

**THE ROLE OF CORPORATE GOVERNANCE
ON EARNINGS MANAGEMENT:
QUARTERLY EVIDENCE FROM TURKEY**

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
IZMIR UNIVERSITY OF ECONOMICS

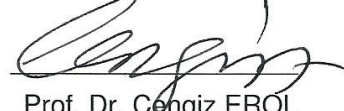
BY

YASEMİN KARAİBRAHİMOĞLU

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF
DOCTOR OF PHILOSOPHY
IN
BUSINESS ADMINISTRATION

DECEMBER, 2010

APPROVAL OF THE GRADUATE SCHOOL OF SOCIAL SCIENCES



Prof. Dr. Cengiz EROL
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Doctor of Philosophy.



Prof. Dr. Serdar ÖZKAN
Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Doctor of Philosophy.



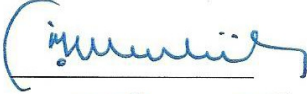
Prof. Dr. Serdar ÖZKAN
Supervisor

Examining Committee Members

Prof. Dr. Rüstem HACİRÜSTEMOĞLU



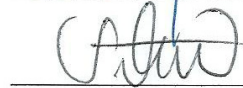
Prof. Dr. Mevlüt KARAKAYA




Prof. Dr. Can ŞIMGA MUĞAN



Prof. Dr. Serdar ÖZKAN



Assist. Prof. Dr. Çağnur KAYTMAZ BALSARI



ABSTRACT

THE ROLE OF CORPORATE GOVERNANCE ON EARNINGS MANAGEMENT: QUARTERLY EVIDENCE FROM TURKEY

Karaibrahimoğlu, Yasemin

PhD in Business Administration,
Department of Business Administration

Supervisor: Prof. Dr. Serdar ÖZKAN

November 2010, 325 pages

Earnings management is an important corporate issue that has attracted the attention of many researchers. Earnings numbers are more likely to be reliable and relevant when earnings management opportunities are controlled. Corporate governance and external audit quality are, therefore, two important controlling and monitoring mechanism that are presumed to constrain earnings management and enhance the financial reporting quality. In this context, this study attempts to contribute to corporate governance and earnings

management literature by empirically examining the relationship between corporate governance mechanisms, board of directors and ownership structure and earnings management. More specifically, it aims to study the relation between corporate governance and earnings management on a quarterly basis controlling for external audit quality and direction of earnings management.

The research utilizes a panel data analysis methodology using a sample of 2152 firm-quarter observations from Istanbul Stock Exchange (ISE) between the years 2006-2009. Overall findings suggest that firms audited by Big-4 and industry specialist auditors have lower discretionary accruals and longer audit firm tenure constrains earnings management. Moreover, there is a strong association between external audit quality and internal corporate governance mechanisms implies that firms' auditor choice in terms of Big-4 and audit firm industry specialisation is affected by internal corporate governance mechanisms. Finally, this study provides evidence on the association between internal corporate governance mechanisms and earnings management, but the direction and magnitude of the association is highly related with audit quality, the use of income-increasing or income-decreasing discretionary accruals and financial quarters.

Keywords: Quarterly Earnings Management, Corporate Governance, Audit Quality, Interim Reporting, Turkey

ÖZET

KURUMSAL YÖNETİMİN KAZANÇ YÖNETİMİ ÜZERİNDEKİ ROLÜ: TÜRKİYE'DEN ÜÇ AYLIK DÖNEMLER İTİBARIYLA BULGULAR

Karaibrahimođlu, Yasemin

İşletme Doktora,

İşletme Yönetimi Bölümü

Danışman: Prof. Dr. Serdar ÖZKAN

Kasım 2010, 325 sayfa

Kazanç yönetimi birçok arařtırmacının ilgisini çeken önemli bir kurumsal olgudur. Kazanç yönetimi fırsatları kontrol altına alındığı takdirde kazanç rakamlarının daha güvenilir ve ihtiyaca uygun olması muhtemeldir. Bu sebeple, kurumsal yönetim ve denetim kalitesinin kazanç yönetimini kısıtlayan ve finansal raporların kalitesini arttıran iki önemli kontrol ve gözetim mekanizması olduğu varsayılmaktadır. Bu kapsamda, bu çalıřma yönetim kurulu ve ortaklık yapısının ihtiyari tahakkuklar üzerindeki rolünü ampirik olarak arařtırarak, kurumsal

yönetim ve kazanç yönetimi literatürüne katkıda bulunmayı amaçlamaktadır. Daha detaylı olarak, çalışma kurumsal yönetim ve kazanç yönetimi arasındaki ilişkiyi dış denetim kalitesi ve kazanç yönetiminin yönünün bu ilişki üzerindeki etkisini de kontrol ederek üç aylık dönemler itibariyle araştırmayı amaçlamaktadır.

Araştırmada, 2006-2009 yılları arasında İstanbul Menkul Kıymetler Borsası'ndan (İMKB) 2152 firma-üç aylık dönem verileri kullanılarak panel veri analizi yöntemi uygulanmaktadır. Genel bulgular 4 Büyükler ve endüstride uzmanlaşmış denetim firmaları tarafından denetlenen firmaların daha az ihtiyari tahakkuk kullandıklarını ve denetim firmasının denetlenen firma ile olan toplam iş ilişkisinin süresinin kazanç yönetimini kısıtladığını ortaya koymaktadır. Ayrıca, dış denetim kalitesi ve içsel kurumsal yönetim mekanizmalarının arasında güçlü bir ilişki vardır, buna göre firmaların 4 Büyükler ve endüstriyel uzmanlığı olan denetçi seçimlerinde içsel kurumsal yönetim mekanizmaları tarafından etkilenmektedir. Son olarak, bu çalışma içsel kurumsal yönetim mekanizmaları ve kazanç yönetim arasında bir ilişki olduğunu gösteren bulgular sunmaktadır. Ancak bu ilişkinin yönü ve büyüklüğü, denetim kalitesi, kazanç artırıcı ya da kazanç azaltıcı ihtiyari tahakkukların kullanımı ve raporlamanın yapıldığı mali dönem ile yakından ilişkilidir.

Anahtar Kelimeler: Üç aylık dönemler itibariyle Kazanç Yönetimi, Kurumsal Yönetim, Denetim Kalitesi, Ara Dönem Raporlama, Türkiye

To Firat

To my family

ACKNOWLEDGMENTS

I am grateful to my thesis supervisor, Professor Dr. Serdar Özkan and international advisor Prof. Dr Steven Young for all the encouragement, good advices and for always pointing me in the right direction. Thanks also to my thesis committee members Prof. Dr. Mevlüt Karakaya and Assoc. Prof. Dr. Orhan Çelik for their remarkable recommendations for my dissertation research and to Prof. Dr. Alev Katrinli for her guidance and unlimited support throughout my doctoral studies.

My special thanks goes to my dear spouse Firat Karaibrahimoğlu, for his unbelievable support to keep me focused on my research, his self-sacrifice to survive my PhD, his faith in me and his encouragements that makes me happy all the time. Thanks also to my family for their continues support, understanding and love.

Thanks to my PhD colleagues and dear friends, Ece Acar and Theodosia Konstantinidi. This thesis would not have been possible without your help, support and encouragement and of course our coffee breaks. Thanks to Can Özkurt for his friendship and faith in me. Many thanks also to all my friends who always support me although they have difficulties to understand the meaning of the extraordinary effort that I put on my doctoral studies.

Finally, I acknowledge financial contribution from The Scientific and Technological Research Council of Turkey (TÜBİTAK) for my PhD studies supported by BİDEB 2211 and my PhD dissertation research in Lancaster University supported by BİDEB 2214 and Izmir University of Economics. Also thanks to Lancaster University, Management School for the opportunity they provided through research seminars and the databases for my PhD dissertation.

Yasemin Karaibrahimoğlu

December, 2010

TABLE OF CONTENTS

ABSTRACT	III
ÖZET	V
ACKNOWLEDGMENTS	VIII
TABLE OF CONTENTS	X
LIST OF TABLES	XIII
LIST OF FIGURES	XVI
LIST OF ABBREVIATIONS	XVII
CHAPTER 1: INTRODUCTION	1
1.1 Introduction	1
1.2 Motivations and Contributions of the Research.....	6
1.3 Research Objectives and Research Questions.....	11
1.4 Scope and Research Methodology of the Study.....	13
1.5 Structure of the Thesis	15
CHAPTER 2: OVERVIEW OF TURKISH ACCOUNTING AND LEGAL ENVIRONMENT	17
2.1 Introduction.....	17
2.2 Capital Market	18
2.3 Accounting and Auditing Environment.....	21
2.4 Corporate Governance	26
2.5 Summary.....	31
CHAPTER 3: A REVIEW OF THE LITERATURE ON EARNINGS MANAGEMENT	33
3.1 Introduction.....	33
3.2 Definition of Earnings Management.....	34
3.3 Earnings Management Incentives.....	38
3.3.1 Capital Market Incentives.....	38
3.3.2 Contracting Incentives.....	40
3.3.3 Regulatory and Political Incentives.....	42
3.4 Discussion on Quarterly versus Yearly Earnings Management.....	43
3.5 Earnings Management Techniques.....	46
3.6 How to Measure Earnings Management	50

3.6.1 Total Accruals to Measure Earnings Management.....	53
3.7 Earnings Management Models to Estimate Discretionary Accruals.....	56
3.7.1 The Healy Model	57
3.7.2 The DeAngelo Model	58
3.7.3 The Industry Model	59
3.7.4 The Jones Model	60
3.7.5 The Modified Jones Model	63
3.7.6 Alternative Adjustments to the Jones and Modified Jones Models.....	64
3.8 Summary	72
CHAPTER 4: A REVIEW OF THE LITERATURE ON CORPORATE GOVERNANCE.....	75
4.1 Introduction.....	75
4.2 Definition of Corporate Governance.....	76
4.3 Corporate Governance Mechanisms.....	79
4.3.1 Board of Directors.....	81
4.3.1.1 Board of Directors' Independence.....	82
4.3.1.2 Board of Directors' Size.....	86
4.3.1.3 CEO Duality.....	87
4.3.1.4 Audit Committee.....	88
4.3.2 Ownership Structure.....	92
4.3.2.1 Managerial Ownership.....	93
4.3.2.2 Institutional Ownership.....	96
4.3.2.3 Ownership Concentration.....	98
4.3.2.4 Blockholdership.....	102
4.3.3 Audit Quality.....	104
4.4 Summary	114
CHAPTER 5: RESEARCH DESIGN.....	116
5.1 Introduction.....	116
5.2 Review of the Research Objectives and Questions.....	117
5.3 Research Model.....	121
5.4 Hypothesis.....	125
5.5 Research Design	130
5.6 Data and Model Specification.....	135
5.6.1 Data.....	135
5.6.2 Measuring Earnings Management	138
5.6.3 Corporate Governance Measure.....	144
5.6.4 Audit Quality Measure.....	148
5.6.5 Control Variables.....	150

5.6.6 Model Specification.....	152
5.7 Summary	155
CHAPTER 6: RESEARCH ANALYSIS AND HYPOTHESIS TESTING.....	157
6.1 Introduction	157
6.2 Research Analysis	158
6.2.1 Evaluation of Earnings Management Models.	158
6.2.2 Descriptive Statistics.....	170
6.2.3 Hypothesis Testing	189
6.2.3.1 Audit Quality and Earnings Management.....	189
6.2.3.2 Internal Corporate Governance Mechanisms and Audit Quality.....	206
6.2.3.3 Corporate Governance and Earnings Management.....	213
6.3 Sensitivity Analysis.....	250
6.3.1 Total Accrual Models Sensitivity Analysis.....	251
6.3.2 Regression Model Assumptions.....	252
6.3.3 Corporate Governance Model Sensitivity Analysis.....	254
6.4 Summary	266
CHAPTER 7: CONCLUSION.....	269
7.1 Introduction	269
7.2 Conclusion to the Study.....	271
7.3 Contribution of the Study.....	285
7.4 Limitation of the Research	290
7.5 Recommendation for Further Research.....	291
REFERENCES.....	293
APPENDICES.....	320
Appendix I: Supplementary Analyses' Tables.....	320
Appendix II: Sensitivity Analyses' Tables.....	322
VITA.....	325

LIST OF TABLES

Table 1:	Sample Selection.....	137
Table 2:	Data Composition.....	138
Table 3:	Analysis of Total Accrual Models.....	164
Table 4:	Correlation Matrix for Quarterly Total Accruals (QTAC) and Quarterly Discretionary Accrual (QDA)..	166
Table 5:	ANOVA - Analysis of Variance of The Level of Quarterly Discretionary Accruals (QDA) over Interim and Fourth Quarters.....	170
Table 6:	Descriptive Statistics for All Firm-Quarters.....	173
Table 7:	Descriptive Statistics for Big-4 and Non-Big-4 Firms.....	177
Table 8:	Descriptive Statistics for Income-Increasing and Income-Decreasing Firms.....	180
Table 9:	Correlations Matrix for Absolute Discretionary Accruals (ABS_QDA) and Independent Variables.....	188
Table 10:	Mean Comparison of Absolute Quarterly Discretionary Accruals (ABS_QDA) of Big-4 and Non-Big-4 Firms.....	191
Table 11:	Mean Comparison of Quarterly Discretionary Accruals (QDA) of Big-4 and Non-Big-4 Firms for Income-Increasing and Income-Decreasing Firms....	195
Table 12:	Univariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA) on Audit Quality Attributes.....	197
Table 13:	Univariate Regression of Quarterly Discretionary Accruals (QDA) on Audit Quality Attributes for Income-Increasing and Income-Decreasing Firms....	200
Table 14:	Univariate Regression of Quarterly Discretionary Accruals (QDA) on Audit Quality Attributes for All firm-quarters, Sample, Interim and Fourth Quarters...	203

LIST OF TABLES (Continued)

Table 15:	Multivariate Regression of Audit Quality Attributes on Internal Corporate Governance Mechanisms.....	211
Table 16:	Mean Comparison of Absolute Quarterly Discretionary Accruals (ABS_QDA) of Internal Corporate Governance Mechanisms; CEO Duality, Institutional Ownership and Blockholdership.....	215
Table 17:	Mean Comparison of Quarterly Discretionary Accruals (QDA) of Internal Corporate Governance Mechanisms; Board Independence, CEO Duality, Institutional Ownership and Blockholdership Grouped For Income-Increasing and Income-Decreasing Firms.....	218
Table 18:	Univariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA) on Internal Corporate Governance Mechanisms.....	221
Table 19:	Multivariate Regression of Absolute Discretionary Accruals (ABS_QDA) for Big-4 And Non-Big-4 Firms.....	226
Table 20:	Multivariate Regression of Income-Increasing Quarterly Discretionary Accruals for Big-4 and Non-Big-4 Firms.....	229
Table 21:	Multivariate Regression of Income-Decreasing Quarterly Discretionary Accruals for Big-4 and Non-Big-4 Firms.....	234
Table 22:	Multivariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA) for All firm-quarters, Interim and Fourth Quarters.....	237
Table 23:	Multivariate Regression of Income-Increasing Quarterly Discretionary Accruals for All firm-quarters, Interim and Fourth Quarters.....	241
Table 24:	Multivariate Regression of Income-Decreasing Quarterly Discretionary Accruals for All firm-quarters, Interim and Fourth Quarters.....	242
Table 25:	Tolerance and VIF of Multivariate Regression.....	254

LIST OF TABLES (Continued)

Table 26:	Alternative Estimation Procedure for Multivariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA) for Big-4 and Non-Big-4 Firms.....	256
Table 27:	Multivariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA) for Big-4 and Non-Big-4 Firms using Modified Jones Model and the Kazsnik Model in the Estimation of Discretionary Accruals.....	262
Table 28:	Multivariate Regression of Sum of Absolute Quarterly Discretionary Accruals(SUM_ABS_QDA)...	265

LIST OF FIGURES

Figure 1: Research Model..... 122

LIST OF ABBREVIATIONS

approx.	approximately
CEO	Chief Executive Officer
CMB	Capital Markets Board of Turkey
CML	Capital Markets Law
e.g.	exempli gratia (for example)
EU	European Union
etc.	et cetera (and so on)
GAAP	Generally Accepted Accounting Standards
GLS	Generalised Least Square
IASC	International Accounting Standards Committee
IASs	International Accounting Standards
IFAC	International Federation of Accountants
IFRSs	International Financial Reporting Standards
IIF	Institute of International Finance
IPO	Initial Public Offerings
ISAs	International Standards on Auditing
ISE	Istanbul Stock Exchange
OLS	Ordinary Least Square
S&P	Standard and Poor's
TASB	Turkish Accounting Standard Board
TASs	Turkish Accounting Standards
TFRSs	Turkish Financial Reporting Standards
TKYD	Corporate Governance Association of Turkey
TMUDESK	Turkish Accounting and Auditing Standards Committee
TURMOB	The Union of Certified Public Accountants and Sworn-in Certified Public Accountants of Turkey
UK	United Kingdom
US	United States
WFE	World Federation of Exchanges

CHAPTER 1

INTRODUCTION

1.1 Introduction

Financial reporting plays a significant role in capital markets as an effective communication tool that presents information about the financial situation and performance of firms. The primary objective of financial reporting is assumed to reduce the information asymmetry arising among management, shareholders and outside users and enable users to make decisions. Therefore, reliability and relevance of accounting numbers presented in financial reports and timeliness of financial reporting are essential concerns of regulators.

Earnings numbers are important performance indicators presented in financial reports, which are used to set the value of the securities in capital markets, make the investment decisions, assess

the overall performance etc. Any intervention that distorts the accuracy of the reported earnings both in interim and fourth quarters is more likely to affect the decisions of all users of financial reports.

It is apparent that financial reports complied with accounting standards and audited by an independent external auditor provides accurate and reliable information about the actual performance of the firms. However, recent corporate scandals suggest that the use of accounting and auditing standards are not sufficient enough to ensure the accuracy of earnings numbers.

Accounting standards are flexible which allow judgements and estimates in some accounting treatments and the presentation of the financial reports. Moreover, financial reports rely on accrual basis accounting which enhances the relevance of financial reports and increase the users' predictive ability to make decisions. Due to the flexibility in accounting standards and the accrual basis nature of financial reports, instead reflecting the actual performance of the firms, management might prefer using judgements, estimates and accruals improperly in order to manipulate earnings. Similarly, although auditing standards provide guidance to auditors, the quality of independent external audit is affected by several other attributes such as the size of the audit firm, specialisation of auditor, the relative importance of the client and the magnitude of audit firm-client relationship. Without strong

enforcement mechanisms the accounting standards (Ball et al., 2003) and auditing standards do not provide a higher financial reporting or accounting quality. Thus, the overall effectiveness of legal enforcement mechanisms and regulations set by capital markets is vital for the financial reporting quality.

Earnings management is an important dimension of financial reporting quality and a central issue for all corporate stakeholders. It is defined as “*a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain*” (Schipper, 1989). Due to several different incentives; to mislead investors about the financial performance of the firm or meet a specific earnings target etc., management might choose to engage in earnings management. Earnings numbers are more likely to be reliable and relevant when earnings management opportunities are controlled (Wild, 1996; Dechow et al., 1996; Klein, 2002 and Peasnell et al., 2000, Bugshan, 2005).

Corporate governance and external audit are two important aspects that might provide effective monitoring over management to mitigate the information asymmetry, agency problems and consequently control management’s opportunistic behaviour to manage earnings.

Within the past decade, corporate governance has gained a valuable attention from all capital market regulators. As corporate governance

reduces the information asymmetry by mitigating the agency problem and controls and monitors financial reporting and overall activities of management, it influences the financial reporting and disclosure quality. Several regulations have been set by capital markets board of developed nations and reports have been issued in US (Blue Ribbon, 1998), in UK (Cadbury, 1992) and in EU (Hampel, 1998). Similarly, in 2003, Capital Markets Board of Turkey (CMB) issued Corporate Governance Principles, which aim to improve the board structure, increase the shareholders rights, and enhance the financial reporting quality through public disclosure and transparency in order to raise public confidence to capital market, restructure the Turkish capital market and attract capital inflow into Turkey.

Moreover, particularly after the collapse of big corporations (e.g. Enron, World.com), the quality of external audit has been started to be questioned and starting in US with Sarbanes Oxley Act (SOX) in 2002, several new regulations (e.g. European Union 8th Directive on Company Law, 2006) have been introduced into force to increase the quality of audit services. Consequently, CMB has also issued Communiqués on independent external audit and independent auditing standards in capital markets.

The findings of prior studies on the role of corporate governance on earnings management provide contradicting results (e.g. Beasley, 1996;

Dechow et al., 1996, Peasnell et al., 2000; Chtourou et al., 2001), which raise the following questions; Whether corporate governance mechanisms are effective in limiting management's opportunities to engage in earnings management?, (if it limits) Which corporate structures play more privilege role as strong corporate governance mechanisms?, What is the role of audit quality on the relation between corporate governance and earnings management? Do other factors like the direction of earnings management, the financial quarters influence the role of corporate governance? It is essential to answer these questions for further policy implication of capital market boards and legal authorities.

Therefore, considering the significance of corporate governance and external audit in financial reporting quality and the relevance of quarterly interim financial reporting to enable investors to make timely decisions, this study aims to examine the role of corporate governance on earnings management. Moreover, it also aims to study the relation between corporate governance and earnings management considering the impact of external audit quality, the direction of earnings management (income-increasing versus income-decreasing) and financial quarters on this relation in order to provide more precise findings. This study might aid to come up with remarkable inferences about the effectiveness of corporate governance in constraining quarterly earnings management.

The remainder of this chapter is organised as follows. Section two explains the motivations and contributions of this research. Section three explains the main objectives to be achieved with this research and identifies the research questions. Section four details the scope and the research methodology of the study. Section five outlines the structure of the thesis.

1.2 Motivations and Contributions of the Research

Corporate governance is defined as “*a set of mechanisms through which outside investors protect themselves against expropriation by the insiders*” (LaPorta et al., 2000) and the primary role of corporate governance is monitoring and controlling of management’s activities (Benkel et al. 2006). Hermanson (2003) indicates that “*Good governance goes in-hand with reduced risk of financial reporting problems and other bad accounting outcomes*”.

It is expected that if the corporate governance is effective in fulfilling its roles, it is more likely to constrain earnings management. However the findings of prior studies are contradictory. Primarily, this research is motivated by the inconclusive role of corporate governance on earnings

management (e.g. Beasley, 1996; Dechow et al., 1996, Peasnell et al., 2000; Chtourou et al., 2001) and the discussion of quarterly versus year-end earnings management attempts of firms (Jeter and Shivakumar, 1999; Degeorge et al. 1999; Jacob and Jorgensen, 2006; Gunny et al. 2008, Das et al., 2009).

This research extends the prior studies in several ways.

First, the influence of corporate governance mechanisms on earnings management is not conclusive. Garcia-Meca and Sanchez-Ballesta (2009) have indicated that even previous studies have provided insights into the role of corporate governance on earnings management, the results of them are contradictory. One possible explanation of contradictory findings might be countries' dissimilar legal environment and enforcement mechanisms in force that shapes firms' corporate governance structure differently. Another reason might be the measurement errors in detecting earnings management resulting from the estimation of discretionary accruals. Moreover, it might be also because of the differences in the research designs and the measurement of earnings management used in prior studies. In this research, the role of corporate governance on earnings management is explained by considering the criticisms on previous studies and control other variables (e.g. audit quality, direction of earnings management,

financial quarters) to explicitly define the relation between corporate governance and earnings management.

Second, it makes contributions to accounting literature by using quarterly measures to reveal the relation between earnings management and corporate governance mechanisms. The review on accruals based earnings management and corporate governance literature shows that, most of the previous studies examined the relation by using annual discretionary accruals (e.g. Shah et al., 2010; Jaggi et al., 2009; Bowen et al., 2008; Klein, 2002; Xie et al., 2003). However, firms may manage their earnings in interim financial reports and the effects of downward or upward earnings management through discretionary accruals in interim periods may be offset in the year-end financial reports. Therefore, the use of annual data to measure discretionary accruals might cause deficiencies in detecting earnings management (Benkel et al., 2006). The literature on annual versus quarterly earnings incentives of management reveals mixed results. Das et al. (2009) argue that, as in capital markets audited annual earnings are more relevant than interim earnings; managers have greater incentives to manage annual earnings rather than interim ones. Therefore, although management has greater opportunity to manage earnings in unaudited quarterly interim financial reports, management's incentive to manage earnings quarterly might be less. Some of the previous studies provide results consistent with the arguments of Das et

al. (2009) on stronger incentives of management to manage earnings annually or in the fourth quarter financial reports rather than quarterly (Jeter and Shivakumar, 1999; Degeorge et al. 1999; Jacob and Jorgensen, 2006; Gunny et al. 2008).

On the contrary, Han and Wang (1998), Rangan (1998) and Mangena (2008) advocate that management has greater incentives to manage earnings quarterly and they engage in quarterly earnings management rather than annual. If interim reports are not audited, management has more opportunity to manage interim earnings (Mendenhall and Nichols, 1988). Therefore, quarterly data in the estimation of discretionary accruals provides a sharper focus on management' reported earnings numbers which is more likely to capture the discretion in earnings and the likelihood of earnings management (Jeter and Shivakumar, 1999). Consequently, a quarterly research design might provide more precise results on the relation between corporate governance and discretionary accruals.

Third, this study contributes to accounting literature by studying the influence of corporate governance mechanisms on quarterly earnings management using data from financial reports prepared under International Financial Reporting Standards (IFRSs). In corporate governance and earnings management literature, most of the studies are based on firms in US (e.g. Klein, 2002; Xie et al., 2003; Bugshan,

2005; Bowen et al., 2008; Yang and Krishnan, 2005). There are a few studies conducted in other countries (e.g. Shah et al. 2009; Jaggi et al., 2009; Piot and Janin, 2007; Davidson et al., 2005) However, most of those studies use data from non-IFRSs financial reports. According to Healy and Wahlen (1999), earnings management occurs when managers use judgements. IFRSs are principles based standards which allow judgements and estimations in preparing the financial reports. The accounting quality of IFRSs financial reports are on debate, while some researchers find that the accounting information has improved in the post-IFRSs period in terms of less earnings management (Chen et al., 2010), more timely loss recognition and higher value relevance (e.g. Barth et al., 2008 (only for voluntary adoptors), Christensen et al., 2008), some others provide evidence that the quality of accounting numbers has decreased in the post-IFRSs period, particularly because of mandatory adoption of IFRSs and lack of effective enforcement mechanisms (e.g. Garcia-Osma and Pope, 2009, Ahmed et al., 2010). Therefore, it is significant to examine earnings management under IFRSs.

Fourth, it extends earnings management and corporate governance literature to Turkish context. Studies on earnings management and corporate governance are limited (Cornett et al., 2009; Davidson et al., 2005) especially for emerging economies. Leuz et. al. (2003) propose that earnings management is more pervasive in countries where legal

protection of investors is low. This proposition is also true for firms with weak corporate governance mechanisms. In Turkey, as a result of poor corporate governance structure and weak investor protection, earnings management might be pervasive as well. As corporate governance mechanisms are highly affected by the legal system and capital market laws in the country and they change as a result of different institutional environments (Schleifer and Vishny, 1997), the findings of previous research cannot be applied to Turkish firms. Most of the previous studies are from the Anglo-Saxon countries. Therefore, Turkey, as an emerging economy and a Continental European country, is an interesting case to examine the role of corporate governance on earnings management.

1.3 Research Objectives and Research Questions

The main objective of this study is to examine the impact of corporate governance in constraining earnings management. Also, this research aims specifically to study (i) the impact of corporate governance mechanisms in constraining earnings management by questioning whether strong ownership and board of directors' structure affect the level of discretionary accruals, a proxy of earnings management, (ii) if so, the extent of their constraining role on earnings management and (iii) the role of audit quality on the relation between internal corporate

governance mechanisms and earnings management, (iv) the effect of audit firm attributes, as a proxy of audit quality on the level of discretionary accruals both in interim and fourth quarter financial reports, (v) whether the relation among corporate governance, earnings management and audit quality changes over financial quarters.

Based on these objectives, in this research the following research questions were addressed (see section 5.2 for a detailed explanation of each research question);

- *What is the overall role of corporate governance mechanisms on earnings management?*
- *What is the role of audit quality on earnings management?*
- *What is the association between internal corporate governance mechanisms and audit quality?*
- *How does audit quality affect the relation between internal corporate governance mechanisms and earnings management?*

1.4 Scope and Research Methodology of the Study

This study examines the role of corporate governance mechanisms, particularly board of directors' composition and ownership structure on earnings management controlling for audit quality, direction of earnings management and financial quarters. The study was employed on non-financial firms listed on Istanbul Stock Exchange (ISE). Hence, financial characteristics, ownership structure and financial reporting practices of financial firms differ from non-financial firms in some points, financial institutions and holdings are out of the scope of this study.

This study uses a data set from a post-IFRSs period, starting from the mandatory adoption of IFRSs in 2005. The pre-IFRSs period is out of scope of this study, since the reporting requirements of pre-IFRSs period where historical-cost based Turkish GAAP were used, differ significantly from the post-IFRSs period. In addition, the sample does not include firm-quarter observations from early adoptors of IFRSs for the years 2003 and 2004, because of the limited number of early adopter firms to estimate discretionary accruals and the absence of the statement of cash flows from operations, which were used in the measurement of total accruals, for the early adaptor firms.

This study examines the relation between earnings management and corporate governance employing a panel data analysis. In order to employ panel data analysis, first the dependent variable, earnings management is measured through discretionary accruals. Based on the previous studies, among all accrual-based earnings management models, the Jones Model (Jones, 1991), the Modified Jones Model (Dechow et al. 1995), the Adapted Model (Dechow et al. 2003), the Forward Looking Model (Dechow et al. 2003), the Kazsnik (1999) Model, the Larcker and Richardson (2004) Model and the Kothari et al. (2005) Model were employed in the estimation of discretionary accruals. The model with the highest explanatory power and significant coefficients was chosen in the estimation of discretionary accruals.

In the second step, before studying the relation between corporate governance and earnings management, the differences among the level of discretionary accruals over quarters were examined in order to reveal that firms use discretionary accruals in interim financial reports. This may facilitate the interpretations of further findings. In addition, in order to understand the role of audit quality on the relation between corporate governance and earnings management, supplementary analyses were conducted to reveal the association between internal corporate governance mechanisms and audit firm attributes, as proxies of audit quality. After these analyses, several panel regression analyses were employed to examine the impact of corporate governance on earnings

management for all sample firm-quarter observations and partitioned sample by Big-4 and Non-Big-4 firms, by income-increasing and income-decreasing firms and by financial quarters. To improve the explanatory power of the model, the multivariate regression model was controlled for other variables (e.g. financial debt, firm size) that might have explanatory power on earnings management.

1.5 Structure of the Thesis

The overall structure of the dissertation is as follows. The introduction chapter introduces the research objectives and questions, explains motivation and contributions of the study, details the scope of the study with a review of research methodology and sets out the structure of the thesis. Chapter two summarises overview of Turkish accounting and legal environment. Chapter three and four explain the relevant literature on earnings management, corporate governance and audit quality with the motivation of managing earnings, the accrual based earnings management models in the estimation of discretionary accruals, the theoretical background of corporate governance mechanisms and the importance of audit quality with the relation to earnings management, respectively. Chapter five explains the research, revisits the research objectives, details the research questions, develops the research model and hypotheses and describes the research design in details with data

characteristics and definitions of the variables, model specification, and the stage of empirical analyses. Chapter six analyses the hypotheses and presents the findings. Chapter seven concludes the findings by comparing the results with previous literature, presenting the practical contributions and implications of this research, points out the limitations and directs for further studies.

CHAPTER 2

OVERVIEW OF TURKISH ACCOUNTING AND LEGAL ENVIRONMENT

2.1 Introduction

The main purpose of this chapter is to provide an overview of the current regulations in capital market, accounting and auditing environment and corporate governance principles. This chapter provides an understanding of the compliance with IFRSs, the quality of independent audit, the investor protection rights, enforcement mechanisms and other regulations in ISE. The justification of the current situation is crucial for the development of hypotheses, interpretations of the findings and comparison of them with prior studies in order to explain the differences in the results (if any). Therefore,

instead focusing on the historical development of capital markets, accounting and auditing environment, it aims to draw attention on the overall structure and the present principles and rules in force.

The remainder of this chapter is as follows. Section two provides a short review of capital markets in Turkey, the development of ISE and the current regulations in force. Section three describes the accounting and auditing environment in Turkey. Section four provides an overview of the overall structure of corporate governance of listed firms on ISE and the corporate governance principles issued by CMB. Section five summarises the literature.

2.2 Capital Market

Since 1980's, Turkish economy has experienced significant changes in the capital and market structure in terms of a movement from a public-stated market economy to a more liberal market economy that aims to persuade both domestic and foreign investments and increase the capital transfers in the economy. Following these developments, the foundation of a capital market in Turkey is initially proposed in the early of 1980's and the CMB was established in 1981 with the empowerment by the Capital Markets Law (CML) enacted in the same year.

Following the foundation of CMB, three exchange markets was established and started their operations; Istanbul Stock Exchange in 1985, for the trade of equities and fixed income securities, Istanbul Gold Exchange in 1995, for the trade of precious metal and Turkish Derivatives Exchange in 2005, for the trade of future and option contracts.

CMB is the regulatory and supervisory body which determines the operational principles of capital markets in Turkey and sets the regulations for stock exchanges and the protection of the rights and interests of investors. All ISE listed firms are subject to capital markets law and regulations and CMB Communiqués which stress overall requirements of listed firms for financial reporting, accounting standards, independent auditing and rules to be traded on exchange markets.

The number of listed companies in ISE has dramatically changed from its foundation in 1986 to the year 2001 from 80 firms to 311 (WFE, 2009). However, Turkish economy has gone through severe crises between the years 1994-2001, because of macroeconomic instability, political reasons and international recessions. Consequently, Turkish capital market, particularly ISE suffered from these crises and the number of listed firms declined to 288 in 2002. Although a slight recovery in the number of listed firms has been observed with the

fraction of market capitalization and trading volume of listed firms in ISE since 2002 (CMB, 2010), as a result of the global financial crisis in 2008, initial public offerings (IPOs) remained limited.

As of December 2009, there are 315 listed companies in ISE, with a market capitalization of TL 351 billion (US\$ 236 billion) and trade volume of TL 475 billion (US\$ 306 billion), a level of with 50% and 45% of gross domestic products, respectively in 2009 (CMB, 2010). According to World Federation of Exchanges' (WFE) report in 2009, among 54 stock exchanges around the world including America, Asia Pacific, Europe, Africa and Middle East, ISE ranks 27th in terms of market capitalization and 32nd in terms of number of listed companies. In addition it is among Top 10 performing broad market indexes in 2009, in local currency terms.

Both ISE and CMB continue their efforts by the introduction of new financial instruments and markets, constitutions of new regulations in accounting and auditing standards and recommendation on the compliance with corporate governance principles, to increase market efficiency, strengthen the position of ISE in the international capital markets and increase equity financing.

Despite the attempts of both ISE and CMB and WFE' indications that Turkish capital market is one of the promising markets in terms of

internationalization, with its limited number of listed firms, relatively small amount of market capitalization and trading volume, it is an emerging capital market.

Turkish capital market is emerging and developing (Elitaş and Uç, 2009) and Turkey is a country with lack of equity culture (IIF, 2005). Turkish companies use debt rather than equity, as a source of finance and the capital market is not liquid and developed as those in the Anglo-Saxon countries (Hacımahmutoğlu, 2007). The reasons of undeveloped capital market might be explained by Turkey's political, economic and historical developments, inadequate regulatory framework for the investor protection, the concentrated ownership mostly with family oriented and complex-pyramidal structure and lack of enforcement mechanisms (IIF, 2005).

2.3 Accounting and Auditing Environment

The need for accounting and auditing services in Turkey has been emerged immediately after the foundation of the new Turkish Republic in 1923 with the efforts to build public and private enterprises for the development of Turkish economy. So, following the establishment of enterprises, in 1930s, there were several attempts to built accounting

and auditing profession and set a legal framework for accounting and auditing services (Arikan and Toraman, 2007)¹.

The millstones of these attempts can be summarised as the empowerment of privately held accounting and auditors to audit the accounts of municipalities in 1930, the authorization of the accountants through a legal act to the Tax Procedures Law in 1950, the establishment of the Expert Accountants' Association of Turkey in 1942, the Federation of Associations of Accountancy in 1974 and the Association of Financial Advisers and Accountants Union in 1976 (TURMOB, 2010).

However, since 1989, the accounting profession has not gained a legal authorization. In 1989 with the Law of Independent Accountancy, accounting and auditing have been legalized as a profession. Immediately after the authorization of accounting and auditing profession, The Union of Certified Public Accountants and Sworn-in Certified Public Accountants of Turkey (TURMOB) was established in 1989. Correspondingly, in order to issue national accounting standards and the national auditing standards for auditing services, in 1994, Turkish Accounting and Auditing Standards Committee (TMUDESK, TAASC) was founded. TURMOB is a member of International

¹ A more detailed study on the development of the CPA profession in Turkey can be found in Arikan and Toraman (2007)

Accounting Standards Committee (IASB) and recognises the standards issued by International Federation of Accountants (IFAC).

One of the important reasons of this late recognition is basically, the negligence of accountancy in the Commercial Code of Turkey, which recognises the judgement of courts than accounting profession for the assurance of the accounting information in financial statements and accounting documents. Another reason is the approach given on the financial statement and accounting documents by of the Ministry of Finance which basically concern about the assurance of the reported accounting numbers only for taxation purposes. Therefore, instead relying on private accountants and auditors, the Ministry of Finance prefers to assign its own accounts experts, tax auditors and income controller (Arıkan and Toraman, 2007).

Turkey has a Commercial Code which is derived from the French Commercial Code and influenced by both the German and Italian Commercial Codes (Balsarı et al. 2009). Therefore, in the accounting system of Turkey the Continental Europe model is strongly perceptible. As a consequence of this Continental Europe model, taxation law has a significant influence on the Turkish accounting system (Balsarı et al., 2009; Elistas ve Uç, 2009). While, the basic accounting requirements are determined in Turkish Commercial Code, Turkish accounting rules are determined mainly in the Tax Procedural Law and all companies in

Turkey, except the listed companies in ISE and financial institutions prepare their financial statement in accordance with the requirements of Tax Procedural Law in force and the Communiqués issued by the Ministry of Finance (Balsarı et al. 2009).

Since 2001, Turkish accounting system has come into sight with some changes in terms of the Anglo-Saxon influence on accounting and financial reporting, particularly for listed firms and financial institutions in ISE. Following to the developments in the capital markets, Turkish Accounting Standard Board (TASB), an incorporated self-governing authority, began its operations in 2002 in order to issue Turkish Accounting and Financial Reporting Standards (TASs/TFRSs) in compliance with the International Accounting and Financial Reporting Standards (IASs/IFRSs).

Financial reporting and auditing requirements of listed firms in ISE are regulated by communiqués issued by CMB. CMB issued two important communiqués in order to provide more accurate, comprehensive and transparent financial reporting and increase the understandability and comparability of financial reports. The Communiqué on Accounting Standards in Capital Markets (Serial: XI, no: 25) issued in 2003, effective from 1 January 2005, requires all listed firms in ISE to use accounting and financial reporting standards issued by CMB which are

in line with IFRSs² and the Communiqué on Financial Reporting in Capital Markets (Serial: XI, no: 29) issued in 2008, effective from 1 January 2009, requires listed firms in ISE to use of TASs/TFRSs. According to communiqués listed firms in ISE present quarterly interim financial reports in compliance with (TASs/TFRSs) which are adopted from (IASs/IFRSs).

Similarly, in order to assure the accuracy of the financial reports, CMB issued two important communiqués on external independent auditing. The Communiqué on Independent Audit in Capital Markets (Serial: X, No: 16) in 2002 sets external independent auditing requirements of ISE firms and the Communiqué on Independent Auditing Standards in Capital Markets (Serial: X, No: 22), partially effective from June 2006, and full effective from year-end of 2006, defines the legal requirements and the independence of auditors, regulates the quality of auditing services by describing the scope of them, identifies the auditor tenure and introduces auditing standards which are in line with International Standards on Auditing (ISAs). According to Communiqué, listed firms in ISE require to have independent external audit for the year-end financial reports and audit review for the sixth month's quarterly interim financial reports. Other interim reports are not subject to any independent audit. Moreover, the Communiqué regulates the audit services rendered by external auditors and clearly identify that audit

² CMB require mandatory application of the Communiqué on Accounting Standards (Serial: XI, no: 25), effective from 1 January 2005 for listed firms on ISE. However, listed firms are encouraged for early adaptation of IFRSs in the years 2003 and 2004.

firms are prohibited to render non-audit services, such as book-keeping, preparation of financial reports, consultancy and also declares that the audit firm tenure is limited with seven years.

2.4 Corporate Governance

Corporate governance is a system that is entrenched with its legal framework and capital markets. Therefore it is not possible to assess country's corporate governance structure without its legal and self-regulatory provisions (Hacımahmutoğlu, 2007).

Overall governance structures of Turkish listed firms are characterized by relatively weak investor protection and minority rights (Durukan et al., 2009), low level of board independence (Ararat et al. 2010, Arslan et al. 2010), family controlled ownership with complex-pyramidal structure where family members are CEOs, boards members or top managers (Demirağ and Serter, 2003), concentrated ownership (Ararat et al., 2010; Hacımahmutoğlu, 2007) and lack of equity culture (IIF, 2005).

In contrast to agency problems between management and shareholders in a disperse ownership in developed capital markets (e.g. in US or UK), the agency problems is present between the majority shareholders and minority shareholders in developing countries where firms'

ownership structure is concentrated. In Turkey, as a developing country with an emerging capital market, and concentrated ownership, particularly family oriented ownership concentration, agency problems are more likely to occur between majority shareholders or family shareholders and minority shareholders.

The weak investor protection in Turkish capital markets, principally the rights of minority shareholders, discourages investors to enter to capital markets and Turkey faces with lack of equity culture (IIF, 2005). CMB issued Corporate Governance Principles of Turkey based on Corporate Governance Principles of OECD with a “comply or explain” approach in order to solve lack of equity issues through mitigating agency problems among management, minor and major shareholders, improve the public confidence to capital markets, enhance the transparency and disclosure of financial reporting and develop the overall board structure and composition of Turkish firms, in 2003. The Corporate Governance Principles of Turkey consist of four sub-sections; shareholders, disclosure and transparency, stakeholders and board of directors sections, (CMB, 2003a).

Shareholders section concerns about the rights of shareholders, particularly minority shareholders, voting rights and the equal treatment to all investors, dividend payments, participating to general meetings and access of all shareholders to firms' information. The concentrated

ownership structures of Turkish firms limits minority shareholders right to access information and communicate effectively with management; consequently it causes information asymmetry among management, majority shareholder and minority shareholders. Therefore, corporate governance principles recommend firms to disseminate information through various channels (e.g. websites) to reduce the information asymmetry.

Disclosure and transparency section aims to provide guidelines to provide shareholders and investors accurate, complete, comprehensible and understandable information in a timely manner. The financial reporting requirements issued in the Communiqué on Financial Reporting in Capital Markets (Serial: XI, No: 29) and the regulations on independent external auditing issued in the Communiqué on Independent Auditing Standards in Capital Markets (Serial X, No: 22) are consistent with this section to assure the transparency and full disclosure of firms.

Stakeholders' section focus on keeping informed of all parties who have direct relation with the company about firms' operations and overall conditions. To ensure the disclosure and transparency and the rights of the stakeholders and to provide timely access to all publicly available information, ISE introduces *Public Disclosure Platform* which aims to enhance disclosure on financial statements, annual reports, all other

material information for investors (e.g. board structure, ownership structure, management etc.), independent external audit reports and company news of listed firms. Starting from 2009, all information about listed firms is disclosed through *Public Disclosure Platform* to enable the information publicly available and facilitate the access to this information for all users.

The principles regarding board of directors aim to assure that the board, as the strategic decision-making, representation and top management body of the firm, function well in order to perform its roles over firms' operations and regulate its responsibilities on balancing the interest of company, shareholders and stakeholders. It recommends on the structure and composition of board of directors and the sub-committees established by the board of directors, the principal activities and roles of the board of directors. The Communiqué on Independent Auditing Standards (Serial: X, No: 22) describes the responsibility of board of directors and CEO in financial reporting and it identifies that according to Turkish Commercial Code and CML, board of directors is responsible for the faithful presentation of financial reports and full compliance of for both the interim and year-end financial reports with financial reporting standards.

All board of directors' structure principles, except audit committee as a sub-committee of board of directors, are recommendation and have no

enforcement power. The presence of audit committee with at least two board members is required in the Communiqué on Independent Auditing Standards (Serial: X, No: 22), section 2, part 6, article 25. The audit committee controls the accounting system of the firms, is responsible for the disclosure of the financial information and the overall effectiveness of internal control and independent external audit in the firm.

Following the recommendation of Corporate Governance Principles of Turkey, with the committee ruling dated 10.12.2004, numbered 48/1588 and issued in Weekly Bulletin numbered 2004/51 effective starting from 2005, CMB required all listed firms to present *Corporate Governance Compliance Report* in their annual financial reports, explaining their level of compliance and any reason of not complying in accordance with the guidelines. In the report, firms declares the compliance with corporate governance principles, shareholders voting rights, general meetings, minority rights, dividend policy, firm disclosure policy, insiders, real natural person shareholders, social responsibility, the independency, composition and characteristics of board of directors, risk management and internal control mechanisms, the roles and responsibilities of board of directors, ethical conducts, the independency, composition and characteristics of the sub-committees and the remuneration of board of directors.

According to the report of Institute of International Finance (IIF) (2005), the main problem in the application of corporate governance principles in Turkey is the lack of legal enforcement mechanism. Although Capital Markets Board plays an essential role in the regulation of the exchange markets and makes contributing recommendations, the “comply or explain” approach, as an enforcement mechanism does not fit with Turkish Continental Europe model legal framework (Hacımahmutoğlu, 2007).

Along with the developments in capital markets and improvements in accounting and auditing standards and introduction of corporate governance principles, a draft Turkish Commercial Code is expected to be effective soon. When the draft version of the new commercial code comes into effect, financial reports of all Turkish firms (listed and non-listed) will be prepared in accordance with IFRSs, they will be audited and corporate governance principles will find a wide range of application.

2.5 Summary

Since 1980's, Turkish economy has experienced significant changes in the overall structure of economy, which in turn lead to the development of the capital markets. Despite its performance since the establishment,

Turkish capital market is still considered as an emerging and developing capital market. The lack of equity culture in Turkey is a serious issue that blocks the development ISE. The lower level equity-financing in Turkey is probably because of the inadequate regulatory framework for the investor protection, the concentrated ownership mostly with family oriented and complex-pyramidal structure and lack of enforcement mechanisms in the country (IIF, 2005). CMB makes significant changes in the regulations to break the barriers against equity-financing and increase market efficiency through several regulations such as the communiqués on the financial reporting requirements and international auditing standards in capital markets and issuance of corporate governance principles.

As the purpose of this study is to examine the role of corporate governance mechanisms on earnings management, an overview of Turkish legal and accounting environment was crucial for the interpretation of research findings. The following two chapters review the literature on earnings management and corporate governance, respectively.

CHAPTER 3

A REVIEW OF THE LITERATURE ON EARNINGS MANAGEMENT

3.1 Introduction

In accounting literature, several researchers intend to reveal the underlying incentives of earnings management, the methods of detecting discretionary portion of managed earnings and any mechanism that might constrain the earnings management attempts of the management. As the aim of this study is to examine the role of corporate governance mechanisms on earnings management, it is crucial to understand the earnings management framework comprehensively by discussing the definition, the incentives and techniques of earnings management with the empirical models to detect earnings discretions. Therefore, this chapter aims to present a review of earnings management literature.

The remainder of this chapter is as follows. Sections two and three define earnings management and the underlying motivations, respectively. Section four discusses quarterly versus annual earnings management attempts of the firms. Section five focuses on accruals in relation to earnings management. Chapter six outlines the earnings management techniques and briefly explains each technique. Section seven discusses models developed to detect accruals based earnings management. Section eight summarises the literature.

3.2 Definition of Earnings Management

Earnings management has been defined variously in literature. One definition is *“the process of taking deliberate steps within the constraints of generally accepted accounting principles to bring about a desired level of reported earnings”* (Davidson et al., 1987, cited in Schipper, 1989, p.92). Likewise, it is also defined by Schipper (1989) as: *“a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain”*. Moreover, Dechow et al. (1996) define earnings management as: *“earnings manipulations within the constraints of GAAP to bring about a desired level of reported earnings”*. Jackson and Pitman (2001) contribute as *“earnings management is an intentional structuring of reporting or production/investment decisions around the bottom line impact”*.

Alternatively, it might be defined as the intervention of management to financial reporting process in order to reflect a desired level of earnings rather than the actual economic performance of the firm. Although, the definition of earnings management is not unique, it is obvious that all definitions point out the term “*altering the reported earnings for a specific purpose*”. Healy and Wahlen (1999) explain earnings management as follows:

Earnings management occurs when managers use judgments 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.

By using judgements in accounting practices, management obtains flexibility in applying accounting standards and in reporting financial performance. As a result, this flexibility provides management with the opportunity of managing earnings (Christie and Zimmerman, 1994).

Mulford and Comiskey (2002, p.58-59) discuss the definition of earnings management in order to interpret whether it is a bad or good thing. They argue that the term “*purposeful alteration of earnings numbers*” in the definition does not necessarily imply that managed earnings are less meaningful than unmanaged earnings. Managed earnings might be better indicator of future earnings, which means that managed earnings might be more predictable than unmanaged earnings. Also, the volatility of managed earnings might provide more realistic index for financial

risk. In other words, as earnings numbers are smoothed over the periods; managed earnings might be more persistent. From this point of view, they comment that, “*a little bit of earnings management is a good thing*”.

The discussion whether earnings management is “good” or “bad” is quite complex and inconclusive because of two reasons. First, it is up to the definition of the earnings management. As it is discussed above, the boundaries of earnings management are not clearly defined and definitions might range from the use of flexibility allowed under accounting standards to behaviours beyond the accounting standards and the fraudulent financial reporting (Mulford and Comiskey, 2002, p.82). Second, it changes in accordance with the perception of the users of financial reports. While, practitioners and regulators perceive it problematic, academic researchers believe that earnings management has no consequences, because the investors might price the effect of earnings management with other disclosed information in the financial reports (Dechow and Skinner, 2000). Laux (2003) argues that considering the wealth maximization of stockholder, income smoothing in terms of earnings management is desirable to reduce the volatility of earnings and cash flows, to drive down the cost of capital and increase the share price. In line with Laux (2003), Parfet (2000) argues that earnings management is not purely bad. It depends on the proper (e.g. using the flexibilities in accounting standards or actual operations) or

improper (artificial entries and fraudulent financial reporting) techniques used to manage earnings.

Beside the discussion on the good or bad nature of earnings management, another important issue that shapes the definition of earnings management is its form. Mainly, earnings management takes two forms; real earnings management or accruals based earnings management. Even though, both forms of earnings management intentionally aim to alter the reported earnings, the way they use differs from each others. Real earnings management is any intervention to financial reporting by using financial structuring with direct cash flows consequences (e.g. altering the recognition and measurement of real operating activities such as production, sales, investment, and financing activities) in order to meet a specific earnings target (Gunny et al., 2008). On the other hand, accruals based earnings management is earnings manipulations through discretionary accrual choices or estimates which are allowed under accounting standards.

In this study, earnings management is considered as any earnings manipulation within the boundaries of accounting standards. Any other manipulations beyond the accounting standards or artificial entries are assumed as fraudulent financial reporting. In addition, this research focuses on the accruals based earnings management. Real earnings management is costly to measure and it changes across industries and

firms. Therefore, it is not appropriate to study real earnings management in a research design that aims to explore the role of firm specific characteristics (e.g. corporate governance) on earnings management in different industries.

3.3 Earnings Management Incentives

Earnings management is purposeful and it is done in response to certain motivations and incentives (Mulford and Comiskey, 2002, p.59). In literature, the main incentives of earnings management are documented as follows; capital market incentives, contracting incentives, regulation and political incentives. A brief review of each incentive and related literature are presented in the following subsections.

3.3.1 Capital Market Incentives

The primary classes of users of financial reports are investors, employees, lenders, suppliers, trade creditors, customers, governments and the general public. All of these users rely on the information presented in financial reports to understand the financial situation and financial performance of entities and to help them in decision making

(IASB, 2010). It is obvious that, financial reports are effective communication tools and the informativeness of the accounting numbers disclosed in the financial reports is important for all users. Therefore, any earnings management aptitudes that mislead the users of financial reports, especially the present and prospective investors, are more likely to harm the efficiency of the capital markets. For that reason, prior research studies attempt to document the effects of earnings management on the capital markets and the incentives to manage earnings.

One of the important incentives that motives management to manage earnings is to avoid extreme earnings decreases (Burgstahler and Dichev, 1997) or increases in order to meet analysts' forecast or specific earnings benchmark (Bauman et al., 2001; Dechow and Skinner, 2000; Degeorge et al., 1999; Kasznik, 1999; Libby and Kinney, 2000, Balsam et al. 2003). Moreover, as earnings predictability and persistence are two important earnings attributes associated with earnings quality (Francis et al. 2004) management intend to manage reported earnings to smooth earnings over years. Kazsnik (1999) documents that while management uses income-increasing discretionary accruals to meet the forecasted earnings; they revise the income forecast instead using income-decreasing discretionary accruals in case of underestimation of earnings. Alternatively, Abarbanell and Lehavy (2003) indicate that firms use

income-decreasing accruals in order to report lower earnings for the year when pre-managed earnings exceed the target earnings.

Another incentive might be the aspiration of beating the existed or prospective share prices and as a result the market value of the entity (Schipper, 1989). Many previous studies document that equity offerings or initial public offerings present great incentive for management (Dechow et al., 1996 ; Teoh et al., 1998a; Teoh et al., 1998b ; Yoon and Miller, 2002; Yükseltürk, 2006). In order to raise the capital in favour of the firm, management might manage earnings in equity offerings of initial public offerings. Similarly, other firm specific events such as mergers and acquisitions (Erickson and Wang, 1999) might provide an incentive for earnings management to hide large decreases in earnings or to boost the reported earnings.

3.3.2 Contracting Incentives

Contracting incentive is another widely discussed issue to answer why management use discretion in earnings. In accounting literature, many researchers are concerned about the effect of both the compensation and lending contracts on management's attempts to managing earnings (e.g. Healy, 1985; DeAngelo et al., 1994; Defond and Jiambalvo, 1994).

Mainly, the compensation contract incentive on earning management bases on the agency theory. Jensen and Meckling (1976) indicate that, in case of separation of ownership (principals) and control (agents), the agents may work to maximise their own interest rather than the benefit of the principals. In theory, this is known as agency cost which refers to all costs arising as a result of self-interested actions of the agent. In order to avoid or minimize the agency cost and align benefits of the agents to the principal, principal may tie up the actions of the agent with a compensation contract to the financial performance of the firm. However, a compensation contract might create incentive for earnings management. Healy (1985) argues that management might use income-increasing accruals to meet a specific compensation target in the current period or similarly, income-decreasing accruals to defer the current period's earnings to the next period if the compensation target is already met.

Similar to compensation contracts, lending contracts provide incentives for earnings management. According to Watts and Zimmerman (1986), a debt contract includes a covenant which limits managements' activities. Therefore, to not violate the conditions such as the financial ratios (e.g. debt to equity ratio) defined in the debt covenant, management might manage earnings downward or upward. DeFond and Jiambalvo (1994) support the lending contracts arguments and find

that management uses income-increasing accruals prior to the covenant violation.

3.3.3 Regulatory and Political Incentives

Regulatory and political incentives are another important incentive that motivates the management to manage earnings. From regulation perspectives, Ball et al. (2003) argue that political bodies involve in regulations and enforcement of accounting standards and taxes to reduce the volatility (large profits or losses) of reported earnings, which in turn affect the financial reporting. On the other hand from political cost perspective, firms' uses discretionary accruals to avoid some political costs or gain some government sponsored regulations. Watts and Zimmerman (1978) propose that the political costs are associated with firms accounting choices and argue that in order to avoid higher taxes and more costly regulatory oversight due to the public attention, big firms are more likely to choose accounting choices that defer current period earnings to following periods. Jones (1991) finds that firms benefiting government import relief are more likely to use income-decreasing earnings management during import relief investigations in order to maintain government benefits. Ramanna and Roychowdhury (2010) study the relation between elections and the discretionary accruals and find that for politically-connected firms,

particularly firms with more outsourcing activities, have more income-decreasing discretionary accruals. Similarly, Cahan (1992) and Makar and Alam (1998) indicates, in case of anti-trust violations, firms use income-decreasing discretionary accruals. Furthermore, in terms of tax avoidance, prior studies show that firms might use income-decreasing discretionary accruals to have tax-exemptions or any tax benefit associated due to the lower level earnings or negative earnings (e.g. Guenther, 1994).

3.4 Discussion on Quarterly versus Annual Earnings Management

Although, earnings management literature mostly concentrates on annual earnings management, there are a few studies that examine quarterly earnings patterns and earnings management attempts (e.g. Shivakumar, 2000; Rangan, 1998; Jeter and Shivakumar, 1999; Degeorge et al. 1999; Jacob and Jorgensen, 2007; Gunny et al. 2008, Das et al., 2009).

Previous studies discuss that earnings management incentives and opportunities are likely differing across financial quarters (e.g. Jeter and Shivakumar, 1999). Jeter and Shivakumar (1999) explain the variations across quarters with the following reasons; the absence of independent

audit in interim periods, the compensation plans and debt covenants tied up to the year-end financial performance, and the differences in optimistic estimations and conservatism across quarters. Although annual financial reports are subject to independent external audit, which might constrain the opportunistic behaviours of management, the interim financial reports are generally not audited³ and provide greater opportunity to management to use discretionary accruals. However, as compensation plans and debt covenants are mostly tied up to the year-end financial performance, management is less likely to have incentive to manage earnings in interim periods. Furthermore, discretionary accruals differ over quarters because management might be more optimistic in interim periods and delay the bad news to the fourth quarter to manage earnings. Accounting standards require estimation of some costs and expenses (e.g. allowances) throughout the financial period (Manry et al. 2003) and the actual amount of these expenses or costs cannot be determined until the year-end. Management might use these estimations opportunistically, as earnings management tool and make less conservative estimations in interim periods to mislead the reported earning numbers.

The literature on quarterly versus annual earnings management is inconclusive. Apart from the opportunity provided in interim periods, earnings management depends on the incentives of management

³ 2nd quarter financial reports of listed firms in Istanbul Stock Exchange (ISE) are subject to an independent audit review.

(Jeter and Shivakumar, 1999). Consequently, from the point of corrections of estimates and the incentives to meet the compensation targets, debt covenants or analysts forecasts, it is argued that discretionary accruals are greater in the fourth quarter (Jeter and Shivakumar, 1999; Jacop and Jorgenson, 2007, Das et al., 2009). However, from the point of unaudited financial reports and the relevance of interim earnings in capital markets, management might use greater discretion in interim quarters relative to the fourth quarter.

Mendenhall and Nichols (1988) claim that management uses income-increasing bias in interim reports and defers the bad news to the fourth quarter, which is resulted in positive discretionary accruals in interim periods and negative discretionary accruals in the fourth quarters. Similarly, in their study, Jeter and Shivakumar (1999) find that discretionary accruals are higher in the fourth quarter relative to the interim periods. Givoly and Ronen (1981) document that as management smooth the annual earnings at the end of the year, there is a negative correlation between the deviations of interim periods' earnings and the fourth-quarter earnings from their expectation. Similarly, Collins et al. (1984) and Das et al. (2009) evidence that the fourth quarter earnings have different characteristics and argue that fourth quarter earnings are more volatile relative to the interim periods. Das et al. (2009) claim that firms with "bad" news in interim periods and "good" news in the fourth quarter are more likely than others to manage

earnings upward, vice versa. Supporting their arguments, they find that firms exhibit earnings reversals in the fourth quarter. Moreover, as it is indicated in Rangan and Sloan (1998), Gunny et al. (2007) point out that earnings numbers in interim reports are integral part of annual earnings and the fourth quarter earnings are used to “*settle up*” or as a reconciliation of in the previous three quarters. Alternatively, Dhaliwal et al. (2004) add more evidence on the fourth-quarter earnings management to meet annual earnings targets and find that firms use tax expense as a cookie jar reserve to manage earnings when other pre-tax accruals fail to achieve the target earning.

3.5 Earnings Management Techniques

In section 4.2, earnings management is defined as any earnings manipulations within the boundaries of accounting standards. Based on this definition, it is obvious that the principal earnings management techniques might be in any form allowed by the accounting standards. Mulford and Comiskey (2002, p.62) argue that the most commonly used earnings management techniques involve simply using the flexibility in accounting standards, or which is called as “*the pliancy*” in the speech “The Numbers Game” by Arthur Lewitt (1998).

Earnings management is basically achieved through two main channels; operating decisions (real earnings management) and accounting choices or estimates (accruals based earnings management).

Operating decisions allow management to manage earnings through real activities with direct cash flows consequences (e.g. having additional discounts to increase the sales, making new investments, hiring new employees,) in order to meet a specific earnings target.

Accruals based earnings management is earnings manipulations through discretionary accrual choices or estimates which are allowed under accounting standards. The accounting standards allow management flexibility in some accounting treatments through the use of judgements (e.g. in revenue recognition, classifying the financial investment), estimations (in the estimation of costs and net realizable values of inventories, estimation of useful life of tangible and intangible assets, allowances for doubtful accounts) or choices (in the subsequent measurement of assets, depreciation methods). For management, as accruals based earnings management is done through the use of judgement, estimations and choices, it is less noisy and costly. Also, for the auditors it is more difficult to detect accruals based earnings management, because it requires high justification of management's estimates and judgements.

There are many different earnings management techniques documented in previous literature, such as big-bath restructuring charges, cookie jar reserves, income smoothing, immaterial bias in estimates, and premature revenue recognition. As Lewit (1998) defines that accounting standards weren't meant to be "*a straitjacket*" and the earnings management techniques can be accreted as business structure changes and new and innovative transaction appears. In this section, the most commonly used accrual based earnings management techniques are summarised briefly.

Big-Bath Restructuring Charges

Big-bath restructuring charges refer to the use of large write-off or write-downs at once through removing or reducing assets in the balance sheet in years when the general economy goes down or firm suffers sales decreases. Healy (1985) suggests that, in case of compensation plans, if the bonus target has been met or the bonus threshold cannot be met, management is more likely to reduce earnings. Also Lewitt (1998) and Abarbanell and Lehavy (2003) indicate that firms use extreme conservative estimates or income-decreasing accruals as earnings management tool in order to report lower earnings for the year, which will reborn as income when estimates change or future earnings fall. Big-bath restructuring charges are infrequent expenses resulting mostly resulting from the reorganization of the firms. In literature, it is suggested that firms are more likely to experience with

“*clear the desk*” approach in case of CEO turnover, where the new CEO might decrease earnings in their first years (Pourciau, 1993).

The main argument under big-bath restructuring charges is that as investor focus on long-term performance, one time losses do not have significant negative impact on firms’ performance (Elliott and Hanna, 1996; Elliott and Shaw 1988), instead these charges might be used as a make-up tool in the preceding year of large write-offs or write-downs.

Cookie Jar Reserves

Cookie jar reserves refer to accrue unrealistic estimation for liabilities (e.g. sales returns, warranty costs, allowance for receivables, contingent liabilities) in good years to reserve accruals for bad years (Lewitt, 1998). Abarbanell and Lehavy (2003) argue that when pre-managed earnings exceed the target earnings, firms deflate earnings and reserve the excess portion of the current earnings to use it in the future. Alternatively, Cazier et al. (2010) study the use of discretionary accruals to meet the analysts’ forecast and find that if firms’ earnings before tax do not meet analysts’ forecast, firms reduce tax reserves and report higher net income.

Revenue Recognition (pre-mature versus delay)

Another earnings management technique widely discussed in literature is earnings manipulation through the improper recognition of revenue.

Although accounting standards clearly identifies the criteria for revenue recognition, management might recognize revenue before the product is delivered to a customer, or at a time when the customer still has options to terminate, avoid, or delay the sale (Lewitt, 1998).

Income Smoothing

Income smoothing refers to management of earnings numbers through accruals to reduce the volatility of accounting earnings (Barefield and Comiskey, 1972) and display a more predictable and persistent picture for the firms' earnings by shifting the timing of earnings from good year to bad years.

3.6 How to Measure Earnings Management

In previous earnings management studies, accruals based earnings management is measured by various proxies (e.g. accruals, changes in accounting method or capital structure, frequency distributions of earnings, changes in earnings). McNichols (2000) summarises commonly used research designs to detect earnings management and broadly discusses trade offs associated with each research design and He groups them as follows; research designs using (i) aggregate or total accruals model (ii) specific accruals model and (iii) the distribution

of earnings model. The brief detail of each research design is abridged below.

Total Accruals (Aggregate Accruals)

Among all research designs, the total accrual models are the most widely used model in the literature. It starts with Healy (1985) and DeAngelo (1986) who use total accruals as a proxy to estimate the discretionary accruals. Then, it is followed by Jones (1991) who proposes a regression based estimation of discretionary accruals. In accounting literature a lot of researchers (e.g. Dechow and Sloan, 1991; Dechow et al., 1995; Kang and Shivaramakrisnan, 1995; Peasnell et al., 2000, Dechow et al., 2003; Kothari et al., 2005) use total accrual models to measure earnings management, because they allow a research design to explore the association of earnings management and other exploratory variables.

Specific Accruals

An alternative measure of earnings management is based on specific accruals models. Specific accruals models allow researchers to study accruals, based on their previous knowledge about the items that might be used in earnings management. Also, they allow studying accruals that might be resulted from the nature of the business in a specific industry. Alternatively, they also allow examining the association between a single accrual and an explanatory variable (McNichols,

2002). Although there are many studies using the specific accruals models (i.e McNichols and Wilson, 1988; Beatty et al., 1995; Liu et al., 1997; Ayers, 1998; Miller and Skinner, 1998), they have several limitations. First, they focus on a specific item to measure earnings management and they limit the ability to detect any other possible earnings management practices. Secondly, the researcher should use prior knowledge to specify an item or tool which might be used in earnings management. If there is no information about the items or choices used in earnings management, specific accruals models will be unable to detect earnings management. Therefore, they are much more subjective and costly comparing to total accruals models.

The Distribution of Earnings

Comparing to total accruals and specific accruals models, a more recently emerged approach is using the distributions of earnings and frequency of earnings changes to detect earnings management. It is first used by Burgstahler and Dichev (1997) and followed by Degeorge et al. (1999) and Myers and Skinner (1999), Das et al. (2009). In distribution of earnings method, based on earnings benchmarks, earnings behaviour is observed to detect earnings management (McNichols, 2002). However, similar to specific accruals models, it is a costly and subjective measure to detect earnings management.

3.6.1 Total Accruals to Measure Earnings Management

There is no consensus on the explanatory power of the research designs to detect earnings management. Nevertheless, in this research, earnings management is measured using total accrual models. The reason to use total accrual models is that it allows controlling for additional variables (e.g. corporate governance) (McNichols, 2000; Pornupatham, 2006). Bugshan (2005) indicates that, in corporate governance literature, it is not straightforward which accruals are used to manage earnings. Therefore, total accrual models, which measure the total effects of accruals resulting from accounting choices and estimates, are more appropriate for studies examining the association between earnings management and corporate governance. In addition, as McNichols (2000) points out that in a research design aiming to explore the association between earnings management and other variables, the specific accrual models are less applicable, because they require separate analyses for each variable. Moreover, the use of total accrual models in most of the previous earnings management studies indicates a wide acceptance for this model.

Total accruals are composed of two components; discretionary and non-discretionary accruals (Healy, 1985). Non-discretionary accruals are accruals resulted from the operational activities and the mandated accounting rules on which management has no opportunity to change

or manage. They are determined exogenously; therefore they have no effects on earnings manipulation (Young, 1995). On the other hand, discretionary accruals are accruals resulted from the choices of accounting standards, estimations and judgements of management. They might be adjusted in accordance with management's intention. Therefore, discretionary accruals enable manager to alter the timing or the amount of reported revenue or expense through estimations, deferrals and choices. Discretionary accruals might be both positive (income-increasing) or negative (income-decreasing).

$$TAC_{it} = DA_{it} + NDA_{it} \quad (1)$$

Where;

TAC_{it} = Total accruals in the period (t),

DA_{it} = Discretionary accruals in the period (t),

NDA_{it} = Non-Discretionary accruals in the period (t),

t = the event period,

i= the firm.

As discretionary accruals cannot be observed directly, they are measured indirectly by subtracting non-discretionary accruals from total accruals. Thus, in order to measure discretionary accruals, first, total accruals are calculated. In literature, total accruals are calculated both using a Balance Sheet approach and Cash Flow approach.

In Balance Sheet approach, which is also known as an indirect measure, total accruals are measured as follows;

$$TAC_{it} = (\Delta CA_{it} - \Delta Cash_{it}) - (\Delta CL_{it} - \Delta STD_{it}) - DEP_{it} \quad (2)$$

Where;

TAC_{it} = Total accruals in the period (t),

ΔCA_{it} = Change in total current assets in the period (t),

$\Delta Cash_{it}$ = Change in cash and cash equivalents in the period (t),

ΔCL_{it} = Change in total current liabilities in the period (t),

ΔSTD_{it} = Change in long term debt in the period (t),

DEP_{it} = Depreciation and amortization expense in the period (t),

t = the event period,

i = the firm.

In Cash Flow approach, which is a direct measure, total accruals are measured as follows;

$$TAC_{it} = NI_{it} - CFO_{it} \quad (3)$$

Where;

TAC_{it} = Total accruals in the period (t),

NI_{it} = Net income in the period (t),

CFO_{it} = Cash flows from operations in the period (t),

t = the event period,

i = the firm.

Drina and Largay (1985) indicate that while in theory both approaches yield the same results, Balance Sheet approach provides errors in measuring total accruals. Hribar and Collins (2002) support this and argue that Balance Sheet approach suffers from measurement problems, because some of the non-operating events bypass income statement and recognized in the balance sheet, which might boost total accruals if it is measured by Balance Sheet approach.

As this study uses data from post-IFRSs time period, between the years 2005-2009, all listed firms on ISE are required to present cash flow statement. Therefore, considering the criticism on the indirect method and following Young (1995) and Hribar and Collins (2002), in this research, in order to measure discretionary accruals Cash Flow approach is applied.

After the measurement of total accruals, in order to estimate the discretionary accruals, non-discretionary accruals are estimated based on the total accrual models. In the following section, total accrual models developed to estimate non-discretionary accruals to decompose discretionary accruals are discussed.

3.7 Earnings Management Models to Estimate Discretionary Accruals

As it is briefly discusses in section 4.5, there are different total accrual models to capture earnings management (e.g. the Healy Model, the DeAngelo Model, the Industry Model, the Jones Model, the Modified Jones Model, the KS Model, the Margin Model, the Adapted Model and several other Performance Adjusted Models). The details of each model are summarised in the following subsections.

3.7.1 The Healy Model

Total accrual models to measure the earnings management starts with the Healy Model. Healy (1985) defines the accruals as the difference between reported earnings and cash flows from operations. Total accruals are composed of two parts, discretionary and non-discretionary. Non-discretionary accruals include all accruals resulted from the mandatory application of accounting standards. On the other hand, discretionary accruals are accruals resulted from the use of accounting choices and estimations of management allowed in accounting standards. Even though depreciation of long lived assets is mandated, the accounting standards allow management to choose the depreciation method and to estimate the useful life of them. Therefore, while depreciation expenses are non-discretionary, as a result of depreciation method choice and the useful life estimations, some part of the depreciation expenses involve discretions.

According to the Healy Model (1985), the discretionary accruals are measured as the difference between total accruals and non-discretionary accruals estimated as the mean of the total accruals in the estimation period scaled by the lagged total assets.

The Healy Model is as follows;

$$DA_{it} = TAC_{it} - NDA_{it} \quad (4)$$

$$NDA_{it} = 1/n \sum_{\tau} (TAC_{\tau} / TA_{\tau-1}) \quad (5)$$

Where;

DA_{it} = Discretionary accruals in the period (t) scaled by the lagged total assets,

TAC_{it} = Total accruals in the period (t) scaled by the lagged total assets,

NDA_{it} = Non-discretionary accruals in the period (t) scaled by lagged total assets,

TA_{t-1} = Total assets in the period (t-1),

n = the number of years in the estimation period

t = the event period,

i = the firm,

τ = year subscript for years (t-n, t-n+1, ..., t-1) included in the estimation period.

The proxy proposed by Healy (1985) is a simple measure of discretionary accruals with an assumption of that, non-discretionary accruals are zero.

3.7.2 The DeAngelo Model

Similar to the Healy Model, DeAngelo (1986) decomposes total accruals into discretionary and non-discretionary parts. DeAngelo (1986) relaxes the unrealistic assumption of zero non-discretionary accruals, and assumes that non-discretionary accruals are constant over years. So, previous year's total accruals are used as non-discretionary accruals of current year and discretionary accruals

are measured as the difference between current year's total accruals and non-discretionary accruals which is technically prior year' total accruals.

The DeAngelo Model is as follows;

$$NDA_{it} = TAC_{i,t-1}/TA_{i,t-2} \quad (6)$$

$$DA_{it} = (TAC_{it}/ TA_{i,t-1}) - NDA_{it} \quad (7)$$

Where;

NDA_{it} = Non-discretionary accruals in the period (t),

TAC_{it} = Total accruals in the period (t),

$TAC_{i,t-1}$ = Total accruals in the period (t-1),

DA_{it} = Discretionary accruals in the period (t) scaled by the lagged total assets,

$TA_{i,t-1}$ = Total assets in the period (t-1),

$TA_{i,t-2}$ = Total assets in the period (t-2),

t = the event period,

i = the firm.

3.7.3 The Industry Model

Dechow and Sloan (1991) propose the Industry Model to detect earnings management. The Industry Model relaxes the assumption of constant non-discretionary accruals over years and assumes that non-discretionary accruals are similar for firms operating in the same industry. Therefore, the median of total accruals scaled by lagged total assets represent the non-discretionary accruals for firms in the same industry. In other words, according to Industry model, each industry has

normal accruals for a specific time period. So, discretionary accruals are equal to abnormal accruals, which are accruals above or below of industry average normal accruals.

The Industry Model is as follows;

$$NDA_{it} = \beta_0 + \beta_1 \text{Median} (TAC_{it} / TA_{i,t-1}) \quad (8)$$

$$DA_{it} = (TAC_{it} / TA_{i,t-1}) - NDA_{it} \quad (9)$$

Where;

NDA_{it} = Non-discretionary accruals in the period (t) scaled by lagged total assets,

TAC_{it} = Total accruals in the period (t),

DA_{it} = Discretionary accruals in the period (t),

$TA_{i,t-1}$ = Total assets in the period (t-1),

t = the event period,

i = the firm.

Dechow et al. (1995) argue that, the Industry Model fail to detect earnings management if there is a variation in non-discretionary accruals resulting firm-specific circumstances.

3.7.4 The Jones Model

Jones (1991) proposes a regression based estimation model in which she assumes that all revenues are non-discretionary and non-discretionary accruals are a function of change in sales ($\Delta SALES$) and property plant and equipment (PPE). Similar to Dechow and Sloan

(1991), Jones (1991) relaxes the assumption of constant non-discretionary accruals and incorporates the firm-specific circumstances into the estimation model.

The Jones Model is as follows;

$$TAC_{it} = \beta_0 + \beta_1 \Delta SALES_{it} / TA_{i,t-1} + \beta_2 PPE_{it} / TA_{i,t-1} + \varepsilon_{it} \quad (10)$$

Where;

TAC_{it} = Total accruals in the period (t) scaled by lagged total assets,

$\Delta SALES_{it}$ = Change in sales from period (t-1) to period (t),

PPE_{it} = Property plant and equipment in the period (t),

$TA_{i,t-1}$ = Total assets in the period (t-1),

t = the event period,

i = the firm.

In the model, in order to control the changes associated with depreciation expenses in non-discretionary accruals, property plant and equipment (PPE) is added into the estimation model. In the same way, to control the changes in working capital, change in sales ($\Delta SALES$) which represents firms' operations performance is included. The Jones Model is originally estimated by using a times series analysis. For each firm, the firm-specific parameters β_0 , β_1 and β_2 are estimated by Ordinary Least Square (OLS) regression in the estimation period and replaced in the regression above for the event period.

After the estimation of non-discretionary accruals, the discretionary accruals are measured by subtracting the estimated total accruals measured by the Jones Model from total accruals in the event period.

So the error term (ϵ_{it}) in the regression represents the discretionary accruals.

Although, the Jones Model is more sophisticated relative to the Healy, DeAngelo and Industry Model, it assumes that all sales are non-discretionary (Jones, 1991). Therefore, the model is not able to capture earnings management attempts of management over sales (Dechow et al. 1995). In addition, as it uses a time series analysis, it subjects to a survivorship bias in empirical test and needs a minimum of six years of data prior to year in order to estimate the regression (Defond ve Jiambalvo, 1994).

Defond ve Jiambalvo (1994) use a cross sectional version of the Jones Model. They estimate the Jones Model using a data from firms matched on year and industry. Cross sectional Jones Model do not require a long time series which causes survivorship bias and limits the usefulness of the sample (Bartov et al., 2001; Teoh and Wong, 2002). Moreover Bartov et al. (2001) find and Jones et al. (2008) approve that cross sectional Jones Model and Modified Jones Model outperform their time series counterparts in detecting earnings management.

3.7.5 The Modified Jones Model

Following Jones (1991), Dechow et al. (1995) develop the Modified Jones Model. They argue that, discretion on accruals might be exercised over revenues. Consequently, if management manages the earnings through revenues, the Jones Model fails to detect earnings management which is indicated as the main limitation of the model by Jones (1991), as well. Dechow et. al. (1995) adjusted the Jones Model for changes in receivables to avoid this limitation and assumed that all changes in credit sales are discretionary and explain it by the proposition that earnings are managed more easily over credit sales rather cash sales.

The Modified Jones Model is as follows;

$$TAC_{it} = \beta_0 + \beta_1(\Delta SALES_{it} - \Delta REC_{it}) / TA_{i,t-1} + \beta_2 PPE_{it} / TA_{i,t-1} + \varepsilon_{it} \quad (11)$$

Where;

TAC_{it} = Total accruals in the period (t) scaled by lagged total assets,

$\Delta SALES_{it}$ = Change in sales from period (t-1) to period (t),

ΔREC_{it} = Change in receivables from period (t-1) to period (t),

PPE_{it} = Property plant and equipment in the period (t),

$TA_{i,t-1}$ = Total assets in the period (t-1),

t = the event period,

i = the firm.

Similar in the Jones Model, the error term (ε_{it}) in the regression represents the discretionary accruals.

Even the Modified Jones Model is a powerful earnings management model; its ability to detect earnings management is limited. Dechow et al. (1995) implicitly assume that, all changes in credit sales (receivables) are discretionary. However, the assumption is not realistic. There are various studies (e.g. Dechow et al., 2003; Larcker and Richardson, 2004) concerning to develop the Modified Jones Model by adding new variables or ratios into the model.

3.7.6 Alternative Adjustments to the Jones and Modified Jones Models

The ability of accruals based earnings management model continues to be a popular topic in accounting research and researchers keep on developing more sophisticated models to estimate discretionary accruals more precisely. All total accruals model aim to estimate non-discretionary accruals using the regression. Therefore, the error term (ϵ_{it}) in the regressions represents the discretionary accruals.

In their studies, Kang and Sivaramakrishnan (1995) criticise the Jones Model and point out that, in the Jones Model the variables used to measure non-discretionary accruals may not be free of earnings management. According to them, there are some omitted variables in the Jones Model such as cost of goods sold and other expenses to

predict non-discretionary accruals. In addition, they add that there is a simultaneity problem resulting from accounting standards and double entry bookkeeping systems, in the model which may affect the estimated firm-specific coefficients and standard errors. To avoid these problems, they propose a model based on an instrumental variable method and add cost of good sold and other expenses as partitioning variables into the model and use panel data analysis to estimate the accruals.

The KS Model is follows;

$$\begin{aligned}
 AB_{it} = & \Phi_0 + \Phi_1[AR_{i,t-1}/REV_{i,t-1}]*REV_{it} \\
 & + \Phi_2[APB_{i,t-1}/EXP_{i,t-1}]*EXP_{it} \\
 & + \Phi_3 [DEP_{i,t-1}/GPPE_{i,t-1}]*GPPE_{it} + \beta PART_{it} + e_{it}
 \end{aligned} \tag{12}$$

Where;

AB_{it} = Unmanaged accruals balance in the period (t),

$AR_{i,t-1}$ = Accounts receivable in the period (t-1),

$REV_{i,t-1}$ = Net sales revenues in the period (t-1),

REV_{it} = Net sales revenues in the period (t),

$APB_{i,t-1}$ = Sum of the account balances related to expenses (e.g. inventory, prepaid expenses and accounts payable) in the period (t-1),

$EXP_{i,t-1}$ = Operating expenses (cost of goods sold, selling and administrative expenses before depreciation) in the period (t-1),

EXP_{it} = Operating expenses in the period (t),

$DEP_{i,t-1}$ = Depreciation and amortisation in the period (t-1),

$GPPE_{i,t-1}$ = Gross property, plant and equipment in the period (t-1),

$GPPE_{it}$ = Gross property, plant and equipment in the period (t),

$PART_{it}$ = Partitioning variable that captures factors that allegedly motivate earnings management in the period (t),

t = the event period,

i = the firm.

According to Kang and Sivaramakrishnan (1995), the KS model is more powerful to the Jones Model in measuring earnings management. However, Jaime and Noguera (2004) argue that the KS model is not a powerful model.

Peasnell et al. (2000) argue that, the Modified Jones Model outperforms to measure discretionary accruals when the depreciation expense is included in the measurement of total accruals. Therefore, they propose an alternative cross sectional model which uses the working capital accruals as dependent variable.

The Margin Model is follows;

$$WAC_{it} = \beta_0 + \beta_1(\Delta SALES_{it} - \Delta REC_{it}) / TA_{i,t-1} + \epsilon_{it} \quad (13)$$

Where;

WAC_{it} = Working capital accruals in the period (t) scaled by lagged total assets,

$\Delta SALES_{it}$ = Change in sales from period (t-1) to period (t),

ΔREC_{it} = Change in receivables from period (t-1) to period (t),

$TA_{i,t-1}$ = Total assets in the period (t-1),

t = the event period,

i = the firm.

According to Peasnell et al. (2000), although the Margin Model specifies the discretionary accruals better when the cash flow performance is extremely high, the Jones Model and the Modified Jones Model perform better in detecting discretionary accruals if the earnings managed through revenues or bad debts.

As it is indicated in section 3.6.1, total accruals are associated with net income and cash flows from operations. An increase in the reported income (relative to CFO) is associated with an increase in total accruals, vice versa (Young, 1995).

$$TAC_{it} = NI_{it} - CFO_{it} \quad (14)$$

Therefore, recent adjustments to the Jones Model and the Modified Jones Model mostly focus on the incorporation of performance measures into the model. Kazsnik (1999) included change in cash flows from operations (ΔCFO) into the Modified Jones Model as an additional explanatory variable.

The Kazsnik Model is as follows;

$$TAC_{it} = \beta_0 + \beta_1(\Delta SALES_{it} - \Delta REC_{it}) / TA_{i,t-1} + \beta_2 PPE_{it} / TA_{i,t-1} + \beta_3 \Delta CFO_{it} / TA_{i,t-1} + \varepsilon_{it} \quad (15)$$

Where;

TAC_{it} = Total accruals in the period (t) scaled by lagged total assets,

$\Delta SALES_{it}$ = Change in sales from period (t-1) to period (t),

ΔREC_{it} = Change in receivables from period (t-1) to period (t),

PPE_{it} = Property plant and equipment in the period (t),

ΔCFO_{it} = Change in cash flows from operations from period (t-1) to period (t),

$TA_{i,t-1}$ = Total assets in the period (t-1),

t = the event period,

i = the firm.

Similarly, Dechow et al. (2003) relaxes the assumption of the Modified Jones that all credit sales are discretionary. They argue that there is a

positive correlation between sales growth and changes in receivables. They adjust the Modified Jones Model by adding a coefficient (k) as a proxy that measures the expected changes in credit sales in a given amount of sales, considering the growth in sales.

$$\Delta REC_{it} = \alpha + k * \Delta SALES_{it} \quad (16)$$

So, they use the adapted version of ($\Delta SALES - \Delta REC$) in accordance with k coefficient which captures the changes in receivables resulting from the changes in sales. This model is called the Adapted Model. Moreover, they extend the model by including lagged total accruals (Lag_TAC) and future sales growth (GR_Sales) into the model to control the portion of the current accruals resulting from previous year's accruals and the increases in accruals resulting from the operations to meet the future sales growth, respectively. The new model is called the Forward Looking Model.

In their study, Dechow et al. (2003) compare the Modified Jones Model to the Adapted and the Forward Looking Models and they find that while the Adapted Model provides a slight improvement in the explanatory power, the Forward Looking Model doubles the Modified Jones Model in explanatory power. Consistent with the Modified Jones Model, in the Forward Looking Model, the coefficient of k corrected change in sales adjusted for receivables ($(1+k)\Delta SALES - \Delta REC$) is positive, the coefficient of property plant and equipment (PPE) is negative, and

additionally, both lagged total accruals (Lag_TAC) and future sales growth (GR_Sales) display positive signs.

The Adapted and Forward Looking Models are as follows

$$TAC_{it} = \beta_0 + \beta_1((1+k)\Delta SALES_{it} - \Delta REC_{it}) / TA_{i,t-1} + \beta_2 PPE_{it} / TA_{i,t-1} + \varepsilon_{it} \quad (17)$$

$$TAC_{it} = \beta_0 + \beta_1((1+k)\Delta SALES_{it} - \Delta REC_{it}) / TA_{i,t-1} + \beta_2 PPE_{it} / TA_{i,t-1} + \beta_3 Lag_TAC_{i,t-1} / TA_{i,t-1} + \beta_4 GR_Sales_{it} + \varepsilon_{it} \quad (18)$$

Where;

TAC_{it} = Total accruals in the period (t) scaled by lagged total assets,

$\Delta SALES_{it}$ = Change in sales from period (t-1) to period (t),

ΔREC_{it} = Change in receivables from period (t-1) to period (t),

PPE_{it} = Property plant and equipment in the period (t),

$Lag_TAC_{i,t-1}$ = Total Accruals in the period (t-1),

GR_Sales_{it} = Change in sales from the current year to next years scaled by current sales

$TA_{i,t-1}$ = Total assets in the period (t-1),

k = Proxy that measures the expected changes in credit sales in a given amount of sales,

t = the event period,

i = the firm.

As the Modified Jones Model misspecifies discretionary accruals in extreme firm performance, Larcker and Richardson (2004) add book-to-market ratio (BM) as a proxy of expected growth in the operations of firms and cash flows from operations (CFO) to avoid the effect of extreme firm performance on accruals. Consistent with the Modified Jones Model, while change in sales adjusted for receivables

($\Delta SALES - \Delta REC$) displays a positive coefficient, property plant and equipment (PPE) has a negative coefficient. Additionally, both book-to-market ratio (BM) and cash flows from operations CFO are negatively associated with total accruals.

The Larcker and Richardson Model is as follows;

$$TAC_{it} = \beta_0 + \beta_1(\Delta SALES_{it} - \Delta REC_{it}) / TA_{i,t-1} + \beta_2 PPE_{it} / TA_{i,t-1} + \beta_3 CFO_{it} / TA_{i,t-1} + \beta_4 BM_{it} + \varepsilon_{it} \quad (19)$$

Where;

TAC_{it} = Total accruals in the period (t) scaled by lagged total assets,

$\Delta SALES_{it}$ = Change in sales from period (t-1) to period (t),

ΔREC_{it} = Change in receivables from period (t-1) to period (t),

PPE_{it} = Property plant and equipment in the period (t),

BM_{it} = Book to Market ratio in the period (t),

CFO_{it} = Cash flows from operations in the period (t),

$TA_{i,t-1}$ = Total assets in the period (t-1),

t = the event period,

i = the firm.

A final adjustment has been made by Kothari et al. (2005). They include return on assets (ROA) in year t and in year (t-1), separately into the model in order to control the effect of company performance on total accruals. In addition, they use a performance matched accrual model to detect the model that best performs.

The Kothari et al. (2005) Model is as follows;

$$TAC_{it} = \beta_0 + \beta_1 1/TA_{i,t-1} + \beta_2 \Delta SALES_{it} / TA_{i,t-1} + \beta_3 PPE_{it} / TA_{i,t-1} + \beta_4 ROA_{it} + \varepsilon_{it} \quad (20)$$

Where;

TAC_{it} = Total accruals in the period (t) scaled by lagged total assets,

$\Delta SALES_{it}$ = Change in sales from period (t-1) to period (t),

PPE_{it} = Property plant and equipment in the period (t),

ROA_{it} = Return on Assets in the period (t),

$TA_{i,t-1}$ = Total assets in the period (t-1),

t = the event period,

i = the firm.

According to findings of the study, the performance matched Modified Jones Model, the Jones Model with return on assets (ROA) in year t and the Modified Jones Model with lagged return on assets (ROA) perform best among others, but they do not argue that these measures are best in all circumstances.

Similarly, Siregar and Utama (2008) evaluate explanatory power of total accrual models developed by Jones (1991), Dechow et al. (1995), Kasznik (1999) and Dechow et al. (2003). According to their study, with the highest adjusted R-square, Kazsnik's model performs best among the models evaluated.

In this study, the Jones Model, the Modified Jones Model, the Adapted Model and other Performance Adjusted Models (Kazsnik, 1999; Dechow et al., 2003; Larcker and Richardson, 2004; Kothari et al. 2005)

are evaluated to estimate discretionary accruals. Mainly, there are two reasons of choosing these models. First, the Jones Model and the Modified Jones Model are most commonly used models and they provide more robust estimates than the Healy Model and the DeAngelo Model (Young, 1999). Second, the Jones Model is a relatively sophisticated measure of discretionary accruals and subsequent models aim to relax its assumption to increase the explanatory power and detection ability of it. The Adapted Model is used because it is the first model that makes a significant change in the Modified Jones Model and assumes that all receivables are not discretionary, some portion of receivables are non-discretionary resulting from the growth in sales. Besides, the subsequent performance adjusted models (the Forward Looking Model, the Kazsnik (1999) Model, the Larcker and Richardson (2004) Model and the Kothari et al. (2005) Model) are applied because total accruals are associated with net income and cash flow performance, therefore, performance adjusted models are more likely to detect discretionary accruals precisely.

3.8 Summary

In sum, this chapter focuses on the literature on earnings management by explaining the underlying reasons of managing the earnings and reviewing the accounting literature in theory. Earnings management is

the alteration of the reported earnings numbers in order to mislead the users of financial reports. Mainly, the accounting literature explains managements' incentive to manage the earnings through the wealth maximizing approach of them, the pressures from the capital markets through the analysts' forecasts and the political incentives. Managers may manage earnings using both real activities and accruals. The aim of this study is to focus on the accruals based earnings management. Therefore, after a short review of real earnings management, a detailed review of accrual based earnings management has been presented.

Accounting standards allow management to use professional judgement and to choose the best accounting treatments allowed in the standards that reflect the actual economic performance of the firm. However, management might use the flexibility provided in standards to alter the earnings of the firm. Therefore, as a result of the nature of accounting standards, earnings management is not avoidable.

Earnings management is not always a bad thing, some researchers argue that it may be a good thing to reduce the volatility of earnings and cash flows, drive down the cost of capital and increase the share price. Besides the ongoing debate on good versus bad earnings management, another unsolved issue is the management's intention to manage quarterly versus annually earnings number. It is argued that, while management has more opportunity to manage quarterly earnings

in unaudited financial reports, some researchers claim that management is less likely to manage earnings quarterly as the year-end financial numbers are priced more by the investors and management's compensation and firms' lending contracts are mostly tied up to year-end financial performance.

In addition to all debates above, in this chapter after the definition of earnings management and the review on possible underlying reasons of managing earnings, widely used earnings management techniques were explained and total accrual models to estimate discretionary accruals were presented in detail. Among all models, the Jones Model and the Modified Jones Model are the most commonly used models in the literature. Based on these models, some recent performance adjusted models are developed to improve the capturing power of the Jones Model and the Modified Jones Model.

The following chapter highlights both internal and external firm-specific corporate governance mechanisms with the relation to constrain earnings management.

CHAPTER 4

A REVIEW OF THE LITERATURE ON CORPORATE GOVERNANCE

4.1 Introduction

The main purpose of this study is to examine the role of corporate governance mechanisms on earnings management. Therefore, following the brief review of earnings management literature, this chapter summarises the literature on corporate governance mechanisms in relation to earnings management. Mainly, the relation between earnings management and corporate governance is presented theoretically from the agency theory perspective. The role of board composition and ownership structure on earnings management is held with their aims in financial reporting and the impact of strong corporate governance structure on earnings management. In addition, a

review of external audit literature is presented to define the role of audit quality in terms of audit firm size (Big-4 and Non-Big-4), auditor tenure and industry specialisation on the relation between corporate governance and earnings management.

The remainder of this chapter is as follows. Section two defines corporate governance. Section three summarises the corporate governance mechanisms and evaluates the literature on internal and external corporate governance mechanisms and reviews the relation with earnings management. Section four summarises the literature.

4.2 Definition of Corporate Governance

In literature, there are various definitions of corporate governance and classifications of its mechanisms. Shleifer and Vishny (1997) define it narrowly as “*ways in which suppliers of finance to corporations assure themselves of getting a return on their investment*”. According to García-Osma (2006), corporate governance surrounds all the provisions, instruments and mechanisms intended to monitor the activities of management and align the management incentives with all capital lenders. Corporate Governance is a management mechanism that assures the efficient use of companies’ assets in the interests of the stakeholders and protects investors from opportunistic behaviour

(Gillan, 2006). Mainly, it aims to mitigate the incentive problems resulting from the separation of ownership and control and includes all internal and external firm specific mechanisms to control firms' operations.

However, corporate governance is a broad concept and its definition is not that much simple. The definition of corporate governance depends on different factors such as the ownership structure, composition of management and board, the capital markets regulations and economic environment. Moreover, the role of corporate governance shapes its definition. Therefore, corporate governance definition that reflects the economic conditions, regulations and institutional settings in one country may not absolutely meet the expectations of another country. Primarily, it is apparent from all definitions above corporate governance aims to mitigate the agency problem. However, the dilemma is the agency problem that exists among whom? Agency problem in firms with a diffused ownership like in US, UK or other developed countries may exist among the shareholders (principal) and the management (agent). On the other hand, agency problem in firms with concentrated ownership may arise among minor and major shareholders (Shleifer and Vishny, 1997), who has the control power and significant influence over management to pursue their own interests on financial reporting and overall management activities regardless the rights of minority shareholders (Johnson et al. 2000). For that reason, while in firms with

concentrated ownership, corporate governance is more likely to be used in order to mitigate the agency problems, or the information asymmetry, arisen between majority and minority shareholders, it serves to solve the conflicts and agency problems between management and owners in firms with dispersed ownership.

In addition to ownership structure, countries' legal environment has an important influence on the definition of corporate governance and its roles. While in countries with high investor protection, corporate governance mitigates the conflicts between management and owners, in countries with weak investor protections, its roles and consequently its definition move towards to identify and mitigate the agency problems between majority and minority shareholders.

Therefore, in a broader sense, corporate governance is defined by LaPorta et al. (2000) as "*a set of mechanisms through which outside investors protect themselves against expropriation by the insiders*" and they add that both management and controlling or majority shareholders are referred as insiders.

As corporate governance controls and monitors financial reporting and overall activities management and mitigates agency problem by reducing the information asymmetry, consequently, it influences the financial reporting process and the accounting information disclosed.

Empirical studies concerning the importance of corporate governance provide supporting findings on the relation between poor governance and poor financial reporting quality associated with earnings management, restatements and fraudulent reporting (e.g. Beasley, 1996; Dechow et al., 1996; Peasnell et al., 2000; Klein, 2002; Davidson et al., 2005).

The following section discusses the corporate governance mechanisms and their relation to earnings management by reviewing the previous literature.

4.3 Corporate Governance Mechanisms

It is well defined in the previous section that corporate governance is a broad and comprehensive concept. Therefore, any internal and external mechanism that plays a role to mitigate the agency problem and increases the efficiency in the use of organizations' assets, builds corporate governance. From this view, all capital market regulations (e.g. independent external audit) to protect the rights of investors, organizational rules, appointment of management roles (e.g. separation of CEO and chairman roles), ownership structure (e.g. the rate of public shares), accounting regulations (e.g. conservatism, García Osma

(2006)) that aim to improve the quality of financial reports might be considered as corporate governance mechanism.

Dennis and McConnell (2003) classify corporate governance mechanisms as institutional (internal) and market based (external). According to this classification, internal corporate governance mechanisms are firm-specific and institutional mechanisms (e.g. structure of board of directors, the ownership structure, internal audit) and external corporate governance mechanisms are country-level rules and regulations (e.g. independent external audit, accounting standards) set by the regulatory bodies or capital markets board.

Following Dennis and McConnell (2003), in this study, in order to examine the role of corporate governance on earnings management, the institutional (internal) corporate governance mechanisms are used. The reason of using the institutional mechanisms is mainly because of the research design. This study uses data from one country to test the relation and the external corporate governance regulations doesn't change for the sample firms. Among institutional corporate governance mechanisms, because of the data availability, this study uses following characteristics of the board of directors and ownership structure; board of directors independence, board size, CEO duality, audit committee size, ownership concentration, institutional ownership and blockholdership. Nonetheless, even though external audit is considered

as market based corporate governance mechanism, previous studies show that its quality differs among firms. Therefore, to investigate the role of external independent audit as external corporate governance mechanism the audit quality is used.

4.3.1 Board of Directors

A board of directors is a body representing the shareholders to govern the organizations' main activities, make decisions on the behalf of the shareholders in response to protect the benefits of the organization and shareholders to oversee and inform others (all stakeholders) about the overall performance of the organization. Therefore, it is an important internal control mechanism that monitors top management's activities and performance and it has a significant role in decision making (Chtourou et al. 2001; García-Osma 2008). However, Dennis and McConnell (2003) argue that, although, it seems as an effective corporate governance mechanism in theory, in practice its role is not clear. The underlying reason of this argument is the effectiveness of the board of directors to perform its monitoring roles depends on its independence (Fama and Jensen, 1983; Beasley, 1996; Dechow et al., 1996), composition and characteristics of board members and its ability to limit the management's discretion (Beasley, 1996).

In order to examine the role of board of directors, previous studies concern with several different issues. Among all, the widely studied board composition and characteristics are the size, the independence of board of directors, appointment of CEO and chairperson positions by the same individual, the size and the independence of audit committee and the number of meetings held by the board.

4.3.1.1 Board of Directors' Independence

The role of independent or outside directors in the board of directors has long been a subject of various studies. Fama and Jensen (1983) argue that board of directors is an important component of strong corporate governance and an effective mechanism to mitigate the agency problems. Williamson (1984) argues that, as management has information advantage over others and access insider knowledge easily in the organizations, board of directors may be an instrument that limits management's incentives to guard the shareholders' interest. Consequently, to have a board of directors with independent outside members is crucial, because the outsiders in the board of directors may balance the relations between the management and insider members and surmount the privity over the decisions.

A board with independent members is objective in decision making and it improves the monitoring and controlling activities over management

(CMB, 2003a). As the number of outside members in the board increases, the ability of the board to perform its monitoring role increases (Fama and Jensen, 1983). Within this framework, the presence of an independent board of directors might play a constraining role on management discretion. As board of directors is responsible for the monitoring of the management activities, it is expected that board independence influence whether or not management engages in earnings management (Xie et al. 2003). In recent years, the capital markets boards' regulations on the corporate governance (e.g. Cadbury, 1992 in UK; Hampel, 1998 in EU; Blue Ribbon, 1998 and SOX, 2002 in US; CMB, 2003a in Turkey) advise the appointment of independent members to board of directors.

In contrast to the common expectations, in earnings management literature, the role of board of directors on earnings management is inconclusive. While some of the existing empirical studies find a negative association between board of directors independence and earnings management (e.g. Beasley, 1996; Dechow et al., 1996; Klein, 2002; Xie et al., 2003), some others do not provide any significant evidence (e.g. Chtourou et al. 2001; Park and Shin, 2004).

Beasley (1996) studies the relation between board of directors and financial statements fraud and finds that no-fraud firms have significantly higher percentages of outside directors than fraud firms.

Similarly, Dechow et al. (2006) examine the relation between earnings manipulations and weaknesses in firms' internal governance structures and document that, earnings manipulating firms are more likely to have board of directors dominated by insiders. Klein (2002), in her study examining the relation between board of directors characteristics and earnings management, finds a negative relation between board characteristics and abnormal accruals and also indicate that there is an increase in the abnormal accruals of firms switching the board of directors from a majority-independent to a minority-independent structure. Xie et al. (2003) examine the role of board of directors in preventing earnings management and find that earnings management is less likely occur in firms with more independent outside members in the board of directors. Correspondingly, Benkel et al. (2006) study the relation between board of directors' independence and earnings management and the results of their findings confirm that board of directors with a higher proportion of independent directors is associated with reduced levels of earnings management. Peasnell et al. (2000) study the influence of board independence on earnings management and report that outside directors are effective in UK in constraining earnings management, only in the post-Cadbury Report. Furthermore, they restudy the relation considering the asymmetric loss functions with respect to earnings management (Peasnell et al., 2005) and argue that the board of directors have greater incentive to monitor income-increasing discretionary accruals, because the loss of

overstating of earnings are likely to exceed understating of earnings. Overall, they provide evidence that income-increasing accruals are negatively correlated with the proportion of outsiders in the board of directors. Moreover, in the meta analysis on corporate governance and earnings management, Lin and Hwang (2009) find that there is a negative relation between board of directors' independence and earnings management. Kim and Yoon (2008) examine whether corporate governance improvements mitigate earnings management and find that board of directors' independence limits earnings management.

On the other hand, Chtourou et al. (2001) investigate the effects of firms' corporate governance practices on information released in financial reports and they find no effect of board independence on earnings management. Similarly, Park and Shin (2004) study the effect of outside board members, financial intermediaries and the institutional owners on earnings management and find no significant association between the outsiders in the board and earnings management and also suggest that outside directors do not improve corporate governance by itself, particularly, where firms have highly concentrated ownership and labour market for outside directors is not well developed.

4.3.1.2 Board of Directors' Size

In corporate governance literature, a considerable attention has been drawn to the board of directors' size in terms of board composition. Theoretically, there are two contrary views on the board size. Jensen (1993) argues that a small board may improve the financial performance by supporting his argument with the following explanation; "*When boards get beyond seven or eight people they are less likely to function effectively and are easier for the CEO to control*". So, from this point of view, because of the coordination and communication problems among board members in the large boards, the board is less likely to be effective and functional in financial reporting oversight. In other words, a small board may be more effective and functional in performing its duties.

On the other hand, it is also argued that, a large board have more expertise and external networks, as a result of experienced and diversified members (Dalton et al.,1999), large boards are more likely to have more independent directors with corporate or financial experience who can resist management's discretion (Pornupatham, 2006). As larger boards are more likely to have more independent members with diversified backgrounds, it is proposed that, large boards may be more qualified and effective in overseeing the financial reporting process.

Beside the debate on the optimal number of directors on the board, previous empirical studies concerning the association between earnings management and board size provides conflicting findings. According to Xie et al. (2003), Benkel et al. (2006), Beasley (1996) and Chtourou et al. (2001), as board size increases, discretionary accruals decreases. However, Abbott et al. (2000) do not find any significant association. Pornuthanam (2006) studies the role of corporate governance on earnings management controlling for audit quality, and confirming the findings of Abbott et al. (2000), he cannot find any significant effect of board size on the level of discretionary accruals.

4.3.1.3 CEO Duality

CEO duality is the occupation of both the chairman and the Chief Executive Officer (CEO) positions by the same person. CEO is the highest officer in organization and responsible for the overall activities and management of the organization. The chairman is the head of board of directors and the primary responsibility of the board of directors is to oversee the management activities. Occupation of both positions by the same person leads to a power concentration which is likely to decrease the controlling and monitoring ability of the board over management's activities. Therefore, in order to avoid the power concentration and balance between management and control, the roles of the chairman and CEO should be separated (Jensen, 1993). In

recent years, capital markets boards' regulations on the corporate governance (e.g. Cadbury, 1992 in UK, CMB, 2003 in Turkey) recommend the separation of CEO position and chairman positions, as well.

Theoretically, as a result of power concentration and the overlapping of the management and controlling roles, it is expected a positive association between CEO duality and earnings management. In other words, firms with CEO duality are more likely to have higher level of discretionary accruals. However, most of the empirical studies do not support the theory. Dechow et al. (1996) document in their study that earnings manipulating firms are more likely to have CEO who simultaneously serves as the Chairman of the Board of directors. Using a sample from S&P index, Xie et al., (2003) find no association between CEO duality and discretionary current accruals. Similarly, Davidson et al. (2005) and Chtourou et al. (2001) cannot find any significant association between earnings management and CEO duality.

4.3.1.4 Audit Committee

Audit committee is another important internal corporate governance mechanism. It is delegated by the board of directors to oversee the financial reporting and auditing processes, as well as to assure an effective internal control over corporations (Beasley, 1996; Klein, 2002).

Audit committee supervises major accounting choices and constrains earnings management practices (Piot and Janin, 2006). In addition, audit committee is responsible for the coordination between internal and external audit and assuring the independence of external auditors (McMullen and Raghunandan, 1996). Therefore, independence of audit committee is vital to effectively fulfil its coordination and oversight roles and it is expected that an active functional and well structured audit committee may able to limit earnings management (Xie et al. 2003).

In recent years, the capital markets boards' regulations on the corporate governance (e.g. Cadbury, 1992 in UK; Hampel, 1998 in EU; Blue Ribbon, 1998 in US; CMB, 2003 in Turkey) recommend or require (e.g. in Turkey) the presence of audit committees. Moreover, regulators also describe the composition of audit committee and characteristics of audit committee members.

Similar to the composition of board of directors, in literature, many researchers concern with the effect of independent audit committee and the size of the audit committee on earnings management. Considering the main responsibilities of an audit committee, it is expected that an independent committee would be more effective in constraining earnings management. However, unlike the expectations, previous studies do not provide consistent results about the relation between audit committee independence and earnings management. While, in

some studies a constraining role of audit committee - a negative relationship between audit committee independence and earnings management- are observed, in some others, it is argued that there is no significant relation between them. According to Klein (2002), there is a negative relation between audit committee independence and earnings management and a decrease in the dependence of audit committee causes a large increase in abnormal accruals. Peasnell et al. (2000) argue that, an independent audit committee mitigates income-increasing earnings management. Similarly, Lin and Hwang (2009), Benkel et al. (2006), Chtourou et al. (2001) and Abbott et al. (2004) argue that there is a negative association between independence and earnings management.

In contrast, some of the studies do not provide any relation between audit committee independence and earnings management (Yang and Krishnan, 2005; Xie et al., 2003; Piot and Janin, 2009; Davidson et al., 2005).

Another important factor related to the composition of audit committee is the size of it. Similar to the discussions of board of directors, the size of the audit committee may likely influence earnings management both positively and negatively depending on the effectiveness of large versus small audit committees.

In literature, the role of the audit committee size is discussed widely. However, most of them do not find any significant association between audit committee size and earnings management (e.g. Xie et al., 2003; Benkel et al., 2006, Davidson et al., 2005). As audit committee is delegated by board of directors, Beasley (1996) examine the role of board of directors on financial statement fraud considering the moderating effect of audit committee. He finds that no-fraud firms are not significantly more likely to have audit committee and the presence of audit committee does not provide any significant effect on the relation between board of directors' composition and financial statement fraud.

In contrast to others, Yang and Krishnan (2005) study the relation between audit committee characteristics and quarterly earnings management. Overall results show that a negative relation between audit committee size and earnings management. However, the results of the regression for each quarters shows that, the audit committee size has a significant influence only in the third and fourth quarter. Lin and Hwang (2009) conduct a meta analysis on earnings management and corporate governance literature and argue that there is a negative relation between audit committee size and earnings management.

4.3.2 Ownership Structure

Ownership structure refers to the distribution of shares among the equity lenders of firms. With the development of capital markets, the ownership structures of companies have become more complex. Ownership structure varies among firms with regard to voting rights, the composition and characteristics of equity shareholders. Demsetz and Lehn (1985) propose that the structure of corporate ownership is associated with value maximization. Therefore, in theory, it is expected that a value-maximizing firm should be structured in a balanced way in which the rights and interests of all shareholders and the corporate value of firm supposed to be followed, simultaneously.

According to Denis and McConnell (2003), the control and ownership is not completely separated from each other. While management might have some degree of equity shares of the firms they control, some owners have significant influence on firms' operations by virtue of the size of the equity shares they own. Therefore ownership structure is an important element of strong corporate governance.

As, ownership structure affects the overall control of firms, it also has influence on the effectiveness of financial reporting. In literature, several theoretical and empirical studies have been developed to explain the importance of the ownership structure on firms' management and

financial reporting. Mainly, from the agency theory perspective, Jensen and Meckling (1976) propose that managerial ownership creates an alignment between the agent and principal and therefore it increases the firm value. However, the role of ownership structure, on firms' value, financial reporting and the effectiveness of management is not that much basic. Several researchers examine the ownership structure empirically considering different ownership characteristics; the role of managerial or insiders holding of shares (e.g. García-Meca and Sanchez-Ballesta, 2009; Warfield et al., 1995; Gabrielsen et al., 2002; Gul et al., 2002 ; Koh, 2003) the role of institutional owners (e.g. Jiambalvo et al., 2002; Chung et al., 2002; Cornett et al., 2008; Koh, 2003), the effects of dispersed versus concentrated ownership structure (e.g. Leuz et al., 2003; Haw et al., 2004; Kim and Yi, 2006) and the effect of blockholdership (e.g. Abbott et al., 2000; Agrawal and Cadha, 2005, Beasley, 1996) on firms financial and accounting numbers.

4.3.2.1 Managerial Ownership

Managerial ownership is the insider holding of equity shares by parties who involve in the firms' management (Bauguess et al. 2009; Karathanassis and Chrysanthopoulou, 2006). The traditional agency theory suggests that shareholdings held by managers aid to align their interests with other shareholders (Jensen and Meckling, 1976). As managerial ownership increases, the interests of managers converge to

shareholders, which in turn constrain the opportunistic behaviour of managers (García-Meca and Sanchez-Ballesta, 2009). In other words, as managers are shareholders of the organization, their interests or benefits are same as with all other shareholders, which is known as the “*alignment effect*” in theory. Therefore, managerial ownership is a tool that may be used to constrain managers’ opportunistic behaviour. Conversely, if there is no alignment in the interests, narrow separation between shareholders and managers or higher managerial ownership is more likely to be resulted with lower firm value, because managers are more likely to entrench themselves, they do not concern the pressures from financial markets (García-Meca and Sanchez-Ballesta, 2009; Denis and McConnell, 2003; Jensen,1986) and the control of shareholders over the accuracy of earnings numbers will be inadequate (Al-Fayoumi et al., 2010). This effect is called the “*entrenchment effect*” in theory.

The influence of managerial ownership on firm value is two folded and it is highly associated with management’ trade-off between the alignment and entrenchment effects (Denis and McConnell, 2003). Based on the propositions of Healy (1985) and Holthausen et al. (1995) on the contracting incentives, García-Meca and Sanchez-Ballesta (2009) claim that, in case of lower level of alignment between shareholders’ and managers’ interests, management tend to use more discretionary accruals to increase earnings-based compensation, relax contractual

constraints, or avoid debt covenants. On the other hand, when there is the entrenchment effect, a higher managerial ownership is more likely to be resulted with a higher level of discretionary accruals, because of the occupation of both control and ownership by the same person or institution and the inadequate control over the activities of management by the owners.

The findings of prior studies on the role of managerial ownership on earnings management is contradicting. Warfield et al. (1995) find a high level of managerial ownership exhibits a higher explanatory power of reported earnings for stock returns and a lower level of the absolute discretionary accruals. Similarly, Gabrielsen et al. (2002) examine the role of managerial ownership on discretionary accruals using a different country-level institutional setting where dominated firms are characterised with highly concentrated share holdings and controlling ownership and the capital market rules do not restrict the takeover of large shares by banks. They find a negative relationship between managerial ownership and the magnitude of absolute discretionary accruals. Gul et al. (2002) examine whether audit quality, as Big-6 audit firms, moderates the negative association between managerial ownership and discretionary accruals and show that the relation between managerial ownership and discretionary accruals are sensitive to audit quality and the relation is weaker for firms with Big-6 auditors. Supporting previous findings, Mitra (2005) finds a negative relationship

between managerial ownership and management's accounting discretion, controlling for institutional share holdings and Big-6 external audit.

On the other hand, Koh (2003) studies the relation between institutional ownership and earnings management, controlling for managerial ownership and assuming a non-linear relationship between two variables and find no association between managerial ownership and earnings management. Similarly, Jiambalvo et al. (2002) do not find any significant relation between managerial ownership and earnings management.

4.3.2.2 Institutional Ownership

Institutional ownership refers to holding of equity shares by large financial institution, pension funds, or other incorporated bodies. It serves as a monitoring device therefore it is an important element of corporate governance. It is argued that as institutional investors are more sophisticated and experienced and also, they have timely access to relevant information (Balsam et al., 2002) they are more effective in controlling and monitoring of managements' activities than individual investors (Siregar and Utama, 2008). Therefore, it is expected that a higher level of institutional ownership is more likely to constrain earnings management.

Although in theory, a negative relation between institutional ownership and earnings management is expected, the results of previous findings are mixed. Jiambalvo et al. (2002) examine the relation between institutional ownership and absolute value of discretionary accruals and provide evidence of a negative relation supporting the controlling and monitoring role of institutional owners on financial reporting. Consistently, Chung et al. (2002) find that the presence of institutional ownership restrains managers from increasing or decreasing reported earnings. Mitra (2005) examines whether institutional investor shareholdings restrict management from engaging in earnings management considering the effect of other influential governance variables and finds that extensive presence of institutional owners plays an effective monitoring role in financial reporting and moderates the relationship between managerial ownership and management's accounting discretion. Correspondingly, Cornett et al. (2008), Jiraporn and Gleason (2007) and Hartzell and Starks (2003) claim that institutional ownership mitigates the agency costs and provide evidence on the constraining role of institutional ownership on earnings management.

Koh (2003) extends the prior studies and argues that the association between institutional ownership earnings management is not mutually exclusive, it changes in accordance with the level of institutional ownership and the short-term or long-term orientation of institutional

owners. While he finds a positive association between institutional ownership and income-increasing discretionary accruals for short-term oriented institutional owners, he observes a negative association between long-term oriented institutional investors and discretionary accruals. He explains his findings as follows; because of their focus on short-term earnings, short term institutional investors create incentives for management to manage the earnings upward. On the other hand, as long-term institutional investors mostly have large shares, the cost of any misstatement will be higher for long-term oriented institutional investors relative to individual investors, which push them to monitor the financial reporting and activities of management closer.

On the other hand, Siregar and Utama (2008) study the effect of ownership structure, firm size and corporate governance on earnings management and do not find any significant findings to support that institutional owner(s) exhibit lower level of discretionary accruals.

4.3.2.3 Ownership Concentration

Ownership concentration is an important firm structure that affects the overall efficiency of corporate governance. It is defined as *“the extent to which a small number of shareholders own a large proportion of share capital”* (JeanJean et al., 2010). An alternative definition of it is the distribution of the shares held by a certain number of individuals,

institutions, or families (Gürsoy and Aydođan, 2002). It is an ownership structure with a few controlling shareholders holding the majority of shares.

Ownership structure is more likely to be concentrated in countries with weak investor protection (La Porta et al., 1999). The relation between ownership concentration and agency problems might be two folded. While concentrated ownership might be a controlling mechanism to monitor and discipline management and solve the agency problems (Grossman and Hart, 1988), conversely it might cause agency problem if the interest of controlling shareholders do not align with minority shareholders (Claessens et al., 2002).

According to DeBos and Donker (2004) and Sánchez-Ballesta and García-Meca (2007) ownership concentration is an effective corporate governance mechanisms in monitoring management. Therefore, as ownership concentration increases, level of discretionary accruals decreases. On the contrary, high ownership concentration might lead controlling shareholder(s) to have higher incentives for opportunistic earnings management. A higher opportunistic behaviour is more likely to be resulted from the desire of controlling shareholder(s) to hide possible non-value-maximizing behaviour (Kim and Yi, 2006). Therefore, high ownership concentration is associated with high level of earnings management.

Firms with dispersed ownership tend to be more transparent than firms with concentrated ownership in financial reporting and disclosure because according to Leuz (2006) they rely more on those reports as a communication tool for the firms' performance and earnings. On the other hand, in case of ownership concentration, as controlling owners directly involve into the management, they have comparative priority over minority shareholders to access the information and in most cases they do not interest in communicating the information that they own via public disclosures or financial reports. Therefore, it is more likely arising information asymmetry among controlling shareholder and minority shareholders (Leuz, 2006). For that reason, while firms with dispersed ownership might use accounting discretion to improve the quality of earnings (Leuz, 2006) firms with concentrated ownership might use it to mislead the minority shareholders.

Haw et al. (2004) provide evidence that firms with larger concentration of control of cash flows rights have higher levels of earnings management. Similarly, Kim and Yi (2006) examine the influence of controlling shareholders on earnings management, controlling for the voting versus cash flow rights. They find that firms with larger wedge between control (voting rights) and ownership (cash now rights) of the controlling shareholders are more likely to engage in earnings management more aggressively. Leuz (2006) examines the differences in US-GAAP accounting numbers of US firms and cross listed firms that

differ from each other in terms of ownership concentration and documents that US firms with a dispersed ownership structure exhibit less earnings management comparing to the cross listed firms with high ownership concentration. Prior to these findings, Leuz et al. (2003) study the effect of institutional characteristics on the level of earnings management on an international level using data from 31 countries and they find that firms in outsider countries with dispersed ownership, strong investor protection, and large stock markets exhibit lower levels of earnings management than firms in insider countries with relatively concentrated ownership, weak investor protection, and less developed stock markets. Kim and Yoon (2008) support the findings and exhibit that earnings management has a positive relationship with ownership concentration.

On the other hand, Ding et al. (2007) investigate the role of firms' ownership structure on earnings management and document that the relationship between earnings management and ownership concentration exhibits an inverted U-shape pattern, "*entrenchment versus alignment*" effect, depending on the level of ownership concentration and the involvement level of controlling owners into management. Moreover, Sánchez-Ballesta and García-Meca (2007) examine the relationship between ownership structure, discretionary accruals and earnings informativeness and do not find any significant

relationship between ownership concentration and earnings management.

4.3.2.4 Blockholdership

Another important element of ownership structure is blockholdership which is closely related to the ownership concentration. Blockholdership refers to the situation where a significant amount of equity shares are held by a specific investor. Alternatively, it is defined as the existence of large shareholder(s) who holds a significant amount of equity shares. In literature, it is argued that monitoring and controlling by owners improves the quality of managerial decisions and increases firm value. From this point of view, the presence of blockholder who have substantially larger investment stakes provide closer monitoring and effective control over the management (e.g. García-Meca and Sanchez-Ballesta, 2009; Chen et al., 2006; Lins, 2003; Denis and McConnell, 2003; Jensen,1986). Therefore, blockholders are more likely to improve the quality of financial reporting and constrain the opportunity for earnings management (e.g. Abbott et al., 2000; Agrawal and Cadha, 2005, Beasley, 1996). However, blockholders' ability to exercise control over management is more likely to depend on its level of engagement with firms' management. Yeo et al. (2002) claim that the presence of blockholdership is more likely to be effective in controlling and monitoring management's activities if blockholders are external.

Therefore, another view is as like in ownership concentration, blockholdership might cause opportunistic behaviour, because of the entrenchment effect and blockholders' controlling rights might create earnings management incentive.

Yeo et al. (2002) study the relation between ownership structure and firm value and examine the role of external unrelated blockholders on firm value and earnings management and find that external blockholders have a positive relation with firm value and it also has a constraining influence on earnings management. On the other hand, Beasley (1996) in his study on the relation between board composition and financial statement fraud find no significant relation between them. Similarly, Sánchez-Ballesta and García-Meca (2007) study the relation between managerial ownership and earnings management, controlling for blockholdership and find that blockholders have no significant effect on earnings management. Xie et al. (2003) study the role of overall board composition and audit committee on earnings management and do not support any significant controlling role of blockholdership on discretionary accruals.

4.3.3 Audit Quality

Auditing assures that the information in financial reports is fairly and accurately presented. From agency theory perspective, it plays an important role in reducing information asymmetry and mitigating agency problems between management and owners and as well as between minor shareholders and major shareholders (Jensen and Meckling, 1976; Willenborg, 1999). Therefore, the quality of external audit is essential to fulfil its roles for the users of financial reports.

Since the collapse of big corporations in US (e.g. Enron) and in Europe (e.g. Parmalat), a great importance is given to the audit quality, in terms of the independency and competency of auditors, particularly in order to improve the financial reporting quality and increase public trust to capital markets. Mainly, because of the concerns on the independency of auditors and the quality of audit, in US, with Sarbanes-Oxley Act in 2002, the non-audit services provided by the external auditor to clients were restricted audit partner rotation times was reduced to five years. In addition to these regulations, since 2008, audit partner rotation after a maximum of seven years is required for firms in EU Member states by European 8th Directive on Company Law (2006). Capital Markets Board of Turkey (CMB) issued new regulations on independent auditing standards, effective from 2006, which describes auditors and the independence of them, regulates the quality of auditing services by

describing its scope, introduces auditing standards and defines the maximum auditor tenure.

Independent external audit plays a crucial role for strong corporate governance (Watts and Zimmerman, 1986). Although, independent audit is considered as an external corporate governance mechanism and an essential component of strong corporate governance, in literature, studies concerning the relation between audit quality and internal corporate governance mechanisms are scarce. The relation between audit quality and corporate governance varies in accordance with the “*substitution or complement effect*”. According to the substitution effect proposed by Williamson (1983), strong corporate governance structure might substitute higher quality external audit and demand less quality in the auditor choice. On the other hand, in accordance with the complement effect, strong corporate governance might demand more external audit quality to assure the quality of financial reporting. Anderson et al. (1993) study the relation between three monitoring mechanisms used for corporate governance; external auditing, internal auditing, and directorships and find that the monitoring role of board of directors is substitutable with internal audit and external audit quality. On the other hand, Abbot et al. (2007) study the demand for high audit quality by audit committee and find that firms with effective audit committees demand higher audit quality, which is measured as the percentage of hours and the proportion of various

non-audit services provided by the external auditor of firms. Yeoh and Jubb (2002) study the demand for audit quality and overall corporate governance attributes and they find that strong corporate governance is associated with higher audit quality, in terms of occupation of Big-4. Similarly, Adeyemi and Fagbemi (2010) study the demand for audit quality for firms with independent board of directors and report that non-executive directors' ownership is significantly associated with high audit quality.

Audit quality is defined in various ways. DeAngelo (1981a) defines audit quality as "*the joint probability that a given auditor will both discover and report material misstatements in financial report*". Palmrose (1988) contributes to the audit quality definition and defines it "*the probability that financial statements contain no material misstatements*". A more comprehensive definition of it is "*the ability of the auditor to detect and eliminate material misstatements and manipulations in the net income reported*" (Davidson and Neu, 1993). The ability of the auditor is an important issue for audit quality and it might be interpreted from different perspectives. It is highly associated with internal and external factors, auditors' characteristics (e.g. experience, competence, ethical conduct etc.) auditors' independence (dependence on clients, the competition in the market etc.), the regulatory environment (mandatory rotations, audit and non-audit services etc.). It is not obvious which factor is more descent in determining auditors' ability. Therefore, audit

quality cannot be observed directly. Balsam et al. (2003) define it as “*multidimensional and unobservable*” and argue that “*there is no single auditor characteristic that can be used to proxy for it*”. As it cannot be observed directly, in literature, several proxies are used to capture it indirectly (e.g. auditor size, industry specialisation, auditor tenure, and audit versus non-audit fees).

A well known proxy of audit quality is “audit firm or partner tenure”. Mainly, auditor tenure refers to the length of the auditor-client relationship. Theoretically, it is assumed that, auditor’s independency might decrease with the length of tenure (DeAngelo 1981a, 1981b, Davis et al. 2010). Recent regulations on auditor rotation show that regulators have similar concerns on decreasing audit quality with auditor tenure. The proponents of a negative relation between auditor tenure and independency believe that longer auditor tenure might cause loosing the motivation and the objectivity of auditor because of the prior knowledge about firms’ accounting information and the close relationships with the management or owners of the firm. The reason of loosing the motivation is basically explained as like that rather than to conduct a comprehensive audit on financial reports, auditors might assess them based on the prior years audit results, (Arrunada and Paz-Ares, 1997). The underlying concern of loosing the objectivity is because of auditors’ possible close relations with the owner(s) or management and their intent to maintain this relation. On the other

hand, the opponents of the decreasing independency of auditor with longer auditor tenure argue that auditors gain experience and knowledge about the client with the length of the tenure. Therefore, this experience might lead auditors to conduct a higher quality audit. Mainly, this argument depends on the information asymmetry. As it is discussed earlier, auditing mitigates the agency problem and reduces the information asymmetry among the users of financial statements and management. For higher quality audit, first it is necessary to reduce the knowledge gap between the management and auditor. So, longer auditor tenure is more likely to provide auditors with more knowledge about the firm, consequently it increases the ability of auditors to detect misstatements. Besides the contradictory debates on the relations, empirical studies show that longer auditor tenure provide higher audit quality (e.g. Manry et al., 2008; Gul et al., 2007; Geiger and Raghunandan, 2002; Johnson et al. 2002). Geiger and Raghunandan (2002) support this argument in their study and find that audit reporting failures are higher in the early years of audit-client relations. Similarly, Gul et al. (2007) find in their study that audit quality is higher in case of longer auditor tenure. Moreover, Manry et al. (2008) confirm the findings of prior studies and also document a positive association between audit partner tenure and audit quality but only in small companies. Myers et al. (2003) examine the relation between audit firm tenure and both discretionary accruals and current accruals. They find that there is a negative association between both discretionary and

current accruals and audit firm tenure. Using performance-adjusted discretionary accruals as a proxy for earnings quality, Chen et al. (2008) find that the absolute and income-increasing discretionary accruals are negatively associated with audit partner tenure. In addition, they provide evidence on the negative relation between audit firm tenure and discretionary accruals, controlling for audit partner tenure. Similarly, Lin and Hwang (2009) contribute to literature by providing evidence on the negative relation between auditor tenure and earnings management.

In addition to auditor tenure, another audit quality proxy widely used in literature is the audit and non-audit services (e.g. Gul et al., 2003; DeFond 2002; Frankel et al., 2002). Audit firms may provide both audit and non-audit services to their clients. Non-audit services are all other accountancy, taxation or consultancy services, except auditing and review of financial reports, provided by the audit firms. Serving non-audit services to audit clients causes deficiencies in audit quality and it is assumed that all non-audit services impair audit quality (Abbott et al., 2007; DeFond and Francis, 2005). The impairment of audit quality resulting from non-audit services has three main grounds. First, the interest of the auditors and the management aligns when the auditors serves non-audit services. Secondly, if auditors provide consultancy to management in non-audit services, there exists a duality in their consultancy and control roles, which reduces the audit quality. Finally, auditor's economic dependency increases in parallel to the

services provided to a specific client. Therefore, a low level independence resulting from the concurrent audit and non-audit services provided to the same client is more likely reduce the audit quality. Most of the previous studies' findings support this assumption (Abbott et al. 2007; Gul et al., 2007; Frankel et al., 2002; DeFond, 2002, Chung and Kallapur 2003; Larcker and Richardson 2004). In their study, Frankel et al. (2002) evidence that increases in non-audit fees cause higher discretionary accruals. Gul et al. (2007) study the relation between discretionary accruals and non-audit fees by short and long audit tenure, and find a positive association between non-audit fees and increasing discretionary current accruals. So, their results show that auditor independence impairs in accordance with non-audit fees when the auditor tenure is short. Extending the prior studies, Abbott et al. (2007) study the relation between audit quality and non-audit services, by differentiating between different types of non-audit services (routine and non-routine in nature) and they find that different non-audit services have differential effects on audit quality. While, the outsourcing of routine internal auditing activities to the external auditor is negatively related, non-routine internal audit services are not negatively related to independent, active and expert audit committees. In contrast, Ashbaugh et al. (2003) study the relation between non-audit fees and discretionary accruals controlling for firms performance and do not find any significant relation between non-audit fees and discretionary accruals.

Another proxy used to measure audit quality is “auditors’ industry specialisation”. As auditors specialised in a given industry, have more industry specific knowledge, they are expected to be more capable of detecting misstatements relative non-specialist auditors. Therefore, they provide more effective and high quality audit (Solomon et al., 1999; DeFond et al., 2000). If industry specialisation is positively associated with audit quality, it is obvious that industry specialisation is more likely to result with lower discretionary accruals. Balsam et al. (2003) supports this argument and argues that specialised auditors are more experienced in detecting earnings management which constrains management opportunistic behaviours. However, the results of empirical studies shows mixed results. While Lin and Hwang (2009), Balsam et al. (2003) and Krishnan (2003) document a negative relation as expected. Balsam et al. (2003) find a positive association between industry specialists and the earnings response coefficient consistent, which indicates indirectly a higher quality audit. Schauer (2002) studies the association between industry specialisation and information asymmetry and finds that firms audited by industry specialist have lower levels of information asymmetry, measured as bid-ask spread relative than firms audited by non-specialists. The results indicate that decreases in the information asymmetry associated indirectly with a higher level of audit quality. Zhou and Elder (2001) study the association between Big-5 and industry specialisation, as the proxies of audit quality and earnings management in IPOs and they find that

industry specialist auditors are related with lower level of earnings management in IPOs.

In literature, the most commonly used proxy is auditor size (e.g., Van Tendeloo and Vanstraelen 2008; Piot and Janin, 2006; Krishnan, 2003; Vander Bauwhede et al., 2000; Becker et al., 1998). DeAngelo (1981a) examines the relation between audit quality and auditors' size, theoretically and argues that, as big audit firms have more clients and total fees over the clients allocated widely, their dependency over the clients decrease. Therefore, a more independent auditor would provide higher audit quality. Similarly, Dye (1993) argues that big audit firms have higher audit quality because their opportunity cost, in terms of losing their wealth, is higher in case of any litigation. In addition, as Big-4 auditors has reputation and they are more experienced (Krishnan, 2003) and more conservative in their opinion (Piot and Janin, 2006), they are more likely to constrain earnings management. Although conservative opinion of Big-4 is more likely to constrain earnings management, their constraining role depends on the attempts of management through income-increasing or income-decreasing accruals. Kim and Yi (2009) discuss the possible effects of conservatism and claim that when management uses income-increasing accruals, Big-4 auditors with more conservative approach might constrain earnings management. However, when the manager uses income-decreasing accruals, there is more likely an alignment

between the desire of management and the conservative approach of the auditor.

Theoretically, because of their reputation, experience and the opportunity cost of any litigation, it is expected that, Big-4 audit firms have a higher audit quality which would have a more constraining role on earnings management. However, the results of previous studies are mixed. While in some studies a negative association between auditor size and discretionary accruals is found, in some others the relation is not observed. Becker et al. (1998) find a negative association between auditors' size and income-increasing discretionary accruals. In contrast, Vander Bauwhede et al. (2000) provide evidence on the negative relation between auditor size and earnings management but only for income-decreasing discretionary accruals, not for income-increasing discretionary accruals. Francis et al. (1999) argue that Big-6 auditors constrain aggressive and potentially opportunistic accruals and find in their study that firms audited by Big-6 have lower level of discretionary accruals. Lin and Hwang (2009) support the constraining role of auditor size on earnings management. On the other hand, Davidson et al. (2005) and Piot and Janin (2006) do not find any significant association. Van Tendeloo and Vanstraelen (2008) find that private firms audited by Big-4 audit firms engage less earnings management, however, this relation holds only when there is high alignment between tax accounting and financial reporting. This might be one of the reasons of

contradicting findings on the significance of the relation between Big-4 audit quality and earnings management.

As it is widely discussed above, audit quality is highly associated with auditor's independence. Therefore, any attribute that affects auditors' independence is indirectly affecting the audit quality. In particular, as a result of the data availability, this study uses, the following auditor attributes as audit quality proxies to examine the impact of audit quality in constraining earnings management; Big-4, auditor tenure and industry specialisation.

4.4 Summary

The purpose of this chapter was to provide a brief review of the theories proposed and the empirical findings provided in literature on corporate governance and earnings management.

Throughout the chapter, corporate governance mechanisms were held as both internal and external. Internal corporate governance mechanisms were considered as firm-specific mechanisms which are associated with the internal institutional, management and ownership structure (e.g. composition of board of directors, the roles of CEO and chairman). On the other hand, external corporate governance

mechanisms were considered as all market based mechanisms including capital markets, accounting and financial reporting regulations (e.g. external auditing, accounting standards). All internal and external firm specific corporate governance mechanisms were briefly defined and their role in financial reporting and earnings management was discussed based on the theories developed and the empirical findings of prior studies in literature.

Both internal and external firm specific corporate governance mechanisms are important for firms to reduce the information asymmetry among the users of financial reports, management and shareholders. Overall, as it is explained in detail, strong corporate governance provides an effective control and monitoring through various mechanisms which is more likely to constrain earnings management.

The following chapter describes the research design employed in this dissertation to execute the research objectives.

CHAPTER 5

RESEARCH DESIGN

5.1 Introduction

Previous chapters reviewed corporate governance and earnings management literature. The aim of this chapter is to provide insights about the research methodology. The remainder of this chapter is organized as follows. Section two briefly highlights the aim of the study and research questions. Section three and four document the hypotheses and present the research model of the study, respectively. Section five details the research design. Section six explains data estimation and gathering procedures, defines the variables and describes the model specification in detail. Finally, section seven summarises the research methodology.

5.2 Review of the Research Objectives and the Questions

As it is clearly indicated in the previous chapters, the main aim of the study is to examine the role of corporate governance on earnings management. With this aim, the research objectives are summarised as follows;

- To study the relation between corporate governance and earnings management by questioning whether strong ownership structure and board structure affect the level of discretionary accruals, a proxy of earnings management.
- To examine the relation between audit firm attributes, as audit quality proxies, and discretionary accruals.
- To explore the role of audit quality on the relation between internal corporate governance mechanisms and earnings management.
- To study whether the relation among corporate governance, earnings management and audit quality changes over financial quarters.

Based on the research objectives and the prior literature, a more detailed description of the research questions and the underlying

rationalisation of conducting these questions were introduced as follows.

What is the overall role of corporate governance mechanisms on earnings management?

This question is designed to understand whether a strong corporate governance structure has an influence on the level of discretionary accruals. From agency theory perspective, as corporate governance aims to reduce the information asymmetry arising between management and shareholders (or alternatively between majority and minority shareholders) and to mitigate the agency problems, it is expected that a strong governance structure has a constraining role on management's opportunistic behaviour to avoid any misstatement in financial reports and protect the rights of all other stakeholders. Previous empirical studies on the role of corporate governance in constraining earnings management provide mixed results. While some studies support the theory empirically, some others fail to endow with significant evidences. Therefore, it is worth to investigate whether corporate governance fulfils its role effectively in constraining earnings management. For the efficiency of the capital markets, the effectiveness of corporate governance is significant to guard stakeholders' rights, especially in interim quarters where the financial reports are generally not audited. Thus, it is also important to examine the relation between

corporate governance and earnings management both in interim and fourth quarters.

What is the role of audit quality on earnings management?

This question aims to comprehend the role of audit quality on earnings management. Audit quality is a multidimensional term associated with the technical capability and independence of auditors and it cannot be observed directly. Therefore, it is essential to examine the role of audit quality on discretionary accruals to understand whether auditors' attributes are effective in reducing managements' opportunism to manage earnings. This question particularly aims to understand the relation between auditor's attributes and discretionary accruals and discuss whether auditors' attributes used in this study are proper audit quality proxies. Auditing is a vital controlling mechanism on financial reporting. Consequently, it is expected that higher audit quality is more likely to constrain earnings management. While year-end financial reports are subject to an independent audit, the interim quarters' financial reports are generally not audited. Thus, it is also important to examine the relation both for interim and fourth quarters to reveal whether auditors have more significant influence in limiting discretionary accruals for the fourth quarters or not.

What is the association between internal corporate governance mechanisms and audit quality?

The aim of this question is to understand the magnitude and the direction of the relation between internal corporate governance mechanisms and audit quality, in terms of auditor choice. Auditing is considered as an external corporate governance mechanism. As firms' board of directors' composition and ownership structure directly influence external auditor choice, theoretically it is expected that there is a substitutional or complementary relation between internal and external corporate governance mechanisms. In other words while a strong corporate governance mechanism might substitute external auditing and demand less audit quality, conversely, it might also perceive high audit quality as complementary mechanism supporting governance structure and demand high quality auditors. Therefore, it is more likely to have a strong association between internal corporate governance mechanisms and audit quality through the choice of auditors. Before conducting a comprehensive analysis between corporate governance and earnings management, it is appeal to understand how a strong corporate governance structure is associated with audit quality to reveal the effect of each corporate governance mechanisms on Big-4, audit firm tenure and industry-specialist auditor choice.

How does audit quality affect the relation between internal corporate governance mechanisms and earnings management?

This question aims to examine the effect of audit quality on the relation among ownership structure, board of directors and earnings management. Theoretically, both external and internal corporate governance mechanisms might constrain earnings management. However, it is not straightforward to distinguish the role of each mechanism in limiting earnings management. Therefore, it is worth to investigate the relation between corporate governance and earnings management by controlling for audit quality through partitioning the sample in accordance with audit firms attributes. Moreover, the question also aims to explore whether the relation among internal corporate governance mechanisms, earnings management and audit quality change over quarters, particularly for interim and fourth quarters in order to understand the role of independent external audit on corporate governance and earnings management.

5.3 Research Model

For capital markets, external independent audit and corporate governance are two important factors that have significant influence on financial reporting and accuracy of the information disclosed in those reports. The effectiveness of both the external independent audit and

corporate governance depends on several different factors. The ability of corporate governance mechanisms to fulfil controlling, monitoring and communicating role is highly associated with the ownership structure and the composition and characteristics of board of directors. Similarly, the ability of external independent audit to be effective in financial reporting is highly associated with its quality. As it is widely discussed in the preceding chapters, theoretically it is argued that a high quality external audit and a strong corporate governance structure are more likely to constrain earnings management. Recent regulations in terms of auditing standards, corporate governance principles, financial reporting standards and the legal enforcements in capital markets support the theory and confirm the importance of auditing and corporate governance in financial reporting. The following research model in Figure 1 is proposed to exhibit the relation among corporate governance, earnings management and audit quality in a simple form.

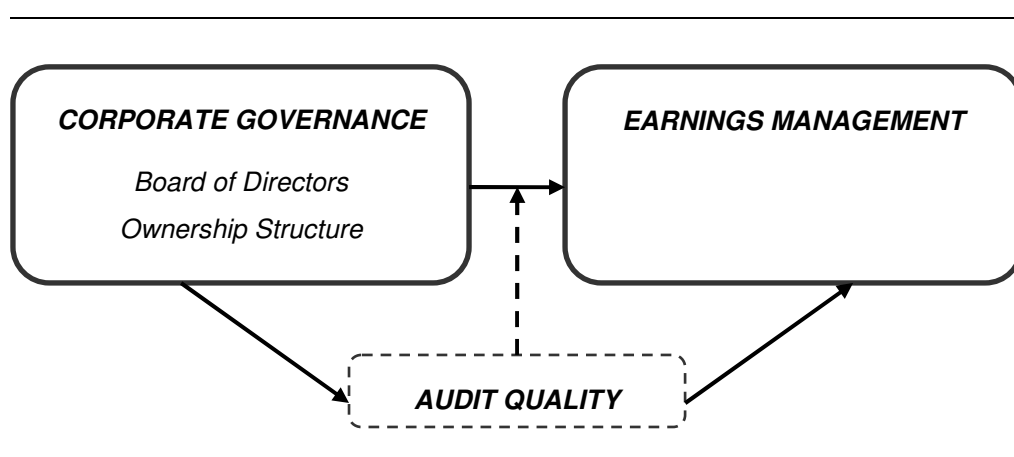


Figure 1: Research Model

Corporate governance influence both audit quality and earnings management appreciably. A strong corporate governance structure in terms of board of directors and ownership structure aims to reduce the information asymmetry. It involves into management through accounting choices, significant influence on operational decisions and monitoring to assure the overall effectiveness of management and accuracy of information in financial reports. Therefore, it is expected that strong corporate governance might constrain earnings management through monitoring and controlling management's attempts to manage earnings. Thereto, a strong corporate governance structure might demand a higher quality or lower quality audit, in terms of audit firms' characteristics (Cadbury, 1992). It might demand high audit quality because a more transparent financial reporting process supported by a high quality audit firm is important for the users of financial reports (Liftschutz et al., 2010; Yeoh and Jubb, 2002). Alternatively, it might substitute the role of auditing and demand less audit quality. Either because of substitutional (negative) or complementary (positive) effect, it is expected that board of directors, ownership structure, strong corporate governance mechanisms influence audit quality.

Considering the relation between corporate governance and audit quality, it is obvious that audit quality has a two sided influence on earnings management. First, because of its association with corporate

governance, it influences the relation between corporate governance and earnings management. It is expected that strong corporate governance with higher audit quality is more capable to limit earnings management. In addition, as external auditors involve in financial reporting and their opinion on the presentation of financial reports is relevant for the users of financial reports, it is proposed that audit quality has a direct effect on earnings management.

In sum, the relation among corporate governance, audit quality and earnings management is not mutually exclusive, all connected with each other in a complicated structure. Corporate governance may influence earnings management directly or through audit quality. Similarly, audit quality might influence earnings management directly or through corporate governance. Therefore, beside the straight relations among corporate governance, audit quality and earnings management, this study aims to examine the role of corporate governance mechanism on earnings management controlling for the audit quality attributes. Moreover, it also controls for the direction of earnings management (income-increasing versus income-decreasing) and the financial quarters in order to provide more comprehensive explanation to the relations.

5.4 Hypotheses

The main aim of this study and research questions were widely discussed throughout the previous chapters and briefly summarised in Section 5.2. This section develops the hypotheses. The hypotheses in this study were grouped into three categories; hypotheses testing the association between (i) earnings management and audit quality, (ii) internal corporate governance and audit quality, (iii) corporate governance and earnings management.

Since independent external audit serves as a monitoring device that constrains management's incentives to manipulate earnings, it is expected that a higher audit quality would be resulted with less opportunity for earnings management, *ceteris paribus* (Ebrahim, 2002). In order to understand the relation between auditors' attributes and audit quality, particularly to test whether Big-4 auditors, audit firm tenure and industry specialisation of audit firms are proper proxies for audit quality, first the relation between auditor's attributes and earnings management the hypotheses presented below are conducted.

As it is broadly discussed in Chapter 4, Big-4 auditors are considered more independent and experienced and they are exposed to a high litigation risk in case of misreported audit reports. Therefore, it is expected that Big-4 provide a considerably higher audit quality and

there is a negative association between discretionary accruals and Big-4 audit quality (e.g. Van Tendeloo and Vanstraelen, 2008; Vander Bauwhede et al., 2000; Francis et al., 1999). Thus, the following hypotheses are conducted.

H1a: Firms with Big-4 auditors have lower level of discretionary accruals than firms with Non-Big-4 auditors.

H1b: Big-4 auditors have a constraining role on earnings management.

The relation between audit firm tenure and earnings management is two folded. While shorter tenure causes lack of knowledge and experience on audited client, longer tenure might results of loosing the independence of auditors and increasing alignment of interest of both management and auditors. Following the findings of previous studies (e.g. Chen et al., 2008; Myers et al., 2003), in this study a negative association between audit firm or partner tenure and discretionary accruals are expected. To test the relation between auditor tenure and earnings management, the following hypothesis is conducted.

H2: Firms with longer audit firm tenure report lower level of discretionary accruals.

Similarly, as industry specialisation provides auditors with extensive knowledge, it is more likely for industry specialist audit firms to detect misstatements in financial reports. Thus, a negative association is expected between industry specialisation of audit firms and earnings management (e.g. Balsam et al., 2003; Krishnan, 2003; Zhou and Elder, 2001). Therefore, the following hypothesis is conducted.

H3: Firms audited by industry specialist auditors report lower level of discretionary accruals.

Audit quality is a function of auditor technical capacity and independence (DeAngelo et al. 1981a). From the information hypothesis and agency theory, for the accuracy of the information presented in financial reports, an independent external audit is demanded. External independent audit is considered as an external corporate governance mechanism. The relation between audit quality and corporate governance is two folded. Theoretically, it is expected that a strong internal corporate governance structure demands a high quality external audit, or alternatively because of the substitution effect a strong internal corporate governance structure might demand a low quality external audit. Considering the importance of audit quality for capital markets and following Adyemi and Fagbemi (2010) and Yeoh and Jubb (2002) the following hypotheses are conducted to test the association between audit quality and corporate governance;

H4a: Ceteris paribus, there is an association between board internal corporate governance mechanisms and Big-4 auditor choice.

H4b: Ceteris paribus, there is an association between internal corporate governance mechanisms and audit firm tenure.

H4c: Ceteris paribus, there is an association between internal corporate governance mechanisms and audit firm industry specialisation.

In literature, it is theoretically proposed that strong corporate governance is associated with an independent board of directors free of CEO influence, non-occupation of CEO and chair positions by the same person, effective board of directors and audit committee representing all shareholders with experienced and diversified members, a lower level of ownership concentration. An effective strong corporate governance structure is more likely to reduce earnings management (Beasley, 1996; Dechow et al., 1996; Peasnell et al., 2000; Klein, 2002; Davidson et al., 2005). In this study, to test the relation between internal corporate governance mechanisms and earnings management, the following hypotheses are conducted. Additionally, alternative hypotheses are developed to examine the role of Big-4 auditors, as audit quality proxy on the relation between internal corporate governance mechanisms and earnings management.

H5a: A more independent board of directors is more likely to constrain earnings management.

H5b: A more independent board of directors is more likely to constrain earnings management for firms audited by Big-4 than those audited by Non-Big-4.

H6: There is an association between board of directors' size and discretionary accruals.

H7a: There is positive relation between CEO duality and discretionary accruals.

H7b: The positive relation between CEO duality and discretionary accruals is relatively less for firms audited by Big-4 than those audited by non-Big-4.

H8: There is an association between audit committee size and discretionary accruals.

H9a: The presence of institutional owner is more likely to constrain earnings management.

H9b: The presence of institutional owner is more likely to constrain earnings management for firms audited by Big-4 than those audited by Non-Big-4.

H10: There is an association between ownership concentration and discretionary accruals.

H11: There is an association between blockholdership and discretionary accruals.

5.5 Research Design

The relation between corporate governance and earnings management has been studied by various researchers (e.g. Beasley, 1996; Dechow et al., 1996; Peasnell et al., 2000; Klein, 2002; Davidson et al., 2005). Most of these studies use a research design that examines the relation on a yearly basis. Recently, some researchers start to question the validity of this relation in interim periods (e.g. Yang and Krishnan, 2005). It is essential to understand the relation between corporate governance and earnings management on quarterly discretionary accruals mainly for two reasons. First, interim earnings numbers are value relevant for the users of financial reports and second, the role of a strong internal corporate governance mechanisms gain more attention

in interim quarters with lack of independent external audit than the fourth quarter. As quarterly interim financial reports are generally not subject to audit and require relatively less detailed disclosures, they provide management with more opportunity to manipulate earnings (Jeter and Shivakumar, 1999). According to Yang and Krishnan (2005) most of the fraudulent financial reporting cases start with quarterly misstatements. Therefore, this study aims to investigate the relation between corporate governance and earnings management on a quarterly basis.

In order to conduct a comprehensive analysis, the research is designed in three consecutive stages. The first stage aims to evaluate the prior earnings management model to validate that the models are well specified for the quarterly data and figure out the most appropriate model to be used in the research to estimate the discretionary accruals.

The second stage aims to analyse and present the relation among corporate governance, audit quality and the level of discretionary accruals descriptively.

Finally, the third stage intends to conduct empirical analyses to test the research hypotheses. It compounds of three subsections analysing the relation between (i) audit quality and earnings management, (ii) internal corporate governance mechanisms and audit quality and (iii) corporate

governance and earnings management. All hypotheses were tested using a panel data for all sample firm-quarters and for interim and fourth quarters. The first two subsections in this stage aim to provide insights about the overall relations between internal and external firm specific corporate governance mechanisms and the role of them on earnings management separately. Therefore, it is valued to conduct these subsections for the interpretation of further analyses. The final subsection aims to examine the role of corporate governance mechanisms on earnings management controlling for audit quality. The underlying reason of controlling for auditor quality is the quarterly analysis of the relation. While, the year-end financial statements are subject to an independent audit, interim financial reports are generally not audited. Therefore, it is merit to examine this relation on a quarterly basis to understand any difference in the role of corporate governance on earnings management over quarters which is more likely resulted from the lack of enforcement mechanisms in interim quarters.

In the study, all statistical analyses and regressions were performed using STATA 11 data analysis and statistical software.

In the first stage, earnings management models were evaluated. Using a panel data set, all regressions were run by two-way clustering approach controlling for the industry effect for all sample firm-quarters.

In addition, the differences among the level of discretionary accruals over financial quarters were tested using one-way ANOVA analysis.

In the second stage, the overall structure of sample ISE firms was presented. At this stage, the characteristics of board of directors, the existence of audit committee, the size of board and audit committee (if any), the ownership structure, attributes of audit firms and quarterly discretionary accruals were investigated and presented descriptively for all firms-quarters and also both for Big-4 and Non-Big4 firms and firms using income-increasing and income-decreasing quarterly discretionary accruals.

In the third stage, the association between earnings management and audit quality in terms of Big-4, audit firm tenure and industry specialisation of audit firms were examined. First, the mean differences in quarterly discretionary accruals of firms with Big-4 and Non-Big-4 were tested using two-group mean comparison t-statistics for all sample firm-quarters and for income-increasing and income-decreasing firms in interim and fourth quarters. Second, univariate regression analyses were employed for each audit firm attributes. The aim of these analyses are to determine the audit firm attribute which is more capable to constrain quarterly discretionary accruals and therefore more likely to capture the audit quality, for the subsequent analyses. These analyses

aid to validate whether Big-4, audit firms' tenure and industry specialisation are good proxies of audit quality or not.

In the same way, the third stage continues with testing the association between corporate governance and audit quality, especially, to assess the role of internal corporate governance mechanisms on auditor choice. A multiple logistic regression analysis and panel regression analyses were applied for Big-4 auditors, audit firm tenure and audit firm industry specialisation, as dependent variables, respectively.

In the final subsection of third stage, the relation between internal corporate governance variables and earnings management were tested by univariate and multivariate panel regression analyses, first for all firm-quarters, second for Big-4 and Non-Big-4 firms, third for income-increasing and income-decreasing firms and finally the regression were run both for interim and fourth quarters. Partitioning the sample as Big-4 and Non-Big-4 and income-increasing and income-decreasing firms aid analysing the role of Big-4, as audit quality proxy, on corporate governance and earnings management both for magnitude and direction of earnings management. The aim of testing interim and fourth quarters is to reveal whether there is any change in the relation (if any) among quarters.

5.6 Data and Model Specification

5.6.1 Data

The study uses data from non-financial firms listed in the ISE where data was available between the years 2005-2009 (post-IFRS period). Since 2005, all firms listed in ISE are required to prepare their financial statement in accordance with IFRSs. All accounting numbers to measure discretionary accruals were gathered from FINNET database and interim (quarterly) financial reports⁴ of firms downloaded from ISE website. In the sample, in order to estimate discretionary accruals, only the industries with 10 or more firms are included (Jones et al., 2008). From this initial sample, firms with missing data for the computation of discretionary accruals, and firms with different reporting periods were excluded. Furthermore, as the computation of the discretionary accruals requires the change in sales and receivables, for the accuracy of computations, the first quarter of 2005 and the first reporting period of the firms that change their reports from solo to consolidated, vice versa, were excluded. The final sample for the measurement of discretionary accruals comprises of 3,067 firm-quarter observations.

⁴ According to CMB regulations of Turkey, ISE companies require to report quarterly financial reports.

This study uses quarterly data to test the hypothesis. One of the main issues in quarterly data set is the imbalance problems of firm-quarter observations. While some of the firms have full firm-quarter observations for all years, some of them encounter with an imbalance problem because of missing quarter accounting information in some quarters. As the first quarter of the year 2005 has been excluded to calculate the change in revenues, receivables and cash flows from operations. All firms are with missing first quarter for the year 2005. Therefore, to solve the imbalance problem, all firm-quarter observations for the year 2005 were excluded. In addition, observations of firms with missing auditor or corporate governance data and with any missing firm-quarters, for any reason, were excluded to assure that all sample firms have available data for all variables in all financial quarters of a year. The final sample for the analyses comprises of 2,152 firm-quarter observations. The sample selection procedure is presented in Table 1.

Table 1: Sample Selection

Sample Selection Procedure	Number of firms	Number of firm-quarters
Total number of firms listed in ISE as of December 2009	315	
Less financial institutions and holdings	113	
Less firms in industries with less than 10 firms	41	
Add firms de-listed from ISE	8	
Firms and firm-quarters in the initial sample (2005-2009)	169	3308
Less firm-quarters of firms with missing quarterly data and firms with different reporting periods		56
Less firm-quarters of firms that change reporting from solo to consolidated, vice versa		25
Less first quarter observation of the year 2005		160
Firm-quarters in the final sample for the estimation of discretionary accruals (2005-2009)		3,067
Less all firm-quarters for the year 2005		471
Less firm-quarters with missing auditor and corporate governance data		312
Less firm-quarters of firms with any missing quarter data for any years		132
Firm-quarters in the final sample (2006-2009)		2,152

The industry and year composition for the sample is provided in Table 2. ISE is a relatively small capital market and the requirement of at least 10 firms observation per industry for cross-sectional total accruals models to estimate discretionary accruals significantly limit the data availability of this study. In ISE, there are only 8 two-digit industries with more than 10 firm observations. After the exclusion of firm-quarters with missing corporate governance and auditor data and firm-quarters of firms with any missing quarter for any year there were only 128, 126, 136 and 148 firms left for the year 2006, 2007, 2008 and 2009, respectively. Among all industries, according to cumulative averages,

the industries with the largest representation are as follows; Textile, wearing apparel and leather with 17.84%, Fabricated metal products, machinery and equipment with 17.47%, Non-metallic mineral products with 15.61%, Chemicals, petroleum rubber and plastic products with 15.06% and Food, beverage and tobacco with 13.20%.

Table 2: Data Composition

Industries	Years				Total Average %
	2006	2007	2008	2009	
Food, beverage and tobacco	16	15	19	21	13.20
Textile, wearing apparel and leather	27	24	24	21	17.84
Paper and paper products, printing and publishing	9	11	12	13	8.36
Chemicals, petroleum rubber and plastic products	20	19	21	21	15.06
Non-metallic mineral products	21	20	19	24	15.61
Basic metal industries	6	9	10	11	6.69
Fabricated metal products, machinery and equipment	22	21	26	25	17.47
Information technology	7	7	7	10	5.76
Total	128	126	138	146	100

5.6.2 Measuring Earnings Management

In this research, discretionary accruals were used as a proxy for earnings management. In literature, various studies concern to decompose total accruals into discretionary and non-discretionary accruals. A detailed review of the proposed earnings management models is presented in Chapter 3. Among all models, the Jones Model (Jones, 1991) and the Modified Jones Model (Dechow et al. 1995) are

the most widely used models. All recent models (e.g. Kazsnik, 1999; Dechow et al., 2003, Larcker and Richardson, 2004; Kothari et al., 2005) proposed after the Jones Model (Jones, 1991) mostly develop it considering the assumption of the model and its drawbacks.

As the main aim of this study is to examine the relation between corporate governance and earnings management on a quarterly basis, the discretionary accruals were estimated quarterly, as well. Therefore, first quarterly total accruals were measured by cash flow approach (direct approach) as the difference between quarterly net income and quarterly cash flows from operations. After the measurement of quarterly total accruals, in order to estimate quarterly discretionary accruals, the Jones Model (Jones, 1991), the Modified Jones Model (Dechow et al., 1995) and subsequent models were employed. The coefficient estimates with R-square of each model were presented in Table 3 and the estimation procedure was discussed in detail in Chapter 6, section 6.2.1. Quarterly discretionary accruals were estimated for all available data between the years 2005-2009, using a total of 3,067 firm-quarter observations.

The original Jones Model (Jones, 1991) is employed using a time series approach. This approach requires a long time series data (approx. 20 years or quarters, including minimum 6 years or quarters for the estimation period) for each firm to inference the coefficient estimates for

the observation period. Defond and Jiambalvo (1994) propose a cross sectional version of the Jones Model, which also provides several advantages over times series. Bartov et al. (2001) evaluate the Jones Model (Jones, 1991) and the Modified Jones Model (Dechow et al., 1995) and argue that cross sectional models perform better than their time-series counterparts. It allows researcher to use a large sample size which reduces the survivorship bias. In this research, because of the data availability on ISE, a cross sectional version of total accrual models was employed, which increases the size of the firms in the sample.

In addition, this research does not use the approach of cross-sectional analysis in previous studies. Most of the previous studies divide the firms into estimation and observation sample. In this study, following Young (1995), Siregar and Utema (2008) and Rodríguez-Pérez and Hemmenin (2010), all firms in the sample were used to estimate the non-discretionary accruals coefficients. The reason of using this method is mainly because of the data constraints in ISE resulting from the data requirement of at least 10 firms per industry in the estimation of discretionary accruals.

While previous studies measure discretionary accruals by employing OLS regression for each industry-year and present the pooled coefficient estimates with average R-squares of the each model,

following Rodríguez-Pérez and van Hemmen (2010), this research uses a panel data analysis to measure the quarterly discretionary accruals. A panel data regression provides more accurate results comparing to pooled OLS results (Hsiao, 2005). However, as a panel data set consists of multiple firms across multiple time periods, it might suffer from firm-specific or time-specific effects. Therefore, in order to get robust standard errors and accurate coefficients, following Petersen (2009) and Thompson (2010), a panel regression analysis of two-way clustering controlled for industry dummy was applied. Petersen (2009), in his study showed that, in case of cross sectional and time series dependence, OLS standard errors might be biased and causes under or over estimation of the coefficient estimates. Therefore, he proposes two-way clustering as a solution to control the panel data set for firms and times specific effects simultaneously. Since previous studies on earnings management estimate the discretionary accruals by pooled OLS regression and controlling the firm and time specific effects using firm, industry or time dummies, this study makes a contribution also by using panel data regression on a two-way clustering approach controlling for industry dummies, which allow to control the data set for all three dimension (time, firm and industry effects) to get more robust coefficient estimates.

According to coefficient estimates of accruals models presented in Table 3, among all models, the Forward Looking Model (Dechow et al.

2003) is with the highest explanatory power (R-square of 25.9%), but with insignificant coefficients for both k corrected change in sales adjusted for receivables $((1+k)\Delta\text{SALES} - \Delta\text{REC})$ and property, plant and equipment (PPE). On the other hand, among all models, the Adapted Larcker and Richardson (2004) Model is the second best model (R-square of 20.9%) with significant coefficient estimates for k corrected change in sales adjusted for receivables $((1+k)\Delta\text{SALES} - \Delta\text{REC})$.

As it is discussed in detail in the Chapter 6, section 6.2.1, in this research quarterly discretionary accruals were estimated by the Adapted Larcker and Richardson (2004) Model. The original Larcker and Richardson (2004) Model adds book-to-market ratio (BM) as a proxy of expected growth in the operations of firms and cash flows from operations (CFO) to avoid the effect of extreme firm performance on accruals. However, in their model, they do not change the assumption of the Modified Jones Model (Dechow et al., 1995) where all credit sales are discretionary. In this study, with the intention of relaxing the assumption, the original model proposed by Larcker and Richardson (2004) is adjusted for the Adapted Model proposed by (Dechow et al. 2003). Dechow et al. (2003) argue that all receivables are not discretionary; there is a positive correlation between sales growth and changes in receivables. Therefore, they adjust the Modified Jones Model (Dechow et al. 1995) by adding a coefficient (k) as a proxy that

measures the expected changes in credit sales in a given amount of sales, considering the growth in sales.

$$\Delta REC_{it} = \alpha + k^* \Delta SALES_{it} \quad (21)$$

The Adapted Larcker and Richardson (2004) Model is as follows;

$$QTAC_{it} = \beta_0 + \beta_1((1+k)\Delta SALES_{it} - \Delta REC_{it}) / TA_{i,t-1} + \beta_2 PPE_{it} / TA_{i,t-1} + \beta_3 CFO_{it} / TA_{i,t-1} + \beta_4 BM_{it} + \varepsilon_{it} \quad (22)$$

Where;

$QTAC_{it}$ = Quarterly total accruals in the quarter t scaled by lagged total assets,

$\Delta SALES_{it}$ = Change in sales from quarter (t-1) to quarter (t),

ΔREC_{it} = Change in receivables from quarter (t-1) to quarter (t),

PPE_{it} = Gross property plant and equipment in the quarter (t),

CFO_{it} = Cash flows from operations in the quarter (t),

BM_{it} = Book to Market ratio in the quarter (t),

$TA_{i,t-1}$ = Lagged total assets, or the total asset in quarter (t-1),

k = Proxy that measures the expected changes in credit sales in a given amount of sales,

t = the event quarter,

i = the firm.

The fitted values of the above regression provides quarterly non-discretionary accruals (QNDAC) and the residuals (ε_{it}) are the quarterly discretionary accruals (QDA).

Accrual models are proxies to capture both the amount and the direction of earnings management practices. In literature there are two measures of discretionary accruals; a signed measure of discretionary

accruals, which takes a positive value (income-increasing accruals) or a negative value (income-decreasing accruals) and captures both the direction and magnitude of discretionary accruals and an unsigned measure of discretionary accruals, which is the absolute value of quarterly discretionary accruals (ABS_QDA) and captures only the magnitude of earnings management. In this study, both signed and unsigned measures of earnings management were used in the analyses. As an unsigned measure is not able to capture the direction of discretion, it limits the information content of the data. Therefore, it is more suitable for research designs in which the researcher concern about the role of independent variables on the magnitude of earnings management, where the earnings management is contextual (Bradburry, 2006). In this study, for the accuracy of the research findings, both measures were used to examine the hypotheses.

5.6.3 Corporate Governance Measure

In this study, the role of corporate governance mechanisms on earnings management was analysed through internal corporate governance mechanisms; the board of directors and the ownership structure. To incorporate corporate governance characteristics, board of directors' independence, board of directors' size, CEO duality, audit committee

size, institutional ownership, ownership concentration and blockholdership were used.

Currently, there is no available database for corporate governance data of listed firms in ISE. The web site of the Corporate Governance Association of Turkey (TKYD) provides corporate governance ratings of only a few firms starting from 2006. As the information provided by TKYD is not sufficient for any analysis, the corporate governance data were hand-collected using the following sampling procedure. Mainly, the information about board of directors, CEO and ownership structure could be gathered through *Company Year Books* provided on ISE website. However, as *Company Year Books* doesn't provide quarterly information for firms, to track the quarterly changes of the board members, board size, audit committee size, and ownership structure, the data was gathered from *Company News* files⁵ published on ISE website. In addition, the disclosed information about the board of directors and ownership structures were controlled from the websites and the quarterly financial reports of firms (where available). Board of directors' independence (BOARD_IND) data was gathered through several different sources; from firms' *Corporate Governance Principles Compliance Reports*, from the web site of *Public Disclosure Platform* and *Company News* files using a retrospective approach. Starting from 2009, using the information disclosed in the *Corporate Governance*

⁵ The Company news files are only available in Turkish.

Principles Compliance reports and on *Public Disclosure Platform*, the independence of the board members is applied for prior years.

Measuring the board of directors' independence is complicated if it is not disclosed by firm. The difficulties in measuring the independence arise because of its multidimensional definition. Particularly, a board member is considered independent if the person has (i) no ownership in the firm, (ii) no previous employment in the firm, except the board membership, or in any subsidiary of it and (iii) no family tie with firms' owner. Considering the independence definition, in this study, a board member is defined as independent if the person meets all of the criteria above. Following the determination of the board members as dependent or independent, the board of directors' independence (BOARD_IND) was measured as the proportion of independent directors on the board to the board size (Klein, 2002; Beasley, 1996).

CEO duality is the situation where the person holds both the CEO and the chairman of the board of directors' positions. Based on this definition, CEO duality (CEO_D) was measured by a dichotomous variable that takes the value of 1 if both the chairman and the CEO are the same person and 0 otherwise.

Board of directors' size (BOARD_SIZE) and audit committee size (ACC_SIZE) were measured as the number of board members in the board and audit committee, respectively.

Institutional ownership is the situation where the equity shares of firms are held by large financial institution, pension funds, or other incorporated bodies. In this study, based on the definition, institutional ownership (INST_OWN) was measured by a dichotomous variable that takes the value of 1 if the largest shareholder is an institution and 0 otherwise.

Ownership concentration is the distribution of the shares among investors. A well know ownership concentration is the Herfindahl index⁶, which is calculated as the sum of the squares of shares held by each individual (or top ten) shareholder(s). A high level of Herfindahl index corresponds to high ownership concentration. Alternative measurements of ownership concentration is the percentage of shares held by the largest shareholder(s) or total of equity shares hold by shareholders who own more than 5 or 10 percent of the shares. In this research, as a result of quarterly research design which causes a data constraints, ownership concentration (OWN_CNCT) was measured as the percentage of shares held by the largest shareholder.

⁶ The original Herfindahl index is a measure for market concentration and computed as a measure of the size of firms in relation to the industry (Hirschman, 1964)

Blockholdership is defined as the existence of a large shareholder who holds a significant amount of equity shares. In this study, the existence of the blockholdership (BLOCK) was measured by a dichotomous variable that takes the value of 1 if the largest shareholder holds more than 20% of equity shares and 0 otherwise.

5.6.4 Audit Quality Measures

Similar to corporate governance data, there is no available database for the auditor information and characteristics of listed firms. Therefore, auditor data was hand-collected from firms financial reports downloaded from ISE and *Public Disclosure Platform* website.

Mainly, while the year-end financial reports are subject to an independent external audit, the interim quarter financial reports are generally not audited. Since this research aims to examine the relation between corporate governance and earnings management controlling for audit quality on a quarterly basis, quarterly audit firm information was assigned based on the assumption that the audit firm responsible from the external audit of year-end financial reports has a direct influence on the interim financial reports, as well.

As it is discussed in Chapter 3, actual audit quality is multidimensional and it is not possible for researchers to measure it directly. In this study, the audit quality is associated with the following audit firm attributes; Big-4, audit firm tenure and audit firm specialisation and it was measured indirectly through those attributes. A pre-analysis of auditors' attributes and quarterly discretionary accruals were conducted to validate those attributes as audit quality proxies.

The auditor's attributes were measured as follows;

BIG-4 is a dichotomous variable that takes the value of 1 if the audit firm is one of the Big-4⁷ and 0 otherwise.

Measuring the audit firm tenure is not simple if there is no information about the exact start date of the audit firm-client relationship. In order to figure out the accurate start date of audit firm-client relationship, all available information on ISE website disclosed in firms' financial report files were examined from 2009 to back 1998, retrospectively. Audit firm tenure (TENURE) was measured as the number of consecutive quarters the firm has retained a particular audit firm, starting from the year 1998.

⁷ Consistent with previous studies, Big-4 audit firms are as follows; Pricewaterhousecoopers, Ernst and Young, Deloitte Touche Tohmatsu and KPMG.

Industry specialisation refers to the experience of audit firms in a specific industry. As it is not possible to observe the industry specialisation of auditors or audit partners using the auditor characteristics or educational background or experience spent in a specific industry, in literature industry specialisation is measured indirectly. In this study, industry specialisation (IND_SPECL) of audit firm was measured as the market share of audit firms in percents and calculated as the proportion of total assets of clients audited to the sum of total assets of all firms in a specific industry. First, the market share of each audit firm, in terms of total asset was calculated for each quarter and industry, separately. Then, the calculated market share of the audit firms was divided to total assets of firms in a specific industry and in a specific quarter, to compute an industry specialisation index.

5.6.5 Control Variables

In literature, it is argued that firm size has a significant influence on accounting choice and indirectly on discretionary accruals (Burgstahler and Dichev, 1997). The role of firm size on earnings management is two folded. Firm size might limit earnings management, because large firms are more likely to have an effective and sophisticated internal control system and management comparing to small firms (Kim et al. 2003). On the other hand, large firms might have more earnings

management, because they face more pressure from capital markets to meet some analysts' forecast, target earnings number etc. (Richardson et al., 2002; Shen and Chih, 2007). In addition, because of their size in the market, audit firms dependence on big firms increase, which might reduce the quality of audit conducted. Therefore, firm size (SIZE) was added as a control variable to the model and measured as the natural logarithm of total assets.

In prior studies, the role of debt is examined to figure out its relation with earnings management. Mainly there are two views on the role of debt on earnings management; the debt covenant effect and the monitoring effect. It is argued that, financial leverage ratio represents the debt covenants (DeAngelo et. al., 1994; DeFond and Jiambalvo, 1994). The management of firms with financial distress might choose to manage earnings to avoid covenants in debt contracts (DeFond and Jiambalvo 1994) and the pressures from lenders (Gupta et al. 2008). Therefore, from the perspective of debt covenants, it is expected that a firm with high leverage ratio is more likely to have higher level of discretionary accruals. On the other hand, a higher debt ratio indicates closer ties with the debt lenders who might act as monitoring device to constrain earnings management attempts of the management (Barclay and Smith, 1995). Therefore, from monitoring role perspective, with the expectation of that institutional debt lenders are more experienced in detecting earnings management, firms with higher financial debt ratio

are more probably have lower level of discretionary accruals. In this study, considering the direct influence of leverage either as a monitoring device or earnings management incentive, the model was controlled for financial debt (FIN_DEBT) ratio, which was measured by the proportion of financial debt to total assets.

5.6.6 Model Specification

In literature, the empirical studies using the quarter-year regressions to examine the relation between earnings management and corporate governance mechanisms are limited. Yang and Krishnan (2005) examine the relation between audit committee characteristics and quarterly earnings management. They propose two approaches to examine the relation, first calculating the discretionary accruals for each quarter and run on audit committee characteristics for each quarter separately. Second, summing up quarterly discretionary accruals and using a composite measure of discretionary accruals total of absolute values of quarterly discretionary accruals. They indicate that, as they come across an imbalance problem, because while discretionary accruals can be estimated on a quarterly basis, audit committee and other firm characteristics are only observed for year-end, they use the second approach in their studies. Even though this approach seems appropriate to examine the relation quarterly, it has some limitations.

Firstly, this approach does not allow researcher to examine the income-increasing and income-decreasing discretionary accruals, because to calculate a composite annual discretionary accruals measure, the absolute value of discretionary accruals are used, which hinder offsetting of downward and upward earnings management among quarterly earnings. Secondly, even their approach extends the literature, by quarterly discretionary accruals, they examine the relation between audit committee characteristics and earnings management annually. So their results cannot be interpreted directly as that audit committee characteristics has an influential effect on quarterly earnings management.

This study uses the first approach proposed by Krishan and Yang (2005) and uses an empirical model based on panel regression analysis of quarterly discretionary accruals on corporate governance variables, audit quality and control variables.

The regression model is specified as follows;

$$\begin{aligned}
 QDA_{it} = & \beta_0 + \beta_1 BOARD_IND_{it} + \beta_2 BOARD_SIZE_{it} & (23) \\
 & + \beta_3 CEO_D_{it} + \beta_4 ACC_SIZE_{it} + \beta_5 INST_OWN_{it} \\
 & + \beta_6 OWN_CONCT_{it} + \beta_7 BLOCK_{it} + \beta_8 BIG-4_{it} \\
 & + \beta_9 FIN_DEBT_{it} + \beta_{10} SIZE_{it} + \varepsilon_{it}
 \end{aligned}$$

Where:

QDA_{it} = Quarterly discretionary accruals in the period (t),

$BOARD_INDP_{it}$ = Independence of board of directors and equal to the proportion of the number of independent directors in the board to the number of all board members in the period (t),

$BOARD_SIZE_{it}$ = Board size and measured by the number of directors in the board in the period (t),

CEO_D_{it} = CEO duality and it takes the value of 1 if CEO and the chairperson positions are held by the same individual, 0 otherwise in the period (t),

ACC_SIZE_{it} = Audit committee size and measured as the number of directors in the audit committee in the period (t),

$INST_OWN_{it}$ = Institutional ownership and it takes the value of 1 if the largest shareholder is an institutional or incorporated body, 0 otherwise in the period (t),

OWN_CNCT_{it} = Ownership concentration and measured by the percentage of equity shares owned by the largest shareholder in the period (t),

$BLOCK_{it}$ = Blockholdership and it takes value of 1 if there is a shareholder holding 20 percent or more shares of the firm , 0 otherwise in the period (t),

$BIG-4_{it}$ = Dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise in the period (t),

FIN_DEBT_{it} = Financial debt ratio measured as the proportion of financial debt to total assets in the period (t),

$SIZE_{it}$ = Size of the firms and measured the natural logarithm of total assets in the period (t).

The Fama-Macbeth (Fama and Macbeth, 1973) two-step panel regression were used to estimate parameters for research model with quarterly discretionary accruals, as dependent variable and corporate governance variables, Big-4, financial debt and firm size as independent variables. Fama-MacBeth estimation procedure is suitable for panel data analysis to cope with probable cross-sectional dependence problems in the data set and it is used widely in the accounting literature in panel data analyses (e.g. Yang and Krishnan, 2005; Cornett et al., 2008; Gow et al. 2007; García-Lara et al. 2005). It is a two-step panel regression approach; in the first step, performing a cross-sectional regression for each time periods in the panel data set, in the second step, the coefficient estimates are displayed with average standard errors. Although the original Fama-MacBeth model is designed for panel data sets with long time series, its application with large cross sectional variables has been recognised as well (Skoulakis, 2006).

5.4 Summary

This chapter provides the justification of the research methodology in order to empirically test the relation between corporate governance and earnings management and the role of audit quality on this relation.

First, the research objective and the research questions were revisited and explained in detail. Then, based on the literature on earnings management and corporate governance and considering the main aim of the research, the research design was presented and the hypotheses were developed. In the data section, the sample selection procedure and the measurement of each variable in the model were explained in detail with underlying reasons of the measurement. A sample of 2,152 firm-quarter observations where data is available for discretionary accruals, audit quality and corporate governance was drawn between the years 2006-2009. In order to test the hypotheses a three stage research methodology was applied, in the first stage, the earnings management models were evaluated. In the second stage, descriptive analyses were presented and in third stages, the hypotheses were tested using both univariate and multivariate panel regression methodology.

The next chapter presents findings of the empirical research on corporate governance, audit quality and earnings management.

CHAPTER 6

RESEARCH ANALYSIS AND HYPOTHESIS TESTING

6.1 Introduction

The previous chapter details the research methodology. The main purpose of this chapter is to conduct analyses in order to test the research hypotheses and examine the relations between discretionary accruals, as a proxy of earnings management and corporate governance mechanisms by controlling for audit quality. The statistical and econometrical analyses such as descriptive statistics, two-groups mean comparison t-tests, one-way ANOVA analysis, univariate and multivariate regressions were employed to test the proposed hypotheses.

The remainder of this chapter is organised as follows. Section two presents the findings of research analyses. It consists of three subsections, evaluating the earnings management models, presenting the descriptive statistics and testing the hypotheses to conclude the findings. Section three revisits statistical and empirical models using alternative measures for robustness of the findings and details the sensitivity analyses. Section four summarises the findings.

6.2 Research Analysis

6.2.1 Evaluation of Earnings Management Models

In order to determine the total accrual model that captures discretionary accruals more accurately, the relative explanatory power and the coefficient estimates of each model were assessed. The models were evaluated using a data set of 3,067 firm-quarters between 2005 Quarter-2 to 2009 Quarter-4⁸ from the two-digit industry groups with more than 10 firms in ISE that have the required information to calculate the independent variables; change in sales (Δ SALES), change in receivables (Δ REC), property, plant and equipment (PPE), lagged total accruals (Lag_TAC), book-to-market ratio (BM), future sales growth

⁸ The mandatory application of IFRSs on ISE firms started on 2005. Therefore this study uses a sample starting from 2005. In order to calculate the quarterly changes from first quarter to second quarter in 2005, the Quarter-1 of 2005 was excluded from the sample.

(GR_Sales), cash flows from operations (CFO), change in cash flows from operations (Δ CFO) and return on assets (ROA). With the intention of estimating quarterly discretionary accruals, the following models were employed; the Jones Model (Jones, 1991), the Modified Jones Model (Dechow et al. 1995), the Adapted Model (Dechow et al. 2003), the Forward Looking Model (Dechow et al. 2003), the Kazsnik Model (Kazsnik, 1999), the Larcker and Richardson Model (Larcker and Richardson, 2004) and the Kothari et al. Model (Kothari et al. 2005). Table 3 reports the coefficient estimates for the parameters in each model. The final column reports the explanatory power (adjusted R-square) for each model.

Overall, in all models, consistent with prior studies, change in sales (Δ SALES) or change in sales adjusted for change in receivables (Δ SALES- Δ REC) display positive coefficients and property plant and equipment (PPE) displays a negative coefficient. Both the Jones Model (Jones, 1991) and the Modified Jones Model (Dechow et al. 1995) have low explanatory powers with adjusted R-squares of 3% and 2.3%, respectively. Alike to Dechow et al. (2003), the results for the Adapted Model (Dechow et al. 2003) show a little improvement in the explanatory power (adjusted R-square of 2.4%) of the Modified Jones Model (Dechow et al. 1995).

A major criticism to the Jones Model (Jones, 1991) and the Modified Jones Model (Dechow et al. 1995) is that both of the models are misspecified in case of extreme level of firm performance (Dechow et al. 1995) and therefore it is suggested by Young (1995) and Jones et al. (2008) that controlling for firm performance is essential to increase the ability of total accrual models in capturing discretionary accruals. Recent total accrual models attempt to include performance based independent variables that might improve the ability of the Jones Model (Jones, 1991) and the Modified Jones Model (Dechow et al. 1995). Dechow et al. (2003) propose the Forward Looking Model (Dechow et al., 2003), which includes the future sales growth (GR_Sales) and lagged total accruals (Lag_TAC). The inclusion of these two variables creates an incremental increase in the explanatory variable of the model, which increases to 25.9%. The coefficient of lagged total accruals (Lag_TAC) in this model is 0.44 significant at 1% level, which grounds for the incremental increase in adjusted R-square of the model. Kazsnik (1999) adds change in cash flows from operations (Δ CFO) as a performance measure to control the Modified Jones Model (Dechow et al. 1995) for extreme cash flow performance. However, it only makes a slight increase in the adjusted R-square to 3.9%. Alternatively, Larcker and Richardson (2004) use cash flows from operations (CFO) and book-to-market ratio (BM) to control for current operating performance and expected growth in operations, respectively, in order to reduce measurement error associated with discretionary accruals. Jones et al.

(2008) argue that, if total accrual models are not controlled for growth in operations, the growth is more likely to be captured as discretionary accruals by the model. According to Larcker and Richardson (2004) the performance adjusted model they proposed is superior to the Modified Jones Model (Dechow et al. 1995) and it identifies discretionary accruals that are associated with lower future earnings more accurately. The regression results show that the Larcker and Richardson (2004) Model has an explanatory power of 20.8% which performs best after the Forward Looking Model (Dechow et al., 2003). In this study, as a further adjustment, an adapted version of Larcker and Richardson (2004) Model was employed. The Adapted Larcker and Richardson (2004) Model provides a slightly higher explanatory power with an adjusted R-square of 20.9%. Mainly, instead using change in sales adjusted for receivables ($\Delta\text{SALES}-\Delta\text{REC}$), the Adapted Larcker and Richardson (2004) Model uses k corrected change in sales adjusted for receivables ($(1+k)\Delta\text{SALES}-\Delta\text{REC}$), as proposed in the Adapted Model by Dechow et al. (2003). Finally, the Kothari et al. (2005) model, which introduces return on assets (ROA) as a performance control variable, has an adjusted R-square of 11.6%. Although Kothari et al. (2005) model performs better than the Jones Model (Jones, 1991) and the Modified Jones Model (Dechow et al., 1995) in estimating discretionary accruals, the explanatory power of the Larcker and Richardson (2004) Model and the Adapted Larcker and Richardson (2004) Model almost double it.

In summary, as it is presented in Table 3, the Forward Looking Model (Dechow et al. 2003) and the Adapted Larcker and Richardson (2004) Model are the models with highest explanatory power with an adjusted R-square of 25.9% and 20.9%, respectively.

The coefficient estimates of the Forward Looking Model (Dechow et al. 2003) show that among independent variables only lagged total accruals (Lag_TAC) and growth in future sales (GR_Sales) are significant at 1% level, indicating that on average 1TL increase in prior period's total quarterly accruals causes 0.44TL increase in current periods quarterly total accruals and an increase in future sales causes a decrease in quarterly total accruals but the effect of future sales is very small.

On the other hand, in the Adapted Larcker and Richardson (2004) Model, k corrected change in sales adjusted for receivables $((1+k) \Delta SALES - \Delta REC)$ has a significant positive coefficient at 5% level. The coefficient of 0.050 for k corrected change in sales adjusted for receivables $((1+k) \Delta SALES - \Delta REC)$ indicates that increases in sales adjusted for receivables cause a 5% increase in current periods quarterly total accruals. Alternatively, it refers that 1TL increases in sales adjusted for receivables causes a 0.05TL increase in quarterly total accruals. Moreover, cash flows from operations (CFO) has a significant negative coefficient of -0.538, at 1% level, indicating that an

increase in cash flows from operations causes a 53.8% decrease in current period's quarterly total accruals. In other words, 1TL increase in cash flows from operations result in 0.53TL decrease in quarterly total accruals. Book-to-market ratio (BM) has a significantly positive coefficient of 0.009, at 1% level, which refers that 1% increase in book-to-market ratio causes an equal increase in current periods' quarterly accruals (approx. by 0.9%). Although the explanatory power of the Adapted Larcker and Richardson (2004) Model is relatively high among all total accrual models, R-square of 0.209 refers that the independent variables are only capable of explaining 20.9% of the variation in current periods' quarterly total accruals.

Table 3: Analysis of Total Accrual Models

Dependent Variable: Quarterly Total Accruals (QTAC)												
Independent Variables												
	Constant	Δ SALES	Δ SALES - Δ REC	(1+k) Δ SALES - Δ REC	PPE	Lag_TAC	GR_Sales	Δ CFO	CFO	BM	ROA	Adj. R-Squ.
Jones Model	-0.038 (-1.90)	0.069*** (2.66)			-0.007 (-1.03)							0.030
Modified Jones	-0.014 (-0.74)		0.021 (0.85)		-0.007 (-1.10)							0.023
Adapted Model	-0.020 (-1.02)			0.026 (1.33)	-0.007 (-1.09)							0.024
Forward Looking Model	-0.006 (-0.59)			0.006 (0.55)	-0.002 (-0.53)	0.446*** (2.91)	-0.000*** (-4.96)					0.259
Kazsnik (1999)	-0.009 (-0.81)		0.027 (1.11)		-0.008 (-1.11)			-0.101 (-1.29)				0.039
Larcker and Richardson (2004)	-0.034 (-1.71)		0.056** (2.20)		-0.006 (-1.01)			-0.538*** (-5.68)	0.009*** (4.06)			0.208
Adapted Larcker and Richardson (2004)	-0.038 (-1.88)			0.050** (2.43)	-0.006 (-1.02)			-0.538*** (-5.96)	0.009*** (4.07)			0.209
Kothari et al. (2005)	-0.023 (-1.31)	0.038 (0.60)			-0.030 (-1.30)						0.494*** (4.95)	0.116

(***), (**) and (*) denote significant at %1, %5 and %10 (two-tailed), respectively. n=3067 firm-quarter observations between the years 2005-2009. t-statistics are reported in parentheses below parameter estimates. Adapted Larcker and Richardson (2004) Model is the adapted version of the Larcker and Richardson (2004) model, in accordance to k coefficient adjustment to (Δ SALES-REC) proposed by Dechow et al. (2003). QTAC is quarterly total accruals, Δ SALES is change in net sales for the quarter, Δ REC is the change in receivables for the quarter, PPE is the gross amount of property plant and equipment at the end of the quarter, Lag_TAC is lagged quarterly total accruals, GR_Sales is future sales growth, Δ CFO is the change in cash flows from operations, CFO is cash flows from operations, BM is the book-to-market ratio, ROA is return on assets. All independent variables except BM and ROA are scaled by lagged total assets to avoid heteroscedasticity. k is calculated from the following regression for each two-digit industry group Δ REC = $\alpha + k^* \Delta$ REV. In the Kothari et al. (2005) Model, 1/lagged total assets is not added as a regressor into the model. All coefficients are robust estimators estimated by using two-way clustering as suggested by Petersen (2009) to avoid heteroscedasticity and control for firm and time effect simultaneously. In addition, in order to control for industry effect eight dummy representing each industry is incorporated as regressor to each earnings management model.

Table 4 reports the Pearson correlations between quarterly discretionary accrual estimates and quarterly total accruals. As expected, the Forward Looking Model (Dechow et al. 2003) and the Adapted Larcker and Richardson (2004) Model have higher correlations (correlation coefficient of 0.50 and 0.45, respectively) with quarterly total accruals, indicating a strong linear relationship between quarterly total accruals and quarterly discretionary accruals measured by the Forward Looking Model (Dechow et al. 2003) and the (Adapted) Larcker and Richardson (2004) Model.

However, it is interesting that, the Forward Looking Model (Dechow et al. 2003) is the only model that significantly negatively correlates with all other performance adjusted total accrual models, except Kothari et al. (2005) Model, inconsistent with Dechow et al. (2003). The reason of this negative correlation has been analysed through further analyses and it is found that all indicators are robust. The Pearson correlation matrix for quarterly total accruals and the independent variables was presented in Appendix-I, Table A1. The future sales growth ratio do not significantly correlates neither with other performance measures nor quarterly discretionary accruals. The inconsistent coefficient estimates of the Forward Looking Model (Dechow et al., 2003) for future sales growth might causes misspecification of the model and misestimating of quarterly discretionary accruals.

Table 4: Correlation Matrix for Quarterly Total Accruals (QTAC) and Quarterly Discretionary Accrual (QDA)

Quarterly Discretionary Accrual (QDA) estimated for Total Accrual Models	Quarterly Discretionary Accrual (QDA) estimated for Total Accrual Models							
	QTAC	Jones Model	Modified Jones	Adapted Model	Forward Looking Model	Kazsnik (1999)	Larcker and Richardson (2004)	Adapted Larcker and Richardson (2004)
Jones Model	0.174***							
Modified Jones	0.153***	0.934***						
Adapted Model	0.156***	0.960***	0.995***					
Forward Looking Model	0.509***	0.293***	0.305***	0.306***				
Kazsnik (1999)	0.199***	0.727***	0.769***	0.767***	-0.034			
Larcker and Richardson (2004)	0.456***	0.336***	0.335***	0.337***	-0.081***	0.723***		
Adapted Larcker and Richardson (2004)	0.457***	0.346***	0.337***	0.341***	-0.080***	0.724***	0.999***	
Kothari et al. (2005)	0.340***	0.486***	0.444***	0.458***	0.202***	0.302***	0.058***	0.064***

(***), (**) and (*) denote significant at %1, %5 and %10 (one-tailed), respectively. n=3067 firm-quarter observations between the years 2005-2009. QTAC is quarterly total accruals. QDA is quarterly discretionary accruals estimated by for each total accrual models.

This research estimates quarterly discretionary accruals by the Adapted Larcker and Richardson (2004) Model. The use of the Adapted Larcker and Richardson (2004) Model in the estimation of quarterly discretionary accruals grounds several reasons. First, it has the second highest explanatory power with relatively more significant coefficient estimates and high correlation with quarterly total accruals. Second, Dechow et al. (1995) and Jones et al. (2008) argue that if total accrual models are not controlled for extreme firm performance, they fail to capture discretionary accruals. Moreover, Young (1995) argues that for firms with high cash flows from operations (CFO) relative to earnings, total accruals will be negative, vice versa. Any total accrual model that fails to control for cash flows from operations (CFO) is likely to misspecify in capturing discretionary accruals, because, *ceteris paribus*, when CFO is high, total accruals are more likely to be low, consequently for the models not controlling for CFO, the low total accrual will tend to be income-decreasing discretionary accruals, vice versa. Third, although the Forward Looking Model (Dechow et al., 2003) has a higher adjusted R-square, the coefficient estimates of the k coefficient corrected change in sales adjusted for change in receivables $((1+k)\Delta\text{SALES}-\Delta\text{REC})$ and property, plant and equipment (PPE) are insignificant for the model. Finally, the negative correlation of the Forward Looking Model (Dechow et al., 2003) with other performance adjusted models arouses suspicious that the model misestimates quarterly discretionary accruals.

As this study aims to examine the relation between corporate governance and earnings management on a quarterly basis, a pre-analysis was conducted to test whether there is any significant difference in the level of discretionary accruals over interim and fourth quarters. Table 5, present the results of one-way ANOVA analysis and corresponding descriptive statistics for mean differences in discretionary accruals (QDA) over financial quarters with p values in parenthesis.

Panel A reports ANOVA analysis, which illustrates that the level of discretionary accruals differs significantly over interim and fourth quarters at 1% level.

Panel B reports mean quarterly discretionary accruals. Overall, while mean discretionary accruals are income-decreasing both in interim and fourth quarters, discretionary accruals are higher in the fourth quarter (Quarter-4) comparing to interim quarters. Mean income-decreasing discretionary accruals are 0.4%, 1.12%, 1.53% and 1.79% of total quarterly beginning assets, for Quarter-1, Quarter-2, Quarter-3 and Quarter-4 respectively. The results confirm the opinion that discretionary accruals are greater in the fourth quarter (Jeter and Shivakumar, 1999; Jacop and Jorgenson, 2007, Das et al., 2009), probably because of the incentives to meet the compensation targets, debt covenants or analysts' forecasts which tied up with year-end

financial performance. Panel C reports Bonferroni test for mean differences in quarterly discretionary accruals. The results reveal that, first quarter discretionary accruals differ significantly from third and fourth quarters' discretionary accruals with a mean difference of -0.010 and -0.013, respectively. These differences might be resulted from the optimistic estimations in interim periods in the absence of independent audit and delaying the bad news to the fourth quarter. Alternatively, higher fourth quarter discretionary accruals might be resulted from big-bath restructuring or cookie jar reserves approach where managers tend to use income-decreasing accruals to delay some portion of current earnings in order to use it in the following financial periods (Abarbanell and Lehavy, 2003). Gunny et al. (2007) point out that earnings number in interim reports are integral part of annual earnings and the fourth quarter earnings are used to "settle up" or as a reconciliation of in the previous three quarters.

Table 5: ANOVA - Analysis of Variance of the Level of Quarterly Discretionary Accruals (QDA) over Interim and Fourth Quarters

Panel A : Quarterly Discretionary Accruals					
ANOVA Results					
Source	SS	df	MS	F	Prob > F
Between groups	0.070	3	0.0233	5.35	0.0011
Within groups	13.361	3063	0.0043		
Total	13.432	3066	0.0043		
Bartlett's test for equal variances: $\chi^2(3) = 332.0929$ Prob> $\chi^2 = 0.000$					
Panel B: Descriptive Statistics for Interim and Fourth Quarters					
Quarters	Mean QDA		Standard Deviation		
Quarter 1	-0.00473		0.00322		
Quarter 2	-0.01120		0.00277		
Quarter 3	-0.01532		0.00163		
Quarter 4	-0.01798		0.00190		
Panel C: Comparison of Differences among the Level of Discretionary Accruals over Interim and Fourth Quarters (Bonferroni)					
	Quarter 1	Quarter 2	Quarter 3		
Quarter 2	-0.006 (0.391)				
Quarter 3	-0.010 ** (0.016)	-0.004 (1.000)			
Quarter 4	-0.013 *** (0.001)	-0.006 (0.231)	-0.002 (1.000)		
(***), (**) and (*) denote significant at %1, %5 and %10 (two-tailed), respectively. n=3067 firm-quarter observations between the years 2005-2009. p-values are reported in parentheses below Quarterly Discretionary Accruals (QDA) mean differences. QDA is quarterly discretionary accruals estimated using the Adapted Larcker and Richardson (2004) Model. The equality of variances is tested before ANOVA statistics, and ANOVA tests are conducted based on the assumption of unequal variances.					

6.2.2 Descriptive Statistics

Table 6 presents descriptive statistics for all firm-quarter observations containing mean, median, standard deviation minimum and maximum value of all variables. Mean and median quarterly discretionary accruals (QDA) measured by the Adapted Larcker and Richardson (2004) Model are -0.012 and -0.010, respectively. On average, quarterly discretionary

accruals are 1.2% of total quarterly beginning assets. When quarterly discretionary accruals from Table 5, Panel B are summed up, it gives mean annual discretionary accruals of -0.04, or approximately 4% of total quarterly beginning assets. These results imply that mean discretionary accruals of ISE firms are lower during the years 2006-2009 than that between the years 1992-2003 where the mean and median discretionary accruals are 0.28 and 0.27 during IPOs, respectively (Yükseltürk, 2006) and between the years 1998-2002 where the mean and median discretionary accruals are -0.12 and -0.02, respectively (Ayarlıoğlu, 2007) both measured by the Jones Model (Jones, 1991). On average, although the level of discretionary accruals decreased dramatically since 2005, it is still comparatively higher than to US firms (0.0051) documented by Xie et al. 2003). Similarly, mean and median absolute quarterly discretionary accruals (ABS_QDA) are 0.037 and 0.026, respectively. The dummy variable of BIG-4 has a mean of 0.498, demonstrating that while 49.8% of sample ISE firms were audited by Big-4 audit firms, 50.2% of them were audited by Non-Big-4 auditors. Mean and median of audit firm tenure (TENURE) is 22.06 quarters (approx. 5.51 years) and 21 quarters (approx. 5.25 years), respectively. Mean and median of value of industry specialisation (IND_SPECL) is 17.73% and 7.34%, respectively, sign of that on average, sample ISE firms are audited by a lower level of industry specialist auditors. Mean and median proportion of independent board members to board of directors' size (BOARD_IND)

is 3.8% and 0 (zero), respectively, implies a quite low level of board of directors' independence relative to that of US and UK firms reporting 58% (Klein, 2002) and 43% (Peasnell et al., 2006). The results report that majority of sample ISE firms have no independent member in the board of directors. Mean and median of board of directors' size (BOARD_SIZE) are 6.21 and 6, respectively; representing that sample ISE firms have on average 6 directors (3-14 directors) in the board of directors. This number demonstrates small sized board of directors relative to US firms which have board size of 12.48 on average and ranging between (6-39) founded by Xie et al. (2003) and UK firms with on average 8.01 number of board members and ranging between (3-24) documented by Peasnell et al. (2006). Mean and median of CEO duality (CEO_D) is 0.16 and 0 (zero), respectively, signifying that on average, only in 16% of sample ISE firms CEO position are held by the chairman of the board of directors. Mean and median of audit committee size (ACC_SIZE) are 1.95 and 2, respectively, suggesting that sample ISE firms have on average 2 members in the audit committee. This number demonstrates that sample ISE firms mostly meet the minimum requirement set by Capital Markets Board of Turkey (CMB) regardless the number of directors in the board and the firm's size. Mean and median of institutional ownership (INS_OWN) are 0.84 and 0 (zero), respectively, showing that 84% of sample ISE firms have institutional owner. Mean and median percentages of ownership concentration (OWN_CNCT) illustrate a value of 50.77 and 50.93, respectively,

indicating that in sample ISE firms, 50.7% of total shares are held by big shareholder. Mean and median of blockholdership (BLOCK) is 0.92 and 1, respectively, specifying that 92% of the sample ISE firms have a blockholder. Mean and median financial debt ratio is 0.25 and 0.17, respectively, means that 25.4% and 17.3% of total assets financed by debts. Finally, the mean and median value of the firm size (SIZE) measured by natural logarithm of total assets, are 19.08 and 19.07, respectively.

Table 6: Descriptive Statistics for All firm-quarters

Variables	All Observations				
	Mean	Median	Standard Deviation	Minimum	Maximum
QDA	-0.012	-0.010	0.072	-1.62	1.658
ABS_QDA	0.037	0.026	0.063	0.000051	1.658
BIG-4	0.498	0	0.500	0	1
TENURE	22.06	21	13.15	0	48
IND_SPECL	0.177	0.073	0.202	0.0005	0.862
BOARD_IND	0.038	0	0.103	0	0.6
BOARD_SIZE	6.210	6	1.89	3	14
CEO_D	0.160	0	0.366	0	1
ACC_SIZE	1.95	2	0.662	0	5
INST_OWN	0.843	1	0.363	0	1
OWN_CNCT	50.77	50.93	21.85	0.78	99.36
BLOCK	0.923	1	0.265	0	1
FIN_DEBT	0.254	0.173	0.413	0	5.72
SIZE	19.08	19.07	1.50	15.67	23.20

n= 2152 firm-quarter observations between the years 2006-2009. QDA is Quarterly Discretionary Accruals; ABS_QDA is Absolute Quarterly Discretionary Accruals; BIG-4 is dummy variable that takes the value of 1 if the auditor is one of the BIG-4 and 0 otherwise; TENURE is Audit Firm Tenure; IND_SPECL is Industry Specialisation of audit firm; BOARD_IND is Independence of Board of Directors; BOARD_SIZE is Size of Board of Directors; CEO_D is CEO Duality; ACC_SIZE is Size of the Audit Committee; INST_OWN is Institutional Ownership; OWN_CNCT is Ownership Concentration; BLOCK is Blockholdership; FIN_DEBT is Financial Debt to Total Assets; SIZE is size of the firm in terms of natural logarithm of Total Assets.

Table 7 reports descriptive statistics grouped by the variable BIG-4. Quarterly discretionary accruals (QDA) of firms audited by Big-4 are significantly lower than of firms audited by Non-Big-4 at 5% level. Mean quarterly discretionary accruals are -0.008 for Big-4 and -0.015 for Non-Big-4 firms, indicating that Non-Big-4 firms using more income-decreasing accruals relative to Big-4 firms. In other words, while quarterly discretionary accruals are 0.08% of total quarterly beginning assets for Big-4 firms, it constitutes 1.5% of total quarterly beginning assets for Non-Big-4 firms. Similarly, absolute quarterly discretionary accruals (ABS_QDA) of firms audited by Big-4 are significantly lower than of firms audited by Non-Big-4 at 1% level. Mean absolute quarterly discretionary accruals are 0.034 for Big-4 and 0.041 for Non-Big-4 firms. This significant difference supports the argument of the constraining role of Big-4 auditors on earnings management, consistent with Francis et al. (1999). Mean audit firm tenure (TENURE) of Big-4 and Non-Big-4 auditors are 24.08 and 20.05 quarters, respectively, which means that there is a significant 4 quarters or approximately 1 year difference between two groups. Firms audited by Big-4 retain the auditor-client relationship longer than Non-Big-4. Mean industry specialisation (IND_SPECL) is 0.305 for Big-4 firms, while it is 0.050 for Non-Big-4 firms. Mean difference in the occupation of industry specialist audit firm is significantly higher for Big-4 firms. All corporate governance variables, except board of directors' independence are significantly different for Big-4 and Non-Big-4 firms at 1% level. Big-4 audited firms

have board of directors' structure with an average of 3.8% independent members in the board (BOARD_IND), 6.8 and 2.05 directors in the board of directors (BOARD_SIZE) and audit committee (ACC_SIZE), respectively, and 56.90% ownership concentration (OWN_CNCT). In addition, Big-4 firms have a mean value of 0.097 CEO duality (CEO_D), mean value of 0.93 institutional ownership (INST_OWN) and mean value of 0.970 blockholdership (BLOCK). On the other hand, Non-Big-4 audited firms have a board of directors' structure with an average of 3.8% independent members in the board (BOARD_IND), 5.6 and 1.85 directors in the board of directors (BOARD_SIZE) and audit committee (ACC_SIZE), respectively, and 44.68% ownership concentration (OWN_CNCT). In addition, Big-4 firms have a mean value of 0.22 CEO duality (CEO_D), mean value of 0.75 institutional ownership (INST_OWN) and mean value of 0.877 blockholdership (BLOCK). While mean financial debt (FIN_DEBT) is 0.204 for firms audited by Big-4, it is 0.304 for firms audited by Non-Big-4. These results imply that Non-Big-4 audit firms have higher financial debt to total assets. Comparing the firm size (SIZE), analysis results show that there is a significant difference in the firm size for firms audited by Big-4 and Non-Big-4. This result is consistent with Chung et al. (2003) that because of their perceived audit quality, reputation and experience, big firms are more likely to occupy Big-4 auditors.

Overall, for the sample ISE firms, the descriptive statistics and mean difference t-test results show that on average discretionary accruals of firms audited by Big-4 are lower than the firms audited by Non-Big-4. Similarly, firms audited by Big-4 characterized as large firms, in terms of firm size, and with larger board of directors' size, with higher ownership concentration and longer audit-client relationship and preference of industry specialist firms. On average, although there is a significant difference in the audit committee size, CEO duality, institutional ownership and blockerholdership, the median of these variables doesn't change between firms with Big-4 and Non-Big-4. In addition, Non-Big-4 firms tend to have higher financial debt-ratio comparing to Big-4. However, there is no difference for the board of directors' independence between two groups. This result is not surprising, as it is previously indicated that, sample ISE firms have lower level of board of directors' independence in general.

Table 7: Descriptive Statistics for BIG-4 and Non-BIG-4 firms

Variables	Observations for BIG-4 firms (n=1072)			Observations for Non-BIG-4 firms (n=1080)			Mean Difference
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-statistics
QDA	-0.008	-0.009	0.081	-0.015	-0.012	0.061	-2.39**
ABS_QDA	0.034	0.025	0.074	0.041	0.028	0.048	2.66***
TENURE	24.08	25	12.60	20.05	17	13.37	-7.18***
IND_SPECL	0.305	0.319	0.211	0.050	0.023	0.069	-37.43***
BOARD_IND	0.038	0	0.106	0.038	0	0.099	-0.09
BOARD_SIZE	6.803	7	1.619	5.631	5	1.973	-15.06***
CEO_D	0.097	0	0.297	0.222	0	0.415	7.97***
ACC_SIZE	2.050	2	0.503	1.857	2	0.778	-6.83***
INST_OWN	0.938	1	0.240	0.75	1	0.433	-12.48***
OWN_CNCT	56.90	52.87	21.03	44.68	44.44	20.93	-13.50***
BLOCK	0.970	1	0.170	0.877	1	0.327	-8.21***
FIN_DEBT	0.204	0.166	0.174	0.304	0.178	0.553	5.65***
SIZE	19.73	19.50	1.402	18.43	18.44	1.31	-22.08***

(***), (**) and (*) significant at %1, %5 and %10 (two-tailed), respectively. n=2152 firm-quarter observations between the years 2006-2009. QDA is Quarterly Discretionary Accruals; ABS_QDA is Absolute Quarterly Discretionary Accruals; BIG-4 is dummy variable that takes the value of 1 if the auditor is one of the BIG-4 and 0 otherwise; TENURE is Audit Firm Tenure; IND_SPECL is Industry Specialisation of audit firm; BOARD_IND is Independence of Board of Directors; BOARD_SIZE is Size of Board of Directors; CEO_D is CEO Duality; ACC_SIZE is Size of the Audit Committee; INST_OWN is Institutional Ownership; OWN_CNCT is Ownership Concentration; BLOCK is Blockholdership; FIN_DEBT is Financial Debt to Total Assets; SIZE is size of the firm in terms of natural logarithm of Total Assets.

Table 8 presents descriptive statistics grouped by the direction of earnings management, as firms using income-increasing (positive) and income-decreasing (negative) discretionary accruals. Absolute quarterly discretionary accruals (ABS_QDA) of income-decreasing firms are significantly higher than income-increasing firms at 1% level. Mean absolute quarterly discretionary accruals are 0.032 for income-increasing firms and 0.040 for income-decreasing firms, indicating that sample ISE firms tend to use more aggressive income-decreasing discretionary accruals. In other words, on average while income-increasing firms use quarterly discretionary accruals which are 3.2% of total quarterly beginning assets, income-decreasing firms use quarterly discretionary accruals which are 4% of total quarterly beginning assets. There is no statistically significant difference in the mean of auditor attributes in terms of BIG-4, audit firm tenure (TENURE) and audit firm industry specialisation (IND_SPECL). This results demonstrates that, firms either audited by Big-4 or Non-Big-4 and by industry specialist or non-industry specialist auditors and retaining a longer or shorter auditor-client relation use both income-increasing and income-decreasing discretionary accruals. In terms of corporate governance variables, except audit committee size, corporate governance structure of income-increasing and income-decreasing firms differ significantly from each other. While income-increasing firms have independent board of directors (BOARD_IND) with a fraction of 3.2% independent member in the board, the mean of board

independence for income-decreasing firms is 4.2%. This result might be interpreted as, although firms both with higher independent and lower independent board use discretionary accruals, higher independent board of directors are more likely to use income-decreasing accruals. Income-increasing firms have a board of directors size (BOARD_SIZE) of 6.30 on average, while income-decreasing firms have a slightly smaller size 6.15, which is significant at 10% level. Also, according to the sample descriptive results, income-increasing firms are characterized with lower CEO duality (CEO_D) and higher ownership concentration (OWN_CNCT). Moreover, they are more likely to have institutional owner (INST_OWN) and less likely to have blockholder relative to income-decreasing firms. Although they significantly differ for CEO duality, institutional ownership, ownership concentration and blockholdership, at 1% level, the major difference appears particularly in blockholdership, which is 4.3% and 90% for income-increasing and income-decreasing firms, respectively. Mean value of financial debt (FIN_DEBT) is 0.218 for income-increasing firms and it is 0.277 for income-decreasing firms, indicating that while income-increasing firms have 21% financial debt to total asset, income-decreasing firms have relatively higher financial debt with 27% of total assets, which is significantly different at 1% level. Comparing the firm size (SIZE), analysis results show that there is a significant difference in the firm size for income-increasing and income-decreasing firms, that bigger firms are more likely to use income-increasing discretionary accruals.

Table 8: Descriptive Statistics for Income-Increasing and Income-Decreasing Firms

Variables	Observations for Income-increasing firms (n=837)			Observations for Income-decreasing firms (n=1315)			Mean Difference
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-statistic
QDA	0.032	0.020	0.067	-0.040	-0.030	0.059	-25.70***
ABS_QDA	0.032	0.020	0.067	0.040	0.030	0.059	2.84***
BIG-4	0.508	1	0.500	0.491	0	0.500	-0.80
TENURE	22.31	21	13.50	21.90	21	12.92	-0.70
IND_SPECL	0.179	0.079	0.198	0.176	0.071	0.204	-0.36
BOARD_IND	0.032	0	0.096	0.042	0	0.106	2.14**
BOARD_SIZE	6.30	6	1.76	6.15	6	1.97	-1.76*
CEO_D	0.136	0	0.343	0.175	0	0.380	2.49***
ACC_SIZE	1.96	2	0.672	1.949	2	0.657	-0.39
INST_OWN	0.875	1	0.330	0.823	1	0.381	-3.36***
OWN_CNCT	53.04	51	21.41	49.32	49.55	22.01	-3.89***
BLOCK	0.043	1	0.208	0.904	1	0.294	-4.64***
FIN_DEBT	0.218	0.168	0.341	0.277	0.177	0.452	3.39***
SIZE	19.30	19.26	1.53	18.94	18.95	1.46	-5.44***

(***), (**) and (*) significant at %1, %5 and %10 (two-tailed), respectively. n= 2152 firm-quarter observations between the years 2006-2009. QDA is Quarterly Discretionary Accruals; ABS_QDA is Absolute Quarterly Discretionary Accruals; BIG-4 is dummy variable that takes the value of 1 if the auditor is one of the BIG-4 and 0 otherwise; TENURE is Audit Firm Tenure; IND_SPECL is Industry Specialisation of audit firm; BOARD_INDP is Independence of Board of Directors; BOARD_SIZE is Size of Board of Directors; CEO_D is CEO Duality; ACC_SIZE is Size of the Audit Committee; INST_OWN is Institutional Ownership; OWN_CNCT is Ownership Concentration; BLOCK is Blockholdership; FIN_DEBT is Financial Debt to Total Assets; SIZE is size of the firm in terms of natural logarithm of Total Assets.

Table 9 documents the Pearson correlation matrix across all independent variables. Before the analysis, firm-quarter observations with extreme quarterly discretionary accruals at %1 and 99% percentile are omitted from the sample. The new sample consists of 2135 firm-quarter observations between the years 2006-2009. The correlation coefficients assure that multicollinearity is not a serious problem for independent variables because the correlation coefficients do not exceed 0.50 for most of the variables. The multicollinearity among variables is also tested for corporate governance variables (see Section 6.4 for VIF and Tolerance values).

Absolute quarterly discretionary accruals (ABS_QDA) are negatively correlated with Big-4 audit firms, audit firm tenure and industry specialisation at 1% significance level, respectively. Consistent with literature (e.g. Becker et al., 1998, Kim and Yoon, 2008), all audit quality proxies negatively correlate with absolute quarterly discretionary accruals. In addition, absolute quarterly discretionary accruals are significantly positively correlated both with board of directors' independence and the board of directors' size. A significant positive correlation between board independence and discretionary accruals is astounding and inconsistent with theory that a more independent board is more objective in decision making and it improves the monitoring and controlling activities over management. This positive correlation might be a sign of that the independent board members are not effective in

fulfilling their roles in Turkey. On the other hand, a significant positive correlation between board size and absolute discretionary accruals is consistent with Jensen (1993) that larger board of directors are less likely to function effectively and easier for the CEO to control, because of the coordination and communication problems among board members and therefore it is expected that less effective and functional in financial reporting oversight. In addition, CEO duality has a significantly positive correlation with absolute quarterly discretionary accruals, suggesting that firms with CEO duality are more likely to use larger discretionary accruals, consistent with the proposition of that occupation of both positions by the same person leads to a power concentration which is likely to decrease the control of the board over management's activities. Besides, there is a significant positive correlation between absolute quarterly discretionary accruals and financial debt ratio implying that firms with higher financial debt tend to use more discretionary accruals and a significant negative correlation between absolute quarterly discretionary accruals and firm size indicates that smaller firms are more likely to use larger discretionary accruals.

The dummy variable BIG-4 is significantly correlates with all variables at 1% level, except the independence of board of directors. The correlation between Big-4 and audit firm tenure and audit firm industry specialisation imply that firms with Big-4 tend to retain longer

auditor-client relation. The positive association between Big-4 and industry specialisation doesn't purely mean that Big-4 firms are more specialised than Non-Big-4 firms it might also interpreted as Big-4 audit firms have more auditors, therefore they dominate in all industries. Significant correlations between Big-4 and all internal corporate governance mechanisms, except board independence, imply that, a firm with a large board of directors and a smaller audit committee, no CEO duality, institutional owner, higher ownership concentration and no-blockholder is more likely to be audited by Big-4, consistent with Yeoh and Jubb (2002), Big-4 auditor choice is highly correlated with internal corporate governance mechanisms. In addition, as expected, Big-4 is positively correlated with firm size and negatively correlated with financial debt, indicating that bigger firms and firms with lower level of financial debt are more likely to hire Big-4.

Audit firm tenure (TENURE) is significantly positively correlated with board of directors' size, ownership concentration and blockholdership and negatively correlated with CEO duality. It is not surprising, that firms with higher ownership concentration and blockholder to retain longer auditor-client relationship. In addition, audit firm tenure is positively correlated with industry specialisation of auditor, implying that firms prefer to retain longer relation with industry specialist audit firms. Finally, there is a significant positive association between firm size and audit firm tenure. This might be explaining by the tendency of big firms

to hire the same audit firms or conversely, because of the firm size and the relative importance of the firm, the preference of audit firm to maintain audit firm-client relationship over years.

In a similar way, industry specialisation (IND_SPECL) of audit firms has significant association with all variables. It has a significant positive correlation with all corporate governance variables except CEO duality and blockholdership. Firms with independent large board of directors, large audit committee, institutional owner and higher level of ownership concentration tend to hire industry specialist audit firms. On the other hand, in case of CEO duality and blockholdership, firms do not prefer to hire industry specialist audit firms. Also, while there is a negative relation between, the occupation of industry specialist auditor and financial debt ratio, a significant positive correlation has been observed with firm size.

There is a significant correlation among all corporate governance variables. It is not surprising that there is a significant positive association between board of directors' independence (BOARD_IND), board size and firm size. As the size of the firm increases, the associated board of directors' size is getting larger, and it is more likely to appoint an independent director to the board. CEO Duality and board of directors' independence is negatively correlated, implicating that in case of the occupation of CEO position and the chairman position by

the same person, the independence of the board of directors decreases, most probably because of the significant influence of CEO, who is the chairman also, on board of directors' decision in the appointment of the board members. It is unpredicted that, there is a negative correlation between institutional ownership and board independence. Alike, in case of CEO duality, a possible explanation of might be the significant influence of institutional owners in the appointment of board members, which decreases board of directors' independence. It is observed that board independence is positively associated with blockholdership and ownership concentration. The positive correlation between blockholdership and board independence is reasonable, because in theory blockholder(s) are regarded as a controlling mechanism and constraining the managerial discretion. A significant positive relation between ownership concentration and board independence is surprising, because a concentrated ownership structure is considered as a situation where a large amount of shares are held by a big (few) controlling shareholder(s), therefore a negative relation between board independence and ownership concentration is expected.

A significant negative correlation between board size (BOARD_SIZE) and CEO duality means that firms with large boards are less likely to be faced with CEO duality. Also, positive correlations of board size with institutional ownership, blockholdership and firm size implying that big

firms, firms with institutional owners and blockholders are more likely to have a larger board of directors. Similarly, as audit committee is a sub-committee of board of directors, a large board size is significantly associated with a larger audit committee size. In addition, board size is negatively correlated with financial debt indicating that big firms have larger board size, and lower leverage ratio as expected.

The significant negative correlation coefficient of CEO duality (CEO_D) with other variables indicates that firms with institutional owners and blockholders are less likely to face with CEO duality. Also, there is a negative association between CEO duality and audit committee size, implying that firms with CEO duality are more likely to have smaller audit committee. Unlike other corporate governance variables, CEO duality is negatively correlated with firm size, which means that big firms are more likely to separate CEO and chairman roles.

The significant positive correlation between audit committee size (ACC_SIZE) and corporate governance variables indicates that, firms with institutional ownership, higher ownership concentration and blockholdership are more likely to have larger audit committee. Similarly, as big firms have larger board size and firms with larger board size is more likely to have larger audit committee, the significant positive relation between audit committee and firm size is obvious.

Furthermore, as other corporate governance variables, audit committee correlates negatively with financial debt.

Institutional ownership (INST_OWN) is significantly positively associated with ownership concentration, blockholdership and firm size. This positive relation is a sign of firms with for the sample ISE firms, big firms have more institutional owners and the institutional owners are more likely to be blockholder or the big shareholder with a concentrated ownership.

A significantly positive correlation between ownership concentration (OWN_CNCT) and blockholdership (BLOCK) points out that for the sample ISE firms; larger shareholders hold the significant amount of shares. Also, positive correlation between ownership concentration and blockholdership with firm size implies that big firms tend to have a more concentrated ownership structure with blockholders.

Finally, there is a negative significant correlation between firm size (SIZE) and financial debt ratio (FIN_DEBT), suggesting that larger firms have lower financial debt ratio.

Table 9: Correlations Matrix for Absolute Discretionary Accruals (ABS_QDA) and Independent Variables

Variables	ABS_QDA	Independent Variables											
		BIG-4	TENURE	IND_SPECL	BOARD_IND	BOARD_SIZE	CEO_D	ACC_SIZE	INST_OWN	OWN_CNCT	BLOCK	FIN_DEBT	
BIG-4	-0.108***	1											
TENURE	-0.112***	0.154***	1										
IND_SPECL	-0.088***	0.627***	0.201***	1									
BOARD_IND	0.045**	0.002	-0.033	0.076***	1								
BOARD_SIZE	0.105***	0.304***	0.084***	0.404***	0.139***	1							
CEO_D	0.025**	-0.169***	-0.088***	-0.186***	-0.075***	-0.202***	1						
ACC_SIZE	0.018	-0.148***	0.007	0.095***	0.011	0.268***	-0.063***	1					
INST_OWN	-0.0006	0.260***	0.036	0.234***	-0.053**	0.184***	-0.227***	0.182***	1				
OWN_CNCT	-0.015	0.281***	0.055***	0.129***	0.085***	-0.019	-0.019	0.048**	0.492***	1			
BLOCK	-0.036	-0.176***	0.066***	-0.186***	0.042**	0.141***	-0.070***	0.175***	0.559***	0.496***	1		
FIN_DEBT	0.249***	-0.108***	0.017	-0.151***	-0.049**	-0.239***	-0.055**	-0.111***	0.006	-0.037	-0.002	1	
SIZE	-0.144***	0.426***	0.114***	0.490***	0.148***	0.532***	-0.290***	0.174***	0.289***	0.122***	0.239***	-0.099*	

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n= 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. ABS_QDA is absolute quarterly discretionary accruals measured by the Adapted Larcker and Richardson (2004) Model, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise. TENURE is the audit firm tenure and IND_SPECL is industry specialisation of audit firm, BOARD_INDP, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm in terms of natural logarithm of Total Assets.

6.2.3 Hypothesis Testing

6.2.3.1 Audit Quality and Earnings Management

Table 10 compares absolute quarterly discretionary accruals of firms audited by Big-4 with those audited by Non-Big-4 for all firm-quarters, interim and fourth quarters over 2006-2009. The aim of two group mean comparison is to reveal whether firms' absolute quarterly discretionary accruals differ between Big-4 and Non-Big-4 auditors. The mean, standard deviations and mean differences of absolute quarterly discretionary accruals for firms with Big-4 and Non-Big-4 auditors were reported in the table with t-statistics shown in the parenthesis with a star denoting the significance level.

Panel A presents the mean difference of absolute discretionary accruals of firms with Big-4 and Non-Big-4 auditors for all firm-quarter observations (n=2135). Mean absolute quarterly discretionary accruals of Big-4 firms and Non-Big-4 firms are 0.030 and 0.037, respectively, which point out that on average Non-Big-4 firms have higher absolute quarterly discretionary accruals significant at 1%. The mean difference of absolute discretionary accruals is 0.007.

Panel B reports mean difference of absolute quarterly discretionary accruals between two groups for interim and fourth quarters. The table shows that, both in interim and fourth quarters, absolute quarterly

discretionary accruals are higher for Non-Big-4 at 1% and 5% significance level. The mean difference of absolute quarterly discretionary accruals for each quarter is 0.005, 0.008, 0.009 and 0.005, respectively. Although, the differences are significant in all quarters, mean differences are relatively higher in Quarter-2 and Quarter-3. Within firm comparison demonstrate that mean absolute quarterly discretionary accruals of Non-Big-4 firms are almost same both in interim and fourth quarters. However, Big-4 firms tend to have relatively higher mean absolute quarterly discretionary accruals in the fourth quarter comparing to interim quarters. Therefore, although mean absolute quarterly discretionary accruals are significantly lower for Big-4 firms relative to Non-Big-4 firms in all quarters, the gap in the mean difference gets closer in the fourth quarter indicating that, Big-4 firms are using relatively more discretionary accruals than interim periods which is consistent with the argument that discretionary accruals are greater in the fourth quarter (Jeter and Shivakumar, 1999; Jacop and Jorgenson, 2007, Das et al., 2009).

Table 10: Mean Comparison of Absolute Quarterly Discretionary Accruals (ABS_QDA) of Big-4 and Non-Big-4 firms

Panel A: Mean Comparison of ABS_QDA for the period (2006- 2009)			
Group	n	Mean ABS_QDA	Std. Dev.
Non-BIG-4	1066	0.037	0.0349
BIG-4	1069	0.030	0.0270
Difference (Non-BIG-4 - BIG-4)		0.007 *** (5.06)	
Panel B: Quarterly Mean Comparison of ABS_QDA for the period (2006- 2009)			
Quarter 1 (Q1) for the period (2006- 2009)			
Group	n	Mean ABS_QDA	Std. Dev.
Non-BIG-4	269	0.034	0.0311
BIG-4	267	0.029	0.0271
Difference (Non-BIG-4 - BIG-4)		0.005 (1.95)**	
Quarter 2 (Q2) for the period (2006- 2009)			
Group	n	Mean ABS_QDA	Std. Dev.
Non-BIG-4	264	0.038	0.0349
BIG-4	267	0.030	0.0245
Difference (Non-BIG-4 - BIG-4)		0.008 (2.92)***	
Quarter 3 (Q3) for the period (2006- 2009)			
Group	n	Mean ABS_QDA	Std. Dev.
Non-BIG-4	266	0.039	0.0371
BIG-4	268	0.030	0.0244
Difference (Non-BIG-4 - BIG-4)		0.009*** (3.53)	
Quarter 4 (Q4) for the period (2006- 2009)			
Group	N	Mean ABS_QDA	Std. Dev.
Non-BIG-4	267	0.038	0.0362
BIG-4	267	0.033	0.0314
Difference (Non-BIG-4 - BIG-4)		0.005** (1.75)	

(***), (**) and (*) denote significant at %1, %5 and %10 (one-tailed), respectively. t-values are reported in parentheses below the mean differences of QDA n= 2135 firm-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009; 1069 firm-quarter observations for BIG-4 firm-quarter and 1066 for Non-Big-4 firm-quarter for income-decreasing firms in Panel A. QDA is quarterly discretionary accruals measured by the Adapted Larcker and Richardson (2004) Model and BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4 audit firms and 0 otherwise. Before the two-groups mean comparison test, the equality of each groups variances are measured. According to test results, the variances of QDA for BIG-4 and Non-BIG-4 firms are statistically not equal to each other. Therefore, two-groups mean comparison test is conducted by considering the unequal variance assumption.

Following the analysis of absolute quarterly discretionary accruals, in order to support the prior findings a further analysis was conducted. Table 11 presents the mean comparison of quarterly discretionary

accruals of Big-4 and Non-Big-4 firms classified by direction of earnings management between the years 2006-2009. The signed (absolute) measure of quarterly discretionary accruals of sample ISE firms is divided into two groups; by firms using income-increasing (positive) and income-decreasing (negative) discretionary accruals.

Panel A presents the mean differences of quarterly discretionary accruals for Big-4 and Non-Big-4 firms using both income-increasing and income-decreasing accruals. For income-increasing sample (n=829 firm-quarters), there is no difference in the mean quarterly discretionary accruals of Big-4 and Non-Big-4 firms, which implies that Big-4 audit do not limit the income-increasing accruals and both Big-4 and Non-Big-4 firms use approximately same level of income-increasing discretionary accruals. On the other hand, for the income-decreasing sample (n=1306 firm-quarters), the mean quarterly discretionary accruals of Big-4 and Non-Big-4 firms are -0.032 and -0.043, respectively, which indicates that on average Non-Big-4 firms income-decreasing quarterly discretionary accruals are 0.011 higher than Big-4 firms, significant at 1% level.

In Panel B, the mean differences in quarterly discretionary accruals between Big-4 and Non-Big-4 firms were presented for interim and fourth quarters, again both for income-increasing and income-decreasing quarterly discretionary accruals. For firms using

income-increasing discretionary accruals, although the mean value of income-increasing accruals of Non-Big-4 firms is higher than Big-4 firms in all quarters, the mean differences are not statistically significant. The results are more likely to imply that Big-4 audit has no influence on income-increasing quarterly discretionary accruals.

For firms using income-decreasing accruals, consistent with the results in Table 10, quarterly discretionary accruals are significantly different between two groups at 1% level. The mean difference of income-decreasing quarterly discretionary accruals of each quarter is -0.007, -0.015, -0.013 and -0.006, respectively. Although, the differences are significant in all quarters, mean quarterly discretionary accruals are relatively higher in absolute terms in Quarter-2 and Quarter-3. The mean difference between Big-4 and Non-Big-4 in the fourth quarter is -0.006. Among all quarters, mean of quarterly income-decreasing discretionary accruals for Big-4 firms is higher in the fourth quarter, consistent with Jeter and Shivakumar (1999) discretionary accruals are higher in the fourth quarter relative to the interim periods. Management might be more optimistic in interim periods and delay the bad news to the fourth quarter to manage earnings.

Overall results imply that both Big-4 and Non-Big 4 firms use both income-increasing and income-decreasing discretionary accruals both in interim and fourth quarters. Although the interim financial reports with

lack of external audit provides greater opportunity for earnings management, the comparatively higher mean discretionary accruals show that management is likely having less incentive to manage earnings in interim periods, consistent with Jeter and Shivakumar (1999), Jacop and Jorgenson (2007) and Das et al. (2009). t-test results support the Hypothesis 1a that firms with Big-4 have lower level of absolute discretionary accruals than firms with Non-Big-4. The mean comparison t-test statistics for all firm-quarters show that on average Non-Big-4 firms tend to use more aggressive earnings management, particularly through the use of income-decreasing discretionary accruals.

Table 11: Mean Comparison of Quarterly Discretionary Accruals (QDA) of BIG-4 and Non-BIG-4 firms for Income-Increasing and Income-Decreasing Firms

Panel A: Mean Comparison of QDA for the period (2006- 2009)						
Group	Income-Increasing Firms			Income-Decreasing Firms		
	n	Mean QDA	Std. Dev.	n	Mean QDA	Std. Dev.
Non-BIG-4	405	0.029	0.0275	661	-0.043	0.0014
BIG-4	424	0.027	0.0280	645	-0.032	0.0010
Difference		0.002			-0.011***	
(Non-BIG-4 - BIG-4)		(0.64)			(-5.64)	

Panel B: Quarterly Mean Comparison of QDA for the period (2006-2009)						
Quarter 1 (Q1) for the period (2006- 2009)						
Group	Income-Increasing Firms			Income-Decreasing Firms		
	n	Mean QDA	Std. Dev.	n	Mean QDA	Std. Dev.
Non-BIG-4	106	0.030	0.0028	163	-0.037	0.0025
BIG-4	114	0.028	0.0025	153	-0.030	0.0022
Difference		0.002			-0.007*	
(Non-BIG-4 - BIG-4)		(0.70)			(-1.86)	

Quarter 2 (Q2) for the period (2006- 2009)						
Group	Income-Increasing Firms			Income-Decreasing Firms		
	n	Mean QDA	Std. Dev.	n	Mean QDA	Std. Dev.
Non-BIG-4	106	0.031	0.0024	158	-0.045	0.0030
BIG-4	115	0.028	0.0026	152	-0.030	0.0017
Difference		0.003			-0.015***	
(Non-BIG-4 - BIG-4)		(0.79)			(-3.75)	

Quarter 3 (Q3) for the period (2006- 2009)						
Group	Income-Increasing Firms			Income-Decreasing Firms		
	n	Mean QDA	Std. Dev.	n	Mean QDA	Std. Dev.
Non-BIG-4	95	0.028	0.0397	171	-0.045	0.0030
BIG-4	101	0.026	0.0261	167	-0.032	0.0017
Difference		0.002			-0.013***	
(Non-BIG-4 - BIG-4)		(0.69)			(-4.55)	

Quarter 4 (Q4) for the period (2006- 2009)						
Group	Income-Increasing Firms			Income-Decreasing Firms		
	n	Mean QDA	Std. Dev.	n	Mean QDA	Std. Dev.
Non-BIG-4	98	0.028	0.0029	169	-0.043	0.0030
BIG-4	94	0.025	0.0030	173	-0.037	0.0024
Difference		0.003			-0.006**	
(Non-BIG-4 - BIG-4)		(0.73)			(-1.72)	

(***), (**) and (*) denote significant at %1, %5 and %10 (one-tailed), respectively. t-values are reported in parentheses below the mean differences of QDA. n= 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009; 829 firm-quarter observations for income increasing and 1306 firm-quarter for income-decreasing firms in Panel A. QDA is quarterly discretionary accruals measured by the Adapted Larcker and Richardson (2004) Model and BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4 audit firms and 0 otherwise. Before the two-groups mean comparison test, the equality of each groups variances are measured. According to test results, the variances of QDA for BIG-4 and Non-BIG-4 firms are statistically not equal to each other. Therefore, two-groups mean comparison test is conducted by considering the unequal variance assumption.

Table 12 provides the univariate regression results with absolute quarterly discretionary accruals as dependent variable and overall audit quality attributes; BIG-4, audit firms tenure (TENURE) and audit firms industry specialisation (IND_SPECL), as independent variables. F-values and adjusted R-squares were presented at the bottom of the table.

Regression results show that, all audit quality attributes have a negative coefficient significant at 1% level, suggesting that, consistent with prior studies, Big-4 auditors, longer audit firm tenure and industry specialist auditors have constraining role on absolute quarterly discretionary accruals.

Big-4 has a coefficient of -0.006, indicating that on average Big-4 audit causes 0.6% decrease in quarterly discretionary accruals. However, R-square of the univariate regression for Model 1 is 0.0159, which means that Big-4 is only capable to explain 1.5% of the variation in quarterly discretionary accruals.

The significant negative coefficient (-0.0002) of audit firm tenure show that, longer auditor tenure by 1 quarter causes 0.02% decrease in quarterly discretionary accruals. The R-square of the Model 2 is 0.0197, which refers that audit tenure explains 1.9% of the variation in quarterly discretionary accruals.

Moreover, audit firm industry specialisation has a coefficient of -0.013, indicating that on average industry specialist auditors decrease quarterly discretionary accruals by 0.013. However, R-square of the univariate regression for Model 1 is 0.0108, which means that external audit conducted by industry specialist auditors explain 1% of the variation in quarterly discretionary accruals.

Table 12: Univariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA) on Audit Quality Attributes

Dependent Variable: Absolute Quarterly Discretionary Accruals (ABS_QDA)			
Independent Variable	Model 1	Model 2	Model 3
Constant	0.037*** (36.71)	0.040*** (24.71)	0.036*** (39.04)
BIG-4	-0.006*** (-6.05)		
TENURE		-0.0002*** (-5.73)	
IND_SPECL			-0.013*** (-5.10)
F-Value	36.57***	32.89***	26.01***
Average Adj. R-square	0.0159	0.0197	0.0108

(***), (**) and (*) denote significant at %1, %5 and %10 (one-tailed), respectively. n= 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses below parameter estimates. ABS_QDA is absolute quarterly discretionary accruals measured by the Adapted Larcker and Richardson (2004) Model, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, TENURE is Audit Firm Tenure and IND_SPECL is Industry Specialisation of audit firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter.

Furthermore, the univariate regressions were repeated for quarterly discretionary accruals grouping firms by income-increasing and income-decreasing accruals. Table 13 provides the univariate regression results of income-increasing and income-decreasing quarterly discretionary

accruals as dependent variables and overall audit quality attributes; BIG-4, audit firms tenure (TENURE) and audit firms industry specialisation (IND_SPECL), as independent variables, respectively. The average adjusted-R-squares were presented at the bottom of the table.

Consistent with the findings in Table 11, mean quarterly discretionary accruals comparison of income-increasing firms for Big-4 and Non-Big-4 audit firms, Big-4 does not constrain income-increasing accruals. Similarly, industry specialisation has no significant constraining role on income-increasing accruals. In contrast, auditor tenure, with a significant coefficient at 1% level limits management attempts to use income-increasing accruals to boost the reported earnings. The coefficient of audit firm tenure is -0.0003, indicating that longer auditor tenure by 1 quarter has on average 0.03% decrease in income-increasing quarterly discretionary accruals, consistent with the theory that a long auditor-clients relation initiates the knowledge accumulation and experience about all operation of the clients, which facilitates auditors' detection of any earnings management practices.

For the income-decreasing firms, consistent with the coefficient estimates in Table-12, all audit quality attributes have significant negative effect on quarterly income-decreasing discretionary accruals⁹.

⁹ As the independent variables compounds of negative values, an increase in negative values indicating a decrease in the extent (absolute) of discretionary accruals. Therefore, for the

Big-4, audit firm tenure and industry specialisation have coefficient of -0.010, -0.0002, -0.016, respectively, indicating that on average external audit conducted by Big-4 decreases income-decreasing discretionary accruals by 1%, longer auditor tenure by 1 quarter lead 0.02% decrease in quarterly income-decreasing discretionary accruals and industry specialist auditors decrease quarterly income-decreasing discretionary accruals by 1.6%. Among all models, while Big-4, with a relatively higher average-adjusted although R-square of 3.5%, explains the change in the variation of income-decreasing quarterly discretionary accruals better than other models, the individual constraining effect of the industry specialist auditor is higher comparing to Big-4 audit and audit firm tenure.

simplification of interpretation and presentation of the results, in the income-decreasing sample, the absolute income-decreasing discretionary accruals were used as dependent variable in the analysis. A comparison table of the regression results of signed (negative) quarterly discretionary accruals and unsigned (absolute) quarterly discretionary accruals were presented in Appendix-I Table A2. The only difference between two tables is the signs (negative versus positive) of the coefficients and t-values, which results from the change in the sign of the dependent variable.

Table 13: Univariate Regression of Quarterly Discretionary Accruals (QDA) on Audit Quality Attributes for Income-Increasing and Income-Decreasing Firms

Dependent Variable: Quarterly Discretionary Accruals (QDA)						
	Income-Increasing Firms (n=829)			Income-Decreasing Firms (n=1306)		
Independent Variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	0.29*** (15.86)	0.036*** (14.89)	0.029 *** (17.17)	0.043*** (26.25)	0.042*** (19.85)	0.040*** (28.33)
BIG-4	-0.001 (-0.95)			-0.010 *** (-5.11)		
TENURE		-0.0003*** (-4.92)			-0.0002*** (-2.97)	
IND_SPECL			-0.008 (-1.60)			-0.016 *** (-4.35)
F-Value	0.90	24.19***	2.56	26.15***	8.80***	25.26***
Average Adj. R-square	0.0114	0.0437	0.0191	0.0352	0.0182	0.0072

(***), (**) and (*) denote significant at %1, %5 and %10 (one-tailed), respectively. n= 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009; t-statistics are reported in parentheses below parameter estimates. QDA is quarterly discretionary accruals measured by the Adapted Larcker and Richardson (2004) Model, income increasing firms and income-decreasing firms are those using positive and negative discretionary accruals, respectively, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, TENURE is Audit Firm Tenure and IND_SPECL is Industry Specialisation of audit firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter. For the income-decreasing firms, the absolute discretionary accruals were used as dependent variable.

In order to validate the results, a further analysis was conducted considering the role of audit quality attributes for each quarter using the absolute value of discretionary accruals. Table 14 presents the univariate regression results with absolute quarterly discretionary accruals, as dependent variable and Big-4, audit firm tenure (TENURE) and industry specialisation (IND_SPECL), as independent variables.

The significant coefficient of Big-4 indicates that Big-4 audit firms constrain the extent of earnings management both for the interim and fourth quarters. However, the relative explanatory power of the model with R-square of 2% and 2.4% is higher in Quarter-2 and Quarter-3 which is interpreted as the constraining role of Big-4 on earnings management is relatively more significant for these quarters. The regression coefficient shows higher negative impact of Big-4 in Quarter-2 and Quarter-3, where Big-4 auditor constrains discretionary accruals by 0.7% and 0.9%, which are higher than 0.5% in both Quarter-1 and Quarter-4. The regression results are consistent with quarterly discretionary accruals mean difference results of Big-4 and Non-Big-4 firms.

Similarly, univariate regression results for audit firm tenure (TENURE) show that firms with longer audit firm tenure have lower discretionary accruals for both interim and fourth quarters. The coefficients in interim quarters and fourth quarters show that, on average audit firms tenure

has more constraining role in the fourth quarter by 0.03% decrease in quarterly discretionary accruals, which is 0.02% in interim quarters.

Furthermore, audit firm industry specialisation significantly limits earnings management for all quarters, except Quarter-2. The coefficients in interim and fourth quarters show that, on average industry specialist auditors are more likely to reduce discretionary accruals in Quarter-3 and Quarter-4, by 1.8% and 1.9% decrease in quarterly discretionary accruals, respectively.

Table 14: Univariate Regression of Quarterly Discretionary Accruals (QDA) on Audit Quality Attributes for All firm-quarters, Interim and Fourth Quarters

Dependent Variable: Absolute Quarterly Discretionary Accruals (ABS_QDA)					
Panel A: BIG-4					
	All firm-quarters	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Constant	0.037*** (36.71)	0.034 (16.07)	0.038 (16.33)	0.039 (21.58)	0.038 (21.03)
BIG-4	-0.006*** (-6.05)	-0.005* (-1.96)	-0.007** (-2.76)	-0.009*** (-4.02)	-0.005*** (-5.60)
Average Adj. R-square	0.0159	0.0124	0.0201	0.0248	0.0063
Panel B: TENURE					
	All firm-quarters	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Constant	0.040*** (24.71)	0.037 (17.75)	0.040 (17.61)	0.040 (16.36)	0.044 (8.18)
TENURE	-0.0002*** (-5.73)	-0.0002*** (-3.25)	-0.0002*** (-3.44)	-0.0002** (-2.49)	-0.0003** (-2.46)
Average Adj. R-square	0.0197	0.0171	0.0159	0.0134	0.0323
Panel C: IND_SPECL					
	All firm-quarters	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Constant	0.036*** (39.04)	0.033*** (27.01)	0.036*** (27.13)	0.038*** (21.31)	0.039*** (17.63)
IND_SPECL	-0.013*** (-5.10)	-0.005** (-2.65)	-0.010 (-1.59)	-0.018*** (-3.07)	-0.019*** (-5.20)
Average Adj. R-square	0.0108	0.0022	0.0098	0.0162	0.0149

(***), (**) and (*) denote significant at %1, %5 and %10 (one-tailed), respectively. n= 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses below parameter estimates. ABS_QDA is absolute quarterly discretionary accruals measured by using the Adapted Larcker and Richardson (2004) Model, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, TENURE is the audit firm tenure and IND_SPECL is industry specialisation of audit firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter.

In sum, it is concluded from t-test and regression results that the absolute quarterly discretionary accruals are higher for firms audited by Non-Big-4 than those audited by Big-4. Also, considering the income-increasing and income-decreasing accruals, while there is no difference in income-increasing discretionary accruals of firms audited

by Big-4 and Non-Big-4, the income-decreasing accruals are significantly higher for firms audited by Non-BIG-4. Furthermore, the validity of the hypothesis was tested for each quarter separately, and it is found that absolute quarterly discretionary accruals of Big-4 firms are significantly lower for firms. Moreover, Big-4 firms using income-decreasing accruals have relatively lower level of discretionary accruals both in interim and fourth quarters. The findings might be interpreted as Big-4 audit firms have stronger impact on the magnitude of earnings management in all quarters, but using a sign variable, the hypothesis is only supported for the firm using income-decreasing accruals. Therefore, Hypothesis 1a that firms with Big-4 audit firms have lower level of discretionary accruals than firms with Non-Big-4 auditors is supported only for firms using income-decreasing accruals.

Similarly, Hypothesis 1b that Big-4 audit firms have a constraining role on earnings management is supported by univariate regressions and it is concluded that Big-4 audit firms constrains management discretion on reported earnings both for interim and fourth quarters, but using a sign variable, the hypothesis is only supported for the firm using income-decreasing accruals.

For audit firm tenure (TENURE), according to the above findings, Hypothesis 2 that firms with longer auditor tenure report lower level of discretionary accruals is accepted and it is concluded that firms with

longer auditor tenure report lower level of discretionary accruals both in interim and the fourth quarters and for both income-increasing and income-decreasing firms.

For audit firm industry specialisation (IND_SPECL), according to the above findings, Hypothesis 3 that firms audited by industry specialist report lower level of discretionary accruals is supported in all quarters, except Quarter-2. However using a sign variable, the hypothesis is only accepted for firms using income-decreasing accruals.

Overall, significant influence of Big-4, audit firm tenure and industry specialisation on discretionary accruals point towards Big-4 and industry specialist audit firms have relatively higher audit quality than Non-Big-4 and non-industry specialist ones. Also, longer audit firm tenure increases the audit quality in terms of reducing earnings management. The relation between audit firm attributes and discretionary accruals also validate that Big-4, audit firm tenure and industry specialisation are proper audit quality proxies.

6.2.3.2 Internal Corporate Governance Mechanisms and Audit

Quality

This section aims to examine the relation between audit firm attributes and internal control mechanisms in order to reveal the auditor choice of firms with strong corporate governance. With this aim, three different multivariate regression models were employed with Big-4, audit firm tenure (TENURE) and audit firm industry specialisation (IND_SPECL), as dependent variables, respectively and internal corporate governance mechanisms, financial debt and firm size as independent variables.

Table 15 documents the results of the multinomial logistic regression with Big-4, as dependent variable (Model 1) and the multiple panel regressions for audit firm tenure (TENURE) and audit firm industry specialisation (IND_SPECL), as dependent variables (Model 2 and 3, correspondingly). F-values and adjusted R-squares (Pseudo R-square for Model 1) were presented at the bottom of the table. Internal corporate governance variables and control variables explain 29.9% of Big-4 auditor choice, 1.2% of audit firm tenure and 26.3% of industry specialist auditor choice.

Regression results point out that, while internal corporate governance mechanisms have significant influence on firms' choice of Big-4 and industry specialist auditors, they have no relation with the audit firm tenure et all. According to the coefficient parameters, the significant

negative coefficients of both board independence (BOARD_IND) and audit committee size (ACC_SIZE) in Model 1 at 1% and 5% level, indicating that firms with larger audit committees and higher board independence demand less Big-4 auditor. On average, 1% increase in board independence decreases the likelihood of Big-4 auditor choice by 2.28 and appointment of one more director to audit committee decreases the likelihood of Big-4 auditor choice by 0.39. These findings might be interpreted as independent board of directors with large audit committee might substitute the audit quality demanded from Big-4, consistent with the substitution effect proposed by Williamson (1983) and the findings of Anderson et al. (1993) and Yeoh and Jubb (2002) that effective internal monitoring devices substitute the demand for high quality external monitoring. Although, in the descriptive statistics in Table 7, while the mean difference of board of directors' independence is lower for Big-4 firms, audit committee size shows that on average Big-4 firms have slightly larger audit committees, the median of audit committee do not differ for both groups. Multinomial logistic regression results indicate that a large audit committee is less likely to demand Big-4.

A positive coefficient of board of directors size (BOARD_SIZE) at 1% significance level indicates that firms with larger board of directors demand more Big-4 and industry specialist auditor. The coefficient estimates of board size is 0.158 and 0.014 in Model 1 and Model 3,

respectively, indicating that as board sizes increases the likelihood of Big-4 auditor choice increases by 0.158 and industry specialist auditor choice increases by 1.4%. These findings might be a sign of that as larger boards might suffer from the coordination and communication problems among board members, the board is less likely be effective and functional in financial reporting oversight and demand more industry specialist and Big-4 auditor.

Unexpectedly, there is a negative association between Big-4 auditor choice and industry specialisation of auditor in case of CEO duality (CEO_D). The coefficient of CEO duality are -0.392 and -0.027 in Model 1 and in Model 3, significant at 1% and 5% level, respectively, implying that the presence of CEO duality decreases the likelihood of Big-4 auditor choice by 0.392 and industry specialist auditor choice by 2.7%. CEO duality leads a power concentration and as it is discussed before, this power concentration and the overlapping of the management and controlling roles are more likely to the existence agency problems. Therefore, theoretically, for the effectiveness of financial reporting audit and to mitigate agency problems, it is expected a demand for a higher quality audit in terms of Big-4 and industry specialist auditors. However, the coefficient of CEO duality is negative and significant at 1%. One of the reasons of this inverse relation might be the influence of the CEO, as a board chairman in the appointment of external auditors.

Institutional ownership (INST_OWN) has a significant positive coefficient of 0.034 for industry specialisation at 5% level, indicating that on average the presence of institutional owners increase the industry specialist auditor choice by 3.4%. As institutional investors are more sophisticated and they prefer to have more access to timely and relevant information, it is not surprising institutional owners' preference of industry specialist auditors.

The significant positive coefficient of ownership concentration (OWN_CNCT) at 1% level points out that firms with more concentrated ownership are more likely to choose Big-4 auditors, consistent with Yeoh and Jubb (2002). The coefficient estimates for ownership concentration is 0.031, indicating that as ownership concentration increases by 1%, the likelihood of Big-4 audit demand increases by 0.031. As higher ownership concentration is associated with higher information asymmetry, to gain the public confidence and signal to investors that the information disclosed in the financial reports are audited by an experienced and high quality auditor, firms with concentrated ownership are more likely to choose Big-4.

Blockholdership (BLOCK) has a significant negative influence on Big-4 auditor choice. The coefficient estimates of -0.730 significant at 1% level indicates that, the presence of blockholder decreases Big-4 auditor choice by 0.73. The results points out that, firms with

blockholder demand Non-Big-4 audit firms. It is not surprising, because blockholders are regarded as controlling mechanism, therefore, firms with blockholders might substitute the need for a higher quality audit and demand Non-Big-4 firms. Similar to board independence, although, in the descriptive statistics Table-7, the mean difference of blockholdership shows that Big-4 firms are more likely to have blockholders and there is no difference in the median value for both groups.

All multivariate regression models were controlled for both financial debt and firm size. The coefficient estimates of controlling variables show that firm size positively affects firms' choice of Big-4, industry specialist auditors and audit firm tenure, suggesting that big firms are more likely to prefer Big-4 and industry specialist auditors and they tend to have longer auditor-client relations. However, these findings might also be interpreted differently, considering the market competition among auditors and the beating power of the Big-4 audit firms in the market; Big-4 audit firms are more likely to retain their client relation with big firms. Furthermore, the significant negative coefficient of financial debt in Model 1 indicates that as financial debt ratio increases firms demand a relatively lower level of audit quality in terms of Big-4.

Table 15: Multivariate Regression of Audit Quality Attributes on Internal Corporate Governance Mechanisms

Independent Variable	Model 1	Model 2	Model 3
	Dependent Variable: BIG-4	Dependent Variable: TENURE	Dependent Variable: IND_SPECL
Constant	-13.102 *** (-16.93)	-35.617** (-2.14)	-0.413* (-1.92)
BOARD_IND	-2.288*** (-4.58)	2.843 (0.48)	-0.005 (-0.10)
BOARD_SIZE	0.158*** (4.29)	-0.185 (-0.31)	0.014*** (2.80)
CEO_D	-0.392*** (-2.72)	-1.772 (-0.96)	-0.027** (-2.12)
ACC_SIZE	-0.392** (2.25)	-0.378 (-0.20)	0.011 (1.24)
INST_OWN	0.207 (1.02)	3.905 (1.44)	0.034** (2.04)
OWN_CNCT	0.031*** (10.10)	0.036 (0.42)	-0.0003 (-0.59)
BLOCK	-0.730*** (-2.60)	-3.884 (-1.72)	0.0005 (0.05)
FIN_DEBT	-0.355*** (-2.85)	2.030 (0.85)	-0.016 (-1.10)
SIZE	0.568*** (12.26)	3.029*** (3.30)	0.024** (2.10)
Wald Chi-square	545.97***	25.66***	45.14***
Adjusted or Pseudo R-square	0.2190	0.0123	0.2634

(***), (**) and (*) significant at %1, %5 and %10 (two-tailed) respectively. n= 2152 firm-quarter observations. t-statistics are reported in parentheses below parameter estimates. Model 1 is estimated using logistic regression. Both Model 2 and Model 3 were estimated using panel regression cluster for firm. All coefficient estimates are robust estimates of White corrected standard errors. The dependent variables are as follows; BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise. TENURE is the audit firm tenure and IND_SPECL is industry specialisation of audit firm. Independent variables are; BOARD_INDP, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership and control variables are FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm in terms of natural logarithm of Total Assets.

Regression results of Model 1 support Hypothesis 4a that there is an association between internal corporate governance mechanisms and Big-4. All corporate governance mechanisms except institutional ownership have a significant influence on Big-4 audit auditor choice. It is concluded that firms' ownership structure and board of directors'

structure, except institutional ownership significantly affects firms' auditor choice in terms of Big-4.

On the other hand, regression coefficients of Model 2 do not support Hypothesis 4b that there is an association between audit firm tenure and internal corporate governance mechanisms. None of the corporate governance variables have significant influence on audit firm tenure.

Hypothesis 4c that there is an association between internal corporate governance mechanisms and audit firm industry specialisation is supported partially for some of the corporate governance mechanisms. While, board of directors' size, CEO duality, and institutional ownership have significant influence of the choice of industry specialist auditors, the association is not supported for other internal corporate governance variables.

In sum, firms' auditor choice in terms of Big-4 and industry specialist auditors is affected by overall corporate governance structure of firms, particularly, board of directors' composition and ownership structure. Beside, corporate governance has relatively higher influence on Big-4 auditor choice comparing to industry specialist auditor choice. Conversely, the audit firm tenure is unrelated with firms' corporate governance structure.

6.2.3.3 Corporate Governance and Earnings Management

Table 16 presents the mean comparison of absolute quarterly discretionary accruals of firms for board of directors' independence (BOARD_IND), CEO Duality (CEO_D), Institutional Ownership (INST_OWN) and Blockholdership (BLOCK) between the years 2006-2009. The mean and standard deviation of quarterly discretionary accruals for internal corporate governance variable were presented with mean differences and t-statistics shown in the parenthesis.

For board of directors' independence (BOARD_IND), on average, absolute quarterly discretionary accruals of firms with non-independent board of directors are slightly lower than firms with independent board of directors at 10% significance level. While firms with independent board members have quarterly discretionary accruals of 0.036, firms with non-independent board of directors have slightly lower quarterly discretionary accruals of 0.034, inconsistent with the prior studies suggesting that an independent board constrains the extent of discretionary accruals.

For both CEO duality (CEO_D) and institutional ownership (INST_OWN), absolute quarterly discretionary accruals are slightly higher for firms with CEO duality and slightly lower for firms with institutional ownership, but the differences are insignificant. So mean

absolute quarterly discretionary accruals do not differ significantly for CEO duality and institutional ownership.

Moreover, on average, absolute quarterly discretionary accruals are slightly lower for firms with blockholder at 10% significance level, consistent with the proposition that blockholdership is a close monitoring mechanism on financial reporting and therefore it is expected a constraining role on discretionary accruals. While firms with blockholder have quarterly discretionary accruals of 0.034, firms with non-blockholder have slightly higher quarterly discretionary accruals of 0.038.

Table 16: Mean Comparison of Absolute Quarterly Discretionary Accruals (ABS_QDA) of Internal Corporate Governance Mechanisms; CEO Duality, Institutional Ownership and Blockholdership

Panel A: Mean Comparison of ABS_QDA for the period (2006- 2009)			
Group: Board Independence (BOARD_IND)			
Group	n	Mean ABS_QDA	Std. Dev.
Non- BOARD_IND	1830	0.034	0.0314
BOARD_IND	305	0.036	0.0313
Difference		-0.002*	
(Non- BOARD_IND- BOARD_IND)		(-1.34)	

Panel B: Mean Comparison of ABS_QDA for the period (2006- 2009)			
Group: CEO Duality (CEO_D)			
Group	n	Mean ABS_QDA	Std. Dev.
Non-CEO_D	1793	0.034	0.0313
CEO_D	342	0.036	0.0317
Difference		-0.002	
(Non-CEO_D- CEO_D)		(-1.15)	

Panel C: Mean Comparison of ABS_QDA for the period (2006- 2009)			
Group: Institutional Ownership (INST_OWN)			
Group	n	Mean ABS_QDA	Std. Dev.
Non- INST_OWN	333	0.0344	0.0304
INST_OWN	1802	0.0343	0.0316
Difference		0.0001	
(Non- INST_OWN- INST_OWN)		(0.02)	

Panel D: Mean Comparison of ABS_QDA for the period (2006- 2009)			
Group: Blockholdership (BLOCK)			
Group	n	Mean ABS_QDA	Std. Dev.
Non-BLOCK	164	0.038	0.0326
BLOCK	1971	0.034	0.0313
Difference		0.004*	
(Non-BLOCK-BLOCK)		(-1.62)	

(***), (**) and (*) denote significant at %1, %5 and %10 (one-tailed), respectively. t-values are reported in parentheses below the mean differences of ABS_QDA. n= 2135 firms-quarter observations after omitting the outliers for at %1 and 99% percentile between the years 2006-2009. ABS_QDA is absolute quarterly discretionary accruals measured by the Adapted Larcker and Richardson (2004) Model. Before the two-groups mean comparison test, the equality of each groups variances are measured. According to test results, the variances of QDA for the groups are statistically not equal to each other. Therefore, two-groups mean comparison test is conducted by considering the unequal variance assumption.

In order to validate the results above, a supplementary analysis was conducted comparing quarterly discretionary accruals classified by the direction of earnings management (income-increasing versus income-decreasing), again for Board Independence (BOARD_IND), CEO Duality (CEO_D), Institutional Ownership (INST_OWN) and Blockholdership (BLOCK) between the years 2006-2009. Table 17 presents the mean and standard deviation of quarterly discretionary accruals for each group with mean differences and t-statistics shown in the parenthesis.

For firms using income-increasing discretionary accrual, consistent with the mean absolute discretionary accruals, while quarterly discretionary accruals of firms with an independent board of directors are significantly higher than those with non-independent members in the board at 10% level, the mean quarterly discretionary accruals are significantly lower for firm with blockholders at 10% level. While firms with independent board members have 0.033 income-increasing quarterly discretionary accruals, firms with non-independent board of directors have 0.028. Similarly, while firms with blockholder have 0.028 income-increasing quarterly discretionary accruals, firms with non-blockholder have 0.037. However, income-increasing quarterly discretionary accruals do not differ significantly for CEO duality and institutional ownership.

For firms using income-decreasing discretionary accruals, quarterly discretionary accruals do not significantly differ for any of internal corporate governance variables. Although, the mean differences are insignificant, firms with blockholdership tend to have slightly lower income-decreasing quarterly discretionary accruals and firms with independent board of directors, CEO duality and institutional ownership are more likely to use more aggressive income-decreasing quarterly discretionary accruals.

Table 17: Mean Comparison of Quarterly Discretionary Accruals (QDA) of Internal Corporate Governance Mechanisms; Board Independence, CEO Duality, Institutional Ownership and Blockholdership grouped for Income-Increasing and Income-Decreasing Firms

Mean Comparison of QDA for the period (2006- 2009)						
Panel A: Group: Board Independence (BOARD_IND)						
Group	Income-Increasing Firms			Income-Decreasing Firms		
	n	Mean QDA	Std. Dev.	n	Mean QDA	Std. Dev.
Non- BOARD_IND	734	0.028	0.0271	1096	-0.0380	0.0334
BOARD_IND	95	0.033	0.0321	210	-0.0381	0.0309
Difference (Non-BOARD_IND - BOARD_IND)		-0.005* (-1.50)			0.0001 (0.06)	
Panel B: Group: CEO Duality (CEO_D)						
Group	Income-Increasing Firms			Income-Decreasing Firms		
	n	Mean QDA	Std. Dev.	n	Mean QDA	Std. Dev.
Non-CEO_D	717	0.028	0.0268	1076	-0.037	0.0334
CEO_D	112	0.031	0.0332	230	-0.038	0.0308
Difference (Non-CEO_D-CEO_D)		-0.003 (-1.06)			0.001 (0.19)	
Panel C: Group: Institutional Ownership (INST_OWN)						
Group	Income-Increasing Firms			Income-Decreasing Firms		
	n	Mean QDA	Std. Dev.	n	Mean QDA	Std. Dev.
Non- INST_OWN	104	0.031	0.0307	229	-0.035	0.0303
INST_OWN	725	0.028	0.0273	1077	-0.038	0.0335
Difference (Non- INST_OWN - INST_OWN)		0.003 (1.05)			0.003 (1.24)	
Panel D: Group: Blockholdership (BLOCK)						
Group	Income-Increasing Firms			Income-Decreasing Firms		
	n	Mean QDA	Std. Dev.	n	Mean QDA	Std. Dev.
Non-BLOCK	38	0.037	0.0405	126	-0.038	0.0300
BLOCK	791	0.028	0.0270	1180	-0.037	0.0333
Difference (Non-BLOCK-BLOCK)		0.009* (1.34)			-0.001 (-0.26)	

(***), (**) and (*) denote significant at %1, %5 and %10 (one-tailed), respectively. t-values are reported in parentheses below the mean differences of ABS_QDA. n= 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. ABS_QDA is absolute quarterly discretionary accruals measured by the Adapted Larcker and Richardson (2004) Model. Before the two-groups mean comparison test, the equality of each groups variances are measured. According to test results, the variances of QDA for the groups are statistically not equal to each other. Therefore, two-groups mean comparison test is conducted by considering the unequal variance assumption.

Table 18 provides the average coefficients and the Fama-Macbeth statistic (Fama and MacBeth, 1973) of the univariate regression models with absolute quarterly discretionary accruals, as dependent variable and several internal corporate governance variables, BIG-4, financial debt and firms size, as independent variables. F-values and the average adjusted-R-squares are presented at the bottom of the table.

Overall, all corporate governance variables, except board of directors' independence, audit committee size and institutional ownership, are unrelated to absolute quarterly discretionary accruals for all firm-quarters.

The coefficient of board of directors' independence of 0.022 surprisingly displays a positive sign—a wrong sign and statistically significant at 1% significance level, indicating that as the independency of board increases by 1% quarterly discretionary accruals increases by 2.2%. In other words, firms with more independent board of directors have more quarterly discretionary accruals.

The significant positive coefficient of audit committee and institutional ownership at 10%, suggests that larger audit committees are associated with higher absolute quarterly discretionary accruals and firms with institutional owners tend use more absolute quarterly discretionary accruals. The coefficient estimates of audit committee size

is 0.001, which means that as audit committee size increases by 1 director, quarterly discretionary accruals increases by 0.1%. Similarly, the coefficient estimate of institutional ownership of 0.003 refers that the presence of institutional owners increases quarterly discretionary accruals by 0.3%.

The coefficients of all control variables are statistically significant. The negative coefficient of -0.002 significant at 5% (significant at 10% for Model 1) for Big-4 implies that on average Big-4 auditor constrains absolute quarterly discretionary accruals by 0.2%. Quarterly discretionary accruals are negatively associated with Big-4 audit quality, consistent with Francis et al. (1999) and the findings of this research in Section 6.2.3.1. Similarly, financial debt and firm size are significant across all seven models at 1%, indicating that on average firms with higher financial debt ratio having more discretionary accruals (Gupta et al. 2008) and there is a negative relation between discretionary accruals and firm size. On average financial debt ratio has a coefficient of 0.019, suggesting that a 1% increase in financial debt ratio resulting with 1.9% increase in quarterly discretionary accruals. Moreover, the coefficient estimate for firm size of -0.002 implies that as the firm size increases in term of total assets, quarterly discretionary accruals decreases by 0.2%.

**Table 18: Univariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA)
on Internal Corporate Governance Mechanisms**

Dependent Variable: Absolute Quarterly Discretionary Accruals (ABS_QDA)							
Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant	0.075*** (8.93)	0.074*** (8.56)	0.071*** (8.72)	0.069*** (8.12)	0.072*** (8.65)	0.072*** (8.12)	0.072*** (8.51)
BOARD_IND	0.022*** (3.97)						
BOARD_SIZE		0.0004 (1.33)					
CEO_D			0.0002 (0.13)				
ACC_SIZE				0.001* (2.08)			
INST_OWN					0.003* (1.80)		
OWN_CNCT						0.00001 (0.43)	
BLOCK							-0.001 (-0.47)
BIG-4	-0.002* (-1.93)	-0.002** (-2.46)	-0.002** (-2.27)	-0.002** (-2.42)	-0.002** (-2.31)	-0.002** (-2.25)	-0.002** (-2.19)
FIN_DEBT	0.019*** (4.63)	0.019*** (4.71)	0.018*** (4.59)	0.019*** (4.57)	0.018*** (4.47)	0.018*** (4.42)	0.018*** (4.43)
SIZE	-0.002*** (-5.31)	-0.002*** (-4.83)	-0.002*** (-4.83)	-0.002*** (-5.07)	-0.002*** (-5.37)	-0.002*** (-4.83)	-0.002*** (-4.89)
Wald Chi-square	31.23***	29.20***	21.50***	22.38***	21.47***	24.56***	21.40***
Adjusted R-square	0.1249	0.1181	0.1210	0.1198	0.1216	0.1215	0.1243

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n=2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses. ABS_QDA is absolute quarterly discretionary accruals, BOARD_IND, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter.

Table 19 presents the average coefficients and the Fama-MacBeth statistic (Fama and MacBeth, 1973) of the multivariate regression models with absolute quarterly discretionary accruals, as dependent variable and several internal corporate governance variables, financial debt and firms size, as independent variables for all firm-quarters, and both for Big-4 and Non-Big-4 firms. F-values and the average adjusted-R-squares are presented at the bottom of the table.

The first column contains the results of the multivariate regression results for all firm-quarters with the hypothesised corporate governance variables, of which board of directors' independence, audit committee size and institutional ownership are slightly significant at 1% and 5% level, correspondingly.

Inconsistent with theory of that, independent board members play a constraining role on earnings management and the findings of prior studies (e.g. Peasnell et al., 2005), the board of directors' independence has a positive association with absolute quarterly discretionary accruals. The coefficient estimate of 0.025 for board of directors' shows that as the independency of board increases by 1%, firms' quarterly discretionary accruals increases by 2.5%. To state the matter differently, firms with more independent board of directors have more quarterly discretionary accruals.

Nevertheless, the significant positive coefficient of audit committee and institutional ownership at 5% level indicate that firms with larger audit committees and institutional ownership have higher quarterly discretionary accruals. The coefficient estimates of audit committee size is 0.001, which means that as audit committee size increases by 1 director, quarterly discretionary accruals increases by 0.1%. Similarly, the coefficient estimate of institutional ownership of 0.006 refers that the presence of institutional owners increases quarterly discretionary accruals by 0.6%. The R-square of the multivariate regression model for all firm-quarters is %16.85 indicating that on average corporate governance variables and control variables are able to explain only 16.85% of the variation in quarterly discretionary accruals.

When the sample partitioned into two groups as firms audited by Big-4 and Non-Big-4; the positive significant influence of board of directors' independence only exists for Big-4 firms. For Big-4 firms, board of directors' independence displays a significant positive coefficient of 0.038 at 1% level, indicating that 1% increase in board independence causes 3.8% increase in discretionary accruals, which is relatively higher than the coefficient results provided for all firm-quarters. This means that, Big-4 audit quality do not improve the monitoring and controlling ability of board of directors and it has no significant influence on the relation between board independence and earnings management. Also, while for all firm-quarters and Non-Big-4 firms, there

is no relation between board size and absolute discretionary accruals, for Big-4 firms; board size has a significantly positive relation with absolute quarterly discretionary accruals at %1 level. The coefficient of board size is 0.001 suggesting that as board size increases by 1 director, on average quarterly discretionary accruals increases by 0.1%.

Furthermore, while CEO duality and absolute discretionary accruals are unrelated for all firm-quarters' regression results, when the sample partitioned, it gives significant coefficients for both groups. For Big-4 firms, the negative coefficient of CEO duality on absolute quarterly discretionary accruals at 5% significance level demonstrates an adverse relation, indicating that CEO duality decreases the absolute quarterly discretionary accruals. On average, the presence of CEO duality in Big-4 firms constrains quarterly discretionary accruals 0.6%. Conversely, for Non-Big-4 firms; CEO duality increases the absolute discretionary accruals, consistent with theory, which is significant at %5 level. On average the presence of CEO duality in Non-Big-4 firms increases quarterly discretionary accruals by 0.7%. The results might be interpreted as Big-4 audit quality limits opportunistic behaviour resulting from the presence of CEO duality, or particularly power concentration.

For the audit committee, the coefficient displays a significant positive relation with quarterly discretionary accruals only for Non-Big-4 firms.

The coefficient estimates is 0.003, referring that on average an increase in audit committee size by 1 director, quarterly discretionary accruals increases by 0.3%. The regression results on Big-4 auditor choice in section 6.2.3.2 in Table 15 show that firms with larger audit committees are more likely to prefer Non-Big-4 audit firms. Therefore, the presence of a positive relation between discretionary accruals and audit committee lack of external audit quality is not surprising.

Additionally, for the institutional ownership, there is a significant positive association between institutional ownership and absolute discretionary accruals both for Big-4 and Non-Big-4 firms, at 5% and 10% level, correspondingly. The coefficient estimates are 0.007 and 0.006, respectively, indicating that on average while the presence of institutional ownership causes an increase in quarterly discretionary accruals by 0.7% for Big-4 firms and 0.6% for Non-Big-4 firms.

The R-square of the multivariate regression models for Big-4 and Non-Big-4 firms are %14.07 and %24.72, indicating that on average corporate governance variables and control variables are more capable explaining of the variation in quarterly discretionary accruals for Non-Big-4 firms.

Table 19: Multivariate Regression of Absolute Discretionary Accruals (ABS_QDA) for BIG-4 and Non-BIG-4 firms

Dependent Variable: ABS_QDA			
Independent Variables	All firm-quarters	BIG-4 firms	Non-BIG-4 firms
Constant	0.076*** (8.72)	0.099*** (9.37)	0.048*** (2.98)
BOARD_IND	0.025*** (4.46)	0.038*** (4.60)	0.011 (1.06)
BOARD_SIZE	0.0001 (0.59)	0.001*** (3.25)	0.0001 (0.30)
CEO_D	0.001 (1.00)	-0.006** (-2.18)	0.007** (2.89)
ACC_SIZE	0.001** (2.21)	-0.001 (-0.83)	0.003*** (3.65)
INST_OWN	0.006** (2.77)	0.007** (2.56)	0.006* (1.90)
OWN_CNCT	-0.00001 (-0.41)	0.00002 (0.42)	-0.00003 (-0.66)
BLOCK	-0.005 (-1.48)	-0.007 (-1.26)	-0.004 (-1.19)
BIG-4	-0.002** (-2.39)	omitted	omitted
FIN_DEBT	0.019*** (5.08)	0.005 (1.59)	0.022*** (5.07)
SIZE	-0.002*** (-5.95)	-0.003*** (-8.89)	-0.001 (-1.47)
Average F-value	35.31***	37.59***	22.27***
Average Adjusted R-square	0.1685	0.1407	0.2472

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n=2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses. ABS_QDA is absolute quarterly discretionary accruals measured by using the Adapted Larcker and Richardson (2004) Model, BOARD_INDP, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter.

Table 20 reports the average coefficients and the Fama-MacBeth statistic (Fama and MacBeth, 1973) of the multivariate regression models with income-increasing quarterly discretionary accruals, as dependent variable and several internal corporate governance variables, financial debt and firms size, as independent variables for all firm-quarters, and both for Big-4 and Non-Big-4 firms. The F-values and adjusted-R-squares are presented at the bottom of the table.

For all firm-quarters using income-increasing discretionary accruals, among all corporate governance variables and control variables, only the board of directors' independence is slightly significant at 5% level, consistent with the findings in Table 19, higher board of directors' independence is positively associated with income-increasing discretionary accruals. The coefficient estimates displays 0.034, indicating that on average a 1% increase in firms' board of directors' independence causes 3.4% more income-increasing quarterly discretionary accruals.

When the income-increasing firms sample partitioned into two groups as firms audited by Big-4 and Non-Big-4, it is found that corporate governance variables do not have any significant influence on income-increasing firms audited by Big-4. For the Non-Big-4 firms, CEO duality has a significant positive influence on income-increasing quarterly discretionary accruals for Non-Big-4 firms at 10% level,

consistent with the findings in Table 19 and the prior studies. The coefficient estimates 0.010 for CEO duality means that the presence of CEO duality causes 1% increase in quarterly discretionary accruals.

**Table 20: Multivariate Regression of Income-Increasing Quarterly Discretionary Accruals
for BIG-4 and Non-BIG-4 firms**

Dependent Variable: Income-increasing QDA			
Independent Variables	All firm-quarters	BIG-4 firms	Non-BIG-4 firms
Constant	0.064*** (4.33)	0.091*** (4.60)	0.019 (0.71)
BOARD_IND	0.034** (2.81)	0.014 (0.51)	0.025 (1.25)
BOARD_SIZE	-0.0001 (-0.28)	-0.0005 (-0.37)	0.0002 (0.32)
CEO_D	0.003 (1.28)	-0.007 (-1.26)	0.010* (1.76)
ACC_SIZE	0.0001 (0.13)	0.0003 (0.08)	0.002 (1.40)
INST_OWN	0.003 (0.95)	-0.009 (-0.61)	0.002 (0.79)
OWN_CNCT	0.00003 (0.88)	0.0001 (1.11)	-0.00002 (-0.40)
BLOCK	-0.015 (-1.53)	-0.005 (-0.82)	-0.015 (-1.16)
BIG-4	-0.00003 (-0.01)	omitted	omitted
FIN_DEBT	0.0003 (0.05)	0.003 (0.27)	0.010 (0.87)
SIZE	-0.001 (-1.52)	-0.002** (-2.29)	0.0006 (0.42)
Average F-value	1.98	4.72***	3.45**
Average Adjusted R-square	0.2287	0.3751	0.4041

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n=2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses. QDA is quarterly discretionary accruals, BOARD_IND, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter.

Table 21 presents the average coefficients and the Fama-MacBeth statistic (Fama and MacBeth, 1973) of the multivariate regression models with income-decreasing quarterly discretionary accruals, as dependent variable and with several internal corporate governance variables, financial debt and firm size, as independent variables for all-firm-quarters, and both for Big-4 and Non-Big-4 firms. The F-values and adjusted-R-squares are presented at the bottom of the table.

The first column contains the results for the multivariate regressions for all firm-quarters with the hypothesised board characteristics variables, of which board of directors' independence, audit committee size and institutional ownership are slightly significant, which is consistent with the findings in Table 19. For board of directors' independence, the coefficient estimate is 0.018 significant at 1%, referring that 1% increase in board independence causes 1.8% more income-decreasing discretionary accruals. This means that, as board independence increases firms tend to use 1.8% more aggressive income-decreasing earnings management. Audit committee size displays a significant positive coefficient of 0.003 at 5% level, indicating that as audit committee size increases income-decreasing quarterly discretionary accruals increase by 0.3%. Finally, the coefficient of institutional ownership is 0.007 significant at 5%. It means that the presence of institutional owners causes 0.7% increase in quarterly discretionary accruals.

When the income-decreasing firms sample partitioned into two groups as firms audited by Big-4 and Non-Big-4; the positive significant influence of Board of directors' independence only exists for Big-4 firms. The coefficient of board independence is 0.044 significant at 1% level indicating that, an increase in board of directors causes a 0.044 times increase in income-decreasing discretionary accruals. In other words, if the independence of board increases by 1%, income-decreasing discretionary accruals increase by 4.4%, which is very high. These ratio shows that independent boards are more tend to use income-decreasing earnings management for Big-4 firms.

Also, while there is no significant association between board size and income-decreasing quarterly discretionary accruals for all firm-quarters and for Non-Big-4 firms; board size has a significant positive relation with income-decreasing quarterly discretionary accruals for Big-4 firms at 5% level. The coefficient estimates is 0.001, which indicates that as board size increases by 1 director, income-decreasing quarterly discretionary accruals increases by 0.1% for Big4-firms.

In addition, for the income-decreasing firms, while there is no relation between CEO duality and absolute discretionary accruals for all firm-quarters and for Non-Big-4 firms, Big-4 firms' income-decreasing discretionary accruals are negatively associated with CEO duality significant at 10%, indicating that CEO duality decreases the quarterly

discretionary accruals. The coefficient estimate for CEO duality is -0.004 indicating that the presence of CEO duality decreases income-decreasing discretionary accruals for Big-4 firms.

For the audit committee size, the positive significant influence of audit committee size only exists for Non-Big-4 firms, consistent with the findings in Table 19. Audit committee displays a coefficient of 0.005, suggesting that as the audit committee size increases by 1 director, income-decreasing quarterly discretionary accruals of Non-Big-4 firms increase by 0.5%.

Conversely, for the institutional ownership, the significant positive association between institutional ownership and income-decreasing discretionary accruals only exists for Big-4 firms, at 5% level. The positive coefficient estimate of 0.013 implies that the presence of institutional owner causes 1.3% increase in income-decreasing discretionary accruals for Big-4 firms. In other words, Big-4 firms with institutional owners are more tend to use income-decreasing discretionary accruals.

Control variables are significant for all-firm quarters. Big-4 limits income-decreasing absolutely quarterly discretionary accruals. In addition, there is a positive relation between financial debt and quarterly

discretionary accruals and a negative relation between firm size and quarterly discretionary accruals significant at 1% level.

For Big-4 firms, financial debt ratio does not display any significant coefficient, but firm size has a significant negative influence on income-decreasing discretionary accruals at 1% level. For Non-Big-4 firms, financial debt ratio shows a positive relation and firm size displays a negative relation with income-decreasing quarterly discretionary accruals at 1% significance level.

Table 21: Multivariate Regression of Income-Decreasing Quarterly Discretionary Accruals for BIG-4 and Non-BIG-4 firms

Dependent Variable: Income-decreasing QDA			
Independent Variables	All firm-quarters	BIG-4 firms	Non-BIG-4 firms
Constant	0.075*** (5.44)	0.094*** (5.96)	0.078*** (3.40)
BOARD_IND	0.018*** (2.98)	0.044*** (4.97)	-0.004 (-0.28)
BOARD_SIZE	0.0002 (0.52)	0.001* (2.03)	0.0003 (0.34)
CEO_D	0.00005 (0.02)	-0.004* (-1.76)	0.0006 (0.17)
ACC_SIZE	0.003** (2.24)	-0.002 (-1.34)	0.005** (2.53)
INST_OWN	0.007** (2.72)	0.013*** (3.36)	0.003 (0.61)
OWN_CNCT	-0.00001 (-0.19)	-0.00002 (-0.45)	0.00004 (0.53)
BLOCK	-0.001 (-0.54)	-0.002 (-0.57)	-0.0009 (-0.20)
BIG-4	-0.006*** (-3.81)	omitted	omitted
FIN_DEBT	0.018*** (3.69)	0.010 (1.68)	0.019** (2.81)
SIZE	-0.002*** (-3.48)	-0.004*** (-4.92)	-0.003** (-2.19)
Average F-value	43.48***	39.02***	23.01***
Average Adjusted R-square	0.2396	0.2195	0.3430

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n=2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses. QDA is quarterly discretionary accruals, for income-decreasing in absolute terms. BOARD_INDP, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter.

Furthermore, the multivariate analyses were repeated for interim and fourth quarters to test the significance of the corporate governance variables for each quarter in the year. Table 22, Table 23 and Table 24 presents the average coefficients and the Fama-MacBeth statistic (Fama and MacBeth, 1973) of the multivariate regression models with absolute quarterly discretionary accruals, income-increasing quarterly discretionary accruals and income-decreasing quarterly discretionary accruals as dependent variables, correspondingly and several internal corporate governance variables, Big-4, financial debt and firms size, as independent variables. The F-values and adjusted-R-squares are presented at the bottom of the table.

In Table 22, the first column contains the results for the multivariate analysis results for all firm-quarters with the hypothesised corporate governance variables, of which board of directors' independence, audit committee size and institutional ownership are positively associated with absolute quarterly discretionary accruals at 1% and 5% significance level, correspondingly.

When the sample partitioned into quarters, while, the positive association between board independence and absolute quarterly discretionary accruals is significant in Quarter-3 and Quarter-4, the relation do not significant in other interim periods. Similarly, board size has a significantly positive relation with absolute quarterly discretionary

accruals in Quarter-1 and Quarter-3. The relation between other corporate governance variables and absolute quarterly discretionary accruals differ also across interim and fourth quarters. While CEO duality has a significant negative coefficient in Quarter-4, the relation does not exist in interim periods. Similarly, audit committee size and institutional ownership are positively correlated with absolute quarterly discretionary accruals in Quarter-3 and blockholdership is negatively related with absolute quarterly discretionary accruals in Quarter-4.

Control variables, financial debt and firm size are significant both for interim and financial quarters, indicating that firms with higher financial debt ratio have larger quarterly discretionary accruals and larger firms are more likely to have lower quarterly discretionary accruals.

**Table 22: Multivariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA)
for All firm-quarters, Interim and Fourth Quarters**

Dependent Variable: Quarterly Discretionary Accruals (ABS_QDA)					
Independent Variables	All firm quarters	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Constant	0.076*** (8.72)	0.079*** (4.97)	0.061*** (3.15)	0.063*** (3.52)	0.101*** (6.70)
BOARD_IND	0.025*** (4.46)	0.019 (1.36)	0.016 (1.19)	0.037*** (4.48)	0.028** (2.91)
BOARD_SIZE	0.0001 (0.59)	0.001*** (5.30)	0.00004 (0.07)	-0.001*** (5.24)	0.0002 (0.32)
CEO_D	0.001 (1.00)	0.003 (1.23)	0.003 (0.55)	0.004 (1.29)	-0.003* (-1.79)
ACC_SIZE	0.001** (2.21)	0.0009 (0.69)	0.002 (1.10)	0.003** (2.42)	0.0001 (0.13)
INST_OWN	0.006** (2.77)	0.0031 (0.60)	0.005 (0.96)	0.013*** (3.95)	0.003 (1.02)
OWN_CNCT	-0.00001 (-0.41)	-0.00002 (-0.26)	-0.00008 (-1.31)	-0.00009 (-1.07)	0.0001 (1.56)
BLOCK	-0.005 (-1.48)	0.003 (0.57)	-0.002 (-0.38)	-0.006 (-0.95)	-0.015* (-1.96)
BIG-4	-0.002** (-2.39)	-0.002 (-1.26)	-0.003 (-1.38)	-0.003 (-0.92)	-0.001 (-1.13)
FIN_DEBT	0.019*** (5.08)	0.009* (2.19)	0.023** (2.27)	0.034*** (8.91)	0.010** (2.45)
SIZE	-0.002*** (-5.95)	-0.003*** (-4.27)	-0.001** (-2.25)	-0.001** (-2.29)	-0.003*** (-3.20)
Average F-value	35.31***	2.35	20.23**	6.97*	6.01*
Average Adjusted R-square	0.1685	0.0955	0.1931	0.2867	0.0986

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n=2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses. ABS_QDA is absolute quarterly discretionary accruals, BOARD_IND, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter.

In Table 23, the multivariate analysis results show that, for all firm-quarters with the hypothesised corporate governance variables, of which board of directors' independence is positively associated with income-increasing quarterly discretionary accruals at 5% significance level. When the sample partitioned into quarters, the positive association between board independence and income-increasing quarterly discretionary accruals is significant only in Quarter-3. Similarly, CEO duality has a significant positive effect on income-increasing quarterly discretionary accruals only in Quarter-3. Control variables, financial debt and firm size display significant coefficients only in Quarter-1, indicating that firms with a higher financial debt ratio have larger quarterly income-increasing quarterly discretionary accruals and larger firms are more likely to have lower income-increasing quarterly discretionary accruals. Big-4 has no influence on income-increasing quarterly discretionary accruals for any of the financial quarters, consistent with results of Table 11 and Table 13.

In Table 24, the multivariate analysis results show that, for all firm-quarters with the hypothesised corporate governance variables, of which board of directors' independence, audit committee size and institutional ownership are positively associated with income-decreasing quarterly discretionary accruals significant at 1% and 5% level. However, as in the previous tables, when the sample partitioned into

quarters, the positive association between board independence and income-decreasing quarterly discretionary accruals is significant only in Quarter-2 and Quarter-3. Also, the positive coefficient of board size in Quarter-1 and Quarter-3 implies that larger boards use higher income-decreasing quarterly discretionary accruals only in Quarter-1 and Quarter-3. Similarly, CEO duality has a negative effect on income-decreasing quarterly discretionary accruals only in Quarter-4, consistent with prior findings of this study that CEO duality has a significant negative effect on income-decreasing accruals for Big-4 firms, presented in Table 20. For the audit committee size and institutional ownership, the coefficient estimates are significantly positive, only in Quarter-3. Also, for the ownership concentration, the positive relation between concentrated ownership and income-decreasing discretionary accruals are only valid in Quarter-3 and Quarter-4.

Control variables, Big-4, financial debt and firm size display significant coefficients partially for some financial quarters. Big-4 has a significant negative coefficient for income-decreasing discretionary accruals, only for Quarter-2 and Quarter-4, suggesting that Big-4 firms are more likely to support corporate governance in limiting income-decreasing discretionary accruals in Quarter-2 and Quarter-4 in which financial reports are subject to limited audit review and independent external audit, respectively. Financial debt has a positive relation with income-

decreasing discretionary accruals, only in Quarter-2 and Quarter-3, significant at 5%. The coefficient of firm size displays a negative relation with income-decreasing discretionary accruals in all quarters, except Quarter-2.

As it is discussed in Chapter 3, managerial incentives to manage earnings might vary over quarters, particularly for interim and fourth quarters (e.g. Jeter and Shivakumar, 1999; Mendenhall and Nichols, 1988, Das et al., 2009). Interim quarters' earnings are based on estimations and the corrections of these estimations are done in the fourth quarter. Moreover, interim reports are not audited and the compensation plans and debt covenants mostly tied up to the year end financial performance, therefore, consistent with Yang and Krishan (2005), it is not expected for multivariate models to be similar across four quarters. However, all of the corporate governance variables that are significant in prior regressions are significant in at least one quarter in the year and provide same sign for coefficient estimates in all firm- quarter observations or for income-increasing and income-decreasing firms. For ownership concentration and blockholdership, while they do not provide any significant association with discretionary accruals for all sample quarters, when the sample partitioned into financial quarters, they provide significant results for some quarters, specifically in the fourth quarter.

**Table 23: Multivariate Regression of Income-Increasing Quarterly Discretionary Accruals
for All firm-quarters, Interim and Fourth Quarters**

Dependent Variable: Income-Increasing Quarterly Discretionary Accruals (QDA)					
Independent Variables	All firm-quarters	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Constant	0.064*** (4.33)	0.084** (2.82)	0.068** (2.36)	0.035 (0.97)	0.067** (2.30)
BOARD_IND	0.034** (2.81)	0.031 (1.39)	0.032 (0.89)	0.055* (2.00)	0.019 (1.44)
BOARD_SIZE	-0.0001 (-0.28)	0.001 (1.33)	-0.0002 (-0.24)	-0.001 (-1.35)	-0.0006 (-0.36)
CEO_D	0.003 (1.28)	-0.002 (-0.73)	0.006 (1.33)	0.013* (2.18)	-0.003 (-0.84)
ACC_SIZE	0.0001 (0.13)	0.0003 (0.52)	-0.001 (1.79)	0.001 (0.45)	0.0002 (0.10)
INST_OWN	0.003 (0.95)	0.004 (0.69)	0.007 (1.37)	0.007 (0.98)	-0.006 (-0.71)
OWN_CNCT	0.00003 (0.88)	-0.00001 (-0.25)	-0.00004 (-0.42)	0.0001 (1.64)	0.0001 (0.97)
BLOCK	-0.015 (-1.53)	-0.001 (-0.13)	-0.016 (-0.86)	-0.011 (-1.22)	-0.030 (-0.91)
BIG-4	-0.00003 (-0.01)	0.0009 (0.17)	0.004 (1.25)	-0.002 (-0.44)	-0.003 (-0.40)
FIN_DEBT	0.0003 (0.05)	0.022** (2.41)	-0.020 (-1.57)	-0.014 (-1.06)	0.014 (1.44)
SIZE	-0.001 (-1.52)	-0.003** (-2.27)	-0.001 (-0.91)	-0.0002 (-0.09)	-0.0004 (-0.26)
Average F-value	43.48***	3.89	1.69	11.10*	1.39
Average Adjusted R-square	0.2396	0.1826	0.1892	0.2322	0.3111

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n=2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses. QDA is income-increasing quarterly discretionary accruals, BOARD_IND, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter.

**Table 24: Multivariate Regression of Income-Decreasing Quarterly Discretionary Accruals
for All firm-quarters, Interim and Fourth Quarters**

Dependent Variable: Income-Decreasing Quarterly Discretionary Accruals (QDA)					
Independent Variables	All firm quarters	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Constant	0.075*** (5.44)	0.082*** (12.64)	0.056*** (3.12)	0.048 (1.21)	0.114*** (3.58)
BOARD_IND	0.018*** (2.98)	0.009 (0.49)	0.018* (1.94)	0.021** (2.39)	0.024 (1.76)
BOARD_SIZE	0.0002 (0.52)	0.001*** (4.16)	-0.00008 (-0.08)	-0.001** (-2.22)	0.0008 (1.26)
CEO_D	0.00005 (0.02)	0.005 (1.36)	-0.0002 (-0.03)	0.0001 (0.05)	-0.005*** (-3.97)
ACC_SIZE	0.003** (2.24)	0.0003 (0.09)	0.004 (1.63)	0.003** (2.45)	0.003 (1.23)
INST_OWN	0.007** (2.72)	0.0002 (0.03)	0.005 (0.93)	0.016*** (4.78)	0.008 (1.80)
OWN_CNCT	-0.00001 (-0.19)	0.00002 (0.33)	-0.00007 (-0.59)	0.0002*** (3.16)	0.0002*** (3.24)
BLOCK	-0.001 (-0.54)	0.006 (1.51)	0.0006 (0.11)	-0.005 (-0.77)	-0.008 (-1.80)
BIG-4	-0.006*** (-3.81)	-0.003 (-0.93)	-0.010** (-2.67)	-0.004 (-1.29)	-0.006*** (-4.11)
FIN_DEBT	0.018*** (3.69)	0.001 (0.18)	0.028** (2.84)	0.035*** (9.05)	0.007 (1.59)
SIZE	-0.002*** (-3.48)	-0.003*** (-7.17)	-0.001* (-1.81)	-0.0007 (-0.35)	-0.004*** (-2.78)
Average F-value	43.48***	4.86**	19.84***	37.60***	9.54**
Average Adjusted R-square	0.2396	0.1485	0.3173	0.3776	0.1151

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n= 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses. QDA is Income-decreasing quarterly discretionary accruals in absolute terms measured by using the Adapted Larcker and Richardson (2004) Model, BOARD_INDP, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter.

In summary, overall results about the relation between corporate governance and accrual based earnings management indicates that the role of corporate governance variables on the extent of quarterly discretionary accruals is highly related with the direction of management, financial quarters and the quality of external audit. None of the corporate governance variables has a consistent influence over interim and the fourth quarters. Therefore, the research hypotheses were partially accepted depending on firms' aptitude to use income-increasing and income-decreasing accruals and firms' external audit quality in terms of Big-4 versus Non-Big-4.

For the board of directors' independence (BOARD_IND), it is obvious that independent board members are not effective in Turkey in constraining earnings management. Instead, firms with independent members in the board have significantly higher absolute discretionary accruals, particularly while this positive relation is significant for Big-4 firms using income-decreasing discretionary accruals; the role of independent board is insignificant for Non-Big-4 firms. Therefore Hypothesis 5a that a more independent board of directors constrains earnings management is rejected and it is concluded that a more independent board of directors do not have a constraining role on earnings management. In addition, a more independent board of directors does not constrain earnings management for firms audited by Big-4, therefore Hypothesis 5b that a more independent board of

directors is more likely to constrain earnings management for firms audited by Big-4 than those audited by Non-Big-4 is rejected as well.

Board of directors' independence (BOARD_IND) displays a significant adverse sign, inconsistent with (Fama and Jensen, 1983) that as the number of outside members in the board increases, the ability of the board of directors to perform its monitoring role increases, which is more likely to constrain earnings management (Beasley, 1996). The studies concerning the board independence and its role on accounting performance is limited in Turkey, particularly its role on discretionary accruals is not examined previously. Therefore, it is not possible to confirm or reject the prior findings on the role of board independence in constraining earnings management in Turkish firms. Two contributory studies (Ararat et al., 2010 and Arslan et al., 2010) examine the role of board independence on firm performance and accounting data in Turkey. Both of these studies find an inconsistent inverse relation for board independence comparing to theory and literature, suggesting that independent board members are not effective in their role in Turkey. Ararat et al. (2010) find that a higher fraction of independent directors in the boards decrease rather than increase the market value and the accounting performance of Turkish listed firms. They use several different regression models in their estimation to control any endogeneity problems (if any) in the sample for the robustness of coefficient estimates, all models (Fixed effects model, Instrumental

variable estimation model, Ordinary Least Square (OLS) estimation model and a Two-Stage Least Squares (2SLS) model) provide an inverse sign of the board of directors' independence and they conclude that it has a significant negative association with the market value and the accounting performance at the 5% level, inconsistent with prior studies. Similarly, Arslan et al. (2010) find that board independence are negatively associated with Tobin's Q of firms at 1% significance level propose that an increase in the board independence causes a decrease in the stock performance. They conclude that board independence has an adverse impact on corporate performance in firms listed on ISE.

There are many different possible reasons of this inverse relation. A possible rationale might be the insufficient monitoring ability of independent board members in sample ISE firms. Arslan et al. (2010) suggest that non-artificial separation of independent and dependent board members in Turkish firms and the information asymmetry among independent and dependent members might cause a poor quality of financial information. In addition, as Ararat et al. (2010) argue that for most of the Turkish firms, independent board members declared in the Corporate Governance Principles Compliance reports do not fulfil the requirements for the independence and therefore not providing an effective monitoring and control over management activities. Also, this inverse relation might be due to the undisclosed social, personal, or financial ties between the controlling shareholder and the independent

board members. Another possible explanation is the lower level of independent members in the board. Ararat et al. (2010) claim that although independent board member(s) has (have) not any tie with the firm, being minority in the board would make it difficult for the members to declare a controversial opinion, which is consistent with findings of Klein (2002), where abnormal accruals of firms switching the board or directors from a majority-independent to a minority-independent structure increase. A further explanation might be the influence of high ownership concentration of ISE firms, consistent with Park and Shin (2004) who argue that outside directors do not improve corporate governance by itself, particularly, where firms have highly concentrated ownership.

For the board size (BOARD_SIZE), it is obvious that board size has a significantly positive relation with quarterly discretionary accruals in Turkey, suggesting that firms with smaller board of directors are more effective in constraining earnings management, because of the coordination and communication problems among board members in the large boards, the board is less likely to be effective and functional in financial reporting oversight. Firms with larger boards have significantly higher absolute discretionary accruals, particularly while this positive relation is significant for Big-4 firms using income-decreasing discretionary accruals, the role of board size is insignificant for Non-Big-4 firms. Therefore, Hypothesis 6 that there is an association

between the number of directors in the board and discretionary accruals is accepted only for Big-4 firms using income-decreasing discretionary accruals and it is concluded that a smaller board of directors is more effective in constraining earnings management in some interim periods and for Big-4 firms using income-decreasing quarterly discretionary accruals.

For the CEO duality (CEO_D), regression results show that CEO duality has contradicting roles on the extent of quarterly discretionary accruals. CEO duality has a significantly negative relation with the extent of quarterly discretionary accruals for Big-4 firms, suggesting that even though in case of CEO duality, a higher level of discretionary accruals is expected; Big-4 audit quality limits earnings management. In contrast, CEO duality has a positive influence on the extent of quarterly discretionary accruals for Non-Big-4 firms, consistent with the proposition of power concentration which is likely to decrease the control of the board over management's activities and firms with CEO duality are more likely to have higher level of discretionary accruals particularly lack of higher audit quality. The negative relation was observed only for Big-4 firms using the income-increasing quarterly discretionary accruals and the positive relation was found only for Non-Big-4 firms using income-decreasing quarterly discretionary accruals. Therefore, Hypothesis 7a that there is a positive relation between CEO duality and discretionary accruals is accepted only for Non-Big-4 firms,

particularly for firms using income-increasing discretionary accruals. Hypothesis 7b that the positive relation between CEO duality and discretionary accruals is relatively less for firms audited by Big-4 than those audited by Non-Big-4 is accepted only for Big-4 firms using income-increasing quarterly discretionary accruals, because the positive influence of CEO duality on discretionary accruals was not observed for Big-4 firms, instead, CEO duality constrains in income-decreasing accruals if the firms is audited by Big-4.

For the audit committee size (ACC_SIZE), there is a positive relation between audit committee size and the extent of discretionary accruals, particularly, for Non-Big-4 firms using income-decreasing discretionary accruals. Therefore Hypothesis 8 that there is an association between the number of audit committee members and discretionary accruals is accepted only for Non-Big-4 firms, particularly for firms using income-decreasing discretionary accruals. Previously in the analysis in section 6.2.3.2, it was found that larger audit committees demand less Big-4 auditor. This might be because a larger audit committee might substitute the external audit quality demanded. However, the positive association between audit committee size and extent of discretionary accruals suggest that the reason of Non-Big-4 audit choice is less likely because of the substitution external audit quality.

For the institutional ownership (INST_OWN), there is a positive association between institutional ownership and extent of quarterly discretionary accruals showing that firms with institutional owners have larger quarterly discretionary accruals, particularly Big-4 firms using income-decreasing accruals. Therefore both Hypothesis 9a, that the presence of institutional owner constrains earnings management and Hypothesis 9b, that the presence of institutional owner is more likely to constrain earnings management for firms audited by Big-4 than those audited by Non-Big-4 are rejected. It is concluded that institutional ownership has an adverse effect on the extent of discretionary accruals, inconsistent with Balsam et al. (2002) and Siregar and Utama (2008) who argue that as institutional investors are more sophisticated and experienced and they have more access to timely and relevant information and they are more effective in controlling and monitoring of managements' activities than individual investors, respectively. In Turkey, institutional investors are mostly the private incorporated bodies who held large fraction of shares and have controlling power over management; therefore, a positive relation might be because of the controlling power of those institutional owners.

For both the ownership concentration (OWN_CNCT) and blockholdership (BLOCK), no associations were found with the extent of discretionary accruals in constraining earnings management for the partitioned sample neither by audit quality nor by the direction of

earnings management. Therefore Hypothesis 10, that there is an association between the level of discretionary accruals and ownership concentration and Hypothesis 11 that there is an association between blockholdership and the extent of discretionary accruals are rejected and it is concluded that in ISE firm ownership concentration and blockholdership have no constraining role on earnings management. Again, the partitioned regression results do not show any significant influence of blockholdership on quarterly discretionary accruals, indicating that Big-4 audit quality has no significant influence on the relation between blockholdership and quarterly discretionary accruals. However, regression results based on the interim and fourth quarters show that, ownership concentration and blockholdership might be associated with discretionary accruals only in the fourth quarter.

6.3 Sensitivity Analysis

This section aims to test the robustness of the findings. In order to do this, first total accrual models were tested by presenting the coefficient estimates of alternative estimation approaches. Second, the linear regression model specification was tested for the validity of regression assumptions. Third, the robustness of the research findings were examined by using alternative estimation approaches, alternative

discretionary accruals measures, alternative control variables and alternative research design.

6.3.1. Total Accrual Models Sensitivity Analysis

In the estimation of discretionary accruals, this study uses a panel data set, two-way clustering regression (Petersen, 2009) controlled for industry dummy, which controls time, firms and industry specific effects simultaneously. For the robustness of the parameter estimates, alternatively, all total accrual models were estimated by using pooled OLS estimation, panel regression with two-way clustering and random-effect generalised least square (GLS) estimation models. The regression results were presented in Appendix-II in Table A1, Table A2 and Table A3, respectively. Overall in all models, the sign of the coefficient estimates are consistent with prior studies with a positive coefficient for change in sales adjusted for change in receivables ($\Delta\text{SALES} - \Delta\text{REC}$) and a negative coefficient for property plant and equipment (PPE) have been found. Also, consistently, in all models the Forward Looking Model and the (Adapted) Larcker and Richardson (2004) Model are two best models with highest explanatory powers, on average with R-square of 25.5% and 17.5% respectively.

While the coefficient estimates do not change significantly in all models, the significance of the coefficients changes slightly. Comparing all models, two-way clustering regression controlled for industry dummy, which is used in this study, controls for all three dimensions-time, firm and industry of the panel data provides more robust standard errors.

In this study, the Adapted Larcker and Richardson (2004) Model has been employed to estimate quarterly discretionary accruals. Alternatively, to check the sensitivity of the results, the multivariate regression analysis was repeated using absolute quarterly discretionary accruals estimated by the Jones Model (Jones, 1991) and the Kazsnik (1999) Model. The coefficient estimates of the multivariate regression analysis with absolute quarterly discretionary accruals measured by the Modified Jones Model (Dechow et al., 1995) and the Kazsnik (1999) Model are explained in detail in section 6.3.3 and presented in Table 27.

6.3.2 Regression Model Assumptions

Heteroscedasticity is the non-constant variances of residuals, which impairs accuracy of coefficient estimates in the regression. Heteroscedasticity is not a concern of this study, because for the robustness of the estimated coefficients in the multivariate regression standard errors were corrected for heteroscedasticity.

Autocorrelation is cross correlation and similarity of the variables across time. As the study uses pane data, which consists of cross sectional data over quarters the regression model is tested for autocorrelation using Durbin-Watson test. The transformed Durbin-Watson D statistics is 1.79, (Durbin-Watson $(2135, 10)$ $D_L=1.57$ and $D_U=1.77$, at 1% significance level) indicates that there is no autocorrelation in the residuals of the multivariate regressions.

Multicollinearity is high correlation of independent variables with each other where coefficient estimates turns into insignificant even tough the relation of independent variables is strong with dependent variables. Table 25 presents VIF and tolerance values for multivariate regression model. Overall, lower VIF values (less than 10) and higher tolerance values (more than %60) indicate that multicollinearity is not a severe problem for the regression model employed in this research.

Table 25: Tolerance and VIF of Multivariate Regression

$$QDA_{it} = \beta_0 + \beta_1 \text{BOARD_IND}_{it} + \beta_2 \text{BOARD_SIZE}_{it} + \beta_3 \text{CEO_D}_{it} + \beta_4 \text{ACC_SIZE}_{it} + \beta_5 \text{INST_OWN}_{it} + \beta_6 \text{OWN_CNCT}_{it} + \beta_7 \text{BLOCK}_{it} + \beta_8 \text{BIG-4}_{it} + \beta_9 \text{FIN_DEBT}_{it} + \beta_{10} \text{SIZE}_{it} + \varepsilon_{it}$$

Variables	VIF	Tolerance
BOARD_IND	1.08	0.9276
BOARD_SIZE	1.60	0.6255
CEO_D	1.16	0.8635
ACC_SIZE	1.12	0.8955
INST_OWN	1.81	0.5522
OWN_CNCT	1.64	0.6095
BLOCK	1.66	0.6011
BIG-4	1.36	0.7348
FIN_DEBT	1.09	0.9186
SIZE	1.70	0.5892

n= 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. BOARD_IND, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm.

6.3.3 Corporate Governance Model Sensitivity Analysis

Sensitivity Analysis for Coefficient Estimates

This study uses Fama-MacBeth estimation approach (Fama and MacBeth, 1973) for the multivariate regression models. To test the sensitivity of coefficient estimates, standard errors and t-statistics to the estimation approach, the multivariate regression models were reestimated using pooled OLS estimation, random effect GLS¹⁰, panel regression with two-way and one-way clustering estimation procedures all with White corrected robust standard errors. Petersen (2009), in his study show that, in case of cross sectional and time series dependence,

¹⁰ For the panel regression model, the Hausman test of fixed versus random effects suggests that the random effect is more appropriate for the data set.

OLS standard errors might be biased and causes under or over estimation of the coefficient estimates. Therefore, he proposed two-way clustering as a solution to control the panel data set for firms and times specific effects simultaneously.

Table 26 presents the coefficient estimates and t-statistics of the multivariate regression results for pooled OLS, random-effect GLS, panel regression with two-way and one-way clustering estimations with absolute quarterly discretionary accruals, as dependent variable and with several internal corporate governance variables, financial debt and firm size, as independent variables for all firm-quarters, and both for Big-4 and Non-Big-4 firms. The F-values, Wald Chi-square and adjusted-R-squares were presented at the bottom of the table. Although t-values of random GLS model, clustered in panel variable, are less likely to be significant, the sign of coefficient estimates in both models is consistent with the average coefficients provided by Fama-MacBeth two-step method in Table 19. In addition, the sensitivity check for the cross sectional dependence was tested by panel regression with two-way, clustered both for panel and time variables and one-way clustering, clustered for time variable estimations. The sign and significance of the coefficient estimates are consistent in both models. The sensitivity checks for coefficient estimates with alternative estimation procedures assure the robustness of the signs and significance of the estimated coefficients.

Table 26: Alternative Estimation Procedure for Multivariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA) for Big-4 and Non-Big-4 Firms

Independent Variables	Pooled OLS estimations			Random effect GLS estimations		
	All firm-quarters	BIG-4 Firms	Non-BIG-4 Firms	All firm-quarters	BIG-4 Firms	Non-BIG-4 Firms
Constant	0.077*** (7.98)	0.102*** (8.10)	0.045*** (2.69)	0.093*** (5.16)	0.108*** (6.04)	0.073** (2.32)
BOARD_IND	0.025*** (3.37)	0.036*** (3.88)	0.012 (1.05)	0.027** (2.29)	0.037*** (2.94)	0.020 (0.88)
BOARD_SIZE	0.0002 (0.56)	0.001** (2.03)	0.00001 (0.03)	0.0005 (0.60)	0.0009 (1.14)	0.0004 (0.34)
CEO_D	0.001 (0.76)	-0.006** (-2.58)	0.007*** (2.66)	0.002 (0.95)	-0.002 (-0.88)	0.006 (1.85)
ACC_SIZE	0.001 (1.38)	-0.001 (-0.91)	0.002** (2.15)	0.001 (0.96)	-0.002 (-0.77)	0.002 (1.74)
INST_OWN	0.006*** (2.89)	0.007* (1.92)	0.005** (2.11)	0.006* (1.97)	0.006 (1.35)	0.006 (1.77)
OWN_CNCT	0.000 (0.09)	0.00002 (0.44)	0.000 (0.05)	0.00001 (0.21)	0.00003 (0.38)	0.000 (0.06)
BLOCK	-0.005* (-1.85)	-0.009 (-1.56)	-0.005 (-1.52)	-0.004 (-1.35)	-0.010* (-1.92)	-0.004 (-1.16)
BIG-4	-0.002* (-1.80)	omitted	omitted	-0.002 (-1.05)	omitted	omitted
FIN_DEBT	0.021*** (6.14)	0.005 (0.93)	0.024*** (5.92)	0.015*** (5.00)	-0.001 (-0.15)	0.019*** (5.40)
SIZE	-0.002*** (-5.08)	-0.003*** (-5.87)	-0.001 (-1.23)	-0.003*** (-3.45)	-0.003*** (-4.06)	-0.002 (-1.47)
Avrg. F-value and Wald Chi-square	10.05***	6.61***	6.15***	50.06***	30.29***	48.90***
Avrg. Adjusted R-square	0.0884	0.0536	0.1160	0.0831	0.0498	0.1107

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n= 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses. ABS_QDA is absolute quarterly discretionary accruals measured by using the Adapted Larcker and Richardson (2004) Model, BOARD_INDP, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm. Coefficients are estimated by both pooled OLS estimation and random effect GLS panel regressions both with White corrected robust standard errors.

Table 26: Alternative Estimation Procedure for Multivariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA) for BIG-4 and Non-BIG-4 Firms (continued)

Independent Variables	Panel Regression (Two-way cluster) estimations			Panel Regression (One-way cluster) estimations		
	All firm-quarters	BIG-4 Firms	Non-BIG-4 Firms	All firm-quarters	BIG-4 Firms	Non-BIG-4 Firms
Constant	0.077*** (4.77)	0.102*** (5.74)	0.045* (1.64)	0.077*** (8.27)	0.102*** (9.90)	0.045** (2.88)
BOARD_IND	0.025** (2.28)	0.036** (2.80)	0.012 (0.79)	0.025*** (3.40)	0.036*** (4.12)	0.012 (1.07)
BOARD_SIZE	0.0002 (0.31)	0.001** (2.49)	0.00001 (0.02)	0.0002 (0.64)	0.001*** (3.33)	0.00001 (0.04)
CEO_D	0.001 (0.50)	-0.006** (-2.25)	0.007** (1.96)	0.001 (0.70)	-0.006** (-2.45)	0.007** (2.69)
ACC_SIZE	0.001 (1.03)	-0.001 (-0.46)	0.002* (1.81)	0.001 (1.60)	-0.001 (-1.26)	0.002** (2.70)
INST_OWN	0.006* (1.92)	0.007* (1.81)	0.005 (1.49)	0.006** (2.61)	0.007** (2.42)	0.005 (1.70)
OWN_CNCT	0.000 (0.06)	0.00002 (0.32)	0.000 (0.03)	0.000 (0.09)	0.00002 (0.47)	0.000 (0.06)
BLOCK	-0.005 (-1.20)	-0.009 (-1.39)	-0.005 (-1.09)	-0.005 (-1.46)	-0.009 (-1.69)	-0.005 (-1.26)
BIG-4	-0.002 (-1.07)	omitted	omitted	-0.002** (-2.34)	omitted	omitted
FIN_DEBT	0.021*** (5.55)	0.005 (0.87)	0.024*** (5.77)	0.021*** (4.89)	0.005 (1.56)	0.024*** (4.70)
SIZE	-0.002*** (-2.97)	-0.003*** (-4.31)	-0.001 (-0.70)	-0.002*** (-5.65)	-0.003*** (-8.36)	-0.001 (-1.35)
Avg. F-value and Wald Chi-square	10.05***	6.61***	6.15***	20.95***	25.01***	13.30***
Avg. Adjusted R-square	0.0884	0.0536	0.1160	0.0884	0.0536	0.1160

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n = 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses. ABS_QDA is absolute quarterly discretionary accruals measured by using the Adapted Larcker and Richardson (2004) Model, BOARD_INDP, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm. Coefficients are estimated by panel regression using two-way and one-way clustering estimation both with White corrected robust standard errors.

Sensitivity Analysis for Alternative Discretionary Accruals Estimates

Dechow et al. (1995) argue that the Jones Model (Jones, 1991) and Modified Jones Model (Dechow et al. 1995) are misspecified in case of extreme level of firm performance and therefore Jones et al. (2008) suggest that controlling for firm performance essential to increase the ability of total accrual models in capturing discretionary accruals. Therefore, in this study discretionary accruals were measured using the Adapted Larcker and Richardson Models, which uses book-to market ratio (BM) and cash flows from operations (CFO) to control for firm performance.

In most of the prior studies, discretionary accruals are measured using the Jones Model (Jones, 1991) and the Modified Jones Model (Dechow et al., 1995). For that reason, in order to check the sensitivity of the findings to earnings management measure, the multivariate regression model was reestimated using two different measures; the Modified Jones Model (Dechow et al., 1995) and an alternative performance adjusted model- the Kazsnik (1999) Model.

Table 27 presents the average coefficients and the Fama-MacBeth statistic (Fama and MacBeth, 1973) of the multivariate regression models with absolute quarterly discretionary accruals measured by the Modified Jones Model (Dechow et al., 1995) and by the Kazsnik (1999)

Model, as dependent variables and with several internal corporate governance variables, financial debt and firms size, as independent variables for all firm-quarters, and both for Big-4 and Non-Big-4 firms. The F-values and adjusted-R-squares are presented at the bottom of the table.

The results for quarterly discretionary accruals measured by the Modified Jones Model (Dechow et al., 1995) indicate that, some of the findings presented in Table 19 are sensitive to the earnings management measure used in the regression. The coefficient of boards of directors' independence (BOARD_IND) remains significantly positive both for all firm-quarters and for Big-4 firms. In contrast, board of directors' independence has a significant negative impact on the extent of quarterly discretionary accruals for Non-Big-4 firms, as it is proposed in literature. For board size (BOARD_SIZE) and institutional ownership (INST_OWN) regression results show that board size and institutional ownership have significant positive influence on quarterly discretionary accruals for Big-4 firms. Similarly, while CEO duality (CEO_D) has a negative relation with quarterly discretionary accruals for Big-4 firms, it has a positive relation with quarterly discretionary accruals for Non-Big-4 firms, as consistent with findings in Table 19. The main difference in the regression results for both measures exists in the role of audit committee size (ACC_SIZE). While regression results for the quarterly discretionary accruals measured by the Adapted Larcker and

Richardson (2004) Model indicates that larger audit committee causes an increase in the extent of earnings management, for the quarterly discretionary accruals measured by the Modified Jones Model (Dechow et al., 1995) indicates that larger audit committee are more effective in monitoring and limiting earnings management. In addition, when the quarterly discretionary accruals are measured by the Modified Jones Model (Dechow et al., 1995) the coefficient estimates get more significant, while ownership concentration (OWN_CNCT) and blockholdership (BLOCK) have insignificant results for the Adapted Larcker and Richardson (2004) Model estimations, those variables displays significantly negative coefficients, suggesting that high level of ownership concentration and blockholdership have a constraining role on earnings management. Even though the Modified Jones Model (Dechow et al., 1995) is commonly used and recognized model in earnings management studies, as it is discussed earlier it misspecifies to capture discretionary accruals for firms with extreme firm performance. Therefore, the differences in the findings of regression results might be resulting from the misspecification of the Modified Jones (Dechow et al. 1995) and the differences in the ability of both models to capture discretionary accruals.

Alternatively, the quarterly discretionary accruals were measured using the Kazsnik (1999) Model, which is another performance adjusted total accruals model. The results for quarterly discretionary accruals

measured by the Kazsnik (1999) Model indicate that, using a performance adjusted discretionary accruals model, the coefficient estimates are consistent with the findings in Table 19, with one exception that blockholdership (BLOCK) displays a significant negative coefficient, indicating the presence of blockholdership limits earnings management.

The sensitivity checks for the findings of regression results show that, the relation between corporate governance and earnings management is sensitive to the estimation of discretionary accruals. As this study uses a discretionary accruals model that also controls for the firm performance, as suggested by Jones et al. (2008) and Young (1995), it is argued that the model is more capable in estimating the discretionary accruals comparing to the Modified Jones Model (Dechow et al., 1995) and therefore displaying more robust results about the relation between earnings management and corporate governance.

Table 27: Multivariate Regression of Absolute Quarterly Discretionary Accruals (ABS_QDA) for BIG-4 and Non-BIG-4 Firms using Modified Jones Model and the Kazsnik Model in the Estimation of Discretionary Accruals

Independent Variables	Dependent Variable: Absolute Quarterly Discretionary Accruals (ABS_QDA)					
	The Modified Jones Model (Dechow et al., 1995)			the Kazsnik (1999) Model		
	All firm-quarters	BIG-4 Firms	Non-BIG-4 Firms	All firm-quarters	BIG-4 Firms	Non-BIG-4 Firms
Constant	0.075*** (46.68)	0.074*** (31.97)	0.068*** (24.70)	0.072*** (13.93)	0.076*** (9.85)	0.062*** (12.49)
BOARD_IND	0.012*** (17.28)	0.027*** (18.02)	-0.003** (-2.65)	0.013*** (12.47)	0.025*** (10.19)	-0.00002 (-0.01)
BOARD_SIZE	0.0006*** (8.26)	0.001*** (10.33)	-0.00002 (0.27)	0.0004** (2.54)	0.001*** (5.00)	-0.00005 (-0.33)
CEO_D	0.0005 (1.21)	-0.005*** (-7.79)	0.003*** (3.57)	0.001* (1.99)	-0.005*** (5.77)	0.005*** (4.99)
ACC_SIZE	-0.0008** (-2.45)	0.0006 (1.56)	-0.001** (-2.60)	-0.0006 (-1.54)	-0.0002 (-0.30)	-0.0005 (-0.94)
INST_OWN	0.003*** (5.08)	0.008*** (3.89)	0.0008 (1.14)	0.003*** (4.78)	0.008*** (3.98)	0.001* (1.99)
OWN_CNCT	-0.00004*** (-3.42)	-0.00002 (-1.35)	-0.00003 (-1.63)	-0.00003 (-1.63)	-0.00001 (-0.70)	-0.00001 (-0.36)
BLOCK	-0.012*** (-14.11)	-0.012*** (-6.95)	-0.012*** (-15.85)	-0.011*** (-10.72)	-0.012*** (-8.13)	-0.012*** (-9.21)
BIG-4	-0.001** (-2.54)	omitted	omitted	-0.0009 (-1.53)	omitted	omitted
FIN_DEBT	0.006*** (9.43)	0.007*** (6.69)	0.005*** (5.77)	0.006*** (4.47)	0.003 (1.32)	0.006*** (3.12)
SIZE	-0.002*** (-32.63)	-0.003*** (21.00)	-0.001*** (-12.49)	-0.002*** (-7.43)	-0.003*** (-5.66)	-0.001*** (-6.42)
Average F-value	385.81***	398.94***	313.04***	279.39***	101.54***	67.75***
Average Adjusted R-square	0.1418	0.1729	0.1566	0.1280	0.1659	0.1572

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n = 2135 firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009. t-statistics are reported in parentheses. ABS_QDA is absolute quarterly discretionary accruals. BOARD_INDP, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, 0 otherwise, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter.

Sensitivity Analysis for Other Control Variables

The multivariate regression model in Table 19 was controlled for financial leverage (measured by total liabilities to equity and financial liabilities to equity), instead financial debt ratio (measured by total financial debt scaled by total assets) and firm size (measured by natural logarithm of total sales and market capitalization) instead natural logarithm of total assets. The results, not shown in a table are similar to those shown in Table 19.

Sensitivity Analysis for Quarterly versus Annual Research Design

Alternatively, the sensitivity of the results was checked using a composite measure of absolute quarterly discretionary accruals to examine the relation between earnings management and corporate governance annually for each year. Table 28 presents the average coefficients and the Fama Macbeth statistic (Fama and MacBeth, 1973) of the multivariate regression models with sum of the absolute quarterly discretionary accruals, as dependent variable and with several internal corporate governance variables, financial debt and firm size, as independent variables for all firm-quarters, and both for Big-4 and Non-Big-4 firms. The F-values and adjusted-R-squares were presented at the bottom of the table.

The multivariate analysis displays consistent results with the findings in Table 19. Among all corporate governance variables, board of directors' independence has a positive relation with discretionary accruals, both for all firm-quarters and Big-4 firms. Similarly, while board size displays a significant positive coefficient for Big-4 firms, it is unrelated with discretionary accruals for Non-Big-4 firms. So the results are consistent when the regressions are employed annually. For CEO duality, there is a significant negative relation between CEO duality and discretionary accruals for Big-4 firms. Audit committee size display a positive relation, but consistent with prior studies only for Non-Big-4 firms. Finally, institutional owners has a significant positive coefficient suggesting that firms , particularly those audited by Non-Big-4, with institutional owners tend to use more discretionary accruals.

Table 28: Multivariate Regression of Sum of Absolute Quarterly Discretionary Accruals (SUM_ABS_QDA)

Dependent Variable: Sum of Absolute Quarterly Discretionary Accruals (SUM_ABS_QDA)			
Independent Variables	All firm-quarters	BIG-4 Firms	Non-BIG-4 Firms
Constant	0.301*** (5.41)	0.390*** (10.14)	0.188 (1.98)
BOARD_IND	0.102*** (3.88)	0.132*** (3.21)	0.078 (1.37)
BOARD_SIZE	0.0001 (0.19)	0.004*** (4.76)	-0.001 (-1.25)
CEO_D	0.001 (0.11)	-0.034** (-2.66)	0.026 (1.97)
ACC_SIZE	0.004 (1.24)	-0.004 (-1.08)	0.011*** (3.18)
INST_OWN	0.017*** (3.27)	0.021 (1.38)	0.020** (2.85)
OWN_CNCT	-0.0000 (-0.02)	0.0002 (1.20)	-0.0002 (-0.48)
BLOCK	-0.017 (-1.03)	-0.031 (-1.42)	-0.014 (-0.73)
BIG-4	-0.009 (-1.32)	omitted	omitted
FIN_DEBT	0.056* (1.92)	0.022 (0.88)	0.068** (2.23)
SIZE	-0.009*** (-5.29)	-0.015*** (-17.88)	-0.003 (-0.90)
Average F-values	19.99***	11.81**	6.79*
Average adjusted R-square	0.1873	0.1838	0.2602

(***), (**) and (*) significant at %1, %5 and %10 (one-tailed), respectively. n= 525 firms-year observations between the years 2006-2009. t-statistics are reported in parentheses. Sum_ABS_QDA is sum of the absolute quarterly discretionary accruals measured by using the Adapted Larcker and Richardson (2004) Model, BOARD_INDP, independence of Board of Directors; BOARD_SIZE, size of Board of Directors; CEO_D, CEO Duality; ACC_SIZE, size of the Audit Committee; INST_OWN, Institutional Ownership; OWN_CNCT, Ownership Concentration; BLOCK, Blockholdership, FIN_DEBT, Financial Debt to Total Assets; SIZE, size of the firm in terms of natural logarithm of Total Assets. All coefficients are estimated by using random effect GLS regression with White corrected robust standard errors.

6.4 Summary

The purpose of this chapter was to conduct analyses to test the hypotheses and examine the relations between discretionary accruals, as a proxy of earnings management and several explanatory variables that measures corporate governance mechanisms controlling for audit quality, firm size, and financial debt ratio, as control variables. In addition, it aims to reveal the relation between audit firm attributes (Big-4, audit firms tenure and industry specialisation) and discretionary accruals and the role of internal corporate governance mechanism on audit firm choice. Internal corporate governance mechanisms used in this study includes both board of directors' composition and ownership structure.

Several different statistics, regression analyses and sensitivity checks were conducted. Mainly, mean absolute quarterly discretionary accruals were examined through mean comparison t-statistics for Big-4, presence of independent board of directors, CEO duality, blockholdership and institutional ownership both for the all firm-quarters and for interim and fourth quarters. The regression analyses were performed from several different dimensions, considering the effect of Big-4, the direction of earnings management and interim and fourth quarters in order to understand their impact on the role of corporate governance in limiting earnings management. Sensitivity checks were

conducted for the robustness of the results and it is observed that the regression model is correctly specified and the coefficient estimates display robust results. However, some of the corporate governance variables are sensitive to performance adjusted versus non-performance adjusted total accruals model in the estimation of the discretionary accruals.

In summary, overall findings on audit firms attributes and earnings management suggest significant influence of Big-4, audit firm tenure and industry specialisation on discretionary accruals point towards Big-4 and industry specialist audit firms have relatively higher audit quality than Non-Big-4 and non-industry specialist ones. Also, longer audit firm tenure increases the audit quality in terms of reducing earnings management.

In addition, overall findings on audit firms attributes and internal corporate governance implies that firms' auditor choice in terms of Big-4 and audit firm industry specialisation is affected by the overall corporate governance structure of firms, particularly, board of directors' characteristics and ownership structure. Beside, internal corporate governance mechanisms have relatively higher influence on Big-4 auditor choice comparing to industry specialist auditor choice. Conversely, the audit firm tenure is unrelated with firms' corporate governance structure.

Finally, overall findings on internal corporate governance mechanisms and earnings management indicates that the role of corporate governance mechanisms on quarterly discretionary accruals is highly related with the direction of management, the financial quarters and the quality of external audit (Big-4 versus Non-Big-4). None of the corporate governance variables has a consistent influence on earnings management over interim and the fourth quarters. Therefore, the hypothesis were partially accepted depending on firms' aptitude to use income-increasing and income-decreasing accruals, firms' external audit quality in terms of Big-4 versus Non-Big-4 and the subsistence of the relation over interim and fourth quarters.

The next chapter presents a detailed review of research findings on corporate governance, audit quality and earnings management and concludes the findings.

CHAPTER 7

CONCLUSION

7.1 Introduction

This thesis focuses on the role of corporate governance and audit quality on quarterly earnings management. The thesis consists of seven chapters. Chapter one highlighted the motivations and contributions, defined the objectives of the research and set out the research questions. This chapter also detailed the scope of the study and the research methodology with the outline of the thesis. Chapter two provided an overview of Turkish accounting and legal environment, particularly capital markets, auditing and accounting environments and corporate governance to describe the market condition in Turkey and to facilitate the interpretation of empirical tests in accordance with country settings. Chapter three reviewed the literature on earnings management, principally starting from the definition of earnings management; it detailed the incentives for earnings management, the

debates on quarterly versus annual earnings management, common tools and techniques for earnings management and the estimation discretionary accruals to measure earnings management. Chapter four briefly reviewed the literature on internal and external corporate governance mechanisms, mainly board of directors, ownership structure and audit quality as effective controlling and monitoring mechanisms. Chapter five explained the rationalisation of research methodology, revisited the research objectives and questions, introduced the research model, developed hypotheses and detailed the research design with data gathering procedure, model specifications, the estimation and measurement of variables. Chapter six conducted the empirical tests and sensitivity analyses to examine the proposed research hypothesis on corporate governance, earnings management and audit quality and to assure the robustness of the findings. The statistical and regression analyses were performed to evaluate the performance of earnings management models for quarterly data set, descriptively documented the overall structure of discretionary accruals, auditors and corporate governance of sample ISE firms and finally tested the research hypotheses for the full panel data set ($n=2,135^{11}$), for Big-4 versus Non-big-4 firms, for income-increasing versus income-decreasing firms and for interim and fourth quarters. The sensitivity analyses were performed to test the sensitivity of the findings to the discretionary accruals measures, regression model assumptions,

¹¹ Initial sample for the dissertation is 2,152 firm-quarters. $n=2,135$ firms-quarter observations after omitting the outliers for QDA at %1 and 99% percentile between the years 2006-2009.

the regression model coefficient estimation procedure and quarterly research design.

Finally, this chapter concludes the thesis by providing a detailed review and the interpretation of the findings, revisiting the contribution of the study, explaining the limitations with further research suggestions.

7.2 Conclusion to the Study

This study reveals important findings on the relation between corporate governance and accruals based earnings management. Specifically, this study uses quarterly discretionary accruals, as earnings management measure and examines the role of board independence, board size, CEO duality, audit committee size, institutional ownership, ownership concentration and blockholdership as internal corporate governance mechanisms, Big-4, as external corporate governance mechanism and audit quality proxy, financial debt ratio and firm size as control variables on quarterly discretionary accruals.

Overall descriptive statistics indicate that sample ISE firms are more tend to use income-decreasing discretionary accruals both in interim and fourth quarters. Although Turkish firms have higher discretionary accruals relative to developed countries such as US, comparing with

earnings management studies conducted in Turkey for pre-IFRS period, the level of discretionary accruals has decreased considerably. Additionally, according to descriptive statistics, Turkish listed firms are more likely to be characterised with lower level of board of directors' independence, relatively smaller board size and audit committee size, which is mostly composed of 2 members that meets the legal requirement of capital markets boards Communiqué, with concentrated ownership, mostly with blockholder who owns more than 20% of shares and with institutional owners.

The findings of the regression analysis were summarised and interpreted in three groups as the analysis of (i) Audit Quality and Earnings Management, (ii) Internal Corporate Governance Mechanisms and Audit Quality, and (iii) Corporate Governance and Earnings Management.

Audit Quality and Earnings Management

There is a strong negative association between the extent of discretionary accruals as earnings management proxy and Big-4, audit firm tenure and industry specialisation. Firms audited by Big-4 have relatively lower level of quarterly discretionary accruals comparing to those firms audited by Non-Big-4 both in interim and in the fourth quarters, consistent with Francis et al. (1999). However when the

sample partitioned as income-increasing and income decreasing firms, it is found that while Big-4 auditors are capable of limiting income-decreasing earnings management, they have no influence for income-increasing earnings management attempts, consistent with Vander Bauwhede et al. (2000). There is a significant negative relation between Big-4 and quarterly discretionary accruals, in absolute terms both in interim and fourth quarters. So the results confirms that big audit firms provide higher audit quality, in terms of constraining earnings management, because they have more clients and wide allocation of total fees over the clients which decreases the dependency over the clients (DeAngelo, 1981a), the opportunity cost, in terms of loosing their wealth is higher in case of any litigation (Dye, 1993). Also, they provide higher quality audit because of their reputation and experience (Krishnan, 2003) and their relatively more conservative opinions (Piot and Janin, 2006), but only for income-decreasing firms. Big-4 audit quality does not constrain income-increasing earnings management.

Hypothesis 1a is supported only for income-decreasing earnings management and it is concluded that firms audited by Big-4 have lower level of income-decreasing discretionary accruals than those firms audited by Non-Big-4.

Hypothesis 1b is supported only for income-decreasing earnings management and it is concluded that Big-4 audit has a constraining role on income-decreasing earnings management.

Audit firm tenure has a significant negative relation with the extent of discretionary accruals both in interim and fourth quarters and both for income-increasing and income-decreasing firms, consistent with Manry et al. (2008), Gul et al. (2007), Geiger and Raghunandan (2002) and Johnson et al. (2002). Unlike the expectation that longer auditor tenure impair auditor independency because of the prior knowledge about the firm's accounting information and the close relationships with the management or owners of the firm, auditors might loose their motivation to conduct a proper external audit and they might be not objective in their opinions, this study supports that auditors gain experience and knowledge about the client with the length of the tenure. Therefore, this experience might lead auditors to conduct higher quality audit.

Hypothesis 2 is supported and it is concluded that firms with longer audit firm tenure constrains earnings management. Firms with longer audit firm tenure are more likely to have lower level of discretionary accruals.

There is a significant negative relation between audit firm industry specialisation and the level of discretionary accruals both in interim and

fourth quarters, except the Quarter-2. The findings in general, except Quarter-2 are consistent with Zhou and Elder (2001). However, when the sample partitioned, it is found that while audit firm industry specialisation constrains income-decreasing discretionary accruals, it does not have any significant influence on income-increasing discretionary accruals. Therefore, findings confirms that industry specific knowledge provides higher audit quality because industry specialisation improve the capability of auditors to detect misstatements relative non-specialist auditors (Solomon et al., 1999; DeFond et al., 2000), but only for income-decreasing firms. Industry-specialist auditors do not constrain income-increasing earnings management.

Hypothesis 3 is supported only for income-decreasing earnings management and it is concluded that audit firm industry specialisation constrains income-decreasing earnings management.

Internal Corporate Governance Mechanisms and Audit Quality

Firms' auditor choice in terms of Big-4 and audit firm industry specialisation is affected by the overall corporate governance structure of firms, particularly, board of directors' composition and ownership structure. All internal corporate governance variables, except institutional ownership have significant influence on Big-4 auditor choice. On the other hand, it is found that only board size, CEO duality

and institutional ownership have significant relation with industry specialist auditor choice. Moreover, corporate governance has relatively higher influence on Big-4 auditor choice comparing to industry specialist auditor choice. The audit firm tenure is unrelated with firms' corporate governance structure. These findings support Anderson et al. (1993) and Yeoh and Jubb (2002), that due to several different incentives such as the substitution of external audit quality by internal governance mechanisms (Williamson, 1983) or signalling to market about the accuracy of the information in financial reports, firms' internal corporate governance structure have significant influence on auditor choice.

Hypothesis 4a is supported for all internal corporate governance mechanisms, except institutional ownership and it is concluded that firms with less independent board of directors, larger board size, no CEO duality, smaller audit committee, no blockholder and high ownership concentration is more likely to choose Big-4 audit firms.

Hypothesis 4b is not supported and it is concluded that firms' internal corporate governance mechanisms have no relation with the tenure of audit firm.

Hypothesis 4c is supported for only board size, CEO duality and institutional ownership and it is concluded that firms with large

boards, no CEO duality and institutional owners are more likely to choose industry specialist audit firms.

Corporate Governance and Earnings Management

The relation between corporate governance and accruals based earnings management indicates that the role of corporate governance variables on quarterly discretionary accruals is highly related with the direction of earnings management, financial quarters and audit quality. None of the corporate governance variables has a consistent influence over interim and the fourth quarters. Therefore, the hypothesis are partially accepted depending on firms' aptitude to use income-increasing and income-decreasing accruals and firms' external audit quality in terms of Big-4 versus Non-Big-4. It is also concluded that the relation between corporate governance and earnings management is not straightforward, the subsistence, the magnitude and the direction of the relation changes over interim and fourth quarters.

Board of directors' independence has a significantly positive relation with discretionary accruals indicates that as board of directors independence increases, the level of discretionary accruals increases, which is inconsistent with prior studies (e.g. Beasley, 1996; Dechow et al., 1996; Klein, 2002; Xie et al., 2003). A board with independent members is objective in decision making and it improves the monitoring

and controlling activities over management (CMB, 2003). Therefore, as the number of outside members in the board increases, the ability of the board to perform its monitoring role increases (Fama and Jensen, 1983). The findings might be interpreted as independent board members are not effective in Turkey in fulfilling their roles. Studies on board independence and firm performance in Turkey also show significant inverse relation (Ararat et al., 2010; Arslan et al., 2010). Dennis and McConnell (2003) argue that, the effectiveness of board of directors is highly associated with its composition and characteristics. According to the survey on the effectiveness and composition of board of directors in Turkey, conducted by Deloitte in 2009, Turkish companies have lower level of board independence with 6.4% for the surveyed firms. In addition survey results indicate that, %25 of the firms in Turkey have independent board member(s), however this number is limited with only an independent member in most of the boards. It is also argued by 15% of the survey participants that the independent board members do not work in close cohesion with management and 18% of them added that board of directors do not endow with ethical business conduct. Therefore, the limited number of independent board members, the probable cohesion problems with management, lack of ethical business conduct, correspondingly the adverse relation found in empirical studies raise the question of whether the independent board members are really independent or whether the board independence work effectively as described in corporate governance principles of

Turkey. It is more likely that independent board members confined to provide advice and council in Turkish firms (Ararat et al., 2010) and they are more likely to be appointed in order to fulfil the compliance with corporate governance principles as a “*display case*” and not effective to fulfil the expected role from them. Consequently, when the sample partitioned, the positive relation between corporate governance and earnings management is more prominent for Big-4 firms using income-decreasing discretionary accruals, suggesting that firms with independent board of directors use aggressive income-decreasing earnings management and Big-4 audit quality has no influence to reduce management attempts to use discretionary accruals. The role of independent board is insignificant for Non-Big-4 firms.

Hypothesis 5a is not supported and it is concluded that a more independent board of directors do not have a constraining role on earnings management, instead for the sample ISE firms, it has a reverse relation with quarterly discretionary accruals.

Hypothesis 5b is not supported and it is concluded that Big-4 audit firms has no influence in mitigating the role of independent board of directors on discretionary accruals.

Board size has a significantly positive relation with quarterly discretionary accruals, implying that firms with larger boards have

significantly higher quarterly discretionary accruals, particularly while this positive relation is significant for Big-4 firms using income-decreasing discretionary accruals, consistent with Jensen's (1993) arguments that a small board may improve the financial performance, because a larger board are less likely to function effectively and are easier for the CEO to control. The results show that larger boards are more tend to use income-decreasing discretionary accruals.

Hypothesis 6 is supported only for Big-4 firms using income-decreasing earnings management and it is concluded that larger boards are less effective in constraining earnings management and Big-4 audit does not mitigate the impact of board size on earnings management.

CEO duality has contradicting roles on the extent of quarterly discretionary accruals. While it displays a significant negative relation with the extent of quarterly discretionary accruals for Big-4 firms, it has a positive relation with quarterly discretionary accruals for Non-Big-4 firms. When the sample partitioned, it is found that while the negative relation is observed only for Big-4 firms using income-decreasing quarterly discretionary accruals, there is a positive relation between CEO duality and income-increasing quarterly discretionary accruals for Non-Big-4 firms. Prior studies mostly fail to document a significant

relation between earnings management and CEO duality (Xie et al., 2003; Davidson et al., 2005; Chthorou et al., 2001). This study also fails to provide significant results, when the regression is employed for all firms-quarters. However, the regression model controlled for audit quality in terms of Big-4 and the direction of earnings management indicates a significantly negative relation for Big-4 using income-decreasing earnings management and positive relation for Non-Big-4 using income-increasing earnings management. Theoretically, CEO duality leads to a power concentration which is likely to decrease the control of the board over management's activities. Therefore, it is expected a positive relation between CEO duality and discretionary accruals as observed for Non-Big-4 firms. The negative influence of CEO duality on earnings management might be because of Big-4 auditors' ability to limit income-decreasing discretionary accruals and mitigating the power concentration of CEO duality.

Hypothesis 7a is supported only for Non-Big-4 firms using income-increasing discretionary accruals and it is concluded that firms with CEO duality uses more income-increasing earnings management.

Hypothesis 7b is supported only for firms using income-decreasing earnings management and it is concluded that

Big-4 limit the extent of income-decreasing discretionary accruals where it is more likely to be larger in case of CEO duality.

There is a positive relation between audit committee size and the extent of discretionary accruals, particularly, for Non-Big-4 firms using income-decreasing discretionary accruals. Similar to board size, small audit committee might not function effectively and is easier for the CEO to control.

Hypothesis 8 is supported only for Non-Big-4 firms using income-increasing earnings management and it is concluded that firms with larger audit committee and absence of high quality audit, in terms of Big-4, are more likely to use income-increasing earnings management.

There is a positive association between institutional ownership and the extent of quarterly discretionary accruals, consistent with Koh (2003) who argues that the relation between institutional ownership and earnings management changes in accordance with the level of institutional ownership and the short-term or long-term orientation of institutional owners and finds a positive association between institutional ownership and income-increasing discretionary accruals for short-term oriented institutional owners, a negative association for long-term oriented investors. Theoretically, as institutional investors are more sophisticated and experienced and they have more access to

timely and relevant information (Balsam et al., 2002) and therefore, they are more effective in controlling and monitoring of managements' activities than individual investors (Siregar and Utama, 2008). However, as Koh (2003) proposes, the monitoring and controlling ability of institutional owners are associated with short-term versus long-term investment orientation and the level of institutional ownership. In Turkey, institutional owners are private incorporated bodies held large fraction of firm shares; therefore they are more likely to be controlling shareholder. The primary reason of larger quarterly discretionary accruals for firms with institutional owners, particularly Big-4 firms using income-decreasing accruals is more likely because of the high ownership concentration of institutional owners.

Hypothesis 9a and Hypothesis 9b are not supported and it is concluded that the presence of institutional owner does not have a constraining role on earnings management and Big-4 do not mitigate the relation between institutional ownership and earnings management.

For both the ownership concentration and blockholdership, no associations have been found with the extent of discretionary accruals in constraining earnings management neither for Big-4 nor for Non-Big-4 firms. Turkish firms have concentrated ownership and concentrated ownership might be a controlling mechanism to monitor and discipline management and solve the agency problems (Grossman

and Hart, 1988) or conversely it might cause agency problem if the interest of controlling shareholder does not align with minority shareholders (Claessens et al., 2002). Similarly, blockholders' ability to exercise control over management is more likely to its level of engagement with firm's management. For the sample ISE firms, no relation has been observed neither between ownership concentration and earnings management, consistent with Sánchez-Ballesta and García-Meca (2007) and nor between blockholdership and earnings management, consistent with Beasley (1996), Xie et al. (2003) and Sánchez-Ballesta and García-Meca (2007).

Hypothesis 10 is not supported and it is concluded that there is no association between ownership concentration and earnings management.

Hypothesis 11 is not supported and it is concluded that there is no association between blockholdership and earnings management.

As it is presented in Table 22, Table 23 and Table 24 and detailed in section 6.2.3.3, the relation between corporate governance and earnings management changes over interim and fourth quarters, consistent with Yang and Krishan (2005). However, all of the corporate governance variables that are significant in prior regressions are significant in at least one quarter in the year and provide same sign for

coefficient estimates in all firm- quarters or for income-increasing and income-decreasing firms.

7.3 Contribution of the Study

This study has several contributions to literature. Among all, the main contribution of this thesis has been the depth investigation of the role of corporate governance on earnings management from different dimensions. First, the study provides evidence on the changing role of corporate governance mechanisms in accordance with the audit quality. Particularly corporate governance mechanisms' influence on discretionary accruals changes in accordance with the audit conducted by Big-4 and Non-Big-4 firms. Second, the study also provides evidence on the changing role of corporate governance mechanisms with the direction of earnings management; income-increasing and income-decreasing discretionary accruals, suggesting that while corporate governance mechanisms might be ineffective for income-increasing firms, they might significantly influence for income-decreasing firms, vice versa. Third, the study gives evidence on the changing role of corporate governance mechanisms over interim and fourth quarters. Therefore, it makes a significant contribution to existing literature, which evidence with contradictory findings. It is concluded that the relation between corporate governance mechanisms

and earnings management is not straightforward; it is highly associated with other factors, such as the quality of external audit firm, the financial quarters and the incentive of management to use income-increasing and income-decreasing discretionary accruals.

Additionally, this thesis contributes to both earnings management and corporate governance literature by evaluating the relative explanatory power of total accrual models in the estimation of quarterly discretionary accruals and by examining the relation between corporate governance and earnings management on a quarterly basis, which might give a sharper focus on the relation. Annual or yearly research designs misspecifies in measuring accruals based earnings management, because firms might use both income-increasing and income-decreasing discretionary accruals throughout the year which might offset each other in the year-end financial reports. Therefore, yearly estimation of discretionary accruals might fail to capture those discretionary accruals used in interim quarters. Studies examine the role of corporate governance on quarterly earnings management is very limited, particularly, as far as it is noticed that there is only one study conducted by Yang and Krishnan in 2005, which focuses on the role of audit committee composition and characteristics on quarterly earnings management. This study extends their study in two ways; first this study examines not only the role of audit committee it also examines the role of other corporate governance mechanisms including both board of

directors composition and the ownership structure on quarterly earnings management. Second, it uses quarterly data for corporate governance variables rather than considering the corporate governance structure of firms is fixed throughout the year as in Yang and Krishnan (2005).

Moreover, in the view of the limited literature in Turkey regarding the effectiveness of corporate governance, particularly the absence of studies examining its role on discretionary accruals in Turkey, this study makes significant contribution to Turkish literature by providing empirical findings on the relation between corporate governance and earnings management. The contradictory results obtained from the existing studies conducted in Turkey and the research findings of this study increase the questions on the effectiveness of board of directors' composition and ownership structure in Turkey. As it is indicated in Chapter 2, as a developing code-law country with emerging capital markets, Turkey displays quite different institutional characteristics relative to developed countries. Corporate governance mechanisms are highly affected by the legal system and capital market law in the country and they change as a result of different institutional environments. Therefore, the findings of prior studies in developed countries are not sufficient to properly explain corporate governance mechanisms and their expected role in Turkey and the proposed corporate governance guidelines in developed countries might fail to fulfil their roles effectively in Turkish context. This study makes contribution to literature by

providing results on corporate governance and earnings management from an emerging economy. The findings of this study might direct regulators for further policy implications and enforcement mechanisms that fit with country's legal and institutional context.

Besides, this study makes also contribution to the quality of accounting numbers in post-IFRS period. However, the comparison of firms' earnings management practices is out of the scope of this thesis. The findings of the discretionary accruals provide evidence that ISE firms still use discretionary accruals after post-IFRS period, however the level of quarterly discretionary accruals are comparatively lower than pre-IFRSs period's discretionary accruals provided by Ayarlıoğlu (2007) and Yüksek Türk (2006), consistent with Prather-Kinsey et al. (2008) who argue that for code-law countries the mandatory use of IFRSs improves the quality of financial reporting and accounting numbers, which was relatively performs poor in pre-IFRS period. The findings of this study do not suggest that the quality of financial reporting in terms of earnings management is improved after post-IFRSs period, because of two reasons. First, earnings management studies are sensitive to total accrual models to estimate of discretionary accruals and second, this study uses a quarterly research design. Therefore, the comparison of the findings of this study with prior studies using other estimation methods (total accrual models) for discretionary accruals and annual research design does not provide accurate results.

Moreover, this study contributes to audit quality literature, that Big-4, audit firm tenure and industry specialisation are proper proxies of audit quality. Higher audit quality in terms of Big-4, audit firms tenure and industry specialisation reduce quarterly discretionary accruals and limit management's opportunistic behaviour. Therefore, the findings also suggest that auditing is an important external corporate governance and enforcement mechanism that contains discretion over reported earnings and the quality of external audit does matter in fulfilling its roles. However, the role of audit quality on earnings management changes again in accordance with the direction of earnings management and financial quarters.

Furthermore, this study contributes to corporate governance literature by providing evidence on the relation between internal corporate governance mechanisms and audit firm choice suggesting that firms' auditor choice in terms of Big-4 and industry specialist audit firms highly associated with board of director's composition and ownership structure.

7.4 Limitation of the Research

Although this research was conducted based on a strong theoretical background and research design it has some limitations, particularly, due to the nature of the research methodology and data constraints.

This study uses secondary data analysis to examine the hypothesis; therefore it suffers from the measurement and operationalisation of dependent and independent variables. First, this study uses discretionary accruals as dependent variable to measure the level of earnings management. Therefore, one of the main limitations of this research is the ability of the total accruals model employed to accurately estimate discretionary accruals. Although this study attempts to evaluate total accrual models considering the criticism made in prior studies and control for the deficiencies that might impair the estimation of discretionary accruals, total accruals model have limited ability to capture discretionary accruals.

Second, this research suffers from data constraints both for the estimation of discretionary accruals and collecting corporate governance variables. In order to meet the estimation requirements of discretionary accruals industries with less than 10 firms were excluded from the sample, in which only eight industries left to conduct the research. Among sample firms, the board of directors' composition and

ownership structure was limited and displayed a narrow concentration. Among all firm quarters only 14% of firms (305 out of 2135 firm-quarters and only 28 firms) did have independent directors in the board, which might lead a lack of statistical power in the experimental design. Due to the lack of reliable database for board of directors' and ownership structure in Turkey and limited number of firm-quarters observations and listed firms, the generalisability of the findings is limited to all listed firms in ISE.

Third, the average adjusted R-square of the multiple regressions that examine the role of corporate governance variables on earnings management is approximately 20% for the full sample, which indicates that on average 80% of the variation in discretionary accruals cannot be explained by the independent explanatory and control variables used in the regression model.

7.5 Recommendation for Further Research

This study covers a comprehensive research topic which aims to examine the relation among corporate governance, earnings management and audit quality. The literature on corporate governance, earnings management and audit quality provide researchers various

further research opportunities, since the relation among them is sensitive and changes in different circumstances.

This research provides evidence on the changing role of corporate governance on earnings management in accordance with audit quality, earnings management direction and the financial quarters. It might be extended in several ways. First, as another research topic, quarterly earnings management of ISE firms might be examined by matching the firms in accordance to the qualified and unqualified auditors opinions or corporate crime announcements by capital markets boards. Second, this study might be extended through the use of alternative audit quality measures by collecting primary data directly from auditors. Third, a depth analysis might be conducted to reveal possible reasons of this changing role of corporate governance over quarters and for income-increasing and income decreasing firms by observing the earnings patterns of firms and collection corporate governance data by a primary research design. Moreover, quarterly earnings management incentives of management might be examined as a separate study.

REFERENCES

- Abarbanell, Jeffery and Reuven Leavy. 2003. "Can Stock Recommendations Predict Earnings Management and Analysts' Earnings Forecast Errors?", *Journal of Accounting Research*, 41(1), 1-31.
- Abbott, Lawrence J., Young Park, and Susan Parker. 2000. "The Effects of Audit Committee Activity and Independence on Corporate Fraud", *Managerial Finance*, 26(11), 55-66.
- Abbott, Lawrence J., Susan Parker and Gary F. Peters. 2004. "Audit Committee Characteristics and Restatements", *Auditing: A Journal of Practice & Theory*, 23(1), 69-87.
- Adyemi, Semiu B. and Temitope O. Fagbemi, 2010. "Audit Quality, Corporate Governance and Firms Characteristics in Nigeria", *International Journal of Business and Management*, 5(5), 169-179.
- Agrawal, Anup and Sahiba Chadha. 2005. "Corporate Governance and Accounting Scandal", *Journal of Law and Economics*, 48(2), 371-406.

- Ahmed, Anwer S, Michael J. Neel and Dechun Wang. 2010. "Does Mandatory Adoption of IFRS improve Accounting Quality? Preliminary Evidence", Working Paper, [online] [Accessed on 27 June 2010]
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1502909
- Al-Fayoumi, Nedal, Bana Abuzayed and David Alexander. 2010, "Ownership Structure and Earnings Management in Emerging Markets: the Case of Jordan", *International Research Journal of Finance and Economics*, 38, 28-47.
- Anderson, Don, Jere R. Francis and Donald J. Stokes. 1993. "Auditing, Directorships and the Demand for Monitoring", *Journal of Accounting and Public Policy*, 12(4), 353-375.
- Ararat, Melsa, Hakan Orbay and B. Burcin Yurtoğlu. 2010. "The Effects of Board Independence in Controlled Firms: Evidence from Turkey", Working Paper, [online] [Accessed on 20 September 2010]
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1663403
- Archibald, T. Ross. 1967. "The Return to Straight-Line Depreciation: An Analysis of A Change in Accounting Method", *Journal of Accounting Research*, 5(Supplement), 164-180.
- Arıkan Yahya and Cengiz Toroman. 2007. "The Development of the CPA Profession in Turkey", The Balkan Countries' 1st International Conference on Accounting and Auditing, 8-9 March 2007, Edirne, Turkey, [online] [Accessed on 01 September 2010]
http://www.mufad.org/index.php?option=com_docman&task=doc_details&gid=30&Itemid=100
- Arrunada, Benito and Candido Paz-Ares. 1997. "Mandatory Rotation of Company Auditors: A Critical Examination", *International Review of Law and Economics*, 17(1), 31-61.
- Arslan, Özgür, Mehmet Baha Karan and Cihan Ekşi. 2010. "Board Structure and Corporate Performance", *Managing Global Transitions*, 8(1), 3-22.

- Ashbaugh, Hollis, Ryan LaFond and Bryan W. Mayhew. 2003. "Do Nonaudit Services compromise Auditor Independence? Further Evidence", *The Accounting Review*, 78(3), 611-639.
- Ayarlıoğlu, Mehmet Akif. 2007. "Kar Yönetimi Uygulamaları ve İstanbul Menkul Kıymetler Borsası'nda Test Edilmesi" (Applications of earnings management and its detection in Istanbul Stock Exchange), Unpublished PhD Thesis, Hacettepe Üniversitesi, Türkiye.
- Ayers, Benjamin C. 1998. "Deferred Tax Accounting Under SFAS No. 109: An Empirical Investigation of its Incremental Value-relevance Relative to APB No. 11", *The Accounting Review*, 73(2), 195-212.
- Ball, Ray, Ashok Robin and Joanna Shuang Wu. 2003. "Incentives versus Standards: Properties of Accounting Income in Four East Asian Countries", *Journal of Accounting and Economics*, 36(1-3), 235-270.
- Balsam, Steven, Eli Bartov and Caril Marquardt. 2002. "Accruals management, investor sophistication, and equity valuation: Evidence from Form 10-Q Filings," *Journal of Accounting Research*, 40(4), 987-1012.
- Balsam, Steven, Jagan Krishnan and Joon S. Yang. 2003. "Auditor Industry Specialization and Earnings Quality", *Auditing: A Journal of Practice & Theory*, 22(2), 61-96.
- Balsarı, Çağnur Kaytmaz, Serdar Özkan and Can Secer. 2009. "Financial Statement Effects of Adopting IFRS in Turkey: the Mediating Effect of Inflation Accounting", *Journal of International Finance and Economics*, 9(5), 55-68.
- Barclay, Michael. J. and Clifford W. Smith Jr. 1995. "The Maturity Structure of Corporate Debt", *Journal of Finance*, 50(2), 609-31.
- Barefield, Russell M. and Eugene E. Comiskey. 1972. "The Smoothing Hypothesis: An Alternative Test". *The Accounting Review*, 47 (April), 291-298.

- Barth, Mary E., Wayne R. Landsman and Mark H. Lang. 2008. "International Accounting Standards and Accounting Quality", *Journal of Accounting Research*, 46(3), 467-498.
- Bartov, Eli, Ferdinand A. Gul and Judy S. L. Tsui. 2001. "Discretionary-accruals Models and Audit Qualifications", *Journal of Accounting and Economics*, 30(3), 421-452.
- Bauguess, Scott W. and et al. 2009. "Ownership Structure and Target Returns", *Journal of Corporate Finance*, 15(1), 48-65.
- Bauman, Christine C., Mark P. Bauman and Robert F. Halsey. 2001. "Do Firms Use the Deferred Tax Asset Valuation Allowance to Manage Earnings?", *Journal of the American Taxation Association*, 23(1), 27-48.
- Beasley, Mark S. 1996. "An Empirical Analysis of the Relation between the Board of Directors and Financial Report Fraud", *The Accounting Review*, 71(4), 443-465.
- Beatty, Anne, Sandra L. Chamberlain and Joseph Magliolo. 1995. "Managing Financial Reports of Commercial Banks: The Influence of Taxes, Regulatory Capital and Earnings", *Journal of Accounting Research*, 33(2), 231-261.
- Becker, Connie L. and et al. 1998. "The Effect of Audit Quality on Earnings Management", *Contemporary Accounting Research*, 15(1), 1-24.
- Benkel, Mark, Paul Mather and Alan Ramsay. 2006. "The Association between Corporate Governance and Earnings Management: The Role of Independent Directors", *Corporate Ownership and Control*, 3(4), 65-65.
- Blue Ribbon Committee. 1999. Report and Recommendations of Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees, [online] [Accessed on 07 September 2010] www.nasdaq.com/about/Blue_Ribbon_Panel.pdf

- Bowen, Robert M., Shivaram Rajgopal and Mohan Venkatachalam. 2008. "Accounting Discretion, Corporate Governance and Firm Performance", *Contemporary Accounting Research*, 25(2), 351-405.
- Bradbury, Michael, Yuen Teen Mak and S.M. Tan. 2006. "Board Characteristics, Audit Committee Characteristics and Abnormal Accruals", *Pacific Accounting Review*, 18(2), 47-68.
- Bugshan, Turki. 2005. "Corporate Governance, Earnings Management, and the Information content of Accounting Earnings: Theoretical Model and Empirical tests", Unpublished Ph.D. Thesis, Bond University, Australia.
- Burgstahler, David and Ilia Dichev. 1997. "Earnings Management to Avoid Earnings Decreases and Losses", *Journal of Accounting and Economics*, 24(1), 99-126.
- Cadbury Committee. 1992. "Report of the Committee on the Financial Aspects of Corporate Governance", [online] [Accessed on 07 September 2010] www.uksa.org.uk/Corporate_Governance_Cadbury_1992.pdf
- Cahan, Steven F. 1992. "The Effect of Antitrust Investigations on Discretionary Accruals: A Refined Test of The Political Cost Hypothesis", *The Accounting Review*, 67(1), 77-95.
- Capital Markets Board (CMB). 2002. "Communiqué on Independent Audit in Capital Markets (Serial: X, No:16)", [online] [Accessed on 07 September 2010] <http://spk.gov.tr/apps/teblig/index.aspx?lang=T&submenuheader=-1>
- Capital Markets Board (CMB). 2003a. "Corporate Governance Principles", [online] [Accessed on 09 July 2010] <http://www.spk.gov.tr/indexcont.aspx?action=showpage&menuid=10&pid=0>

- Capital Markets Board (CMB). 2003b. "Communiqué on Accounting Standards in Capital Markets. (Serial: XI, No: 25)", [online] [Accessed on 07 September 2010] <http://spk.gov.tr/apps/teblig/index.aspx?lang=T&submenuheader=-1>
- Capital Markets Board (CMB). 2006. "Communiqué on Independent Auditing Standards in Capital Markets (Serial:X, No:22)", [online] [Accessed on 07 September 2010] <http://spk.gov.tr/apps/teblig/index.aspx?lang=T&submenuheader=-1>
- Capital Markets Board (CMB). 2008. "Communiqué on Principles for the Financial Reporting in Capital Markets. (Serial: XI, No: 29)". [online] [Accessed on 07 September 2010] <http://spk.gov.tr/apps/teblig/index.aspx?lang=T&submenuheader=-1>
- Capital Markets Board (CMB). 2010. "International Economic and Financial Indicators June-2010", [online] [Accessed on 11 September 2010] <http://www.spk.gov.tr/indexcont.aspx?action=showpage&menuid=9&pid=2&submenuheader=-1>
- Cazier Richard and et al. 2010. "Did FIN 48 Stop "Last Chance" Earnings Management through Tax Reserves?", Working Paper, [online] [Accessed on 20 July 2010] tippie.uiowa.edu/accounting/mcgladrey/pdf/wilson2.pdf
- Chen, Chih-Ying, Chan-Jane Lin and Yu-Chen Lin. 2008. "Audit Partner Tenure, Audit Firm Tenure, and Discretionary Accruals: Does Long Auditor Tenure Impair Earnings Quality?", *Contemporary Accounting Research*, 25(2), 415-445.
- Chen, Gongmeng and et al. 2006. "Ownership Structure, Corporate Governance and Fraud: Evidence from China", *Journal of Corporate Finance*, 12(3), 424-448.
- Chen, Huifa and et al. 2010. "The Role of International Financial Reporting Standards in Accounting Quality: Evidence from the European Union", *Journal of International Financial Management & Accounting*, 21(3), 220-278.

- Christensen, Hans B., Edward Lee and Martin Walker. 2008. "Incentives or Standards: What determines Accounting Quality Changes around IFRS Adoption?", Working paper, [online] [Accessed on 27 June 2010] <http://www.mbs.ac.uk/research/analysisinvestment/documents/ChristensenLeeWalker2008-IncentivesStandards.pdf>
- Christie, Andrew A. and Jerold L. Zimmerman. 1994. "Efficient and Opportunistic Choices of Accounting Procedures: Corporate Control Contests", *The Accounting Review*, 69(4), 539-566.
- Chtourou, Sonda Marakkchi, Jean Bedard and Lucie Courteau. 2001. "Corporate Governance and Earnings Management", Working paper, [online] [Accessed on 23 February 2010]. <http://aaahq.org/audit/midyear/02midyear/papers/Governance-earnings-Mgt.pdf>
- Chung, Hyeesoo and Sanjay Kallapur. 2003. "Client Importance, Nonaudit Services, and Abnormal Accruals", *The Accounting Review*, 78(4), 931-55.
- Chung, Richard, Michael Firth and Jeong-Bon Kim. 2002. "Institutional Monitoring and Opportunistic Earnings Management", *Journal of Corporate Finance*, 8(1), 29-48.
- Chung, Richard, Michael Firth and Jeong-Bon Kim. 2003. "Auditor Conservatism and Reported Earnings", *Accounting and Business Research*. 33(1), 19-32.
- Claessens, Stijn and et al. 2002. "Disentangling the Incentive and Entrenchment Effects of Large Shareholdings", *Journal of Finance*, 57(6), 2741-2771.
- Collins, William A., William S. Hopwood and James C. McKeown. 1984. "The Predictability of Interim Earnings over Alternative Quarters", *Journal of Accounting Research*, 22(2), 467-479.

- Cornett, Marcia M., Alan J. Marcus and Hassan Tehranian. 2008. "Corporate Governance and Pay-for-performance: The Impact of Earnings Management", *Journal of Financial Economics*, 87(2), 357-373.
- Cornett, Marcia M., Jamie J. McNutt and Hassan Tehranian. 2009. "Corporate Governance and Earnings Management at Large U.S. Bank Holding Companies", *Journal of Corporate Finance*, 15(4), 412-430.
- Dalton, Dan R. and et al. 1999. "Number of Directors and Financial Performance: A Meta-analysis", *Academy of Management Journal*, 42(6), 664-686.
- Das, Somnath, Pervin K. Shroff and Haiwen Zhang. 2009. "Quarterly Earnings Patterns and Earnings Management", *Contemporary Accounting Research*, 26(3), 797-831.
- Davidson, Ronal A. and Dean Neu. 1993. "A Note on Association Between Audit Firm Size and Audit Quality", *Contemporary Accounting Research*, 9(2), 479-488.
- Davidson, Ryan, Jenny Goodwin-Stewart and Pamela Kent. 2005. "Internal Governance Structures and Earnings Management", *Accounting and Finance*, 45(2), 241-266.
- Davidson, Sidney, Clyde P. Stickney and Roman L. Weil. 1987. "Accounting: The Language of Business", in Schipper, Kathrine. 1989. "Earnings management", *Accounting Horizons*, 3(4), 91-102.
- Davis, Larry R., Soo, Billy S. and Gregory M. Trompeter. 2010. "Auditor Tenure and the Ability to Meet or Beat Earnings Forecasts", *Contemporary Accounting Research*, 26(2), 517- 548.
- DeAngelo, Harry, Linda DeAngelo and Douglas J. Skinner. 1994. "Accounting Choice in Troubled Companies", *Journal of Accounting and Economics*, 17(1-2), 113-144.

- DeAngelo, Linda E. 1981a. "Auditor Size and Audit Quality", *Journal of Accounting and Economics*, 3(3), 183-199.
- DeAngelo, Linda E. 1981b. "Auditor Independence, low-balling, and Disclosure Regulation", *Journal of Accounting and Economics*, 3(2), 113-127.
- DeAngelo, Linda E. 1986. "Accounting Numbers as Market Valuation Substitutes: A Study of Management Buyouts of Public Stockholders", *The Accounting Review*, 61(3), 400-420.
- DeBos, Auke de and Han Donker. 2004. "Monitoring Accounting Changes: Empirical Evidence from the Netherlands", *Corporate Governance: An International Review*, 12(1), 60-73.
- Dechow, Patricia M. and Richard G. Sloan 1991. "Executive Incentives and the Horizon Problem: an Empirical Investigation", *Journal of Accounting and Economics*, 14(1), 51-89.
- Dechow, Patricia M., Richard G. Sloan, and Amy P. Sweeney. 1995. "Detecting Earnings Management", *The Accounting Review*, 60(2), 193-225.
- Dechow, Patricia M., Richard G. Sloan, and Amy P. Sweeney. 1996. "Causes and Consequences of Earnings Manipulation: An Analysis of Firms subject to Enforcement Actions by the SEC", *Contemporary Accounting Review*, 13(1), 1-36.
- Dechow, Patricia M. and Douglas J. Skinner. 2000. "Earnings Management: Reconciling the Views of Accounting Academics", Practitioners, and Regulators", *Accounting Horizons*, 14(2), 235-250.
- Dechow, Patricia M., Scott A. Richardson and Irem Tuna 2003. "Why Are Earnings Kinky? An Examination of the Earnings Management Explanation", *Review of Accounting Studies*, 8(2-3), 355-384.

- DeFond, Mark L., and James Jiambalvo. 1994. "Debt Covenant Violation and the Manipulation of Accruals", *Journal of Accounting and Economics*, 17 (1-2), 145-176.
- DeFond, Mark L., Jere J. Francis, and Tak J. Wong. 2000. "Auditor Industry Specialization and Market Segmentation: Evidence from Hong Kong", *Auditing: A Journal of Practice & Theory*, 19(1), 49-66.
- DeFond, Mark L. 2002. "Do Non-Audit Service Fees Impair Auditor Independence? Evidence from Going Concern Audit Opinions", *Journal of Accounting Research*, 40(4), 1247-1274.
- DeFond, Mark L., and Jere J. Francis. 2005. "Auditing Research after Sarbanes-Oxley", *Auditing: A Journal of Practice & Theory*, 25(1), 5-30.
- Degeorge, François, Jayendu Patel and Richard Zeckhauser. 1999. "Earnings Management to exceed Thresholds", *Journal of Business* 72(1), 1-33.
- Deloitte (2009). "Modern Dunyaya Ayak Uyduran Yonetim Kurullari (Board of Directors' kept pace with Modern World)", [online] [Accessed on 27 September 2010] www.deloitte.com/.../Turkey-tr_ceo_YonetimKuruluanketi_230209.pdf
- Demirag, Istemi and Mehmet Serter. 2003. "Ownership Patterns and Control in Turkish Listed Companies", *Corporate Governance: An International Review*, 11(1), 40-51.
- Demsetz, Harrold and Kenneth Lehn. 1985. "The Structure of Corporate Ownership: Causes and Consequences", *The Journal of Political Economy*, 93(6), 1155-1177.
- Dennis, Diane K. and John J. McConnell. 2003. "International Corporate Governance", *Journal of Financial and Quantitative Analysis*, 38(1), 1-36.

- Dhaliwal, Dan S., Cristi A. Gleason and Lillian F. Mills. 2004. "Last Chance Earnings Management: Using the Tax Expense to meet Analysts' Forecasts", *Contemporary Accounting Research*, 21(2), 431-459.
- Ding, Yuan, Hua Zang and Junxi Zhang. 2007. "Private vs. State Ownership and Earnings Management: Evidence from Chinese Listed Companies", *Corporate Governance: An International Review*, 15(2), 223-238.
- Durukan, M. Banu, Serdar Özkan, and A. Fatih Dalkılıç. 2009. "The Effectiveness of The Turkish Corporate Governance System: CEO Changes and Performance Measures", Working paper, [online] [Accessed on 06 October, 2009] http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1405251
- Dye, Ronald A. 1993. "Auditing Standards, Legal Liability, and Auditor Wealth", *The Journal of Political Economy*, 101(5), 887-914.
- Ebrahim, Ahmed 2002. "Auditing Quality, Auditor Tenure, Client Importance, and Earnings Management: An Additional Evidence", American Accounting Association Auditing Section Midyear Conference, Orlando, Florida, United States, [online] [Accessed on 05 May 2010] <http://aaahq.org/audit/midyear/02midyear/papers/Auditing%20Conference%20Paper.pdf>)
- Elitaş, Cemal and Mustafa Üç. 2009. "The Change on the Foundations of the Turkish Accounting System and the Future Perspective", *Critical Perspectives on Accounting*, 20(5), 674-679.
- Elliott, John A. and Wayne E. Shaw. 1988. "Write-offs as Accounting Procedures to Manage Perceptions", *Journal of Accounting Research*, 26 (Supplement), 91-119.
- Elliott, John A. and J. Douglas Hanna. 1996. "Repeated Accounting Write-offs and the Information Content of Earnings", *Journal of Accounting Research*, 34 (Supplement): 135-155.

- Erickson, Merle and Shiing-Wu Wang. 1999. "Earnings Management by Acquiring Firms in Stock for Stock Mergers", *Journal of Accounting and Economics*, 27(2), 149-176.
- European Union (EU). 2006. "European Union 8th Directive on Company Law, Directive 2006/43/EC" [online] [Accessed on 05 August 2010] <http://www.8th-company-law-directive.com/8thCompanyLaw.htm>
- Fama, Eugene F. and James D. MacBeth. 1973. "Risk, Return, and Equilibrium: Empirical Tests", *The Journal of Political Economy*, 81(3), 607-636.
- Fama, Eugene F. and Michael C. Jensen. 1983. "Separation of Ownership and Control", *Journal of Law and Economics*, 26(2), 301-25.
- Francis, Jennifer and et al. 2004 "Costs of Equity and Earnings Attributes", *The Accounting Review*, 79(4), 967-1010.
- Francis, Jere R., Edward L. Maydew and H. Charles Sparks. 1999. "The Role of Big 6 auditors in the Credible Reporting of Accruals", *Auditing: A Journal of Practice & Theory*, 18(2), 16-34.
- Frankel, Marilyn F., Karen K. Johnson and Richard M. Nelson. 2002. "The Relation between Auditors' Fees for Nonaudit Services and Earnings Management", *The Accounting Review*, 77(Supplement), 71-105.
- Gabrielsen, Gorm, Jeffrey D. Gramlich and Thomas Plenborg. 2002. "Managerial Ownership, Information Content of Earnings, and Discretionary Accruals in a Non-US Setting", *Journal of Business, Finance and Accounting*, 29(7-8), 967-988.
- García-Lara, Juan Manuel, Beatriz García-Osma and Araceli Mora. 2005. "The Effect of Earnings Management on the Asymmetric Timeliness of Earnings", *Journal of Business Finance & Accounting*, 32(3-4), 691-726.

- García-Meca, Emma and Juan P. Sánchez-Ballesta. 2009. "Corporate Governance and Earnings Management: A Meta-Analysis", *Corporate Governance: An International Review*, 17(5), 594-610.
- García-Osma, Beatriz. 2006. "Earnings Quality, Auditor Monitoring and Corporate Governance Mechanisms", Unpublished PhD Thesis, Lancaster University, United Kingdom.
- García-Osma, Beatriz. 2008. "Board Independence and Real Earnings Management: The Case of R&D Expenditure", *Corporate Governance: An International Review*, 16(2), 116-131.
- García-Osma, Beatriz and Peter F. Pope. 2009. "Earnings Quality Effects of Mandatory IFRS Adoption", Working Paper, Lancaster University.
- Geiger, Marshall A. and Kannan Raghunandan. 2002. "Auditor Tenure and Audit Reporting Failures", *Auditing: A Journal of Practice & Theory*, 21 (1), 67-78.
- Gillan, Stuart L. 2006. "Recent Developments in Corporate Governance: An Overview", *Journal of Corporate Finance*, 12(3), 381-402.
- Givoly, Dan and Joshua Ronen. 1981. "Smoothing Manifestations in fourth quarter Results of Operations: Some Empirical Evidence", *ABACUS*, 17 (2), 174-93.
- Gow, Ian Drummond, Gaizka Ormazabal and Daniel Taylor. 2007. "Correcting for Cross-Sectional and Time-Series Dependence in Accounting Research", Working Paper, [online] [Accessed on 05 September 2010] www.stanford.edu/~igow/GOT/GOT_2007-10-29.pdf
- Grossman, Sanford J. and Oliver D. Hart. 1988. "One Share-One Vote and the Market for Corporate Control", *Journal of Financial Economics*, 20(1-2), 175-202.

- Guenther, David A. 1994. "Earnings Management in Response to Corporate Tax Rate Changes", *The Accounting Review*, 69(1), 230-243.
- Gul, Ferdinand A., Stephen J. Lynn and Judy S. L. Tsui. 2002. "Audit Quality, Management Ownership, and the Informativeness of Accounting Earnings", *Journal of Accounting, Auditing and Finance*, 17, 25-49.
- Gul, Ferdinand A., Bikki L. Jaggi and Gopal V. Krishnan. 2007. "Auditor Independence: Evidence on the Joint Effects of Auditor Tenure and Nonaudit Fees", *Auditing: A Journal of Practice & Theory*, 26(2), 117-142.
- Gunny, Katherine, John Jacob and Bjorn N. Jorgensen. 2008. "Earnings Attributes of Alternate Annual Reporting Periods", American Accounting Association 2008 Financial Accounting and Reporting Section (FARS) Paper, [online] [Accessed on 05 May, 2010] http://papers.ssrn.com/sol3/papers.cfm?abstract_id=992068#
- Gupta, Manu, Inder K. Khurana and Raynolde Pereira. 2008. "Legal Enforcement, Short Maturity Debt, and the Incentive to Manage Earnings", *The Journal of Law and Economics*, 51(4), 619-639.
- Gürsoy, Güner and Kürşat Aydoğan. 2002. "Equity Ownership Structure, Risk Taking, and Performance", *Emerging Markets Finance and Trade*, 38(6), 6-25.
- Hacımahmutoğlu, Sibel. 2007. "The Problems of Minority Protection and their Solutions within the Legal Framework", *Journal of Banking Regulation*, 8(2), 131-158.
- Hampel Committee. 1998. "Final Report on Corporate Governance", [online] [Accessed on 07 September 2010] http://www.ecgi.org/codes/documents/hampel_index.htm
- Han, Jerry C. Y. and Shiing-Wu Wang. 1998. "Political Costs and Earnings Management of Oil Companies during the 1990 Persian Gulf Crisis", *The Accounting Review*, 63(1), 103-16.

- Hartzell, Jay C. and Laura T. Starks. 2003. "Institutional Investors and Executive Compensation", *Journal of Finance*, 58(6), 2351-2375.
- Haw, In-Mu and et al. 2004. "Ultimate Ownership, Income Management, and Legal and Extra-Legal Institutions", *Journal of Accounting Research*, 42(2), 423-462.
- Healy, Paul M. 1985. "The Effect of Bonus Schemes on Accounting Decisions", *Journal of Accounting and Economics*, 7(1-3), 85-107.
- Healy, Paul M. and James M. Wahlen. 1999. "A Review of the Earnings Management Literature and Its Implications for Standard Setting", *Accounting Horizons*, 13(4), 365-383.
- Hermanson, Dana R 2003. "Does Corporate Governance really matter? What the Research tells us", *Internal Auditing*, 18(2), 44-45.
- Hirschman, Albert O. 1964. "The Paternity of an Index", *American Economic Review*, 54(5), 761.
- Holthausen, Robert W., David F. Larcker and Richard G. Sloan. 1995. "Annual Bonus Schemes and the Manipulation of Earnings", *Journal of Accounting and Economics*, 19(1), 29-74.
- Hribar, Paul and Daniel W. Collins. 2002. "Errors in Estimating Accruals: Implications for Empirical Research", *Journal of Accounting Research*, 40(1), 105-134.
- Hsiao, Cheng. 2005. "Why panel data?" *The Singapore Economic Review*, 50(2), 143-154.
- Institute of International Finance (IIF). 2005. "Corporate Governance in Turkey, an Investor Perspective", [online] [Accessed on 01 September 2010] www.goodprogram.org/docs/IIFCorpGovTurkey_0405.pdf

- International Accounting Standards Board. (IASB). 2010. International Financial Reporting Standards, Framework. London: IASCF Publications Department.
- Jackson, Scott B. and Marshall K. Pitman. 2001. "Auditors and Earnings Management", *The CPA Journal*, 61(6), 39-44.
- Jacob, John and Bjorn N. Jorgensen. 2007. "Earnings Management and Accounting Income Aggregation", *Journal of Accounting and Economics*, 43(2-3), 369-390.
- Jaggi, Bikki, Sidney Leung and Ferdinand Gul. 2009. "Family Control, Board Independence and Earnings Management: Evidence based on Hong Kong Firms", *Journal of Accounting and Public Policy*, 28(4), 281-300.
- Jaime, José J. Alcarria and Belén Gill de Albornoz Nouger. 2004. "Specification and Power of Cross-sectional Abnormal Working Capital Accruals Models in the Spanish Context", *European Accounting Review*, 13(1), 73-104.
- Jeanjean, Thomas, Cédric Lesage and Hervé Stolowy. 2010. "Why do you speak English (in your financial statements)?", *International Journal of Accounting*, 45(2), 200-223.
- Jensen, Michael C. 1986. "Agency Costs of free Cash Flow, Corporate Finance and Takeovers", *American Economic Review*, 76(2), 323-329
- Jensen, Michael C. 1993. "The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems", *The Journal of Finance*, 48 (3), 831-80.
- Jensen, Michael C. and William H. Meckling. 1976. "Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure", *Journal of Financial Economics*, 3(4), 305-360.

- Jeter, Debra C. and Lakshmanan Shivakumar. 1999. "Cross-sectional Estimation of Abnormal Accruals using Quarterly and Annual data: Effectiveness in Detecting event-specific Earnings Management", *Accounting and Business Research*, 29(4), 299-319.
- Jiambalvo, James, Rajgopal, Shivaram and Mohan Venkatachalam. 2002. "Institutional Ownership and the Extent to which Stock Prices Reflect Future Earnings", *Contemporary Accounting Research*, 19(1), 117-136.
- Jiraporn, Pornsit and Kimberly C. Gleason, K.C. 2007. "Delaware Incorporation and Earnings management: An Empirical Analysis", *Journal of Applied Finance*, 17, 40-51.
- Johnson, Simon and et al. 2000. "Tunneling", *The American Economic Review*, 90(2), 22-27.
- Johnson Van. E., Inder K. Khurana and J. Kenneth Reynolds. 2002. "Audit-firm Tenure and the Quality of Financial Reports", *Contemporary Accounting Research*, 19 (4), 637-660.
- Jones, Jennifer J. 1991. "Earnings Management during Import Relief Investigation", *Journal of Accounting Research*, 29(2), 193-228.
- Jones, Keith L., Gopal V. Krishnan and Kevin D. Meleudrez. 2008. "Do Models of Discretionary Accruals Detect Actual Cases of Fraudulent and Restated Earnings? An Empirical Analysis", *Contemporary Accounting Research*, 25(2), 499-531.
- Kang, Sok-Hyon and Kartik Sivaramakrishnan. 1995. "Issues in Testing Earnings Management and an Instrumental Variable Approach", *Journal of Accounting Research*, 33(2), 353-367.
- Karathanassis, George and Evangelia Chrysanthopoulou, E.C. 2006. "The relationship Between Ownership Structure and Corporate Dividend Policy – Evidence from the Athens Stock Exchange", Working paper, [online] [Accessed on 13 October, 2009] http://papers.ssrn.com/sol3/papers.cfm?abstract_id=813024

- Kazsnik, Ron. 1999. "On the Association between Voluntary Disclosure and Earnings Management", *Journal of Accounting Research*, 36(1), 56-81.
- Kim, Jeong-Bon and Cheung H. Yi. 2006. "Ownership Structure, Business Group Affiliation, Listing Status, and Earnings Management: Evidence from Korea", *Contemporary Accounting Research*, 23(2), 427-464.
- Kim, Jeong-Bon and Cheung H. Yi. 2009. "Does Auditor Designation by the Regulatory Authority Improve Audit Quality? Evidence from Korea", *Journal of Accounting and Public Policy*, 28(3), 207-230.
- Kim, Hyo Jin and Soon Suk Yoon. 2008. "The Impact of Corporate Governance on Earnings Management in Korea", *Malaysian Accounting Review*, 6(1), 43-59
- Kim, Yangseon, Caixing Liu and S. Ghon Rhee. 2003. "The Relation of Earnings Management to Firm Size", Working Paper, [online] [Accessed on 01 September 2010] www2.hawaii.edu/~fima/PDF/Finance_Seminar/EarningsMgmt.pdf
- Klein, April. 2002. "Audit Committee, Board of Director Characteristics, and Earnings Management", *Journal of Accounting and Economics*, 33(3), 365-400.
- Koh, Ping-Sheng. 2003. "On the Association between Institutional Ownership and Aggressive Corporate Earnings Management in Australia", *British Accounting Review*, 35(2), 105-128.
- Kothari, S. P., Andrew J. Leone and Charles E. Wasley. 2005. "Performance matched Discretionary Accrual Measures", *Journal of Accounting and Economics*, 39(1), 63-196.
- Krishnan, Gopal V. 2003. "Does Big 6 Auditor Industry Expertise constrain Earnings Management?", *Accounting Horizons*, 17(1), 1-16.

- Larcker, David F. and Scott A. Richardson 2004. "Fees Paid to Audit Firms, Accrual Choices, and Corporate Governance", *Journal of Accounting Research*, 42(3), 625-658.
- LaPorta, Rafael and et al. 1999. "Corporate Ownership around the World", *The Journal of Finance*, 58(1-2), 3-27.
- Laux, Judith A. 2003. "Earnings Management: Friend or Foe?", *Journal of Business & Economics Research*, 1(11), 73-76.
- Leuz Christian, Dhananjay Nanda and Peter D Wysocki. 2003. "Earnings Management and Investor Protection: An International Comparison", *Journal of Financial Economics*, 69(3), 505-526.
- Leuz, Christian 2006. "Cross Listing, Bonding and Firms' Reporting Incentives: A discussion of Lang, Raedy and Wilson (2006)", *Journal of Accounting and Economics*, 42(1-2), 285-299.
- Levitt, Arthur. 1998. "The Numbers Game", Speech Delivered at the NYU Centre for Law and Business, New York, Working paper, [online] [Accessed on 21 April, 2008] <http://www.sec.gov/news/speeches/spch220.txt>
- Libby, Robert and William R. Kinney. 2000. "Does Mandated Audit Communication Reduce Opportunistic Corrections to Manage Earnings to Forecasts?", *The Accounting Review*, 75(4), 383-404.
- Liftschutz, Shilo, Ariet Jacobi and Shlomit Feldshtein 2010. "Corporate Governance Characteristics and External Audit Fees: A Study of Large Public Companies in Israel", *International Journal of Business Management*, 5(3), 109-116.
- Lin, Jerry W and Mark I. Hwang, 2009. "Audit Quality, Corporate Governance, and Earnings Management: A Meta-Analysis", *International Journal of Auditing*, 14 (1), 56-66.
- Lins, Karl V. 2003. "Equity Ownership and Firm Value in Emerging Markets", *Journal Financial Quantitative Analysis*, 38(1), 159-184.

- Liu, Chi-Chun, Stephen J. Ryan and James M. Wahlen. 1997. "Differential Valuation Implications of Loan Loss Provisions Across Banks and Fiscal Quarters", *The Accounting Review*, 72(1), 133-146.
- Makar, Stephen D. and Pervaiz Alam. 1998. "Earnings Management and Antitrust Investigations: Political Costs over Business Cycles", *Journal of Business Finance & Accounting*, 25(5-6), 71-720.
- Mangena, Musa and Venancio Tauringana. 2008. "Audit Committees and Voluntary External Auditor Involvement in UK Interim Reporting", *International Journal of Auditing*, 12(1), 45-63.
- Manry, David L., Samuel L. Tiras and Clark M. Wheatley. 2003. "The Influence of Interim Auditor Reviews on the Association of Returns with Earnings", *The Accounting Review*, 68(1), 251-264.
- Manry, David L., Theodore J. Mock and Jerry L. Turner. 2008. "Does Increased Audit Partner Tenure Reduce Audit Quality?", *Journal of Accounting, Auditing, & Finance*, 23(4), 553-572.
- McMullen, Dorothy A. and Kannan Raghunandan. 1996. "Enhancing Audit Committee Effectiveness", *Journal of Accountancy*, August, 69-81.
- McNichols, Maureen and G.Peter Wilson. 1988. "Evidence of Earnings Management from the Provision for Bad Debts", *Journal of Accounting Research*, 26(Supplement), 1-40
- McNichols, Maureen F. 2000. Research Design Issues in Earnings Management Studies, *Journal of Accounting and Public Policy*, 19(4-5), 313-345.
- McNichols, Maureen F. 2002. "Discussion of the Quality of Accruals and Earnings: The Role of Accrual Estimation Errors", *The Accounting Review*, 77(1), 61-69.

- Mendenhall, Richards R. and William D. Nichols. 1988. "Bad news and Differential Market Reactions to Announcements of earlier-quarters versus fourth-quarter Earnings", *Journal of Accounting Research*, 26(Supplement), 63-86.
- Miller, Gregory S. and Douglas J. Skinner. 1998. "Determinants of the valuation allowance for deferred tax assets under SFAS No. 109", *The Accounting Review*, 73(2), 213-233.
- Mitra, Santanu. 2005. "Institutional Investors, Managerial Ownership and Accrual Management", *Journal of Forensic Accounting*, 6(1), 77-102.
- Mulford, Charles W. and Eugene E. Comiskey. 2002. *The Financial Numbers Game, Detecting Creative Accounting Practices*, New York: John Wiley & Sons, Inc.
- Myers James N., Linda A. Myers and Thomas C. Omer. 2003. "Exploring the Term of Auditor-client Relationship and the Quality of Earnings: A Case for Mandatory Auditor Rotation?", *The Accounting Review*, 78(3), 779-799.
- Palmrose, Zoe-Vonna. 1988. An Analysis of Auditor Litigation and Audit Service Quality, *The Accounting Review*, 64 (1)1, 55-73.
- Parfet, William U. 2000. "Accounting Subjectivity and Earnings Management: A Preparer Perspective", *Accounting Horizons*, 14(4), 481-488.
- Park, Yun W. and Hyun-Han Shin. 2004. "Board composition and earnings management in Canada", *Journal of Corporate Finance*, 10(3), 431-56.
- Peasnell, Ken. V, Peter. F. Pope and Steve Young. 2000. "Accrual Management to meet Earnings Targets: UK evidence pre- and post-Cadbury", *British Accounting Review*, 32(4), 415-445.

- Peasnell, Ken. V, Peter. F. Pope and Steve Young. 2005. "Board Monitoring and Earnings Management: Do Outside Directors Influence Abnormal Accruals?", *Journal of Business Finance & Accounting*, 32(7-8), 1311-1346.
- Petersen, Mitchell A. 2009. "Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches", *Review of Financial Studies*, 22(1), 435-480.
- Piot, Charles and Rémi Janin. 2006. "External Auditors, Audit Committees and Earnings Management in France", *European Accounting Review*, 16(2), 429-454.
- Pourciau, Susan. 1993. "Earnings Management and Non-Routine Executive Changes", *Journal of Accounting and Economics*, 16(1-3), 317-336.
- Pornupatham, Sompong. 2006. "An Empirical Examination of Earnings Management, Audit Quality and Corporate Governance in Thailand: Perceptions of Auditors and Audit Committee Members", Unpublished PhD Thesis, Cardiff University, United Kingdom.
- Prather-Kinsey, Jenice, Eva K. Jermakowicz and Thierry Vongphanith. 2008. "Capital Market Consequences of European Firms' Mandatory Adoption of IFRS", Working paper, [online] [Accessed on 21 April, 2008] www.business.illinois.edu/accountancy/research/.../Kinsey.pdf
- Ramanna, Karthik and Sugata Roychowdhury 2010. "Elections and Discretionary Accruals: Evidence from 2004", *Journal of Accounting Research*, 48(2), 445-475.
- Rangan, Srinivasan. 1998. "Earnings management and the performance of seasoned equity offerings", *Journal of Financial Economics*, 50(1), 101-122.
- Rangan, Srinivasan, and Richard G. Sloan. 1998. "Implications of the Integral Approach to Quarterly Reporting for the Post-Earnings Announcement Drift", *The Accounting Review*, 73(3), 553-571.

- Richardson, Scott, Irem Tuna, and Min Wu. 2002. "Predicting Earnings Management: the Case of Earnings Restatements", Working Paper, [online] [Accessed on 21 August, 2010] http://papers.ssrn.com/sol3/papers.cfm?abstract_id=338681
- Rodríguez-Pérez, Gonzalo. and Stefan van Hemmen. 2010 "Debt, Diversification and Earnings Management", *Journal of Accounting and Public Policy*, 29(2), 138-159.
- Sánchez-Ballesta, Juan Pedro and Emma García-Meca. 2007. "Ownership Structure, Discretionary Accruals and the Informativeness of Earnings", *Corporate Governance: An International Review*, 15(4), 666-691.
- Schauer, Paul C. 2002. "The Effects of Industry Specialization on Audit Quality: An Examination Using Bid-Ask Spreads", *Journal of Accounting and Finance Research*, 10(1), 76-86.
- Schipper, Kathrine. 1989. "Earnings management", *Accounting Horizons*, 3(4), 91-102.
- Shah, Syed Zulfiqar Ali, Safdar Ali Butt and Arshad Hasan. 2010. "Corporate Governance and Earnings Management an Empirical Evidence Form Pakistani Listed Companies", *European Journal of Scientific Research*, 26(4), 624-638.
- Shen, Chung-Hua and Hsiang-Lin Chih. 2007. "Earnings Management and Corporate Governance in Asia's Emerging Markets", Working Paper, [online] [Accessed on 05 September, 2008] www.fin.ntu.edu.tw/~chshen/book/download/35.EM_CLSA.pdf
- Shivakumar, Lakshmanan. 2000. "Do firms mislead investors by overstating earnings before seasoned equity offerings?", *Journal of Accounting and Economics*, 29(3), 339-371.
- Shleifer, Andrei and Robert W. Vishny. 1997. "A Survey of Corporate Governance", *Journal of Finance*, 52(2), 737-783

- Siregar, Sylvia Veronica and Sidharta Utama. 2008. "Type of Earnings Management and the Effect of Ownership Structure, Firm Size, and Corporate Governance Practices: Evidence from Indonesia", *The International Journal of Accounting*, 43(1), 1-26.
- Skoulakis, Georgios. 2006. "Panel Data Inference in Finance: Least-Squares vs Fama-MacBeth", [online] [Accessed on 05 September, 2008] www.rhsmith.umd.edu/faculty/gskoulak/panel.pdf
- Solomon, Ira, Michael D. Shields and O. Ray Whittington. 1999. "What Do Industry-Specialist Auditors Know?", *Journal of Accounting Research*, 37(1), 191-208.
- Teoh, Siew Hong, Ivo Welch and T. J. Wong. 1998a. "Earnings Management and the Long-Run Market Performance of Initial Public Offerings", *The Journal of Finance*, 53(6), 1935-1974.
- Teoh, Siew Hong, Ivo Welch and T. J. Wong. 1998b. "Earnings Management and the Underperformance of Seasoned Equity Offerings", *Journal of Financial Economics*, 50(1), 63-99.
- Teoh Siew Hong and T. J. Wong. 2002. "Why New Issues and High-Accrual Firms Underperform: The Role of Analysts' Credulity", *Review of Financial Studies*, 15(3), 869-900.
- The Sarbanes-Oxley Act. 2002. [online] [Accessed on 07 September 2010] news.findlaw.com/cnn/docs/gwbush/sarbanesoxley072302.pdf
- The Union of Certified Public Accountants and Sworn-in Certified Public Accountants of Turkey (TURMOB), 2010. "A Brief History of TURMOB", [online] [Accessed on 07 September 2010] <http://www.turmob.org.tr/TurmobWeb/turkce/popup.aspx?Sayfa=/Arsiv/turmobwebdb/html/ingilizce6.htm>
- Thomson, Samuel B. 2010. "Simple Formulas for Standard Errors that cluster by both firm and time", *Journal of Financial Economics*, forthcoming, doi:10.1016/j.jfineco.2010.08.016

- Vander Bauwhede, Heidi, Marleen Willekens and Ann Gaeremynck. 2000. "Audit Quality, Public Ownership and Firms' Discretionary Accruals Management", Working Paper, [online] [Accessed on 23 February 2010] https://lirias.kuleuven.be/bitstream/123456789/118483/1/OR_0053.pdf
- Van Tendeloo, Brenda Van and Ann Vanstraelen. 2008. "Earnings Management and Audit Quality in Europe: Evidence from the Private Client Segment Market", *European Accounting Review*, 17(3), 447-469.
- Warfield, Terry D., John J. Wild and Kenneth L. Wild. 1995. "Managerial Ownership, Accounting Choices, and Informativeness of Earnings", *Journal of Accounting and Economics*, 20(1), 61-91.
- Watts, Ross L. and Jerold L. Zimmerman. 1978. "Towards a Positive Theory of the Determination of Accounting Standards", *The Accounting Review*, 53(1), 112-134.
- Watts, Ross L. and Jerold L. Zimmerman. 1986. *Positive Accounting Theory*, New Jersey: Prentice Hall.
- Wild, John J. 1996. "The Audit Committee and Earnings Quality", *Journal of Accounting, Auditing and Finance*, 11, 246-266.
- Willenborg, Michae. 1999. "Empirical Analysis of the Economic Demand for Auditing in the Initial Public Offering Market", *Journal of Accounting Research*, 37(1), 225-238.
- Williamson, Oliver E. 1983. "Organizational Form, Residual Claimants, and Corporate Control", *Journal of Law and Economics*. 26(2), 351-366.
- Williamson, Oliver E. 1984. "Corporate Governance", *The Yale Law Journal*, 93(7), 1197-1230.

- World Federation of Exchanges (WFE). 2009. "Annual Reports and Statistics-2009", [online] [Accessed on 07 September 2010] <http://www.world-exchanges.org/reports>
- Xie, Biao, Wallace N. Davidson and Peter J. Dada. 2003. "Earnings Management and Corporate Governance: The Role of the Board and the Audit Committee", *Journal of Corporate Finance*, 9(3), 295-316.
- Yang, Joon S. and Jagan Krishnan. 2005. "Audit Committees and Quarterly Earnings Management", *International Journal of Auditing*, 9(3), 201-219.
- Yeo, Gillian H. H. and et al. 2002. "Corporate Ownership Structure and the Informativeness of Earnings", *Journal of Business Finance & Accounting*, 29(7-8), 1023-1046.
- Yeoh, Evelyn. and Christine A. Jubb. 2002. "Governance and Audit Quality: Is there an Association?", American Accounting Association Auditing Section Midyear Conference, Orlando, Florida, United States, [online] [Accessed on 07 September 2010] <http://aaahq.org/audit/midyear/02midyear/papers/yeoh&jubb.htm>
- Yoon, Soon Suk and Gary Miller. 2002 "Earnings Management of Seasoned Equity Offering Firms in Korea", *International Journal of Accounting*, 37(1), 57-78.
- Young, Steven. 1995. "Discretionary Accounting Accruals: Systematic Measurement Error and Firm-specific Determinants", Unpublished Ph.D. Thesis, Lancaster University, United Kingdom.
- Young, Steven. 1999. "Systematic Measurement Error in the Estimation of Discretionary Accruals: An Evaluation of Alternative Modelling Procedures", *Journal of Business Finance and Accounting*, 26(7-8), 833-862.

Yükseltürk, Osman. 2006. "İşletmelerde Kârı Yüksek Gösterme Yöntemleri ve Türkiye'de Hisse Senetlerinin Halka Arzı Öncesi Kârı Yüksek Gösterme Eğilimleri" (Earning management methods and earnings management in companies performing initial public offerings in Turkey), Unpublished PhD Thesis, İstanbul Üniversitesi, Türkiye.

Zhou, Jian and Randal Elder. 2001. "Audit Firm Size, Industry Specialization and Earnings Management by Initial Public Offering Firms", American Accounting Association Auditing Section Midyear Conference, Orlando, Florida, United States, [online] [Accessed on 07 September 2010] http://aaahq.org/audit/midyear/02midyear/papers/ipo_earningsmgmt.pdf

APPENDICES

Appendix I- SUPPLEMENTARY ANALYSES' TABLES

Table A1: Correlation Matrix for Total Accrual Models

Independent Variables	Independent Variables									
	QTAC	ΔSALES	ΔSALES - ΔREC	(1+k)ΔSALES - ΔREC	PPE	Lag_TAC	GR_Sales	ΔCFO	CFO	BM
ΔSALES	0.1025***									
ΔSALES - ΔREC	0.0464***	0.9401***								
(1+k)ΔSALES - ΔREC	0.0643***	0.9560***	0.9886***							
PPE	-0.0705***	-0.1633***	-0.1686***	-0.1771***						
Lag_TAC	0.5034***	0.0675***	0.0739***	0.0758***	-0.0895***					
GR_Sales	-0.0256	-0.0624***	-0.0582***	-0.0574***	0.0154	-0.0059				
ΔCFO	-0.1237***	0.0328	0.0563***	0.0481***	-0.0068	0.4425**	-0.0065			
CFO	-0.4016***	0.0257	0.0843***	0.0750***	-0.0185	0.2526***	-0.0045	0.7932***		
BM	0.0939***	-0.0492***	-0.0494***	-0.0444***	-0.0327	0.1171***	-0.0103	0.000	0.0401*	
ROA	0.3131***	0.1112***	0.0817***	0.0963***	-0.0288	0.0896***	-0.0303	0.0815***	0.1815***	0.1585***

(***), (**) and (*) denote significant at %1, %5 and %10 significance level (two-tailed), respectively. n=3067 firm-quarter observations. QTAC is quarterly total accruals and measured as the difference between net income and cash flows from operations for the quarter, ΔSALES is change in net sales for the quarter, ΔREC is the change in receivables for the quarter, PPE is the gross amount of property plant and equipment at the end of the quarter, Future Sales growth is the change in sales for the following year scaled by current sales. ΔCFO is the difference in cash flows from operations for the quarter, CFO is the net cash flows from operations at the end of the quarter, BM is the book-to-market ratio, ROA is return on assets. All independent variables except BM and ROA are scaled by lagged total assets to avoid heteroscedasticity. k is calculated from the following regression for each two-digit industry group $\Delta REC = \alpha + k \Delta REV$.

**Table A2: Comparison of Income-Decreasing Firms
both for Signed and Unsigned (Absolute) Quarterly Discretionary Accruals as Dependent Variable**

Independent Variables	Income-Decreasing Firms (n=1306)			Income-Decreasing Firms (n=1306)		
	<i>Dependent Variable (Unsigned): Absolute Quarterly Discretionary Accruals (ABS_QDA)</i>			<i>Dependent Variable (Signed): Income-Decreasing (negative) Quarterly Discretionary Accruals (QDA)</i>		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	0.043*** (26.25)	0.042*** (19.85)	0.040*** (28.33)	-0.043*** (-26.25)	-0.042*** (-19.85)	-0.040*** (-28.33)
BIG-4	-0.010 *** (-5.11)			0.010 *** (5.11)		
TENURE		-0.0002*** (-2.97)			0.0002*** (2.97)	
IND_SPECL			-0.016 *** (-4.35)			0.016 *** (4.35)
F-Value	26.15***	8.80***	25.26***	26.15***	8.80***	25.26***
Average Adj. R-square	0.0352	0.0182	0.0072	0.0352	0.0182	0.0072

(***), (**) and (*) denote significant at %1, %5 and %10 (one-tailed), respectively. n= 2135 firms-quarter observations after omitting the outliers for QDA at %1 and %99 percentile between the years 2006-2009; t-statistics are reported in parentheses below parameter estimates. QDA is quarterly discretionary accruals and ABS_QDA is absolute quarterly discretionary accruals measured by the Adapted Larcker and Richardson (2004) Model, income increasing firms and income decreasing firms are those using positive and negative discretionary accruals, respectively, BIG-4 is the dummy variable which takes the value of 1 when the firm is audited by BIG-4, TENURE is Audit Firm Tenure and IND_SPECL is Industry Specialization of audit firm. Coefficients are estimated by Fama-MacBeth cross-sectional regressions for each quarter. For the income-decreasing firms both the signed (negative quarterly discretionary accruals) and the unsigned (absolute quarterly discretionary accruals) measures were used as dependent variable.

Appendix II- SENSITIVITY ANALYSES' TABLES

Table A1: Analysis of Total Accrual Models (Pooled Regression OLS estimators)

Dependent Variable: Quarterly Total Accruals (QTAC)												
Independent Variables	Constant	Δ SALES	Δ SALES - Δ REC	(1+k) Δ SALES- Δ REC	PPE	Lag_ TAC	GR_ Sales	Δ CFO	CFO	BM	ROA	Adj. R-Squ.
Jones Model	-0.021 *** (-3.62)	0.069*** (5.14)			-0.008 *** (-3.04)							0.013
Modified Jones	-0.008 (-1.37)		0.026 (1.94)		-0.009*** (-3.53)							0.006
Adapted Model	-0.012** (-2.05)			0.031 (2.93)	-0.009*** (-3.34)							0.007
Forward Looking Model	-0.006 (-1.29)			0.012 (1.24)	-0.003 (-1.36)	0.453*** (31.84)	-0.000 (-1.35)					0.254
Kazsnik (1999)	-0.009 (-1.62)		0.032** (2.35)		-0.009*** (-3.54)			-0.100*** (-7.07)				0.022
Larcker and Richardson (2004)	-0.017*** (-3.18)		0.057*** (4.59)		-0.009*** (-3.71)			-0.528*** (-25.24)	0.009*** (6.86)			0.184
Adapted Larcker and Richardson (2004)	-0.020*** (-3.73)			0.052*** (5.41)	-0.008*** (-3.53)			-0.528*** (-25.31)	0.009*** (6.89)			0.186
Kothari et al. (2005)	0.010 (1.38)	0.039*** (2.93)			-0.035** (-2.57)						0.506*** (17.86)	0.104

(***), (**) and (*) significant at %1, %5 and %10 (two-tailed), respectively, n=3067 firm-quarter observations between the years 2005-2009. t-statistics are reported in parentheses below parameter estimates. All variables are measured quarterly from the interim reports. QTAC is the difference between net income and cash flows from operations for the quarter, Δ SALES is change in net sales for the quarter, Δ REC is the change in receivables for the quarter, PPE is the gross amount of property plant and equipment at the end of the quarter, Future Sales growth is the change in sales for the following year scaled by current sales. Δ CFO is the difference in cash flows from operations for the quarter, CFO is the net cash flows from operations at the end of the quarter, BM is the book-to-market ratio, ROA is return on assets. All independent variables except BM and ROA are scaled by lagged total assets to avoid heteroscedasticity. k is calculated from the following regression for each two-digit industry group Δ REC = $\alpha + k \Delta$ REV. In the Kothari et al. (2005) Model 1/lagged total assets is not added as a regressor into the model.

Table A2: Analysis of Total Accrual Models (Two-way cluster for firms and quarters)

Dependent Variable: Quarterly Total Accruals (QTAC)												
Independent Variables	Constant	Δ SALES	Δ SALES - Δ REC	(1+k) Δ SALES- Δ REC	PPE	Lag_ TAC	GR_ Sales	Δ CFO	CFO	BM	ROA	Adj. R-Squ.
Jones Model	-0.021 (-1.75)	0.069*** (2.57)			-0.008 (-1.21)							0.013
Modified Jones	-0.008 (-0.68)		0.026 (1.21)		-0.009 (-1.42)							0.006
Adapted Model	-0.012 (-1.03)			0.031 (1.75)	-0.009 (-1.34)							0.007
Forward Looking Model	-0.006 (-0.93)			0.012 (1.24)	-0.003 (-0.89)	0.453*** (2.96)	-0.0007*** (-6.12)					0.255
Kazsnik (1999)	-0.009 (-0.81)		0.032 (1.42)		-0.009 (-1.42)			-0.100 (-1.25)				0.022
Larcker and Richardson (2004)	-0.017 (-1.53)		0.057** (2.28)		-0.009 (-1.39)			-0.528*** (-5.62)	0.009*** (3.93)			0.184
Adapted Larcker and Richardson (2004)	-0.020 (-1.74)			0.052** (2.51)	-0.008 (-1.32)			-0.528*** (-5.62)	0.009*** (3.94)			0.186
Kothari et al. (2005)	0.004 (0.33)	0.0002 (0.01)			-0.048** (-2.31)						0.516*** (4.88)	0.1021

(***), (**) and (*) significant at %1, %5 and %10 (two-tailed), respectively, n=3067 firm-quarter observations between the years 2005-2009. t-statistics are reported in parentheses below parameter estimates. QTAC is the difference between net income and cash flows from operations for the quarter, Δ SALES is change in net sales for the quarter, Δ REC is the change in receivables for the quarter, PPE is the gross amount of property plant and equipment at the end of the quarter, Future Sales growth is the change in sales for the following year scaled by current sales. Δ CFO is the difference in cash flows from operations for the quarter, CFO is the net cash flows from operations at the end of the quarter, BM is the book-to-market ratio, ROA is return on assets. All independent variables except BM and ROA are scaled by lagged total assets to avoid heteroscedasticity. k is calculated from the following regression for each two-digit industry group Δ REC = α + k* Δ REV. In the Kothari et al. (2005) Model 1/lagged total assets is not added as a regressor into the model. All coefficients are estimated using panel data by two-way clustering as suggested by Petersen (2009) to avoid heteroscedasticity and control for firm and time effect simultaneously.

Table A3: Analysis of Total Accrual Models (Random-effect GLS regression)

Dependent Variable: Quarterly Total Accruals (QTAC)												
Independent Variables	Constant	ΔSALES	(1+k)		PPE	Lag. TAC	GR_Sales	ΔCFO	CFO	BM	ROA	Adj. R-Squ.
			ΔSALES - ΔREC	ΔSALES - ΔREC								
Jones Model	-0.025*** (-2.94)	0.111*** (4.98)			-0.013*** (3.24)							0.018
Modified Jones	-0.004 (-0.49)		0.028 (1.27)		-0.013*** (-3.28)							0.008
Adapted Model	-0.010 (-1.14)			0.040** (2.23)	-0.013*** (-3.22)							0.011
Forward Looking Model	-0.010 (-1.99)			0.026** (2.26)	-0.003 (-1.69)	0.447*** (32.23)	-0.0007 (-1.28)					0.265
Kazsnik (1999)	-0.009 (-1.08)	0.049** (2.21)			-0.013*** (-3.34)			-0.101*** (7.35)				0.022
Larcker and Richardson (2004)	-0.018** (-2.22)		0.095*** (4.50)		-0.014*** (-3.68)			-0.506*** (-25.64)	0.006*** (3.79)			0.171
Adapted Larcker and Richardson (2004)	-0.023*** (-2.75)			0.088*** (5.27)	-0.013*** (-3.62)			-0.506*** (-25.74)	0.006*** (3.84)			0.174
Kothari et al. (2005)	-0.017 (-1.70)	0.066*** (3.11)			-0.033 (-1.88)						0.444*** (16.10)	0.102

(***), (**) and (*) significant at %1, %5 and %10 (two-tailed), respectively, n=3067 firm-quarter observations between the years 2005-2009. t-statistics are reported in parentheses below parameter estimates. All variables are measured quarterly from the interim reports. QTAC is the difference between net income and cash flows from operations for the quarter, ΔSALES is change in net sales for the quarter, ΔREC is the change in receivables for the quarter, PPE is the gross amount of property plant and equipment at the end of the quarter, Future Sales growth is the change in sales for the following year scaled by current sales. ΔCFO is the difference in cash flows from operations for the quarter, CFO is the net cash flows from operations at the end of the quarter, BM is the book-to-market ratio, ROA is return on assets. All independent variables except BM and ROA are scaled by lagged total assets to avoid heteroscedasticity. k is calculated from the following regression for each two-digit industry group $\Delta REC = \alpha + k \Delta REV$. In the Kothari et al. (2005) Model 1/lagged total assets is not added as a regressor into the model. All coefficients are estimated by using panel data random-effect GLS regression by clustering for firm.

VITA

Yasemin Karaibrahimoğlu was born in İzmir, on April, 21, 1982. She completed her high school education in Yunus Emre Anatolian High School in 2000 and studied Economics in Ege University where she received her Bachelor's Degree in 2005. She spent her sophomore year at De Rijksuniversiteit Groningen, Groningen, the Netherlands as an exchange student.

After graduation, she has worked for an engineering company in manufacturing industry as an administrator director. In 2006, she started her PhD in Business Administration, major in accounting, at Izmir University of Economics. Since 2006, she has been working as research assistant at the Department of Business Administration in the same university and since 2007 she is TÜBİTAK scholar of National Scholarship Programme for PhD Students. As part of her PhD studies, during July-August 2008, she stayed at University of Texas at Dallas, Dallas, USA as a visitor researcher to make research on her PhD research subject. In addition, during July-December 2010, she stayed at Lancaster University, Lancaster, United Kingdom as a visiting research fellow with TÜBİTAK International Research Fellowship Programme to attend PhD courses in accounting, write her dissertation and conduct research.