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Danışman: PROF. DR. ALİ OSMAN GÜRBÜZ

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SOSYAL BİLİMLER ENSTİTÜSÜ MÜDÜRLÜĞÜ

TEZ ONAY BELGESİ

İŞLETME (İNGİLİZCE) Anabilim Dalı MUHASEBE FİNANSMAN (İNGİLİZCE) Bilim Dalı DOKTORA öğrencisi SEDA CANİKLİ'nın EARNINGS MANAGEMENT PRACTICES IN INITIAL PUBLIC OFFERING PROCESS: EVIDENCE FROM BORSA ISTANBUL adlı tez çalışması, Enstitümüz Yönetim Kurulunun 13.07.2016 tarih ve 2016-25/11 sayılı kararıyla oluşturulan jüri tarafından oy birliği / ~~oy çokluğu~~ ile Doktora Tezi olarak kabul edilmiştir.

Tez Savunma Tarihi 04/01/2017

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Tez Türü ve Tarihi	: Doktora – Temmuz 2016
Anahtar Kelimeler	: Kazanç Yönetimi Birincil Halka Arzlar Olay Çalışması Gelişmekte Olan Piyasalar

ÖZET

BİRİNCİL HALKA ARZ SÜRECİNDE KAZANÇ YÖNETİMİ UYGULAMALARI: BORSA İSTANBUL ÖRNEĞİ

Enron, WorldCom, Xerox gibi büyük muhasebe skandalları ve bunların yatırımcının korunması üzerindeki etkisi, araştırmacıları muhasebe hilelerini araştırmaya yöneltmiştir. Büyük denetim firmalarının gözetimine ve firmalardaki denetim komitelerinin varlığına rağmen, bu skandallar nasıl firma prestijini, finansal durumunu ve yatırımcının sermaye piyasalarına duyduğu güveni sarsabilir? Bu noktada, seçilen muhasebe teknikleri finansal raporların güvenilirliğinden sorumludur ve bu teknikleri her zaman hile olarak tanımlamak mümkün değildir. Ancak, özellikle bazı önemli olaylarda bu teknikler, işletme ilgilileri için yanıltıcı olabilirler.

Bu çalışmanın esas amacı, halka arz sürecinde, firmaların kazanç yönetimi uygulamalarını araştırmaktır. Kazanç yönetimi uygulamaları tahakkuk bazlı ve faaliyet bazlı olarak değerlendirilmektedir. Uluslararası literatürde tahakkuk bazlı kazanç yönetimi uygulamaları yeterince incelenmis olsa da, Türkiye'de konu sığ kalmıştır. Bunun yanında faaliyet bazlı kazanç yönetimine hiç değinilmemiştir. Bu nedenle bu çalışma, halka arz sürecinde şirketlerin faaliyet bazlı kazanç yönetimi uygulamalarını da saptamaya çalışan ilk çalışma olma özelliği taşımaktadır.

Sonuç olarak, kazanç yönetimi faaliyetlerini belirleyebilmek için bir veri setinden yararlanılmıştır. Kullanılan veri seti, 2004-2013 yılları arasında Borsa Istanbul'da ilk kez halka arz edilen şirketleri kapsamaktadır. Nihai örneklem 79 şirket ve 395 şirket-yıl gözlemi içermektedir. Tahakkuk bazlı kazanç yönetimi uygulamalasını ölçmek için Kothari, Leone ve Wasley (2005)'in performans uyumlu yatay kesit modeli kullanılmıştır. Faaliyet bazlı kazanç yönetimi uygulamalarını ölçmek içinse, Roychowdhury (2006)'dan geliştirilen Cohen ve Zarowin (2010)'nin yatay kesit modelinden yararlanılmıştır. Daha sonra yer alan analizlerde ise, halka arz öncesi ve sonrası dönemlerde yöneticilerin kazanç manipülasyon davranışlarını kıyaslamak için olay çalışması tekniklerinden faydalanılmıştır.

Çalışmanın ana sonucu, Türk firmalarının halka arz sürecinde dikkate değer yararlar sağlayabilmek için kazançlarını yönettiğini göstermektedir. Halka arz sürecinde başvurulan kazanç yönetimi uygulamaları, firmaları yanlış değerlemeye ve aşırı fiyatlanmış hisse senetlerine neden olabilmektedir. Bu nedenle, yöneticilerin hem tahakkuk hem de faaliyet bazlı olarak kazançlarını yönetme eğilimleri, ciddi bir gözetim mekanizması ve geliştirilen finansal okuryazarlık düzeyi ile indirgenebilir.

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Degree Awarded and Grade	: Ph.D. – July 2016
Keywords	: Earnings Management Initial Public Offerings Event Study Emerging Markets

ABSTRACT

EARNINGS MANAGEMENT PRACTICES IN INITIAL PUBLIC OFFERING PROCESS: EVIDENCE FROM BORSA ISTANBUL

The big accounting scandals like Enron, WorldCom, Xerox and their effects on investor protection have led researchers to search accounting frauds. In spite of the monitoring role of big audit firms and audit committees existed in companies, how these scandals could injure the corporate reputation, financial situation of firms and investors' trust to capital markets? At this point, accounting techniques are responsible for the reliability of financial reports and these techniques are not always defined as fraud. Especially during the important events, these techniques can be misleading for stakeholders.

The main purpose of this thesis is to investigate earnings management practices of firms in the initial public offering process. Earnings management practices are evaluated on the basis of accruals and real activities. Even though accrual-based earnings management has been investigated in international context, Turkish literature is sufficiently swallowed with the topic. Furthermore, real activity-based earnings management is an unaddressed issue in Turkey. Hence, this thesis represents the first attempt to determine real activity earnings management practices of Turkish IPOs.

Consequently, a dataset was utilized to determine earnings management practices. Dataset covers the firms listed for the first time on Borsa Istanbul (BIST) during the

period 2004-2013. The final sample is made up of 79 firms and 395 firm-year observations. As a proxy to measure accrual-based earnings management, performance adjusted cross-sectional model of Kothari, Leone and Wasley (2005) was run and Roychowdhury (2006)-based Cohen and Zarowin (2010) model was utilized to measure real earnings management practices. The further analysis was conducted to compare periods in IPO process to determine earnings manipulations of management with event study techniques.

The major finding of the study states that Turkish firms manage their earnings in the initial public offering process in order to obtain remarkable proceeds. Earnings management activities in IPO process may cause to misevaluated firms and overpriced stocks. Thus, the tendency of managers to manage earnings with both accruals and real activities could be mitigated by a seriously monitoring mechanism and a developed financial literacy basis.

ACKNOWLEDGEMENTS

I would like to thank my supervisor, Prof. Dr. Ali Osman GÜRBÜZ, for his precious insights, contribution, comments about the subject and his eternal patience. I owe gratitude to Prof. Dr. Salih DURER for his great efforts on my professional development and for his fatherly affection. I would also want to thank who I owe the most Assoc. Prof. Dr. H. Emre AKBAŞ for his invaluable support, encourage and contributions. Another gratitude is to my friends who made my time valuable and amusing. Last but not least, I certainly thank to my beloved family for their undefinable support, inexplicable toleration and motivation.

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ABBREVIATIONS

ACFE	Association of Certified Fraud Examiners
AEM	Accrual Based Earnings Management
BIST	Borsa Istanbul
BPG	Breusch-Pagan-Godfrey Test
CFO	Cash Flow from Operations
CMB	Capital Market Board of Turkey
CSRC	China Securities Regulatory Commission
EMEIA	Europe, Middle East, India and Africa
EPS	Earnings Per Share
EY	Ernst&Young
FASB	Financial Accounting Standards Board
FED	Federal Reserve Depository
GAAP	Generally Accepted Accounting Principles
GDP	Gross Domestic Product
IFRS	International Financial Reporting Standards
IPO	Initial Public Offering
ISE	Istanbul Stock Exchange
JB	Jacque-Bera Test

KAP	Public Disclosure Platform (Kamuyu Aydınlatma Platformu)
LEN	Linear Exponential Normal
M&A	Merger and Acquisitions
OLS	Ordinary Least Square
PWC	Price Waterhouse Coopers
R&D	Research and Development
REM	Real Activity Based Earnings Management
ROA	Return on Asset
S&P	Standard & Poor's
SEC	Securities and Exchange Commission
SEO	Seasoned Equity Offering
SG&A	Selling, General and Administrative
SOX	Sarbanes-Oxley Act
VIF	Variation Inflation Factor

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1. INTRODUCTION

Jane Bryant Quinn, an American financial journalist who is also one of the leading commentators on personal finance, emphasized her thoughts with a paragraph on her column in Newsweek as follows; "*After the first of the Wall Street scandals, 10 bad-guy investment firms paid $1,4 billion in fines. They floated slow apologies. They were kinda sorry their lying analysts had hyped the prices of Internet, high tech and telecommunications stocks. They were really sorry they got caught making all that money while you were losing yours*." The corporate meltdowns in the wake of these scandals caused hundreds of millions of dollars in losses to investors. As a result, investor's faith in the integrity of capital markets has been shook up (Ronen and Yaari, 2008).

In September 2015 with $13 billion market capitalization, Japan electronic giant Toshiba admitted that it had overstated its operating profits by nearly $2 billion over the past 7 years. Looking at the reports of prosecutors, it is seen that Toshiba CEOs put intense pressure on subordinates to meet sales targets after the 2008 global recession. These targets were so aggressive that they could not be met without inflating divisional results. Toshiba has responded to this new scandal by changing up its member of boards. According to Financial Times, in 2013 the Toshiba group was ranked ninth out of 120 publicly traded Japanese companies with good governance practices in a list which ranged by the Japanese Corporate Governance Network, a Tokyo based non-profit organization (Singh, 2015). This was a big discrepancy. How a company which was high ranked in corporate governance practices just 3 years ago could be involved in a scandal like this? Masashi Muromachi the president said in a press conference "*I am strongly feeling the social responsibility of alarming and causing trouble to our 400,000 shareholders, including domestic and international investors, as well as our clients and the authorities concerned. We will devote ourselves wholeheartedly to regain your trust and revive Toshiba under the new management."*

The big accounting scandals like Enron, WorldCom, Xerox and their effects on investor protection have encouraged researchers to wonder and tend to search the accounting frauds. In spite of the monitoring role of big audit firms and audit committees that exist in the companies, how these scandals could harm the corporate reputation, financial situation and investors' trust? All around the world, legislatives or accounting authorities have supported a strong corporate culture, good governance and transparency. It is believed that they are necessary not just to avoid major accounting and business scandals but also because they have a large impact on company valuations, investor trust and investment.

As mentioned in the Toshiba case, executives at many companies who faced the intense pressure to meet earnings estimates from analysts or investors and reflect this behaviour to subordinates, use a variety of accounting techniques to help them "make the numbers". These techniques will frequently take the advantage of loopholes in accounting principles to manipulate deliberately the company's revenues (Millstein, 2005). The window and results of accounting are financial statements. The technique used in accounting procedure, is directly reflected to the financial reports. The language of accounting is very important because the speech of reports and statements will be made with this language. The nature of this speech, namely financial statements have to be remembered at this point.

The aim of financial statements is to provide accurate, dependable, objective and comparable information to shareholders and stakeholders. Internal users and especially managers dominate this information, so during the decision making process, numbers included in financial statements can fully and easily be used by internal users. In contrast, external users have to be contented with what they have.

Theoreticians, auditors and also practitioners realise that investment decisions set sight on the bottom line with particular attention to earnings per share. When an institution makes an analysis of financial statement, it is assumed that this number is accurate. Nevertheless, financial numbers do not always reflect the reality and companies can be a bit deceptive, manipulate accounting aggressively or commit fraud because of flexibility, which is the most fundamental accounting issue (Giroux, 2006).

Earnings management needs a variety of motivations besides these pressures such as management bonuses, boosting stock prices, increasing value and reputation etc. Initial public offering is also an important factor to motivate management to manage their earnings. Initial public offering is such an important strategy that a firm can experience only once in a whole lifetime. Therefore, IPO is an opportunity for a firm to attain multiple benefits and this importance causes managers to maximize the opportunity. In the literature, many theoreticians emphasize that firms utilize earnings management methods to maximize this opportunity. These methods are comprised of accrual and real earnings management. Accrual-based earnings management contains accrual movements of firms and widely investigated in the literature since about 1985, modified various times and modernized in 2005 with Kothari, Leone and Wasley's performance-adjusted model which will be used in the empirical analysis part of the thesis. Real earnings management contains the real activity manipulations of management such as cash flows from operations, production costs and operating expenses. Real earnings management researches are shallower compared to accrual earnings management and these studies became more intensive after 2006 with Roychowdhury. In Turkish content, there is a lack of studies tend to explain earnings manipulation with real activities, thus this thesis is the first research that will assert the manipulation of these activities as earnings management practices of Turkish firms.

In this framework, this thesis aims to determine the earnings management activities of Turkish firms throughout initial public offering process. Earnings management activities will be investigated based on both accruals and real operations. Whether Turkish firms appeal to earnings management activities and beyond this, the method which is utilized more during the IPO process will be determined by using econometric analysis techniques as a cross-sectional regression and event study. While the current section provides an overview of the study; this thesis is composed of six sections. All sections highlight different concepts of the study such as definitions, legal framework, literature review and empirical analysis.

The reminder of the thesis structure is as follows: Section 2 focuses on earnings management concept. This section primarily provides definitions about

earnings, gives information about users and importance of earnings and the relationship between earnings and accounting. Various definitions and general concept of earnings management and differences from fraud are also given in this section. Underlying motives of managing earnings by executives, capital market and shareholders will be examined in detail under this section. Furthermore, Section 2 also highlights the methods of managing earnings and theoretical backgrounds of these methods.

Section 3 presents general information about initial public offering based on definitions, related theories, triggering motives and reasons of abstention. Since public offering is a long lasting event, the process and legal framework in Turkey, the situation of participators and regulations of going public is explained in this part. At the end of the section, an overview of IPO operations around the world and Turkey is illustrated with charts and figures.

Section 4 establishes an understanding on the models used to determine earnings management activities with econometric base. Literally accrual and real activity earnings management models and their revisions will be explained in this section. International and Turkish market based researches, motivations and their empirical results have been discussed and this section also contains the hypothesis of the thesis. Sample design, statistical information about sample, definitions of variables used in the models and framework of the methodology have all been placed in the section.

Section 5 contains empirical analysis and results. The preliminary empirical information such as descriptive statistics of variables, regression assumption tests displayed and tests of developed hypothesis are included in this section. Both regression and Wilcoxon Sign Rank Test results of models and the interpretations are explained in this part.

Finally the last section presents a summary of all tests and findings. Recommendations for further research and institutions are highlighted with the limitations of the thesis.

2. EARNINGS MANAGEMENT

The most fundamental accounting issue is flexibility allowed by generally accepted accounting principles have been determined by accounting authorities. Firms have considerable accounting choices and incentives to use that flexibility with the aim of bending the rules usually to increase the earnings (Giroux, 2006). All of these choices and incentives will be approved by the auditors because it has already been allowed by the accounting authorities. Starting from this point of view, we can structure a frame for earnings management as; it is a legal managerial decision making that aims to achieve stable and predictable financial results. Earnings management should not be confused with illegal activities under any circumstances to manipulate financial statements and report results that do not reflect a firm's financial reality (McKee, 2005). However, earnings management includes both legitimate and less than legitimate efforts to smooth earnings over accounting periods or to obtain a forecasted result or target. If management performs completely illegal activities, these type of activities, popularly known as "cooking the books", involve misrepresenting financial results and augmenting financial data to yield previously non-existent earnings.

2.1. THE IMPORTANCE OF EARNINGS

Investment decisions generally concentrate on financial matters especially profit or loss, with particular attention to earnings per share (EPS). Earnings are valuable in making decisions that require assessing risk, such as investing in, or lending to an enterprise (Sunder, 2002). Earnings, sometimes called "net income" or "bottom line" is the most important item in financial statements and contains brief information about the firm. With this information, shareholders can obtain information without suffocating in details. Association between stock prices and earnings has also been investigated by many academics. Francis, Schipper and Vincent (2003) found that, reported earnings are closely associated with stock prices rather than cash flow, sales and other financial statements' item. McKee (2005), another author, describes the importance of earnings in his book as follows;

"*Earnings indicate the extent to which a company has engaged in value added activities. They are a signal that helps direct resource allocation in capital markets. In fact, the theoretical value of a company's stock is the present value of its future earnings. Increased earnings represent an increase in company value, while decreased earnings signal a decrease in that value*".

Earnings are also a performance measure to enable shareholders monitoring the management under the conflict of interest between two parties. Because earnings are observable and can be used as a mutual language that shareholders are able to understand the economic events and the results that firm faces (Ronen and Yaari, 2008). Additionally, earnings, as a measure of profit potential, eventually claims to the value of assets and offers a high-stakes test of a firm's fundamental health and competitive position (Demirtas and Cornaggia, 2013, 136). As stated in Standard and Poor's notes, a firm with a lack of indicated earnings growth potential and ongoing earnings power is considered as "*financially weak*" even if it generates cash (S&P, 2006, 26).

With this emphasis on earnings, the intense concern of management on earnings and how they are reported will not be an unpredictable issue. Managers want to make the best possible decision for the company and they are aware of how their accounting choices will affect the process. At this point, they have to learn how to use accounting to manage earnings instead of "cooking the books". There is a blurry line between appropriate earnings management techniques and fraud. This blurry line arises from the dual role of accounting. It is believed that some forms of earnings management are difficult to be distinguished from appropriate accounting choices.

2.1.1. The Dual Purpose of Accounting

According to Watts and Zimmerman 1978, accounting is a measurement regarding the financial information about a firm and a communication tool, as well. Some accounting scholars suggest that firms use accounting systems to serve two objectives. The first one is to facilitate managerial decision making and the second is to reduce organizational control problems (Feltham, Indjejikian and Nanda, 2006). The authors distinguish these objectives by time frame. For example, while decision making

objective tends to be forward looking, control objective is retrospective. In other words control information is useful for evaluating a firm's past behaviour. In practice, these are fully interlaced. The reason is that reported information serves both a control role (first period) and a decision facilitating role (second period) with respect to past behaviour and future actions respectively. Feltham et.al - with their two period linear exponential normal (LEN) agency model- state that the owner of a firm hires a manager for both periods and evaluates the manager according to performance measures about the exertion in each period. Manager's compensation contract is negotiable at the end of the periods. Starting from this point, decision makers are less sensitive to gain but more sensitive to losses so manager's desire to affect both periods' performance is deeply possible (Feltham, Indjejikian and Nanda, 2006).

Another study which discusses the dual role of accounting with a different perspective belongs to Ronen and Yaari, 2008. In their book, the authors emphasize two fundamental roles of accounting information which are informativeness and stewardship. Investor's demand is to obtain information on the firm to predict future cash flows and to assess their risk. This demand causes the informative role of accounting to appear. On the other hand, especially in public firms, there is a distinction between ownership and management which puts the manager in a position of steward to shareholders. In such circumstances, conflict of interests can occur. Since shareholders information demand to monitor the manager to implement their own interest, the other role of accounting; stewardship appears. According to Watts and Zimmerman (1978), one function of financial reporting - and consequently accounting's- is to constrain management to act in the shareholders' interest. However, this phenomenon ignores other stakeholders. If there is a conflict between the interest of shareholders and managers, there is probably doubtful information about the real economic situation of the firm for the stakeholder in question.

Poor and doubtful financial information may cause to uncertainty and increases corruption. Accounting as an information system and as a monitoring tool on the accuracy of the financial and economic information, can increase accountability and detect corrupt activities. Accountants are really involved in the discovery and

prevention of corruption (Kimbro, 2000). Academics should be deeply involved in this issue, as well. Because scholars are consciously aware of the quality of accounting data, financial information and transparency of financial statements increase the investor interest towards capital markets and support transnational flows related with both from portfolio and foreign direct investments. As mentioned before, among the whole accounting data and the items of financial statements', the earnings are more closely related with these investment opportunities and are much more open to abuse.

2.1.2. The Beneficiaries of Earnings

To determine the earnings management phenomenon, it is important to emphasize who puts pressure on a firm to share information through earnings. As an insider, firm management is the major party of earnings info suppliers to stakeholders (Ronen and Yaari, 2008). Those who require this information are plain-vanilla users and gatekeepers. Management reports the earnings and this is the major output of the process. Beneficiaries use reported earnings as an input to make decision, and gatekeepers provide valuable signals to other users regarding the credibility and the informational value of the reported earnings (Coffee, 2003). It is obvious that earnings management cases are closely related to managerial decisions. All beneficiaries of earnings and their reasons for demanding earnings information are given in table below.

Table 2.1

The Beneficiaries of Earnings

Retail Shareholders	Have no power over operating decisions. They need information on earnings to evaluate stock investment of a firm.
Bondholders and Other Creditors	They need information on earnings and cash flows to assess the risk of lending money to the firm and to monitor the firm after the debt has been issued.
Regulators	Regulators determine the rules of the game. They need information on earnings on regulated industries such as banking and insurance industries and for assessing

	tax liabilities.
Employees	They need information on earnings to assess the firm's ability to grant wage increases, the capability of preserving employees' rights and also assess the possibility to go bankrupt and firing employees.
Competitors, Suppliers and Customers	Competitors need information in order to make numerous business decisions. Suppliers and customers need information to ascertain the solvency of the firm. They also want the firm to provide the sustainability of the service.

Source: Joshua Ronen and Varda Yaari, "Earnings Management: Emerging Insights in Theory, Practice and Research", 2008, pp. 113.

2.2. THE CONCEPT OF EARNINGS MANAGEMENT

In an environment where management-based information is only resource, outsiders are reluctant and inadequate to assess the financial data truly. So, managers can utilize the discretion afforded by accounting principles to obtain the most favourable economic results (Demirtas and Cornaggia, 2013, 135). Most executives feel they are making an appropriate choice when sacrificing value to smooth-earnings or to hit a target (Graham, Harvey and Rajgopal, 2004, 2). This choice would cause negative earnings surprises to both equity and bond markets. Facing with decision to enhance short-run earnings causes long-term cost. (Roosenboom et.al, 2003, 244). Also manipulating earnings should impose economic cost on a firm, because it changes the firm's operations and accounting results from the optimal (normal) practices. Manipulating a firm's real profitability requires significant changes to the operations and implementing these changes may take a long time (Li, 2012, 77; Ali and Zhang, 2008, 2).

Gary Giroux (2006) states that earnings management includes the whole view, from conservative accounting through fraud, a huge range of accounting choices.

According to Ronen and Yaari (2008), earnings management is an umbrella for acts that affect reported accounting earnings or their interpretation. McKee (2005) indicates that earnings management is primarily achieved by management actions to make easier to achieve the desired earnings targets through accounting choices among accounting principles and through operating decisions. However, it is necessary to emphasize that earnings management is not only affected by each manager and firm's acts, but also by institutional factors, level of corporate governance, ownership structure, market mechanism and regulators (Wysocki, 2004; Aybars, 2013).

Earnings management hides unbiased earnings of a firm from investors and other stakeholders, by shifting reported income between current and future periods. So it can be said that earnings management can only borrow earnings from other periods. (Ge, 2009, 17; Demirtas and Cornaggia, 2013, 136, Ball and Shivakumar, 2008, 325). Hence, the quality of reported earnings which can effect lenders' and other stakeholders' estimates of future cash flow, can be distorted (Ge and Kim, 2014, 641).

When executives of a firm decide to exploit loopholes, and manage reported earnings, they are included in a process, given in the figure below based on the expressions of Ronen and Yaari (2008)

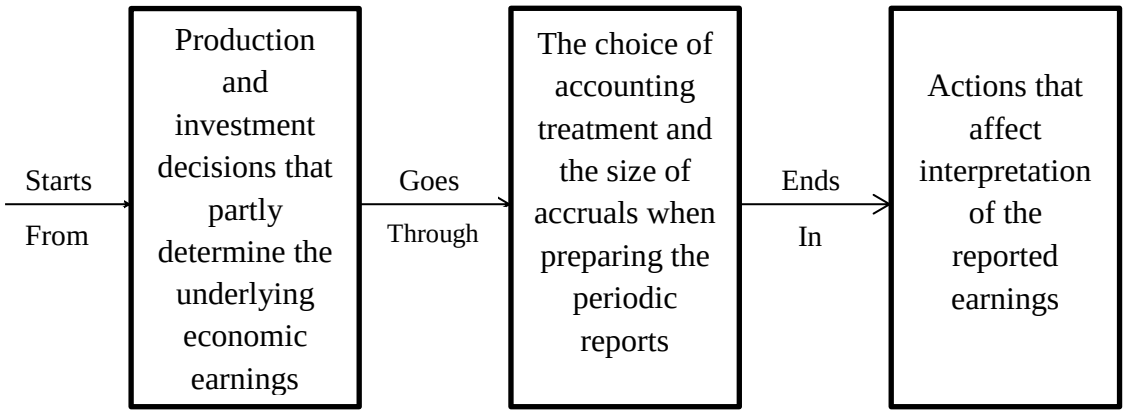

Figure 2.2: Earnings Management Process

After revealing the frame of earnings management conceptually, it will be more useful to give definitions related with earnings management. In this subtitle, the academic and professional literatures that define the notion are both given.

2.2.1. The Definition of Earnings Management

Earnings management is a broad subject so it is difficult to frame a beneficial and a unique definition. There are several definitions of earnings management made by both academics and practitioners. Some of these definitions present earnings management as an innocuous accounting practice while some of them present it as a fraud tool and an unethical treatment. Ronen and Yaari (2008) classify these definitions as white, grey and black. The table given below indicates these categories explicitly.

Table 2.2

Classification of Earnings Management Definitions

White (Beneficial)	Grey (Neutral)	Black (Pernicious)
Earnings management is taking advantage of the flexibility in the choice of accounting treatment to signal the manager's private information on future cash flows.	Earnings management is choosing an accounting treatment that is either opportunistic (maximizing the utility of management only) or economically efficient.	Earnings management is the practice of using tricks to mispresent or reduce transparency of the financial reports.

Source: Joshua Ronen and Varda Yaari, "Earnings Management: Emerging Insights in Theory, Practice and Research", 2008, pp. 25.

Thomas McKee emphasizes that earnings management should not be confused with illegal "cooking the books" activities to manipulate financial statements and financial results that do not reflect economic reality. According to McKee (2005), earnings management is a part of a well-managed business that delivers value to shareholders and he gives a white (beneficial) definition for earnings management as;

"...reasonable and legal management decision making and reporting intended to achieve stable and predictable financial results." (McKee, 2005, pp.1).

Another beneficial explanation is stated by Messod D. Beneish. Before defining the notion, he emphasizes that, academics have no consensus on the definition

of the earnings management. Hence, there are several definitions either in an accusing or supportive structure.

"*…it is implausible to call earnings management a deviation from rational investment behaviour. This reflects my view that earnings management is a financial reporting phenomenon."* (Beneish, 2001, pp.3)

In a recent paper, a group of Japanese academics stated that managers can opportunistically manage earnings by changing the accrual process because of various estimations and judgement of managers' included in process when they prepare financial reports. They give a grey (neutral) definition as;

"…so earnings management occurs through a change in the accrual process or a deviation from normal business activity, or both simultaneously..." (Enomoto, Kimura and Yamaguchi, 2015, pp.183).

In 1995, a more specific neutral definition of earnings management was made;

"*…referring to actions of a manager which serve to increase (decrease) current reported earnings of the unit for which the manager is responsible without generating a corresponding increase (decrease) in the long-term economic profitability of the unit*." (Fischer and Rosenzweig, 1995, pp. 434).

According to leading black (pernicious) definitions, earnings management is;

"…disclosure management" in the sense of a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process)" (Schipper, 1989, pp. 92)

"*…alteration of firms' reported economic performance by insiders to either mislead some stakeholders or to influence contractual outcomes."* (Leuz, Nanda and Wysocki, 2003, 506). From this definition, the authors emphasize that financial realities are altered exclusively by insiders and not shared with non-monitoring outsiders.

Another definition reads; "*Earnings management can be defined as any action on the part of management, which affects reported income and which provides no true economic advantage to the organization and may, in fact, in the long term, be detrimental*" (Merchant, 1987, pp.168).

The most accepted and leading definition in the literature is stated by Paul M. Healy and James M. Wahlen. Their purpose is to review earnings management research related to standard setters and regulators. They are also aimed to help accounting standard setters and regulators assess the pervasiveness of managing earnings and the integrity of financial reporting. This definition is important because of its wide-scope structure;

"*Earnings management occurs when managers use 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, pp.368).

Several important aspects of the Healy and Wahlen (1999)'s definition deserves focusing. First, managers have potential to exercise judgment in financial reporting in various ways such as estimation of expected lives, salvage values of long term assets and assets impairments. The second issue focuses on the purpose of earnings management as misleading stakeholders about the underlying economic performance of the firm. They state that their definition of earnings management do not encompass decisions that are undertaken to generate more informative financial reports for users (Aybars, 2013). This is the point that makes Healy and Wahlen's definition pernicious and distinguishes it from a beneficial view.

Ronen and Yaari offer an alternative and plural definition to earnings management. Their structure comes from the three different contributions to the earnings management concept. First, it measures earnings versus short term realities. Second, it adds subjective value to earnings management. Finally, it describes the achievement of earnings management in a broad sense;

"Earnings management is a collection of managerial decisions that result in not reporting the true short-term, value-maximizing earnings as known to management. Earnings management can be;

Beneficial: it signals long-term value;

Pernicious: it conceals short- or long-term value;

Neutral: it reveals the short-term true performance.

The managed earnings result from taking production/investment actions before earnings are realized, or making accounting choices that affect the earnings numbers and their interpretation after the true earnings are realized."(Ronen and Yaari, 2008, pp. 27).

Some academics criticize Healy and Wahlen's leading definition about ignoring the possibility of earnings management occurrence to enhance the signal in reported earnings. In other words, this definition has not been able to differentiate the intention of management to apply earnings management exercises to inform or to mislead the non-monitoring stakeholders and has been claimed that earnings management contains much fraud. (Beneish, 2001, 3; Ronen and Yaari, 2008, 27; Scott, 2003, 369). It has believed that the connotation of the sentence is; "*earnings management is not innocuous even when it does not involve any fraudulent transaction*". Hence, it is very important to distinguish earnings management from fraud.

2.2.2. Earnings Management versus Fraud

National Association of Certified Fraud Examiners define fraud in their publication "Cooking the books: What every accountant should know about fraud" as; *"…one or more intentional acts designed to deceive other persons and cause them financial loss*." (ACFE, 1993, 6). In the same study, they have defined earnings management as well: "*…the intentional, deliberate, misstatement or omission of material facts, or accounting data, which is misleading and, when considered with all the information made available would cause the reader to change or alter his or her*

judgement or decision." (ACFE, 1993, pp.12). These definitions do not exist in the academic literature but exist in the professional literature. Thus, ACFE's –formerly named NACFE- definitions have been gathered from regulators' speeches, practitioners' opinions, legal interpretations and observations of actual cases.

As mentioned above, Healy and Wahlen's definition does not distinguish normal earnings from managed earnings. Financial analysts, managers and investors are concerned about the boundary between manipulation through earnings with the intent of fraud and managerial efforts to meet sales targets or to keep costs low (Dharan, 2003,1). Stlowy and Breton (2004) have provided a framework that defines earnings manipulation. The figure given below indicates the account manipulation and wealth transfer. Wealth transfer is shown with the symbol of (⟷).

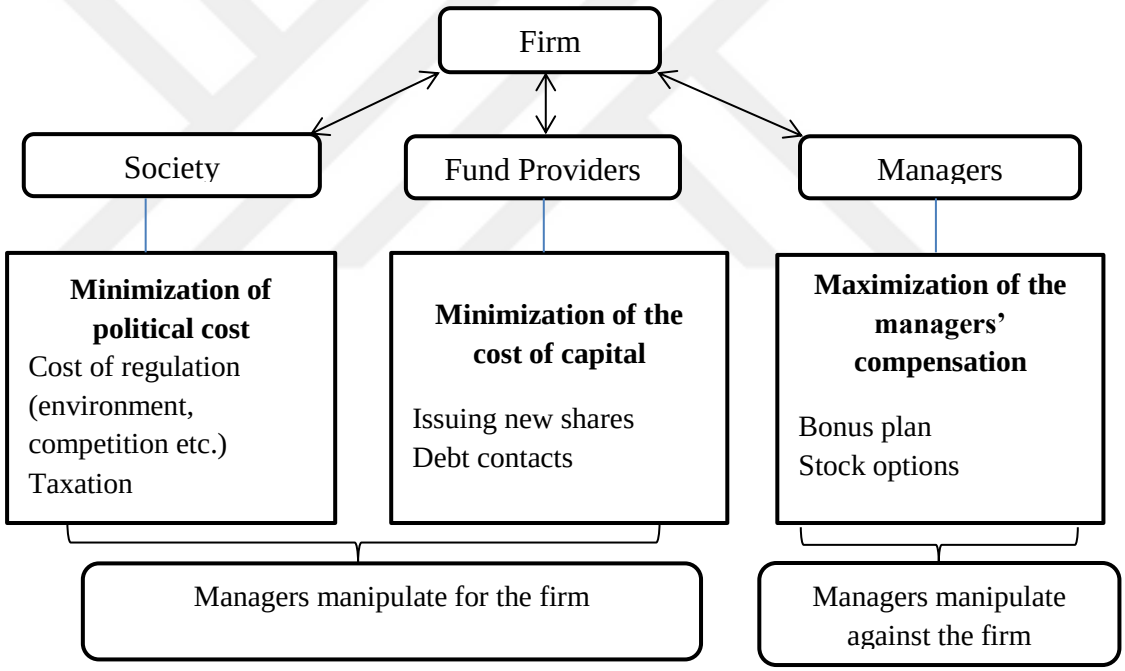

Figure 2.3: The Principles of Accounts Manipulation
Source: Stlowy H. and Breton G.**,** 2004, pp.7

According to this framework, managers use discretion for two reasons. The first one is to make accounting choices and the other one is to design transactions. The purpose is to affect the wealth transfer between firm-society, firm-creditors and firm-managers. In the first two cases, the firm takes the advantage of this transfer but in the last case, the firm is imposed by the managers. Legal manipulation causes fraud but

transactions covered by the terms of "earnings management", "income smoothing" or "creative accounting" normally remain within the boundaries of law/regulations (Marai and Pavlovic, 2013, 42). Ning Yaping (2005) has distinguished earnings management, earnings fraud and creative accounting within the constructive framework. Earnings management is defined as; "*management takes deliberate steps to bring reported earnings to a desired level*". Three concepts –earnings management, earnings fraud and creative accounting- existed under the same roof of "earnings manipulation". The table below is prepared by the help of the expressions developed by Yaping (2005).

Table 2.3

Concepts of Earnings Manipulation

Earnings Management	Refers to the earnings manipulation through exercising the discretion accorded by accounting standards and corporate laws, and/or structuring activities in such a way that expected firm value is not affected negatively.
Earnings Fraud	Refers to the earnings manipulation by violating accounting standards and corporate laws, and/or structuring activities in such a way that reduces expected firm value.
Creative Accounting	Refers to the earnings manipulation practices that do not violate accounting standards or principles because of the lack of relevant standards or regulations.

Source: Yaping N., The Theoretical Framework of Earnings Management, 2005; pp.33

It is normal to confuse earnings management with fraudulent activities due to their close definitions, their close concepts, their close objectives. The reason is, earnings management and fraud share same arguments. They share the same objective; deceiving or misleading the outsiders, the same managerial aim; achieving higher levels of corporate earnings, the same potential; causing to a loss or damage for outsiders by asymmetric economic information. (Perols and Lougee, 2011, 40) They both use financial statements as input and accounting rules as a tool. The other reason is earnings

manipulation through accruals results in a financial fraud (Healy, 1985, 106; Perols and Lougee, 2011, 41). Although the financial fraud is outside the boundaries of GAAP –or other accounting principles- arising with an illegal act, earnings management is one form of accounting manipulation that can be located within the boundaries of GAAP (Kassem, 2012, 31).

Financial statement fraud generally occurs with the realization of a few situations. Financial pressure resulting with earning's deterioration, a breakdown in organizational performance, a decline in sectoral performance and an economic recession. Pressure on a firm to achieve earnings estimates can be a motivation for earnings management and resulting in fraud. It is possible to state earnings management as a tactical response to the requirement of meeting earnings expectations. Earnings management benefits can be evaluated by managers with its positive effect on stock prices by its role in preventing the negative effect on stock prices. (Zabihollah and Riley, 2010, 80). Compared to the fraud's possible cost of detection, sanction and prosecution, earnings management with these beneficial aspects is less risky.

Another study that determines the earnings management acts and financial fraud distinction has been presented by Dechow and Skinner in 2000. They state that, both fraud and earnings management come to mind if there is an illegal transaction during the financial reporting practices. They argue that the consistence of academic definitions refer to earnings management and its occurrence within the boundaries of GAAP. Nevertheless, the idea of earnings management would lead to adverse circumstances for the company and management as same way as financial fraud. (Dechow and Skinner, 2000, 239). They illustrated different types of managerial choices in Figure 2.4 given below.

	Accounting Choices	"Real" Cash Flow Choices
	Within GAAP	
"Conservative" Accounting	Overly aggressive recognition of provisions or reserves Overvaluation of acquired in-process R&D in puchase aqusitions Overstatment of restructuring charges and asset write-offs	Delaying Sales Accelerating R&D or advertising expenditures
"Neutral" Accounting	Earnings that result from a neutral operation of the process	
"Aggressive" Accounting	Understatement of the provision for bad debts Drawing down provisions or reserves in an overly aggressive manner.	Postponing R&D or advertising expenditures Accelerating sales
	Violates GAAP	
"Fraudulent" Accounting	Recording sales before they are relizable Recording fictitious sales Backdating sales invoices Overstating inventory by recording fictitious inventory	

Figure 2.4: The Distinction between Fraud and Earnings Management
Source : Dechow and Skinner, 2000, pp.239

Thus far, it is emphasized that, earnings management is not the same notion with financial fraud. In spite of the accounting-based regulation acts of earnings management, financial statement fraud is against to legislations. Whilst managing earnings does not require penal sanction, on the contrary; violating GAAP – or other accounting principles in different countries- results with penalties. Nevertheless, the starting point of both is to deceive financial information users. Even though it is not completely accepted that the objective of earnings management is just to mislead the outsiders, it is acceptable that uncontrolled accrual or real activity accounting can be concluded as financial fraud. From now on, the important question which has to be asked is why managers appeal to earnings management. At this point, it will be beneficial to mention the incentives of earnings management.

2.2.3. The Underlying Incentives of Earnings Management

There are some fundamental problems with target-based corporate budgeting systems instead of non-target-based systems (Jensen, 2003, 400). Budgets and targets are related to compensation. Hence, people are not paid for what they do but for what they do with the intent of meeting the targets. Thus, this sanction leads them to manipulate targets as well as their strategies to meet the targets. In other words, they "game the system" (Jensen, 2005, 7). Earnings management needs opportunity and motive/self-interest (Dechow and Schrand, 2004, 46). It has been deeply investigated by both academicians and practitioners whether and when earnings management occurs. In other words, it makes a sensation when people attempt to violate ethical boundaries or regulations for personal benefit (Giroux, 2004, 8). If perchance they could understand when companies have incentives to manage earnings, it would be easier for financial information users to assess the timing of a firm to engage in earnings management behaviour (Dechow and Schrand, 2004, 46). Whilst the perception of motivation is related to earnings management strategy, opportunism is related to conservative reporting. Nevertheless, there does not exist a clear-cut distinction between opportunism and motivation –or self-interest- because of the difference in purposes of each individual (Giroux, 2004, 8).

Previously related studies also examine the underlying motives for earnings management with different perspectives. Chen and Tai (2010) conduct their motivation model based on two sources: the first one is attitudes and beliefs and the second one is pressure from affiliated parties. According to authors, attitudes and beliefs include personal perceptions and behavior tendencies in earnings management and encompass "*altruistic motives*", "*selfish motives"* and *behavior convictions*". Selfish motives and behavior convictions are also named as "*speculative motives*" in the study of Hashim et.al. (2013). Altruistic motives refer to the intention of earnings management for the benefit of companies or as a response to potential crisis confronted by companies (Chen and Tai, 2010, 958-961). For example; managers manage earnings to prevent a decrease in company stock prices, to reduce tax burdens or to proceed with the development of important investments (Hashim, Salleh and Ariff, 2013, 296). Managers feel under

compulsion to meet earnings predictions. Hence, if management cannot achieve the predicted earnings, the market concludes that the firm probably has poorer future performance and, hence, pull the firm stock price down and then the market is likely to punish the stock (Graham et.al., 2005, 13). Another earnings management motivation form is "speculative motive" which refer to the intent of managing earnings for personal benefits. In a multitude of research, it is indicated that, managers attempt to realize earnings management acts to boost their compensation, to increase their bonus and remuneration, to strengthen reputation etc. (Nodset, 2012, 8; Giroux, 2004, 8; Dechow and Skinner, 2000, 242; Healy and Wahlen, 1999, 375; Alhadab et.al., 2015, 58).

Attempt to manage earnings may also be due to pressures from affiliated parties such as supervisors, colleagues, accountants, creditors, shareholders and analysts (Chen and Tai, 2010, 958). Those parties may put a great pressure on managers to meet the earnings targets. Probably managers make all their effort to satisfy the shareholders that expect the convincing dividends.

In their earlier study, Dechow, Sloan and Sweeney (1996) conduct another motivation model and they suggest that earnings management incentives are created by three main factors. First, capital market transactions, second the desire to report upward trending earnings per share, and finally contractual incentives are motives for earnings management (Dechow et.al., 1996, 30). Based on Dechow, Sloan and Sweeney's study and getting support from earlier and recent academic and professional researches, incentives of earnings management will be examined on individual base.

2.2.3.1. Executive (Managerial) Incentives

According to Ronen and Yaari (2008), an earnings management perspective necessitates focusing on senior officers; the CEO, the controller and the CFO who have a leadership role and responsible for reporting the company's earnings. Eugene Fama (1980) in his leading article defines management as "*... a type of labor but with a special role-coordinating the activities of inputs and carrying out the contracts agreed among inputs, all of which can be characterized as "decision making*". For the purposes of the managerial labor market, the associations of a manager with success and failure

are information about his/her talents (Fama, 1980, 290-292). In recent studies, it is emphasized that managers' decision-making process has five types of classification; financing choices, returning capital to investors, mergers and acquisitions (M&A), corporate investment, and the allocation of capital across divisions (Graham et.al., 2015, 450). While executives are responsible for those vitally important decisions for firms, executive hubris becomes another phenomenon that merit investigation. Hubris will lead a corporate executive to focus his or her purposes instead of a firm (Tang et.al, 2015, 1702).

With the intent of preventing such executive hubris', The Sarbanes-Oxley Act (SOX) has come into force in 2002 with the purpose of improving the company financial statement controls and supports the efficient corporate governance practices (Price Waterhouse Coppers website). In the frames of Section 302 and Section 404, executive managers have been designated for the responsibility of determining the risks on financial statement, documenting and assessing the controls related to determined risks. Especially Section 302 affirms the state *"… based on such officers' knowledge, the financial statements, and other financial information included in the report, fairly present in all material respects the financial condition and results of operations of the issuer as of, and for, the periods presented in the report…"* (Ronen and Yaari, 2008, 59).

It is expected from managers to be corporate stewards, manage the company in the best interest of shareholders according to their fiduciary role. One of the potential problems that can exist in companies is that managers can exclude themselves out of this provision. Instead of the long term financial performance of a firm, executives may focus on short term personal benefits (Giroux, 2004, 8). What drives managers to gain much more than they deserved, to obtain excessive benefits and to manage earnings in the absence of a regulation like SOX? Herein, it will be more beneficial to refer to some related theories.

Agency Theory: Numerous researches have determined the relationship between managers and owners. They have focused on excessive benefits and offered solutions to decrease benefit-related personal cost of managers to the firm referred as

"*agency cost*" and after the studies for the intent of assessing the cost of agency, a theory named as *Agency Theory* has been founded by a group of leading academics. A Nobel prized economist Richard Coase mentions that the reason of the emergence of the modern corporates is entrepreneurs. He suggests that these entrepreneurs hire workers for doing the job for themselves with contracts and self- organizations. Thus, that organization opinion brings the "hierarchy" phenomenon (Coase, 1937, 20). After this hierarchy, the notion of agent comes as a nature. Thus, owners (shareholders) are principles and executives are agents. An agent relationship arises when the principle hires the agent to perform a task (Subramaniam, 2006, 55). A pioneer study describes the agent-principle relationship as *"... a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent. If both parties to the relationship are utility maximizers there is good reason to believe that the agent will not always act in the best interests of the principal"*(Jensen and Meckling, 1976, 308). In their study, they define agency cost as the sum of "the monitoring expenditures by the principal", "the bonding expenditures by the agent" and "the residual loss". Thus, those costs are as real as any other costs. Before Jensen and Meckling, Stephen Ross conducted an econometric model for the agency costs with Pareto efficiency. He assumes that participants hold the information and fee to act induced by the agent was completely known to the principle. Agent could be told to perform act particularly. At this point, the problem comes from monitoring the act that agent chooses (Ross, 1973, 138). Monitoring has a vital importance because the manager of a firm is like a coach of any team. He may not suffer any gain or loss in current wages and current performance of his team, but success or failure of the team impacts his future wages. Thus, this is an encouragement for managers to be attentive to team success (Fama, 1980, 306).

Relatively more recent studies have also aimed to determine management behavior on the base of agency theory in earnings management process. Davidson III et.al, (2004) extends agency theory with an impression concept. They claim that using earnings management as a tool for impression management is an agency cost under the circumstance of non-optimal decision making by owners and investors. Hence, the agency problem occurs. Although those stakeholders cannot make an optimal decision,

they still expect good economic performance, and with a stronger role provided by a strength managerial structure, executives may engage in earnings management to achieve better performance. Their empirical study shows that managerial duality creates situational agency problems and after the duality creating successions, income-increasing earnings management occurs to a greater extent than in non-duality successions (Davidson III et.al, 2004, 16). Jiraporn et.al, (2008) investigated whether more earnings management are related with acute agency costs. According to their results, this is not the case. Empirical results show that earnings management have a negative relationship with agency cost (Jiraporn, et.al, 2008, 632). On the contrary, the results of a very recent study indicate that agency costs and earnings management are positively related; the degree of earnings management can decrease as agency costs fall. Earnings management is affected by internal control information by agency cost. If firm improves the quality of disclosure, thus agency cost can be reduced and earnings management as well (Ying, 2016, 70).

Income Smoothing Theory: Income smoothing practices have a very long history in corporate finance. According to Investopedia, a widely contented and generally accepted online financial dictionary, the definition is given as; *"...the use of accounting techniques to level out net income fluctuations from one period to the next. Companies indulge in this practice because investors are generally willing to pay a premium for stocks with steady and predictable earnings streams, compared with stocks whose earnings are subject to wild fluctuations*" (Investopedia, 2016). Executives want to keep the earnings consistent by avoiding large differences in gains and losses over years. This is called "income smoothing". Income smoothing is a potential earnings management component. It attempts to generate stable revenues and earnings rather than unbalanced changes (Giroux, 2004, 9). Graham et.al, indicate that the CFO of a firm prefers stable earnings instead of volatile earnings to hold cash flows constant. The reason for this is that volatile earnings are riskier and smooth earnings make the analysts forecasting ability easier. Less predictable earnings command a risk premium in the market and one of the most important determinants for this preference for smooth earnings is to assure suppliers and customers that the operations are stable. (Graham et.al, 2005, 2).

The lack of legal regulations for counterparties to rely on the protection of their rights based on relationship-related investments; generates the implicit claim of stakeholders and thus firms' incentives to smooth their earnings to enhance long-term business relationships with current/potential stakeholders (Dou et.al, 2013, 1652). A classical income smoothing strategy is to increase reserve accounts when earnings are high and reduce reserve accounts while earnings are low. The former reserves are known as "cookie-jar reserves". Managers do appeal to smooth earnings with the intent of purifying the bonus formulas from unusual or infrequent items. Bonuses or other incentive compensation calculations are based on performance calculations approved by the board (Giroux, 2004, 9). A very recent study indicates that outside shareholders do not have detailed information about a firm, but insiders do, and then an asymmetric information problem arises. This opacity causes outsiders to take action against insiders about deserving the payouts they received if they met the expectations. Hence, managers try to report the economic condition not consistent with the reality but consistent with those expectations. They appeal to real and financial smoothing activities with the intent of protecting financial statements from economic shocks as well as their personal and contractual benefits (Acharya and Lambrecht, 2015, 2567).

Income smoothing perfection is affiliated to some criteria that were demonstrated in Copeland's study (1968). First of all, it must not commit the firm to any particular future action, must be based upon the exercise of professional judgement and be in the legal frame of "generally accepted accounting principles," must lead to material shifts relative to year-to-year differences in income as it is only a reclassification of internal account balance, so it must not require a real transaction with second parties and finally, it must be used in conjunction with other practices or individually over consecutive periods (Copeland, 1968, 102).

The major incentive for income smoothing is to reduce perceived risk by investors, and thus, to reduce the corporate cost of capital as a vital motivation for managers. Besides this incentive, executives can also appeal to income smoothing if their compensation contracts are based on accounting numbers. Political concerns are another motivation for income smoothing because it diverts attention from excessively

high or low income which might be attractive for political environment. Also managers' compensation and concerns over job security have been considered as another motivation for income smoothing because keeping the job is more important than hitting the rules. Some studies also emphasize that managers do such transactions to stabilize the firm's income volatility and reduce employment risk (Prencipe et.al, 2011, 530 ; Gebhardt et.al, 2001, 136; Che-Ahmad and Mansor, 2009, 7; Burgstahler, 2006, 634). These are managerial incentives that are related to income smoothing activities. Another theory based on managerial motivations with earnings management is the positive accounting theory.

The Positive Accounting Theory: Positive accounting theory is an agency-theory-based phenomenon that focuses on individual relationships. Thus, those relationships are beneficial for predicting the time and the reason of managements' intent to manage earnings by using accounting methods (Keppel, 2009, 11). This theory has been developed by Watts and Zimmerman (1978). In their leading paper, they try to put forward a positive theory with the aim of understanding the managerial incentives on opposing accounting standards. They assume that individuals tend to maximize their own utility. They criticize Gordon's (1964) assumption about shareholder satisfaction as a positive function of accounting income. According to authors, there is serious doubt about the ability of management to manipulate the prices of shares by changing accounting procedure legally (Watts and Zimmerman, 1978, 114). In other words, whilst the shareholders would be satisfied, indeed they would just be deceived. Watts and Zimmerman (1978, 115 and 1990, 138) examine managerial incentives on earnings management with five affective factors but in three hypotheses and the table below is based on their statements.

Table 2.4. Management Incentives Based on the Positive Accounting Theory

Taxes	Management expects a proposed financial accounting procedure to influence future tax laws; their lobbying behavior is affected by the future tax law affects.
Regulation "Debt/Equity Hypothesis"	Utilities have an incentive to favour accounting standard change which results with an increase on cash flow vice versa. When the ratio of debt and equity is high, the management will prefer accounting methods which increase the income in order not to breach debt contracts. If a company cannot meet the terms of a debt contract, debtors can change the conditions and raise the interest rate. Thus, to avoid this situation, managers can manage the earnings.
Political Costs "Size Hypothesis"	Management minimizes reported earnings to avoid potential governmental intrusions. By avoiding the attention that "high" profits draw because of the public's association of high reported profits and monopoly rents, management can reduce the likelihood of adverse political actions and thereby reduce its expected costs.
Bookkeeping Costs	Changes in accounting procedures are costly for a firm. Increasing disclosure and additional training costs can lead managers to take income increasing actions.
Management Bonus Plans "Bonus Plan Hypothesis"	A change in accounting standards, which increase the firms' reported earnings, would lead to a greater income. As long as the per manager present value of the after tax incentive income is greater than the decline in each managers' portfolio, it would be expected that management would favour this type of accounting change. Managers of firms with bonus plans are more likely to use accounting methods that increase current period reported income.

Source: Watts and Zimmerman, 1978, pp.117 and 1990, pp.138.

In despite of many studies, an author emphasizes that *"…none of the studies take the opportunity to examine management behaviours other than the chosen disclosure variable that one might expect to exist if self-interested income reducing strategies were being adopted as hypothesized, therefore further weakening the tests."* (Milne, 2002, 385).

2.2.3.2. Capital Market Incentives

The expected function of an efficient capital market is to lead accounting gains faster. Market will facilitate the resource allocation to their highest value. On the other hand, an efficient market avoids firms to invest negative valued projects (Healy et.al, 2014, 1285). Due to the fact that stock is approved as currency in capital market transactions, the incentive of firm is to affect the firms' share price. If there is a higher stock price associated with managed earnings, this means that the cost of obtaining new capital is low, the price of an acquisition is effective and the manager's personal wealth is high (Dechow and Schrand, 2004, 47). According to earnings management literature, it is obvious that in capital markets, the most "earnings-based" transactions are initial public offerings (which composes this thesis' hypothesis and the research framework), seasoned public offerings, mergers and management buyouts, insider trading activities, insider equity transactions, initial credit ratings and credit rating changes.

There are several studies that prove the managerial incentives to manage earnings in attempt to attain capital market benefits, to meet the predictions of financial analysts or management. These studies examine whether managers illusion financial statements especially earnings, prior to equity offers. In general, it is found that prior to important cases – such as initial or seasoned public offerings - firms tend to manage earnings with the intent of window-dressing financial statements (Kim et.al., 2013; 113). According to empirical results, companies report income increasing unexpected accruals prior to initial public offerings (hereafter IPO) (Teoh et.al; 1998a; 1966; 1998c; 203; Yükseltürk, 2006; 240; Miloud, 2014, 131; Aerts and Cheng; 2011, 453; DuCharme et.al, 2001, 393; Roosenboom, 2003, 264; Ball and Shivakumar, 2008, 346; 1151). Evidences show that firms prepare for an initial public offering by changing the ownership structure, by reorganizing corporate culture and most importantly, by

improving financial reporting systems. Firms promulgate financial statements for the first time. Managers and insiders already know the private information but outsiders do not (Ronen and Yaari, 2008, 146). Roosenboom et.al, states that "*at the time of initial public offering (IPO), managers have private information about future cash flows, investment opportunities, and their own managerial skills. Investors, on the other hand, are uncertain about the prospects of the IPO firm*" (pp. 243)

At this point, it is possible to say that there is a great information asymmetry between the current shareholders and the potential investors at the process of external capital rising of firms in capital markets. Investors always face information asymmetry during the investment of listed companies, but this problem is extremely high in the process of IPO of a newly listed firm. Just prior to the IPO, the managers and shareholders of the firm have strong incentives to present the firm and its future prospects favourably, in order to maximize the IPO proceeds (Kouwenberg and Thontirawong, 2015,4). To mitigate this asymmetry, earnings forecasts can be used as a financial position indicator to the expected investors (Ammer and Zaluki, 2015, 68). Thus, these forecasts can be met by managements by deceiving the financial statements.

The purpose of earnings management activities around initial public offerings is to gain economic benefits from offerings by taking advantage of firms' shorter historical information. For IPO firms -even for old companies- publicly available historical information is limited. Thus, it is difficult for market participants to estimate the real value of earnings and so the probability of fooling investors is greater (Dechow and Schrand, 2004, 50). The results of researches indicate that IPO firms tend to manage earnings to sell shares at inflated prices. Earnings are valuable as long as they affect the stock price. Earnings are valuable for passing the market test because investors consider earnings on buying stocks. Earnings are valuable as a baseline for future assessments and as a guarantee for desperate investors who think that they are misled by the firm during IPO. If we consider IPO as a cashing in tool, then the firm's strategy would be to inflate earnings to maximize the stock price. If we consider IPO as a step for raising capital from the public, then prudence and conservatism would be better to allow the firm to meet the expectations (Ronen and Yaari, 2008, 149). It is

prudential to keep the reserved income to attain a "smooth long run earnings growing trend" before offerings.

Different from IPO, in a seasoned equity offering (here after SEO), listed companies tend to get a new group of investors unless the firm raises capital through a rights offering. A right offering is an arrangement whereby the firm makes an offer to its current shareholders to purchase additional shares (Ronen and Yaari, 2008, 151). Similar to IPO, at a SEO process, management and shareholders prefer to gain share prices as high as possible. Thus, it is natural for firms to manage earnings before SEO. An alternative explanation for earnings management prior to SEO is that high accrual (earnings managed) companies are high growth companies. Those are likely to have the most optimistic forecast for future growth and the market is subsequently disappointed when the growth is not realized (Dechow and Schrand, 2004, 49).

Similar to initial and seasoned public offerings, firms have motives to manage earnings prior to mergers and managerial buyouts. For example, in a management buyout, there are clear incentives for managers to understate earnings in an attempt to acquire a firm at a lower price (Xie et.al, 2001, 6). In takeover or merger cases, there are evidences of earnings management in both hostile takeovers and in mergers. Targets of hostile takeover tend to inflate earnings in the period prior to a hostile takeover, in an attempt to dissuade their shareholders from supporting the takeover. Likewise, in the case of mergers it is found that firms engaging in stock mergers inflate their earnings prior to the merger in order to inflate their stock price and thereby reduce the cost of merger (Easterwood, 1997, 30). A recent study found evidence that "earning reducing" activities by target firms -which have publicly announced their intention to be acquired- are mostly appealed activities. Those firms engage in earning reducing activities in the years surrounding this announcement (Anagnostopoulou and Tsekrekos, 2015, 351). Firms may be more likely to manage accruals that can be unnoticed rather than manage publicized accounting choices which can easily be observed during the mergers. Instead of mergers, in a managerial buyout event, managers have incentives to minimize the purchase price through income reducing earnings management that will negatively affect the firm's stock price (Dechow and Schrand, 2004, 50).

Another incentive on earnings management is related to insider trading activities. Beneish and Vargus (2002) mention the relationship between insider trading and earnings management. They provide evidence that insider trading is an informative signal about earnings quality. They suggest that insiders presume their knowledge of the economic factors underlying the persistence of their firms' income increasing accruals (Beneish and Vargus, 2002, 789). Insider trading is informative about managers' perceptions of future performance and naturally contents of earnings management are typically performance-dependent; thus, it would be more powerful to test earnings management with insider trading activity (Beneish et.al, 2012, 213). For instance, the profits gained from insider trading create incentive to sustain the overvaluation through earnings management and also create an incentive for managers to prolong the undervaluation the firm has already undervalued. But prolonging undervaluation has negative effects on managers; thus, the existence of insider trading motivated by accrual based earnings management lead managers to transform undervalued firms to overvalued firms (Sawichki and Shrestha, 2014, 945).

It is possible to summarize all capital market incentives on earnings management as gaining reputation, avoiding losses, reporting increases in seasonally adjusted quarterly earnings and meeting analysts' expectations (Dechow and Skinner, 2000, 242). Earnings management observation is not that easy for market participants and they can be fooled by these practices. On the other hand, if the firm reveals the earnings management to the market, this may bring serious penalties to the firm. Under these circumstances, audit committees, academics, regulators and practitioners should decide whether earnings management is pervasive and problematic or less important phenomena.

2.2.3.3. Shareholders Incentives

Allowing firms to report extraordinary and special items separately on financial statement lets managers to isolate some components of income statement. These components can be categorized as permanents and transients. Shareholders can expect periodic income called permanents but transients can be expected only by managers due to lack of information asymmetry. Managers can report only permanents to obtain a

smoothed raw series of income numbers instead of transients in the frame of accounting principles to meet the targets. This manipulation is not just tolerated but also encouraged by shareholders for their own interests (Arya et.al, 2003, 112).

The important question that deserves an answer is why shareholders tolerate managers to mislead them by deceiving accounting numbers. Several authors had answered this dilemma in different perspectives. Arya, Glover and Sunder (2003) indicate that in a situation of dispersed information, shareholders have no choice. Even if they do, they would prefer earnings manipulation to improve firm performance. According to another study, the role of shareholders in earnings management is demand for information to link the share prices and earnings. Shareholders attempt to affect stock prices through earnings because stock price is related with cost of capital, stocks serve as cash and finally stocks are also used as collateral (Ronen and Yaari, 2008, 114). In capital markets, to evaluate the firm, the most important indicator that is used by outside investors is the stock price (Hsu and Wen, 2015, 340). Hence, shareholders' stock sensitivity and incentives to affect the stock price and to increase the insider trading profits is quite normal. Another motive is expressed in the frame of stewardship theory. First, shareholders determine an action and encourage management to implement this productive action by designing a contract. If the objective of this contract is to minimize the expected cost of enacting managers to implement shareholders' action, then this contract encourages earnings management; thus, internal demand for managing earnings exists (Dye, 1988, 195). A principle developed by Dye (1988) reinforces these perceptions. The Revelation Principle states that a breakdown of one or more of the communication, commitment and contract makes income manipulation beneficiary a necessity.

According to Demski (1998), running the firm and predicting future earnings are properties of a hard working manager. Manager reveals his hard work by managing earnings. By the virtue of earnings management as an informative variable, smoothing can reduce the cost of managers' work motivation. Earnings management also keeps a shareholder from getting involved in decisions normally left to management. A shareholder would be better off with managed earnings because it keeps him from

involving excessively in the process of running the firm (Arya et.al, 1998, 113). In the frame of contractual perspective, a manager's compensation has to be independent from his earnings announcements. But it is stated that *"...constant contracts are optimal only when the manager's optimal action is the lowest possible action. Thus, if shareholders wish managers to exert some nontrivial effort level, they must tolerate some earnings management*"(Dye, 1988, 200).

Similar to the insiders and individual shareholders, institutional shareholders have triggers on earnings management as well. Along the relationship with venture capitalists, underwriters and agent on board of directors, institutional investors have an information advantage compared to individuals (Hsu and Wen, 2015, 341). In the short term, institutional shareholders act like traders rather than owners, so they focus on short term developments of the firm to gain trading profits. They make managers fear from large amount of institutional sellings after an earnings disappointment (Bushee, 1998, 306; Lee et.al, 2011, 664). In the long term, the aim of institutional investors is to gain profits not from trading but from operations. Hence, they have incentive to monitor management for a long term process. Previous studies found that institutional shareholders prevent, mitigate and alleviate firms' earnings management activities (Aybars, 2013, 173; Koh, 2007, 297).

Another point to be discussed regarding earnings management incentives of shareholders is to gain tax benefits. Tax issue is a little bit riskier because there is a third party on the process (Slemrod, 2004, 15). Therefore, there is another cost called detection cost. Shareholders do not have any intention to pay additional taxes so they may force managers to prevent these payments using earnings management strategies. However, this time, there will be a detecting risk caused by regulators and auditors. Under these circumstances, shareholders have to decide between tax costs associated with pre-tax earnings management and risks of exposing detection costs as well as risks of losing reputation. (Erikson et.al, 2004, 406; Badertscher et.al; 2009, 63)

2.3. THE METHODS TO MANAGE EARNINGS

There has been an increased exertion to document and understand how companies manage their earnings. The steps taken for earnings management, include not only reported earnings but also real business decisions (Yaping, 2005, 35). Earnings are composed of accruals and cash flows and management can affect cash flows by taking real economic actions (Dechow and Schrand, 2004, 39). Whilst reported earnings is related to accounting choices and generally implemented with accruals, economic earnings is related to real business decisions and implemented with real transactions. At this very point, it can be said that earnings management can be classified into two approaches: accrual based earnings management (hereafter AEM) and real activity based earnings management (hereafter REM). While AEM is involved in GAAP (or any accounting principles in any country) accounting choices to hide true economic performance, REM is an effort to influence the financial statements by managers undertaking actions that structure an investment, operation or change the timing of economic events (Gunny, 2010, 855). Accruals management is related to accounting methods used to represent operating activities while REM is related to operating activities to boost the earnings. In other words, both methods of earnings management contains managerial attempt to deceive earnings; however, one method affects operating activities while the other does not.

In the empirical analysis part of the thesis, the econometric models and measurement of both methods of earnings management will be comprehensively identified but first, it will be beneficial to give general theoretical information about all.

2.3.1. Accrual-Based Earnings Management (AEM)

According to McKee (2005), earnings management is at the legal end of a process where the illegal end of the process is fraud. Since 1985, a definition from Financial Accounting Standards Board (FASB) broadly informs everyone who is interested in the issue and emphasizes the expectation of true economic performance reflection through GAAP-based accounting; *"…accrual accounting uses accrual, deferral, and allocation procedures whose goal is to relate revenue, expenses, gains*

and losses to periods to respect an entity's performance during a period." (FASB, 1985, 6, 145)

Opportunistic short-term income smoothing activities can lead firms to future write-downs and accrual accounting allows this situation (Dechow and Schrand, 2004, 7). While managers prepare financial statements, they include their judgements and estimations in the process by changing accruals (Enomoto et.al, 2015, 183). If there is an inconsistency between the timing of cash flows and the timing of the transaction's accounting recognition, then accruals arise (Ronen and Yaari, 2008). Accruals shift cash flow timing to a better measure of earnings because cash flow from operation is an alternative definition of performance (Giroux, 2006, 74). Ronen and Yaari gives an example that demonstrates how the accrual process occurs through the recognition of revenue.

Period	**1**	**2**	**3**
Event →	An advance frım a customer	Shipment of the merchandize to the customer	The customer settles his account
Cash flows	Inflow of advance	None	Inflow of the final payment
Accounting Recognition of Revenue	None	Recording of revenues	None
Accruals	Increase in "unearned revenues"	Decrease in "unearned revenues" and/or increase in "accounts receivable"	Decrease in "accounts receivable"

Figure 2.5. The Accruals Process

Source: Ronen and Yaari, 2008 ; pp. 371

Previous studies, classify accruals in two major groups; discretionary (abnormal/managed) and non-discretionary (normal/unmanaged) accruals (Ball and

Shivakumar, 2008, 325). Some accrual adjustments are necessary, normal and predictable by investors and related to firm specific conditions. For example, the revenues of rapidly growing firms exceed cash sales or the depreciation structure of asset-intensive firms can be different. These accruals are known as "non-discretionary accruals" (Teoh et.al, 1998, 66). Instead of non-discretionary accruals, some accruals arise from transactions made or accounting treatments chosen in order to manage earnings so managements have greater discretion over these accruals known as "discretionary accruals". Thus, it can be said that non-discretionary accruals are proxies for accrual recognition outside the control of management and the discretionary accruals are proxies for earnings management (Teoh et.al, 1998, 67). In the earnings management researches, assessment of earnings is related to observability of the managed and un-managed components of reported earnings (Elgers et.al, 2003, 406). This observation is based on shifting accruals or adjustment of cash flow recognition over time; thus, adjusted earnings measure firm performance better than shifting (Dechow and Dichev, 2002, 35). Dechow and Dichev (2002) emphasize that accruals are based on assumptions and estimates. If there is a mistake, it contains an estimation error and it must be corrected in future accruals and earnings.

A large number of previous studies focus on managing earnings based on discretionary accruals. In his leading study, Healy (1985) states that managers use income decreasing accruals to affect their bonus plan. He asserts that bonus plans may create an incentive to manage earnings upward or downward. After developing "*The Healy Model*", his results show that there is a high incidence of intuitional changes in accounting procedures during the years following the adoption or modification of a bonus plan. With a sample of 94 firms and years between 1930-1980, by scaling total accruals to total assets and dividing to total firm-years number, Healey estimated an effective measure for non-discretionary accruals. Based on the empirical analysis, he reveals that constant cash-flow firms with binding their bonus plan to upper bounds have lower accruals than firms with no upper bound (Healy, 1985, 106).

One year after Healy's comment, a revision was made by DeAngelo (1986) her study conducted to determine the management buyouts of publicly traded firms. She

starts out her study with the suspicion of managerial tendency to manage earnings to reduce the buyout price which was negotiated with shareholders. Similar to Healy (1985), DeAngelo (1986) with a sample of 64 firms and between the years 1973-1982, also used total accruals (net income minus operating cash flows) from one period as a proxy for non-discretionary accruals in the test period instead of a historical average. "*DeAngelo Model"* (1986) differentiates from Healy (1985) by using prior period total accruals as an estimate tool. According to empirical results, she concludes that managerial conflicts of interest between firm and public stock holders are severe in buyouts; their financial advisors invest resources to examine firms' financial statements for evidence of income reducing accounting techniques (DeAngelo, 1985, 419).

In a 1991 publication, Jennifer Jones introduced her well-known "*Jones Model*" that investigates import reliefs. Her objective was to test whether firms manage their earnings during the investigations of import reliefs. According to Jones (1991), import relief is a wealth transfer from a group of diffuse losers (consumers) to a group of concentrated winners (others). She argues that consumers do not monitor earnings management as effectively as losers; regulators have less incentive to adjust managers' accrual decisions or accounting procedures in making their recommendations. During the evaluation, if firms manage their earnings downward, they can increase the import relief approval as an investigation result. With a time series model, her empirical test is based on a sample including 23 firms from five industries. *Jones' Model* uses discretionary accruals as an earnings management measurement and adjusts expected nondiscretionary accruals for changes in revenues and capital investment (Smith, 2012, 116). This model represented an attempt to improve upon the prior measures of discretionary accruals, and developed a time series analysis to estimate nondiscretionary accruals. Jones Model clarified the measure of accruals compared to former studies; yet, it was not flawless.

Jones's model had a conjectured tendency to measure abnormal accruals with error when discretion is exercised over revenues. To eliminate this condition, Dechow, Sloan and Sweeney (1995) developed a modification that allows a management to use discretion over revenue recognition. This newly model is known as *"The Modified*

Jones Model". The underlying reason of this modification is that, it is easier to affect earnings by managing revenue on credit sales then revenue from cash sales so they assumed that all changes in credit sales could be resulting from managing earnings (Dechow et.al, 1995, 199). If the firm does not manage earnings in the estimation period and manages accounts receivable in the event period, then accruals of credit sales are unmanaged in the estimation period and managed in the event period. The change in accounts receivable is subtracted from change in revenues to measure the nondiscretionary accruals (ΔREV-ΔAR) (Ronen and Yaari, 2008, 436).

Another contribution to the accrual model literature was developed by Kasznik (1999). In this study, the relationship between disclosure of earnings forecasts and earnings management was investigated. The role of earnings management in mitigating costs associated with management earnings forecast errors was questioned in the model. Empirical results show that managers who overestimate the earnings manage earnings upward. He applied a cross sectional methodology to the Modified Jones Model with the aim of including industry wide economic conditions and also cash flow from operations was included in the model as an additional explanatory variable (Kasznik, 1999, 2). A relatively recent study conducted by Kothari, Leone and Wasley (2005) developed a performance-matching model that investigates the relationship between earnings management and performance. They used return on asset (ROA) and industrial membership as performance-matching variables. They started with a gross sample (250 samples for 100 firms each) from 1962-1999 Compustat firms and they found that having a ROA included in the regression model reduces abnormal accruals. They observed that the standard error of managed accruals increases with the lagged ROA of the previous period (Kothari et.al, 2005, 193). They also found that ROA is more closely associated with accruals when those accruals are extremely negative and vice versa. Both Kasznik (1999) and Kothari et.al (2005) models are known as "*Performance Adjusted Models*". Detailed accrual models' equations are given in the empirical analysis part of the thesis.

2.3.2. Real Activity-Based Earnings Management (REM)

Accrual-based earnings management does not succeed by changing operating activities of the firm but through the accounting choices use to indicate those activities. Both methods involve the managerial tendency to increase or decrease earnings. However, one of them affects the operations of the firm and has cash flow effects whereas the other does not (Gunny, 2010, 855). For example, failing to write down damaged or obsolete inventory is accrual management but cutting back on research and development expenses to meet earnings targets is real earnings management (Smith, 2012, 119). REM has not been widely studied as much as AEM but academic studies find evidence that management has incentives to manage earnings through real activities.

There are several studies which emphasize the fact that real activity manipulation is used to manage earnings instead of accrual based earnings management and presents several reasons as to why REM is preferred to AEM. Cohen and Zarowin (2008) state that, AEM is more likely to draw auditor and regulatory scrutiny than real decisions and it is too risky to rely on accrual manipulation solely. Authors remark that if real activities cannot be adjusted at the end of the reporting period, managers are left with no opinion under the circumstances of reported income falls below estimations and accrual-based strategies to meet it are exhausted (Cohen and Zarowin, 2008, 8). Ning Yaping (2005) reveals that accruals approach is problematic for three reasons. First, the relationship between earnings management and discretionary accruals is an assumption due to information asymmetry in other words; there is not a cause-effect relationship between them. Second, discretionary accruals are a noisy variable and finally third; thereby accruals are the one type of objects that can be manipulated, accrual-based earnings management is not exhaustive or inclusive (Yaping, 2005, 35). Another opinion is stated by Gunny (2010). She indicates her drawbacks about AEM-REM trade-offs under three reasons, as well. First, aggressive accounting choices that use accruals are riskier for SEC (Securities and Exchange Commission) monitoring. Second, the firm may not have the adequate flexibility to manage accruals in the frame of sector inclusion or timing etc. Third, accruals management takes place at the end of

the fiscal year and this subjects the management to uncertainty of accounting treatments allowed by auditors at that time (Gunny, 2010, 856). According to Graham et.al (2005) *"...while auditors can second-guess the firm's accounting policies, they cannot readily challenge real economic actions that are taken in the ordinary course of business to meet earnings targets..."* (Graham et.al, 2005, 15) Managers engage in real earning management activities throughout the fiscal year and accrual earnings management is utilized at the end of the fiscal year to meet the earnings forecasts and targets (Alhadab et.al, 2015, 61; Zang, 2011, 7). Monitoring by auditors and regulators is tighter for AEM than REM; thus, it can be said that the costs of REM is lower (Enomoto et.al, 2015, 184).

As mentioned before, in the earnings management literature, real earnings management has not been extensively investigated as much as accrual-based earnings management and until 2006 there was not a comprehensive methodology to test REM. Researches may be accelerated with the suggestion of Graham et.al (2005) that more attention should be given to REM. Roychowdhury (2006) focuses on REM, explains why earnings are not evenly distributed near zero. He defines real activity earnings management as *"...management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds"* (Roychowdhury; 2006, 336). His model is based on calculating the expected normal cash flows for each area and comparing the results to the actual cash flows with the aim of estimating abnormal cash flow. He starts from the point of three operational areas where management can alter activities. Thus, his model focuses on *sales, discretionary expenses (R&D, SG&A and advertising expenses)* and *production costs*. Empirical results show that firms cut discretionary expenses, boost their productions and manipulate sales in order to prevent negative earnings (Li, 2012,76).

Real activity manipulation causes economic costs for a firm because it alters firm operations from optimal practices. In their favoured research, Cohen and Zarowin (2010) focused on accrual and real earnings management around seasonal equity offerings and for the REM, they designed three manipulation methods and their impact on sales, discretionary expenses and production cost. These methods are listed as;

"*acceleration of the timing of sales through increased price discounts or more lenient credit terms"* -this method will temporarily boost the sales volume-, *"reporting of lower cost of goods sold through increased production"* -this method will spread the fixed costs over a large number of units, so fixed cost per unit will decrease-, and finally "*decreasing discretionary expenses including advertising, R&D, and SG&A expenses*" -this method will boost the current period earnings- (Cohen and Zarowin, 2010, 8). They found evidence that firms engaged in REM underperform after the seasoned equity offering (SEO).

According to Gunny (2010), managers tend to manage earnings through REM to meet the earnings benchmarks and to influence the future performance. Her results suggest that engaging REM is not opportunistic but just a signaling for the firms. Hutton (2009) states that if a firm's financial reports and operations are more opaque, then, there is less firm-specific information available to affect its stock returns. Real operations can serve the purpose of manipulating earnings, they can be used to hide negative information (Li, 2010, 78). In a recent study, it is stated that REM is implemented during the accounting period, so when managers can no longer hide the negative information and decide to cover it by managing real operating activities or by managing accruals, market participants can observe the REM reversion during the period. However, they cannot observe the AEM reversion until the year ends. Authors also emphasize that firms' abnormal real business operations increase their subsequent crash risk (Francis et.al, 2016, 219). Cho and Chun (2015) determined the relationship between REM and corporate social responsibility and documented that Korean firms have incentives to manage earnings not through accruals but real operations. Nevertheless, they emphasize that REM can be more harmful to a firm than AEM. Because REM can adversely affect firm value by distorting normal operating activities and thereby harming the relationship with key stakeholders such as customers, employees, and communities (Cho and Chun, 2015, 2).

In 2014, a study by Ising indicates that boosting earnings and sales around IPOs by real activities is less likely to be uncovered as influential behavior than using accruals would (Ising, 2014, 197). Wongsunwai (2013) investigates the effect of

external monitoring -by venture capital- of earnings management before initial public offering. He finds that in the offering period, top-quartile venture capitals provide strong external monitoring resulting in significantly less aggressive earnings management through either accruals or real activity manipulations by portfolio companies (Wongsunwai, 2013, 313). Another study mentions that investors focus on three items to value companies as these items are *earnings, sales and R&D* (Fedyk et.al, 2012, 4). Authors employ a method that lets them decide if discretion in these items is used simultaneously because managers have various possibilities to influence capital market participants but not only earnings. Fedyk et.al (2012) found that there are many companies -especially internet firms- that manipulate their real activities prior to the IPO process.

Kothari et.al (2016) emphasizes the crucial difference between accrual earnings management and real earnings management as "*…generally accepted accounting principles (GAAP) provide a framework for ''acceptable'' accounting principles enforced by the Securities and Exchange Commission (SEC), but no such framework for real operations exists*". The inference of this sentence is that the detection of REM is more challenging for investors compared to AEM. Kothari et.al (2016) examines the opacity of earnings management; hence, the market is unable to detect these acts of deceiving and resultantly overvaluing the stock. Their return based test shows the REM as a driver of negative future performance in post-SEO term namely, SEO firms exhibit future negative abnormal returns when they report positive abnormal earnings that are also accompanied by real activities management. They especially emphasize that managers may exhibit a preference to manage earnings via real activity management during high scrutinized times because these strategies have a higher possibility of detection escape (Kothari et.al, 2016, 584).

In the first chapter of thesis, it is strived to determine the managerial incentives to manage earnings, the concept and the definitions of earnings management, the methods to manage earnings and related studies that contributed to the literature. Econometric models and implications are explained in detail in the empirical analysis part of the thesis.

3. INITIAL PUBLIC OFFERINGS

"*People tend to think of going public as a goal in and of itself—as the end of the process. It isn't. It's the beginning of a long-term relationship with the public and institutional investors*." says the CEO of Mastech Corporation Sunhil Wadhwani. The CEO begins his sentence with a lack of sense of many entrepreneurs, executives, shareholders, board members, as initial public offerings (hereafter IPO) will be a magic to build a strong business and to create value for customers, employees and shareholders. The continuation of sentence emphasizes that an IPO is an entrance into a new stage but not only a milestone. Being a public company has its own opportunities, challenges and risks (Allison at.al, 2008, 1). In this part of the thesis, IPO concept, pros and cons of IPO and IPO process in the world and in Turkey will be strived to clarify.

3.1. INITIAL PUBLIC OFFERING CONCEPT

All firms need financial resources to increase the competitive power and to make investment for a sustainable growth. These resources can be provided by both insiders and outsiders, especially a large portion can be provided from capital markets through public offerings. Going public provides advantages for liquidity, low-cost financing, transparency, credibility, institutionalization, corporate governance and reliability. Initial public offering is an important financial source for economic growth through bringing passive funds to the economic circulation (Küçükçaylı, 2013, 2). Hence; an IPO is a good indicator for the capital markets development level and avoids the shallow market structures. Thus, it can be said that an IPO incorporates various issues in finance theory such as agency theory, ownership structure, valuation, market efficiency and risk estimation etc.

An initial public offering is considered by many entrepreneurs, managers and shareholders as an indicator of success and a door to obtain liquidity. These stakeholders consider IPO as a "once in a lifetime" event that requires many years of

hard work. However, an IPO requires a great effort, cost and managerial focus (Allison et.al, 2008, 1). In other words, if a firm decides going public, then the board of company and executive officers should analyse the process meticulously and should reveal the pros and cons of the event carefully. Notwithstanding its costs, risks and efforts, different stakeholders have different objectives for going public. The figure given below briefly summarizes these objectives.

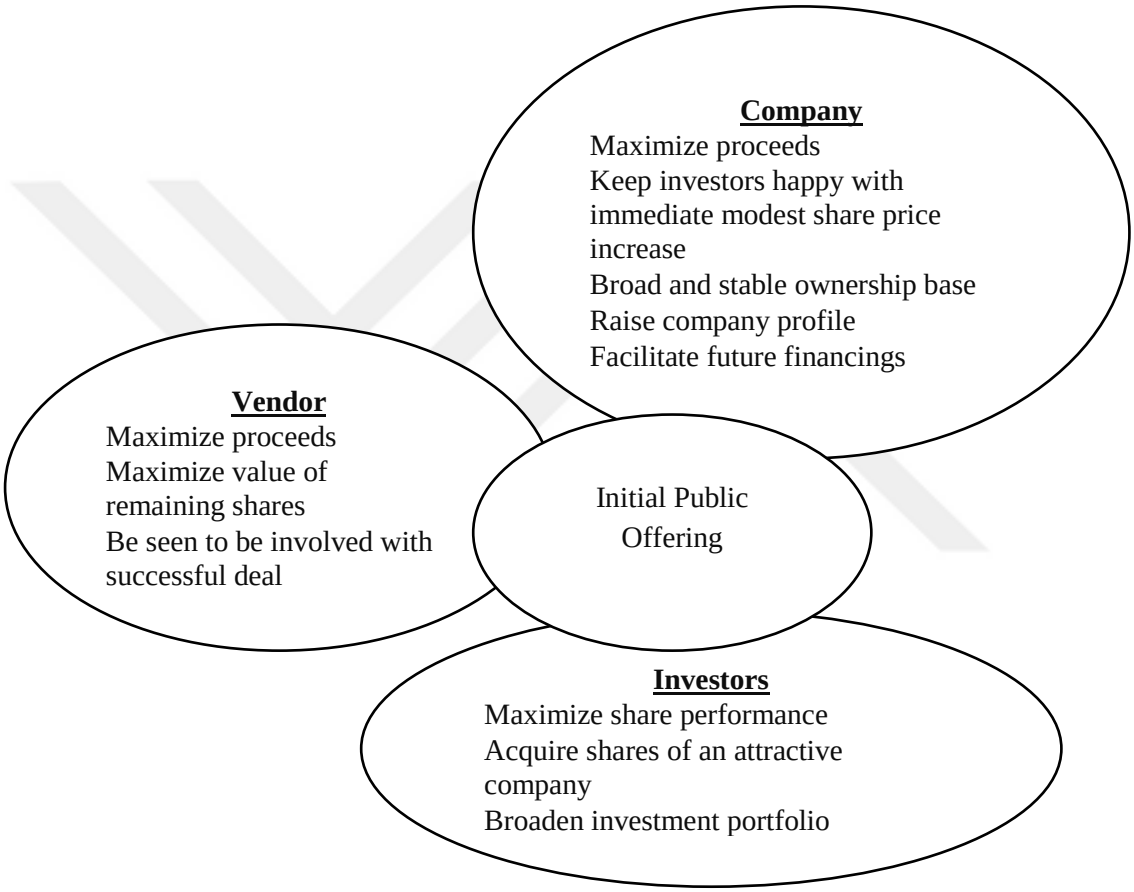

Figure 3.1 Major IPO Objectives

Source: Ross Geddes, IPOs and Equity Offerings, 2003, pp. 2

The important question has to be asked first is "What does going public mean?" and beyond this, what is initial public offering? How is the legal infrastructure framed in Turkey? Why is going public so important? Those questions will be investigated with both practitioner and academic perspectives.

3.1.1. The Definitions of Initial Public Offering

Pricewaterhouse Coopers defines initial public offering from the point of going public as *"…it is the process of offering securities -generally common or preferred stock or bonds- of a privately owned company for sale to the general public. The first time these securities are offered is referred to as an initial public offering or IPO*" (PwC, 2011, 2). An initial public offering represents the initial effort of firms to raise capital in a public equity market (Özer, 1999, pp.1).

Securities and Exchange Commission (SEC) in USA gives the definition below in its education material for investors;

"*…an initial public offering, or IPO, has referred to the first time a company offers its shares of capital stock to the general public. Under the federal securities laws, a company may not lawfully offer or sell shares unless the transaction has been registered with the SEC or an exemption applies"* (SEC, 2013, pp.1).

In Turkish capital market regulations, going public is stated as a direct financing method that corporations apply with the intent of providing financial source (CMB, 2012, 5). The former Capital Market Law defines Public Offer in Article 3 under the title of "definitions" as;

"*Within the context of this Law means the sale of shares or stock of publicly held joint stock corporations to increase capital; continuous trading of the shares in stock exchanges or other organized markets; the invitation of the public to participate in a joint stock corporation or to act as its founder; every kind of appeal to the public for the purchase of capital market instruments*" (Law No: 2499, Article 3; c).

The current Capital Market Law brings a different definition to Public Offer phenomenon. This new definition is more general and more related to "call". The current Public Offer definition is;

"*A general call made through any means for the purchase of capital market instruments and the sale realised after this call*" (Law No: 6362, Article 3; f). In this regulation, publicly held corporation is indicated as a joint stock corporation, the shares

which are offered to public or are deemed to be offered to public. With the legislative regulation, the number of shareholders of a joint stock corporation deemed to be offered to public is identified as 250.

In various academic studies, IPO is defined in different ways. Akbulak and Akbulak (2005) states that IPO is regulating some legislative infrastructures to allow public to join a non-public company. Another definition is *"...selling the stocks to the investors at capital markets to increase their funds*" (Kaya, 2012, 64). Going public is selling corporate stocks to outside investors and allow these stocks circulate in the market. In other words, a public offering means selling a large portion of corporate stocks of fewer shareholders to the public (Brigham and Houston, 2007). In their famous corporate finance book, Brealey and Myers gives a definition as; "*initial public offering is sharing a company's securities with the large mass of investors in the primary market for the first time*" (Brealey and Meyers, 2011, 357).

According to Ronen and Yaari (2008), when a firm goes public, it gets inside a due diligence process and then it discloses financial statements for the first time. Thus, insiders especially managers already have private information about the firm. They also indicate that IPO has two different views about its process matter. One view supports the idea that an IPO is the end of a process and it allows the investors who invest in the firm for the first time to "cash in" their stock. The other view supports that IPO is just an action undertaken to raise the capital needed for financial growth so the firm expects to raise more capital in the future (Ronen and Yaari, 2008, 146). These opposing views come from the perspective of a firm's life cycle and these different views affect the firms' earnings management strategy. An initial public offering process and earnings management strategies are closely related to firm's financial life cycle.

3.1.2. The Financial Life Cycle Theory

Firms are established not with the intent of ending up in a period of time but to grow, invest and sustain its operations forever. In order to make these dreams come true, all companies need financial sources. The availability of finance for investment is vital to the sustainability and viability of companies. Their growth, considering both

start-up and existing companies, significantly depends on access to external finance (M. La Rocca et al., 2011, 108). The life cycle approach is developed to explain, especially, small firm financial structure by Weston and Brigham in 1981. This theory aims to determine the combination of rapid growth and the difficulties to access the capital market. At the beginning, small firms start with the resources of owners and if they survive the dangers of rapid growth –like illiquidity-, they will be able to use other resources of funds. At this stage, small firms are overreliant on short term finance and this problem avoids the firm's availability of long term funds such as equity issues (Chittenden, 1996, 61). According to M. La Rocca et.al, (2011), a company's life cycle determines the nature of its *financial needs*, *the availability of financial resources*, and *the related cost of capital*.

Financial needs of a company change according to some abilities like firm size, growth opportunities, to generating cash or information opacity and all these properties reflect financial preferences and choices during the financial life cycle. Thus, if a firm is at its early stages of life cycle, it has a great level of asymmetric information and should apply specific financial strategies through different phrases of their financial life cycle (Kaplan and Strömberg, 2003, 282). According to life cycle theory, the link between small business and initial public offering is informatively opaque based upon the lack of information about firms that disclose their financial statements for the first time, especially in the case of small firms. Thus, if these firms have incentives to deceive lenders or potential investors by changing their accounting and financial numbers, it would be more difficult for outsiders to detect these strategies. In order to avoid this informational problem, financial intermediaries play a critical role in the initial public offering event as information producers who can assess small business quality and bring solutions to information problems through the activities of *screening*, *contracting*, and *monitoring* (Berger and Udell, 1998, 614-615).

A group of academics indicate that in their early life cycle stages, firms have profitable investment opportunities and limited equity and tend to keep all funds in because of the high costs of external financing. The reasons why external financing is more expensive compared to internal financing are taxes, flotation costs and especially

information asymmetry. A young firm that lives its early years of life cycle will have difficulties to measure the stock-price impact of initial public offering, security issuance costs or tax penalties (DeAngelo et.al, 2006, 228). In an IPO process, informative disclosures are very important for the outsiders, especially potential investors. Informative disclosures are about information asymmetry, and not about firm risk level but about firm maturity. A recent study indicates that firm life cycle is closely related to market risk disclosures. In mature firms, risk committees play a very significant role in improving market risk disclosures through an effective oversight of risk management and risk reporting and decreasing agency costs. According to this view, the capabilities of larger firms are high, but smaller firms are limited and production or storage of information allows matures to allocate greater resources and dissemination of information during big and prestigious events like public offerings (Al-Hadi et.al, 2016, 149).

DeAngelo et.al (2010) researched the impacts acting on seasoned equity offering. The results indicate that market timing opportunities and corporate life cycle stage have statistically and economically significant influences on SEOs and life cycle has even higher impacts. The authors state that, whilst firms in their early life cycle with high market-to-book ratio and low operating cash flows, sell shares with the aim of fund investments, mutual firms with low M/B ratio, fund their investments internally. Hence, growth stage issuers dominate the offering market. Growth stage issuers also distribute free cash flows as they generate and such distribution controls the agency problem but also increases the outside capital needs. Thus, managers will try to discover new attractive investment opportunities (DeAngelo et.al, 2010, 293, Fama and French, 2005, 579). Going public is one of the strategies to realize these opportunities.

3.1.3. The Decisions to Going Public

The decision of going public is very important for all companies, shareholders and managers. Every stakeholder expects different objectives and has different motivations about going public as discussed above, and it depends on various factors. Essentially, public offering is a way to obtain new financial sources to companies. With this method, firms attain finance without bearing the cost of liabilities. There are several

advantages of public offering besides financing. Below is briefly discussed the positive sides of public offerings within the base of Brau and Fawcett (2006) quartet classification; to minimize the cost of capital, to allow insiders to cash out, to facilitate takeover activity and to make a strategic move (Brau and Fawcett, 2006, 406).

Minimization of Capital Cost: In 2004, Eugene Fama and Kennedy French published a study about new listing firms and IPOs. They indicate that "*with a lower cost of capital, less profitable firms and firms with longer-term expected payoffs become positive net present value projects and viable candidates for public equity financing*" (Fama and French, 2004, 267). The main reason is; for a firm's share, investors are willing to pay a higher price so they can sell their shares easily under the terms of privately issuing. This premium reduces the cost of capital (Bragg, 2009, 4). In an initial public offering, as a result of selling the shares over the nominal value, firm gains premium on issued shares (emission premium), so IPO provides owner's equity to the firm. Hence, there is not an obligation as interest and capital similar the other sources attained from borrowing (Küçükçaylı, 2013, 5). Thus, this will increase the firm's bargaining power with banks and lowers the cost of debt (Pegano et.al, 1998, 39).

Allow Insiders to Cash Out: IPO process creates its own liquidity if the firm is processing a perfect offering (Mello and Parsons, 2000, 128). Brau and Ang (2003) investigated the wealth-maximizing behavior of corporate insiders during the IPO process. According to authors, insiders conceal their underlying objective on their planned actions and sell their shares in IPO for personal gain. They show that insiders employ various concealment and confounding strategies in an attempt to deceive outsiders about the firm's real value and to give a positive signal (Brau and Ang, 2003, 170). At this point, earnings management strategies will help the management to perform shareholders wishes. In addition to individual shareholders, also institutional and professional investors -especially private equities and venture capitals- look for the IPO as an existing strategy and opportunity. The cash-out theory offers the hypothesis that professional investors and other insiders will regularly sell personally-owned shares (i.e., secondary) in the IPO (Brau, 2010, 10).

Facilitate Takeover Activity: During the IPO process, the firm creates a public market for itself and has the currency of shares for takeovers. Public shares give an opportunity to firms in either acquiring other companies or in being acquired in a stock deal (Brau, 2010, 14). These activities may be achieved with stock transactions; thus, conserve cash to the firm (PwC, 2011, 7). According to Brau and Fawcett (2006)'s CEO survey results, it is concluded that the most important motivation for IPO is to create public shares for use in future acquisitions. Nevertheless, some firms develop takeover defences to avoid unfriendly acquisitions after the IPO process. Studies indicate that takeover defences reduce the firm value (Johnson et.al, 2012, 30). There are two different theories which suggest that IPO may facilitate future takeovers. The first theory is related with asymmetric information. According to supporters of this theory, with the intent of reducing the information asymmetry problem, a private bidder who contemplates a stock merger, can decide to go public. The other theory is cash infusion theory. According to the supporters of this theory, an IPO could be a means to obtain cash to be used in future acquisitions even if the realized IPO is a low capital raised IPO (Hsieh et.al, 2010, 1369).

Make Strategic Moves: The countries where the level of institutionalization is lower compared to others, the family firm concept widely exists. As a result, the ownership concentration is in the hand of one person or group. Going public broadens the ownership base of the firm. In the case of going public, the required capital is generated by selling shares to a large number of investors; however, although this increase is a necessity it is not a sufficient condition (Chemmanur and Fulghieri, 1999, 250).

According to a considerable number of researchers, IPO can serve as a creator of rumour spread in the business community and increase the reputation of the firm. It also increases the interest on a firm and investor recognition and helps to get attention of portfolio managers and media. A successful IPO gives investors a better impression of the firm's prospects than issuing debt and creates a first step advantage in the IPO's environment. (Pagano et. al, 1998; Brau and Fawcett, 2006; Chemmanur and Fulghieri,

1999; Brau, 2010; Demers and Lewellen, 2003; Arikan and Stulz, 2016; Cooney et.al, 2015).

Besides these four main advantages, IPO has different contributions to capital markets, companies and investors, as well. The list given below abbreviated the other positive contributions collected from selected academic studies (Küçükçaylı, 2013; Zozan 2007; Brau and Fawcett, 2006, Brau, 2010, Ernst&Young, 1999; Lipman, 2009; Reuvid, 2011, Ising 2014, Allison et.al, 2008).

- Initial public offering provides a managerial discipline by monitoring and indexing salaries to the stock prices
- IPO firms will herd and set the business agenda, particularly in industries.
- A market price/value is established with the IPO
- The decision of going public affects the level of company liquidity and the scope for diversification.
- Before going public, the operating control mechanism of the firm is only owners but after the IPO, these activities are spread.
- Firms can sell their goods and services in the global market. After IPO, globalization provides great opportunities for marketing.

If initial public offering provides so many advantages to firms, the question of "why all existing firms do not want to go public?" comes to mind. According to Ernst&Young's 2015 Global Trends in IPO report, despite the record-breaking financial activities of 2014, in 2015, the volume of worldwide IPO fell by 2% to 1,218 IPO listings and the total capital raised declined by 25% to US$ 19 5.5 billion. If we think about the number of firms all around the world and the bigger ones as well, 1,218 deals are too small. Among these deals, the top six countries are; China (304), USA (139), Japan (99), Australia (73), South Korea (70) and India (57). In Turkey, the number of initial public offerings in the year of 2015 is only 4. This reason for this is that there are excellent value-creating, operating reasons for going public; however, there are just as many reasons for not doing so.

IPO brings companies some disadvantages and each company perceives these negative effects in different perspectives. Some of them are directly and some of them are indirectly involved in the process. A detailed competing comment is given below.

3.1.4. The Decisions Not to Going Public

When a firm undergoes a transformation into becoming a public firm from a private ownership, there are several responsibilities and obligations that give firms a big trouble. First of all, the number of people interested in financial reports will rapidly increase and this may be a huge shock to the existing owners (Geddes, 2003, 30). According to Pagano et.al (1998), costs of going public is classified under three theories; *adverse selection, administrative expenses and fees* and l*oss of confidentiality*.

Adverse Selection: In an IPO process, adverse selection problem was first emphasized by Leland and Pyle (1977) and detailed by Chemmanur and Fulghieri (1995) and it was stated that small and young companies faced serious adverse selection cost during the listing because of their little track and financial records or low visibility. In general, it is normal for investors to have less information about new listing firms' true performance than issuers. Thus, the average quality of IPOs and the price they can sell the shares is adversely affected by this information asymmetry (Pagano et.al, 1998, 36). Namely, if a company decides to go public, in the presence of adverse selection phenomenon, small and young ones could face serious costs and the probability of IPO should be positively correlated to the size or age of the firm.

After the decision of going public, all nominated firms wait for the perfect time with high expected productivity and high investor optimism. Hence, IPO returns are more volatile during hot markets (high volume of offerings, severe underpricing, frequent oversubscription of offerings and market demand exceeding the supply of shares). Hot market occurs when adverse selection is relatively low and benefits (higher share price) of listing earlier for weaker firms is larger than the cost (lower share price) of listing later for stronger firms (Bustamante, 2012, 576). According to this explanation, it can be inferred that, during hot markets, adverse selection is low, so the dominantly issuing firms are small, younger and have lower earnings. On the contrary,

whilst the adverse selection is high, cold market occurs and this presents severe costs for younger firms. A study states that adverse selection costs and informed trading are lower for younger firms if more public information is produced for them (Bouzouita et.al, 2015, 806).

Administrative Expenses and Fees: Many factors play a role on determining the cost of an IPO, but in all cases, these costs are significant (PwC, 2011, 7). Underpricing is an important undesirable notion; however, this public offering implies considerably direct and fixed costs as registration fees, underwriting fees etc., furthermore, the firm will also bear annual costs like auditing, certification or stock exchange fees (Pagano et.al, 1998, 38). Initial public offering is not a cheap event. In addition to initial costs, there are costs of maintaining a quote as stock exchange fees, management time, more extensive audits and reporting and reconciliation of accounts to accounting principles (Geddes, 2003, 26). In addition to these costs, also independent audit service expenses for financial statements as well as advertisement expenses for publicity can be listed.

Ritter (1987) focuses on two types of costs; direct and indirect. Direct costs are investment banking fees (commitment or the best effort offers) and indirect cost is the cost of underpricing. Underpricing is not a cost that goes out of the owners' pocket but it is known as "the money left on the table". Underwriters' fee depends on the volume and amount of IPO and is mentioned on the agreement between the underwriter and issuer (Zozan, 2007, 25). Besides the initial cost of public offering, there will be several incremental increases in ongoing expenses. The accounting system in IPO firms is complicated compared to private firms. Thus, the firm has to hire additional accounting staff. Small firms will also face the modest market capitalization (Bragg, 2009, 6).

From new listing firms in Turkey, the Capital Market Board of Turkey takes a registration fee which amounts to 0.2% of the issue price of shares that will be registered and sold. Besides the Capital Market Board, also Borsa Istanbul takes an initial offering fee amounting to 0.1% of the nominal capital and also charges 0.1% of nominal amounts of shares but this amount is set as between TRY 1.000 and TRY 10.000. Central Securities Depository (MKK) takes a membership fee amounted 0.1% of nominal capital and this amount must be in the set of TRY 2.000 and TRY 50.000.

Loss of Confidentiality: All the stock exchanges existing all around the world have their own rules especially disclosure rules for newly listing firms. These rules force firms to unveil information and it is not a matter that this information's secrecy may be important for competitiveness. Many experts claim that disclosed information types (like the compensation of managers, the security holdings of managers and insiders or the extensive financial information) will not harm the competitive position of the company. The reason for this is that competitors can create price wars using financial statement analyses and this can cause bankruptcy. Capital market rules can also force firms to face close scrutiny from tax authorities, so firms' probability of elusion from tax laws reduces (Bragg, 2009, 6 and Pagano et.al, 1998, 38).

Another serious concern is the risk of losing control. If more than 50% of the shares are sold to outside investors, the original shareholders could lose the company control. New investors may have specific interests and can try to influence the attitude of the company in contrast to the original owners' interest (Ising, 2014, 9).

In addition to these three costs of public offerings, there are several studies that determine the different costs/disadvantages/obligations to be a capital market company despite of being a private company (PwC, 2011; Allison at.al, 2008; Zozan, 2007; Küçükçaylı, 2013; Bragg, 2009; Alanazi and Liu, 2015; Dimovski; 2015).

- Management team has to serve not only original owners but also the investing public,
- The listing firms enter under the scrutiny of regulators and authorities,
- Public firms have to pay dividends regularly to shareholders from the gained profits,
- After being a public firm, corporate governance structure will change and will become more complex,
- Listed firm, has to disclose all of its transactions, meetings, agreements or decisions to the public,
- There will be intense pressure on the management about the short term financial performance,

- Listed firms have the responsibility of presenting the independent audit reports periodically,
- The corporate governance principle reports have to be included in annual reports of the listing firms.

3.2. THE PROCESS OF INITIAL PUBLIC OFFERING

Being presented in front of the investing public is difficult because you have to persuade them that you are a quality investment and not a waste one. Thus, the preparations begin years before (minimum 3 years) the event because of the "cleanings". Prior to going public, the candidate company has to make some changes on its corporate governance structure, some of its internal procedures or strategies and has to find an advisor to consult properly in this process (Mayer and Brown, 2014). Bragg (2009) summarizes these changes in an effective and advisable way. Before going public, companies have to increase the competence of the management team, create a reward system that is tied to strategy, obtain audited financials, obtain a top securities law firm, strip out personal transactions, show at least 25 percent annual growth and breakeven profitability, fill the product pipeline, achieve critical mass, expand high-growth segments and pick an independent board an finally protect owner wealth (Bragg, 2009, 10).

According to "The Capital Market Board of Turkey", going public begins with preliminary preparation. The Preliminary Preparation process includes "*changes in articles of association and the general shareholders meeting decision", "underwriting agreement", "preparing the financial statements and external audit report", "submitting the IPO prospectus".* The next step is application to the Board and the Borsa Istanbul. After the application, experts make a physical site visit with the intent of confirming the presented information in the prospectus and related documents. After this, the Board affirms the offering prospectus if an obstacle does not exists. The next two steps are public offering of shares and notifying the selling results and becoming a public company (CMB, 2012, 6).

All of these processes stated and determined above cannot be continued by the firm, owners or management unaided. This is not feasible both in the frame of regulations and within the bounds of financial possibilities. Hence, there are some players that help the company or a must in the legal framework during the initial public offering process. In this section, it will be attempted to clarify the players and the rules of the IPO in the world and in Turkey.

3.2.1 Market Participants

An initial public offering process is a time consuming and complex process and requires close collaboration with some professional players. After the firm's management, the most crucial role belongs to underwriters who floats the firm to the public and manages the marketing and sale of company's shares to the public investors (Allison at.al, 2008, 7).

According to Turkish capital market legislations, intermediary institutions lead companies during the process of initial public offering. In the previous Capital Market Law, intermediary institutions are comprised of brokerage houses and banks. Intermediation in capital market means purchase and sale of capital market instruments for commercial purposes, within the framework of Article 30 and 31[1] of the law (No: 2499) by authorized institutions in their own name and for their own account, in the name and for the account of another person and in their own name and for the account

[1] **Article 30**- Capital Market Activities falling within the scope of this Law are;
a) Intermediation to the public offering or issuance of capital market instruments that are to be registered with the Board.
b) The trading of previously issued capital market instruments for the purpose of intermediation
c) Intermediation to the trading of all kinds of derivative instruments including futures and options contracts based on economic and financial indicators, capital market instruments, commodities, precious metals and foreign currency;
d) The buying and selling of the capital market instruments with the agreement to repurchase or resell them;
e) Investment advisory.
f) Portfolio management and administration ;
g) Activities of other capital market institutions.
Article 31- Institutions to be engaged in capital market activities must obtain permission from the Board. The principles regarding application and permission are to be regulated by the Board with respect to the types of activities and intermediation. The permission for one or more than one type of activity or intermediation type can be granted to the capital market institutions by the Board. Capital market activities described in subparagraphs (a) and (b) of the first paragraph of Article 30 of this Law may be executed exclusively by intermediary institutions.

of another person (Communiqué Serial: V, No: 46). According to the same article of the communiqué; "*Intermediary activities in capital market consist of intermediation in public offerings (primary trading), intermediation in the sale and purchase of previously issued instruments (secondary trading) and intermediation in derivative instruments trading*". In the 10th section of the communiqué, the public offering activities of intermediaries had been determined as "*intermediation in public offering means intermediation in the sale through public offering of capital market instruments registered with the Board. Intermediation in public offering may be described as;*

a) Best effort intermediation,

b) Underwriting.

"Best effort intermediation" means sale of capital market instruments registered with the Board within the sale period stated in the prospectus, return of the unpaid portion to the seller or sale of these to third parties that have committed to purchase before. "Underwriting" consists of the Standby, Firm Commitment, Partial Standby, and Partial Firm Commitment".

Current legal framework (Communiqué on Principles Regarding Investment Services, Activities and Ancillary Services / III-37.1) defines intermediary institution as an investment firm authorized by the Board to deal exclusively with the investment services and activities listed in subparagraphs (a), (b), (c), (e) and (f) of first paragraph of Article 37[2] of the Law (Law No: 6362). The 8th Section of the communiqué, intermediation for public offering refers to and covers the activities described herein

[2] **Article 37 –** (1) Investment services and activities under the scope of this Law are as follows:
a) Reception and transmission of orders in relation to capital market instruments
b) Execution of orders in relation to capital market instruments in the name and account of the customer or in their own name and in the account of the customer
c) Dealing on own account
ç) Portfolio management
d) Investment advice
e) Underwriting of capital market instruments on a firm commitment basis
f) Placing of financial instruments without a firm commitment basis
g) Operation of multilateral trading systems and regulated markets other than exchanges
ğ) Safekeeping and administration of capital market instruments in the name of the customer and portfolio custody services
h) Conduct of other services and activities to be determined by the Board

below and listed in sub-paragraphs (e) and (f) of first paragraph of Article 37 of the Law: underwriting and best effort respectively. The public offering activities determined in Article 51 sub-article 3 of the Communiqué III-37.1 as "*with regard to public offering of capital market instruments, taking actions for determination of issue price, issue amount and public offering process together with issuers and/or public offerers, preparing other information and documents required to be submitted for approval of prospectus and filing an application to the Board, establishing a consortium, and collecting demands, organizing domestic and foreign events for sales of capital market instruments to be offered to public, organizing the sales and conducting similar other corporate financial activities, and performing other obligations set forth in the underwriting agreement are all included in the activity of intermediation for public offering. In the course of sales of capital market instruments without public offering, intermediation in private placement of these issues to a particular group of investors is also considered and treated as a part of the activity of intermediation for public offering."*

Whilst underwriters are so important during the IPO process, companies have to choose the firm they want to coordinate carefully. Allison et.al (2008) summarizes primary factors to consider when choosing an underwriter as "track record, reputation and experience, commitment to the firm, aftermarket support, analyst coverage and finally distribution strength". If the underwriter is well prepared, discussing the proportion of shares that will be sold to the investors, international diversification of investors and intellectual back-ups could be possible (Reuvid, 2011, 93).

The other important player in the IPO process is accountants. Accountants have a key role because they produce the financial statements and report the financial requirements of the firm (Khurshed; 2011, 26). Besides the role of producing and reporting financial statement, accountants also advise the firm on the tax implications of going public. Together with the accountants, company's auditors are also key players of the process. The auditors will help the firm with the obligations regarding financial statements and financial information (Allison et.al, 2008, 9).

Initial public offering targets potential investors. In this point, investor relations have crucial role in the process. These consultants coordinate any advertising to be undertaken, media relations and press conferences. The aim of these activities is to ensure that the company is well-known in the investment environment. If the company plans to include a high proportion of potential investors, the PR activities are as important as financial programmes. Hence, IPO firms have to hire these types of consultants (Geddes, 2003, 40).

3.2.2. Rules and Regulations

The information presented so far is generally based on international environment. Although the conditions are similar in Turkey, there are some specific and individual rules, responsibilities and differences in our tendencies. The process of initial public offering of shares is under the monitoring of Capital Market Board and the process of public listing is under the monitoring of Borsa Istanbul (BIST). First of all, before to application to CMB and BIST, a firm that wants to go public has to complete the steps given below (BIST, IPO Guide 2015, 6; Akbaba, 2012, 44);

- Construct a working group within the organisation,
- The selection of intermediary institutions,
- Preparing the financial statements and independent audit firm selection,
- General shareholders meeting decision and changes in articles of association
- Preparing the timeline of the process
- Determining the share price.
- Preparing the documents of application.

After these preparations, firm should apply to CMB for registration and confirming the prospectus and to BIST for listing and trading on the related market. This is a long and toilsome event for a firm and institutions. There are some other transactions should be processed by both the firm and CMB as well as BIST experts. In the end of the preparation steps, it is time for a more official and documental process. These stages are listed respectively here;

- Application to the Capital Market Board and Borsa Istanbul,
- Promoting activities,
- Examination of the company by experts from CMB and BIST (both quantitative and qualitatively),
- Determination of the market by BIST,
- Public offering of shares,
- Notification of share prices and listing/trading.

As a consequence, listing on a stock exchange needs some criteria, according to BIST Regulation on Principles Relating Stock Exchange Activities; there are some necessities to open your shares to the public in the ISE Main Index given in the table;

Table 3.1 Criteria for Going Public in Borsa Istanbul

Audit Obligation	Financial statements of the last 3 periods and interim financial reports have to be audited by independent auditors.
Operating Period	Since the establishment of the firm, minimum 3 years have to be passed and financial statements belonging to those years have to be disclosed.
Profit Obligation	The firm should have attained profit within the last 2 years before the application (If the market value of issued shares is 40 million TRY and free float rate is 35%,then it should have attained profit in the previous year).
Equity Capital Obligation	In the previous year's balance sheet (been audited), the equity capital has to be at least 14 million TRY.
Market Value and Free Float Rate	21 million TRY market value of issued shares and par value receipted (or par value/issued capital is at least 25%). If par value/issued capital is under 25%, market value of issued shares has to be 40 million TRY.
Financial Structure Obligation	The financial structure of the firm has to be confirmed by the management of BIST so that the operations could be a sustained in a healthy way.
Legal Criterion	There cannot be a legal discrepancy between the firm and the regulations that it has to abide by.

Source: BIST Regulation on Principles Regarding Stock Exchange Activities

Following the examination of CMB inspectors, then shares are offered to public in three ways; sale of existing shares, capital increase and concurrent use of both methods. Those shares can be sold to investors by book keeping, without book keeping and sale on stock exchange. After completion of sales transactions, the underwriter conveys the results to CMB and BIST (Akbaba, 2012, 45). If the Executive Council of exchange approves the accordance of the information on prospectus and the circular with the requirements of legislation and the results of sale, the offering has been finalized.

3.2.3. Initial Public Offerings in the World and in Turkey

After the 2008 global financial crisis, world economy has begun to recover and especially in 2014, financial activities have reached to a record-breaking level. Besides the intensive transaction atmosphere of 2014, 2015 passed economically intensive as well but a bit musty. According to Ernst&Young's reports, global initial public offerings fell by 2% to 1.218 IPO listings and the total capital raised declined by 25% and global proceeds in 2015 were 17% lower than 2014 (EY, 2016, 2). The figure given below indicates the global initial public offerings trend.

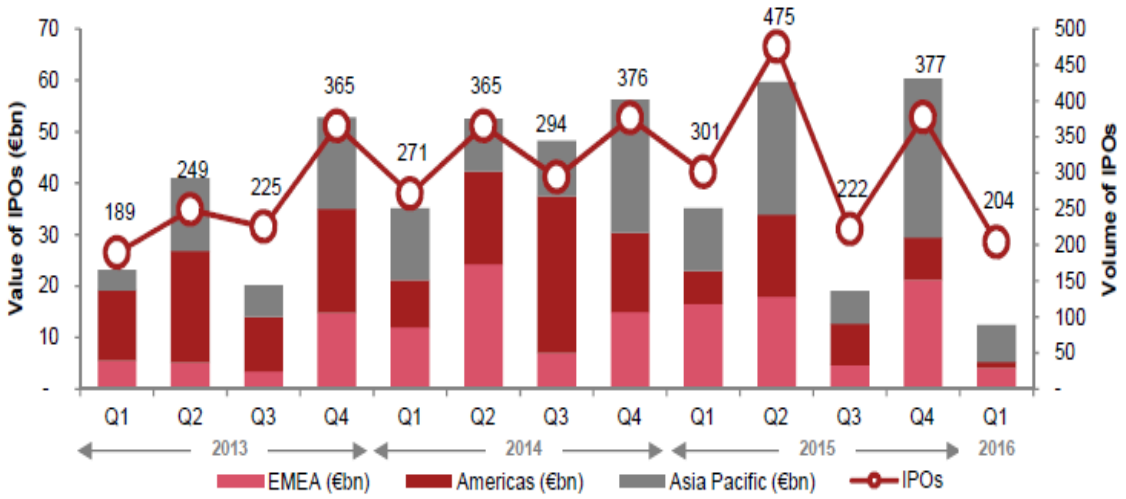

Figure 3.2: Global IPO Activity

Source: www.pwc.co.uk/ipowatch - Europe 2016 Report, pp.12

As seen in the figure, this year, initial public offering activities have demonstrated the slowest start through the recovery or new normal years. Underlying reasons are several but one of them is that funding diversity has increased rapidly in 2016 so this trend seems to continue which will be crucial for the IPO environment. The rise of alternative private financing is a threat to the IPO market, because IPO is a long-run event and access to private capital is much easier, also there is a gap between the valuation of public capital and private capital. Thus, these disadvantages might make IPO a risky and costly financing strategy. EMEIA region (Europe, Middle East, India and Africa) used to be left behind the rest of the world with new listings. But it seems to have changed in the first quarter of 2016. According to the figure and Ernst and Young 2016 Statistics, American firms and Asia Pacific firms have more appetite on public capital. Leader of 2015 in terms of the IPOs and the capital raised is Asia Pacific with 55% (673 deals) of the global deal numbers and 46% (US$ 90.2 billions) of the global capital raised. The leading trigger of the Asia Pacific is *China*. Although there are gossips about Chinese economic growth and market volatility, there were 344 IPO listings on exchange in 2015 and this was 39% higher than that of 2014. In addition to this, there are 690 other IPO applications waiting for the recognition of CSRC. *Japan* is placed after China in IPO deals with the number of 99 in 2015 and this is 35% higher than that of 2014. The world's two larger IPOs were Japan Post Holdings Co. Ltd. and Japan Post Bank Co. Ltd in 2015. *South Korea* follows China and Japan with 70 IPOs in the Asia Pacific region.

EMEIA is another region of economic diversification with a total of 346 IPO deals and US$67.1 billion in 2015. Despite the Asia Pacific's 35% rising compared to the previous year, EMEIA exchanges have declined by 5% on number of deals and 10% on the proceeds. The largest IPOs of the EMEIA are from Amsterdam (US$4.1 billion), from London (US$3.8 billion), from Italy (US$3.5 billion) and from Paris (US$ 1.8 billion) Stock Exchanges, respectively. Notwithstanding the world's strongest economies generally located in EMEIA region, the number of IPO deals is relatively low compared to others. The biggest risk for those economies is volatility caused by uncertainty and geopolitical factors. Political challenges around the Greek economy, the

probability of the exclusion of Britain from the European Union, emerging market shocks and global terrorism impact the potential company projectors.

US exchanges led the world and hit their highest level in 2014 since 2000. In 2015, US IPO deal numbers declined by 41% with 173 deals. The US economy has positive data across wide range indicators with low volatility and average first day return is 16.9% for the overall 2015. The decrease in IPO deals in 2015 means that interest on private markets is growing and the reasons are "*capital is readily available across the global private markets, the value gap between public and private capital has narrowed, thereby making M&A and other private capital transactions very appealing and finally IPOs are generally take at least two years in the planning"*. US equity markets have sustained strength and the country has steady economic growth itself, so these will help to ensure IPOs retain their appeal but pricing will be more important at this point because investors are becoming wary of high valuations (Ernst&Young, KPMG, Price Waterhouse Coopers and Deloitte Touché Tohmatsu, 2016 Capital Markets Reports).

In Turkey, the most significant transactions are observed at the end of the years, and in the end of 2015, only 9 firms decided to go public. With the global trends, performance of global capital markets depended on the Turkish economy because of the oil prices and elections in June 2015 besides the monetary policy of FED and growth in the Eurozone Region. By the second quarter of 2015, twenty-nine hydroelectric and gas turbine-powered plants have been included in an announced privatization program in Turkey and a healthy GDP growth with a rising population is expected to be attract investment in new infrastructure. With its young structure and organization, Borsa Istanbul is an appeal investment and funding mechanism for both firms and investors. However, as the critics have determined before, Turkish firms do not prefer initial public offering compared to the other financing strategies. The graph given below is the trend of initial public offerings in Turkey National Market.

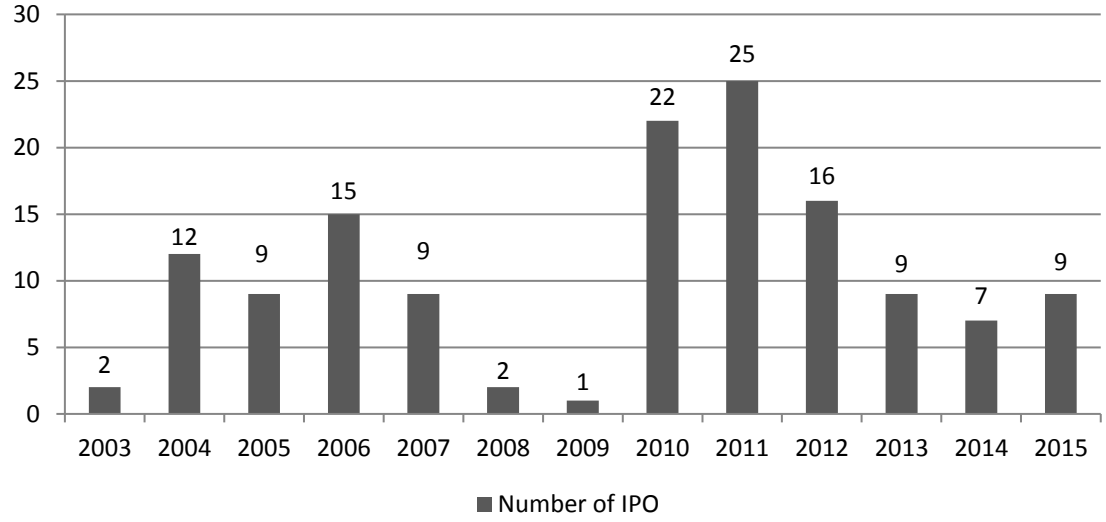

Figure 3.3: Number of IPO in Turkey

Source: Borsa Istanbul, Initial Public Offerings Database, 2016.

As indicated in the graph, the 2008 global financial crisis has negatively affected the IPO activities in Turkey as well. In 2009, only 1 firm completed its IPO event (Ran Logistic Co. Ltd.). In 2015, the offered firm number was 9, the total proceeds were US$ 386 million and this amount was US$717 million in 2013. If we compare the BIST with the other emerging market stock exchanges, it can be said that Turkish companies do not prefer public offerings intensively. It can be caused by regulations, tax problems, the lack of financial literacy, financial habits of the firm, responsibilities of publicly held firms, the shallowness of the Turkish capital markets etc. Not only firms avoid the initial public offerings but also investors do not prefer to invest in BIST as well. Similar to the firms' reasons, there is a lack of financial literacy among Turkish people. According to Public Disclosure Platform, domestic individual investors are just 2% in BIST.

Capital markets are based on confidence, transparency, and accountability. Firms apply to capital markets to finance their investments or projects and investors invest on capital markets to gain interest or dividend with the conservation of trust. Transactions held on these markets rely on accounting principles and strategies. Investors will decide which firm to invest in, by looking to results of accounting. If companies use magic on their accounting system sharply, it would damage the investor's trust in the firm and in the market. In this study, it will be investigated

whether Turkish firms manage their accounting results, especially their earnings, during the IPO process or not. For the empirical analysis, both of earnings management strategies (accrual-based earnings management and real activity earnings management) in initial public offering process will be tested.

4. EMPIRICAL RESEARCH ON EARNINGS MANAGEMENT ACTIVITIES OF FIRMS IN INITIAL PUBLIC OFFERING PROCESS

4.1. PRIOR RESEARCH

This section of the thesis focuses on the researches that have determined the earnings management activities prior to the initial public offering event. Whilst some of these studies are based on accrual-based earnings management (AEM), some others are based on real activity-based earnings management (REM). They will both be explained in detail with the models below. There are several contributions to the subject in international environment but unfortunately in Turkey, it can be said that while earnings management is investigated intensively, those strategies are not examined with IPO in a satisfactory manner.

4.1.1. Prior Research on Measurement of Earnings Management

Initial studies that examine the interaction between earnings management and IPOs were conducted in early 90s. Nevertheless, studies on earnings management begun in late 80s based on accruals and in 2000s, based on real activities.

4.1.1.1 Measurement of Earnings Management with Accrual Models

Measuring models of accruals have developed from simple models to complex ones over time. Compared to real activities, detecting accruals is more difficult and accruals models are more complex. There are some account or item examples of influential financial reports utilizing accrual manipulation as trade receivables, stocks, current assets and fixed assets (Damler, 2012, 20). The accruals that are open to managerial manipulation are called discretionary accruals and those are used as measures for earnings management. There are different models established to distinguish discretionary accruals from total accounting profit will be discussed in this section.

a) Healy Model (1985):

As emphasized before, the leading study on discretionary accruals is from *Healy* in 1985 and this model is one of the first accrual models. He analyses the effects of accounting incentives and typical bonus contracts with 94 companies. He presents two tests that encompass accruals and changes in accounting procedures. He defines total accruals (ACC or TA) as;

Total Accruals = Reported Accounting Earnings – Cash Flow from Operations

Total accruals are decomposed to nondiscretionary and discretionary accruals, it can be indicated as; $ACC_t = NA_t + DA_t$. Cash flow from operations is calculated as; working capital from operations minus changes in inventory and receivables, plus changes in payables and income taxes payable. Healy's test is based on total accruals and he first interprets that all accruals are discretionary, so *ACC = DA* and *NA=0*. His second interpretation is that NA is not zero and *ACC = NA+DA.* According to Ronen and Yaari (2008), the first interpretation that claims total accruals are equal to discretionary accruals is not popular anymore. Healy defines total accruals as;

$$ACC_t = -DEP_t - XI_t.D_1 + \Delta AR_t + \Delta INV_t - \Delta AP_t - \{\Delta TP_t - D_t\}.D_2$$

(Eq. 4.1)[3]

where;

DEP_t = depreciation in year t

XI_t = extraordinary items in year t

ΔAR_t = accounts receivable in year t less accounts receivable in year t-1

ΔINT_t = inventory in year t less inventory in year t-1

ΔAP_t = accounts payable in year t less accounts payable in year t-1

ΔTP_t = income taxes payable in year t previous year

[3] Eq.4.1 has been defined in Ronen and Yaari (2008) as; $DA = -DEP - X_2D_1 + \Delta WORK - (TP + D_1) * D_2$
Where, $\Delta WORK$ denotes the change in selected accruals from working capital and formulated as; $\Delta AR + \Delta INV + \Delta AP$

D_1 = 1 if bonus plan earnings are defined after extraordinary items

0 if bonus plan earnings are defined before extraordinary items

D_2 = 1 if bonus plan earnings are defined after income taxes,

0 if bonus plan earnings are defined before income taxes

Healy also demonstrates the nondiscretionary accruals represented by the mean total accruals from the estimation period (Aybars, 2013, 47). He defines normal accruals as deflated long-run accruals, scaled by lagged total assets and demonstrated as;

$$NDA_{t+1} = \frac{1}{N} \sum_{i=t-n}^{t} \frac{TA_i}{A_{i-1}}$$

(Eq. 4.2)

According to Dechow et.al (1995), Healy's methodology is quite different from other accrual models as he predicts that systematic earnings management occurs in every period.

b) DeAngelo Model (1986-1988):

After Healy's two dimensional model, DeAngelo developed a model in her studies conducted in 1986 and 1988 which were titled "*Accounting Numbers as Market Valuation Substitutes: A Study of Management Buyouts of Public Stockholders*" and "*Managerial Competition, Information Costs, and Corporate Governance: The Use of Accounting Performance Measures in Proxy Contests*" respectively. Her first study investigates the accounting decisions of the managers of 64 New York and American Stock Exchange firms during 1973-1982. In her second study, she analyses 42 firms' earnings behaviour during 1971-1982. Both studies show that managers have incentives to manage earnings.

DeAngelo (1986) uses the accruals of the previous year as the normal, expected or nondiscretionary accruals. Namely, expected accruals this year are equal to those of the previous year; hence, all changes in accruals between two years are abnormal, in other words, discretionary. Similar to Healy, DeAngelo emphasize that the

components of total accruals are discretionary and nondiscretionary, as well ($ACC_t = DA_t + NDA_t$). Besides this, she explains that her study differentiates from Healy with the view of operating cash flow calculation. Healy approximates operating cash flows by adjusting net income for depreciation expense and the changes in inventory, accounts payable and accounts receivable, income taxes payable and deferred income taxes. DeAngelo investigates the earnings impact of equity method of accounting for intercorporate investments. Discretionary accruals have been calculated as[4];

$$\frac{DA_t}{A_{t-1}} = \frac{ACC_t}{A_{t-1}} - \frac{ACC_{t-1}}{A_{t-1}}$$

(Eq. 4.3)

DeAngelo model calculates nondiscretionary accruals as the accruals of the previous period deflated by lagged assets;

$$NDA_{t+1} = \frac{ACC_{t-1}}{A_{t-1}}$$

(Eq. 4.4)

This model is not utilized, unless researchers try to compare the efficiency of other accrual models. However, she continues to influence current researches.

c) The Jones Model (1991):

In 1991, Jennifer Jones revealed a new idea and satisfied a need that had been ignored in Healy (1985) and DeAngelo (1986) accrual models. Jones takes into account the effect of sales and fixed assets (gross property, plant and equipment) on the nondiscretionary accruals calculation. According to Jones, the assumption of the consistency of nondiscretionary accruals, thereby the assumption of accruals differentiates year by year due to solely changes in discretionary accruals. She utilizes time series of a firm's earnings to estimate total nondiscretionary accruals and cross sectional tests of earnings management hypothesis. Those time series decompose to

[4] Damler (2012) rearranges this formula as; $DA_t = TA_t - TA_{t-1}$ where, TA_t is total accruals of year *t* scaled by lagged total assets and $TA_{t-1}$is total accruals of the previous year scaled by lagged total assets.

estimation period ($DA = 0$) and the event period. Her model is based on three stages. *The first stage* is to calculate total accruals. With total accruals, she estimates the coefficients in the formula for nondiscretionary accruals calculation. By these coefficients, the event year normal accruals, thereby abnormal (discretionary) accruals can be determined. Total accruals have been calculated as the change in noncash working capital before income taxes payable less total depreciation expense[5]. *Second stage* of Jones (1991) model is to estimate coefficients in the equation for nondiscretionary accruals using the total accruals calculated in the first stage (Damler, 2012, 25). Total accruals have to be used as dependent variable in the regression model to estimate coefficients. For this purpose, she used an expectation model for total accruals with the aim of controlling the changes in economic circumstances of the firm;

$$\frac{TA_{it}}{A_{it-1}} = \alpha_i[1/A_{it-1}] + \beta_{1i}[\Delta REV_{it}/A_{it-1}] + \beta_{2i}[PPE_{it}/A_{it-1}] + \varepsilon_{it} \qquad \text{(Eq. 4.5)}$$

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-1* for firm *i*

ε_{it} = error term in year *t* for firm *I*

i = firm index

t = year index

The Equation 4.5 was estimated with OLS-regression (Ordinary Least Square). α_i, β_{1i} and β_{2i} are estimated as; a_i, b_{1i} and b_{2i} respectively. Where u_{ip} represents the level of discretionary accruals at time *p*, and all other notations are defined as before,

[5] Jones (1991) composes total accruals (TA_t) as follows; $TA_t = [\Delta Current\ Assets_t - \Delta Cash_t] - [\Delta Current\ Liabilities_t - \Delta Current\ Maturities\ of\ Long\ Term\ Debt_t - \Delta Income\ Taxes\ Payable_t] - Depreciation\ Expense_t$

Jones (1991) develops a new model to assume the relationship between nondiscretionary accruals and explanatory variables;

$$u_{ip} = TA_{ip}/A_{ip-1} - \left(a_i\left[1/A_{ip-1}\right] + b_{1i}\left[\Delta REV_{ip}/A_{ip-1}\right] + b_{2i}\left[PPE_{ip}/A_{ip-1}\right]\right)$$

(Eq. 4.6)

The third stage is to obtain discretionary accruals. As mentioned before, total accruals are decomposed to discretionary and nondiscretionary accruals. Hence, it is possible to derive discretionary accruals by ejecting nondiscretionary accruals from total.

$$DA_{it} = TA_{it} - NDA_{it}$$

All variables are scaled to lagged assets to mitigate the heteroscedasticity effect.

d) The Modified Jones Model (1995).

This model has been developed by Dechow, Sloan and Sweeney with the incentive of eliminating the conjectured tendency of the Jones Model to measure abnormal accruals with error when discretion is exercised over revenues (Dechow et.al, 1995, 199). They criticize Jones (1991) in terms of sales that Jones ignores the credit sales and all sales cannot always be in cash. In the modified model, normal accruals are estimated during the event period;

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

(Eq. 4.7)

where,

ΔREC = net receivables in year *t* less net receivables in year *t-1*

The Modified Jones Model differs from original Jones Model in that the change of revenues is adjusted for the change in receivables in event period. It assumes

that, all changes in credit sales in the event period results from earnings management. Dechow et.al (1995), emphasize that it is easier to manage earnings through credit sales by deferring the recognition of revenue rather than the recognition of cash sales. The Modified Jones Model is still widely used because it has impacts on the detecting procedure of earnings management.

e) Performance Adjusted Models:

According to the developers of Modified Jones Model, all models detailed up to now are well specified and indicate that accruals are related to performance of firms (Dechow et.al, 1995, 193). Performance may affect the estimation of accruals because normal accruals can be classified as abnormal when performance is not usual and if there is a non-linear relationship between accruals and performance (Ronen and Yaari, 2008; 439). Widely used Performance Adjusted Models are the Cash Flow Jones Model of Kasznik (1999) and the Performance Matching Model of Kothari, Leone and Wasley (2005).

e.1. The Cash Flow Jones Model (1999): With his contribution, Ron Kasznik enhanced the original Jones Model by including cash flow from operations to regression as an explanatory variable. In addition to this, he modifies the assumption of revenues exogenous and modifies the construction of estimation portfolios (Kasznik, 1997; 14). Although previous studies assert that managers manage earnings through changes in accounting procedures as well as timing of financial decisions and investments. Kasznik considers discretionary accruals as a source of earnings management. Thereby, he generalizes a model to distinguish normal accruals from abnormal;

$$\frac{TA_{it}}{A_{it-1}} = \alpha_i[1/A_{it-1}] + \beta_{1i}[\Delta REV_{it}/A_{it-1}] + \beta_{2i}[PPE_{it}/A_{it-1}] + \beta_{3i}[\Delta CFO_{it}/A_{it-1}] + \varepsilon_{it}$$

(Eq. 4.8)[6]

[6] Kasznik(1997) denotes the equation as;
$TAC_j/A_j = \alpha_{it}\ 1/A_j + \beta_{1it}\ \Delta ADJREV_j/A_j + \beta_{2ij}\ PPE_{ij}/A_j + \beta_{3ij}\ \Delta CFO_j/A_j + \varepsilon_j$ but it would be difficult to compare the models determined before. Thus it is matched with previous model notations.

where;

ΔCFO_{it} = cash flow from operations in year *t* less cash flow from operations in year *t-1* for firm i

All other notations are defined as before.

Utilizing the estimation coefficients of explanatory variables, the nondiscretionary component of total accruals can be predicted;

$$NDA_{it} = a_{it}[1/A_{it-1}] + b_{1it}[\Delta REV_{it}/A_{it-1}] + b_{2it}[PPE_{it}/A_{it-1}] + b_{3it}[\Delta CFO_{it}/A_{it-1}]$$

(Eq. 4.9)

Dechow and Dichev (2002) asserted that mistakes in predicting cash flows impact the quality of measured accruals and criticizes other models about the lack of cash flow controls. The quality of working capital measure is derived by the residuals from a time series regression;

$$\Delta WC_t = b_0 + b_1 CFO_{t-1} + b_2 CFO_t + b_3 CFO_{t+1} + \varepsilon_t$$

(Eq. 4.10)[7]

where;

ΔWC = change in working capital

CFO = cash flow from operations

ε_t = error term

Damler (2012) asserts that Dechow and Dichev (2002)'s measure is not suited to use for firms that work with a production cycle that takes more time than one accounting period (Damler, 2012, 36). In addition to this, in their model, estimation errors are assumed to be interdependent from each other but in the discretionary accrual

[7] The reason of the existing three different times is that; Dechow and Dichev (2002) calculates total cash flow as ;Cash receipts or payments of amounts accrued at *t-1* + Current cash flows namely at *t* + Deferred cash flows to the next period namely *t+1*.

case, estimation errors are likely to be independent. Hence, McNichols (2002) enhanced a new model with the aim of offering a wide application. She combines the Jones Model and Dechow and Dichev Model to attain a sales and asset-based measure;

$$\Delta WC_t = b_0 + b_1 CFO_{t-1} + b_2 CFO_t + b_3 CFO_{t+1} + b_4 \Delta Sales + b_5 PPE + \varepsilon_t$$

(Eq. 4.11)

McNichols (2002) findings indicate that The Jones Model is more utilizable on evaluating the prior, current and subsequent year's cash flow from operations.

e.2. The Performance Matching Model (2005): Kothari, Leone, and Wasley (2005) suggest that performance matching is very important for designing well specified and strong tests. They control the effect of performance on discretionary accruals using a performance-matched firm's discretionary accrual (Kothari et.al, 2005, 2). To compare the effectiveness of performance matching, they include an additional abnormal accrual measure; the previous year's Return on Asset (ROA to the Jones Model. There are two reasons to use ROA as a performance measure in the model. First, earnings deflated by assets equal to ROA, which in turn measures performance. Second, previous research prove that ROA is better specified and more powerful than other measures for firm performance (Damler, 2012, 40).

They developed their linear model with two modifications of the Jones Model (1991). First, they determined the total accruals;

$$TA_{it} = \delta_0 [1/A_{it-1}] + \delta_1 [\Delta REV_{it}/A_{it-1}] + \delta_2 [PPE_{it}/A_{it-1}] + \varepsilon_{it}$$

(Eq. 4.12)

The residuals from Equation 4.12, were used as the Jones Model discretionary accruals. To obtain the Modified Jones Model discretionary accruals, they used parameters from Equation 4.12 but applied a modified sales change variable defined as $\Delta REV_{it} - \Delta REC_{it}$, where ΔREC_{it} is the change in accounts receivable (Kothari et.al, 2005, 14). Thus, the second model is;

$$TA_{it} = \gamma_0 [1/A_{it-1}] + \gamma_1[\Delta REV_{it} - \Delta REC_{it}/A_{it-1}] + \gamma_2 [PPE_{it}/A_{it-1}] + \varepsilon_{it}$$

(Eq. 4.13)

They estimated the last model similar to the Jones model, but it also includes the lagged ROA. This model is:

$$TA_{it}/A_{it-1} = \beta_0[1/A_{it-1}] + \beta_1 [\Delta REV_{it} - \Delta REC_{it}/A_{it-1}] + \beta_2 [PPE_{it}/A_{it-1}] + \beta_3 ROA_{it} + \varepsilon_{it}$$

(Eq. 4.14)

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_{it} = net receivables in year t less net receivables in year t-1;

PPE_{it} = gross, property, plant, and equipment in year t for firm i;

ROA_{it} = return on assets in year t for firm i;

ε_{it} = error term in year t for firm i;

The coefficients from the third model are used as abnormal accruals and empirical analysis of accrual measures of this thesis is based on The Performance Matching Model (2005) of Kothari, Leone and Wasley.

4.1.1.2 Measurement of Earnings Management with Real Activities

Earnings management researches are generally and for very long years, based on accrual-based earnings management; hence, to measure the level of earnings management, accounting-based accrual models detailed above have been used. According to Gunny (2010), accrual-based earnings management is not an action realized by changing the underlying operating activities of a company, it is an action that changes the choice of accounting methods. Despite accrual management, real activity-based earnings management involves changing the company's underlying operations in an effort to boost current period earnings (Gunny, 2010, 1). Empirical researches on REM have become popular within the last decade and have been investigated by many academicians. The models detailed below are designed to determine REM on firm activities and to test earnings management activities besides accrual management.

a) <u>Roychowdhury Model (2006) :</u>

Sugata Roychowdhury asserts that *"…my paper contributes to the literature on earnings management by presenting evidence on the management of operational activities, which has received little attention to date."* His first objective is to design empirical models to detect and measure the manipulation of real activities. He examines operational cash flows, discretionary expenses[8] and production costs. His assertion is that these variables are more effective in capturing real operations than accruals. He investigates if the abnormal real activities among firms have two sided profit reflects; earnings management to avoid losses or optimal responses to prevail the real economic circumstances.

Roychowdhury focuses on three manipulation methods and their effects on CFO (cash flow from operation), discretionary expenses and production costs. First is *sales manipulation* by accelerating the time of sales and/or generating additional unsustainable sales through increased price discounts or eased credit terms. Second one

[8] Roychowdhury emphasizes that CFO represents cash flow from operation as reported in the statements of cash flow. Discretionary expenses are defined as the sum of advertising expenses, R&D expenses and selling, general and administrative (SG&A) expenses.

is reduction of discretionary expenditures. The final one is overproduction or increasing the amount of production with the intent of lowering the cost of goods sold (Roychowdhury, 2006, 339). According to the author, there are four sources of cross-sectional variation in real activities manipulation; industry membership, incentives to meet zero earnings, earnings management flexibility and institutional ownership.

The author expresses normal cash flow from operations, following Dechow et.al (1998), as a linear function of sales and change in sales;

$$CFO_t = E_t - Ac_t = \pi S_t - \delta\varepsilon_t = \pi S_t - \delta(S_t - S_{t-1})$$

(Eq. 4.15)

where;

E_t = earnings for period *t*

Ac_t = accruals for period *t*

S_t = sales for period *t*

π = profit margin,

δ = Dechow et.al measure[9]

With the intent of estimating the model, Roychowdhury runs the following cross-section regression for every industry and year;

$$CFO_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(S_t/A_{t-1}) + \beta_2(\Delta S_t/A_{t-1}) + \varepsilon_t$$

(Eq. 4.16)

all the notations are described before.

[9] Dechow et.al calculates cash flow from operations as;
$CF_t = \pi S_t - [\alpha + (1-\pi)\gamma_1 - \beta(1-\pi)]\varepsilon_t + \gamma_1(1-\pi)[\beta + \gamma_2(1-\beta)]\Delta\varepsilon_t + \beta\gamma_1\gamma_2(1-\pi)\Delta\varepsilon_{t-1}$.
If there are no accruals (sales and purchases are in cash so, $\alpha = \beta = 0$ and no inventory so $\gamma = 0$), earnings and cash flows for the period are equal. The term $[\alpha + (1-\pi)\gamma_1 - \beta(1-\pi)]$ is the temporary cash flow due to the change in expected long term working capital. It is the shock to sales for the period, ε_t, multiplied by a measure of the firm's expected long term operating cash cycle expressed as a fraction of a year, $[\alpha + (1-\pi)\gamma_1 - \beta(1-\pi)]$, which they denoted as δ.

The model for normal cost of goods sold (COGS) is estimated as;

$$COGS_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta(S_t/A_{t-1}) + \varepsilon_t$$

(Eq. 4.17)

Similarly following the Dechow et.al, Roychowdhury estimates the model for normal inventory growth as;

$$\Delta INV_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(\Delta S_t/A_{t-1}) + \beta_2(\Delta S_{t-1}/A_{t-1}) + \varepsilon_t$$

(Eq. 4.18)

where;

ΔINV = the change of inventory in period *t*

Production costs defined as $PROD_t = COGS_t + \Delta INV_t$ in the research. Utilizing Eq. 4.17 and Eq. 4.18, normal level production cost estimated from the model;

$$PROD_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(S_t/A_{t-1}) + \beta_2(\Delta S_t/A_{t-1}) + \beta_3(\Delta S_{t-1}/A_{t-1}) + \varepsilon_t$$

(Eq. 4.19)

Another model has to be designed based on discretionary expenses. It should be expressed also as a linear function of sales similar to COGS;

$$DISEXP_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta(S_t/A_{t-1}) + \varepsilon_t$$

(Eq. 4.20)

The author asserts that this last model can create a problem if the firm manage sales upward to boost the earnings, they can exhibit unusual low residuals from the Eq. 4.20, even when they do not reduce discretionary expenses. To avoid this problem, he suggests expressing discretionary expenses as a function of lagged assets;

$$DISEXP_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta(S_{t-1}/A_{t-1}) + \varepsilon_t$$

(Eq. 4.21)

Roychowdhury provides evidence that firms reporting small positive profits and small positive forecast errors manage earnings via real activities. His results indicate that drawing inferences on earnings management by analysing only accruals is not appropriate (Roychowdhury, 2006, 365).

b) <u>Zang Model (2006) :</u>

Zang defines real activities management as "*... a purposeful action to alter reported earnings in a particular direction, which is achieved by changing the timing or structuring of an operation, investment or financing transaction, and which has sub-optimal business consequences*". She predicts that managers prefer real activity management response to increased litigation risk. Her empirical research begins with a cost-benefit analysis and determines the costs of both real activity and accrual earnings management.

Similar to Roychowdhury (2006), Zang also selects some transactions to measure REM activities; cutting R&D expenditures, cutting selling, general and administrative expenditures, overproducing inventory to reduce the cost of goods sold and selling fixed assets with a market value greater than book value. She estimates the normal level of R&D expenditure utilizing the equation below;

$$\frac{R\&D_{j,t}}{A_{j,t-1}} = \alpha_0 + \alpha_1 \frac{R\&D_{j,t-1}}{A_{j,t-1}} + \alpha_2 \frac{Funds_{j,t}}{A_{j,t-1}} + \alpha_3 TobinsQ_{j,t} + \alpha_4 \frac{CapitalExp_{j,t}}{A_{j,t-1}} + \varepsilon_{j,t}$$

(Eq. 4.22)

where;

$R\&D_{j,t}$ = research and development expenses for firm *j*, time *t*

$Funds_{j,t}$ = internal funds[10]

$TobinsQ_{j,t}$ = Tobin's Q ratio[11] for firm *j*, time *t*

$CapitalExp_{j,t}$ = capital expenditure for firm *j*, time *t*

To estimate the normal levels of production cost the Eq. 4.23 is used;

$$PROD_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \alpha_2(S_t/A_{t-1}) + \alpha_3(\Delta S_t/A_{t-1}) + \alpha_4(\Delta S_{t-1}/A_{t-1}) + \varepsilon_t$$

(Eq. 4.23)

She estimates the normal level of gains on asset sales;

$$\frac{GLA_{j,t}}{A_{j,t-1}} = \frac{\alpha_0}{A_{j,t-1}} + \alpha_1 \frac{PPESales_{j,t}}{A_{j,t-1}} + \alpha_2 \frac{ISales_{j,t}}{A_{j,t-1}} + \alpha_3 \frac{\Delta S_{j,t}}{A_{j,t-1}} + \varepsilon_{j,t}$$

(Eq. 4.24)

where;

$GLA_{j,t}$ = gain or loss from sale of PPE and investment

$PPESales_{j,t}$ = sale of PPE

$ISales_{j,t}$ = sale of investment

According to Zang, accrual earnings management is negatively correlated with real earnings management. She concludes her research as "…*increasing scrutiny or constraints over accounting discretion may not eliminate earnings management activities, but only change managers' priority of earnings management strategies, some of which (real manipulation for example) may be more costly to investors*".

Zang (2006)'s model -compared to Roychowdhury (2006) model-, requires more information about firms' financial situation. Hence, this model is not applicable to

[10] Internal Funds = Income before extraordinary items + R&D + Depreciation

[11] Tobin's Q ratio = [(Market value of equity + Book value of preferred stocks + Long term debt + Short term debt) / Total assets]

the cases in Turkey due to information gap as a result of the low institutionalisation level.

c) <u>Gunny Model (2010) :</u>

Katherine Gunny, in her research named "*The relationship between earnings management using real activities manipulation and future performance: Evidence from meeting earnings benchmarks*", designed a new model to measure abnormal real activities to detect earnings management. First, she decomposes real activity manipulation as; reducing R&D, reducing selling, general and administrative expenses, cutting prices to increase sales and/or overproducing to decrease cost of goods sold and timing the sale of fixed asset. This decomposition reveals the REM types of Gunny (2010).

Secondly, she utilizes previous literature to design models to estimate the normal level of the operational activities with REM. Her first model is estimating the normal level of R&D expense;

$$\frac{R\&D_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 MV_t + \beta_2 Q_t + \beta_3 \frac{INT_t}{A_{t-1}} + \beta_4 \frac{R\&D_{t-1}}{A_{t-1}} + \varepsilon_t^{R\&D}$$

(Eq. 4.25)[12]

where;

$R\&D$ = research and development expenses

A = total assets

MV = the natural log of market value

Q = Tobin's Q ratio

INT = internal funds

The normal level of SG&A is estimated utilising the model below;

[12] Gunny (2010) emphasizes that, *MV* is used in the model to control size, *Tobin's Q* is a proxy for the marginal benefit to marginal cost of installing an additional unit of a new investment, *INT* is proxy for reduced funds available for investment.

$$\frac{SG\&A_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 MV_t + \beta_2 Q_t + \beta_3 \frac{INT_t}{A_{t-1}} + \beta_4 \frac{\Delta S_t}{A_{t-1}} + \beta_5 \frac{\Delta S_t}{A_{t-1}} * DD + \varepsilon_t^{SG\&A}$$

(Eq. 4.26)

where;

$SG\&A$ = selling, general and administrative expenses

S = total sales

DD = indicator variable equal to 1 if total sales decrease between *t-1* and *t*, 0 otherwise

other notations are described before.

The normal level of gain on asset sales is estimated utilising the model below;

$$\frac{GainA_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 MV_t + \beta_2 Q_t + \beta_3 \frac{INT_t}{A_{t-1}} + \beta_4 \frac{ASales_t}{A_{t-1}} + \beta_5 \frac{ISales_t}{A_{t-1}} + \varepsilon_t^{Asset}$$

(Eq. 4.27)

where;

$GainA$ = income from asset sales,

$ASales$ = long-lived asset sales,

$ISales$ = long lived investment sales,

In the Eq. 4.27, introducing asset sales as a variable requires that the relationship between *GainA, ASales* and *ISales* be monotonic. Herewith, to make the relationship monotonic, variables are transformed; thus, when the income from asset sales is negative, asset sales and investment sales regression's sign is negative.

The normal level of production cost is estimated utilising the model below;

$$\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 MV_t + \beta_2 Q_t + \beta_3 \frac{S_t}{A_{t-1}} + \beta_4 \frac{\Delta S_t}{A_{t-1}} + \beta_5 \frac{\Delta S_{t-1}}{A_{t-1}} + \varepsilon_t^{Prod}$$

(Eq. 4.28)

where;

$PROD$ = cost of goods sold plus changes in inventory

other notations are described before.

According to the empirical results of the study, after controlling size, performance and market to book value, REM is positively associated with the firms' benchmarks of earnings. Another result is that, managing earnings with real activities to meet earnings benchmarks is positively associated with future performance.

d) <u>Cohen and Zarowin Model (2010) :</u>

Cohen and Zarowin investigated the earnings management activities around seasoned earnings management. They used both accrual and real activity measures on their research. With the intent of detecting real earnings management, Cohen and Zarowin (2010) followed Roychowdhury (2006) but they designed a comprehensive aggregate measure of REM. They present a firm's ability to manage earnings through accruals by its net operating assets (NOA) and the cost of such behaviour.

Following Roychowdhury (2006), Cohen and Zarowin (2010) consider three metrics for REM; abnormal levels of cash flow from operations, discretionary expenses and production costs. They focus on three manipulation methods; acceleration of the timing of sales by increased price discounts, increasing production to report the lower cost of goods sold and reducing discretionary expenses.

Normal CFO level, estimated with the following cross-sectional regression for each industry and year while abnormal CFO is actual CFO minus the normal CFO calculated utilizing the estimated coefficients from Eq. 4.29;

$$CFO_{it}/A_{it-1} = k_{1t}\left(1/A_{i,t-1}\right) + k_2\left(Sales_{i,t}/A_{i,t-1}\right) + k_3\left(\Delta Sales_{i,t-1}/A_{i,t-1}\right) + \varepsilon_{it}$$

(Eq. 4.29)

Production costs are defined as the sum of COGS and change in inventory during the year. The model for COGS as a linear function of sales is estimated as;

$$COGS_{it}/A_{it-1} = k_{1t}(1/A_{i,t-1}) + k_2(Sales_{i,t}/A_{i,t-1}) + \varepsilon_{it}$$

(Eq. 4.30)

The model for inventory growth as a linear function of the current and lagged sales shown as;

$$\Delta INV_{it}/A_{it-1} = k_{1t}(1/A_{i,t-1}) + k_2(\Delta Sales_{i,t}/A_{i,t-1}) + k_3(\Delta Sales_{i,t-1}/A_{i,t-1}) + \varepsilon_{it}$$

(Eq. 4.31)

Using Eq.4.30 and Eq.4.31, they estimate the normal level of production costs as follows;

$$Prod_{it}/A_{it-1} = k_1(1/A_{i,t-1}) + k_2(Sales_{i,t}/A_{i,t-1}) + k_3(\Delta Sales_{i,t}/A_{i,t-1}) + k_4(\Delta Sales_{i,t-1}/A_{i,t-1}) + \varepsilon_{it}$$

(Eq. 4.32)

Normal level of discretionary expenses expressed as a linear function of lagged sales;

$$DiscExp_{it}/A_{it-1} = k_{1t}(1/A_{i,t-1}) + k_2(Sales_{i,t-1}/A_{i,t-1}) + \varepsilon_{it}$$

(Eq. 4.33)

where;

$DiscExp$ = discretionary expenses the sum of advertising expenses, R&D expenses and selling, general and administrative (SG&A) expenses

all other notations are described before.

According to all the models estimated above, the abnormal CFO, abnormal production costs and abnormal discretionary expenses are calculated as the actual values less normal levels predicted from equations 4.29, 4.32 and 4.33 respectively. In order to

detect the effects of REM in a comprehensive measure, they computed a single variable by encompassing the three individual REM variables[13].

They also present some additional tests to decide if the manager manages earnings in the first stage and to explain the use of REM versus AEM in the second stage. They also determine a firm's ability to manage earnings using accruals by NOA.

In the empirical research section of this thesis, as the proxy of REM, Roychowdhury Model-based Cohen and Zarowin (2010) model has been used. The reason is that, according to the variable structure of Turkey firms, these models are more applicable than that of Zang (2006) and Gunny (2010).

4.1.2. Research Based on International Context

Many academic studies have documented the earnings management activities prior to initial public offerings in the last decades. The effects of accrual earnings management have been deeply investigated for many years and real earnings management has become a matter of curiosity, only very recently, in the 21^{st} century. In this subtitle of the thesis, these researches and their results will be briefly identified.

In 1993, Aharony et.al, investigated if the entrepreneurs manipulated earnings in the periods before to offer their companies to the public through the choice of accounting tendencies. This study examines 229 industrial firms that went public between 1985 and 1987. They have two hypotheses as; entrepreneurs who plan to take to the public overstate reported earnings prior to IPO and high-quality auditors/underwriters have greater tendency to provide accurate information about IPO value than low-quality ones. To assess the earnings management, they adopted the Healy (1985) and DeAngelo (1986) accruals models and according to their empirical results, firms that plan to go public have a significant growth in their earnings with increased cash flows two years prior to IPO. They found weak evidence that earnings management is related to the quality of auditors and underwriters.

[13] They multiplied abnormal CFO and abnormal discretionary expenses by (-1) but not abnormal Prod.

One year after the study of Aharony et.al (1993), Friedlan (1994) tried to determine the earnings management activities prior to IPO. He examined whether IPO firms applied accounting discretion through income increasing discretionary accruals in the financial statements that were included in the prospectuses. With the adoption of DeAngelo (1986) accrual model, he tested 155 IPO firms and 12 industries in the USA between 1981-1984 periods. His results indicate that issuers systematically involve income increasing discretionary accruals in the interim financial statements if they provide. In the situation of firms do not provide interim financial statements, they involve income increasing earnings management in their annual statements.

In their extensive and leading study, Teoh et.al (1998) emphasize that if a firm has an incentive to boost its earnings before selling shares, initial financial statement of the new offered firm will usually contain positive accruals. Their study differs from precedents in several ways; they examine both IPO-year and post-IPO long run earnings performance, cross-sectional relation of IPO-year excess accruals to post-issue earnings, and finally, the IPO-year accruals they examine include both pre and post-IPO accruals (Teoh, et.al, 1998, 176). Their sample consists of 1.682 IPO firms which went public in the USA between the years 1980-1990. They used cross-sectional modified Jones Model to measure discretionary accruals. According to their tests, during the year of IPO, the firms' return on sales ratios, are significantly higher relative to subsequent years and relative to non-IPO firms. The results indicate that companies report high earnings during the IPO year through reporting discretionary accruals aggressively. An interesting finding is that high discretionary accruals causes underperformance mostly in the three years following the IPO. Another result that deserves emphasis is that issuers utilize income boosting depreciation methods and provide less for uncollectible accounts receivable.

DuCharme et.al (2001) investigated the proxy measures of pre-IPO earnings management are related to firm value at offering. Pre-IPO earnings management is related to subsequent firm performance. They analysed firms which issued their shares to the public between the years of 1982-1987 with a sample of 171 firms. They adopted cross-sectional modified Jones (1991) accrual model and found that the post-IPO

market adjusted stock returns are strongly negatively related to pre-IPO earnings management activities. The authors conclude the research as "*aggressive earnings management prior to IPOs increases initial firm value, but decreases subsequent return to investors*".

Another study determined the delisting risk of firms that managed their earnings prior to IPO, with a sample of 3898 IPOs from 1980 to 1999 in the NYSE. Authors found that the degree of earnings management possesses significant prediction power on IPO failure (Li et.al, 2006). As an estimating model for accruals, they adopted Performance Matching Model of Kothari et.al (2005). They used the probit analyses and found that abnormal accruals in the IPO year are significantly and positively related to the probability of involuntary delisting after IPO and hazard rate for IPO firms. Another finding of Li et.al (2006) is that conservative earnings management in the IPO year predicts a higher chance of merger/acquisition, and merged/acquired firms outperform the market in terms of long term stock returns. They emphasize that earnings management during IPO is very costly if it causes the IPO failure.

Roosenboom et.al (2003) using a sample of 64 firms between the years 1984-1994 in Netherlands, investigated the pattern of abnormal accruals over time. Adopting the cross-sectional accrual model of Jones (1991) and consistent with Aharony et.al (1993), they found that firms managed their earnings prior to IPO and that firms managed earnings before going public suffered poor returns during post-IPO years.

In 2008, Ball and Shivakumar in their study named "*Earnings quality in initial public offerings*" questioned the market and regulatory effects on financial reporting quality and questioned the results of Teoh et.al (1998). Their sample data was 393 IPO firms in London Stock Exchange in the years 1992-1999. Nondiscretionary accruals are estimated with Jones Model that extended by Ball and Shivakumar (2006). According to empirical analysis of the study; they found no evidence of earnings management around IPO and litigation and regulatory risk causes earnings management reverses over time. Poor reporting quality could lead to an increased cost of capital or adverse reputation effects.

Cormier and Martinez (2006) investigated the managers motivations to manage earnings by purposeful discretionary accruals in the content of French IPO firms. They characterized voluntary forecast disclosure as a reporting environment. This environment puts pressure on managers to manage earnings in the following year of IPO. Their sample was 118 IPOs in the Euronext Paris between 2000 and 2002. They concluded their results as; contractual and some governance constraints play an important role on accounting choices of firms' when they have incentive to manage earnings and suggest giving more attention on scrutiny of IPO firms and their financial statements.

Another study by Aharony et.at (2010), investigates the earnings behavior of Chinese firms between 1999 and 2001, with a sample of 185 Shanghai Stock Exchange IPO firms. Using the ordinary least square (OLS) regression Aharony et.al (2010) conducted a performance based model. They utilized ROA, price/earnings ratio and buy and hold returns. Results show that related party sales could be used to manage earnings prior to IPOs. It has been indicated in the study managing earnings upward before the IPO is motivated by the expectations of opportunities post-IPO period for the benefit of the parent firm. According to OLS regression results, the issuer firm's stock performance is negatively related with discretionary related party sales which are positively associated with corporate loans in the post-IPO.

Chen et.al (2013), examined how the information uncertainty surrounding IPO firms influences earnings management and long-run stock performance. They have 1.593 firms that first time issued their shares between the years 1990-2005. Measuring the uncertainty with residual volatility, return volatility and analyst forecast standard deviation, authors adopted both a modified version of Jones (1991) Model and Performance Adjusted Model of Kothari et.al (2005). As the measurement of long-run stock performance, Fama and French's four factors model has been used in the study. The results show that if IPO firms operate under less information uncertainty, IPO earnings management is positively related to post-IPO cash flows. Thus post-IPO non-discretionary earnings of high information uncertainty firms in comparison with low ones, decline with IPO earnings management. They also find that market reaction to

earnings announcements at post-IPO is negative at high information uncertainty firms and long term stock performance is negatively related to IPO earnings management.

Miloud (2014) studied the presence of earnings management in initial public offerings (IPOs) of French firms. 568 IPOs over the years 1995-2008 investigated in the study and he utilized a modified Jones Model (1991) that used in the study of Teoh et.al (1998) to estimate discretionary accruals. The results show that French companies manage their sales to meet planned objectives during the fiscal year. This is consistent with the comment of managers engage in real earnings management while acting on the sales of the year.

Ising (2014) contributed to the literature in several ways. With a very large sample, 6.601 firms over 1987-2012, results illustrate that earnings management differs from two years before to three years after the IPO. He concludes his study as; "*…particularly around IPOs, boosting earnings is more eye-catching than inflating other accounting items which investors also value. Only sales are similarly the focus of such scrutiny. Managing earnings and sales by real activities is less likely to be uncovered as influential behavior than using accruals would*".

In a recent study, Alhadab et.al (2015) analysed the relationship between real and accrual earnings management activities and IPO failure risk with a sample of 570 IPO firms over the period 1998-2008 in the United Kingdom. Adopting the Modified Jones Model (1995) for measuring accrual earnings management and Roychowdhury Model (2006) and Cohen and Zarowin Model (2010) for measuring the real earnings management, they designed cross-sectional and linear regression models to estimate the relationships. Their analyse results indicate that IPO firms manipulate their earnings upward using both real and accrual earnings management prior to IPO. Beside this, they assert in regard to results, high level of real and accrual earnings management cause a higher probability of IPO failure and lower survival rates post-IPO period. They also determine that the probability of IPO failure risk is higher in the firms that utilize real earnings management versus accrual earnings management.

Another study was conducted by Kouwenberg and Thontirawong in 2015. With a sample consisting of 9 Asian countries (Hong Kong, India, Indonesia, South Korea, Malaysia, The Philippines, Singapore, Taiwan, and Thailand), 2402 IPOs were investigated from 2001 to 2010. The adopted accrual-based earnings management estimation model was Modified Jones Model (1995). They determined the group affiliation and underwriter reputation effects on the earnings management of IPO issuers in Asia. Results show that earnings management activities are involved when IPO firms are in a relatively high need of external capital. They also found that underwriter reputation.

The Malaysian IPOs, earnings quality and forecast relation were investigated by Ammer and Zaluki (2015). Utilizing 190 Malaysian IPOs in the period of 2002-2012, content analysis results indicate that earnings forecasts of Malaysian IPO were pessimistic. Accurate earnings forecasts are a result of the absence of difficult forecasting, the profession of managers undertaking forecasts and the capability of company management to manage earnings.

Kothari, Mizik and Roychowdhury (2016) determined the role of earnings management via real earnings management versus accrual earnings management on secondary equity offering (SEO). Their study contained 3.353 SEOs in USA in the 1970-2012 period. They adopted Kothari et.al (2005) Performance Matched Model to estimate accruals and Roychowdhury (2006), Cohen and Zarowin (2010) models to estimate real activities based on research and development expenses within a period of 42 years. The reason of focusing on R&D expenses is that such reductions can be detrimental for future profitability and competitiveness; however, it can improve earnings, profit margins and CFOs. The empirical results of the study suggest that when the scrutiny is strict, managers can prefer real earnings management if they wish to boost earnings because real earnings management have a higher probability of escaping detection.

4.1.3. Research Based on Turkish Context

Although earnings management activities around initial public offerings have been deeply investigated in international context, unfortunately there is a lack of satisfactory research in Turkey. There are some academic studies generally based on accrual-based earnings management; however, there is a little number regarding real earnings management. Therefore, this thesis is the first study that investigates both accrual and real earnings management activities around IPOs in Turkey.

The only study about earnings management activities prior to IPO was presented by Yükseltürk in 2006 as a doctoral thesis. He investigated the IPO firms over the years of 1994 to 2001 and their incentives to manage earnings. The financial statements belonging to 2004 are adjusted according to inflation, consolidated or IFRS-compliant so the period gap is before 2004. A regression model has been used to calculate the variables of the year of IPO, two years and one year prior to IPO and one year and two years after the IPO. The first hypothesis of the study is that discretionary accruals increase when period changes to $(t-1)$ from $(t-2)$[14]. T test results refute this hypothesis. The second hypothesis of the study is that discretionary accruals increase when the period changes to (t) from $(t-1)$. Either mean/median or t tests accept this hypothesis significantly. The last hypothesis is that discretionary accruals decrease in the period $(t+1)$. This means that IPO firms manage their earnings using discretionary accruals prior to IPOs.

Yükseltürk's (2006) study is important for being the first research on determining firms' earnings management behaviours prior to IPOs in Turkey. Notwithstanding, there are some deficiencies that create the need to enhance the study. First, after 2004, Turkish listed firms have been subjected to International Financial Reporting Standards (IFRS), hence, earnings management tendencies could differentiated under new rules. Second, Yükseltürk (2006) investigated only accrual-based earnings management in his study, but real earnings management also has to be thoroughly investigated -especially after it found itself a place in international literature in the last few years. In this sense, this thesis is the first study that investigates the

[14] According to Yükseltürk (2006), IPO year notation is *t*.

firms' both accruals-based and real activity-based earnings management tendencies prior to IPO under the rules of IFRS.

4.2. HYPOTHESIS DEVELOPMENT

Investors' information regarding newly listed firms is very limited because they have to confine with contained information in prospectuses. In Turkey, the firms whose stocks will be offered to public for the first time have to disclose the financial statements of the last three years. Thus, prior to public offering, the last period has an opportunity for managers to manage the earnings and boosted stock prices. As emphasized above, Aharony (1993), Friedlan (1994), Teoh et.al (1998), Li (2006), Kothari et.al, (2005), and Alhadab (2015)'s findings indicate that IPO firms manage their earnings upward prior to offering with some triggers.

In the prior subsections, theoretical frameworks, empirical evidences and literature review have been determined. First, accrual-based earnings management activities will be tested. Based on these academic studies, we conduct our first hypothesis of the thesis as;

H_1 : *Prior to the initial public offering period, discretionary accruals increase significantly contrary to the previous year.*

In the long timeline of a firm, cash flows and profits will be equal to each other. Hence, the lack of liquidity of discretionary accruals will be negative for a short period. According to this expectation, we conduct our second hypothesis as follows;

H_2 : *Following initial public offering period, the level of discretionary accruals decreases significantly.*

In spite of the widely usage of accrual-based earnings management models to detect earnings manipulation, real activity-based earnings management models began to be effective in the last decade. Sugata Roychowdhury (2006) extends the earnings management concept by including real activities of the firm to the models. With the objective of designing empirical models to detect and measure the manipulation of real activities by management, he summarizes that discretionary expenses, operational cash

flows and production costs are more effective in capturing manipulations than accruals. Adopting the Roychowdhury model to detect and measure the real activities, we conduct our third hypothesis with supporting hypothesis as;

H_{3A} *: Prior to the initial public offering period, discretionary levels of operation cash flows increase significantly contrary to the previous year.*

H_{3B} *: Prior to the initial public offering period, discretionary levels of production costs decrease significantly contrary to the previous year.*

H_{3C} *: Prior to the initial public offering period, discretionary levels operating expenses decrease significantly contrary to the previous year.*

Similar to accrual-based earnings management; real activities are expected to reflect different levels around the initial public offering during both the initial and following periods. Thus, we have to measure discretionary levels of real activities after the initial public offering event as well as accrual based earnings management.

H_{4A} *: Following the initial public offering period, discretionary levels of operation cash flows decrease significantly.*

H_{4B} *: Following the initial public offering period, discretionary levels of production costs increase significantly.*

H_{4C} *: Following the initial public offering period, discretionary levels of operating expenses increase significantly.*

The hypothesis given above will be tested with empirical models that have been examined in detail in the previous subsections. Kothari, Leone and Wasley's (2005) performance matching model is utilized to measure the discretionary or abnormal levels of accruals as conducted in the studies of Aybars (2013) and Adıgüzel (2012). In addition to this, Roychowdhury's (2006) real activity based model is utilized to develop a proxy for the abnormal levels of cash flow from operations, cost of goods sold and discretionary expenses as conducted in the studies of Alhadab (2015) and Kothari et.al (2016). These earnings management models are widely used in the

literature by many academicians and utilized to determine earning management activities.

4.3. SAMPLE DESIGN

4.3.1. Data and Sample Selection

In the empirical part of the thesis, the sample data covers the companies which were offered to public for the first time in the period between 2004 and 2013. The reason of the period selection is, according to the methodology of the analysis, models need the last two years' financial statements prior to and the financial statements of the two years following the initial public offering. Inflationary Accounting Practices, consolidation or International Financial Reporting Standard (IFRS) rules were adopted in Turkey after 2003. Hence, in order to obtain a homogenous and balanced dataset, 2004 has been identified as the beginning year of the sample.

Various databases are utilized to construct the dataset. The financial statements of companies are collected from Public Disclosure Platform (KAP), Borsa Istanbul (BIST) archives and public offering prospectuses of issuers. Much financial information has been gained from financial statements' endnotes and external audit reports as well. During the observation period, there were 120 firms as issuers that went public for the first time. The initial sample of the dataset and industrial classification according to BIST is given in the table below;

Table 4.1.
Industrial Classification of IPO firms in the Initial Sample

No	Industrial Classification	Number of IPO Firms
1	Mining	2
2	Manufacturing Industry	34
3	Electricity, Gas and Water	2
4	Construction and Public Works	4
5	Wholesale and Retail Trade	14
6	Transportation, Telecommunication and Storage	6
7	Education, Health, Sports and Other Services	8
8	Financial Institutions	38
9	Technology	12
	Total	**120**

The firms in the Table 4.2 issued their shares to the public in different years in the empirical analysis period. Table 4.3 depicts the IPO firms according to their issuing year. As seen from the table, the effect of global financial crisis can be clearly seen in the years 2008 and 2009. This sharp downtrend in the number of initial public offering events may have resulted from the decreasing faith in the capital markets and the decreasing interest of potential investors in the stock market due to vast sums of losses. In the new-normal period –namely after 2009, recovery of the capital markets around the world and efforts of Borsa Istanbul management through the Campaign of Initial Public Offering triggered companies about going public, these studies have reflected the numbers of IPOs in Turkey. However, compared to the other countries, our IPO events seem really inadequate to be an attractive market.

Table 4.2.

Year Classification of Firms Went Public in the Initial Sample

Year	Number of IPO Firms
2004	12
2005	9
2006	15
2007	9
2008	2
2009	1
2010	22
2011	25
2012	16
2013	9
Total	**120**

Empirical models and analysis need some criteria through the database; thus, we have to eliminate some firms based on these criteria. First, we removed financial institutions from the sample according to obtain homogeneity and balanced dataset as the financial statement structure of financial institutions is different from other companies. Some firms whose financial statements and variables we could not reach also eliminated. The software programs used for the analysis are named as IBM SPSS

24 and Eviews 9.5. The final sample and selection criteria are explained in detail in the Table 4.3 is given below.

Table 4.3.

Final Sample Based on Selection Criteria

Criteria	**Number of Firms**
Total number of firms that issued their stocks for the first time in BIST in the period of 2004-2013	120
Less :	
Financial Institutions	38
Firms that have improper financial statements.	3
Total Number of Firms Included in Final Sample	**79**

4.3.2. The Variables

In the empirical analysis part of the thesis, there are five different models utilized to measure the discretionary levels of earnings management proxies. We have used both accrual-based and real activity-based earnings management measurement tools. All variables used in the models are given below in Table 4.4 below with abbreviations, definitions or calculations in detail.

Table 4.4.

Abbreviations and Definitions of Variables

Variable	**Abbreviation**	**Definition / Calculation**
Panel A : Dependent Variables for Accrual Based Earnings Management Model		
Total Accruals	TA	Total accrual amount of firm *i* at time *t*
Discretionary Accruals	DA	Abnormal levels of total accruals estimated by Kothari, Leone and Wasley (2005)
Non-Discretionary Accruals	NDA	Normal levels of accruals calculated as the difference between total accruals and discretionary accruals
Panel B : Explanatory Variables for Accrual-Based Earnings Management Model		
Change in revenue	ΔREV	Total sales in year *t* for firm *i* less net total sales in year *t-1* for firm *i*

Table 4.4. (continued)

Abbreviations and Definitions of Variables

Variable	Abbreviation	Definition / Calculation
Change in accounts receivable	ΔREC	Net receivables in year *t* for firm *i* less net receivables in year *t-1* for firm *i*
Tangible Assets	PPE	Gross property, plant and equipment in year *t* for firm *i*
Return on Asset	ROA	The ratio of net income to total asset
Lagged Total Assets	A_{t-1}	Total assets of firm *i* at time *t-1*
Panel C : Dependent Variables for Real Activity-Based Earnings Management		
Cash flow from operations	CFO	Cash flow from operations for firm *i* at time *t*, obtained from the statement of cash flow
Cost of Goods Sold	COGS	Cost of creating the products that a company *i* sells at time *t*
Production cost	PROD	The sum of cost of goods sold and change in inventory.
Depreciation expenses	DiscExp	The sum of advertising expenses, R&D expenses and selling, general and administrative expenses.

4.3.2.1 Dependent Variables for Accrual Based Model

As accrual-based earnings management measurement, this thesis utilized the Kothari, Leone and Wasley's (2005) abnormal accrual proxy model detailed above in the related subsections. According to the model used, dependent variable is the value of total accruals. First, we have to calculate total accruals and use it as a dependent variable affected by independents. In the literature, there are two different approaches to calculate total accruals; balance sheet approach and cash flow approach. Jones (1991) determines the former method as;

$$TA_t = [\Delta Current\ Assets_t - \Delta Cash_t] - [\Delta Current\ Liabilities_t - \Delta Current\ Maturities\ of\ Long\ Term\ Debt_t - \Delta Income\ Taxes\ Payable_t] - Depreciation\ Expense_t.$$

According to Rangan (1998), noncash current assets and current liabilities have some increases and decreases in their balances. Current accruals are known as a reflection of these volatilities and obtained from the difference between change in current assets and change in current liabilities. Hence, he indicates that determining total accruals by balance sheet approach is a must. Furthermore, many academics criticize this approach because of the lack of flexibility about specific financial issues as merger and acquisitions. Larcker et.al (2007), Prawitt et al (2009), Adıgüzel (2012) and Aybars (2013) adopt the cash flow approach to measure the total accruals. This thesis utilizes the same method to obtain total accruals as a dependent variable. In cash flow approach, total accruals are calculated as;

$$TA = Net\ Income\ Before\ Exrtaordinary\ Items - Cash\ Flow\ From\ Operations$$

After calculating the total accruals with cash flow approach, Kothari, Leone and Wasley's (2005) Performance Adjusted Model is estimated for each year and firm by the regression model given below;

$$TA_{it}/A_{it-1} = \beta_0 + \beta_1[1/A_{it-1}] + \beta_2\,[\Delta REV_{it} - \Delta REC_{it}/A_{it-1}] + \beta_3\,[PPE_{it}/A_{it-1}] + \beta_4 ROA_{it} + \varepsilon_{it} \quad \text{(Eq. 4.34)}$$

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_{it} = net receivables in year *t* less net receivables in year *t-1*;

PPE_{it} = gross, property, plant, and equipment in year *t* for firm *i*;

ROA_{it} = return on assets in year *t* for firm *i*;

$A_{i,t-1}$ = total asset in year *t-1* for firm *i*

ε_{it} = error term in year *t* for firm *i*;

β_0 = constant

In this model, accruals looks as the function of changes in revenues adjusted by the changes in account receivables, gross property, plant and equipment, also ROA as a financial performance measure. The coefficients from (Eq.4.34) were utilized in a new regression model to estimate the level of nondiscretionary accruals. We calculated the discretionary or abnormal accruals as the difference between total accruals and nondiscretionary accruals. Coefficients from the equation 4.34 were used in the OLS regression to estimate the nondiscretionary accruals as;

$$NDA_{it} = \alpha_i[1/A_{it-1}] + \beta_{1i}\,[\Delta REV_{it} - \Delta REC_{it}/A_{it-1}] + \beta_{2i}\,[PPE_{it}/A_{it-1}] + \beta_{3i}ROA_{it} + \varepsilon_{it} \quad \text{(Eq. 4.35)}$$

where;

NDA_{it} = nondiscretionary accruals in year *t* for firm *i*;

ΔREV_{it} = revenues in year t less revenues in year *t-1* for firm *i*;

ΔREC_{it} = net receivables in year *t* less net receivables in year *t-1*;

PPE_{it} = gross, property, plant, and equipment in year *t* for firm *i*;

ROA_{it} = return on assets in year *t* for firm *i*;

$A_{i,t-1}$ = total asset in year *t-1* for firm *i*

As defined in the subsections of the thesis, total accruals are composed of nondiscretionary and discretionary accruals; thus, the difference between total accruals and nondiscretionary accruals is the accruals that will be used as abnormal;

$$TA_{it} = NDA_{it} + DA_{it}$$

(Eq. 4.36)

Discretionary or abnormal accruals are abbreviated as **ABACC** in the empirical models of the thesis.

4.3.2.2 Explanatory Variables for Accrual Based Model

Kothari, Leone and Wasley's (2005) performance adjusted model, presents total accruals as a linear function of the changes in sales, changes in receivables, gross property and plants, and ROA. Jennifer Jones expresses that revenues are used to control financial environment of the company because they are objective. Jones (1991) model assumes that manipulation is not exercised over revenue while Dechow et al (1995) assumes that all the changes in sales, especially credit sales, are raised from manipulated earnings. They emphasize this opinion as; *"...it is easier to manage earnings by exercising discretion ever the recognition of revenue on credit sales than it is to manage earnings by exercising discretion over the recognition of revenue on cash sales*." Dechow et al. (1995, 199). Under the light of this information, change in revenues, namely sales and change in accounts receivable –indicates the sales in credit- is included in the model as an independent variable with the symbol of **ΔREV-ΔREC.**

In her leading study, Jones (1991) adopts the balance sheet approach to determine total accruals. In this method, depreciation expense is an adjustment item, thus she emphasizes that depreciation expense is related to property, plant and equipment asset. Hence, as an adjuster, Jones and followers adopt this amount as an explanatory variable for determining the total accrual. Gross value of property, plant and equipment is utilized and abbreviated as **PPE** in the thesis.

Another regressor and indicator of performance in the cross-sectional model of Kothari et al. (2005) is Return on Asset (ROA). To control the impact of financial performance on abnormal accruals, the widely used performance measure ROA was tested in the model. McNichols (2000) also emphasized that ROA had to be included in accrual models to determine the performance impact and he found that there was a positive relationship between ROA and total accruals. The expectation from the

empirical result is such a relationship with dependent variable. The symbol of return on assets used in the model is **ROA** as generally used.

4.3.2.3 Dependent and Explanatory Variables for Real Activity-Based Models

This thesis relies on previous studies to construct a proxy to detect earnings management through real activities of companies. As in Roychowdhury (2006), Cohen and Zarowin (2010), Ge (2009), Ge and Kim (2014), we consider three metrics to detect the real earnings management; *abnormal levels of cash flow from operations*, *production cost* and *discretionary expenses*. This thesis focuses on three methods to manage earnings and their effects on these three dependent variables as in the study of Cohen and Zarowin (2010).

1. Price discounts and more complaisant credit terms obviously affect sales positively. Sales volumes can be increased temporarily by such strategies. Current period's earnings will boost with additional sales. Notwithstanding, when the firm reverts to old prices and credit terms, this situation will change immediately. In addition to this, price discounts and more complaisant credit terms can result in lowering the cash flow levels. Hence, we express nondiscretionary cash flow as a function of Sales and Change in Sales. The model has been described in the subsection 4.1.1.2 and Equation 4.16 and if we recall;

   $$CFO_{it}/A_{it-1} = \alpha_0 + \alpha_1(1/A_{it-1}) + \beta_1(S_{it}/A_{it-1}) + \beta_2(\Delta S_{it}/A_{it-1}) + \varepsilon_t$$

   In this model, we estimate the total -in other words, actual- CFO and we estimate the nondiscretionary CFO using the coefficients from the model above. Discretionary/abnormal CFO is calculated as total CFO minus normal CFO. This type of Cash Flows is abbreviated as **ABCFO** in the empirical models of the thesis.

2. Another method to manage earnings is lowering the costs. Increased production decreases the cost of goods sold. Overproduction can spread the

fixed costs over the whole units; thus, fixed costs per unit would be lower and so does the total cost per unit. Operating margins can be boosted with this strategy. Hence, abnormal levels of production have to be calculated to detect the real activity earnings management.

Production cost during the year is defined as *the sum of cost of goods sold and change in inventory* (COGS + ΔINV). We construct a cross sectional regression model to estimate total Production Costs. If we remind the model described before;

$$PROD_{it}/A_{it-1} = \alpha_0 + \alpha_1(1/A_{it-1}) + \beta_1(S_{it}/A_{it-1}) + \beta_2(\Delta S_{it-1}/A_{it-1}) + \varepsilon_{it}$$

Coefficients from the model are used to determine normal levels of production costs. Total production costs less normal production costs gives the abnormal levels of production costs. We abbreviated this dependent variable as **ABPROD** in the thesis.

3. Discretionary expenses or, in other words, *operating expenses* are the sum of advertising expenses, R&D expenses and selling, general and administrative (SG&A) expenses. To maximize the current period's earnings and also cash flows, these types of expenses have to be reduced. Total operating expenses can be expressed as a function of lagged sales;

$$DISEXP_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta(S_{t-1}/A_{t-1}) + \varepsilon_t$$

Similar to the discretionary cash flows and discretionary production costs, coefficients from the OLS regression model utilized to determine abnormal levels of operating expenses. Discretionary operating expenses are symbolized as **ABOPEXP** in this thesis.

The expectations from firms which have managed their earnings through real activities are likely to have one or all of these abnormal levelled situations given below as indicated in the study of Cohen and Zarowin (2010);

a) low cash flow from operation

b) low discretionary (operational) expenses

c) high production costs

4.3.3. Methodology

In this part, the methodological issues used for empirical analysis will be explained in detail. There are two types of analysis utilized to determine the earnings management behaviours around initial public offerings event. The determination of discretionary levels of tested items is identified using "*Cross-Sectional Analysis*" and earnings management behaviours are tested by "*Event Analysis*".

4.3.3.1 Cross-Sectional Analysis

Cross-sectional studies are usually conducted to estimate the prevalence and association of interests (Levin, 2006). This type of data contains information about different individuals during the same time period. Hayashi (2000) states that a dependent variable as a linear function of selected independent variables is expressed by linear regression and gives the model below;

$$y_i = \beta_0 + \beta_1 x_{1,i} + \beta_2 x_{2,i} + \cdots \beta_k x_{k,i} + \varepsilon_i$$

Where, y_i known as dependent variable or regressand and $x_{1,i}, x_{2,i} \ldots . x_{k,i}$ are independent variables or, in other words, regressors, $\beta_1, \beta_2, \ldots, \beta_k$ are regression coefficients, β_0 is constant of the model and ε_i is error term.

Linear regression models are also known as ordinary least squares (OLS) that estimate the unknown coefficients. These models need linearity and homoscedasticity assumptions to be conducted. The former one means that the relationship between dependent and explanatory variables must be linear and must be presented in a straight line (Ho, 2014; 234). The latter one refers to the variability of dependent variable which should remain constant at all values of the independent variable.

Elliot and Woodward (2007) indicate that several assumptions are involved in linear regression models. First, the value of dependent variable *y* for each combination of independent variables is *normally* distributed. Second, the populations in the first assumption have the *same variance* and third, each observed *y* value must be from a separate entity or subject or, in other words, must be *independent*. In the empirical analysis part of this thesis, cross-section analysis have been utilised as an initial (preliminary) analysis for the event study so the mean method to determine earnings management strategy of firms around initial public offerings is event analysis explained in detail in the subsection given below.

4.3.3.2 Event Analysis (Event Study)

Event studies are widely used in finance, economics, accounting and other social areas to determine the effect of events on firms' information, value or financial performance (Kolari and Pynnonen, 2011; 953). Donald Getz defines event study and draws a framework in his book as follows;

"*Event Studies is the academic field devoted to creating knowledge and theory about planned events. The core phenomenon is the experience of planned events, and meanings attached to them. Event Studies draws mainly from the social sciences, management, the arts, humanities and a number of closely related professional fields.*" (Getz, 2007, pp.2).

Event studies provide an ideal measure to determine the information content of disclosures and test the abnormal performance (Başdaş, 2013;8). Even if event studies are widely used to measure abnormal returns, they are appropriate for comparing periods around some specific events i.e. IPO, changes in board of directors or an investment that will affect the firm's financial performance deeply. Dutta (2014) states that some event studies utilize parametric test statistics but parametric tests require assumptions about the distribution of data used. If the data's distribution is not normal, the assumption of *normality* is invalid. In the situation of normality assumption invalidity, parametric tests cannot be used and nonparametric tests have to be in charge.

Among nonparametric tests, most reliable tests are *sign* and *rank* tests. Cowan (1992) indicates that nonparametric tests perform a better performance and are more powerful. He also gives a different perspective about rank and sign tests as; in short event processes, the rank tests provide more power than sign tests. However, if the number of days in the event increases, this power of rank tests decreases (Cowan, 1992; 356). A summary that indicates the event study test statistics is given in the table below. It contains both parametric and nonparametric test statistics. The first three methodologies refer to parametric and the rest refers to nonparametric event study approaches.

Table 4.5

Summary of Alternative Methodologies

Methods	Test Statistics	Definition
t-test-mean excess returns	$J_1 = \frac{\bar{\varepsilon}_0}{S(\bar{\varepsilon})}$	$S(\bar{\varepsilon})$ is standard deviation of the average abnormal returns.
t-test-mean standardized excess returns	$J_2 = \frac{1}{\sqrt{N}} \sum_{i=1}^{N} \varepsilon'_{it}$	N denotes the number of securities and $\varepsilon'_{it} = {}^{\varepsilon_{it}}/_{S(\varepsilon_i)}$
Cross-Sectional Dependence	$J_3 = \frac{\bar{\varepsilon}_0}{\sqrt{\tilde{\sigma}^2}}$	$\tilde{\sigma}^2 = \frac{1}{T-1} \sum_{t-1}^{T} (\bar{\varepsilon_t} - \bar{\varepsilon})^2$
Generalized Sign Test	$z = \frac{\lvert p_0 - p \rvert}{\sqrt{p(1-p)N}}$	p is the binomial distribution parameter
Wilcoxon Signed-Rank Test	$W = \sum_{i=1}^{N} r_i^+$	r_i^+ is positive rank of the absolute value of abnormal returns.
Corrado's Rank Test	$R = \frac{\frac{1}{N} \sum_{t=1}^{N} (K_0 - \bar{K})}{S(K)}$	K_{it} denotes the rank of abnormal return.

Source: Anupam Dutta Parametric and Nonparametric Event Study Tests: A Review International Business Research, Vol.7, No:12 (2014, pp. 140)

In the literature, there are a number of studies that have utilized event study methodology to test the earnings management activities around special events. Teoh et al. (1998) compared aggressive earnings against quartiles around initial public offerings utilizing t-test and their findings indicate that in IPO year, firms manage their earnings opportunistically. DeFond (1994) investigated the debt covenant violations of 94 firms with by comparing it with the preceding year and violation year's accounting choices and findings state that in the year prior to violation, accruals are significantly positive. Also Becker at al. (1998) used event study with Wilcoxon rank test methodology while investigating the effects of audit quality on earnings management, their empirical results emphasize that discretionary accruals of firms with non-big auditors are higher than the discretionary accruals of firms with big auditors. Rangan (1998)'s choice for a specific event was seasoned public offering. The relationship between discretionary accruals and post offering earnings performance was investigated around seasoned public offering. According to Wilcoxon test results, abnormal accruals during the year around offering are negatively correlated with the changes in earnings in the following year.

Jeanjean and Stowoly (2008) examined the behavior of accruals before and after the IFRS practices. They ran the Wilcoxon rank sum test and found that earnings management activities did not decrease after the IFRS adoption in Australia, United Kingdom and France. Myers et al. (2007) determined the earnings momentum, namely increasing the quarterly EPS tendencies of firms around earnings strings reporting periods. Using the event study methodologies, they found that, at the end of the string period, firms with high earnings momentum reflect negative market reaction. With a sample that included 110 firms, Esterwood (2011) investigated earnings behavior of managers prior to takeover attempt and his findings indicates that, in the preceding and following quarters of the takeover event, managers adopt income increasing accruals to manage earnings. In another study, Wongsunwai (2012) examined the effect of external monitoring on earnings management. He determined this effect both on accrual and real activity-based earnings management. By utilizing t-test and z-test, he claimed that venture capitals with higher quality have less aggressive financial reporting strategies prior to initial public offerings. In their recent study, Hung and Lee (2015) claimed that, managers' earnings forecasts and analysts' earnings forecasts are not affected by the

condition of the market. They also found that management forecast is not related to firm size, but earnings variance. In the following section, the empirical analysis and results of this thesis will be strived to explain.

5. EMPIRICAL ANALYSIS AND RESULTS

In the empirical analysis part of this thesis, regression and event study results will be reported in detail.

5.1. DESCRIPTIVE STATISTICS

This subsection of the study, gives a summary of the statistics regarding all the variables belonging to firms which offered stocks to public for the first time during the period of 2004-2013. However, to determine managed earnings around IPO event, econometric analyses requires firm data two years before and two years after the event year. In this situation, the dataset contains financial information of firms in the period of 2002-2015. Table 5.1 depicts the descriptive statistics of all variables for full sample.

Table 5.1
Descriptive Statistics of the Variables

Variables	Mean	Median	Minimum	Maximum	Std. Dev.
ABACC	0,0924	0,0118	-1,9413	3,8954	0,7258
REVENUE	1,7135	1,1582	-0,2793	2,6217	2,1142
∆REVENUE	0,3532	0,1661	-2,8485	23,0014	1,3395
∆REV-∆REC	0,6278	0,0894	-4,7951	1,1516	1,0025
PPE	0,0799	0,0446	0,0000	6,0318	0,3321
ROA	0,1280	0,0271	-0,3864	2,6065	0,3419
ABCFO	0,0106	0,0022	-0,2107	0,2943	0,0330
ABPROD	0,5206	0,2027	-18,4872	6,7449	1,4110
ABOPEXP	1,0088	0,6428	-0,3838	16,9636	1,3867

NOTE *:ABACC* denotes the abnormal levels of accruals and computed as the difference between net profit before extra-ordinary items and cash flow from operations. *REVENUE* is the annual sales. ∆*REVENUE* is the change in sales compared to the previous year. ∆*REV*-∆*REC* depicts the difference between change in sales and change in accounts receivable. *PPE* is gross property and plants ROA denotes the return on asset and computed as the scale of net profit to total asset. ABCFO is abnormal levels of cash flow from operations, ABPROD is abnormal levels of production costs and ABOPEXP denotes the discretionary operating expenses to lagged total assets. Operating expenses is also discretionary expenses and computed as Advertising Expenses + Administration Expenses + Research and Development Expenses.

According to the statistics provided in the table, discretionary accruals estimated by Kothari et al. (2005) is on average 9,24% of the total asset of the previous year with a median of 1,18%. With a range distribution of minimum and maximum, a

72.58% standard deviation, all emphasize that abnormal accruals have a strong impact on firms' financial condition.

Sample statistics offer basic information about the role of sales on managerial discretion during the analysis period. As seen from the table, the mean value of sales is about 171.35% with a 115.82% median and boundary distribution of min and max values is wide ranged. With a very high standard deviation, a changing level through -27.93% and 262.17% sales include an opportunity for managers to manage. The change in revenues, namely change in sales presents an average value of 35.32% with a median of 16.61% and a relatively high standard deviation. Both sales and change in sales variables have relatively high standard deviations and big gaps in minimum and maximum values. Compared to revenues, change in revenues has bigger gaps in min and max levels. Hence, this can be an indicator for the real earnings management through manipulating the sales levels year by year.

An interesting statistical result is that, except cash flow from operations, all real activity-based earnings management items has a wide-range min and max points and high standard deviations. After the assessment of cross sectional analysis and the t-test results, more reliable conclusions would arise; however, it can be already concluded that, earnings management activities through real earnings management would demonstrate different behaviours in sample period.

The distinguishing property of the Kothari, Leone and Wasley (2005)'s accrual-based model is performance indicator. As the measurement of financial performance, performance adjusted model includes ROA as an explanatory variable. According to sample statistics, ROA is approximately 12.80% of the previous year's total assets with a median of 2.71%. Interestingly, ROA has a wide-range of min and max points. This means that discretionary accruals have a large effect on financial performance. Besides this, the standard deviation of ROA is 34.19%.

After determining the descriptive statistics, the distribution structure of the variables have to be tested. First, normality tests have to be conducted. Both cross-sectional regression models variables and event study test variables were tested with

Shapiro-Wilk normality test. An alternative normality test is Kolmogorov-Smirnov which is preferred under little data circumstances. In the literature, Shapiro-Wilk normality test is considered to be more reliable compared to the others (Razali and Wah, 2011, 25; Alva and Estrada, 2009, 1871).

Null hypothesis for the Shapiro-Wilk normality test is;

$H_0 =$ The distribution of the dataset is *normal* under the conf. int. 95%

Table 5.2 given below shows the results of Shapiro-Wilk belonging to all the variables used both in the regression model and event study.

Table 5.2
Shapiro-Wilk Normality Test Results

	N	Statistic	Sig.
ABACC	395	0,512	0,0000
REVENUE	395	0,574	0,0000
∆REVENUE	395	0,324	0,0074
∆REV-∆REC	395	0,093	0,0000
PPE	395	0,046	0,0008
ROA	395	0,077	0,0000
ABCFO	395	0,602	0,0040
ABPROD	395	0,505	0,0000
ABOPEXP	395	0,552	0,0015

Note: The confidence interval is 95%.

According to the test results, all the p-values belonging to variables are below 0.05 ($p<0.05$), thus null hypothesis has been rejected. Namely, it cannot be argued that the distribution of the dataset is normal. Since the distribution structure is not normal, nonparametric methodologies have been used. The correlation between variables has been determined with nonparametric Spearman's Correlation test and the results have been reported in Table 5.3 given below.

Table 5.3
Spearman Correlation Coefficients for Variables

	ABACC	REVENUE	ΔREVENUE	ΔREV-ΔREC	PPE	ROA	ABCFO	ABPROD	ABOPEXP
ABACC	**1,000** .	**-0,007** 0,891	**0,029** 0,572	**-0,028** 0,575	**0,067** 0,187	**-0,125*** 0,013	**-0,162**** 0,001	**0,331**** 0,000	**-0,297**** 0,000
REVENUE	**-0,007** 0,891	**1,000** .	**0,591**** 0,000	**0,214**** 0,000	**-0,045** 0,375	**0,219**** 0,000	**-0,114*** 0,023	**-0,028** 0,576	**0,091** 0,071
ΔREVENUE	**0,029** 0,572	**0,591**** 0,000	**1,000** .	**0,089** 0,076	**-0,058** 0,254	**0,176**** 0,000	**-0,054** 0,285	**-0,016** 0,746	**0,044** 0,388
ΔREV-ΔREC	**-0,028** 0,575	**0,214**** 0,000	**0,089** 0,076	**1,000** .	**0,135**** 0,007	**0,056** 0,269	**-0,045** 0,369	**0,011** 0,832	**-0,003** 0,960
PPE	**0,069** 0,187	**-0,045** 0,375	**-0,058** 0,254	**0,135**** 0,007	**1,000** .	**-0,072** 0,156	**0,038** 0,457	**0,088** 0,081	**0,040** 0,429
ROA	**-0,125*** 0,013	**0,219**** 0,000	**0,176**** 0,000	**0,056** 0,269	**-0,072** 0,156	**1,000** .	**-0,161**** 0,001	**-0,047** 0,355	**0,079** 0,118
ABCFO	**-0,162**** 0,001	**-0,114*** 0,023	**-0,054** 0,285	**-0,045** 0,369	**0,038** 0,457	**-0,161**** 0,001	**1,000** .	**0,109*** 0,030	**0,356**** 0,000
ABPROD	**0,331**** 0,000	**-0,028** 0,576	**-0,016** 0,746	**0,011** 0,832	**0,088** 0,081	**-0,047** 0,355	**0,109*** 0,030	**1,000** .	**0,327**** 0,000
ABOPEXP	**-0,297**** 0,000	**0,091** 0,071	**0,044** 0,388	**-0,003** 0,960	**0,040** 0,429	**0,079** 0,118	**0,356**** 0,000	**0,327**** 0,000	**1,000** .

Note: The numbers displayed in bold characters for each variable are Spearman correlation coefficients and second lines are p-values.
* Correlation is significant at the 0,05 level
** Correlation is significant at the 0,01 level

5.2. ASSUMPTION PROBLEMS OF REGRESSION

In this subsection, the problems that occur when the assumptions are invalidated have been summarized.

5.2.1. Autocorrelation

One of the assumptions of the linear regression is that, error terms which is included in the sample regression model, have to be random and uncorrelated (Yükseltürk, 2006; 186). There has to be no correlation between error terms to avoid the autocorrelation. In statistical terms;

$$E(u_i, u_j) = 0 \quad j \neq i$$

In the condition of $(u_i, u_j) \neq 0$, the statistically significance tests of regression coefficients are affected by autocorrelation (Brooks, 2014, 156). To detect the autocorrelation, Durbin-Watson test has been run in the models. The null hypothesis of the test is;

$H: \rho = 0$ (There is no autocorrelation in the model)

$$\rho = \frac{\sum(u_t - u_{t-1})}{\sum u_t^2}$$

The ρ value given above is used to determine the Durbin Watson parameter d.

$$d = 2(1 - \rho)$$

This d parameter is important to find d_u, d_L values from the d table and determine the existence of autocorrelation (Maddala and Lahiri, 1992, 228). For the detection of autocorrelation, Durbin Watsons test was utilized in this thesis. Under the circumstances of autocorrelation, regression model was to be estimated with the "Newey-West Standard Errors" estimator. Results have been shown in the subsection.

5.2.2. Heteroscedasticity

Another assumption regarding linear regression is that the variance of error terms is constant. When this assumption is not met, namely, the variance of the error

terms differs during observations, the efficiency in using OLS may be substantial and the biased standard errors may lead to invalid estimates (Breusch and Pagan, 1979, 1287). This means that OLS is unbiased. In statistical terms, the constant variance is denoted as;

$$E(u_i^2) = \sigma^2$$

Detecting heteroscedasticity is possible with various test alternatives. The most preferred test is Breusch-Pagan test. The null hypothesis of the test is;

$$H: \delta_1 = \delta_2 = \cdots = \delta_k = 0$$

If the test statistic is greater than the critical value, the null hypothesis is rejected. This means that there is evidence of heteroscedasticity in the model. Besides the critical value, p-value can be also used; if the p-value is smaller than the chosen significance level, e.g. 0.05, then the null hypothesis is rejected (Wooldridge, 2012, 196). If the null hypothesis is rejected, namely if heteroscedasticity exists in the model, model has to be estimated by another estimator. Regression coefficients will be tested with the widely used White Heteroscedasticity Consistent Standard Errors & Covariance estimator under the presence of heteroscedasticity. Results are shown in the subsection.

5.2.3. Multicollinearity

According to Maddala and Lahiri (1992), multicollinearity occurs when independent variables have high intercorrelations. Because another assumption regarding linear regression is that explanatory variables have to be uncorrelated. In this condition, namely if there is a intercorrelation, normal regression techniques result in sensitive parameter estimates to changes in model and current procedures do not provide effective indications (Farrar and Glauber, 1967, 95).

Multicollinearity detection can be done by using the Variation Inflation Factor (VIF) test. This test determines how much the variance is inflated. The VIF is calculated for each predictor as;

$$VIF_j = \frac{1}{1 - R_j^2}$$

where R^2 is the coefficient of determination of the model, if $VIF_j \geq 10$, thus, it can be a sign that there is a multicollinearity problem (Brooks, 2014, 190).

This correlation between the variables can also be seen in Table 5.3 giving the Spearman Correlation results. According to the table, high and significant correlations do not exist between explanatory variables. The highest correlation in the table is the correlation between revenue and change in revenue with a coefficient of 0.591 and p-value less than 1%. When the coefficients and significance levels of the variables are evaluated, it can be indicated that the models utilized are not corrupted by the problem of multicollinearity.

Another significant correlation with revenue is the difference between change in revenue and change in account receivables (ΔREV-ΔREC). There is a positive relationship between them with the p-value less than 1% and coefficient of 0.214. Sales are also associated with ROA where p-value is less than 1% and the coefficient is 0.219. This positive relationship can be expected because increase in sales can also result in another increase in profit and return on asset as well. Gross property and plant is associated with another explanatory variable ΔREV-ΔREC, but with a low correlation of 0.135 and p-value less than 1%.

5.3. TESTS OF HYPOTHESES

In this part, the hypotheses regarding both accrual-based and real activity-based earnings management will be tested and the results will be reported.

5.3.1. Accrual-Based Earnings Management Regression Results

Henceforth, the theoretical framework provided in the prior sections has to be tested for Turkish IPO firms. Accrual-based earnings management activities and real activity-based earnings management activities were tested respectively. First of all, discretionary levels of accruals have to be determined. A cross-sectional performance adjusted model of Kothari et al. (2005) was estimated and the coefficients from this model were utilized to obtain discretionary accrual levels. As demonstrated before, total accruals were calculated as the difference between net profit before extraordinary items and cash flow from operations and used as a dependent variable in the model. Total accruals were estimated as a function of A_{t-1}^{-1}, change in revenues was adjusted to change in receivables, the level of plant, property and equipment and financial indicator ROA. The coefficients and regression results are given in Table 5.4

Table 5.4
Regression Model Results Related to Total Accruals

	Coefficient	**t-statistics**	**p-value**
$1/A_{it-1}$	-10481,2	-0,09	0,128
$(\Delta REV - \Delta REC)/A_{it-1}$	0,301***	12,389	0,000
PPE/A_{it-1}	-0,132***	-17,697	0,000
ROA	0,143***	5,514	0,000
constant	0,025	0,695	0,487
R Square : 0,651 - Adjusted R Square : 0,648 Std. Error of Estimate : 0,296 Durbin-Watson : 2,142 F Statistics : 187,648 Number of Observations : 395 p-value of model: 0,000			

According to the regression results of total accruals, explanatoriness of the model denoted by R^2 is 64% and standard error of estimation is 0.296. This error is quite low compared to Jones (1991), Dechow et al. (1995) and Cohen et al. (2008). The variance test results as F statistics (187,648) and the related p-value (0.000) indicate that the model is statistically significant. As an autocorrelation test, with the reasons detailed above, Durbin-Watson has been used. It is obvious that Durbin-Watson value is 2.142 and this value is too close to 2. Hence, it can be stated that regression model is not contaminated by autocorrelation problem. Heteroscedasticity problem has been tested with Breusch-Pagan-Godfrey (BPG) test and the test's p-value is not statistically significant (p-value = 0,145). This result states that there is no heteroscedasticity assumption problem in the estimation. As emphasized before, this model is also not contaminated by multicollinearity problem according to Spearman correlation test results depicted in Table 5.3. None of the variables show either a positive or a negative high correlation.

The coefficients of the estimation model, t statistics and significance levels are given in Table 5.4. The first variable $1/A_{t-1}$ is not significant. Other variables are significant at the level of 1%. The difference between change in revenue - change in account receivables and performance indicator ROA have a significant and positive relation with total accruals. 1 unit increase in financial performance represented by ROA causes an increase in accruals by approximately 0.3 units. In contrast, plant property and equipment has a negative and significant relation with total accruals. An increase in the plant, property and equipment of 1 unit, causes a decrease of 0.132 units in total accruals. These results are consistent with Ball and Shivakumar (2008), Aybars (2013), and Adıgüzel (2012).

The coefficients above were utilized to obtain nondiscretionary levels of total accruals and the difference between total accruals and nondiscretionary accruals were used as discretionary accruals; namely, managed earnings. Coefficients were placed to the performance adjusted model again to compute managed earnings to test the IPO event.

$$NDA = -10481{,}2(1/A_{t-1}) + 0{,}301((\Delta REV - \Delta REC)/A_{t-1}) - 0{,}132(PPE/A_{t-1}) + 0{,}143(ROA)$$

and;

$$DA = TA - NDA$$

After computing nondiscretionary accruals, discretionary accruals for all firms and all years included in the sample have been determined. Discretionary accruals were utilized to decide how firms' earnings management activities differentiate around the IPO event.

5.3.2. Accrual-Based Earnings Management Event Study Results

With the purpose of testing the hypothesis of the study, the regression error terms that denote the abnormal accruals were tested to determine how they differentiate along periods. After calculating the discretionary or abnormal levels of accruals, first, distribution structure of dataset was tested with Jarque-Bera normality test. The null hypothesis of JB test is;

$$H_0 = the\ distribution\ is\ normal$$

In the situation of JB $>\chi^2$ and p-value < 0.05 null hypothesis has to be rejected and it was decided that distribution of dataset is not normal. The discretionary accruals normality test results show that null hypothesis was rejected and dataset distribution is non-normal. This result states that parametric tests could not be performed in determining accrual based earnings management behaviour of firms around IPO event.

Since normality assumption had not been satisfied, testing earnings management activity through accruals had been tested with *Wilcoxon Sign Rank Test*; which is a nonparametric test. Accruals of firms were calculated as the difference between net profit and cash flow from operations, so due to the structure of accounting and finance, items of statements could not be separated from each other (Rangan, 1998; 118, Aharony et al. 1993; 71 and Aharony et al. 2010; 9). The main assumption of Wilcoxon Sign Rank Test as dependence of samples had been proven. Besides this, Wilcoxon test assumes that paired observations are independently and randomly framed

and also come from the same population. This thesis aims to determine the discretionary accrual to compare the differences of discretionary accruals 2 years prior to initial public offering and 2 years after the event has been tested with Wilcoxon test. The null hypothesis had been proven as; there are no differences in discretionary accruals between, before, and after IPO periods. The periods around offering event had been determined as follows;

2 years before offering	1 year before offering	IPO year	1 year after offering	2 years after offering
$t-2$	$t-1$	t_0	$t+1$	$t+2$

According to Wilcoxon sign rank test, the null hypothesis is based on the acceptance of a significant difference on means of variables. All periods had been compared with the prior or post-IPO ones. Test results are given below in Table 5.5 and the trend of discretionary accruals is given in the graph.

Table 5.5
Wilcoxon Signed Rank Test Results of Discretionary Accruals

	$H_0: t-2=t-1$	$H_0: t-1=t_0$
Negative Rank	5	29
Positive Rank	74	50
z-value	-7,531	-2,903
Asymp. Sig.	0,000	0,004
Null Hypothesis	Rejected	Rejected

	$H_0: t_0=t+1$	$H_0: t+1=t+2$
Negative Rank	77	6
Positive Rank	2	73
z-value	-7,673	-6,510
Asymp. Sig.	0,000	0,000
Null Hypothesis	Rejected	Rejected

Wilcoxon sign rank test results indicated that discretionary accruals differ between periods with a statistical significance. According to negative and positive ranks

results, two years prior to public offering, firms are increasing their discretionary accruals significantly. There is a high and significant difference between the accruals recorded two years before (t-2) and one year before (t-1) IPO periods. The (t-2) period generally comes after an important decision making period about IPO. Hence, this rapid increase slows down in the previous year (t-1) of offering and also it is obvious that discretionary accruals are decreasing significantly after IPO year and this result matches with another case from Turkey researched by Yükseltürk (2006). As seen from Table 5.5, there is a high negative rank in the period (t+1) which is statistically significant. The results are also consistent with Friedlan (1994), Teoh et al. (1998), Li (2006), Roosenboom (2003), Aharony et al. (2010), Chen (2013), Ising (2014) and Miloud (2014).

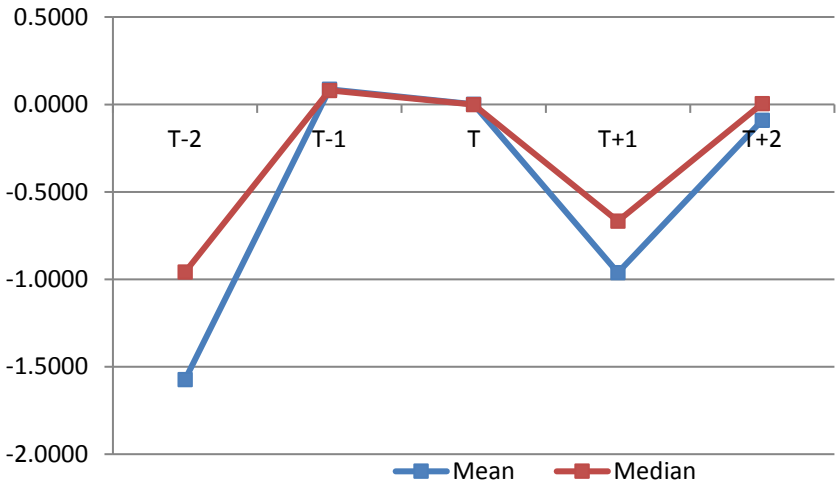

Figure 5.1. Discretionary Accrual Moves Around IPOs in Turkish Firms.

But interestingly, the period (t+2) depicts a different condition. The difference is significant but according to the test results and graph lines given in Figure 5.1 above, firms are in the aim of managing their accruals upwards two years after the offering. According to these results, the hypotheses H_1 *and* H_2 cannot be rejected.

This condition of Turkish firms deserves a thorough investigation in future researches to determine whether there is a predominantly secondary public offering event of firms included in the sample.

5.3.3. Real Activity-Based Earnings Management Regression Results

Accrual-based earnings management had been widely investigated both in international and Turkish content. However, real activity earnings management is a relatively shallow issue in financial literature, especially in Turkish literature. This thesis is the first study that investigates the discretionary real activities around initial public offering. Assimilating Roychowdhury (2006) and its extended version by Cohen and Zarowin (2010) all variables had been determined and the cross-sectional regression model had been constructed to state the real activity earnings management behaviour of firms. In the scope of real activities, three metrics was investigated with their discretionary levels. These metrics are *cash flow from operations, production cost and discretionary (operating) expenses*. The method is the same as accrual-based earnings management. First, regression model was run to detect abnormal levels of all three metrics. Second, to determine the real activity behaviour of firms around initial public event, Wilcoxon Sign Rank Test was utilized to compare discretionary levels among periods around Turkish IPOs.

5.3.3.1 Regression Results of Cash Flow from Operations

The regression model of CFO has been detailed in previous subsections. But as a reminder, it could be stated that total cash flow from operations was estimated as the function of $1/A_{t-1}$, sales scaled by lagged total assets and change in sales scaled by lagged total asset. The statistical notation is as follows;

$$CFO_{it}/A_{it-1} = \alpha_0 + \alpha_1(1/A_{it-1}) + \beta_1(S_{it}/A_{it-1}) + \beta_2(\Delta S_{it}/A_{it-1}) + \varepsilon_t$$

Similar to the accrual-based earnings management detection, this model estimates the total amount of CFO. The coefficients from this model were utilized to determine nondiscretionary –or normal- levels of CFO. The difference between total cash flow from operations and nondiscretionary cash flow from operations calculates the discretionary, namely abnormal levels of CFO. The regression results and coefficients are given in Table 5.6

Table 5.6
Regression Model Results Related to Total CFO

	Coefficient	t-statistics	p-value
$1/A_{it-1}$	2384,8***	4,792	0,000
S_{it}/A_{it-1}	0,640***	7,310	0,000
$\Delta S_{it}/A_{it-1}$	-0,871*	-5,573	0,050
constant	-0,319***	-1,957	0,000
R Square : 0,270 - Adjusted R Square : 0,266			
Std. Error of Estimate : 0,319			
Durbin-Watson : 1,918			
F Statistics : 95,652			
Number of Observations : 395			
p-value of model : 0,000			

*** p-value < 0, 01 - ** p-value < 0,05 - * p-value < 0,1

Regression results state that the coefficient of determination denoted by R^2 is approximately 41%, namely, the proportion of dependent variable variance predicted from independents is 41%. The F statistics denotes the variance test results (95,652) and related p-value (0.000) denotes that the model is statistically significant. According to the regression coefficients, it can be stated that cash flow from operations and sales have a positive relationship. Whilst the sales increase by 1 unit, this makes cash flow from operation 0.640 units. From this result, to obtain consistent estimators, autocorrelation, heteroscedasticity and multicollinearity have to be tested. As an autocorrelation indicator, Durbin-Watson value is (1,918) too close to 2 similar to the total accrual estimation. This value states that no autocorrelation problem exists in the model.

Another assumption problem Heteroscedasticity was detected by Breusch-Pagan-Godfrey Heteroscedasticity test. The null hypothesis of the test is based on all variances of variables are constant as;

$$H: \delta_1 = \delta_2 = \delta_3 = \cdots = \delta_k = 0$$

This test will be run by Eviews 9.5 statistical software program. The test result accepted null hypothesis of BPG test with the p-value 0.465 and it is stated that variances of variables are constant. Hence, this model is also not contaminated by heteroscedasticity problem. Multicollinearity problem can be detected by correlation matrix conducted by using independent variables. According to correlation analysis, there is no high and significant correlation among variables. This result leads us to the opinion that multicollinearity problem does not exist in the model. Under these circumstances, it can be emphasized that model estimators are significant, consistent and reliable.

Similar to discretionary accruals calculation, the regression model of CFO gives the total amount. Coefficients from estimations have to be used to obtain discretionary levels of CFO. They were replaced to the model and so the non-managed portion of CFO was detected;

$$NCFO = (2384{,}8)(1/A_{it-1}) + (0{,}640)(S_{it}/A_{it-1}) - (0{,}871)(\Delta S_{it}/A_{it-1})$$

$$ABCFO = Total\ CFO - NCFO$$

After calculating the normal levels of CFO utilizing the coefficients determined above, abnormal levels of CFO were calculated as total CFO less NCFO for all firms included in the sample. Discretionary CFO differentiations among years around initial public offerings event were tested in the following subsections in the same way with discretionary accruals.

5.3.3.2 Regression Results of Production Costs

Production cost during the year was calculated as the sum of the cost of goods sold and change in inventory ($COGS + \Delta INV$). Roychowdhury had run the regression model based on production cost as a function of total assets, sales and change in lagged sales, as well. As a reminder, the model was;

$$PROD_{it}/A_{it-1} = \alpha_0 + \alpha_1(1/A_{it-1}) + \beta_1(S_{it}/A_{it-1}) + \beta_2(\Delta S_{it-1}/A_{it-1}) + \varepsilon_{it}$$

This amount of production cost is the total amount similar to the accruals and the CFO. Coefficients from model were used to calculate abnormal levels, namely managed levels. The coefficients and regression results are given in Table 5.7.

Table 5.7
Regression Model Results Related to Total Production Cost

	Coefficient	t-statistics	p-value
$1/A_{it-1}$	-815525,2***	-4,550	0,000
S_{it}/A_{it-1}	0,605***	14,829	0,000
$\Delta S_{it-1}/A_{it-1}$	-0,539***	-8,573	0,000
constant	0,454***	5,873	0,000
R Square : 0,367 - Adjusted R Square : 0,362			
Std. Error of Estimate : 0,436			
Durbin-Watson : 2,218			
F Statistics : 78,102			
Number of Observations : 395			
p-value of model : 0,000			

*** p-value < 0, 01 - ** p-value < 0,05 - * p-value < 0,1

According to regression model, R Square value is 0.367. This means that the change in dependent variable can be explained by independent variables with the portion of 37% and p-value of model is under 1%; hence, it can be stated that the regression model is statistically significant. As in the cash flow from operation regression analysis, production costs also have negative relation with change in sales. However, the same relation does not exist with sales/revenues. Contrary to the change in sales, as expected, only sales have a positive and significant relation with production cost. An increase in sales per 1 unit causes another increase in sales about 0.605 and from this result it can be emphasized that sales have a high impact on production costs. Besides this, change in sales causes a decrease in production cost by about 0.539 units.

Assumption problems with the model have also been detected. Durbin-Watson value is around 2 levels and this prevents us from the assertion that an autocorrelation problem exists. Heteroscedasticity problem has been detected with Breusch-Pagan-Godfrey (BPG) test and after estimating the equation, running BPG has been given a *p*-

value 0.199 and F-statistics with 1.269; hence, this result proves that heteroscedasticity problem does not contaminate the model because p-value is not significant. For multicollinearity problem, correlation analysis for independent variables is not necessary because these variables are the same as the independent variables of cash flows from operation equation.

The coefficients from regression model have been utilized to determine the discretionary or abnormal or managed levels of production costs. Replacing the coefficients from the model, total amount of production cost was calculated. Getting the difference of total and nondiscretionary production cost will lead to managed costs.

$$NPROD/A_{it-1} = (-815525{,}2)(1/A_{it-1}) + (0{,}605)(S_{it}/A_{it-1}) - (0{,}539)(\Delta S_{it-1}/A_{it-1})$$

$$ABPROD = Total\ PROD - Nondiscretionary\ PROD$$

Prior to initial public offerings, discretionary production cost movements was detected with event study.

5.3.3.3 Regression Results of Operating Expenses

Operating expenses (or discretionary expenses) –as explained before- are the sum of the advertising expenses, R&D expenses and selling, general and administrative expenses. If managers want to increase their earnings, operating expenses can be a useful opportunity to achieve this purpose. Hence, these expenses are worth investigation. As emphasized before, operating expenses estimated as a function of reversed lagged total asset and lagged sales. Contrary to production cost, operating expenses do not include change in sales, because operating expenses are related to current period and do not concern previous periods (Cohen and Zarowin, 2010, 31).

$$DISEXP_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta(S_{t-1}/A_{t-1}) + \varepsilon_t$$

The most concerned disadvantage of operating expenses regression model was that only two explanatory variables were included in the estimation model. This situation may cause a lower R Square value and a high standard deviation of estimation

compared to other real activity earnings management metrics. Regression results belonging to operating expenses are given below.

Table 5.8
Regression Model Results Related to Total Operating Expenses

	Coefficient	t-statistics	p-value
$1/A_{it-1}$	18097,56	0,711	0,477
S_{it-1}/A_{it-1}	0,218***	5,598	0,000
constant	0,117***	11,319	0,000
R Square : 0,08 - Adjusted R Square : 0,07			
Std. Error of Estimate : 0,162			
Durbin-Watson : 1,906			
F Statistics : 17,669			
Number of Observations : 395			
p-value of model : 0,000			

*** p-value < 0, 01 - ** p-value < 0,05 - * p-value < 0,1

According to estimation results, as expected, R Squared value is quite low (8%). This condition does not mean that the model is statistically insignificant but explanatory variables have an 8% effect on dependent variable. Regression model's p-value is below 1% and F-statistics is 17,669 so it can be stated that the estimation is statistically significant. Beyond explanatory variables, lagged sales to lagged total assets have a positive and statistically significant relation (0,021). The Durbin-Watson value emphasizes that no autocorrelation exists in the model. For detecting heteroscedasticity, BPG test was utilized. BPG test results tell us that Prob. Chi-Square is 0,000 which is a heteroscedasticity signal. Estimation model is contaminated by heteroscedasticity problem. To eliminate this problem and to gain consistent estimators, White Heteroscedasticity-Consistent Standard Errors & Covariance test was run. After this new estimation, the coefficients were determined again and the results are given below;

Table 5.9
Regression Model Results Estimated with White Heteroscedasticity Test

	Coefficient	t-statistics	p-value
$1/A_{it-1}$	18097,56	0,417	0,676
S_{it-1}/A_{it-1}	0,021**	5,598	0,043
constant	0,117***	2.025	0,000
R Square : 0,08 - Adjusted R Square : 0,07			
Std. Error of Estimate : 0,162			
Durbin-Watson : 1,906			
F Statistics : 17,669			
Number of Observations : 395			
p-value of model : 0,000			

*** p-value < 0, 01 - ** p-value < 0,05 - * p-value < 0,1

Utilizing the White test helped to eliminate the negative effects of heteroscedasticity from the model and to obtain consistent estimators. According to the new regression results, lagged sales have a positive, low and significant effect on operating expenses. 1-unit increase in lagged sales causes 0.021-unit increase on operating expense. The operating expenses amount indicates that the total value and discretionary operating expenses need to be calculated with coefficients. Similar to other calculated metrics, the regression model was written again as estimation (In his model, Roychowdhury (2006) uses the discretionary expense title for the operating expenses);

$$DISEXP_t/A_{t-1} = (18097{,}5)(1/A_{t-1}) + (0{,}021)(S_{t-1}/A_{t-1})$$

$$ABOPEXP = Total\ OPEXP - NOPEXP$$

All these regression results lead to the calculation of abnormal levels of real activity metrics around IPO. Sales/Revenue effect results on CFO, production cost and operating expenses are consistent with the real activity studies of Li (2012), Liu (2011), Knott (2012), Francis and Hassan (2011). Francis and Hassan have investigated the real earnings management of countries and according to their results, with a 4.79 score over 10.00; Turkey has got an average abnormal accruals as 0.052 and average abnormal

production cost (as real activity performer) as 0.062. According to the findings of the research, the average abnormal accruals are 0.057 and abnormal value of production cost is 0,053.

Abnormal levels of real activity metrics were calculated in order to understand the real activity earnings management behaviours of firms around initial public offering event. Similar to the accrual-based earnings management, differences of abnormal metric levels was tested for prior and following years of IPO. According to dataset distribution structure, nonparametric Wilcoxon Sign Rank Test was run. The test results, graphs and commands are given in the following subsection.

5.3.4. Real Activity Based Earnings Management Event Study Results

In this part of the thesis, the event study results belonging to real activity-based earnings management behaviours of firms during initial public offering process was determined. Abnormal levels of three metrics have been calculated in the previous section. The values gained from the regression model was used as a parameter to decide if the managers manage their earnings prior to or following IPOs.

5.3.4.1. Cash Flow From Operations Event Study Results

All calculations about real activity metrics were also tested with Jacque-Bera Normality test and it was found that the distribution of dataset was not normal; hence, nonparametric tests have been utilized. Similar to the accrual-based earnings management analysis, periods were determined around the IPO event t_0 and named as$(t-2), (t-1), t_0, (t+1)\ and\ (t+2)$.

The null hypothesis has been identified as follows; there are no differences in discretionary CFO between the periods prior to or following IPO. Null hypothesis is also based on the acceptance of a statistically significant difference among the means of variables. The results are given in Table 5.10.

Table 5.10
Wilcoxon Signed Rank Test Results of Discretionary CFOs

	$H_0 : t-2 = t-1$	$H_0 : t-1 = t_0$
Negative Rank	61	19
Positive Rank	15	60
z-value	-5,950	-5,022
Asymp. Sig.	0,000	0,000
Null Hypothesis	Rejected	Rejected

	$H_0 : t_0 = t+1$	$H_0 : t+1 = t+2$
Negative Rank	30	36
Positive Rank	49	43
z-value	-2,698	-0,271
Asymp. Sig.	0,007	0,786
Null Hypothesis	Rejected	Cannot be Rejected

According to the Wilcoxon test, there is a statistically significant difference between discretionary CFO among periods (t-2) and (t-1). Most of the firms decrease their CFOs downward two years prior to IPO. However, during the previous year of IPO, discretionary CFOs demonstrate a remarkably rapid increase. This increase slows down at the IPO and in the following year and two years after IPO, discretionary CFOs come to normal levels and there is no significant difference between (t+1) and (t+2). These differences can be seen in a trend line in Figure 5.2.

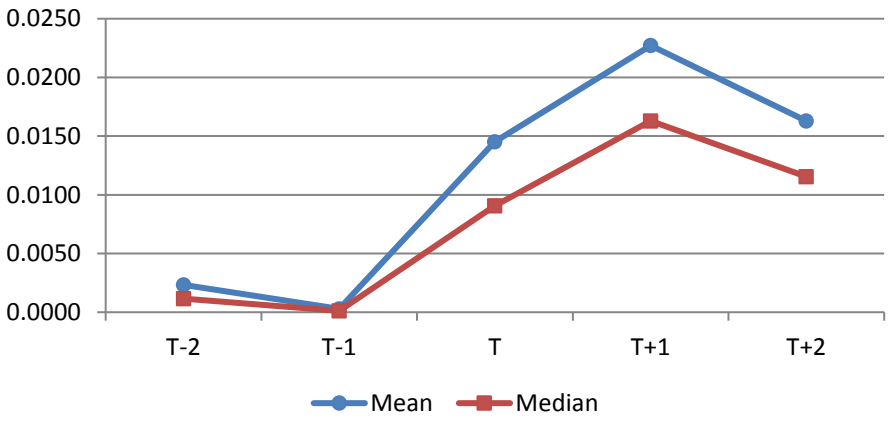

Figure 5.2. Discretionary CFO Moves around IPOs in Turkish Firms

Beyond all explanatory variables of regression model, sales have a high, positive and significant relation (0.640) with CFOs; thus, it can be stated that managers manage their cash flows from operations by utilizing the increase on sales. Price discounts or deeply marketing operations can be effective on boosting sales. This result has been found in previous researches in the literature and is consistent with Zang (2006), Cohen and Zarowin (2010), Armstrong et al. (2008), Ball and Shivakumar (2008) and Alhadab et al. (2015). As emphasized by Alhadab et al. (2015) as well, these results show that firms have incentive to manage their cash flows from operations upward one year before and after the IPO (event year -1 and event year +1).

According to these results, the hypotheses H_{3A} cannot be rejected but H_{4A} is rejected.

5.3.4.2. Production Costs Event Study Results

All variables used in the empirical analysis have to be tested by non-parametric tests because of their distribution structure. Similar to the abnormal levels of cash flow from operations, abnormal levels of production costs was tested with Wilcoxon Signed Rank Test. The discretionary production costs have been determined with regression analysis and time line was defined as in the accruals and CFO. It will be beneficial to remind that production cost has been defined as the sum of the cost of goods sold and the change in inventory (COGS + ΔINV).

The null hypothesis has been identified as follows; there are no differences in discretionary Production Cost between the periods prior to or following IPO and null hypothesis was also based on the acceptance of a statistically significant difference among the means of variables. The results are given in Table 5.11 and the trend line is given in Figure 5.3.

Table 5.11
Wilcoxon Signed Rank Test Results of Discretionary Production Costs

	$H_0 : t-2 = t-1$	$H_0 : t-1 = t_0$
Negative Rank	13	44
Positive Rank	66	35
z-value	-6,989	-2,131
Asymp. Sig.	0,000	0,033
Null Hypothesis	Rejected	Rejected

	$H_0 : t_0 = t+1$	$H_0 : t+1 = t+2$
Negative Rank	73	13
Positive Rank	6	66
z-value	-7,350	-6,138
Asymp. Sig.	0,000	0,000
Null Hypothesis	Rejected	Rejected

According to Table 5.11, two years prior to IPO, 66 firms are increasing their discretionary production cost with a z-value of -6,989 and statistically significant at the level of confidence interval 1%. This is an unexpected result because high costs cause low profit and even though firms take the advantage of tax issues, low profit cannot be a desirable matter. In the (t-1) period, abnormal levels of production costs are significantly different from the event year (t). However it is obvious that (t-1) period is not as efficient as (t-2) period in abnormal production cost because negative and positive ranks are too close to each other in the confidence interval of 5% and with the z-value of -2,131. 44 firms decrease discretionary production costs and 35 firms increase them. An expected result has been realized after the initial public offering. In the (t+1) period most of the abnormal production costs decrease rapidly as seen in the trend line and just 6 firms show a behaviour in the opposite direction. The increase in the production cost two years after the offering (t+2) has to be explained by global or sectoral events or conjecture. These results show that; the hypotheses H_{3B} and H_{4B} cannot be rejected.

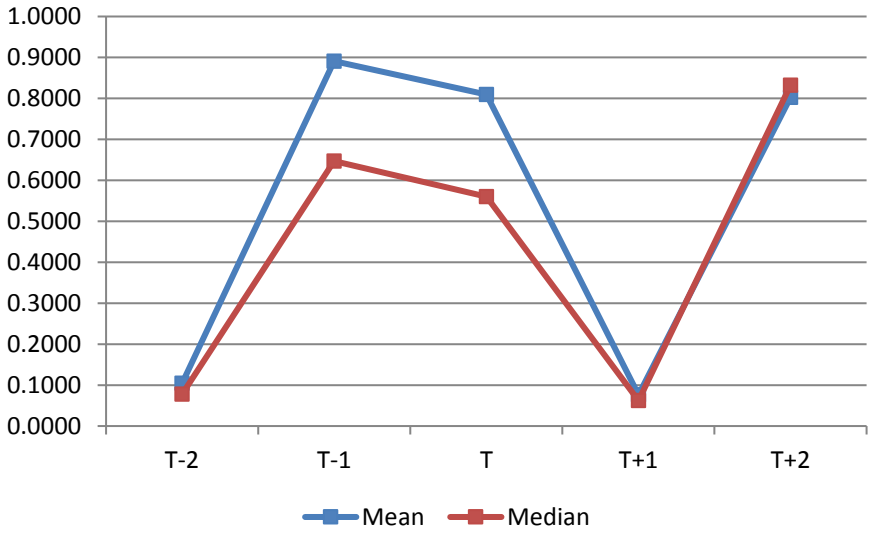

Figure 5.3. Discretionary Production Cost Moves around IPOs in Turkish Firms

Both discretionary levels of cash flows and production costs indicate that Turkish firms use earnings management through real activities based on CFO and production. Discretionary expenses, namely operating expense results have been detailed in the following subsection. Which method is mostly used and effectiveness of the preferred method was shown by z-values. A general sum and comparison with accrual based earnings management were discussed in conclusion.

5.3.4.3. Operating Expenses (Discretionary Expenses) Event Study Results

Detecting discretionary operating expenses is determined by testing the null hypothesis which has been identified as; there are no differences in discretionary Operating Expenses between the periods prior to or following IPO and the null hypothesis were also based on the acceptance of a statistically significant difference among the means of variables. The results are given in Table 5.12 and the trend line is given in Figure 5.3.

Table 5.12
Wilcoxon Signed Rank Test Results of Discretionary Operating Expenses

	$H_0 : t-2 = t-1$	$H_0 : t-1 = t_0$
Negative Rank	69	27
Positive Rank	10	52
z-value	-6,475	-2,839
Asymp. Sig.	0,000	0,005
Null Hypothesis	Rejected	Rejected

	$H_0 : t_0 = t+1$	$H_0 : t+1 = t+2$
Negative Rank	58	16
Positive Rank	21	63
z-value	-4,853	-4,178
Asymp. Sig.	0,000	0,000
Null Hypothesis	Rejected	Rejected

According to test results, it can be said that differences in discretionary levels of operating expenses are statistically significant. Under the circumstances of confidence interval is below 1%, all periods; both prior to and after the initial public offering is significant. In the two years before the event period (t-2), 69 firms have increased their abnormal operating expenses with the z value of (-6,475). This is a very close result to abnormal production cost z-value (-6,989) but is a stronger result compared to cash flow from operations with z-value (-5,950). One year before the event, interestingly, there is a positive trend about abnormal levels as unexpectedly. The impact of these levels is statistically significant in the level of 1%; however, z-value (-2,839) is not as strong as those of the other periods. After the IPO, managed operating expenses were rapidly increased as expected to boost profits and stock prices. This result is expected and consistent with the literature background as emphasized below. According to this result, the hypothesis H_{3C} and H_{4C} cannot be rejected.

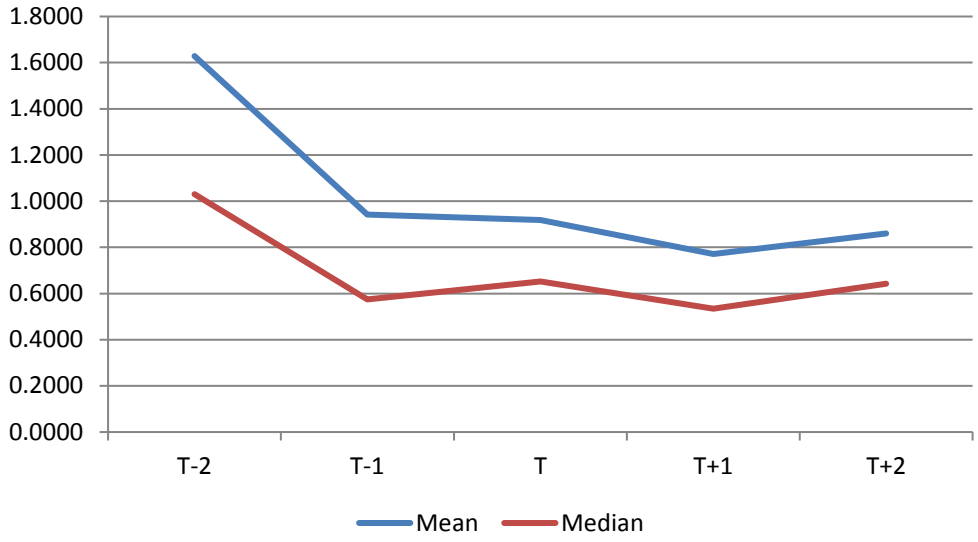

Figure 5.4. Discretionary Operating Expense Moving around IPOs in Turkish Firms

In the empirical analysis of this thesis, event study analysis results match with those of most academic studies in the literature. In Turkey, studies based on REM are nearly close to zero. According to regression and event study analysis results, it is found that Turkish firms manage their earnings by utilizing both accrual and real-activity based earnings management. However, it can be said that by taking in the consideration Wilcoxon Signed Rank Test z-values, most of the firms prefer accrual-based earnings management compared to real activity-based earnings management, namely accrual based earnings management is a more utilized method. It seems that real activity based earnings management will be a new method to gain opportunities in various eras in Turkey like international applications determined in many studies. In his study which determines the initial credit rating and real earnings management activities, Zhao (2010) finds that firms manage their production costs and operation expenses pre-SOX, as well. Furthermore, Franz et al. (2014) emphasized that firms used more real earnings management around important events such as credit rating changes and other events similar to Ali and Zhang (2008), Gong and Sun (2008), Jung et al (2013) and Francis et al (2011).

6. CONCLUSION

The aim of the study is to make a contribution to the literature about earnings management practices during initial public offerings. Earnings management is composed of accrual-based and real activity-based activities. In the literature, the existence of a significant amount of accrual earnings management research during initial public offering process requires investigation on real activity earnings management, as well. Nevertheless, this thesis aims to determine both accrual and real activity-based earnings management activities of Turkish non-financial firms which have decided to going public for the first time. In this context, this thesis is the first study in Turkey that investigates the accrual and real earnings management together and focuses on contributing to international and Turkish earnings management literature with might and main.

The purposes of interest and objectives vary for different groups of stakeholders on firms; nevertheless, it can be stated that shareholder desires high profit, investor desires high dividends and manager desires high bonuses and salaries. Therefore, earnings management practices performed by managers can be seen as a tool to achieve these specific objectives and motives. According to agency theory, there is always a conflict between shareholders and managers; hence, this conflict may cause pressure on managers. This pressure can lead managers to produce inadequate and pseudo financial data to obtain the most favourable economic results. Besides this, outsiders have to be contented with the information declared by the management and take actions based on this information. It can be stated that financial statements belonging to the firm have vital importance for investment decisions of shareholders, potential investors and government. Whilst financial statements are so important for outsiders, earnings management activities can mitigate the reliability of the results of accounting. Although earnings management destroys the real consequences of the financial condition of a firm, these practices cannot be accepted as fraud. Earnings management is structurally in the legal frame of accounting rules and principles. These

practices are implementations of accounting principles in different methods or techniques and cannot be adopted as fraud.

Accounting and finance literature indicates that managers appeal earnings management practices during important events such as mergers, initial public offerings, seasoned public offerings and initial credit ratings etc. These events are "once or twice in a lifetime" events and have strategic importance for the firm. This thesis focuses on the earnings management practices of management during the initial public offering process and generates significant theoretical and practical implication by empirical analysis. Managers have a significant triggering effect on managing earnings prior to IPO with respect to increasing sources with competition power and high reputation which comes from strong financial condition. Besides this, academic studies state that earnings management practices during post-IPO process gives an opportunity to attain high stock returns. These tendencies of managers cannot be considered as illegal; however, they can be considered as faith and trust eroding practices for investors and other outsiders.

The empirical part of the thesis investigates the earnings management practices of firms during IPO process and tests the existence of the prominent hypothesis. The hypotheses of the thesis are conducted on the basis of earnings management practices in the periods of two years before the IPO, during the IPO year and two years after the IPO event. Earnings management concept is investigated in both accrual-based and real activity-based course. The dataset of the research covers the firms listed for the first time on Borsa Istanbul (BIST) during the ten year period between 2004 and 2013. Even though the initial sample was comprised from 120 IPO firms, the final sample is made up of 79 firms and 395 firm-year observations covering all industries except financial institutions. As mentioned before, earnings management measurements were made with discretionary accruals and real operations of firms. Discretionary accruals are measured by the performance adjusted cross-sectional model developed by Kothari, Leone and Wasley (2005) also performed by Adıgüzel (2012), Aybars (2013) and discretionary levels of real activities are measured by Roychowdhury (2006)-based Cohen and Zarowin (2010) also performed by Ge and Kim (2014) etc. This study has the feature of

being the first one which investigates the real earnings management practices of Turkish firms.

According to cross-sectional regression analysis results, with a high explanatory level, accruals have a significant and positive relationship with the difference between change in revenues and change in accounts receivable. Also, accruals have a significant and negative relationship with plant, property and equipment item. Another explanatory variable which has a significant relation with accruals is return on asset (ROA). Accruals and ROA have a positive relationship with total accruals in a statistically significant manner. Besides this, real earnings management cross-sectional regression results indicate that, cash flow from operation has a positive and significant relation with sales and has a negative and statistically significant relation with change in sales. Similar to cash flow from operations, production cost has the same relations with sales and change in sales. There is a positive relationship between production cost and sales, also a negative relationship with change in sales and both relations are statistically significant. The last indicator of real activities is discretionary, namely operating expenses have a positive and statistically significant relation with sales. All these variables have been scaled by lagged total asset in order to eliminate the effect of firm size and discretionary levels of the variables have been calculated by using the coefficients from the regression models.

The major findings of the study with respect to determining the earnings management practices during the IPO process has obtained from event study analysis. The process is separated to three periods; two years prior to IPO, the IPO year and two year after the IPO event. According to normality tests, it has found that the distribution of variables are not normal so non-parametric tests have been run. According to event study methodology and dataset structure, the earnings management behaviour of management has been tested with Wilcoxon Signed Rank Test. The findings of the relevant test evidence that Turkish firms manage their earnings upwards rapidly through discretionary accruals two years prior to going public and this abnormal increase slows down one year before the IPO and after the IPO, discretionary accruals level decreases rapidly to the normal levels. An interesting result belongs to Turkish IPOs is that, two

years after IPO, firms begin to increase their accruals rapidly and it can be stated that managers manage earnings upwards in order to boost their stock prices and this was the anticipated result.

The important question of the empirical analysis is; "do Turkish firms manage their earnings during IPO process through their real activities?" Wilcoxon Signed Rank Test results provide evidence that firms going public for the first time manage their discretionary cash flow from operations downwards two years before the event. In contrast, one year before the event and in the event year, discretionary cash flows are managed upwards in a statistically significant manner. These conditions can cause affirmative results for corporations in order to obtain remarkable proceeds during the IPO. Two years after the event, firms do not manage real activities through cash flows according to test results. Another real activity item is production cost and Wilcoxon results indicate that Turkish firms decrease their production cost in order to manage their earnings downward around the IPO event. One year after the offering, production cost comes to pre-IPO normal levels but interestingly, firms increase their production cost in the period of the event. The last item to manage earnings upwards is operating expenses. The test results have proven that firms going public for the first time decrease their discretionary operating expenses significantly prior to IPO and after the event these expenses come to their normal levels and two years after the IPO, firms manage their operating expenses upwards similar to the production costs.

All these results state that Turkish firms manage their earnings in the initial public offering process in order to obtain remarkable proceeds. Hence, this is an abrasion in the investors' trust to the capital markets. Since potential investors cannot distinguish the earnings managed firms from the others. On the other hand, earnings management activities give disadvantages to the firms which decide to go public for the first time without managing their earnings. This situation hinders the development of capital markets and causes an anxiety to firms which decide to go public. To generate a reliable investment environment in capital markets, a mechanism that provides distinction between firms which manage their earnings and others has to be created. All counterparties existing in the financial reporting process have to take precaution in

order to contribute developments in financial markets. Besides this, in an attempt to inform investors about a firm and the market, prospectuses can be prepared in a more informative, understandable and retroactive manner. Furthermore, prospectuses can contain a chapter in order to determine the risks of the conjecture, market and the firm. A truly-prepared corporate governance compliance report can be included in the prospectus. The relationship between IPO firm, intermediary firm and the independent audit firm can be arranged by the authorities. Another suggestion could be recorded as; free float rate and the presentation rate of the minority can be increased to prevent the earnings management practices.

Another suggestion for future research could be stated as conducting a comparative study with other developing countries in a similar framework. Last but not least, Turkey could increase the number of publicly traded firms to obtain a more informed and reliable capital market. An alternative option to conduct this mechanism is to strengthen the financial literacy level of the country.

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