the association between earnings and loan loss provisions.

In this study, Bhat (1996) also tries to determine the characteristics of income smoother banks. A sample based on 148 banks from 1981 to 1991 is used for the analysis. Results show that banks with low growth, low book-to-asset ratio, high loan-to-deposit ratio, high debt-to-asset ratio, low market-to-book value ratio, low return on assets, high loan loss provisions to gross loans ratio are likely to smooth their earnings (Bhat, 1996, p.506).

Kanagaretnam, et al. (2003) also examines alternative motivations underlying bank managers' use of discretion over loan loss provisions to smooth reported income. They hypothesise that managers with greater job security concerns will more actively engage in income smoothing. They point out that loan loss provisions has discretionary and non-discretionary components and use beginning balance of nonperforming loans, change in nonperforming loans and change in total loans to estimate the non-discretionary component of loan loss provisions. The beginning balance of nonperforming loans is expected to be positively related to loan loss provisions (Kanagaretnam, et al., 2003, p.63, 66, 69).

Empirical analysis of the study of Kanagaretnam, et al. (2003, p.71,77,78) is based on 4,166 bank-quarter observations. The sample comprises US bank holding companies for the period 1987 to 2000. The analysis provides support for the study's predictions and indicates that bank managers save earnings through loan loss provisions in good times and borrow earnings using loan loss provisions in bad times.

Another study examining loan loss provisions to determine income smoothing behaviour of US banks belongs to Rivard, et al. (2003). They say that the use of the loan loss provision to smooth reported income by large bank holding companies is investigated a lot in the literature, and they try to differentiate their study by examining the income smoothing behaviour of banks after the Basel Accord. The Basel Accord was signed by 12 major economic powers in 1988, and replaced the

diverse national standards with a common set of guidelines for a system of risk-based capital requirements (Rivard, et al., 2003, p. 288, 290).

Rivard, et al. (2003, p.288) tries to determine whether income smoothing continued to be used by large bank-holding companies after implementation of the Basel Accord. They use the similar methodology with the existing literature. The data sample for this study consist of 96 banking firms with four years of annual data for the post-accord period, resulting in a total of 672 observations. Empirical results show that after the Basel Accord, banks accelerated their use of loan loss provisions for income smoothing.

3.6.7. Other Studies that Focus on Only One Factor

There are many other income smoothing studies that could not be classified under previous headings and will be presented in the current part. They differentiate from previous studies in many ways. For example, some of them look from a different perspective or use a different research method. Some of them focus on only one factor and investigate the relationship between income smoothing and the factor determined, such as dividends received from unconsolidated subsidiaries, economy sector, LIFO liquidations, fourth quarter results or discretionary R&D expenditures.

3.6.7.1. Dividends Received from Unconsolidated Subsidiaries

Copeland and Licastro (1968) investigate the role of the two accounting methods (cost-basis and dividend income basis¹⁰) used for dividends received from unconsolidated subsidiaries in the IS activities of management. They examine the data of 20 firms and chi-square test is used to analyse the data. Results don't support that the managers attempt to smooth income by using the dividend income method (Copeland and Licastro, 1968, p. 541, 542, 544).

3.6.7.2. Sector

Belkaoui and Picur (1984) and Albrecht and Richardson (1990) investigate whether there is a relation between the industry (or economy sector) the firms are operating in and the income smoothing behaviours of those firms.

¹⁰ The author uses dividend income basis instead of equity method.

After making a literature survey, Belkaoui and Picur (1984, p.528) say that organisational characterisations may exist which differentiate among different firms along the dimension of the attempt to smooth. One such characterisation derived from theories of economic dualism divides the industrial structure into two distinct sectors – the *core* and the *periphery* sectors.

Theories of dual economy suggest that sectoral differences have important implications for the opportunity structures and environments faced by individual firms. Firms in the periphery sector face a more restricted opportunity structure and a higher degree of environmental uncertainty than firms in the core sector. However firms in the periphery industry have more opportunity and more predispositions to smooth both their operating flows (for example, through their labour management) and reported income measures than the firms in the core sector (Belkaoui and Picur, 1984, p.530).

In this study, test criterion is based on the correlation coefficient between the deviations of the smoothing objects with the deviations of the smoothing variables and a positive correlation is consistent with a smoothing behaviour. The results show that “a majority of the firms may be resorting to income smoothing with a higher number included among firms in the periphery sector” (Belkaoui and Picur, 1984, p.539).

Albrecht and Richardson (1990, p.714, 715, 716) assert that there are three approaches for studying income smoothing:

- (1) the classical approach (involves an examination of the relation between choice of smoothing variable and its effects on reported income),
- (2) the income variability approach (Imhoff-Eckel Model) and
- (3) the dual economy approach (core and periphery).

Albrecht and Richardson (1990, p.716) differentiate their study from the study of Belkaoui and Picur (1984) through using Eckel’s income variability method of analysis to detect the incidence of income smoothing in the core and periphery sectors of the economy. Results of this study indicate that there is no difference between the smoothing behaviours of firms from the periphery and the core sectors (Albrecht and Richardson, 1990, p.720).

3.6.7.3. Agency Theory

Some of the studies in the income smoothing literature examine conflicts of related parties and effects of such conflicts on income smoothing behaviour. One of them is the study of Lambert (1984). Lambert (1984, p.604) says that when the shareholders of a firm delegate decision-making tasks to management, management has incentive to select actions, which maximise its own expected utility, even if these actions are not in the best interests of shareholders.

Lambert (1984, p.605) uses agency theory to construct a simple economic model of the stockholder – manager relationship. He shows that when the manager's actions are unobservable, income smoothing can arise as optimal equilibrium behaviour. An important feature of this analysis is that both the principle and the manager are viewed as rational parties who will act in their own best interests and the relationship between the stockholder and manager is modelled as a two-person game. In this game, given the incentives via its compensation scheme, management chooses actions to maximise its own utility. However the principal can predict what actions management can choose in response to a compensation scheme, and he takes this into consideration in deciding what compensation plan to offer. This implies that the principal is not fooled by the manager's behaviour.

Lambert (1984, p. 613) found that it is optimal for the principal to choose the manager's compensation scheme to motivate the manager to engage in smoothing activities. Income smoothing can occur even when smoothing is not the objective of management. It can arise solely as a natural product of the agency relationship.

3.6.7.4. LIFO Liquidations

Dhaliwal, et al. (1994, p.286, 287) analyses the relations between potential determinants and the magnitude of LIFO liquidations. According to them, tax minimisation, earnings management and reducing the likelihood of debt covenant violation provide incentives for LIFO liquidations. To test the prediction that LIFO liquidation reduces earnings variability, first, they identified the reported earnings before extraordinary items of sample firms that have LIFO liquidations. Next, for each firm (136 firms, during 1979-88), they computed coefficient of variation (CV) of both its reported earnings before extraordinary items and its preliquidation earnings before extraordinary items. Finally, for each firm, they computed a difference variable equal to CV of its reported earnings

minus CV of its preliquidation earnings. Result shows that LIFO liquidations reduce the variability of reported earnings over time.

3.6.7.5. Fourth Quarter Results

In their study, Givoly and Ronen (1981, p.176) don't aim to find out whether smoothing behaviour exists or not, rather they try to determine the point of time at which managers make decisions about smoothing adjustments. They accept the existence of the motivation to smooth and proceed to test whether fourth quarter results are consistent with the hypothesis that end of year adjustments are made in a way that is consistent with the purposeful smoothing of annual income numbers.

They say that the availability of quarterly reports provides an opportunity to gain insights into the timing of smoothing decisions. It is reasonable to assume that managers and outside users of the reports use the first three quarterly results to predict the annual income number. This prediction becomes the basis for the desirability of smoothing. The results of the tests indicate that the manifestations of end-of-year actions by management are consistent with the possible attempt to alter annual results to offset extreme deviations of the first three quarters reported income (Givoly and Ronen, 1981, p.191).

3.6.7.6. Discretionary R&D Expenditures

The study of Mande, et al. (2000, p.268, 273) examines whether Japanese managers make R&D allocations based on short-term performance and focuses on discretionary R&D spending as a way of managing earnings. They say that the factors motivating income smoothing are managerial bonus, firm size, dividends and taxes. They suggest that if earnings before R&D expense are below (above) expectations, R&D spending will be cut (increased), for positive (negative) unexpected earnings, unexpected R&D will also be positive (negative).

Mande, et al. (2000, p.263, 274) uses financial analysts' R&D forecast errors proxy for unexpected R&D costs. Data are obtained from the Japan Company Handbook. All variables are adjusted for inflation using Japanese consumer price indexes. The results of the study show that Japanese firms in several industries adjust their R&D budgets to smooth profits, and adjustments are larger in expansion years.

3.6.7.7. An Experiment

Koch (1981) made a laboratory experiment that examines the income smoothing process with respect to motivation (reflected by the cost of smoothing), type of smoothing variable (real or artificial) and management structure (diverse or concentrated ownership). The subjects of this experiment consisted of business people. The experiment was administered individually to each subject in his/her place of business. 74 executives from 31 different companies participated in the experiment. Different cases about different situations (such as diverse or limited ownership, artificial or real smoothing variables) were presented to participants and answers of participants were analysed. The results showed that less smoothing occurs when the cost of smoothing is higher, and smoothing is greater with the use of artificial (accounting) variables than with real (transactional) variables (Koch, 1981, p.574, 579).

3.6.7.8. An Events-Study Approach

Karmon and Lubwama (1997, p.75) expand the income smoothing literature by employing an events-study methodology to detect smoothing activities. They investigate insider-trading activities of companies that elected early adoption of SFAS No. 52. Early adoption of this standard fits the criteria for an income smoothing activity, because it reduces the volatility of earnings by deferring foreign currency translation gains and losses from current income and managers had discretion to adopt new standard before the required implementation date (Karmon and Lubwama, 1997, p.76).

Karmon and Lubwama (1997, p.76) assert that managers expected the provisions of SFAS No. 52 to increase their firms' value and they purchased additional shares of stock to increase their personal wealth. Additionally, managers had private information about when they would adopt SFAS No. 52 and they had the information to estimate its impact on reported earnings. Thus they increased their personal wealth by purchasing shares of their firms before early adoption was made public. Consequently, an increase in the volume of insider trading may signal management's income smoothing activity.

They collected daily individual insider activity of each firm from the Securities and Exchange Commission's Ownership Reporting System. A firm is classified as a net buyer if it bought more shares than it sold on a given day. For the entire test period (21 trading days) there were 89 net buyer, 88 net seller and 3 no trading firms. The results of analysis show that the sample insiders were significant net buyers of their firm's stocks before and after the announcement date of the exposure draft (Karmon and Lubwama, 1997, p.80, 81, 89).



4. RESEARCH ON INCOME SMOOTHING BEHAVIOUR OF ISE LISTED COMPANIES

To conduct the research on income smoothing behaviour of ISE listed companies, firstly research design and methodology are determined and explained in this part. Then findings of the study are summarised. This part also covers the limitations of the study, comparison of the current study with the similar two studies and recommendations for the further research.

4.1. Research Design and Methodology

Before deciding on the research method, a large number of empirical studies were examined. In the literature, there are mainly four types of models used to detect income smoothing. The empirical studies that are using these models were summarised in parts 3.6.1, 3.6.2, 3.6.3 and 3.6.4. One of these models investigates discretionary accounting changes and accepts them as income smoothing devices.

Although there are many researchers applied this method in their studies, mostly referenced study belongs to Moses (1987). Moses (1987, p.360) explains the reasons of using discretionary accounting changes while detecting income smoothing as; "Accounting changes can have material effect on reported earnings, they are adopted with the discretion of the management and there is no need to make any assumption about the discretionary and non-discretionary parts of income".

One may argue that there may be other reasons of accounting changes than income smoothing. However, Moses (1987, p.360) doesn't assume that accounting changes are made exactly for the reason of smoothing income. He just assumes that the smoothing effect of change may be one consideration while accepting an accounting change.

Parallel to Moses' views, in this study, it is also accepted that income smoothing is one of the most important motivations of discretionary accounting changes. Although many modifications take place, research method of this thesis is similar to the method of Moses' study.

4.1.1. Research Objectives

The main objective of the research is “to detect income smoothing behaviour of Turkish listed companies through empirical tests using discretionary accounting changes”. In order to realise this objective, the following questions are determined as the research questions of this thesis.

- (1) How many discretionary accounting changes did the Turkish listed companies make in the period 1998-2003?
- (2) What are the types and effects of the discretionary accounting changes?
- (3) According to the smoothing behaviour index of Moses (1987), how many firms that made DAC are classified as smoothers and non-smoothers?
- (4) What are the factors that affect the smoothing behaviour of the firms? Is there any relationship between smoothing behaviour and firm size, employee costs, ownership structure, industry, debt ratio, prechange earnings deviation and directional impact of the change?
- (5) Does “desire to have a net income (or loss) close to zero” motivate firms to make DACs?

4.1.2. Sample

The research comprises the companies listed on Istanbul Stock Exchange (ISE) between the years 1998-2003. Financial institutions (banks, investment, insurance, factoring and leasing companies) were excluded because of accounting and reporting differences. ISE is a newly organised stock exchange, it was started to operate in 1986. Only after 1998, the companies have been required to prepare and present footnotes of their balance sheets and income statements. As a requirement, the information about the type of accounting changes and the monetary effect of these changes to net income are presented in the footnotes of the financial statements of the firms. Because the information about accounting changes and the effects of those changes is available only after 1998, this study comprises the years between 1998-2003.

In order to find discretionary accounting changes, footnotes of the firms in 1289 firm-years were scrutinised. Especially balance sheet footnote 11, which is related to changes in accounting policies and the monetary effects of those accounting changes to net income, and income statement footnotes 8 and 9, which give information about the changes in depreciation methods and changes

in cost flow assumptions, were examined carefully. Sometimes additional information related to discretionary accounting changes was provided in the auditor reports, so auditor reports of the firms were also scanned through.

Year	Number of firms of which footnotes were examined
1998	216
1999	222
2000	233
2001	235
2002	227
2003	156
TOTAL	1289

Capital Markets Board regulation, which says financial statements of the listed firms must be prepared according to International Financial Reporting Standards, took effect January 01, 2005. However, early adoption of this regulation was permitted. In 2003, 74 firms discretionarily started to present their financial statements and footnotes according to that regulation. These early adoptions also could have been taken as DACs because they had been made before the regulation became mandatory. However, the effects of these changes cannot be determined, so they were excluded from the analyses.

While accepting an accounting change as a DAC, the decision criteria were that the accounting change should be done with the discretion of management, in other words it should not be mandatory, and the accounting change should be appropriate according to accounting rules and regulations which means that it should not be an accounting error or irregularity.¹¹

92 discretionary accounting changes were identified in the examined 6 years period, so “DACs Sample” is composed of 92 DACs. The effects of 7 DACs were disclosed neither in the footnotes nor in the auditor reports, therefore these 7 changes were excluded from the “Firms Sample”. Additionally, when a firm adopted more than one discretionary accounting change in a year, the effects of these changes were aggregated and the total was treated as one event. This further decreased the number of sample firms to 75.

¹¹ Errors are defined as unintentional mistakes, however irregularities are intentional distortions of financial statements (Kieso and Weygandt, 1997, p.1351).

4.1.3. Smoothing Measure

In this study, the smoothing behaviour index of Moses (1987) was used to determine income smoothers and non-smoothers.

$$SB = \frac{|PE - EE| - |RE - EE|}{Sales}$$

SB: Smoothing Behaviour

PE: Pre-change Earnings

EE: Expected Earnings

RE: Reported Earnings

Smother and non-smother firms are distinguished by looking at the sign of the amount that is generated by the application of the above formula. Positive values of SB means the analysed firm is an income smoother. The following example makes the formula clearer.

Example: For the past five years, Firm X generated 1500 TL earnings each year, and in 2003 it is predicted that managers will want to keep the earnings figure very close to 1500 because they want a smooth earnings stream. In 2003 reported earnings was 1200 TL, sales was 10,000 TL and management made a voluntary accounting change.

1st possible condition: Effect of the accounting change is 400 TL, which means that reported earnings increased 400 TL with this change. Then,

Prechange earnings is 800 TL (1200 – 400)

$$SB = \frac{|800 - 1500| - |1200 - 1500|}{10,000} = (+) 0,04$$

SB is positive, so that action of the firm is accepted as the sign of smoothing behaviour.

2nd possible condition: Effect of the accounting change is -400 TL (decreasing)

Prechange earnings is 1600 TL [1200 – (-400)]

$$SB = \frac{|1600 - 1500| - |1200 - 1500|}{10,000} = (-) 0,02$$

SB is negative, so that action of the firm is accepted as the sign of non-smoothing behaviour.

4.1.4. Expected Earnings

Many expectation models to generate expected earnings number have been developed in the literature. Moses (1987, p.362) says that since the actual income number that a company's management can smooth toward is unknown, it cannot be argued that any one of these models is the most appropriate.

Many of the studies chose only one of these estimation models. However, in order to decrease the risk of using an unsuitable model while estimating expected earnings, instead of only one, the following four models were used to predict expected earnings.

- (1) *Simple Random Walk Model*: Expected earnings in the year of accounting change is predicted as equal to the reported earnings of previous year. In this model, it is assumed that the management who is making discretionary accounting change wants to keep the current year's earnings level at least equal to the last year's.
- (2) *Simple Random Walk Model with Inflation Adjustment*: Inflation rate has been very high in Turkey for more than twenty years. In the examination period of this study (1998-2003), the average inflation rate was 48 percent.¹² This shows us the necessity of adjusting the previous year's earnings according to inflation rate while predicting expected earnings of the accounting-change year.
- (3) *A Random Walk Model with Drift*: Average earnings growth over five preceding years is calculated and it is assumed that previous year's earnings will grow with the same rate.
- (4) *Average Return on Assets over Five Preceding Years*: Similar to the third method, it is estimated that in the year of accounting change, return on assets ratio will be equal to the average of the past five years' ROA ratios.

¹² Wholesale Price Index was used in the calculations.

As stated before, firms sample is composed of 75 firms, however the previous year's earnings data of 1 firm is not available therefore expected earnings number of that firm can not be predicted by using simple random walk model (SRWM) and simple random walk model with inflation adjustment (SRWM with inflation adjustment). Additionally, 7 firms' necessary data are not available to calculate expected earnings number according to a random walk model with drift and average return on assets over five preceding years (Average ROA) model.¹³ Lack of the necessary data decreased the number of sample firms to 74 for the first two methods, and 68 for the last two methods.

Table 4.1. Firms Samples by Expectation Model

Expectation Model	Sample Size
Simple Random Walk Model	74
Simple Random Walk Model With Inflation Adjustment	74
A Random Walk Model With Drift	68
Average Return On Assets Over Five Preceding Years	68

For one firm, these four expectation models generated four different expected earnings, and with these four expected earnings numbers SB index calculation was made four times. Therefore one firm may be an income smoother when its expected earnings is estimated by using SRWM and may be a non-smoother when its expected earnings is estimated by using random walk with drift model. Additionally, four different SB index results made necessary the replication of the statistical tests and analyses four times.

¹³ Although the last two methods require 5 years data, the firms of which 3 years data is available were also included into the sample.

4.1.5. Explanatory Variables and Hypotheses

Parallel to the studies in the related literature, firm size, ownership structure, industry, debt ratio, prechange earnings deviation and directional impact of the accounting changes are determined as the possible factors affecting income smoothing behaviors of firms. Additionally, “desire to have a net income close to zero” is accepted as a factor affecting the decisions of making discretionary accounting change. Hypotheses developed related to these factors are presented below.

4.1.5.1. Firm Size

In many studies, firm size was hypothesised as one of the variables affecting income smoothing behaviour. For example, Moses (1987, p.363) says that large firms are subject to more public scrutiny than smaller firms, and large upward and downward fluctuations of the earnings of larger firms will attract more attention of regulators and financial analysts. Therefore it is expected that larger firms engage in smoothing behaviour more frequently than smaller firms do.

Ashari, et al. (1994, p.293) has an opposite view and argues that because larger firms are likely to receive more attention from analysts and investors, lots of information is available and evaluated about them. Smoothed income signals from larger firms add little value, accordingly they have less incentive to smooth income.

Many studies measured firm size by total assets. Ashari, et al. (1994), Darrough, et al. (1998), Beattie, et al. (1994), Chaney and Jeter (1997), Kamarudin, et al. (2003) are just a few examples of such studies. However Moses (1987) and later Saudagaran and Sepe (1996) measured firm size with total sales.

In this thesis, in conformity with the related literature the relation between firm size and income smoothing behaviour is examined. Firm size is measured by both total assets (TASSETS) and total sales (TSALES). The following hypothesis is tested.

H₁: There is a difference between the firm sizes of income smoother and non-smoother firms.

4.1.5.2. Employee Costs

Moses (1987, p.363) says that employee costs may be increased by the actions of employees and union groups. A sharp increase in a firm's accounting earnings may cause demands for wage increases. On the other side, a sharp decrease in the accounting earnings may make the employees of the firm more pessimistic about the future well being of that firm. The employees may resign their jobs in order to work for the companies providing higher job security.

Therefore if employee costs concerns motivate management to reduce earnings fluctuations, it can be expected that smoothing behaviour is more strongly associated with firms that face strong employee or union groups (Moses, 1987, p.363).

In this thesis, the relationship between smoothing behaviour and the employee costs is also examined. Variables used to measure employee costs are (1) the number of employees (NOEMP) and (2) whether the employees are members of a union or not (UNION).

H₂: There is a difference between the employee costs of income smoother and non-smoother firms.

4.1.5.3. Ownership Structure

Naturally, management of a company wishes to be appreciated by the owners of that company and sometimes this may create incentives to adjust earnings. Unexpected poor performance may increase the probability of salary reduction and firing; unexpected good performance may increase the probability of future performance being poor by comparison. Therefore these concerns may create a motivation to smooth earnings (Moses, 1987, 364). Moses (1987, p.365) thinks that management with small ownership control has greater incentives to adjust performance measures and have more tendencies to smooth earnings.

There are some other views about the relationship between income smoothing behaviour and ownership structure. As managerial ownership increases, the incentives of managers and outside shareholders become more closely aligned. So there is less incentive for wealth transferring

activities. This suggests a negative association between smoothing and the level of managerial ownership (Beattie, et al., 1994, p.795).

Another approach is that as the managerial ownership increases, the managers become the owners of the firm and do not need earnings manipulation as a job-preserving strategy, they have sufficient voting power to guarantee future employment. They rather try to benefit from the direct wealth effects of any increase in share prices through income smoothing, and this is the indicator of a positive association (Carlson and Bathala, 1997, p.181; Beattie, et al., 1994, p.795).

Although Moses (1987) uses only managerial ownership variable to measure ownership structure, Önder (2000) uses (1) public ownership, (2) largest shareholder's ownership and (3) the ownership of the three largest shareholders as the variables to measure ownership structure while examining the relationship between the ownership structure and stock returns of the Turkish Traded Companies.

Parallel to these two studies, in this research also, percentage of managerial ownership (MNGOWN), public ownership (PUBOWN), single largest share (SINGLE), and total of top three largest shares (TOP3) are used as the variables to test the association between income smoothing and ownership structure.

H₃: There is a difference between the ownership structures of income smoother and non-smoother firms.

4.1.5.4. Industry

Firms from different industries may face different economical and operational conditions. These differences may affect income-smoothing ability of the firms and their motivations to smooth income. Therefore the association between income smoothing behaviour and the industry (INDUSTRY) is searched.

H₄: There is a difference between the income smoother and non-smoother firms according to the industries they operate in.

4.1.5.5. Debt Ratio

As stated before, Trueman and Titman (1988, p.128) say that income smoothing enables managers to reduce estimates of various claimants of the firm about the volatility of its earnings process and so lowers their assessment of the probability of bankruptcy. This decreases cost of capital and cost of borrowing, and provides opportunity to borrow at lower interest rates.

When a firm's total debt to total assets ratio is high, it might be expected that this firm wants to decrease its cost of borrowing. One way of effecting such a decrease is to create stable earnings. Therefore a positive association between income smoothing behaviour and total debt to total assets ratio (TD/TA) is expected. However, like the other hypotheses of this study, this hypothesis also doesn't imply the expected direction of the association.

H₅: There is a difference between the total debt to total assets ratios of income smoother and non-smoother firms.

4.1.5.6. Prechange Earnings Deviation

Moses (1987, p.365, 368) hypothesised that as the divergence between actual earnings and expected earnings increases, the incentives to smooth earnings also increase. Like Moses (1987), as a controlling variable, prechange earnings deviation from expectations (PED) variable was included in the tests.

$$PED = \frac{|PE_r - EE_r|}{SALES_r}$$

PE_r: Prechange earnings at the year of discretionary accounting change

EE_r: Expected earnings at the year of discretionary accounting change

H₆: There is a difference between the prechange earnings deviation from expectations of income smoother and non-smoother firms.

4.1.5.7. Directional Impact of the Accounting Change

Moses (1987, p.367, 368) included directional impact of accounting change (DIR) variable in his study because most previous studies testing similar variables had assumed that the influence of those variables would be reflected in attempts by the firm to adjust the level of earnings.

$$DIR = \frac{RE_r - PE_r}{SALES_r}$$

RE_r: Reported earnings at the year of discretionary accounting change

PE_r: Prechange earnings at the year of discretionary accounting change

Although Moses (1987) expected an inverse relationship between smoothing and the impact of the change on the level of earnings, in this study, no assumptions were made about the direction of the relationship.

H₇: There is a difference between income smoother and non-smoother firms according to the impact of the accounting change on the level of earnings.

4.1.5.8. Desire to Have a Net Income Close to Zero

As explained so far, the first 7 hypotheses are related to the relationship between income smoothing behaviour and the variables that are thought to be explanatory for smoothing. However, there may be other incentives of making DACs than income smoothing, such as having a net income figure close to zero.

Tax rates are very high in Turkey. The Turkish Confederation of Employer Associations conducted a research to find out the classification of the countries according to tax rates. This research shows that Turkey is the 19th country in the countries that have highest tax rates (<http://www.haberx>).

com/n/166738/turkiye-vergi-oranlari-en-yuksek.htm). Additionally, many news, articles and speeches about the excessiveness of the tax rates are seen in the media¹⁴. Tax evasion is accepted as the natural consequence of extremely high tax rates.

The Turkish listed firms are also suffering from the tax rates and so they might be taking steps to decrease their tax liability. Therefore, it is expected that the sample firms which have prechange earnings higher than zero will make DACs to decrease their net incomes and so their tax liability. However an important point should be noted here. To decrease tax liability, the firms making DACs should use the newly employed accounting method to calculate both financial and taxable income. If they only use the method for financial reporting purposes, their tax liability doesn't change.

In this study, we didn't make an examination to find out whether book and taxable incomes of the sample firms are the same or not. However in the footnotes, many times we faced with the explanation about the harmony of the discretionary accounting changes with the tax laws. Assuming that the firms use the same accounting methods for book and tax purposes, decreasing tax liability is one possible motivation of decreasing reported earnings through DACs.

The firms that have prechange loss will not have tax purposes. Rather their aim will be to decrease their losses. Amount of the loss is important for the external parties and a lower amount of loss gives a better message about the future performance of a firm. Therefore it is expected that the sample firms which have net losses will make DACs to decrease their losses.

Related to the above expectations, the following two hypotheses will be tested.

H₃: Monetary effects of DACs that are made by the firms with positive prechange earnings are different than the monetary effects of DACs that are made by the firms with negative prechange earnings.

H₄: There is a negative relationship between monetary effect of DACs and prechange earnings of the firms.

¹⁴ <http://www.turmob.org.tr/turmob/basin/10-06-2004.htm>,
<http://www.turizmgaletesi.com/articles/article.aspx?id=1536>
http://www.tisk.org.tr/isveren_sayfa.asp?yazi_id=1087&id=

4.2. Findings

In order to realise research objectives of this thesis, in the period of 1998-2003, the listed firms that made discretionary accounting change are determined. Directional effects and the types of the DACs are examined. Then, the sample firms are classified as smoothers and non-smoothers, and lastly statistical analyses conducted to test the hypotheses. The following parts summarise the findings.

4.2.1. Directional Effects of Discretionary Accounting Changes

92 discretionary accounting changes were found in the footnotes of the Turkish listed companies between 1998 and 2003. Although it is a regulatory requirement to disclose monetary effects of DACs in the footnotes, neither directions nor the amounts of the monetary effects of 7 DACs were disclosed.

When we examine the DACs of which we have information about the directional effects, we see that 59 % of them had increasing and 41 % had decreasing effects on the net incomes of the companies making the change.

Table 4.2. Directional Effects of the DACs

<i>Effect</i>	1998	1999	2000	2001	2002	2003	TOTAL	%
Increasing	4	11	5	21	9	-	50	59
Decreasing	6	11	3	9	5	1	35	41
							85	100
Unnoticed	-	4	1	1	1	-	7	
TOTAL	10	26	9	31	15	1	92	
%	<i>11</i>	<i>28</i>	<i>10</i>	<i>34</i>	<i>16</i>	<i>1</i>	100	

As seen in table 4.2, most DACs were made in 1999 and 2001. In these two years, the Turkish economy saw two big crises. These crises made economic and operational conditions much worse, although the most badly affected sector was banking sector; nearly all sectors had difficult times during these crisis years including 2000.

One possible explanation for the increase in the number of DACs in 1999 and 2001 may be that when managers faced harder economical conditions, it became more difficult to keep income level at the expectations. Therefore this increased the motivation of the managers about making DACs to alter the income number.

4.2.2. Types of the Discretionary Accounting Changes

Discretionary accounting changes were classified into five groups according to their types. These groups are (1) change in depreciation / amortisation estimate, (2) change in depreciation / amortisation method, (3) change in capitalising / expensing policies, (4) change in inventory valuation method and (5) other.

Table 4.3. Discretionary Accounting Changes by Year and Type

<i>Type</i>	1998	1999	2000	2001	2002	2003	TOTAL	%
Change in Depreciation / Amortisation Estimates	-	2	1	1	3	-	7	7,6
Change in Depreciation / Amortisation Method	4	8	2	8	1	1	24	26
Change in Capitalising / Expensing Policies	3	7	3	10	7	-	30	32,6
Change in Inventory Valuation Method ¹⁵	1	4	2	9	4	-	20	21,7
Other	2	5	1	3	-	-	11	12
TOTAL	10	26	9	31	15	1	92	100

As seen in table 4.3, managers mostly preferred to change their capitalisation and / or expense policies, and then to change depreciation / amortisation methods. The third most common DAC type is change in inventory valuation method.

Change in depreciation / amortisation estimate group includes the changes about useful lives and salvage values of depreciable assets. For example, one firm changed the useful lives of its fixed assets from 5 years to 7 years and another firm changed the useful life of its one asset from 10 years to 3 years. When we examine the explanations about these types of changes in the footnotes, we see

¹⁵ With inventory valuation methods, we mean cost formula or cost flow assumptions such as LIFO, FIFO or weighted average.

that most of them were made with the aim of abandoning the useful lives determined according to tax law. Determining different useful lives according to book purposes and tax purposes cause differences between financial (or book) income and taxable income, and therefore deferred tax asset or liability is reported on the balance sheet.

As seen in table 4.4, change in depreciation / amortisation method group includes changes from accelerated method to straight-line method, and from straight-line method to accelerated method. 12 of those changes have increasing effects, 10 have decreasing effects and the effects of 2 are not disclosed in the footnotes.

Table 4.4. Details of the Change in Depreciation / Amortisation Method Group

<i>Type</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>TOTAL</i>
⇒ From Accelerated to Straight Line	2i	5i, 1d,1φ	-	4i, 1d	-	-	14
⇒ From Straight Line to Accelerated	1d	1d	1d,1φ	2d	1d	1d	8
⇒ Other	1i	-	-	1d	-	-	2
	4	8	2	8	1	1	24

Note: i = increasing, d = decreasing, φ = unnoticed.

Change in depreciation / amortisation method group is composed of the depreciation / amortisation method changes for both previously recorded and newly acquired assets. Accepting the usage of a different depreciation method for newly acquired as a DAC may be arguable from a theoretical perspective. However, in this study the effects of DACs to income are examined and it is thought that one of the most important motivations of making a DAC is smoothing income. Since we don't know the real intentions of managers, we can not be sure about the reasons of accounting changes. For example, in this case newly acquired assets might have different economical useful lives or again management might be trying to manipulate income. In this study, these types of DACs are also included in the analyses in order to understand whether they affect the income number in the expected direction and/or whether the reason of making these changes is income smoothing.

Change in capitalising / expensing policies group includes 32,6 % of the DACs sample. Managers decided to expense costs while previously capitalising them or vice versa. Table 4.5 shows the details of the changes in capitalising / expensing policies. 18 of these changes increased income (or decreased loss), 11 of them decreased income (or increased loss), and the effect of 1 change was not disclosed. Especially after 2000, it seems that managers have inclination to make income increasing accounting changes (or capitalisation decisions). 75 % of the DACs in the years 2000, 2001 and 2002 have increasing effects.

Table 4.5. Details of the Change in Capitalising / Expensing Policies Group

<i>Type</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>TOTAL</i>
⇒ Capitalisation of Financing Costs	-	2i	2i	2i	2i	-	8
⇒ Capitalisation of Advertising Costs	-	-	-	-	1i	-	1
⇒ Capitalisation of Exchange Rate Differences	-	-	1i	4i	1i	-	6
⇒ Capitalisation of Research and Development Costs	-	-	-	1i	-	-	1
⇒ Change in Valuation Method of Equity Securities	-	-	-	1d	1i	-	2
⇒ Expensing Exchange Rate Differences	1d	1d, 1φ	-	1d	1d	-	5
⇒ Expensing Financing Costs	2d	1d	-	1d	1d	-	5
⇒ Other	-	1d, 1i	-	-	-	-	2
	3	7	3	10	7	-	30

Note: i = increasing, d = decreasing, φ = unnoticed.

The fourth group of DACs is change in inventory valuation method. This group includes 21,7 % of DACs sample. Many different types of accounting changes took place. Moses (1987, p.371) found that 98 of the 212 DACs were adoptions or extensions of the usage of LIFO. However in this study, there is no such a tendency to switch to or adopt a certain valuation method.

Table 4.6. Details of the Change in Inventory Valuation Method Group

<i>Type</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>TOTAL</i>
⇒ From Moving Weighted Average to LIFO		1d					1
⇒ From Moving Weighted Average to FIFO		1d					1
⇒ From Moving Weighted Average to Weighted Average				1d	1i,1d		3
⇒ From Weighted Average to FIFO			1i				1
⇒ From Weighted Average to LIFO				1d			1
⇒ From Weighted Average to Moving Weighted Average		1 ϕ					1
⇒ From FIFO to Weighted Average		1d	1d		1d		3
⇒ From LIFO to FIFO				1i			1
⇒ From LIFO to Moving Weighted Average				3i	1i		4
⇒ From LIFO to Weighted Average				3i			3
⇒ Other	1d						1
	<i>1</i>	<i>4</i>	<i>2</i>	<i>9</i>	<i>4</i>	<i>-</i>	<i>20</i>

Note: i = increasing, d = decreasing, ϕ = unnoticed.

There are also some other discretionary accounting changes that could not be classified under the previous four groups. Examples for the changes classified under "other" group are starting or abandoning revaluation of assets and changing cost accounting method.

4.2.3. Smoother and Non-smoother Firms according to SB Index

As stated before, expected earnings of the firms that made DACs was calculated by using 4 different models, and these models generated 4 different expected earnings numbers for each firm. By using Moses' (1987) smoothing behaviour index these firms were categorised as smoothers and non-smoothers. Using 4 different expected earnings numbers and making calculations 4 times caused that some firms became smoothers according to one model but not according to other.

When expected earnings generated by SRWM were used in SB index calculation, 46 of the sample firms had positive SB values and so classified as income smoothers, and 28 of the sample firms had negative values and classified as non-smoothers. Table 4.7 shows the number of smoother and non-smoother firms that were determined according to the four expectation models.

Table 4.7. Number of Smoother and Non-smoother Firms

Model	Smoothers	%	Non-smoothers	%	Total	% Total
SRWM	46	62	28	38	74	100
SRWM with Inflation Adjustment	43	58	31	42	74	100
Random Walk with Drift	42	62	26	38	68	100
Average ROA	43	63	25	37	68	100

4.2.4. Results of the Statistical Tests

In order to test the hypotheses, t-test, regression analyses, correlation analyses and Kruskal-Wallis tests are conducted. Results of these tests are presented in the following parts.

4.2.4.1. T-Tests

T-tests were applied in order to find out whether there are significant differences between smoother and non-smoother firms according to each of the explanatory variables. As explained in part 4.2.3, smoother and non-smoother firm classification changed according to the model used to estimate expected earnings. Therefore t-tests were applied for each smoother and non-smoother firms pairs.

Like Moses (1987), 90 percent confidence level has been selected. Moses (1987) predicted the directions of the associations between the variables and smoothing behaviour so he used one-tailed significance results to make evaluations. However, hypotheses of this study don't indicate the expected direction of the association and therefore two-tailed significance results were used.¹⁶

Comparison of the smoother and non-smoother firms with t-tests shows that smoother firms have more total sales and total assets than non-smoother firms do. However these differences are not significant differences, therefore we cannot say that smoother firms are bigger than non-smoother firms are.

¹⁶ If a hypothesis shows the direction of the relationship, results of the one-tailed significance are used. If a hypothesis doesn't show any direction, results of the two-tailed significance are used (Altunışık, et al., 2004, p.177)

When we examine the t-test results of the variables related to employee costs, we see that number of employees of smoother firms is higher than the number of the employees of non-smoother firms that were determined according to the first three expectation models. On the other side, the smoother firms have fewer employees than the non-smoother firms that were determined according to average ROA model. Test results related to unionisation rates shows that unionisation rate of the employees of smoother firms is higher than the unionisation rate of the employees of non-smoother firms. However, these differences are not significant. There is no significant difference between the employee costs of income smoother and non-smoother firms.

Non-smoother firms have higher managerial, public and single ownership rates and lower largest three ownership rates.¹⁷ However again there is not a significant difference between the groups. Hypothesis related to the ownership structure is rejected.

As explained in part 4.1.5.5, it is logical to think that the firms with higher total debt to total assets ratios will attempt more smoothing behaviours and want to have smooth income figures in order to decrease their borrowing costs. The t-test results show that smoother firms have higher mean total debt to total assets ratio, however the difference is not significant again. Therefore the hypothesis which says there is a difference between total debt to total assets ratios of smoother and non-smoother firms is rejected.

The differences between prechange earnings deviations (the divergence between actual earnings and expected earnings) of smoother and non-smoother firms were also analysed with t-tests. Results don't show any significant difference related to this variable.

T-test results show that there is a significant difference between smoother and non-smoother firms according to the directional impact of the accounting change (DIR) variable. In other words, smoother firms have higher DIR than non-smoother firms do. Another important point is that although mean DIR of smoother firms is positive, mean DIR of non-smoother firms is negative. DIR is calculated with the following formula.

¹⁷ Non-smoother firms have higher largest three ownership rates only according to SRWM.

$$DIR = \frac{|RE_r - PE_r|}{SALES_r}$$

RE_r : Reported earnings at the year of discretionary accounting change

PE_r : Prechange earnings at the year of discretionary accounting change

All the sample firms have positive sales amount, then a positive DIR means $RE_r > PE_r$, and a negative DIR means $RE_r < PE_r$. As a result, smoother firms generally made accounting changes that have increasing effects and non-smoother firms made accounting changes that have decreasing effects.



Table 4.8. T-test Results – Smoother vs. Non-smoother Firms according to SRWM

Classification according to Smoothing Behaviour					
		Smoother (S)		Non-smoother (N-S)	
		n = 46		n = 28	
Variable		Mean	Std. Dev.	t-Value	Significance
TSALES	N-S	98024314	198204644	-0,8961	0,3732
	S	145633860	234590655		
TASSETS	N-S	108818549	303957223	-0,3673	0,7145
	S	131196407	218983473		
NOEMP	N-S	995,18	1353,52	-0,7743	0,4413
	S	1256,07	1436,09		
UNION	N-S	1,3214	0,4756	-1,1588	0,2512
	S	1,4565	0,5036		
MNGOWN	N-S	10,8250	20,5301	0,0590	0,9531
	S	10,5370	20,2708		
PUBLICOWN	N-S	28,8029	15,4640	0,6623	0,5099
	S	26,5059	13,8380		
SINGLE	N-S	51,4200	22,1540	1,5691	0,1210
	S	43,9646	18,2816		
TOP3	N-S	64,8971	16,4747	0,2262	0,8217
	S	64,0380	15,3392		
TD/TA	N-S	0,6700	0,3533	-0,2045	0,8385
	S	0,7000	0,7241		
PED	N-S	0,1586	0,3891	-0,6981	0,4874
	S	0,2714	0,7974		
DIR	N-S	-0,0284	0,1368	-1,9249	0,0582*
	S	0,0260	0,1050		

* Significant at 0.10 level

N-S : Non-smoother firms

S : Smoother firms

Table 4.9. T-test Results – Smoother vs. Non-smoother Firms according to SRWM with Inflation Adjustment

Classification according to Smoothing Behaviour					
		Smoother (S)	Non-smoother (N-S)		
		n = 43	n = 31		
Variable		Mean	Std. Dev.	t-Value	Significance
TSALES	N-S	98922384	189935314	-0,9463	0,3472
	S	148308010	241544030		
TASSETS	N-S	104499412	289466460	-0,5243	0,6017
	S	135871450	225183060		
NOEMP	N-S	1059,03	1330,49	-0,5097	0,6118
	S	1228,23	1462,49		
UNION	N-S	1,3548	0,4864	-0,7449	0,4588
	S	1,4419	0,5025		
MNGOWN	N-S	11,9039	21,0403	0,4517	0,6528
	S	9,7391	19,8248		
PUBLICOWN	N-S	29,0977	14,6587	0,8716	0,3863
	S	26,1330	14,2769		
SINGLE	N-S	50,2016	23,0102	1,1965	0,2368
	S	44,3228	17,4248		
TOP3	N-S	64,1735	16,7468	-0,0902	0,9284
	S	64,5107	15,0431		
TD/TA	N-S	0,6594	0,3422	-0,3498	0,7275
	S	0,7098	0,7468		
PED	N-S	0,1455	0,3527	-0,7896	0,4323
	S	0,2338	0,5451		
DIR	N-S	-0,0270	0,1305	-2,0079	0,0484*
	S	0,0287	0,1076		

* Significant at 0.05 level

N-S : Non-smoother firms

S : Smoother firms

Table 4.10. T-tests Result – Smoother vs. Non-smoother Firms according to Random Walk with Drift Model

Classification according to Smoothing Behaviour					
		Smoother (S)	Non-smoother (N-S)		
		n = 42	n = 26		
Variable		Mean	Std. Dev.	t-Value	Significance
TSALES	N-S	93404497	222720659	-1,1493	0,2546
	S	158889142	231686792		
TASSETS	N-S	91435199	219967709	-0,9309	0,3553
	S	152448465	285577433		
NOEMP	N-S	934,19	1171,81	-1,0177	0,3125
	S	1280,31	1467,26		
UNION	N-S	1,3077	0,4707	-0,7986	0,4274
	S	1,4048	0,4968		
MNGOWN	N-S	11,8131	21,0836	0,7416	0,4610
	S	8,3298	17,3002		
PUBLICOWN	N-S	30,8423	16,4948	1,6334	0,1071
	S	24,9967	12,8526		
SINGLE	N-S	46,7165	22,3206	0,0372	0,9704
	S	46,5302	18,5238		
TOP3	N-S	61,4700	17,0720	-1,1862	0,2398
	S	66,1069	14,7402		
TD/TA	N-S	0,6938	0,3515	-0,1069	0,9152
	S	0,7107	0,7535		
PED	N-S	1,1377	3,1133	0,0203	0,9838
	S	1,1131	5,6378		
DIR	N-S	-0,0395	0,1409	-2,4291	0,0179*
	S	0,0339	0,1070		

* Significant at 0.05 level

N-S : Non-smoother firms

S : Smoother firms

Table 4.11. T-test Results – Smoother vs. Non-smoother Firms according to Average ROA Method

Classification according to Smoothing Behaviour					
		Smoother (S)	Non-smoother (N-S)		
		n = 43	n = 25		
Variable		Mean	Std. Dev.	t-Value	Significance
TSALES	N-S	101200613	205195781	-0,8956	0,3737
	S	152833618	241874264		
TASSETS	N-S	113560222	321125110	-0,3704	0,7122
	S	138166166	225128292		
NOEMP	N-S	1190,72	1786,00	0,1957	0,8454
	S	1123,12	1067,84		
UNION	N-S	1,3200	0,4761	-0,6139	0,5414
	S	1,3953	0,4947		
MNGOWN	N-S	11,3448	17,3864	0,5613	0,5765
	S	8,6830	19,6470		
PUBLICOWN	N-S	29,5016	16,2028	0,9827	0,3293
	S	25,9121	13,4687		
SINGLE	N-S	49,2476	21,5809	0,8343	0,4071
	S	45,0630	18,9421		
TOP3	N-S	62,5836	16,3929	-0,6978	0,4878
	S	65,3516	15,4066		
TD/TA	N-S	0,6620	0,3659	-0,4210	0,6751
	S	0,7288	0,7414		
PED	N-S	0,2047	0,4680	-0,5572	0,5793
	S	0,3288	1,0528		
DIR	N-S	-0,0447	0,1419	-2,6438	0,0102*
	S	0,0352	0,1055		

* Significant at 0.05 level

N-S : Non-smoother firms

S : Smoother firms

In order to make statistical tests related to the eighth hypothesis, the sample firms were categorised into two groups according to their prechange earnings. The first group includes the firms that have positive prechange earnings and the second group includes the firms that have negative prechange earnings. T-tests were used to determine whether there are differences between the monetary effects of DACs of these two groups.

As shown in the following table, each group includes 37 firms. Mean monetary effect of DACs of the first group is -93132,51. On the average, the firms with positive prechange earnings have made income-decreasing DACs. Mean monetary effect of DACs of the second group is 3406952,78. The firms with negative prechange earnings have generally made income-increasing DACs. There is a significant difference between the groups according to the monetary effects of DACs, so the eighth hypothesis is accepted.

Table 4.12. T-test Results – Comparison of the Firms that Have Positive PE with the Firms that Have Negative PE

Classification according to Prechange Earnings					
		Firms with positive PE (PPE)	Firms with negative PE (NPE)		
		n = 37	n = 37		
Variable		Mean	Std. Dev.	t-Value	Significance
ME	PPE	-93132,51	994990,69	-2,0844	0,044*
	NPE	3406952,78	10165588,67	-2,0844	
PE	PPE	5166687,68	6265741,82	4,2745	0,000**
	NPE	-26667548,89	44866070,03	4,2745	
RE	PPE	5073555,16	6101251,20	4,1646	0,000**
	NPE	-23260596,11	40932206,72	4,1646	

* Significant at 0.05 level

** Significant at 0.01 level

PPE : The group of the firms that have positive prechange earnings

NPE : The group of the firms that have negative prechange earnings

ME : Monetary Effect of DACs

PE : Prechange Earnings

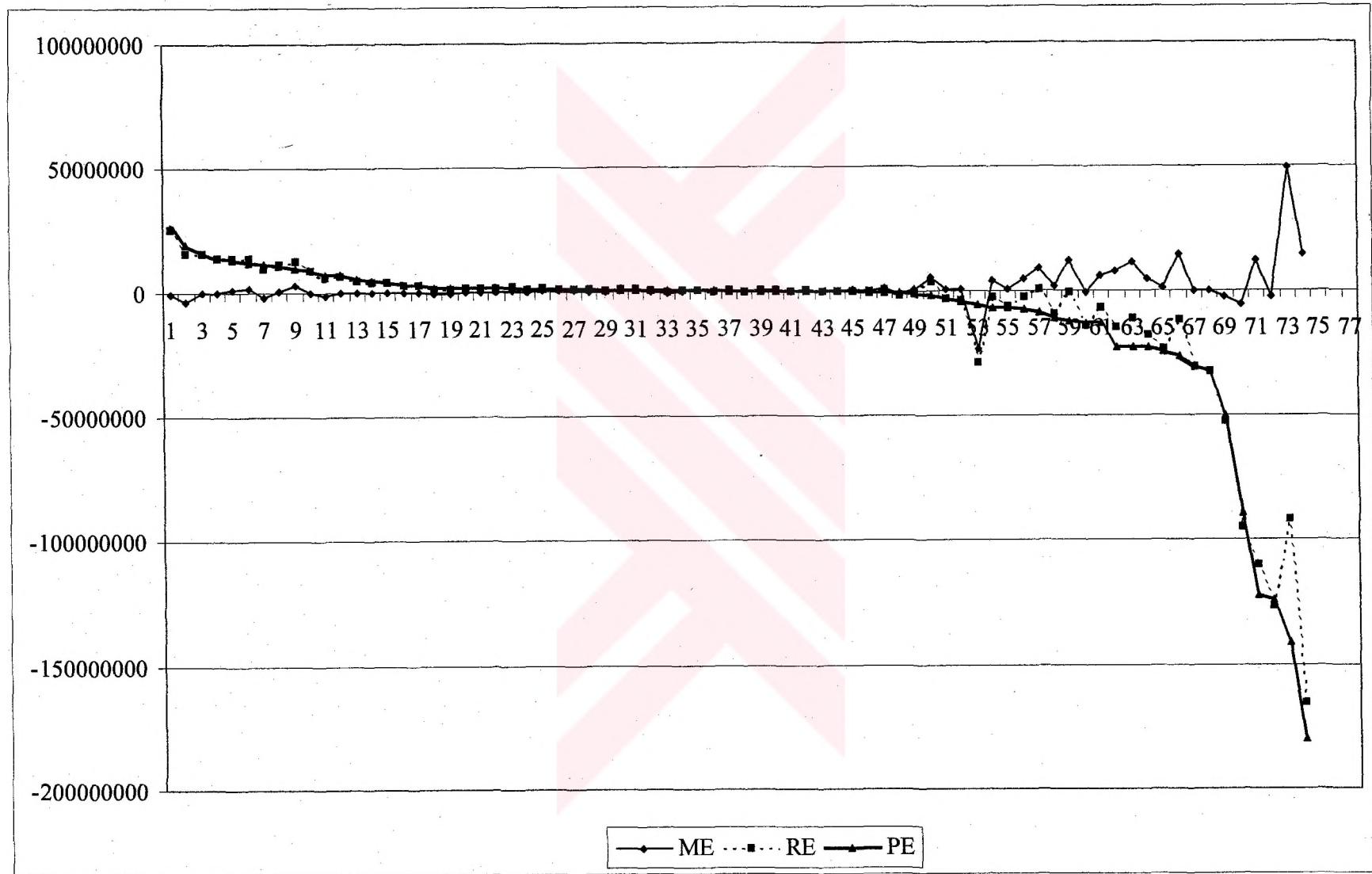
RE : Reported Earnings

The sample firms were sorted according to their prechange earnings in a descending order and the graph 4.1, which is presented on the next page, was drawn. Prechange earnings, reported earnings and monetary effects of DACs were plotted.

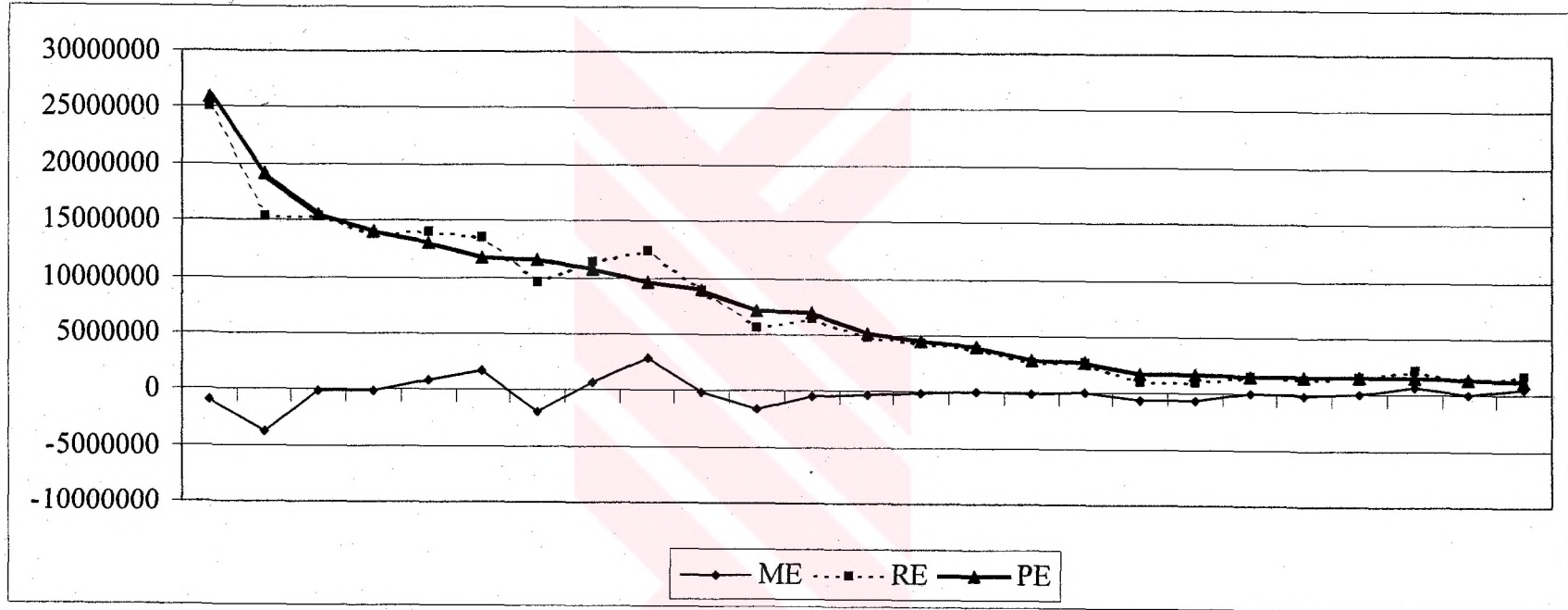
Graph 4.1 doesn't show the details well but roughly we understand that when PE and RE are above zero, ME is below zero or just a little bit above zero. When PE and RE diverge from zero much, ME also diverges from the zero line but in the opposite direction.

Because graph 4.1 doesn't show the details well, the 74 firms, which are ordered according to their prechange earnings, were grouped into three. Graph 4.2 shows the first 25 firms' PE, RE and ME. The second 25 firms' data were shown in graph 4.3 and the last 24 firms data were shown in graph 4.4. From these three graphs, it is clearer that most of the DACs helped firms to make their reported earnings closer to zero. There are also some firms that have negative prechange earnings but positive reported earnings. One possible reason of this situation may be that for these firms, seeming profitable is more important than not paying taxes.

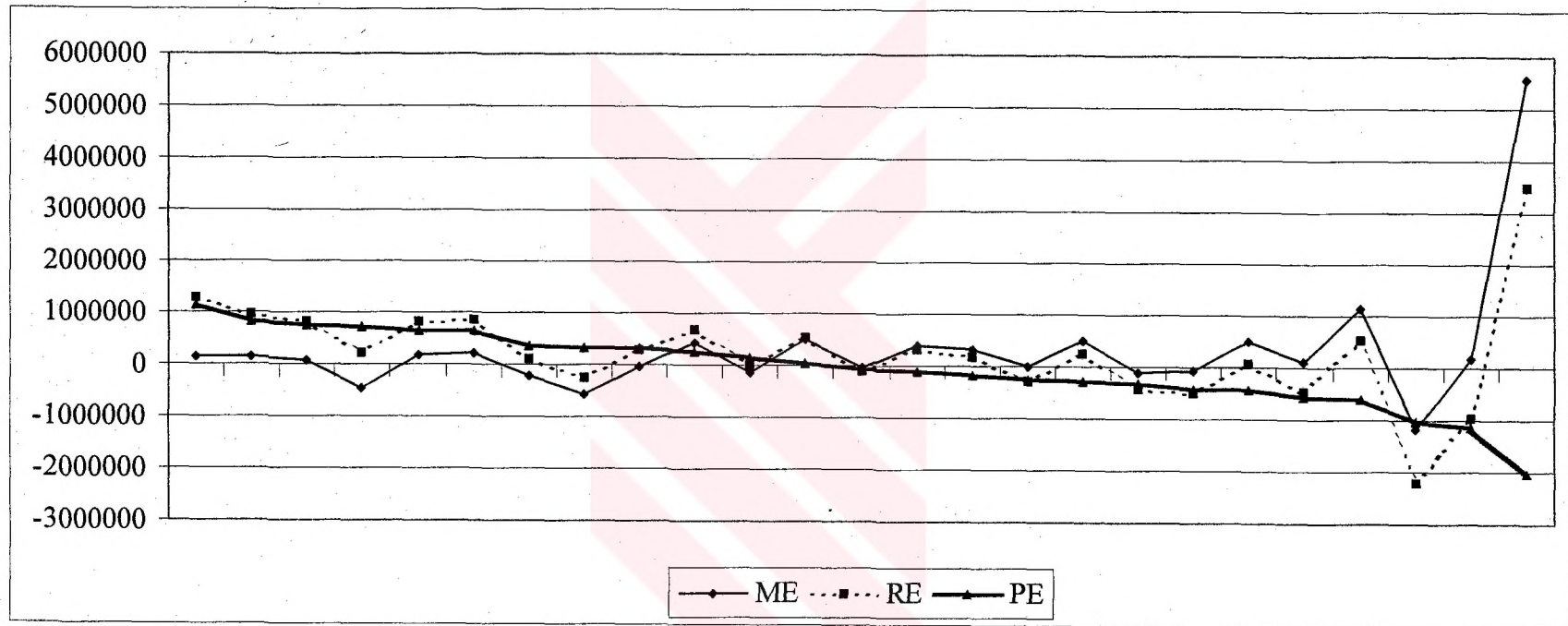
Graph 4.1. Prechange Earnings, Reported Earnings and Monetary Effects of DACs of the Sample Firms



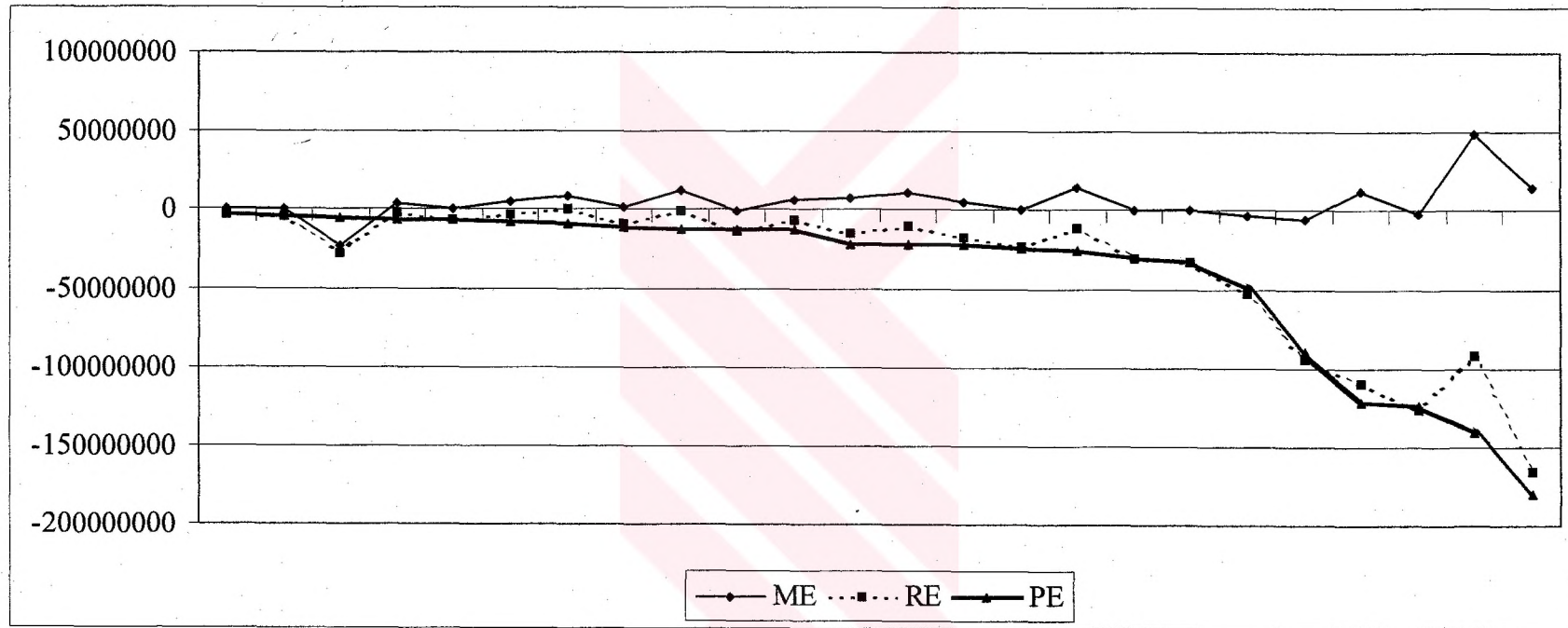
Graph 4.2. Prechange Earnings, Reported Earnings and Monetary Effects of DACs of the First 25 Firms



Graph 4.3. Prechange Earnings, Reported Earnings and Monetary Effects of DACs of the Second 25 Firms



Graph 4.4. Prechange Earnings, Reported Earnings and Monetary Effects of DACs of the Last 24 Firms



4.2.4.2. Regression Analyses

Regression analysis shows the relationship between dependent variable and independent variable(s). When there is only one independent variable, it is named as simple regression analysis and when there is more than one independent variables, it is named as multiple regression (Büyüköztürk, 2003, p.87). In this research, SB is the dependent variable and TSALES, TASSETS, NOEMP, UNION, MNGOWN, PUBLICOWN, SINGLE, TOP3, TD/TA, PED, DIR are the independent variables. Multiple regression analyses are also conducted four times because there are 4 different SB values generated by 4 different expectation models. The results of the regression analyses are presented in tables 4.13 through 4.16.

Results of the regression analyses show that only DIR is significant at the 95 % confidence level when we use SB that is generated by all the four expectation models and MNGOWN variable is significant at 90 % confidence level when we use SB that is generated by SRWM with inflation adjustment.

Therefore we can say that TSALES, TASSETS, NOEMP, UNION, PUBLICOWN, SINGLE, TOP3, TD/TA and PED variables are not explanatory for the smoothing behaviour of the sample firms. Only DIR and MNGOWN variables are helpful in explaining smoothing behaviour. From the sign of the coefficient of DIR, we understand that there is a significant positive relationship between income smoothing behaviour and directional impact of the change. When directional impact of the change is high, smoothing behaviour is also high, and when directional impact of the change is low, smoothing behaviour is also low.

On the other hand, the sign of the coefficient of MNGOWN variable is negative. This means there is a negative relationship between managerial ownership structure and smoothing behaviours of the firms. When the percentage of managerial ownership increases, smoothing behaviours of the firms decrease, and when the percentage of managerial ownership decreases, smoothing behaviours of the firms increase.

Table 4.13. Regression Results – SRWM

<i>Dependent Variable : Smoothing Behaviour</i>				
<u>Variables</u>	<u>Coefficient</u>	<u>Std. Error</u>	<u>T-Value</u>	<u>Significance</u>
CONSTANT	0,021029	0,036248	0,580154	0,563948
TSALES	0,000000	0,000000	0,653659	0,515788
TASSETS	0,000000	0,000000	-0,534254	0,595108
NOEMP	-0,000001	0,000004	-0,213624	0,831552
UNION	0,007160	0,008147	0,878816	0,382950
MNGOWN	-0,000227	0,000220	-1,032023	0,306136
PUBLICOWN	0,000007	0,000440	0,016078	0,987224
SINGLE	-0,000171	0,000288	-0,594506	0,554373
TOP3	-0,000256	0,000516	-0,496182	0,621549
TD/TA	-0,005776	0,008307	-0,695373	0,489462
PED	0,009715	0,007887	1,231853	0,222732
DIR	0,951814	0,036005	26,435581	0,000000*
R ² = ,946 F = 96,206 Significance level = ,000				
* Significant at 0,01 level				

Table 4.14. Regression Results – SRWM with Inflation Adjustment

<i>Dependent Variable : Smoothing Behaviour</i>				
<u>Variables</u>	<u>Coefficient</u>	<u>Std. Error</u>	<u>T-Value</u>	<u>Significance</u>
CONSTANT	0,027508	0,038299	0,718248	0,4753462
TSALES	0,000000	0,000000	0,965827	0,3379446
TASSETS	0,000000	0,000000	-0,467314	0,6419407
NOEMP	-0,000004	0,000004	-0,901451	0,3708940
UNION	0,005681	0,008544	0,664993	0,5085613
MNGOWN	-0,000393	0,000232	-1,694985	0,0951779**
PUBLICOWN	-0,000093	0,000468	-0,198322	0,8434527
SINGLE	-0,000132	0,000305	-0,433619	0,6660951
TOP3	-0,000353	0,000544	-0,649939	0,5181719
TD/TA	-0,001511	0,007648	-0,197545	0,8440579
PED	0,013908	0,009377	1,483208	0,1431678
DIR	0,945695	0,037134	25,467264	0,0000000*
R ² = ,939 F = 85,388 Significance level = ,000				
* Significant at 0,01 level				
** Significant at 0,1 level				

Table 4.15. Regression Results – Random Walk with Drift

<i>Dependent Variable : Smoothing Behaviour</i>				
<u>Variables</u>	<u>Coefficient</u>	<u>Std. Error</u>	<u>T-Value</u>	<u>Significance</u>
CONSTANT	0,015690	0,026038	0,602594	0,549212
TSALES	0,000000	0,000000	0,351672	0,726404
TASSETS	0,000000	0,000000	-0,827029	0,411731
NOEMP	0,000003	0,000004	0,868374	0,388896
UNION	0,005375	0,005982	0,898562	0,372734
MNGOWN	-0,000200	0,000158	-1,268328	0,209928
PUBLICOWN	-0,000180	0,000314	-0,574395	0,568001
SINGLE	-0,000092	0,000207	-0,444685	0,658262
TOP3	-0,000236	0,000372	-0,635292	0,527826
TD/TA	0,000679	0,007898	0,085945	0,931817
PED	-0,000038	0,001209	-0,031450	0,975022
DIR	0,989107	0,026990	36,647612	0,000000*
R ² = ,976 F = 208,260 Significance level = ,000				
* Significant at 0,01 level				

Table 4.16. Regression Results – Average ROA

<i>Dependent Variable : Smoothing Behaviour</i>				
<u>Variables</u>	<u>Coefficient</u>	<u>Std. Error</u>	<u>T-Value</u>	<u>Significance</u>
CONSTANT	0,007885	0,020266	0,389058	0,698709
TSALES	0,000000	0,000000	0,744488	0,459694
TASSETS	0,000000	0,000000	-0,548398	0,585598
NOEMP	-0,000002	0,000003	-0,571497	0,569950
UNION	0,003768	0,004695	0,802644	0,425574
MNGOWN	0,000025	0,000123	0,200002	0,842204
PUBLICOWN	0,000121	0,000243	0,496370	0,621576
SINGLE	0,000013	0,000161	0,079674	0,936781
TOP3	-0,000214	0,000289	-0,741350	0,461579
TD/TA	0,004454	0,006332	0,703470	0,484678
PED	-0,005650	0,005247	-1,076725	0,286220
DIR	1,000917	0,021669	46,191971	0,000000*
R ² = ,985 F = 340,466 Significance level = ,000				
* Significant at 0,01 level				

Moses (1987, p.368) agreed with the views suggesting that “actions to change earnings amount are undertaken only when the deviation of actual performance from expectations causes management to feel enough pressure”. He made further tests to find out whether there is a different relationship between smoothing behaviour and the explanatory variables depending on how much earnings diverge from expectations. He divided the sample firms into two as “PED-high” and PED-low” groups by splitting the sample at the median PED value. SB was regressed on the independent variables separately for each group (Moses, 1987, p.368).

Similar to the study of Moses (1987), the sample firms were divided into PED-high and PED-low groups according to the median PED value and the differences between them were examined through conducting regression analyses for each group.

The results of the regression analyses are presented in the following four tables. Results of the PED-low groups according to Random Walk with Drift Model are not statistically meaningful because significance level is below 0,05.

Only DIR is significant in the analyses of both PED-high and PED-low groups. Results of the regression analyses conducted on the firms that are determined according to SRWM and SRWM with inflation adjustment show that managerial ownership variable is significant when prechange earnings deviation is low. In other words, when PED is low, MNGOWN becomes more explanatory for the smoothing behaviour. There is a negative association between smoothing behaviour and managerial ownership structure, and this negative association becomes stronger when the firms have lower PED values.

According the regression analyses results of the firms that are determined according to Random Walk with Drift Model, MNGOWN is significant at 95 % confidence level and PUBLICOWN, TOP3 and DIR are significant at 99 % confidence level. There is a significant negative relationship between the ownership structure variables (MNGOWN, PUBLICOWN and TOP3) and smoothing behaviour of the sample firms in PED-high group.

Table 4.17. Regression Results – SRWM (Split on PED)

<i>Dependent Variable : Smoothing Behaviour</i>				
	<u>PED HIGH</u> (Above Median)		<u>PED LOW</u> (Below Median)	
<u>Variables</u>	<u>T-Value</u>	<u>Significance</u>	<u>T-Value</u>	<u>Significance</u>
CONSTANT	-0,136431	0,892573	0,762391	0,452688
TSALES	-0,234727	0,816333	0,668669	0,509600
TASSETS	0,413007	0,683122	-0,605001	0,550423
NOEMP	-1,103688	0,280239	0,308336	0,760284
UNION	0,649846	0,521719	0,648233	0,522518
MNGOWN	-0,129461	0,898029	-2,197013	0,037130**
PUBLICOWN	0,506830	0,616716	-0,622826	0,538824
SINGLE	-1,612218	0,119469	-0,461176	0,648507
TOP3	0,790475	0,436685	-1,033969	0,310673
TD/TA	-0,475272	0,638719	0,518850	0,608254
DIR	23,447090	0,000000*	4,319933	0,000202*
	R ² = ,636 F = 4,538 Significance level = ,001		R ² = ,969 F = 79,129 Significance level = ,000	
* Significant at 0,01 level				
** Significant at 0,05 level				

Table 4.18. Regression Results – SRWM with Inflation Adjustment (Split on PED)

<i>Dependent Variable : Smoothing Behaviour</i>				
	<u>PED HIGH</u> (Above Median)		<u>PED LOW</u> (Below Median)	
<u>Variables</u>	<u>T-Value</u>	<u>Significance</u>	<u>T-Value</u>	<u>Significance</u>
CONSTANT	1,000121	0,326835	1,274261	0,213843
TSALES	-0,750486	0,459968	1,035768	0,309848
TASSETS	1,030283	0,312742	-0,688128	0,497466
NOEMP	-1,118485	0,273993	-0,489926	0,628295
UNION	1,526776	0,139370	-0,520665	0,607006
MNGOWN	-1,136576	0,266493	-1,847282	0,076116**
PUBLICOWN	-0,858936	0,398537	-0,397132	0,694512
SINGLE	-1,239192	0,226782	0,167236	0,868478
TOP3	-0,720586	0,477849	-0,602238	0,552232
TD/TA	0,710361	0,484055	-1,652543	0,110451
DIR	7,383565	0,000000*	15,802512	0,000000*
	R ² = ,944 F = 42,225 Significance level = ,000		R ² = ,954 F = 54,417 Significance level = ,000	
* Significant at 0,01 level				
** Significant at 0,1 level				

Table 4.19. Regression Results – Random Walk with Drift (Split on PED)

<i>Dependent Variable : Smoothing Behaviour</i>				
	<u>PED HIGH</u> (Above Median)		<u>PED LOW</u> (Below Median)	
<u>Variables</u>	<u>T-Value</u>	<u>Significance</u>	<u>T-Value</u>	<u>Significance</u>
CONSTANT	3,370844	0,002638	-1,053225	0,303177
TSALES	-0,821251	0,419935	1,280528	0,213123
TASSETS	0,547656	0,589204	-1,270254	0,216695
NOEMP	0,452509	0,655142	-0,057950	0,954289
UNION	0,793395	0,435657	1,961111	0,062084
MNGOWN	-2,279030	0,032269**	-0,584958	0,564271
PUBLICOWN	-2,858768	0,008881*	0,227716	0,821879
SINGLE	0,178170	0,860149	0,248959	0,805602
TOP3	-2,953608	0,007124*	-0,013863	0,989059
TD/TA	0,027357	0,978411	0,815694	0,423043
DIR	52,066123	0,000000*	1,656330	0,111236
	R ² = ,994 F = 408,745 Significance level = ,000		R ² = ,390 F = 1,470 Significance level = ,213	
* Significant at 0,01 level				
** Significant at 0,05 level				

Table 4.20. Regression Results – Average ROA (Split on PED)

<i>Dependent Variable : Smoothing Behaviour</i>				
	<u>PED HIGH</u> (Above Median)		<u>PED LOW</u> (Below Median)	
<u>Variables</u>	<u>T-Value</u>	<u>Significance</u>	<u>T-Value</u>	<u>Significance</u>
CONSTANT	0,363789	0,719339	0,205211	0,839212
TSALES	-0,239789	0,812618	0,410841	0,684992
TASSETS	0,474814	0,639397	-0,321392	0,750816
NOEMP	-0,204305	0,839912	-0,489617	0,629043
UNION	0,682585	0,501687	0,835576	0,411990
MNGOWN	-0,365693	0,717936	-0,498253	0,623037
PUBLICOWN	-0,602216	0,552921	-0,002620	0,997932
SINGLE	-1,044664	0,307034	-0,157980	0,875852
TOP3	-0,081204	0,935982	-0,609143	0,548400
TD/TA	0,600393	0,554115	1,250485	0,223695
DIR	1004,96199	0,000000*	6,314220	0,000002*
	R ² = 1,000 F = 149803,3 Significance level = ,000		R ² = ,730 F = 6,213 Significance level = ,000	
* Significant at 0,01 level				

4.2.4.3. Correlation Analyses

Regression analysis measures the effects of independent variables on a single dependent variable. Correlation analysis measures the covariation of or association between two variables (Zikmund, 1996). Similar results might be expected from those two tests. In order to see whether the results of the tests differentiate, correlation analyses were also conducted. As seen in table 4.21, TD/TA, PED and DIR are significant variables. There is a significant association between these three variables and smoothing behaviour. Correlation analyses don't indicate any causation, therefore TD/TA, PED and DIR variables are not the causes of smoothing behaviour.

Table 4.21. Results of the Correlation Analyses (SB)

		SRWM	SRWM with Inf. Adj.	Random Walk with Drift	Average ROA
		SB	SB	SB	SB
SB	Pearson Correlation	1,000	1,000	1,000	1,000
	Sig. (2-tailed)	0,000	0,000	0,000	0,000
TSALES	Pearson Correlation	0,0365	0,0441	0,0436	0,0316
	Sig. (2-tailed)	0,7574	0,7093	0,7240	0,7980
TASSETS	Pearson Correlation	0,0371	0,0437	0,0414	0,0334
	Sig. (2-tailed)	0,7539	0,7119	0,7375	0,7870
NOEMP	Pearson Correlation	0,0180	0,0076	0,0346	0,0131
	Sig. (2-tailed)	0,8787	0,9490	0,7796	0,9158
MNGOWN	Pearson Correlation	-0,0459	-0,0666	-0,0473	-0,0221
	Sig. (2-tailed)	0,6979	0,5729	0,7020	0,8578
PUBLICOWN	Pearson Correlation	0,1134	0,1075	0,0864	0,0995
	Sig. (2-tailed)	0,3359	0,3618	0,4836	0,4194
SINGLE	Pearson Correlation	-0,1464	-0,1354	-0,1358	-0,1311
	Sig. (2-tailed)	0,2132	0,2502	0,2694	0,2864
TOP3	Pearson Correlation	-0,1263	-0,1146	-0,1061	-0,1132
	Sig. (2-tailed)	0,2870	0,3345	0,3890	0,3581
TD/TA	Pearson Correlation	0,4755	0,4742	0,4854	0,4852
	Sig. (2-tailed)	0,0000*	0,0000*	0,0000*	0,0000*
PED	Pearson Correlation	0,4949	0,3063	0,5780	0,6014
	Sig. (2-tailed)	0,0000*	0,0080*	0,0000*	0,0000*
DIR	Pearson Correlation	0,9684	0,9637	0,9868	0,9918
	Sig. (2-tailed)	0,0000*	0,0000*	0,0000*	0,0000*
Number of firms analysed		74	74	68	68

* Correlation is significant at the 0.01 level (2-tailed).

The direction of the association between SB and the significant variables is positive. In other words, when total debt to total assets ratio, prechange earnings deviation and directional impact of the accounting change are high, managers are more motivated to attempt smoothing behaviour.

Correlation analysis was also conducted to test the ninth hypothesis that says there is a negative relationship between monetary effect of DACs and prechange earnings of the firms. The data of the 74 sample firms was included in the test. Results show a negative association between ME and PE. While PE increases, ME decreases, and vice versa. There is also a negative association between ME and RE however it is not as significant as the negative association between ME and PE.

Table 4.22. Results of the Correlation Analyses (ME, RE, PE)

		ME
ME	Pearson Correlation	1,000
	Sig. (2-tailed)	0,000*
RE	Pearson Correlation	-0,348
	Sig. (2-tailed)	0,02**
PE	Pearson Correlation	-0,523
	Sig. (2-tailed)	0,000*

* Correlation is significant at the 0.01 level (2-tailed).

** Correlation is significant at the 0.05 level (2-tailed).

4.2.4.4. Kruskal-Wallis Tests

Industry could not be included in the previous statistical tests because of the inappropriateness of the data related to that variable. In order to make statistical tests related to industry, as seen in table 4.23, the sample firms were categorised under 12 industries, this categorisation was based on the sector classification of the ISE. For each industry, codes were given from 1 to 12.

Table 4.23. Industry Classification of the Smoother and Non-smoother Firms

Code	Industry	Number of firms
1	food, beverage and tobacco	16
2	textile, wearing, leather	12
3	paper	9
4	fabricated metal products, machinery and equipment	9
5	basic metal	5
6	non-metallic mineral products	6
7	chemicals and chemical petroleum	7
8	holding	2
9	consumer trade	4
10	information technology	2
11	wood products	1
12	restaurants and hotels	1
TOTAL		74

With Kruskal-Wallis tests, the smoothing behaviour differences between the firms from different industries were searched. The following question tried to be answered, "Do the firms from different industries differ from each other according to their smoothing behaviours?" The results are presented in table 4.24 and table 4.25.

Table 4.24. Results of the Kruskal-Wallis Tests (for SB variable)

	SRWM	SRWM with Inf. Adj.	Random Walk with Drift	Average ROA
	SB	SB	SB	SB
Chi-Square	14,182	22,302	10,281	10,196
Df	11	11	11	11
Asymp. Sig.	,223	,022*	,505	,513

Kruskal Wallis Test

Grouping Variable: INDUSTRY

* Significant at 0,05 level

Only according to SRWM with inflation adjustment model, there is a significant difference between the smoothing behaviours of the firms from different industries. According to the other three methods, the firms from different industries don't show different smoothing behaviours.

Because some industries included just a few firms, Kruskal-Wallis tests were replicated by excluding the industries that have less than 5 firms in order to have more reliable results. Smoothing behaviours of the first seven industries were examined. As seen in the following table, the results are the same with the results of the first analyses.

Table 4.25. Results of the Kruskal-Wallis Tests (for SB variable) – Including the industries that have more than 5 firms

	SRWM	SRWM with Inf. Adj.	Random Walk with Drift	Average ROA
	SB	SB	SB	SB
Chi-Square	8,441	15,907	5,658	5,334
Df	6	6	6	6
Asymp. Sig.	,208	,014*	,463	0,502

Kruskal Wallis Test

Grouping Variable: INDUSTRY

* Significant at 0,05 level

4.3. Limitations of the Study

The study has the following limitations:

- (1) In the literature many critics are made about all models that are developed to detect income smoothing. None of the models is accepted as a perfect model that identifies smoother and non-smoother firms with certainty. Therefore while evaluating the findings, it should be taken into consideration that the model used in this study also has some deficiencies.
- (2) Discretionary accounting changes were accepted as income smoothing devices and the Turkish listed firms that made DACs were included into the sample. However firms might be using some other devices such as accounting irregularities and errors. While examining the footnotes and auditor reports of the Turkish listed firms, we faced many accounting irregularities especially related to provisions for losses and bad debts. Accepting only one income smoothing device is a limitation of this study (it is also the limitation of the Moses' model)

- (3) The study covers 6 years period starting at 1998. The necessary data related to DACs is not available for the years before 1998. Because of this limitation, a longer period could not be covered in this study.
- (4) Some variables that were used by Moses (1987) could not be included into the current study because of data unavailability. These variables are market share, bonus compensation and past earnings variability.

4.4. Comparison of the Current Study with the Similar Two Studies

The biggest difference between these three studies is the countries in which the studies are conducted. Moses (1987) uses the data of American firms, Saudagaran and Sepe (1996) replicates the study of Moses (1987) by using the Canadian and the UK firms' data. In the current study Turkish listed firms' data is analysed. Comparison of the three studies is made in table 4.26.

Moses' (1987, p.361) study covered the 1975-80 period, 231 discretionary accounting changes were found and firms (events) sample was composed of 212 firms (events). The study of Saudagaran and Sepe (1996, p.p.1219) covers 1983-86 period. They found 198 DACs and their events sample was composed of 86 events. The current study covers 1998-2003 time period. DACs sample includes 92 discretionary accounting changes and four different firm samples (generated by the four different expectation models) are used in the statistical analyses.

Explanatory variables of those three studies are not the same. Because of the data unavailability, market share (firm sales/total industry sales), bonus compensation (1 if there is a bonus plan, 0 if not), and VAR (past earnings variability¹⁸) variables that are used by Moses (1987) could not be included into the current study. There are also some other variables that are used in the current study but not in the other two studies. They are total assets, number of employees, public ownership, largest single ownership, the three largest ownership and total debt to total assets ratio.

¹⁸ VAR is calculated by averaging the deviations of reported earnings from expected earnings in the four years previous to the year of the accounting change (Moses, 1987, p.366).

Table 4.26. Comparison of the Three Similar Studies

	The Current Study (2005)		The Study of Moses (1987)	The Study of Saudagaran and Sepe (1996)
Main Sample	Turkish Listed Firms		American Firms	Canadian and UK Firms
Examination Period	1998-2003		1975-1980	1983-1986
DACs Sample	92		231	198
Firms (Events) Sample	SRWM	74	212	86
	SRWM-IA	74		
	Random W	68		
	Ave ROA	68		
Number of Smoother Firms	SRWM	46	137	52
	SRWM-IA	43		
	Random W	42		
	Ave ROA	43		
Number of Non-smoother Firms	SRWM	28	75	34
	SRWM-IA	31		
	Random W	26		
	Ave ROA	25		
Explanatory Variables	TSALES, TASSETS, NOEMP, UNION, MNGOWN, PUBLICOWN, SINGLE, TOP3, INDUSTRY, TD/TA, PED and DIR		TSALES, MARKET SHARE, UNION, BONUS COMPENS., MNGOWN, PED, VAR and DIR	TSALES, BONUS COMPENS., PED, VAR and DIR
Significant variables according to t-tests	DIR		SIZE, BONUS COMPENS., PED, DIR	DIR
Significant variables according to regression analyses	MNGOWN (-) DIR (+)		SIZE (+) BONUS COMPENS.(+) PED (+) DIR (-)	VAR (+) DIR (-)

The statistical test results of these studies cannot be directly comparable because the exploratory variables are not the same in all of those three studies. Even though, comparisons can be made for the same variables used.

T-test results of the current study show that only DIR is significant, this means smoother and non-smoother firms differentiate from each other according to directional impact of the accounting change. These results are the same with the results of Saudagaran and Sepe (1996), however Moses (1987) found significant difference between smoother and non-smoother groups according to size (TSALES), market share, PED and DIR variables.

According to the results of the regression analyses, DIR variable is significant in all the three studies. However an important point should be noted here. Although in this study, a positive association is found between directional impact of the accounting change and smoothing behaviour in the other two studies, a negative association is found.

4.5. Recommendations for the Further Research

As stated before, there are just a few studies related to income smoothing and accounting manipulations in the Turkish accounting literature. Many subjects in the related area need more examination and research. The followings are just a few recommendations for the researchers who are eager to study income smoothing.

- (1) In the literature survey part of this study, four models developed to detect income smoothing are explained and summarised. In this study, Moses' (1987) model was used because it is the most applicable model with the data provided by Turkish listed firms. However in the future, enough and appropriate data may be provided by the firms or Istanbul Stock Exchange. Therefore further examination of the smoothing behaviour of Turkish listed firms by using the other models is strongly recommended.
- (2) Many related studies, like the current study, exclude banks and financial institutions from their samples because of accounting and reporting differences. A research can be conducted to detect income smoothing behaviour of Turkish banks and financial institutions.
- (3) In Turkey, another research area may be the consequences of income smoothing. Examining the effects of income smoothing on the firm value, on the relations between the firm and its

investors, creditors, suppliers, employees and the government may be the subject of the further researches.

- (4) In the related literature, nearly all of the studies use secondary data, further studies may collect data related to income smoothing from primary sources such as from managers and certified public accountants.



5. CONCLUSION

Financial reporting is communicating and sharing the financial information of a firm with the users of that information. The most important products of financial reporting system are financial statements. With the increase of information needs of stakeholders, many other financial statements started to be prepared besides balance sheet and income statement.

Financial reports should indicate the real situation of the firms and should provide information about enterprise resources, claims to those resources and changes in them. The information should be useful in investment and credit decisions, and useful in assessing future cash flows (Kieso and Weygandt, 1997, p.7)

However, main goal of the financial information providers is not always to prepare and present high quality financial reports. Sometimes appearances of the financial statements are manipulated by using different manipulation techniques. Dechow and Skinner (2000) show the distinction between accounting manipulations and fraudulent accounting. According to them, fraudulent accounting practices violate accounting standards and rules, however accounting manipulations are inside the limits of accounting rules. Many different concepts are used by the academics, financial analysts and journalists to express accounting manipulations. They are mainly earnings management, income smoothing, big bath accounting, creative accounting, window dressing, aggressive accounting, cosmetic reporting and financial engineering.

Earnings management is defined as “using managerial judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers” (Healy and Wahlen, 1999, p.368).

Income smoothing is also accepted as a kind of earnings management and can be defined as the deliberate actions of management to prevent sharp decreases and increases in income figure.

Big bath accounting is described by Stolowy and Breton (2000, p.43) with the following example. When a new CEO appointed, he/she will announce that many hidden expenses and costs are found, and the company will have loss or the profitability of the firm will not be as good as expected. Discretionary losses that are saved in several years are recognised, big writedowns are made in the year that a firm has a big bath. In those periods, generally firms have earnings below expectations and there is no way to attain expected earnings (Zucca and Campbell, 1992, p.35).

Creative accounting and many other concepts don't have differentiated meanings, generally they are used to explain earnings management, income smoothing and big bath accounting practices.

There are many factors that motivate financial information providers to make accounting and operating manipulations. The followings are just a few examples of the possible motivations of such manipulative behaviour.

- to increase stock prices,
- to decrease stock prices (especially in buyout cases),
- to decrease cost of capital,
- to have better relations with employees, suppliers, creditors and governmental agencies,
- to maximise bonus payments,
- to give positive signals about the future profitability of a firm and
- to have less tax liability .

After making a literature survey, we can say that income smoothing is the most preferable accounting manipulation and firms are highly motivated to make income smoothing because in the long term smooth income series have lots of advantages for the firms, for managers of the firms and for the general public.

Smooth income figures indicate of strength and stability. Investors and creditors want to continue to provide funds, suppliers are eager to work with these firms because they hope that their payments will be made on time. Employees of the firms are happy because they think these firms will have longer lives and so the employees will have higher job security.

However there are also some opposite views too. According to them, whatever the benefits are, it is not right to manipulate reality and mislead the external parties. When the investors' confidence to financial reports decreases, it is hard to win it again. Smooth income streams, low debt ratio and high profitability mean nothing if the financial information users don't believe them.

Although much research has been conducted to detect smoothing behaviour in firms of several countries, there was no such a research in Turkey. The multiple incentives of income smoothing might also motivate Turkish firms to manipulate their financial statements to have smoother incomes. After recognising the lack of research in this area, "detecting income smoothing practices of Turkish listed firms" was determined as the main objective of this study.

In the literature, we see many examples for income smoothing instruments, such as change in accounting principles, change in accounting estimates, shifting costs between expense and capital accounts, timing of sales of investments, timing of shipments of products at the end of an accounting period, and timing of discretionary expenses such as paying bonuses, performing repairs, undertaking an advertising campaign, and pursuing R&D projects.

Moses (1987, p.360) accepts discretionary accounting changes as income smoothing instruments. He thinks that firms try to smooth their income figures by using discretionary accounting changes. DACs can have a big impact on the reported earnings and cannot be done without management's discretion. It is impossible to know real intents of managers, therefore Moses (1987, p.360) just assumes income smoothing as one of the possible reasons of DACs rather than assuming the purpose of DACs is exactly income smoothing.

The research methodology of this thesis is based on the study of Moses (1987), because it is the most applicable method with the data provided by Turkish listed firms and there is no need to make estimations about the discretionary and non-discretionary parts of smoothing instrument (DACs are purely discretionary).

Although main aim of the research is to detect income smoother and non-smoother Turkish listed firms by using discretionary accounting changes, the possible factors that affect smoothing behaviour of those firms are also tried to be find out. The study examines the relationship between smoothing behaviour and firm size, employee costs, ownership structure, industry, debt ratio, prechange earnings deviation and directional impact of the change is examined.

Because the information about the DACs and their monetary effects are presented in the footnotes and preparing and presenting balance sheet and income statement footnotes became compulsory only after 1998, this study covers the period of 1998-2003. Footnotes of the firms in 1289 firm-years are examined and 92 DACs are found. Most of these DACs have increasing effects.

DACs were mostly made in 1999 and 2001. In these two years, two big economical crises happened in Turkey. Economical and operational conditions became harder. The firms, which could not reached their expected earnings with their natural operations and neutral accounting methods, might have preferred to make DACs to reach their expected earnings level.

Moses (1987) developed an index to identify smoother and non-smoother firms. In order to use this index, after determining DACs and monetary effects of DACs, expected earnings of the firms must be estimated. In the literature, there are many expectation models that are used to make estimations about the expected earnings of firms. To decrease the risk of using an unsuitable model while estimating expected earnings, four expectation models were used.

These four models generated four different expected earnings for a firm, and so four different smoothing behaviour index calculations were made for the same firm. After the calculations, four different pairs of smoother and non-smoother firms were generated. According to the first two expectation models, 74 firms' SB index could be calculated and 68 firms' SB index could be calculated according to the other two models. On the average, nearly 60 % of the firms were classified as smoothers and 40 % were classified as non-smoothers.

After determining the smoother and non-smoother firms, statistical tests were conducted in order to find whether there is a relationship between smoothing behaviour and the possible explanatory variables which were determined as firm size, employee costs, ownership structure, industry, debt ratio, prechange earnings deviation and directional impact of the change.

T-test results show that there is a significant difference between smoother and non-smoother firms only according to directional impact of the discretionary accounting changes (DIR). Mean directional impact of the DACs that were made by smoother firms is positive but the mean directional impact of the DACs that were made by non-smoother firms is negative. In other words, smoother firms generally made DACs that have increasing effects and non-smoother firms generally made DACs that have decreasing effects.

According to the results of the regression analyses, the only significant variables are DIR and managerial ownership (MNGOWN). There is a significant positive relationship between income smoothing behaviour and directional impact of the change. In other words, when directional impact of the change is high, smoothing behaviour is also high, and when directional impact of the change is low, smoothing behaviour is low, too. On the other hand, there is a negative relationship between managerial ownership structure and smoothing behaviours of the firms. When the percentage of managerial ownership increases, smoothing behaviours of the firms decrease, and when the percentage of managerial ownership decreases, smoothing behaviours of the firms increase.

Correlation analyses were also conducted to find out the association or covariance between smoothing behaviour and the explanatory variables. Debt ratio, prechange earnings deviation and directional impact of the discretionary accounting change are found as significant variables. There is a positive association between smoothing behaviour and the three variables. As the results of the correlation analyses show, when a firm has a high debt ratio, the firm is more motivated to smooth its earnings. One explanation for this might be that the firm is trying to decrease its cost of borrowing through creating stable earnings and giving a stable company image.

Kruskal-Wallis tests were used to determine whether the smoothing behaviours of the firms from different industries differentiate from each other. Different industries may face different economical, operational and market conditions, therefore the firms profitability, income generating

ability, and motivation to have smoother income series may also be affected from these different conditions.

Kruskal-Wallis tests' results show that there is a significant difference between the smoothing behaviours of the firms from different industries according to SRWM with inflation adjustment model. Therefore we can say that industry is an explanatory variable for the income smoothing behaviour of the firms.

As stated before, one of the most important reasons of DACs is accepted as income smoothing. However tax rates are very high in Turkey and so having a net income close to zero is also very important to have less tax liability. Firms may be using DACs in order to decrease their book and taxable incomes and so tax payables. Additionally, when a firm has a big loss, it may try to decrease its loss through DACs to give better messages about the future performance of the firm. In this study, additional t-test and correlation analyses were made to find out whether tax purpose and desire to have lower losses are the other possible incentives of making DACs.

By using the t-tests, the group of the firms that have positive prechange earnings is compared to the group of the firms that have negative prechange earnings. Results show that the firms with positive prechange earnings made DACs that have decreasing effects and the firms with negative prechange earnings made DACs that have increasing effects. These results support our expectations and we can say that DACs might be used to decrease reported earnings when prechange earnings are higher than zero and to increase reported earnings when prechange earnings are lower than zero.

Results of the correlation analysis also support our expectations. There is a significant negative relationship between monetary effects of DACs and prechange earnings. While prechange earnings are increasing, monetary effects of DACs decrease, and while prechange earnings are decreasing, monetary effects of DACs increase. Firms prefer to have lower income and lower loss as it is expected.

In conclusion, as the first study attempting to investigate income smoothing behaviour of Turkish listed firms, this thesis points out the area which needs more investigation and empirical researches. In this thesis, the importance of quality financial reporting is stressed and an extensive literature survey about all types of accounting manipulations including income smoothing is presented.

The beginning point of our empirical research is the reality that the real intents of financial information providers while making accounting method choices and DACs can not be known. Although accounting method choices and DACs should be made with the purpose of providing better information and high quality financial reports, there may be other intents too.

Empirical research of this thesis shows that there are mainly three possible motivations of discretionary accounting changes other than providing high quality financial reports. They are,

- (1) *Income smoothing*: According to the smoothing behaviour index of Moses (1987), nearly 60 % of the sample firms are smoothers and 40 % of the sample firms are non-smoothers. Therefore income smoothing may be considered an important factor in discretionary accounting change decisions.
- (2) *Having a reported income close to zero*: While making DACs, rather than having long-term purposes, “saving the day” may also be an important incentive. Results of the statistical tests and the graphs on which prechange earnings and reported earnings of the firms and the monetary effects of the DACs are plotted clearly show that decreasing reported income and decreasing losses are the other possible incentives of making DACs. If the accounting methods used for book and tax purposes are the same, the motivation behind decreasing reported income is decreasing the tax liability.
- (3) *The characteristics of the periods in which a DAC is implemented*: The research shows that DACs were made mostly in 1999 and 2001, during Turkey’s biggest economical crises. Therefore the characteristics of time period, or different economical, operational, risk and opportunity conditions may be important factors that managers take into consideration while making DACs.

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