

**Accounting Quality across Different Groups of
Firms under Differential Reporting
Framework: UK Evidence**

A thesis submitted for the degree of Doctor of Philosophy

by

Siming Liu

Department of Economics and Finance

School of Social Sciences

Brunel University

March 2014

Abstract

Motivation:

The IASB and the UK ASB have adopted different financial reporting rules for different classes of company. The IASB have IFRS and IFRS for SMEs. In the UK, currently companies follow IFRS (for public companies), UK GAAP (for medium-sized companies) or FRSSE (for small companies). Furthermore, some companies are exempt from audit. It is difficult to evaluate the efficacy of this approach to regulation since the ASB (and IASB) do not specify what consequences should follow. Do they expect public companies have higher accounting quality than medium and small companies? Or do they expect accounting quality to be the same across different groups of companies?

Objective:

The main objective of this study is to examine accounting quality in order to inform the future policy and discussion about the differential reporting framework.

We examine the effects of accounting standards across public, medium and small companies. However, companies also face reporting discipline from market forces, and consequently we also examine the impact of debt-holders on reporting quality across and within medium and small companies.

Methodology:

We measure accounting quality from different aspects. For the assessment of differential accounting standards, we use: the level of accruals (ratio of cash flows to earnings), earnings smoothing, and target beating. For the assessment of any debt-holders effect, we use aspects that are suited to their needs, namely: earnings conservatism, and earnings persistence.

Main Findings:

Under the discipline of accounting standards, we find that the financial reporting behaviour of medium sized entities is significantly different from public and small

companies. This suggests that accounting standards do not equalise accounting quality.

The impacts of debt-holders on accounting quality are generally weak within medium and small companies. This implies that accounting standards are the main discipline for financial reporting for medium and small companies, which is consistent with the suggestions of Ball and Shivakumar (2005). However, we raise a few issues concerning the interpretation of the accounting quality measurements (earnings conservatism and earnings persistence) and provide theoretical and empirical support for the discussion.

Recommendations:

We suggest the accounting regulations for private companies may need to be further strengthened, especially for medium-sized companies.

Table of Contents

Abstract.....	1
Table of Contents	3
List of Abbreviations	7
Acknowledgement	9
Declaration	10
Statement of Copyright	11
General Introduction	12
Current Background of Differential Reporting	12
Unclear incentives and objectives.....	13
Disciplines of Firms' Accounting Quality	14
Discipline from legal forces	14
Discipline from market forces	14
Main Objective.....	15
Structure of the Thesis	15
Chapter 1: History and Background	17
1.1 Development of Accounting	17
1.2 Development of Accounting Standards and Legislation in the UK	18
1.3 Development of International Accounting Standards (IAS)	20
1.4 Differential Reporting Framework.....	22
1.5 Factors driving Differential Reporting Standards.....	27
1.6 Objectives of Differential Reporting Standards	29
1.7 Incentives for the Demand and Supply of Financial Information.....	32
1.8 Issues arising within the differential reporting framework.....	33
1.9 Main objective of the thesis	35
Chapter 2: Accounting Quality	37
2.1 Overview	37
2.2 Measures of Accounting Quality	37
2.2.1 Earnings persistence	38
2.2.2 Accruals.....	40
2.2.3 Earnings Smoothness.....	46
2.2.4 Target Beating.....	47
2.2.5 Earnings Conservatism.....	49
2.3 Comments about the proxies of Accounting Quality	51
Chapter 3: Effects of Regulation on Accounting Quality: Ratio Analysis	53
.....	53
3.1 Introduction	53
3.1.1 Background	53
3.1.2 Issues Arising.....	53
3.1.3 Criticism of the regulation process.....	55
3.1.4 Objective of this chapter	56
3.1.5 Chapter Outline.....	57
3.2 Hypothesis Development	58
3.2.1 Unclear Objectives and Expectation from Regulators.....	58

3.2.2 The Role of Accounting Quality in Policy Making process.....	59
3.2.3 Mixed findings in Accounting Quality studies.....	60
3.2.4 Assumption based on the need and objective of accounting standards	61
3.3 Sample and Data	63
TABLE 3.1: Industrial Distribution of Numbers of Large, Medium-sized and Small companies.....	66
3.4 Rationale for Measures of Accounting Quality	67
3.4.1 Overview	67
3.4.2 Rationales of Measures of Accounting Quality	67
3.4.3 Cash flows to Earnings Analysis	69
3.5 Measures of Accounting Quality and Results	71
3.5.1 Cash flows from operation to earnings (CFO/E) ratio	71
3.5.1.1 Results of cash flows to earnings ratio	72
TABLE 3.2: Summary Statistics for CFO and Earnings	74
TABLE 3.3: Industrial Distribution and Summary Statistics for ratio of CFO to Earnings.....	78
3.5.1.2 Results of cash flows to earnings ratio – Positive Earnings Group	80
TABLE 3.4: Industrial Distribution and Summary Statistics for ratio of CFO to Earnings (Positive Earnings).....	83
3.5.1.3 Results of cash flows to earnings ratio – Negative Earnings Group	85
TABLE 3.5: Industrial Distribution and Summary Statistics for ratio of CFO to Earnings (Negative Earnings).....	87
3.5.1.4 Overall Comments for the ratio of cash flows to earnings:.....	89
3.5.2 Deviation (from the Industries' average) of the CFO/E ratio.....	90
3.5.2.1 Results of Deviation from Industry Average.....	91
TABLE 3.6: Summary Statistics of Deviation of ratio of CFO to Earnings from Industry Average	92
TABLE 3.7: Summary Statistics of Deviation of ratio of CFO to Earnings from Industry Average with Positive Earnings	95
TABLE 3.8: Summary Statistics of Deviation of ratio of CFO to Earnings from Industry Average with Negative Earnings	98
3.5.2.2 Overall Comments for deviation from industry average.....	100
3.5.3 Distributions of CFO/E	101
3.5.3.1 Results of Distribution of cash flows to earnings ratio.....	102
Figure 3.1: Statistical frequency distribution of ratio of CFO to Earnings	104
3.5.4 Distributions of SMEs vs. Distribution of Large companies.....	106
3.5.4.1 Results of comparisons of distributions cash flows to earnings ratio	107
Figure 3.2: The Comparison of statistical frequency distribution of ratio of CFO to Earnings between Large, Medium and Small Companies.....	109
3.6 Conclusion	111
Chapter 4: Effects of Regulation on Accounting Quality: Variability and Loss Recognition Tests	113
4.1 Introduction	113
Overview of Chapter 3	113
Objective of the Chapter 4.....	114
Outline of the chapter	114
4.2 Literature Review	115
Prior Literatures on Accounting Quality	115
4.2.1 Accounting quality across different accounting standards	115
4.2.2 Accounting Quality across different sizes of firms.....	117
4.3 Sample and Data	119
4.4 First Measure of Accounting Quality and Results.....	121
4.4.1 Factors associated with Earnings and Cash flows.....	121
4.4.2 Literature on Earnings Smoothing	122
4.4.3 Variability of Earnings	124

<i>Methodology of Variability of Earnings</i>	124
<i>Results of Variability of Earnings</i>	126
TABLE 4.1: Summary Statistics Relating to Variables used in Earnings Quality Model Analysis	129
TABLE 4.2: Result of Volatility of Earnings for Large, Medium and Small Companies	131
Figure 4.1: The empirical distribution of 1,000 R-squares for each group of companies	132
4.4.4 Variability of Earnings relative to Variability of Cash flows	133
<i>Methodology of Variability of Earnings relative to Variability of Cash flows</i>	133
<i>Result of Variability of Earnings relative to Variability of Cash flows</i>	134
TABLE 4.3: Volatility of Earnings relative to Volatility of Cash Flows across Large, Medium and Small Companies	136
4.5 Second Measure of Accounting Quality and Results	137
4.5.1 Target Beating – Distribution of Small Profit and Small Loss	137
4.5.2 Literature on Distribution of Small Profit and Small Loss	137
4.5.3 Methodology of Small Profit and Small Loss	139
4.5.4 Results of Distribution of Small Profit and Small Loss	142
<i>Results of Large Companies</i>	142
<i>Results of Medium Companies</i>	143
<i>Results of Small Companies</i>	143
<i>Comparisons between large, medium and small companies</i>	144
TABLE 4.4: Frequency Distribution of Earnings around Zero-Earnings	146
4.6 Conclusion	148
Chapter 5: Effects of Debt-Holders on Accounting Quality	150
5.1 Introduction	150
5.1.1 Overview of previous chapters	150
5.1.2 Disciplines of accounting quality	151
5.1.2.1 <i>Effects of Regulations on Accounting Quality</i>	151
5.1.2.2 <i>Market discipline on Accounting Quality</i>	153
5.1.3 Objective of this chapter	154
5.1.4 Structure of Chapter	155
5.2 Literature Review	156
5.2.1 Effects on Accounting Quality	156
5.2.1.1 <i>Demand Effects</i>	156
5.2.1.2 <i>Incentives Effects</i>	157
5.2.2 Existence of Debts and Accounting Quality	158
5.2.2.1 <i>Existence of debts improve accounting quality</i>	158
5.2.2.2 <i>Existence of debts creates incentives to manage earnings</i>	159
5.2.2.3 <i>Leverage is associated with accounting quality</i>	159
5.3 Hypothesis Development	161
5.3.1 Demand and Incentives Approach	161
5.3.2 Association Between Leverage and Accounting Quality	162
5.3.3 Hypothesis of this chapter	163
5.4 Sample and Data	165
5.4.1 Divide samples based on Total Liabilities/Total Assets	166
5.4.2 Divide samples based on Long-term Loan/Total Assets	166
5.4.3 Divide samples based on Creditors/Total Assets	166
5.5 First Measure of Accounting Quality – Earnings Conservatism	168
5.5.1 Literature of Conservatism and Debt	168
5.5.2 Measure of Conservatism	170
5.5.3 Results of Conservatism	172
<i>Descriptive Statistics</i>	172
<i>Results for Medium Companies</i>	172
TABLE 5.1: Descriptive Statistics of Variables in Testing Earnings Conservatism ..	174
TABLE 5.2: Results of Conservatisms for Medium Companies	175

<i>Results for Small Companies</i>	176
TABLE 5.3: Results of Conservatism for Small Companies.....	177
<i>Comparison between Medium and Small Companies</i>	178
5.5.4 Comment about the Results of Conservatism	180
5.6 Second Measure of Accounting Quality – Earnings Persistence	183
5.6.1 Literature of Earnings Persistence	183
5.6.2 Measure of Earnings Persistence	184
5.6.3 Result from Earnings Persistence.....	187
<i>Descriptive Statistics</i>	187
TABLE 5.4: Descriptive Statistics for Variables in Testing Earnings Persistence.....	188
<i>Result for Medium Companies</i>	189
<i>Result for Small Companies</i>	191
TABLE 5.5: Result of Earnings Persistence Without Control of Endogeneity	193
TABLE 5.6: Result of Earnings Persistence With Control of Endogeneity	195
<i>Comparison between Medium and Small Companies</i>	197
5.7 Discussion of Two Tests.....	199
Link between two tests (conservatism and persistence).....	199
5.8 Conclusion	201
General Conclusion.....	203
Appendix.....	206
References	210

List of Abbreviations

The following table describes the significance of various abbreviations and acronyms used throughout the thesis. The page on which each one is defined or first used is also given.

Abbreviation	Meaning	Page
ACCA	Association of Chartered Certified Accountant	19
ASB	Accounting Standards Board in the UK. The role of the Accounting Standards Board (ASB) was to issue accounting standards. It was recognised for that purpose under the Companies Act 1985. It took over the task of setting accounting standards from the Accounting Standards Committee (ASC) in 1990.	12
ASC	Accounting Standards Committee, first recognizable standard setter. It is replaced by ASB in 1990.	19
CCAB	Consultative Committee of Accounting Bodies	19
FRC	Financial Reporting Council, it is the UK's independent regulator responsible for promoting high quality corporate governance and reporting to foster investment.	19
FRED	Financial Reporting Exposure Draft, it is issued as part of the process of developing a new Financial Reporting Standard.	12
FRRP	Financial Reporting Review Panel	19
FRSSE	Financial Reporting Standards for Smaller Entities. Sometimes it is referred as small GAAP.	10
IASC	International Accounting Standards Committee, it was founded in June 1973 in London and replaced by the International Accounting Standards Board on 1 April 2001. It was responsible for developing the International Accounting Standards and promoting the use and application of these standards.	20
IASB	International Accounting Standards Board, it is responsible for developing International Financial Reporting Standards (the new name for International Accounting Standards issued after 2001), and promoting the use and application of these standards.	12
IAS	International Accounting Standard	20
ICAEW	Institute of Chartered Accountants in England and Wales	17
ICAS	Institute of Chartered Accountants in Scotland	19

Continued on next page

Abbreviation	Meaning	Page
IFRS	International Financial Reporting Standards, issued by IASB after 2001.	12
Industrial Classifications	Companies observations are grouped into 10 major industry sectors, which include Primary, Manufacturing, Utility, Construction, Wholesale, Service, Transport, Telecom, Other services, Education & Health.	63
Manufacturing	Manufacturing sector includes food, beverages, tobacco, textiles, wearing apparel, leather, wood, cork, paper, publishing, printing, chemicals, rubber, plastics, non-metallic products, metals & metal products, machinery, equipment, furniture, and recycling.	63
Other Service	Other services sector includes other services, public administration and defence	63
Primary	Primary sector includes agriculture, mining, and etc.	63
Service	Service sector includes hotels and restaurants	63
SMEs	Small and Medium-sized Entities. Based on Companies Act (2006), medium-sized company is the one that satisfies at least of the following: (1) a turnover of not more than £25.9 million, (2) a balance sheet total of not more than £12.9 million, and (3) not more than 250 employees. A small company is that fulfill at least two of the following: (1) has a turnover of not more than £6.5 million, (2) a balance sheet total of not more than £3.26 million, and (3) not more than 50 employees.	10
Telecom	Telecom sector includes post and telecommunication	
UK GAAP	UK Generally Accepted Accounting Principles, is a mixture of Financial Reporting Standards (FRS), Statements of Standard Accounting Practice (SSAP) and IFRS-based standards.	10
Utility	Utility sector includes gas, water, electricity.	63
Wholesale	Wholesale sector includes wholesale and retail trade.	63

Acknowledgement

I am grateful to everyone who had assisted me in one way or another in the completion of this project. I would like to express my sincere gratitude and appreciation to my supervisor, Professor Len Skerratt, for his kind assistance and advice for this PhD thesis. Without his tremendous support and encouragement, successful completion of this project would be impossible.

Special thanks to my second supervisor Dr. Jill Collis and all the professors and lecturers from Economics and Finance, Brunel University, who have given me valuable advice on this topic.

I am also extremely indebted to my family members for supporting me throughout the PhD studies and giving me this chance to have memorable and fruitful years at Brunel University.

Last but not the least I would like to thank my friends who have taken time to share their insights and comments, which have helped in contributing to the successful completion of this thesis in one way or another.

Declaration

The work described in this thesis has not been previously submitted for a degree in this university or any other university and otherwise reference the author's work.

Statement of Copyright

The copyright of this thesis rest within the author, no question from it should be published without his prior written consent and information derived from it should be acknowledged.

General Introduction

Current Background of Differential Reporting

Current financial reporting structure in the UK follows a three-tiers system of different reporting framework: public listed companies are following full International Financial Reporting Standards (IFRS) to prepare consolidated accounts; private medium-sized companies are following the UK Generally Accepted Accounting Principles (GAAP); and private small companies are following Financial Reporting Standards for Smaller Entities (FRSSE). This underlying differential reporting framework is developed based on the public accountability and size criteria, which is defined in the Companies Act 2006 (sections 382 and 465)¹. According to this a medium-sized company is the one that satisfies at least of the following: (1) a turnover of not more than £25.9 million, (2) a balance sheet total of not more than £12.9 million, and (3) not more than 250 employees. A small company is that fulfill at least two of the following: (1) has a turnover of not more than £6.5 million, (2) a balance sheet total of not more than £3.26 million, and (3) not more than 50 employees.

With the development of differential reporting standards for smaller entities, the International Accounting Standards Board (IASB) issued the new sets of accounting standards – IFRS for Small and Medium-sized Entities (SMEs) in 2009. The IASB suggests that IFRS for SMEs are general-purpose accounting standards regardless of size, and leave each jurisdiction to decide the size criteria to follow IFRS for SMEs. Beginning of 2012, in line with IASB's move, the UK Accounting Standard Board (ASB) proposed Financial Reporting Exposure Draft (FRED) 48, which is about the future of Financial Reporting in the UK and Republic of Ireland. The FRED 48 proposes that medium-sized companies should follow Financial Reporting Standards 102, which is based on IFRS for SMEs; and public listed and small companies should remain the same to follow full IFRS and FRSSE. UK ASB (FRED 48) suggests that accounting standards for SMEs should be proportionate to the size of entities and companies that will follow IFRS for SMEs will be based on existing size criteria.

¹ It defines private companies as SMEs for the purpose of accounting requirements.

Unclear incentives and objectives

However, differential accounting regulations for different classes of companies are developed with mixed incentives. Further, there is no clear indication of what they expect on companies' financial reporting quality across different boundaries. Studies on accounting quality have increased dramatically ever since the emergence of accounting standards. Accountings standards are in the position of disciplining companies to report good quality of earnings (Ball, 2001), but what are regulators' expectations of accounting quality? In the process of making accounting regulations, regulators do not make clear of what they expect. Do they expect higher accounting quality for larger entities and lower accounting quality for smaller entities? Or do they expect equalized accounting quality across all tiers of companies?

Hence, it is difficult to evaluate the efficacy of proposed financial reporting framework since the ASB and IASB do not specify what consequences that companies should follow. Is differential reporting a response to the differential importance of companies and the differential cost of compliance? This approach would suggest that variation in financial reporting quality across companies is acceptable. Or is differential reporting a response to the differential complexity of transactions and the incentive to report truthfully and fairly? This approach would suggest that variation in financial reporting quality across companies is not acceptable.

The issues on unclear objectives and expectations of developing accounting standards are demonstrated in a few studies. Watts and Zimmerman (1979) argue that process of developing new accounting standards is the process of negotiation because regulators do not have enough understanding of how companies are going to behave. Young (2003) suggests that "the standards are to be seen as emergent from a rational process that separates the technical and political rather than as the result of the demand of economic reality". She also indicates standard setters engage rhetorical strategies to persuade users that standards are appropriate, correct and useful (Young, 2003)

Disciplines of Firms' Accounting Quality

There are two forces discipline accounting quality of firms, which are legal forces and market forces. Legal forces include accounting standards, auditors and tax authorities. Market forces include investors, shareholders, and debt-holders.

Discipline from legal forces

Accounting standards are firstly emerged in early 1930s in the US because companies were trying to manage earnings to report improved financial performances. Hence, accounting standards are in the position to discipline companies so as to report good quality of earnings that could better reflect firms' financial performance.

Accounting standards determine how the accounting information on earnings should be computed and reported. High quality of standards influences the users' perception of quality of financial information (Wulandari and Rahman, 2004 pg.2). High quality accounting standards are perceived to provide consistent, comparable, relevant and reliable financial information to the investors for decision-making of specific investment (Wulandari and Rahman, 2004 pg.2).

Ewert and Wagenhofer (2005) indicate that accounting standards limit the opportunistic distortions, which will result high accounting quality. Further, Givoly et al (2010) suggest that the role of accounting standards is to balance the effects from both the demand of reporting high quality of financial information from market and the incentives of managing earnings from companies.

Discipline from market forces

Investors, shareholders, and debt-holders demand good accounting quality. Skinner (1997) indicates that companies have stronger incentives to improve their accounting information and disclosure, and enhance their financial transparency so as to mitigate potential lawsuits and to reduce the cost of their equity capital.

In addition, consistent with Skinner (1997), Givoly et al (2010) suggest that investors will demand high quality of accounting from firms because accounting information is the main type of information contractually available

to public equity holders. Ball and Shivakumar (2005) suggest that the reason why public companies have higher accounting quality than private companies is because public companies have more market demand to report higher accounting quality than private firms.

Ball Robin and Sadka (2008) suggest debt-holders demand higher accounting quality from companies, as financial statements are their primary information source about the firm.

Main Objective

The main objective of this PhD thesis is to compare accounting quality across existing boundaries, due to the lack of expectations from IASB and UK ASB on accounting quality across different tiers of companies and the IFRS for SMEs is not yet adopted in the UK. That is we compare the accounting quality across as well as within each group of companies, which are subject to IFRS, UK GAAP, and FRSSE. The purpose of this is to inform discussion about the suitability of existing boundaries between groups (public listed, medium-sized and small companies). We propose no formal criteria on the desired differences between each group of companies.

The comparison of accounting quality across different tiers of companies will be based on two disciplines – the discipline from accounting standards and discipline from debt-holders. The purpose of this is to examine whether there is any variation in accounting quality under these two types of discipline for each group of companies.

Structure of the Thesis

The general structure of this PhD thesis is as follows: followed by this general introduction, histories and background of development on accounting standards will be provided and current issues will be discussed in chapter 1; the accounting quality and different methods of measuring accounting quality will be discussed in chapter 2 of the thesis.

In the chapter 3, we examine the effects of accounting regulations on accounting quality across different groups of companies. The purpose of this is to examine whether accounting standards ensure equalised accounting quality across

different groups of companies. We measure accounting quality by level of accruals across companies as well as across and within industries.

In the chapter 4, we continue to examine accounting quality across each group of companies under the effects of accounting regulations. In measuring accounting quality, accruals are affected by different factors. Hence, we adjust for different factors to measure accounting quality in view of general earnings management (earnings smoothing) and specific earnings management (target beating).

In the chapter 5, we focus on the accounting quality on SMEs only, since public companies are disciplined by tougher regulations and well-developed market. We examine the impacts of debt-holders on accounting quality for medium and small companies. We measure accounting quality by earnings conservatism and earnings persistence.

The general conclusion is provided at the end of thesis.

Chapter 1: History and Background

1.1 Development of Accounting

Accounting has thousand years' history. The earliest accounting records were found in Mesopotamia (Assyrians), which could be dated back more than 7,000 years. Initially, people applied primitive accounting methods to record the growth of crops and herds. Accounting emerged, improving over the years and developing as business developed (Friedlob et al, 1996).

1.1.1 Double-entry bookkeeping

Early accounts served mainly to assist the memory of the businessperson, and the user of the account was the proprietor or record keeper alone (Richardson, 2013). Cruder forms of accounting were inadequate for the problems created by a business entity involving multiple investors (Richardson, 2013). The very first double-entry bookkeeping was introduced in Italy in 1494, where trading ventures began to require more capital than a single individual was able to invest (Richardson, 2013). The work on double-entry bookkeeping was first printed in English version in the UK, in 1553. The increased economic activity and the naval strength had made England as global trade centre in 18th century, and the very first accountancy firm was established in Bristol in 1780s (ICAEW, 2012).

1.1.2 Company Regulation History

The UK transformed from an agricultural-based economy towards mercantile and manufacturing activities in the 17th and 18th centuries, and hence, one of the main purposes of accounting was pure recordkeeping in order to monitor the debts or check the honesty of employees (Day, 2000). Going into the 19th century, the industrial revolution started in Britain together with rapid economic growth and development, which led to a succession of corporate scandal and insolvencies in the 1840s, and hence, greater public control in the form of audit and winding up of these companies (ICAEW, 2012). Between years of 1831 to 1883, a series of Companies Act and bankruptcy acts were published (ICAEW, 2012). Incorporation was only possible through Royal Charter or private act before the British Joint Stock Companies Act, which was an Act of Parliament (Business Accounting Basics, 2012). In 1844, the British Joint Stock Companies Act permitted companies to be

incorporated, which were owned by one or more individuals (Business Accounting Basics, 2012).

As a consequence, many businesses with thousands of members and management were operated as unincorporated associations, and regulations for underlying businesses were limited. If customers had a grievance or complaints against an unincorporated association, their only way was to file a lawsuit against every member individually, which was virtually impossible in most of the cases (Business Accounting Basics, 2012). This issue was followed up by the Limited Liability Act in 1855, which the individual owners and directors of a business had limited liability. In 1856, the Joint Stock Companies Act was introduced, modified and updated. Companies were incorporated by registration, and auditors needed to be appointed to audit the balance sheet and accounts for public companies. This system is still largely in use during the present day (Business Accounting Basics, 2012).

1.1.3 Formation of accountancy profession

Between years of 1853 to 1880, the emergence of the series of Companies Acts and Bankruptcy acts had significantly increased demand for professional services of accountants. The accountancy bodies and societies were emerged, and accountancy took the form as organised profession. The Queen Victoria granted the Royal Charter leading to the creation of the national body for England and Wales, the Institute of Chartered Accountants in England and Wales (ICAEW), and the national body (ICAEW) began to set up the standards of professional conducts since 1880.

1.2 Development of Accounting Standards and Legislation in the UK

During the 1930s and 1940s, the absence of standard framework for financial accounting became the major concern. This was aware to be a bigger problem in the United States where creative accounting was practiced – making a company look more successful than it actually was. There were a number of high profile cases where supposedly profitable companies managed their financial accounts to attract additional investment, and collapsed a few months later with huge debts (Business Accounting Basics, 2012).

1.2.1 Development of Accounting Standards in the UK

In 1942, the Institute of Chartered Accountants in England and Wales (ICAEW) began to make recommendations about accounting practices. It issued a series of 29 Recommendations over time, in order to codify the best practice to be used in particular circumstances. Unfortunately, these recommendations did not reduce the diversity of accounting methods. In the late 1960s, there was a lot of public criticism of financial reporting methods. The UK sets up its individual self-regulatory organization – the ASSC (Accounting Standards Steering Committee) in 1970, which was known as Accounting Standards Committee (ASC) afterward. ASC was the first recognizable standard setter in the modern world (Anton, 2011). The ASC consisted of six major accountancy bodies, i.e. the Institute of Chartered Accountants of England and Wales (ICAEW), Chartered Accountants of Scotland (now ICAS), Chartered Accountants of Ireland, the Association of Certified Accountants (now ACCA), the Institute of Cost and Management Accountants (now CIMA), and the Chartered Institute of Public Finance and Accountancy (CIPFA).

The ASC was set up with the aim of developing specific standards for financial reporting. A statement of intent produced by ASC in the 1970s identified the following objectives: to narrow the areas of difference in accounting practice; to ensure disclosure of information on departures from definitive standards; to provide a wide exposure for new accounting standards; and to maintain a continuing program for improving accounting standards (History and Development, 2005).

The ASC was renamed again to the Accounting standards board (ASB) in 1990. Along with the 7th directive the 8th directive was introduced in 1989, the new regulatory body called the Financial Reporting Council (FRC) was formed (Anton, 2011). The FRC is maintained by the FRRP (Financial Reporting Review Panel) and ASB. The role of ASB is to supply the FRC with the financial support and leadership on public concerns, also to adjust or withdraw accounting standards (History and Development, 2005). Reporting requirements in the UK are governed by the FRS (Financial Reporting Standards) issued by the ASB that introduce the basic provisions contained in company law in the UK. The Companies Act consists of a number of acts, which governs the actions of UK companies. These acts are regularly updated and amended, which seems to be increasing further (History and Development, 2005).

1.2.2 Legislation Development in the UK

In 1844, the incorporation of businesses by registration had been implemented according to the Joint Stock Companies Act. Books of account had to be recorded and kept. The “true and fair” balance sheet was to be filed with the Registrar of joint stock companies as well as prepared and reported to the shareholders in the annual general meeting. However, there was no requirement for the preparation of the profit and loss account. Auditors need to be appointed with full access to the financial accounts. The audit report was to be prepared for the annual general meeting of shareholders (Day, 2000). The following relevant Act of Parliament – the Joint Stock Companies Act of 1856, abandoned necessary accounting requirements as well as the audit, which was not to be reintroduced until the Companies Act of 1900 (Day, 2000).

The most important transform in the Companies Act was that small and medium sized businesses were required to disclose any material cash flows in their accounts in 1989. Companies needed to show a true and fair indicator in their financial statements to reflect companies’ true financial performance and position (History and Development, 2005).

Up to 2009, companies’ financial accounts needed to follow the requirement under the Companies Act 1985. This Act exhibits the responsibilities and roles of companies, directors and companies’ secretaries. The Companies Act only applied to companies that are incorporated under the guidelines. Sole proprietorship, partnerships, limited liability partnerships and co-operatives are not governed by this Act. In 2009, the Companies Act 2006 was implemented to supersede the Companies Act 1985. The main differences between the old and new acts are the new provisions for companies’ communications to shareholders, the implementation of new European Directives and clarifications on areas of common law affecting companies (Business Accounting Basics, 2012).

1.3 Development of International Accounting Standards (IAS)

The growth and globalisation of companies’ operations had led to an increase in acquisitions of foreign enterprises in the late 19th century, the idea of global corporations and markets without borders has come to the fore, and members of accountancy professions began to realise the need for international accounting

standards to ensure the running of the business. The history of international accounting standards began in 1966, with the proposal to establish an International Study Group comprising the ICAEW, American Institute of Certified Public Accountants (AICPA) and Canadian Institute of Chartered Accountants (CICA) (LIS, 2012). In 1973, the International Accounting Standards Committee (IASC) was formed to release international accounting standards. IASC mentioned the standards had to be “be capable of rapid acceptance and implementation world-wide” (LIS, 2012).

At about the same time, the international professional accountancy bodies from different countries organized and cooperated under the International Federation of Accountants (IFAC). The IASC and IFAC operated closely to each other for setting international accounting standards and publishing discussion documents relating to international accounting issues (Sawani, 2009). Between 1973 and 2000, the International Accounting Standards Committee (IASC) released a series of standards called “International Accounting Standards” (IAS) in a numerical sequence that began with IAS 1 and ended with IAS 41 Agriculture, which was published in December 2000 (LIS, 2012).

The IASC survived for 27 years, until 2001, when the organisation was restructured, and the International Accounting Standards Board (IASB) replaced the IASC (LIS, 2012). However, the International Accounting Standards (IAS) was not widely used by most large corporations and countries whose accounting systems were already established. Up to 1990s, Italy, Belgium, France and Germany permitted large corporations to use International Accounting Standards (IAS) for domestic financial reporting (Sawani, 2009).

In 2001, the IASC was reorganized as the International Accounting Standards Board (IASB) and began developing International Financial Reporting Standards (IFRS) in addition to the existing IAS (IASB, 2007c). The IASB defined itself as “an independent standard-setting board, appointed and overseen by a geographically and professionally diverse group of trustees of the IASC Foundation who are accountable to the public interest” (Sawani, 2009).

By 2005, Listed companies in the UK were required to present their financial statements using the IAS adopted by the EU for periods commencing on or after 1 January 2005 (LIS, ICAEW, 2012). This was a great achievement for the IASB and influenced U.S. Generally Accepted Accounting Principles (GAAP) to converge

with IFRS (Sawani, 2009). Due to pressure from EU officials and corporations in 2008, the Securities Exchange Commission (SEC) eliminated the rule requiring European companies to restate their financial statements to U.S. GAAP for listing on US exchanges (Sawani, 2009). This provided IFRS a foothold in the US financial reporting. With these rapid changes, the SEC began to look at IFRS seriously and the benefits it provides (SEC Release 2008). However, the process was backsliding ever since.

1.4 Differential Reporting Framework

The regulatory framework for financial reporting in the UK is known as UK GAAP (Collis and Jarvis, 2003). Differential reporting requires that different entities should be subject to different accounting standards (Harvey and Walton, 1996). This gives rise to a controversial debate between the big GAAP (accounting standards for large listed companies) and the little GAAP (accounting standards for SMEs). The main focus of this debate is whether there should be different accounting standards for large and smaller companies.

The level of regulation in accounting performance measurement will mainly depend the demand and supply of accounting information in the market. If investors were far removed from the company, the demand for accounting information would be substantial. If the regulator makes accounting standards for quoted companies too tough, then although investors will find it attractive to invest, companies will find the funding too expensive and seek alternative sources, such as from banks and family members. Similarly, if accounting standards for quoted companies are too weak, then although companies will find it attractive to fund projects from the issue of public shares, investors will find it unattractive to invest because of the risks, and will invest in other markets. Therefore, differential reporting standards for small companies emerge to solve this issue in order to achieve market equilibrium. That is, for small companies, they may not have severe agency problems, and there may be non-accounting information about the financial performance of the companies available to investors – i.e. this reduces the amount of accounting information that small companies need to disclose to the market.

The issues and factors related to the debate include: the needs of users of financial reports; agency issues; complexity, costs and benefits of complying with

the accounting standards. Further, the debate was fuelled by the rapid expansion of financial regulations in the early 1990s in terms of volume and complexity, which lead to a concern that compliance imposes a disproportionate burden on smaller entities compared to their larger counterparts (Collis and Jarvis, 2003).

Today, the financial reporting framework in the UK is under three-tier reporting systems based on accountability and size thresholds: public quoted companies comply with full IFRS to prepare consolidated accounts; private non-small companies follow UK GAAP; and smaller and micro-companies comply with FRSSE or only file abbreviated accounts. Further, companies qualifying as “small” under Companies Act 2006 are exempted from statutory audit. The discussion of history and development of differential reporting in the UK, which includes abbreviated accounts, FRSSE, and audit exemption is provided in this section. The development of IFRS for SMEs is discussed as follows.

1.4.1 History and development of Differential Reporting in the UK

The history of differential reporting began in the early 1980s, prior to the Companies Act 1981 in the UK, when companies were governed by identical financial reporting and disclosure requirements, regardless of size, industry or public interest (Collis and Jarvis, 2003). The issues of accounting standards and small companies were considered by the Accounting Standards Committee (ASC) in 1983 and a consultative meeting was held between the ASC and representatives of small businesses (Barker and Noonan, 1996).

Meantime, in 1985, ICAEW sponsored a research project to establish whether there was a need for accounting standards for small companies. The researchers indicated that exemptions from standards with limited importance to small companies should be considered to reduce the burden of complying full accounting standards (Greeff, 2008).

Abbreviated Accounts

The abbreviated accounts for small companies are less detailed and need less information for public record. The abbreviated accounts of small company or limited liability partnership (LLP) do not have to report the profit and loss account or director's report that are normally required by Companies Act (Collis and Jarvis, 2003). The Companies Act 1985 permitted small and medium size companies to file

abbreviated accounts with the Registrar of Companies, although companies are required to furnish shareholders with the full set of accounts. The content of abbreviated accounts is relatively less than the full set of financial statements. For instance, companies are not required to file a profit and loss account or a directors' report (Collis and Jarvis, 2003). However, directors would incur additional costs to produce abbreviated accounts, as it is an additional set of financial statements drawn from the full financial statements.

Financial Reporting Standards for Smaller Entities (FRSSE)

With the establishment of ASB in 1990, the style and content of accounting became longer and more complex. As a result, the relevance of the new standards to small companies became questionable, and representations were made to the ASB to consider the position of small companies and to make appropriate provision for the application of standards to them (Barker & Noonan, 1996).

In response to the request, the Consultative Committee of Accounting Bodies (CCAB) set up a working group in 1993 to investigate how to reduce the administrative burden on SMEs through the exemption of certain accounting standards (Greeff, 2008). The main conclusion of the document was that Small and Medium-sized Entities (SMEs) should not need to comply with all aspects of accounting standards, and recommended that all entities which met the Companies Act definition of a "small company", with an annual turnover of up to £2.8 million and total assets up to £1.4 million (The Companies Act, 1985), should be exempt from compliance with all but five accounting standards (Greeff, 2008).

In December 1995, the CCAB Working Party published a White Paper entitled "Designed to Fit", while the main argument of this paper was that all accounting standards applicable to small companies should be issued in a single document (Barker and Noonan, 1996; ASB, 2007; Greeff, 2008). The ASB, accepted the CCAB Working Party's recommendations, and became the second standard setter to implement differential reporting when it published an Exposure Draft (ED) of the proposed FRSSE in December 1996, which led to the issue of the FRSSE in November 1997 (ASB, 2007). FRSSE is applicable to all reporting entities that qualify as "small" under the Companies Act and its main aim is to reduce disclosure requirements of the full array of accounting standards. The FRSSE is lighter than the full set of standards by 50 disclosure requirements (Collis and Jarvis, 2003).

1.4.1.3 Exemption from Statutory Audits

The EU Fourth Directive allowed national governments to exempt the requirement of undergoing the statutory audit for small companies (Collis and Jarvis, 2003). Article 51 of the Fourth Company Law Directive (78/660/EEC) requires all non-dormant limited companies to have their annual accounts audited. However, using the size criteria in Articles 11 and 27, national jurisdictions can provide the exemption for qualifying non-publicly accountable small companies (Collis, 2010). In 1994, the UK therefore applied the EU Fourth Directive, which permits Member States to exempt small companies from statutory audit, and permitted very small private companies to opt out of statutory audit for the first time (Collis et al, 2004). However, UK government did not adopt the full definition of a small company as defined in the Companies Act, which reflected EC recommendations. Although the definition was the same as the Companies Act for the value of assets and number of employees, the turnover threshold was substantially less (Collis and Jarvis, 2003).

Since the 1990s, the debate between big UK GAAP and little GAAP in the UK has resulted in a number of financial reporting concessions for qualifying to be smaller entities. This led to an amendment of section 249A of the Companies Act 1985 that permitted audit exemption for most companies with a turnover of up to £90,000 and a balance sheet total not more than £1.4m. If the company had a turnover of between £90,000 and £350,000, it was able to exempt from the audit, but had to have an accountant's report (Skerratt, 2001).

In 1997 the turnover threshold was raised from £90,000 to £350,000 (SI 1997/936), with the balance sheet total remaining at £1.4m. On top of that, the company had to qualify as 'small' for the purposes of filing abbreviated accounts. The next amendment was in the year of 2000 when the turnover threshold for audit exemption was raised to £1m (SI 2000/1430). However, this is still considerably lower than that the turnover threshold that applies to the other concessions offered by little GAAP (Collis et al, 20004).

Today, the Companies and Limited Liability Partnerships Regulations 2012 (SI 2012/2301) amend the Companies Act 2006 in order to align the mandatory audit thresholds with accounting thresholds. It exempts some subsidiary companies from statutory audit and dormant subsidiaries from preparing and filing financial accounts (Technical Resource, ICAEW, 2012). Audit thresholds for small companies are aligned with accounting thresholds for small companies. In 2008, small companies will be entitled to an exemption from statutory audit if they meet two out of the three

mandatory criteria: no more than 50 employees; no more than gross assets of £3.26 million; and less than £6.5 million in turnover (Technical Resource, ICAEW, 2012).

1.4.2 Development of IFRS for SMEs from IASB

With the debate on whether SMEs should comply with full sets of accounting standards, the official differential reporting initiatives at the IASB started in 1998 when the International Accounting Standards Committee (IASC) launched a SME project in April 1998 (IASB, 2003a). In December 2000, the IASC noted that there was a need for a different version of international accounting standards for SMEs, and highlighted this as a critical agenda item for the newly formed IASB. The IASB took note and launched a research project for SMEs in 2001 (Greeff, 2008). In September 2003, the IASB hosted a meeting of the World Accounting Standard Setters in London. In the preparation of this meeting, the IASB surveyed the standard setters to ascertain what has been already done in the different countries over the world and what the IASB should do with respect to accounting standards for SMEs. 28 Countries responded to the survey (IASB, 2003b).

At the February 2004 meeting, the IASB concluded that IFRS was suitable for all entities, irrespective of size or public trading (IASB, 2004a). In line with the target set in July 2003, the IASB issued a Discussion Paper: Preliminary Views on Accounting Standards for Small and Medium-sized Entities in June 2004 (IASB, 2004b). The IASB received over 100 responses, which were analysed and discussed during December 2004 (IASPlus 2008). The feedbacks indicated that an overwhelming majority of respondents concurred that full IFRS was not suitable to SMEs, and that separate standards should be developed.

Following the feedback received on the Discussion Paper in 2004, the IASB published a staff questionnaire on potential recognition and measurement modifications for SMEs on 11 April 2005 (IASB, 2005b). They further commenced with a series of round-table meetings to discuss the possible modifications. The board found that there was widespread support for an international SME standard with recognition and measurement simplifications (Greeff, 2008).

In February 2007, the IASB released the final version of the Exposure Draft (ED) of a proposed IFRS for SMEs for comment (IASB, 2007a). The proposed standard is aimed at the types of transactions usually applicable to SMEs with approximately 50 employees and is meant to be a stand-alone document not

requiring significant cross-references to full IFRS (Greeff, 2008). Finally, on 9 July 2009, the International Financial Reporting Standard (IFRS) designed for use by small and medium-sized entities (SMEs) was published by IASB and it is a result of a five-year development process with extensive consultation of SMEs worldwide.

IFRS for SMEs is designed for companies that have no public accountability, which prepare general-purpose financial statements for external users (IASB, 2009). It leaves jurisdictions to define size criteria as it is not feasible for the board to develop quantified size tests that would be applicable and long-lasting in all of the 100 countries (IASB, 2009). IFRS for SMEs is designed for entities, regardless of size, which need to provide general-purpose financial statements for external users (IASB, 2009). Furthermore, it is independent of what tax authorities require (IASB, 2009).

1.4.3 Proposal of ASB in the UK

In 2012, in line with IASB's move, the UK Accounting Standard Board (ASB) proposed Financial Reporting Exposure Draft (FRED) 48, which is about the future of Financial Reporting in the UK and Republic of Ireland. It indicates that companies without public accountability will follow Financial Reporting Standards 102 (FRS 102), which is based on IFRS for SMEs. The proposed financial reporting framework in the UK will be three classes of companies following different sets of accounting standards, include public listed companies will still follow full IFRS to prepare consolidated accounts; private non-small companies will follow the FRS 102 (based on IFRS for SMEs); and private small companies will still follow Financial Reporting Standards for Smaller Entities (FRSSE). ASB defines each class of companies (public quoted, medium-sized and small companies) under size criteria of Companies Act 2006.

1.5 Factors driving Differential Reporting Standards

The development of differential reporting framework is discussed in the previous section. There are various issues that affect the financial reporting standards between large companies and SMEs, which indicate that large companies and SMEs should follow different sets of accounting standards. Various factors will be

discussed below in detail.

1.5.1 User's needs

Research in the UK and Ireland indicates that there is a difference between the main users of the financial statements of large companies and those of SMEs (Collis and Jarvis, 2003). Large companies' financial statements are widely circulated in the market and available to a wide range and unlimited number of users. The circulation of financial statements of SMEs, on the other hand, is generally restricted to shareholders. SMEs do not have a statutory requirement to report full accounts to Registrar of Companies if they fulfill certain size criteria, although they still have to report full accounts to furnish shareholders with full accounts. Investors, lenders, suppliers, customers and the general public market, therefore do not have automatic access to the financial statements of the typical SME (Greeff, 2008).

It is also indicated, in the Statement of Principles (ASB, 1999), that large companies have a much broader range of users than small companies (Collis and Jarvis, 2003). As mentioned above, the typical users of financial statements prepared by private companies are its shareholders and banks, and the taxation authorities. It could, therefore be argued that not all accounting standards and reporting requirements contained in IFRS should be applicable to SMEs (Greeff, 2008).

1.5.2 Agency Issues

Ownership and management in large companies are separate, whereas for private companies, there is no separation of ownership between shareholders and directors. Conflicts of interest between corporate insiders, such as managers and controlling shareholders, on one hand, and outside investors, such as minority shareholders, on the other hand, are central to the analysis of the modern corporation (Berle and Means, 1932; Jensen and Meckling, 1976).

Agency issues are exacerbated in public companies since they have complex transactions, which provide the scope for performance management. Generally, management of public companies are likely to manage earnings upwards, to show to investors that the company is doing well. As for SMEs, they may have agency problems within the owner/manager structure, but they likely to be less severe than in public companies. Overall, public companies need to be more closely regulated compared with private companies based on agency issues.

1.5.3 Size and Complexity

The main argument in differential reporting is that large companies have complex transactions, and therefore need more complex regulation to neutralise the incentives for performance management. ASB (2012, p9) regards size and complexity as a major objective affects the regulation. However, such complexities are rarely relevant in small companies. Private companies may have simpler transactions, and with less facility for performance management. Therefore, in terms of size and complexity, SMEs will demand less complex accounting rules compared with large companies.

1.5.4 Costs

Compliance with IFRS is perceived to be costly. Companies have to either appoint additional staff in the finance department or rely on their auditors to ascertain compliance with the requirement of IFRS. It is generally acknowledged that the work effort and costs of complying with certain accounting standards is proportionately more burdensome and may be somewhat overwhelming for SMEs (Greeff, 2008). Small companies may not afford to spend the same amount of money and report the same quality of reporting as large companies. As well as having an influence on financial reporting requirements, this factor is the basis for the exemptions from audit given to small companies.

In addition, fewer users of private companies are likely to reap the benefits of the information produced than is the case for publicly accountable enterprises. The increased costs as a result of the additional recognition and disclosure requirements, often add no value to the users (Greeff, 2008). Therefore, the issue of the cost will probably lead to the regulators to consider differential reporting in order to reduce the burden for small companies on complying with full IFRS.

1.6 Objectives of Differential Reporting Standards

With the introduction of differential reporting framework across different countries, which the main aim is to reduce the burden for SMEs by complying with full sets of accounting standards (ASB, 2007). The IASB, therefore, in the interest of public development, has extended its convergence project to meet the needs and

demands of SMEs in 2003 (Chand and White, 2007). In 2009, IASB issued the separate set of accounting standards for SMEs, which is IFRS for SMEs. After the launch of IFRS for SMEs, the UK ASB propose the future structure of financial reporting standards in 2013, which is in line with IASB's move. The objectives of both accounting standards boards in developing financial reporting standards for SMEs are discussed below.

1.6.1 Discussion of IASB's objective

The primary objective of the International Accounting Standards Board (IASB) is to “establish a single set of high quality, understandable and enforceable global accounting standards that will enable transparent and comparable information in general-purpose financial reports across nations” (IASB, 2005a, pg.1). According to the IFRS for SMEs, Basis for Conclusion (2009), SMEs could be different from larger companies in terms of users' needs and costs that justify different standards. Both sets of IFRS and IFRS for SMEs standards are general-purpose statements.

IFRS for SMEs is for those companies that do not have public accountability, regardless of size. The major concern for this is how to differentiate between large and SMEs. The IASB offers no specific direction and criteria on how to distinguish between large companies and SMEs (Chand and White, 2007). There is no indication of accounting quality that large entities and SMEs are expected to produce. The IASB leaves each jurisdiction to decide the approach should be used to define SMEs. The implicit assumption in developing a separate set of standards for SME is that greater comparability in financial reports of SMEs across countries if IFRS for SMEs are adopted (Chand and White, 2007). However, leaving each jurisdiction to decide the criteria for SMEs seems inconsistent with the comparability.

1.6.2 Discussion of ASB's objectives

In 2012, the ASB published three Financial Reporting Exposure Drafts (FREDs) setting out revised proposals for the future of financial reporting in the UK and Republic of Ireland: FRED 46 “Application of Financial Reporting Requirements” (draft FRS 100); FRED 47 “Reduced Disclosure Framework” (draft FRS 101); and FRED 48 “The Financial Reporting Standard applicable in the UK and Republic of Ireland” (draft FRS 102) (ASB, 2012b). ASB recommends that proposed FREDs would replace the current body of Financial Reporting Standards (FRS) issued by the ASB (ASB, 2012b). They propose that, entities with public accountability, would have applied EU-adopted IFRS to prepare consolidated accounts; entities without public accountability (non small entities) would apply FRS 102 based on the IFRS for SMEs; and entities qualifying as small based on Companies Act (size thresholds), would have applied the FRSSE (ASB, 2012a).

The main objective of ASB's move is to enable users of accounts to receive high-quality understandable financial reporting proportionate to the size and complexity of the entity and the users' information needs, whilst maintaining the quality of financial reporting (ASB, 2012a, pg.16). However, the objective of ASB in differential reporting framework is unclear in terms of accounting quality. They do not specify what consequences or accounting quality should follow across each class of companies. Therefore, it is very difficult to evaluate the effectiveness of differential reporting framework.

1.7 Incentives for the Demand and Supply of Financial Information

Prior to discussing the issues on differential accounting standards for SMEs, the incentives of demand and supply of financial information or regulation will be discussed in a broader picture in this section.

Factors drive differential accounting standards between large and smaller entities may influence the accounting quality differently. However, from the development of IASB and ASB in differential reporting standards, the issues in regards of accounting quality are not addressed clearly. Both IASB and ASB have not made clear as to what quality they expect that different classes of companies should produce. Do they expect larger companies have better accounting quality than smaller entities or do they expect equal accounting quality for all types of companies? Without any indication of what consequences should follow, it is very difficult to evaluate the efficacy of differential reporting structure. Arguably, some prior papers argue that the process of regulation is the process of negotiation (Watts and Zimmerman, 1979; Joni Young, 2004; Sunder, 2005).

1.7.1 Need of Accounting information and regulations

Jensen and Meckling (1976) point out the relationships between shareholders and managers are agency relationship. In a broader view, accounting procedures and regulations are devised in order to reduce the agency costs of contracts (Watts and Zimmerman, 1979). Jensen and Meckling (1976) define the concept of agency costs, analyze the incentives of principals and agents and derive formal hypothesis about the contractual arrangements one would expect to observe in equilibrium. Watts and Zimmerman (1977) and Jensen and Meckling (1979) indicate that if the equity market is competitive and makes unbiased estimates of the effects of monitoring and bonding expenditures, then the owner-manager bears the total wealth effect of the expected agency costs of creating outside equity; hence, managers have an incentive to reduce expected agency costs.

Givoly, Hayn and Katz (2010) raise the demand and incentives effects on accounting quality that investors, shareholders, authorities will demand high quality accounting information from companies, but in the meantime, companies will have incentives to manage earnings so as to lower the quality of accounting information. Therefore, the role of regulation is to balance the effects from both the demand of

reporting high quality of financial information from the market and the incentives of managing earnings from companies.

1.7.2 Argument against Accounting Regulations

Sunder (2005) argue that heavy reliance on standards-based financial reporting may have led accounting to focus narrowly on the objectivity of individual numbers and so as to sacrifice the overall fairness. Sunder (2005) suggests that a shift in emphasis from standards towards norms may yet help accounting and corporate governance recover a sustainable and efficient balance.

Further, Ball (2001) mentions “you cannot regulate an economy very effectively if there are incentives in the economy to act against the way you regulate.” Therefore, Ball (2001) suggests that there is no point to have accounting standards if they are not properly enforced.

A study by Joni Young (2003) suggests that accounting standard boards regulate without any clear objectives, and therefore are engaged a variety of efforts to persuade users that the work of theirs is valuable, appropriate, useful and correct. Young (2003, pg.625) indicates that accounting standard boards employ rhetorical strategies in its accounting standards attempt to persuade users that a specific standard is “good”, that silence alternatives and possible criticisms of the standard and that construct the FASB as a “good” standard-setter. These strategies help to establish standards as technical products and thus work to maintain the myth of accounting objectivity (Young, 2003, pg.637). Further, standards and accounting practices are to be seen as emergent from a rational process that separates the technical and political rather than as the result of the needs of a particular agent or the demand of economic reality (Young, 2003, pg.637).

Therefore, regulators are basically regulating in the dark. The process of developing new accounting standards is the process of negotiation (Watts and Zimmerman, 1979), because the regulators do not have enough understanding of how companies going to behave.

1.8 Issues arising within the differential reporting framework

1.8.1 Comparison of Objectives of IASB and ASB

The objective of IASB for developing IFRS for SMEs is based on the nature of

users' needs. The purpose is to develop a separate set of standards (general-purpose statements) for companies without public accountability, regardless of size, to enhance comparability across countries. The main objective of ASB in the UK for proposing the FRED 48 (FRS 102) to replace the current UK GAAP, is to enable users of accounts to receive high-quality understandable financial reporting proportionate to the size and complexity of the entity and the users' information needs (ASB 2012). The ASB's proposal is generally in line with IASB's thinking. However, this seems conflicting in terms of size criterion – the IASB suggested that IFRS for SMEs is for companies without public accountability regardless of size, whereas the ASB proposed three-tier system based on the size of companies with elimination of public accountability.

1.8.2 What do regulators expect?

The objectives of having differential reporting standards include: the concern of size issues; cost issues; agency issues; and economic importance of companies. Further, these concerns are major factors driving accounting quality across different groups of companies to be different. However, both the IASB and the UK ASB have not made clear of what they expect in terms of accounting quality. They emphasize the development of differential reporting standards for SMEs is mainly to reduce the reporting burden and cost of SMEs, but it is difficult to predict what regulators expect because they do not specify what consequences (accounting quality) that different classes of companies should follow.

Do they expect larger entities have higher accounting quality than smaller entities? Do they expect accounting quality to be the same across different classes of companies under the differential reporting framework? What if the size criteria are not appropriate for companies that will be adopting the new standards (IFRS for SMEs), which in turn might result low quality of reporting? What if there are some large-private companies need to be regulated like public companies? What if there are some small companies need to be regulated like medium companies? What if the demand of reporting high quality of financial information does not counteract the incentives of managing earnings in public companies and private companies?

1.8.3 Possible outcomes

Different users' needs, agency issues, size and complexity, and costs are the

factors drive differential reporting standards for SMEs. Possible issues in accounting quality may arise under differential reporting framework based on these factors. For example, large companies may develop schemes to circumvent the reporting requirements if agency issues dominate the needs of their potential users. However, smaller companies may have so many exemptions from the regulations, which apply to larger companies that the quantity and quality of reporting is insufficient.

However, regulators do not address these issues and it is very difficult to evaluate the effectiveness of differential reporting framework without clear consequences to follow. It is consistent with Young (2003) and Watts and Zimmerman (1979) that process of regulation is the process of negotiation rather than the result of the needs of a particular agent or the demand of economic reality.

1.9 Main objective of the thesis

The IASB and the UK ASB have adopted different financial reporting rules for different classes of companies. The IASB has IFRS and IFRS for SMEs. In the UK, currently companies follow IFRS, UK GAAP and FRSSE; furthermore, some companies are exempt from audit. The objectives of having differential reporting standards include the concern of size issues, cost issues, agency issues, and economic importance of companies. However, the both regulation boards (IASB and UK ASB) have not made clear of what they expect in terms of accounting quality based on these factors.

It is difficult to evaluate the efficacy of this differential reporting framework to regulation since the ASB (and IASB) do not specify what consequences should follow. Is differential reporting a response to the differential importance of companies and the differential cost of compliance? This approach would suggest that variation in accounting quality across companies is acceptable. Or is differential reporting a response to the differential complexity of transactions and the incentive to report truthfully and fairly? This approach would suggest that variation in accounting quality across companies is not acceptable.

There are two forces discipline accounting quality of firms, which are legal forces and market forces. Legal forces include accounting standards, auditors and tax authorities. Market forces include investors, shareholders, and debt-holders. Accountings standards are in the position of disciplining companies to report good

quality of earnings (Ball, Robin and Wu, 2003). Further, investors, shareholders, and debt-holders demand good accounting quality (Givoly et al, 2010). In the process of making accounting standards, regulators do not make clear of what they expect. Do they expect higher accounting quality for larger entities and lower accounting quality for smaller entities? Or do they expect equalized accounting quality across all tiers of companies. Furthermore, in the presence of market discipline, will the market discipline accounting quality? Will the market discipline result variations in accounting quality?

Therefore, the analysis of companies' behavior of reporting their financial information under current regulatory structure is needed in order to inform the future regulation policy. We cannot examine the post-adoption effects of accounting quality because the new accounting standards for SMEs (FRS 102) are not yet adopted in the UK, and there are very few studies address these issues for SMEs.

The main objective of this thesis is to examine the discipline of current accounting regulations and discipline of market on accounting quality in order to inform the discussion about the suitability of existing boundaries between the groups. That is, we compare the quality of financial reporting for public and private companies under current reporting framework in the UK. We propose no formal criteria for the desired differences between the groups, but merely make observations.

Before conducting the empirical analysis of the issues outlined above, we firstly review and summarize the large volume of literature on accounting quality in the next chapter.

Chapter 2: Accounting Quality

2.1 Overview

Accounting standards determine how earnings should be computed and reported. High quality of standards influences the users' perception of quality of financial information (Wulandari and Rahman, 2004 pg.2). A better perception of the standards would create accounting information that are more readily used by users and enhance the value relevance of financial information. High quality accounting standards are perceived to provide consistent, comparable, relevant and reliable financial information to the investors for decision-making of specific investment (Wulandari and Rahman, 2004 pg.2).

Accounting quality is sometimes referred as the term of earnings quality. Accounting quality refers to the extent to which the financial statement information reflects the underlying economic situation. In particular, Dechow Ge and Schrand (2010 pg.344) define the earnings quality based on Statement of Financial Accounting Concepts No. 1 (SFAC No. 1) as "higher quality earnings provide more information about the features of firm's financial performance that are relevant to a specific decision made by specific decision-maker."

With the definition of earnings quality, Dechow et al (2010 pg.345) indicate that there are three features related to this definition. First, earnings quality is conditional on the decision-relevance of the financial information, and it is defined only in the context of a specific decision model. Second, the quality of reported earnings depends on whether it is informative about the firm's fundamental financial performance. Third, earnings quality is jointly determined by the informativeness of reported earnings on firms' financial performance and by the ability of the accounting system to measure financial performance.

2.2 Measures of Accounting Quality

Dechow et al (2010 pg.345) summarise three broad categories to measure firms' earnings quality: properties of earnings (e.g. earnings persistence and accruals; earnings smoothing; earnings conservatism etc.); investor responsiveness to earnings (e.g. earnings response coefficient); and external indicators of earnings misstatements (e.g. auditing standards; corporate governance). The properties of

earnings focus on the companies' own financial information and accounting numbers, whereas other two types of measures are mainly focusing on effects of external parties.

Due to the limitation of gathering data and information on external parties such as investors and auditors for private companies, therefore, in this thesis, we measure earnings quality based on properties of earnings to examine the quality of earnings for different classes of companies under current regulatory framework in the UK.

Properties of earnings can be operationalized by various proxies, which include earnings persistence, accruals, earnings smoothness, target beating (e.g. small profit relative to small loss), and timely loss recognition, which have been broadly used in accounting research.

However, among these proxies in measuring accounting quality, there is no measure of earnings quality that is superior for all decision models. Each measure is based on different assumptions and inferences, and captures different aspects of accounting quality. Various measures of accounting quality based on properties of earnings are discussed below.

2.2.1 Earnings persistence

Under a sustainable economic performance, firms are expected to have a sustainable earnings/cash flow stream. It will be more useful inputs into equity valuations and will be more predictable and easier to forecast future earnings. Basically, if earnings are persistent, the level of earnings will be continually recurring from accounting to accounting period. This type of measure are usually adopted for the research of usefulness of earnings to equity investors for valuation, with the assumption that more persistent earnings will yield better inputs to equity valuation measure, and hence more persistent earnings are of higher quality than less persistent earnings (Dechow et al, 2010).

The most common model specification estimates earnings persistence is as follows:

$$Earnings_{t+1} = \alpha + \beta Earnings_t + \varepsilon_{t+1}$$

In this model, current earnings are the function of future earnings and earnings are usually scaled by total assets. If earnings are more persistent and more informative, β will be higher (close to 1). In the view of earnings quality, if firms' earnings are persistent, the current earnings will be useful in measuring the future performance of

firms and will have relatively small volatility in earnings and fewer transitory component (Dechow et al, 2010 pg.352).

In addition, Sloan (1996) decomposes $Earnings_t$ into current year's cash flows (CF_t) and accruals ($Accruals_t$). The model is expressed as follows:

$$Earnings_{t+1} = \alpha + \beta_1 CF_t + \beta_2 Accruals_t + \varepsilon_{t+1}$$

The intuition of this model is that β_1 is expected to be larger than β_2 , implying cash flows component should be more persistent than accruals component. Accruals are used to solve the timing and matching problems of cash flows, so would not expect it to have any permanence, whereas cash flows are related to economic activity. Therefore, cash flows are expected to be more informative about $Earnings_{t+1}$ than accruals. If accruals are more informative, it is probably due to earnings management (an overestimate of sales in one period needs to be corrected in the next).

Strength of Earnings persistence model

Overall, earnings persistence fits well with the view of earnings forecast. It helps investors, since they are typically concerned with permanent performance. Earnings persistence captures the smoothness of earnings. Economic performance is quite persistent, so earnings should be too. If earnings are more persistent, it will be easier to forecast firms' future earnings with less earnings volatility and less transitory components.

Therefore, higher persistence of earnings will produce better inputs to equity valuation models and will be able to generate sustainable cash flows in the future (cash flows component greater than accruals component), implying high quality of earnings.

Problem of Earnings persistence model

Earnings persistence is based on the assumption that economic performance is sustainable. Earnings persistence may be achieved by earnings management (evidence of earnings smoothing) because economic performance may be volatile in some situations.

Cash flows component is expected to be more persistent than accruals component. However, accruals grow with the size company, so accruals may have some (or more) information about $Earnings_{t+1}$.

Therefore, earnings persistence model is influenced by economic factors and related to earnings smoothing.

2.2.2 Accruals

2.2.2.1 Magnitude of Accruals

In the light of earnings persistence, accruals are crucial components in earnings affecting earnings persistence. Recently, accruals are the most studied determinant of earnings quality. Sloan (1996 pg.37) finds that the accruals component is less persistent than the cash flows component of earnings, implying that firms with high levels of accruals have low quality of earnings. Extreme large level of accruals involved in earnings are low quality, because high levels of accruals are positively correlated with higher magnitude of estimation errors in accruals, implying all else equal, large accruals indicate lower earnings persistence. (Dechow and Dichev, 2002 pg.54). Therefore, the level of accruals should be appropriate in earnings to adjust cash flows.

According to Dechow et al (2010), who summarize the most commonly used metrics to define magnitude of accruals are as follows:

$$Accruals = Earnings_t - CF_t$$

$$Accruals = \Delta(Noncash\ working\ capital)$$

$$Accruals = \Delta(net\ operating\ assets)$$

Accruals could be defined in various ways. In early research (e.g. Sloan, 1996; Jones, 1991; and Healy, 1985), when statement of cash flows is not mandatory, accruals were frequently defined as non-cash working capital and depreciation. Ever since the statement of cash flows is emerged, accruals are more often defined as the difference between earnings and cash flows where cash flows can be obtained from the statement of cash flows. Hribar and Collins (2002), who suggest the latter definition of accruals mitigates error induced by mergers and acquisitions, which motivate researchers to adopt the new definition of accruals.

Strengths of Large Magnitude of Accruals measure

The measure links directly the role of an accruals-based accounting system relative to a cash-flow-based system (Dechow et al, 2010 pg.351). This tries to capture whether accruals are performing a useful function in making adjustments to cash flows. If accruals are too small then there seems to be little point. If accruals are too large, then earnings might appear not to have any economic substance.

Therefore, if level of accruals is extremely higher, which may result lower earnings persistence. This implies that cash flow component should be more persistent than accruals component in earnings.

Problems of Large Magnitude of Accruals measure

Dechow (1994) finds that accruals solve the timing and matching problems of cash flows, which improves the ability of earnings to better measure firms' financial performance. Dechow and Dichev (2002) suggest that large accruals are indication of greater improvement over cash flows since accruals are used to compensate timing and matching problems of cash flows.

Different firms' characteristics may drive the accruals to be different, for instance, companies in different industries or different sizes are likely have different levels of accruals, for which we are not able to simply compare earnings quality by magnitude of accruals. Therefore, firms' fundamental performance and economic performances are likely to differ for firms with extreme large accruals versus less extreme large accruals.

2.2.2.2 Abnormal Accruals

Various studies emphasize abnormal accruals in the empirical accounting research. The term of "abnormal accruals" is generated from an accruals model as a measure for earnings quality. There are significant areas of research distinguish abnormal from normal accruals by directly modeling the accruals process. The normal accruals are expected to capture adjustments that reflect firms' financial performance while the abnormal accruals are meant to capture discretion in applying accounting standards or earnings management. These accruals models attempt to directly capture problems in the accounting measurement system. The residual from the accrual model represents the management discretion or estimation errors. The general interpretation is that if the normal component of accruals is estimated

properly, then the abnormal component represents earnings management that is of lower quality of earnings.

There are some widely used accruals models in the accounting research, which are discussed below respectively.

Jones (1991) Model (time-series model)

$$Acc_{t-1} = \alpha + \beta_1 \Delta Rev_{t-1} + \beta_2 PPE_{t-1} + \varepsilon_{t-1}$$

$$NormalAcc_t = \alpha + \beta_1 \Delta Rev_t + \beta_2 PPE_t$$

This model specifies that change in normal accruals should be expected during the event period. The relationship between total accruals and its explanatory variables is estimated before the event period using the first regression model, with the assumption that accruals in previous event period are free of earnings management. All variables are scaled by total assets. ΔRev_t is used to capture the effects of changes in working capital, and PPE_t is used to capture the long term accruals such as depreciation. The coefficients of β_1 and β_2 are then used to estimate normal accruals during the event period. The difference between total accruals and estimated normal accruals in the event period is the measure of abnormal accruals.

The problem with this model is that correlation or error with firm performance can bias tests. Residual is correlated with accruals, earnings and cash flow. Dechow Sloan and Sweeney (1995) and Dechow Richardson and Tuna (2003) indicate that the Jones model encounters Type I (classify accruals as abnormal when they are a representation of fundamental performances) and Type II (classify accruals as normal when they are not) misspecification errors.

Modified Jones Model (Dechow Sloan and Sweeney, 1995) (time-series model)

$$Acc_t = \alpha + \beta_1 (\Delta Rev_t - \Delta Rec_t) + \beta_2 PPE_t + \varepsilon_t$$

The problem with the Jones model is that ΔRev_t is included as part of the estimate of normal accruals. However, if revenues are manipulated in the test period, then this will be included in the estimate of normal accruals. That means, the earnings management will not be detected. Dechow et al (2005) modify the Jones model to adjust for changes in credit sales in order to reduce the Type II errors, that only cash sales are considered in estimating normal accruals. Since debtors are frequently manipulated, this modification combats potential bias in normal accruals

and increase the power Jones model to yield residual that is uncorrelated with expected revenue accruals and better reflect earnings management.

However, this heavily relies on assumption that all sales in credit are actually being manipulated, which will give rise of Type I error that is more than Jones model suffers.

Cross-sectional Jones and Modified Jones Model (Peasnell, Pope and Young, 2000)

In the prior models of normal accruals, the parameters are estimated on a time series for each company. This makes significant assumptions about the stability of the model over time and also places considerable restrictions on the companies for which abnormal accruals can be estimated.

Peasnell et al (2000) suggest that accruals models can be modeled at the firm level, which allows variation across firms in estimating normal accruals. The approach in Peasnell et al (2000) is to use cross-sectional estimates of the parameters based on the industry in which each company is located. Firm-level estimation, however, assumes time-invariant parameter estimates and typically imposes sample survivorship biases. The models are therefore most frequently estimated cross-sectionally, with observations taken from the same industry.

This specification assumes constant coefficient estimates within the industry. Dechow et al (2010 pg.358) suggest that some firms may have large residuals because of variation induced by industry classification rather than because of earnings management or errors. The measurement error in the residual will be related to industry factors. For example, the model may have a poorer fit in growth industries, and growth may be associated with the quality of accruals.

Dechow and Dichev (2002) approach

$$\Delta WC = \alpha + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1} + \varepsilon_t$$

Accruals are regressed as function of past, present, and future cash flows given their purpose to vary the timing of cash flow recognition in earnings because accruals anticipate future cash collections/payments and reverse when cash previously recognized in accruals is received/paid (Dechow et al, 2010). This model focuses on short-term working capital accruals. $\sigma(\varepsilon_t)$ or absolute ε_t proxies for accrual quality as an unsigned measure of extent of accrual errors.

However, this model focuses on short-term accruals and it does not address errors in long-term accruals such as depreciation and goodwill that are likely to reflect earnings management.

McNichols (2002) – Discussion of Dechow and Dichev (2002) approach

$$\Delta WC = \alpha + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1} + \beta_4 \Delta Sales_t + \beta_5 PPE_t + \varepsilon_t$$

McNichols (2002) considers the implications from Jones (1991) model and Dechow and Dichev (2002) model and combines their variables from both models. The intuition behind this is that earnings management is what cannot be explained by (1) current and past performance of companies and (2) cash flows of companies.

Her results suggest that estimation error (ε_t) includes effects from firms' fundamental effects and real manipulation. It is correlated with partitioned variables such as cash flows. Therefore, studies need to consider implications from Jones models and Dechow and Dichev model in order to develop more powerful approaches, which help to estimate earnings quality and analyse the role of management discretion in influencing earnings quality.

Discretionary estimation errors (Francis LaFond Olsson and Schipper, 2005)

$$TCA_t = \alpha + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1} + \beta_4 \Delta Rev_t + \beta_5 PPE_t + \varepsilon_t$$

where, $\sigma(\varepsilon_t) = \alpha + \lambda_1 Size_t + \lambda_2 \sigma(CFO)_t + \lambda_3 \sigma(Rev)_t + \lambda_4 \log(OperCycle)_t + \lambda_5 NegEarn_t + \gamma_t$

As suggested by McNichols (2002), Francis et al (2005) include variables from both Jones (1995) model and Dechow and Dichev (2002) model, and extend the model to decompose the standard deviation of the residual from the accruals model into an innate component that reflects the firm's operating environment and a discretionary component (γ_t) that reflects earnings management. Innate estimation errors are the predicted component from $\sigma(\varepsilon)_t$ regression. The standard deviation ($\sigma(\varepsilon)_t$) represents the quality of the accruals to capture the firm's fundamental performance, and the residual (γ_t) represents abnormal accrual quality; higher standard deviations are lower quality.

However, the innate characteristics could also reflect estimation errors, which reduces the power of residual to reflect earnings management (i.e., a Type I error).

Alternatively it could induce bias (in an unknown direction) into the proxy for distortion (Type II error). Therefore, further research is needed to evaluate the importance of these issues.

Performance matched (Kothari Leone and Wasley, 2005)

$$DisAcc_t - Matched\ firm's\ DisAcc_t$$

Kothari et al (2005) identify a firm from the same industry with the closest level of Return On Assets (ROA) to that of the sample firm and deduct the control firm's abnormal accruals (i.e., residuals) from those of the sample firm to generate "performance-matched" residuals.

However, this approach is likely to add noise to the measure of discretionary accruals because normal accruals that generate the residuals explain low level of the variation in accruals, and it is applied when correlated performance is an important issue. In addition, the performance matching can extract too much distortion when earnings are being manipulated, resulting in low power of the tests.

Strengths of Abnormal accrual models

The measure attempts to isolate the manipulated or error component (distortion) of accruals. The use of these models has become the widely accepted methodology in accounting to measure distortion in earnings (Dechow et al, 2010 pg.351).

Problems of Abnormal accrual models

Tests of earnings management are joint tests of the accounting theory and the abnormal accrual model as a proxy for detecting earnings management. It is difficult to model what accruals should be. Abnormal accruals models encounter estimation errors. Quality of accruals are associated various economic factors such as size of the companies, growth of companies, industry characteristics and etc. Correlated omitted variables associated with firms' fundamentals financial performance are the important concerns.

2.2.3 Earnings Smoothness

The measure of earnings smoothness is related to earnings persistence. The basic idea of an accrual-based accounting system is that accruals compensate the timing and matching problems (issues of cash payments and receipts), so as to make earnings more informative about firms' performance than cash flows. The assumption of standard setter is that accrual-based earnings are a better measure of fundamental performance than a measurement system that is based on cash receipts and payments. Hence, smoothing is an outcome of an accrual-based accounting system (Dechow et al, 2010 pg.361). Walker (2013) suggests there is some evidence that many firms choose to engage in smoothing as part of a long-term equilibrium reporting strategy and that firms benefit from this by virtue of a less volatile share price, but this literature is underdeveloped.

However, the assumption may have its own drawback, which means earnings smoothing maybe achieved by management to hide or delay the information regarding firms' performance or management could engage earnings smoothing through the selection of accounting choices in applying the accounting system. Beidleman (1973) defined earnings smoothing as "an attempt on the part of the firm's management to reduce abnormal variations in earnings to the extent allowed under sound accounting and management principles". Hence, empirical research on earnings smoothing are related to these two aspects, one is the management's accounting choices and the other is on whether earnings smoothing better reflect firms' fundamental performance in the absence of accounting choices.

The most commonly used measure of earnings smoothing are the variant of the variability of earnings relative to cash flows from operations:

$$\sigma(Earnings)/\sigma(Cash Flows)$$

The intuition behind this is that the purpose of accruals is to have a measure of firms' financial performance, which is less volatile than the underlying cash flow. So variability of earnings should be lower than the variability of the underlying cash flows. However, too little variability of earnings relative to variability of cash flows may be the product of earnings management.

Furthermore, some studies (Lang et al, 2003 and 2006; Barth et al, 2008; and etc.) regress changes in earnings and changes in cash flows from operations respectively with economic variables such as size, growth, leverage, changes in debt,

turnover, and cash flows as control variables, and then obtain the ratio of variance of residuals from regressing each metric to compute the measure of earnings smoothing (the ratio of variability of earnings relative to cash flows). Metrics of regressing changes in earnings and changes in cash flows from operation are as follows:

$$\Delta E = \alpha_0 + \alpha_1 \text{Size} + \alpha_2 \text{Growth} + \alpha_3 \text{Lev} + \alpha_4 \text{ChangeDebt} + \alpha_5 \text{Turnover} \\ + \alpha_6 \text{CF} + \varepsilon$$

$$\Delta \text{CF} = \alpha_0 + \alpha_1 \text{Size} + \alpha_2 \text{Growth} + \alpha_3 \text{Lev} + \alpha_4 \text{ChangeDebt} + \alpha_5 \text{Turnover} \\ + \alpha_6 \text{CF} + \varepsilon$$

Dechow and Dichev (2002), who suggested that lower variability in earnings exhibit higher quality of accounting. However, too little variability of earnings relative to variability of cash flows may be the product of earnings management. If firms manage their earnings, the variance of residuals from regression of ΔE is expected to be much lower than the variance of residuals from regression of ΔCF .

Strengths of Earnings Smoothing

Income smoothing appears to be a common corporate practice in many countries around the world. Earnings smoothing mitigates the timing problems associated in cash flows under accrual-based system. However, too much smoothing may be an indication of earnings management. If the volatility of earnings relative to volatility of cash flows is too small, which may imply the product of earnings management.

Problems of Earnings Smoothing

Earnings smoothing is an outcome of an accrual-based accounting system, however, too much smoothing may be an indication of earnings management. It only captures the role of accruals that mitigates the volatility of cash flows. It does not provide the evidence how earnings management is being practiced. Furthermore, accruals have the role of recognising future losses to inform about firms' future financial performance, but earnings smoothing does not capture this role.

2.2.4 Target Beating

Recently, earnings quality research has gained significant new knowledge, such as target beating. Studies find a discontinuity in the distribution of reported earnings around zero level: a statistically small number of firms with small losses

and a statistically large number of firms with small profits (Hayn, 1995; Degeorge, 1996; Burgstahler and Dichev, 1997). Hayn (1995) first introduces the concept of the pooled and cross-sectional distribution of reported earnings approach to examine whether there is any evidence of earnings manipulation. She plots the distribution of Earnings Per Share (EPS) and identifies there is a discontinuity around zero earnings. Similarly, Burgstahler and Dichev (1997) propose small earnings increases could indicate earnings management based on a statistically unusual number of firms with small decreases in earnings. Further, Degeorge et al (1999) document that meeting or beating an analyst forecast is an indication of earnings management based on the discontinuity in the distribution of forecast errors: reported earnings less consensus analyst forecasts.

The common interpretation of this discontinuity in earnings distribution is that firms with small losses intentionally manage earnings upwards to report a small profit, implying that observations at or slightly above earnings targets have low quality of earnings. The measures such as small profits and small loss avoidance have been identified as an indication of earnings management. This measure is used as one specific proxy of earnings quality in earnings quality studies. Recently, studies usually use the ratio of small profit to small losses as the measure of small loss avoidance. An observation is classified as small profit (small loss) if positive (negative) earnings after tax fall within the range of 1 percent of lagged total assets, that means small losses are defined to be in the range $(-0.01, 0.00)$, and small profits are defined to be in the range $(0.00, 0.01)$.

The evidence on whether small profit and small loss avoidance represent earnings management is mixed. The discontinuity around zero earnings is with the assumption that earnings follow a smooth distribution when earnings management is absent. If there are discontinuities in the distribution at predictable points, indicate the presence of earnings management. However, Dechow Richardson and Tuna (2003) find that discretionary accruals present no difference in small profit versus small loss firms. Durtschi and Eason (2005, 2009) indicate that discontinuity is explained by statistical and sample bias issues related to scaling by price. Beaver McNicholes and Nelson (2007) suggest that the discontinuity around zero earnings can be interpreted as asymmetric taxes rather than opportunistic management.

Strengths of Target Beating

The measure is easy to compute; the concept is intuitively appealing; and survey evidence suggests earnings management around earnings targets. It is free on the mixed effects of firms' fundamental performance and accounting measurement system.

Problems of Target Beating

It provides the evidence of how earnings are actually managed. It does not provide the whole picture of accounting quality. The discontinuity around zero earnings is with the assumption that earnings follow a smooth distribution when earnings management is absent, but the distribution of earnings without earnings management is unknown in the first place. Furthermore, there might be other economic reasons for discontinuities in the earnings distribution. For example, Beaver McNicholes and Nelson (2007) suggest that the discontinuity around zero earnings can be interpreted as asymmetric taxes rather than earnings management.

2.2.5 Earnings Conservatism

Earnings conservatism in some studies is being addressed as asymmetric timeliness and timely loss recognition. The principle of earnings conservatism is that future bad news is anticipated, whereas future good news is not. A major change that occurred concurrently with the declining relevance of earnings is that more companies began reporting losses (Givoly and Hayn, 2000). A number of studies focus on timely loss recognition because there is a demand for timely loss recognition to combat management's opportunistic intentions (Basu, 1995; Pope and Walker, 1999; Ball Kothari and Robin, 2000; Givoly and Hayn, 2000). Assuming that the degree of asymmetric timeliness in a firm's earnings is controllable by managers, at least in part, and that managers rationally respond to demand through their accounting choices, the correlation between demand and asymmetric timeliness suggests that asymmetric timeliness represents good quality of earnings (Dechow et al, 2010).

Basu (1997) proposed the reverse earnings-returns regression model, which is frequently used in the earning quality research:

$$Earnings_{t+1} = \alpha + \alpha_1 D_t + \beta_1 Return_t + \beta_2 D_t \times Return_t + \varepsilon_t$$

where, $D_t=1$ if $Return_t < 0$

Issues on whether the bad news captured by accounting earnings through accruals process vary across countries or change over time is unaddressed. Generally investors observe firm's current earnings, but there is either good or bad news about future earnings of the firm in the market. The model assumes that markets efficiently reflect losses in returns when such losses are incurred. A higher β_2 implies more timely recognition of the incurred losses in earnings. The basic idea in the Basu model is that earnings capture future bad news not future good news, whereas return captures both future bad and good news. The dummy variable D_t is 1 when stock return is negative as it is impounding bad news about the future. When there is a bad news, earnings and returns recognise future losses altogether, which implies stronger association between returns and earnings (higher β_2).

Several papers address the issues associated with the measure of Basu (1997) model. In particular, Dietrich Muller and Riedl (2007) point out the reverse regression measure from Basu (1997) model is biased, this is further demonstrated in Givoly Hayn and Natarajan (2007), Beaver Landsman and Owens (2008), and Patatoukas and Thomas (2010). Therefore, due to the criticism of use of Basu (1997) model, the use of Basu's alternative measure has increased, which is particular used in the market where equity returns are not available. For example, the Basu's alternative measure is adopted in the study of Ball and Shivakumar (2005) for examining accounting quality of public and private firms in the UK. The Basu's alternative model is as follows:

$$\Delta E_t = \alpha_0 + \alpha_1 D\Delta E_{t-1} + \alpha_2 \Delta E_{t-1} + \alpha_3 D\Delta E_{t-1} \times \Delta E_{t-1} + \varepsilon_t$$

ΔE_t is the change in income from year $t - 1$ to t , scaled by beginning book value of total assets, and $D\Delta E_{t-1}$ is a dummy variable equal to 1 if ΔE_{t-1} is negative. The idea is that changes revert since they are not permanent. Negative changes revert quicker because bad news is more fully recognized in income. Therefore, α_3 will be negative when $\Delta NI_{t-1} < 0$ and Basu (1997) finds support for this prediction.

Strengths of Earnings Conservatism

Earnings conservatism is at the heart of accounting. It acts as a check on over optimistic stock markets. It is different from the role of accruals in error correction,

which is somewhat mechanical. It measures the willingness of accruals to signal future poor performance, which is an important aspect (role) of accruals.

DeFond (2010) points out if debt holders value timely loss recognition, and earnings management is used to avoid covenant violations (e.g., DeFond and Jiambalvo, 1994; Sweeney, 1994; Dichev and Skinner, 2002), then debt holders are also potentially influenced by earnings management. Hence, earnings conservatism is particularly used to avoid debt covenant violations. Earnings conservatism aims at disentangling the measurement of the process from the process itself by assuming that returns appropriately reflect fundamental financial information.

Problems of Earnings Conservatism

The net effect of timely loss recognition on earnings quality is unknown because it results in lower persistence during bad news periods than during good news periods (Dechow et al, 2010 pg.363), since both persistence and conservatism affect the quality of earnings. Furthermore, timely loss recognition as the measure of earnings quality relies strong assumption that accounting regulators are producing a high quality earnings number, and returns are providing an equal representation of timely loss recognition. This assumption creates problems in cross-country studies where variation in market structures and information flow are significant different across countries.

2.3 Comments about the proxies of Accounting Quality

In the light of discussion above, each proxy of earnings quality has its own strengths and drawbacks. The literature is limited in pointing out which proxy is the best in measuring quality of accounting, because each proxy measures different aspects of accounting quality.

Dechow et al (2010 pg.349) indicate that a relationship that high accrual firms tend to have high discretionary accruals, have less persistent earnings, be more subject to legal enforcement action, and appear to beat benchmarks more often. They further suggest that there is more ambiguity in the relation between accruals and other earnings quality proxies such as timely loss recognition, smoothness, and target beating.

In this thesis, we examine earnings quality across and within different groups of companies under current differential reporting framework. We use different

proxies of accounting quality to measure different aspects of firms' accounting quality. The purpose of this is to examine how differently that each group of companies behave in order to inform the future policy and discussion about differential reporting framework.

We firstly start with the very basic analysis of cash flows and earnings and then step into more sophisticated measures of earnings quality such as earnings smoothing, target beating, earnings conservatism and earnings persistence.

Chapter 3: Effects of Regulation on Accounting Quality: Ratio Analysis

3.1 Introduction

3.1.1 Background

Currently, the IASB and the UK ASB have adopted different financial reporting standards for different classes of company. The IASB has full IFRS and IFRS for SMEs. In the UK, currently companies follow IFRS, UK GAAP and FRSSE; furthermore, some companies are exempted from statutory audit.

In 2012, UK ASB proposes the new structure of financial reporting under the existing size criteria, that public and small companies will remain the same to follow full IFRS and FRSSE, and all other entities will follow IFRS for SMEs to replace UK GAAP.

However, neither ASB nor IASB addressed whether the existing boundaries will be suitable for the future of differential reporting standards framework. Furthermore, there is no clear indication of expectation on accounting quality across different tiers of companies from both accounting standards boards.

3.1.2 Issues Arising

The objectives of having differential reporting standards include the concern of size issues, cost issues, agency issues, and economic importance of companies. Further, these concerns may influence accounting quality, and result variations in accounting quality across different groups of companies.

Accounting quality is a way to evaluate how good the accounting system measures the firms' financial performance (Ball, Robin and Wu, 2003). However, both regulation boards (IASB and UK ASB) have not made clear of what they expect in terms of accounting quality. Hence, it is difficult to evaluate the efficacy of this approach to regulation since the ASB (and IASB) do not specify what consequences should follow.

Is differential reporting a response to the differential importance of companies and the differential cost of compliance? This approach would suggest that variation in financial reporting quality across companies is acceptable. Or is differential

reporting a response to the differential complexity of transactions and the incentive to report truthfully and fairly? This approach would suggest that variation in financial reporting quality across companies is not acceptable.

1.2.1 Situations in which variations in accounting quality are acceptable

If differential reporting is a response to differential importance of companies and the differential cost of compliance, the variations between each class of companies are acceptable. Public companies have more economic importance, and they have more demand from legal forces (accounting regulations and government) and market forces (investors, share-holders, and debt-holders). Public companies have made financial information publicly available, which give easy access to investors and shareholders. As for private companies, their equities are not publicly traded and they have less economic importance. Hence, there is a smaller demand from the open market for private companies to have accounting quality as good as public companies.

Compliance with IFRS is costly. Companies either have to appoint additional staff in the finance department or rely on their auditors to ascertain compliance with the requirement of IFRS. Small companies generally cannot afford the same quality of reporting as large companies. As well as having an influence on financial reporting requirements, this factor is the basis for exemptions from audit given to small companies. In addition, the increased costs as a result of the additional recognition and disclosure requirements, often add no value to the users (Greeff, 2008).

1.2.2 Situations in which variations in accounting quality are not acceptable

If differential reporting is a response to the differential complexity of transactions and the incentive to report truthfully and fairly, then the variations of accounting quality between each class of companies are not acceptable. Larger companies have more complex transactions, and hence they need more complex regulations to neutralise the incentives for performance management. As for smaller entities, such complexities are rarely relevant, which means they may have simpler transactions with less facility for performance management. Therefore, the variations

in accounting quality between large and smaller entities are not acceptable.

Due to agency issues, large companies have more incentives to manage earnings in order to hide or delay their poor financial performance, suggesting large companies need to be more regulated to prevent opportunistic earnings management. Smaller companies, on the other hand, do not suffer the agency problems and have fewer incentives to manage earnings, suggesting small companies do not need to be more closely regulated. Therefore, the outcome of accounting quality is expected to have less or no variations between large and smaller entities.

3.1.3 Criticism of the regulation process

Accounting standards are firstly emerged in early 1930s in the US because companies are trying to manage earnings to report better financial performances than it actually was. Furthermore, in the late 1960s, there was a lot of public criticism of financial reporting methods in the UK. Hence, accountings standards are in the position of disciplining companies to report good quality of earnings. However, what are regulators' expectations of accounting quality? Do they expect higher accounting quality for larger entities and lower accounting quality for smaller entities? Or do they expect equalized accounting quality across all tiers of companies. However, with the development of accounting standards and differential reporting standards, the regulators have failed to mention how informative that they expect firms' earnings to be.

This issue is argued in Watts and Zimmerman (1979) and Young (2003), that regulators do not have enough understanding of what market and economy really desire, and the regulation process is the process of negotiation and lobbying in order to persuade the users that work of theirs is valuable, correct and useful.

Therefore, in the absence of expectation on how good that accounting quality across different sizes of firms should be, the proposal of future structure of financial reporting in the UK (FRED 48) under existing boundaries may encounter some issues regarding accounting quality across different tiers of companies. Will the new structure of financial reporting framework fit the existing size criteria? Will there be any medium-sized companies need to regulate as public listed companies? Will there be any small companies regulate as medium-sized companies. Hence, the analysis of accounting quality across three tiers of companies under current boundaries is

needed in order to inform the future policy.

3.1.4 Objective of this chapter

Accounting standards are needed to help discipline the companies in order to help the market reach equilibrium quicker (Watts and Zimmerman, 1979). Further, the role of accounting standards is to balance the effects from both the demand of reporting high quality of financial information from the market and the incentives of managing earnings from companies, suggesting that companies should have the same accounting quality with the discipline of accounting standards.

In the light of discussion of current issues arise from the development of differential reporting standards, and hence, the main objective of this chapter is to examine the effects of accounting regulations on accounting quality in order to inform future policy in differential reporting standards. That is we compare the accounting quality across different tiers of companies under existing boundaries in the UK.

Currently, the UK adopts accruals accounting system for financial reporting. Under accruals system, firms' cash flows are transformed into reported earnings by accruals. Earnings are more informative about firms' financial performances than cash flows (Dechow, 1994).

Assuming the quality of accounting standards is maintained in high quality, that accounting quality is about whether firms' cash flows have been correctly transformed into reported earnings. Accruals play a crucial role in the transforming process, because cash flows encounter timing and matching issues, which could not be the best measure for firms' real financial performance. Hence, accruals are used in solving the timing and matching problems associated in cash flows, and transformed cash flows into reported earnings to better reflect firms' actual financial performance. However, accruals component in the earnings, on the other hand, will suffer earnings management, which lower accounting quality.

With previous discussion on the measures of accounting quality in the second chapter, there are many proxies used to measure accounting quality, and each proxy measures different aspect of accounting quality. In this chapter, we use the ratio of cash flows relative to earnings (CFO/E) to measure the level of accruals for different groups of companies. The purpose of this is to obtain the general view of accounting quality for different groups of companies, and how differently that each group of

companies behave.

3.1.5 Chapter Outline

In section 3.2 of this chapter, the hypothesis is developed based on the literature of accounting standards and accounting quality; follow by the sample and data in section 3.3. The rationale of measuring accounting quality is provided in section 3.4. The measures of accounting quality (ratio of cash flows relative to earnings) and results are discussed in section 3.5. Conclusion is provided in the section 3.6 of this chapter.

3.2 Hypothesis Development

3.2.1 Unclear Objectives and Expectation from Regulators

With the development of differential reporting framework and growing importance of SMEs in the economy, the concern of having different sets of accounting standards for SMEs have been brought to the fore. IASB issued IFRS for SMEs in 2009, and ASB proposed to replace UK GAAP with FRS 102 (which is based on IFRS for SMEs) in 2012. However, the objective of having differential reporting standards for different groups of companies from regulators is unclear in terms of accounting quality.

The objective of IASB for developing IFRS for SMEs is based on the nature of users' needs, is to develop a separate set of standards (general-purpose statements) for companies without public accountability, regardless of size, is that greater comparability across countries. The main objective of ASB in the UK for proposing FRS 102 to replace the current UK GAAP, is to enable users of accounts to receive high-quality understandable financial reporting proportionate to the size and complexity of the entity and the users' information needs (ASB 2012).

The ASB's proposal is generally in line with IASB's thinking. However, this seems contradicting in terms of size criterion, the IASB suggested that IFRS for SMEs is for companies without public accountability regardless of size, whereas the ASB proposed three tier system based on the size of companies with elimination of public accountability. Both regulation boards (IASB and UK ASB) have not made clear of their objectives of developing new accounting standards for SMEs and their objectivities of accounting standards somehow conflict in terms of comparability and size criteria.

In the process of regulating accounting standards, Watts and Zimmerman (1979 pg.273) argue that regulators are basically regulating in the dark, the process of developing new accounting standards is the process of negotiation, because the regulators do not have enough understanding of how companies going to behave. Young (2003 pg.637) further argues who indicated that standards and accounting practices are to be seen as emergent from a rational process that separates the technical and political rather than as the result of the desires or wants of a particular agent or the demand of economic reality. She specifically points out accounting

standard boards engaged variety of efforts such as rhetorical strategies to persuade individuals that the work of theirs is valuable, appropriate, useful and correct (Young, 2003 pg.621).

3.2.2 The Role of Accounting Quality in Policy Making process

Accounting quality is referred as the term of earnings quality in accounting information. Accounting quality can be defined as the extent to which the financial statement information reflects the underlying economic situation. In particular, Dechow et al (2010 pg.344) define the earnings quality as “higher quality earnings provide more information about the features of firm’s financial performance that are relevant to a specific decision made by specific decision-maker”.

Accounting quality is one way to measure firms’ financial performances and behavior, and accounting quality research is influencing standard setters and regulators. For instance, a report on audit quality by the US Department of the Treasury (2008) references numerous accounting quality studies (e.g., Ogneva et al., 2007; Myers et al., 2003). The Treasury Department in the US also publishes a commissioned study by an academic researcher that summarizes the accounting quality literature on restatements (i.e., Scholz, 2008). Further, the Congressional debates leading up to the passage of the Sarbanes–Oxley Act of 2002 cite several academic studies (e.g., DeFond et al., 2002). DeFond (2010) indicates that there are several cases in which the Treasury Department and the FASB have sought informal input directly from accounting academics regarding research studies that potentially inform proposed standards (e.g., Dechow et al., 1996; Hanlon et al., 2008). DeFond (2010) suggested there is ample evidence that accounting quality plays a role in the process of policy-making.

However, Watts and Zimmerman (1979) argue that academic accounting research is used in the “market for excuses” to buttress and justify standard setters’ preconceived notions. For example, Ramanna (2008) suggests that the decision to promulgate fair-value accounting for goodwill was politically motivated, rather than the result of policy makers carefully evaluating and weighing the evidence in the academic literature. DeFond (2010) further argues that although regulators were aware of the accounting quality literature, it was unclear whether or how accounting

quality research actually influences policy makers' decisions because standard setters and lawmakers might selectively cite research in order to achieve political ends.

DeFond (2010) suggests there is ample evidence that accounting quality plays a role in the process of policy-making and influences the standard setters and regulators in the process of policy-making. However, in the development of IFRS for SMEs and the issues of FRED 48 in the UK, regulators have not mentioned neither how they consider accounting quality in the policy-making process nor what they expect SMEs in the future in terms of accounting quality. Regulators emphasize the development of differential reporting standards for SMEs is mainly to reduce the reporting burden and cost of SMEs (ASB 2012a; IASB 2009). However, it is difficult to predict what regulators expect because they have not made clear what they expect in the future in terms of behavior of SMEs such as what accounting quality they expect for SMEs since accounting quality is one way of measuring firms' financial behavior. This is consistent with DeFond (2010), who suggested that it was unclear whether or how accounting quality research actually influences policy makers' decisions because standard setters and lawmakers might selectively cite research in order to achieve political ends.

3.2.3 Mixed findings in Accounting Quality studies

Different users' needs, agency issues, size and complexity and costs are the factors drive differential reporting standards for SMEs. In the mean time, these factors could also influence the accounting quality across different classes of companies under differential reporting framework. These factors suggest that larger companies need to be more closely regulated than smaller ones. But there are a number of issues, which arise from this approach. For example, regulation may lag behind the practices of large companies; hence, the quality of reporting in large companies may be adequate. Large companies may develop schemes to circumvent the reporting requirements if agency issues dominate the needs of their potential users. However, smaller companies may have so many exemptions from the regulations, which apply to larger companies that the quantity and quality of reporting is insufficient.

Furthermore, findings in the literature regarding accounting quality for public and private companies are mixed. Beatty Ramesh and Weber (2002) find that public firms have a greater propensity to manage earnings than private firms, whereas Burgstahler et al. (2006) report the opposite. Ball and Shivakumar (2005) find that financial reporting in public companies is more informative than in private companies. However, Givoly et al (2010), who provide no conclusion on which group of companies have better accounting quality, but suggested that accounting quality for public and private companies are driven by two effects: demand from the market for good accounting quality and incentives from managing earnings to deceive users.

Leuz (2003) shows that there are no differences in information asymmetries between companies reporting under IAS and US GAAP on the Germany's Neuer Markt. This evidence is further supported by Leuz et al (2003), who report no association between accounting frameworks and the country level of earnings management for a large set of countries. Van Tendeloo/Vanstraelen (2005) find no differences in the level of earnings management of companies reporting under German GAAP and IAS. Barth et al. (2005), on the other hand, for a large sample of countries show that IAS adopters report earnings of higher quality.

3.2.4 Assumption based on the need and objective of accounting standards

With the development of differential reporting standards for SMEs, it is important to examine the accounting quality across different classes of companies under current differential reporting regimes. This is because, firstly, regulators do not specify what accounting quality they expect for different groups for companies. Secondly, accounting quality influences the standard setters and regulators and plays a role in policy-making process. Thirdly, accounting research regarding accounting quality across different types of companies provides no clear conclusion which group of companies have better accounting quality.

Accounting standards determine how the accounting information on earnings should be computed and reported. High quality of standards influences the users' perception of quality of financial information (Wulandari and Rahman, 2004 pg.2). High quality accounting standards are perceived to provide consistent, comparable,

relevant and reliable financial information to the investors for decision-making of specific investment (Wulandari and Rahman, 2004 pg.2).

Accounting standards are needed to help discipline companies in order to help the market reach equilibrium quicker. Ewert and Wagenhofer (2005) indicate that accounting standards limit the opportunistic distortions, which will result high accounting quality. Further, Givoly et al (2010) suggest that the role of accounting standards is to balance the effects from both the demand of reporting high quality of financial information from market and the incentives of managing earnings from companies.

Furthermore, UK financial reporting regulations and principles are substantially equivalent for private and public companies (Ball and Shivakumar, 2005 pg.84), so the quality of accounting standards for different groups of companies is expected to be similar. The reason to have different reporting standards between large companies and SMEs is to provide proportionate solution for SMEs while maintaining the quality of financial reporting (ASB, 2012a pg.14).

The main objective of this thesis is to examine the quality of financial reporting for public and private companies under current reporting framework in the UK. That means we compare the quality of financial reporting between each group of companies, which are large companies following full IFRS, private medium companies following UK GAAP, and small companies following FRSSE.

Therefore, the role of accounting standards is to discipline companies to report high quality of accounting information. The assumption could be made based on the role of accounting standards in the market since the quality of accounting standards for public and private companies are substantially similar (Ball and Shivakuamr, 2005). Under the discipline of accounting standards, the hypothesis questions in this chapter are as follows:

Is there any variation in accounting quality for different groups of companies under differential reporting regimes?

Do different groups of companies belong to the same type of distribution of quality of earnings?

3.3 Sample and Data

In this chapter, we investigate the accounting quality in public companies as well as in the SMEs under differential reporting regimes in the UK. Current structure of financial reporting regimes in the UK is as follows: public EU quoted companies are following full IFRS to prepare consolidated accounts, private non-small (medium) companies are following UK GAAP² and small companies are following FRSSE.³

The main data applied in this paper is obtained from the “Financial Analysis Made Easy” (FAME) database supplied by Bureau Van Dijk. The database provides financial statement information of public and private British companies. The database is updated monthly. When a firm converts from one type to another (private to public, for example), all its past information is classified in subsequent versions of FAME under the latest type.

We therefore checked the firm type in older versions of the database for each year over the sample period, 2008-2010. The reason why we choose these years is that companies are aware that differential reporting standards for SMEs are proposed by IASB. It is interesting to analyse how different groups of companies behave during this period in order to inform the future policy. We examine firms’ behavior cross-sectionally based on industries classification in the UK.

Changes in type were verified against the listing or delisting date from the London Share Price database and/or the date of last change of name in the FAME database (conversion from private to public requires a name change in the UK). The main advantage of the FAME database is that it includes privately held corporations, allowing us to focus on an economically important group of firms that is relatively under-represented in most of academic accounting research.

We select public and private companies-observations that are active from years of 2008 to 2010. We exclude companies that are subsidiary as their reporting requirement is different. The criterion for the subsidiary in FAME is that the

³ There are still public companies following UK GAAP and private companies following IFRS, these companies are excluded in our studies, given our intuition of this research is to compare three classes companies that are public quoted companies following IFRS, medium companies following UK GAAP and small companies following FRSSE respectively.

minimum path of the ultimate owner is 50.01%. We also screen out private firms whose legal form is not equal to the status of corporations such as legal forms like sole proprietorships or partnerships. We exclude banks, insurance companies and other financial institutions (SIC codes 6000-6799). We also exclude companies that without known value of total assets in the years of 2008, 2009 and 2010 in order to mitigate the data errors.

In the UK, sections 382 and 465 of the Companies Act 2006 define private companies as SMEs for the purpose of accounting requirements. According to this a small company is one that fulfill at least two criteria of following, which include (1) turnover of not more than £6.5 million, (2) a balance sheet total of not more than £3.26 million and (3) not more than 50 employees. A medium-sized company has to satisfy at two of following criteria: (1) a turnover of not more than £25.9 million, (2) a balance sheet total of not more than £12.9 million and (3) not more than 250 employees. Typically, we select active public companies for the years of 2008-2010, private medium companies with turnover greater than £6.5 million and balance sheet worth greater £3.26 million for the years of 2008-2010, and small companies with annual turnover of £6.5 million or less and have an annual balance sheet worth no more than £3.26 million for the years of 2008-2010.

We therefore obtain the initial sample by dividing companies observations based on the size criteria from Companies Act into three groups of companies, which are large companies (public companies), medium companies (private medium-sized companies) and small companies.

Current structure of financial reporting regimes in the UK requires public EU quoted companies following full IFRS to prepare consolidated accounts, private non-small companies following UK GAAP and small companies following FRSSE. We then match the initial sample into corresponding Financial Reporting standards, which means we will have large companies-observations only following IFRS, medium companies-observations only following UK GAAP and small-companies observations only following FRSSE in the years. However, certain information for Small Companies observations may not be available in the database as Small Companies under Companies Act generally do not have to submit full audited accounts, they only need to submit abbreviated accounts, (no Profit & Loss account

and Cash flow statement).⁴

Several previous studies computed earnings quality proxies based on group of firms, such as Leuz et al. (2003) and Barth et al. (2008) typically used country-level observations. To better control for firm characteristics and economic influences, we choose a finer partition for our three types of companies-observations based on the industry-level, which is from industry sectors classification in FAME. Companies-observations are then grouped into 10 major industry sectors based on UK two digit SIC 2007, which include ⁵ : Primary, Manufacturing, Utility, Construction, Wholesale, Service, Transport, Telecom, Other service, Education & Health. The reason of using two digits SIC codes is to analyse the difference in accounting quality across different industry groups in a broader range. Finer or detailed SIC codes may not present any significant difference in accounting quality across groups. However, using broad two digits SIC codes may introduce noise in the results, we therefore control outliers using winsorizing.

Table 1 summarises the final sample for empirical testing with the number of companies and the number of companies distributed in 10 industries. Our sample comprises 46,146 UK companies for the observation-year of 2008-2010 available in the database of FAME. There are larger portions of companies distributed in Manufacturing, Wholesale, and Education & Health.

⁴ They are exempted from statutory audit if companies qualify as small companies and with turnover of no more than £6.5 million and total assets of no more than £3.26 million. By having full exemption of statutory audit, there could be disadvantage. Banks, credit managers, customers and suppliers rely on information from Companies House to assess creditworthiness and will be reassured by an independent audit.

⁵ Refer to List of Abbreviation for details.

TABLE 3.1: Industrial Distribution of Numbers of Large, Medium-sized and Small companies

Industries	Description^a	Number of Large Companies	Number of Medium Companies	Number of Small Companies	Number of All Companies
1	Primary	94	675	168	937
2	Manufacturing	528	7494	367	8389
3	Utility	29	273	37	339
4	Construction	127	1975	1092	3194
5	Wholesale	318	6438	1485	8241
6	Service	55	1282	204	1541
7	Transport	97	1731	320	2148
8	Telecom	39	339	111	489
9	Other services	37	1087	359	1483
10	Education & Health	929	14302	4154	19385
Total		2253	35596	8297	46146

This table displays the industry sectors' distribution of the large, medium and small companies.

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

The sample is constructed from the FAME database.

^a Refer to list of abbreviation for detailed description of each industry section.

3.4 Rationale for Measures of Accounting Quality

3.4.1 Overview

Under accruals system, firms' cash flows are transformed into reported earnings by accruals. Earnings are more informative about firms' financial performances than cash flows (Dechow, 1994). Accruals play a crucial role in the transforming process, because cash flows encounter timing and matching issues, which could not be the best measure for firms' real financial performance. Hence, accruals are used in solving the timing and matching problems associated in cash flows, and transformed cash flows into reported earnings to better reflect firms' actual financial performance.

Assuming the quality of accounting standards is maintained in high quality, that quality of earnings is all about whether firms' cash flows have been correctly transformed into reported earnings. Accruals component in the earnings, on the other hand, will suffer earnings management, which drives studies on accounting quality increasing enormously. From previous discussion on measures of accounting quality in the second chapter, each proxy measures different aspect of accounting quality.

Therefore, in this chapter, we firstly adopt the most fundamental rationales for measuring accounting quality for different groups of companies. The purpose of this is to obtain a general view of how different groups of companies behave.

3.4.2 Rationales of Measures of Accounting Quality

The measure of accounting quality in this section is based on the rationale of earnings persistence and magnitude of accruals. Initially, accounting quality is addressed by earlier literature as accrual quality. Healy (1985) indicated that accruals-based measures are now widely employed in tests of the accounting quality. Assuming the accounting standards are properly enforced under regulated economy, that accounting quality or earnings quality is all about whether firms' cash flows have been correctly transformed into reported earnings, which is deemed to be more informative about firms' financial performances. Accruals are playing a crucial role in the transforming process, because cash flows are encountering timing and matching issues, which could not be the best measure for firms' real financial performance. Hence, accruals are used in solving the timing and matching problems

associated in cash flows, and transformed cash flows into reported earnings to reflect firms' actual financial performance. Therefore, accounting quality is very much related to whether accruals are being correctly used to transform cash flows into informative reported earnings.

3.4.2.1 Earnings Persistence

Basically, if earnings are persistent, the level of earnings will be continually recurring from accounting to accounting period. This type of measure are usually adopted for the research of usefulness of earnings to equity investors for valuation, with assumption that more persistent earnings will yield better inputs to equity valuation models, and hence a more persistent earnings number is of higher quality than a less persistent number (Dechow et al, 2010). Higher persistence of earnings will yield better inputs to equity valuation models and will be able to generate sustainable cash flows in the future, implying high quality of earnings. Furthermore, Walker (2013 pg.475) suggests that earnings persistence is as part of a long-term equilibrium reporting strategy, and firms benefit from this by virtue of a less volatile share price.

3.4.2.2 Magnitude of Accruals

In the light of earnings persistence, accruals are crucial component in earnings affecting earnings persistence. This tries to capture whether accruals are performing a useful function in making adjustments to cash flows. If accruals are too small then there seems to be little point. As accruals do not perform its roles in compensating timing and matching problems of cash flows properly. If accruals are too large, then earnings might appear not to have any economic substance. As extreme large level of accruals involved in earnings is low quality because they represent a less persistent component of earnings. Therefore, appropriate magnitude of accruals in earnings is indicative of good earnings quality (Dechow and Dichev, 2002 pg.54).

However, different firms' characteristics may drive the accruals to be different, for instance, companies in different industries or different sizes are likely have different level of accruals, for which we could not simply compare earnings quality by magnitude of accruals. Therefore, industry analysis on magnitude of accruals is demanded.

3.4.3 Cash flows to Earnings Analysis

Cash flows and earnings reflect firms' the most fundamental financial reporting behaviour. We use the ratio of cash flows relative to earnings to measure level of accruals based on the rationales of earnings persistence and magnitude of accruals. The purpose of this is to obtain the general understanding of firms' financial reporting behaviour across different groups of companies (large, medium and small companies).

Cash flow could also be used to measure firm performance. However, over finite intervals, reporting cash flows is not necessarily informative. This is because cash flows have timing and matching problems that cause them to be a “noisy” measure of firm performance. Earnings are used as the summary measure of firm performance produced under the accrual basis of accounting by wide range of users. (Dechow, 1994). However, earnings potentially suffer from a problem that cash flows do not, namely manipulation by the management of the company. Managers may have incentives to manage earnings to smooth reported earnings, to boost stock price, to decrease income tax expense, to make firms look better, to maximize managers' compensation, or to decrease political visibility. Firms could use reporting discretion to mask or misstate economic performance and earnings could be temporarily inflated by accrual choices (Burgstahler et al., 2006). For example, firms can overstate reported earnings to achieve certain earning targets or report extraordinary performance in specific instances such as an equity issuance (Teoh et al., 1998).

Cash flow from operation (CFO) is difficult to manage unless firms intentionally front load or defer the recognition of cash accompanying revenue or expense. Therefore, CFO should be a good indicator of a firm's operating performance. A bad performer may have a strong incentive to employ income-increasing accounting strategies, while a good performer in general may have relatively less incentives to employ income-decreasing strategies except for some extremely good performers.

Since we are examining both public and private companies and stock prices are only available for quoted companies, we are unable to measure the performance of companies in terms of stock returns but instead we can examine the quality of their accounts based firms' earnings, cash flows and accruals. Under accruals-based

accounting system, cash flows (cash receipts and payments) are transformed by accruals into reported earnings, which better reflect firms' fundamental financial performance. However, Dechow (1994) indicates earnings are produced under accruals basis of accounting will suffer from earnings manipulation, because accruals can be intentionally manipulated by managers for specific reasons and incentives. Too large or too small level of accruals may be an indication of poor accounting quality.

Therefore, we assume that cash flows are free of manipulation⁶ and analyse the accounting quality for each group of companies based on earnings relative to cash flows. In this chapter, we firstly use cash flows from operation (CFO) to earnings (E) ratio to obtain the idea of level of accruals. The purpose of this is to obtain the basic understanding of financial behaviour for each class of companies. Ratio is applied into large (public listed companies), medium-sized and small companies respectively.

⁶ Note further that we assume that cash flows are free of manipulation, although this is not always the case (e.g. Roychowdhury 2005).

3.5 Measures of Accounting Quality and Results

3.5.1 Cash flows from operation to earnings (CFO/E) ratio

Cash flows from operation (CFO) to earnings (E) ratio are used to measure companies' performance related to the quality of accounting in this chapter. The purpose of doing so is to obtain the basic understanding of financial behaviour for each class of companies.

For each group of companies, they are divided into 10 industries; comparisons of the ratio are made between companies as well as industries. Following the study of Dechow (1994), and taking note of no requirement of cash flow statement to be prepared by SMEs, hence, the cash flows from operations (CFO) are measured as follows:

$$CFO = E + Dep - \Delta WC$$

where:

CFO = Cash flow from operation for the year;

E = Profit after tax and extraordinary items for the year;

Dep = Depreciation for the year;

ΔWC = Increase in Debtors + Increase in Stock – Increase in Creditors for the year.

Therefore, the first measurement of firms' performance related to earnings quality is:

$$\text{Ratio of Cash Flows from Operation to Earnings} = \left(\frac{CFO}{E}\right)_{i,g,k}$$

where:

$i = 1, \dots, n_{g,k}$;

$g = L$ (Large), M (Medium), S (Small);

$k = \text{Industry } 1, 2, \dots, 10$;

$CFO_{i,g,k}$ = Cash flow from operation for company i in group g and industry k ;

$E_{i,g,k}$ = Profit after tax and extraordinary items for company i in group g and industry k .

Ratio of cash flows from operation to earnings could indicate that how much cash flow that companies could generate that is relative to earnings under the observation-year. Based on Dechow (1994) who suggests that accruals improve the

earnings' ability to measure firms' performance relative to cash flows, suggesting more accruals signify greater improvement over the underlying cash flows. However, Sloan (1996) indicates that extreme large level of accruals is indicative of poor earnings quality. Basically, this ratio is developed under this intuition, by simply looking at ratio of cash flow relative to earnings so as to obtain the level of accruals. If the ratio is high in absolute value, which may indicate the level of accruals is high.

Our primary objective of this chapter is to examine whether differential reporting framework (differential accounting standards) has made accounting quality different across different classes of companies. By comparing the level of accruals across different groups of companies would give us a general view of how they behave.

If the ratio is high in absolute value, which may indicate the level of accruals is high. This is because if the absolute value is large, the absolute value of cash flows is far greater than the absolute value of earnings. Given earnings comprising of cash flows and accruals, if the absolute value of cash flows is far greater than the absolute value of earnings, the level of accruals will be high.

However, if ratio of cash flows to earnings is negative, this includes two situations, (1) positive cash flows with negative earnings and (2) negative cash flow with positive earnings. Positive cash flows with negative earnings are the indication of accruals adjusting matching and timing problems encountered by cash flows. However, those companies having negative cash flow with positive earnings are likely to have accruals back up their losses in order to report profit. Therefore, taking into account of these situations, we split the observations into two categories: one is with positive earnings and the other one is with negative earnings in order to further analyse the role of accruals.

3.5.1.1 Results of cash flows to earnings ratio

Table 3.2 presents the summary statistics for CFO and Earnings for each group of companies. Large companies amounts the largest CFO and Earnings compared with the other two groups of companies. There is a huge gap between lowest and highest of CFO and Earnings, which is indicative of large variances of CFO and

earnings in each group. Further, large companies amounts the highest variance, followed by medium companies, and small companies the last.

[Table 3.2 Here]

TABLE 3.2: Summary Statistics for CFO and Earnings

Variables	Large Companies		Medium-sized Companies		Small Companies	
	<i>CFO</i>	<i>E</i>	<i>CFO</i>	<i>E</i>	<i>CFO</i>	<i>E</i>
No. of observations	2,253	2,253	35,596	35,596	8,297	8,297
Mean	56,317	20,664	5,731	3,539	187	163
Std Deviation	790,745	209,895	159,555	151,689	1,022	1,030
Min	-2,614,000	-913,000	-20,500,000	-20,500,000	-26,979	-26,980
1st Percentile	-25,153	-48,200	-23,100	-23,261	-1,469	-1,123
5th Percentile	-3,839	-6,089	-3,107	-2,941	-428	-251
25th Percentile	-59	-76	0	1	4	18
Median	464	234	565	281	125	113
75th Percentile	3,465	1,728	1,969	1,044	280	211
95th Percentile	119,400	60,992	17,450	9,861	910	616
99th Percentile	1,118,000	505,000	119,400	77,100	2,514	1,758
Max	32,200,000	7,968,000	9,754,000	9,750,000	32,949	33,114

This table presents the descriptive statistics for variables of *CFO* and *E*. The statistics are reported separately for large, medium-sized and small companies. All values are in thousands form (except the standard deviation).

Variable Definition: *E* = Net income after interest, tax and extraordinary items for the observation year of 2010; *CFO* = Net cash flow from operation in the observation year of 2010, it is defined as Net income after interest, tax and extraordinary items for the observation year of 2010 + Depreciation – Changes in Working Capital.

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

[Table 3.3 Here]

Table 3.3 presents the detailed descriptive statistics of $\frac{CFO}{E}$ across different industries for large, medium-sized and small companies. The means of $\frac{CFO}{E}$ for three types of companies seem very different but they are not statistically different (-1.06, -0.37 and 1.61). Medium companies have the highest mean (7.60) may suggest that the level of accruals is higher than large companies (-5.99) and small companies (0.98). The mean of large companies is negative, which could be either positive cash flows with negative earnings or negative cash flows with positive earnings. Therefore, analysis of $\frac{CFO}{E}$ based on positive and negative earnings is needed, which will be discussed in next section. From 25th percentile to 75th percentile, the $\frac{CFO}{E}$ does not differentiate too much across three groups of companies, suggesting three groups of companies within this region have similar level of accruals. The standard deviation of $\frac{CFO}{E}$ in medium companies is largest (775.30), followed by large companies (576.30) and small companies (31.50). The large variance could be due to the influences of extreme values (outliers) in each group of companies, as shown in Table 3.1, there is huge gap between lowest and highest value of CFO and earnings.

The first finding in Table 3.3 is that the overall accounting quality for three types of companies does not vary too much given the mean of ratio is not statistically significant between each other, but accounting quality within medium companies group is varied the most and accounting quality within small companies is rather similar given the largest standard deviation in medium companies and the smallest standard deviation in small companies.

Table 3.3 also presents the result of $\frac{CFO}{E}$ across different industries for each group of companies. With 10 industry sectors allocated into each group of companies, it is possible to analyse the behavior of each group of companies in each industry. The means of $\frac{CFO}{E}$ from 10 industries in large companies group are almost similar except the means in Construction (8.07) and Education & Health (-17.49) are relatively large in absolute value, suggesting companies in these two industries have higher level of accruals. The negative ratio will then be analysed based on positive and negative earnings group. Whereas the mean of $\frac{CFO}{E}$ in

Primary (0.03) is less than 1 that cash flows only amounts a few percentage of their earnings, implying that companies in Primary sector have more accruals component in their earnings. As for standard deviation of $\frac{CFO}{E}$ across different industries for large companies, only Construction (64.72) and Education & Health (897.10) amounts the higher standard deviation.

Therefore, the second part of findings in Table 3.3 is that accounting quality for large companies across different industries is almost similar, except companies in Construction and Education & Health, which have higher means and higher standard deviation, suggesting level of accruals is higher in these two sectors. Further, companies in Primary sector have the smallest mean, implying that their earnings have more accrual component and less cash flows to back up their earnings, which may lead less persistence of earnings.

The means of $\frac{CFO}{E}$ from 10 industries in medium companies group varies from each industry. There are two negative means in Primary (-0.27) and Construction (-2.82), which need to be analysed in positive and earnings group. Education & Health amounts the highest mean, suggesting that medium companies in this sector have the highest level of accruals. The standard deviations of $\frac{CFO}{E}$ vary across different industries for medium companies, with Education & Health amounts (1,219.00) the highest. Therefore, third part of findings in Table 3 is that accounting quality is different within medium companies across different industries, given different means and different standard deviations across industries.

As for small companies, the mean of $\frac{CFO}{E}$ across different industries does not vary too much, with only Transport having largest mean (4.10) and largest standard deviation (62.17). Another finding in Table 3.3 is that quality within small companies group does not vary too much.

Comparing the means of three types of companies across industries, the final findings in Table 3.3 is that, overall the behavior of medium companies is different from small and large companies, given the statistically significant differences in Construction (1.69, -1.76), Service (2.42), Telecom (1.76) and Education & Health (1.68). Further, the accounting quality of large companies and small companies does not have much difference, except in Wholesale (1.96).

Standard deviations in medium companies across industries are relatively larger than that in large and small companies, suggesting that accounting quality across industries in medium companies is varied more than in large and small companies.

Key findings from Table 3.3:

1. The level of accruals in medium companies is relatively higher than large companies and small companies, given medium companies amount the highest mean of $\frac{CFO}{E}$.
2. The accounting quality is varied the most within medium companies because they have large standard deviations across 10 industries.
3. Overall, the accounting quality of medium companies is different from large and small companies, though the means of $\frac{CFO}{E}$ are not statistically different.

TABLE 3.3: Industrial Distribution and Summary Statistics for ratio of CFO to Earnings

$$\text{Ratio of Cash Flows from Operation to Earnings} = \left(\frac{CFO}{E}\right)_{i,g,k}$$

Large Companies (g=L)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	94	528	29	127	318	55	97	39	37	929	2,253
Mean	0.03	1.48	2.13	8.07	1.41	2.42	2.38	0.49	1.71	-17.49	-5.99
Std Deviation	4.28	10.92	2.31	64.72	14.54	10.76	22.96	14.75	2.77	897.10	576.30
Min	-21.65	-139.60	-4.07	-28.07	-170.10	-44.67	-128.20	-85.67	-4.93	-21,554.00	-21,554.00
1st Percentile	-21.65	-20.00	-4.07	-18.12	-25.12	-44.67	-128.20	-85.67	-4.93	-57.67	-35.29
5th Percentile	-7.00	-2.28	0.01	-9.13	-3.30	-2.08	-5.28	-4.39	-1.28	-8.25	-5.28
25th Percentile	-0.29	0.41	1.26	0.10	0.04	0.10	0.52	0.93	0.61	-0.08	0.10
Median	0.34	1.12	1.91	0.99	1.13	1.51	1.51	1.96	1.17	1.00	1.03
75th Percentile	1.13	2.19	2.72	2.72	2.07	2.59	3.34	3.01	2.74	2.15	2.22
95th Percentile	3.13	8.29	8.51	19.10	5.99	15.77	13.06	12.55	7.70	12.44	10.80
99th Percentile	22.67	22.21	8.81	60.80	28.72	58.13	178.00	18.00	12.25	83.70	50.52
Max	22.67	161.00	8.81	722.00	143.80	58.13	178.00	18.00	12.25	10,817.00	10,817.00

Medium-sized Companies (g=M)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	675	7,494	273	1,975	6,438	1,282	1,731	339	1,087	14,302	35,596
Mean	-0.27	0.81	1.72	-2.82	0.19	3.70	3.02	5.17	1.30	17.85	7.60
Std Deviation	36.52	103.40	25.59	128.40	60.62	32.82	71.63	48.73	85.60	1,219.00	775.30
Min	-885.80	-8,138.00	-142.00	-3,932.00	-2,457.00	-182.20	-992.00	-166.20	-1,620.00	-13,040.00	-13,040.00
1st Percentile	-59.08	-27.52	-67.83	-152.60	-51.00	-38.03	-55.06	-23.67	-57.44	-51.96	-48.75
5th Percentile	-5.42	-4.69	-10.14	-15.45	-8.29	-4.66	-7.56	-5.11	-6.21	-6.36	-6.79
25th Percentile	0.35	0.28	0.23	-0.82	-0.13	0.12	0.19	0.23	0.51	0.37	0.18
Median	1.15	1.12	1.15	1.02	1.04	1.22	1.27	1.01	1.16	1.00	1.00
75th Percentile	2.31	2.18	2.28	2.86	2.38	2.63	2.96	1.97	2.14	1.81	2.16
95th Percentile	7.73	9.03	8.60	13.87	11.09	10.65	13.29	12.67	8.90	10.33	10.40
99th Percentile	29.85	44.86	70.43	85.29	50.78	87.27	65.20	91.91	60.80	76.09	60.38
Max	155.20	1,862.00	306.40	1,882.00	1,072.00	721.00	2,322.00	669.50	1,924.00	118,239.00	118,239.00

(Continued on next page)

TABLE 3.3 (Continued)

<i>Small Companies (g=S)</i>											
Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	168	367	37	1,092	1,485	204	320	111	359	4,154	8,297
Mean	1.19	2.61	-5.02	2.72	-0.55	1.17	4.10	0.44	1.05	0.72	0.98
Std Deviation	25.26	19.88	38.62	40.55	22.37	7.19	62.17	5.16	5.76	31.50	31.50
Min	-139.00	-159.50	-232.50	-561.10	-464.00	-40.00	-182.00	-37.00	-22.36	-1,298.00	-1,298.00
1st Percentile	-128.60	-23.00	-232.50	-50.00	-67.67	-18.50	-44.00	-28.86	-13.14	-28.83	-36.69
5th Percentile	-4.22	-4.57	-8.31	-8.35	-9.00	-6.00	-5.10	-2.08	-2.73	-3.20	-5.29
25th Percentile	0.68	0.21	0.59	-0.16	0.02	0.57	0.23	0.45	0.77	0.69	0.44
Median	1.04	0.98	1.07	1.00	0.96	1.10	1.02	1.00	1.04	1.00	1.00
75th Percentile	1.67	1.48	1.42	2.25	1.80	1.71	1.91	1.38	1.27	1.33	1.50
95th Percentile	8.18	6.00	5.44	15.08	8.83	6.94	6.82	3.87	2.97	5.50	7.50
99th Percentile	136.30	117.70	19.13	75.56	34.00	28.00	60.00	7.45	10.00	35.00	41.20
Max	205.00	191.00	19.13	682.00	101.00	61.50	1,076.00	18.65	91.00	327.00	1,076.00
t -stat (L-M) ^a	0.21	0.53	0.25	1.69*	1.10	-0.74	-0.22	-1.32	0.15	-1.13	-1.06
t -stat (L-S) ^b	-0.58	-0.98	1.12	0.91	1.96**	0.81	-0.41	0.02	1.21	-0.62	-0.37
t -stat (M-S) ^c	-0.61	-1.14	1.03	-1.76*	0.77	2.42***	-0.28	1.76*	0.10	1.68*	1.61

This table presents the summary statistics of $(\frac{CFO}{E})_{i,g,k}$ across different industries for large, medium-sized and small companies, where, $i = 1, \dots, n_{g,k}$; $g = L$ (Large companies), M (Medium-sized companies), S (Small companies); $k = \text{Industry } 1, 2, \dots, 10$.

Variable definitions: E = Net income after interest, tax and extraordinary items for company i in group g and industry k in the observation year of 2010; CFO = Net cash flow from operation for company i in group g and industry k in the observation year of 2010, it is defined as Net income after interest, tax and extraordinary items for the observation year of 2010 + Depreciation – Changes in Working Capital.

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

^a t -statistic for two-tailed of difference between large and medium-sized companies' means.

^b t -statistic for two-tailed of difference between large and small companies' means.

^c t -statistic for two-tailed of difference between medium-sized and small companies' means.

*, **, *** represent statistically significant different at the 0.10, 0.05 and 0.01 levels, respectively.

With negative $\frac{CFO}{E}$, there could be two scenarios. The first scenario is that positive cash flows with negative earnings, which is the indication of matching and timing problems for cash flows not the result poor quality of accounting. Second one is that companies have negative cash flow with positive earnings, which might be the indication of poor quality of accounting. Furthermore, from Table 3.3, large companies have a negative mean of $\frac{CFO}{E}$, which may include two scenarios. Therefore, the observations are divided into two groups: one is with positive earnings (Table 3.4) and the other one is with negative earnings (Table 3.5).

3.5.1.2 Results of cash flows to earnings ratio – Positive Earnings Group

[Table 3.4 Here]

Table 3.4 presents the result of $\frac{CFO}{E}$ across different industries for each group of companies with positive earnings. The means of $\frac{CFO}{E}$ for three types of companies are not statistically different, suggesting that the accounting quality of three types companies is relatively similar statistically. Still, medium companies (11.27) have higher level of accruals than large (5.03) and small (1.59) companies do. Given the results in Table 3.3, that large companies have negative mean of $\frac{CFO}{E}$. However, after splitting companies into positive and negative earnings groups in Table 3.4, the mean of large companies turns to positive. The reason why large companies have negative means may be due to the financial crisis during years of 2008-2010. The standard deviation of $\frac{CFO}{E}$ for medium companies is the largest (877.60), follow by large companies (420.10) and small companies (24.56), suggesting that accounting quality in medium companies group is more varied than large and small companies.

The first findings in Table 3.4 is consistent with Table 3.3, that the overall accounting quality for companies with positive earnings does not vary too much between the three groups. But accounting quality within medium companies group is varied the most and accounting quality within small companies is least varied.

Another finding in Table 3.4 is that large companies with positive earnings across industries behave similarly, given all positive means and relatively similar variances across industries, except companies in Education & Health with largest

mean (8.43) and largest standard deviation (661.90). In Table 3.3, the mean of Primary is the smallest and the mean of Education & Health is negative, however, in Table 3.4 here, all means of $\frac{CFO}{E}$ are greater than one and positive, implying that loss-making companies influence the overall results in these industries.

Medium companies with positive earnings in Table 3.4 have rather different means and standard deviations. Primary and Other Services have a mean less than 1, 0.61 and 0.54, suggesting that medium companies in these industries have less cash flows to back up their earnings. Construction has the negative mean, which is the same in Table 3.3, suggesting that medium companies in Construction use accruals to back up the negative cash flows into positive earnings, which may suggest that companies in this sector have more tendencies to manage earnings. The standard deviations of all medium companies with positive earnings across industries are relatively large, with Education & Health having the largest standard deviation (1418.00). The third part of findings in Table 3.4 is that quality of earnings is varied within medium companies with positive earnings. Companies in Construction may have more tendencies to manage earnings.

The means of $\frac{CFO}{E}$ in small companies with positive earnings are similar across industries, except in Wholesale (-0.01). Negative cash flows amount 1 percent of positive earnings in Wholesale, implying that companies use accruals to back up the negative cash flows into positive earnings and have more tendencies to manage earnings into positive. Overall, the variances of $\frac{CFO}{E}$ across industries for small companies with positive earnings are relatively similar.

The final finding in Table 3.4 is that, the accounting quality of small companies in Construction, Wholesale, Service, Telecom and Other Services is statistically different with large and medium companies. Large companies and medium companies are not so different across industries, except in Construction (2.23). Again, variances in medium companies across industries are relatively larger than that in large and small companies, suggesting that accounting quality across industries in medium companies is varied more than in large and small companies.

Key Findings from Table 3.4:

1. In consistent with Table 3.3, medium companies have higher level of accruals than large and small companies with positive earnings.

2. Furthermore, the accounting quality is still varied the most within medium companies group with positive earnings.
3. Medium companies in Construction and small companies in Wholesale may have more tendencies to manage earnings, as accruals are used to back up the negative cash flows into positive earnings.
4. The accounting quality of small companies in Construction, Wholesale, Service, Telecom and Other Services is statistically different with large and medium companies. This may be due to the nature of small business.

TABLE 3.4: Industrial Distribution and Summary Statistics for ratio of CFO to Earnings (Positive Earnings)

$$\text{Ratio of Cash Flows from Operation to Earnings} = \left(\frac{CFO}{E}\right)_{i,g,k}, \text{ where, } E > 0$$

Large Companies (g=L)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	27	371	25	95	265	41	73	32	28	646	1,603
Mean	1.73	2.27	2.54	3.56	2.32	3.48	5.49	3.46	2.14	8.43	5.03
Std Deviation	4.80	12.55	2.05	11.39	11.45	12.29	21.03	4.08	2.87	661.90	420.10
Min	-7.00	-139.60	0.01	-18.12	-29.00	-44.67	-15.50	-2.63	-4.93	-5,134.00	-5,134.00
1st Percentile	-7.00	-19.50	0.01	-18.12	-19.23	-44.67	-15.50	-2.63	-4.93	-115.70	-29.00
5th Percentile	-2.75	-1.47	0.08	-9.13	-2.48	0.80	-1.23	-2.16	-0.79	-5.50	-2.96
25th Percentile	-0.03	0.87	1.61	0.38	0.58	1.06	1.10	1.70	1.07	0.48	0.69
Median	0.90	1.48	2.01	1.17	1.26	2.04	2.07	2.18	1.66	1.30	1.46
75th Percentile	2.29	2.62	2.78	2.95	2.15	3.46	3.69	3.49	2.88	2.74	2.72
95th Percentile	5.27	10.96	8.51	22.27	5.99	15.77	15.61	12.55	7.70	15.26	12.94
99th Percentile	22.67	27.57	8.81	60.80	39.25	58.13	178.00	18.00	12.25	125.00	60.67
Max	22.67	161.00	8.81	60.80	143.80	58.13	178.00	18.00	12.25	10,817.00	10,817.00

Medium-sized Companies (g=M)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	520	5,802	190	1,510	5,263	851	1,327	244	804	10,195	26,706
Mean	0.61	3.23	4.50	-4.58	1.39	7.32	5.84	7.25	0.54	25.93	11.27
Std Deviation	40.74	39.57	27.44	134.60	53.83	38.34	75.26	56.02	71.35	1,418.00	877.60
Min	-885.80	-909.90	-67.83	-3,932.00	-2,457.00	-58.67	-279.50	-166.20	-1,620.00	-3,405.00	-3,932.00
1st Percentile	-28.85	-13.38	-64.49	-163.60	-27.74	-12.23	-21.97	-17.51	-42.75	-26.00	-26.15
5th Percentile	-1.74	-2.54	-1.03	-12.89	-5.51	-0.15	-2.78	-2.73	-1.41	-2.71	-3.66
25th Percentile	0.93	0.71	1.00	-0.31	0.28	1.18	0.92	0.85	1.00	0.95	0.75
Median	1.46	1.32	1.62	1.28	1.24	2.03	1.66	1.18	1.43	1.05	1.23
75th Percentile	2.64	2.45	2.72	3.20	2.60	3.56	3.50	2.45	2.52	2.30	2.58
95th Percentile	8.66	9.52	11.50	14.50	11.88	16.41	14.22	14.93	12.08	11.69	11.59
99th Percentile	29.85	48.35	162.90	69.88	50.78	133.00	65.20	91.91	58.89	77.94	62.93
Max	155.20	1,862.00	306.40	1,591.00	1,072.00	721.00	2,322.00	669.50	689.80	118,239.00	118,239.00

(Continued on next page)

TABLE 3.4 (Continued)

<i>Small Companies (g=S)</i>											
Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	135	316	30	870	1,173	148	269	84	296	3,454	6,775
Mean	3.70	3.00	1.68	2.75	-0.01	2.08	6.31	1.19	1.33	1.28	1.59
Std Deviation	22.61	21.27	3.52	38.27	21.68	7.70	66.19	2.58	6.04	15.65	24.56
Min	-84.43	-159.50	-1.82	-561.10	-464.00	-40.00	-44.00	-9.20	-18.50	-445.00	-561.10
1st Percentile	-20.04	-12.50	-1.82	-36.69	-37.33	-22.89	-10.13	-9.20	-13.14	-13.00	-21.00
5th Percentile	-1.13	-3.12	-1.75	-5.97	-7.23	-1.73	-3.82	-0.72	-0.53	-1.62	-3.25
25th Percentile	0.98	0.42	0.88	0.15	0.18	0.97	0.48	0.74	0.94	0.83	0.64
Median	1.15	1.00	1.19	1.04	1.00	1.26	1.08	1.05	1.07	1.00	1.01
75th Percentile	1.79	1.57	1.42	2.38	1.86	2.00	1.96	1.41	1.29	1.36	1.56
95th Percentile	9.00	6.00	4.46	16.00	8.97	7.00	11.00	3.10	2.95	5.00	7.52
99th Percentile	136.30	117.70	19.13	54.20	34.00	41.18	62.33	18.65	16.90	25.07	36.81
Max	205.00	191.00	19.13	682.00	98.00	61.50	1,076.00	18.65	91.00	327.00	1,076.00
<i>t</i> -stat (L-M) ^a	0.55	-1.16	-0.96	2.23**	0.90	-1.65	-0.11	-1.04	0.62	-0.59	-0.53
<i>t</i> -stat (L-S) ^b	-0.92	-0.54	1.13	0.46	2.46**	0.70	-0.17	2.93***	1.26	0.27	0.33
<i>t</i> -stat (M-S) ^c	-1.17	0.18	1.35	-1.98**	1.44	3.59***	-0.10	1.69*	-0.31	1.76*	0.91

This table presents the summary statistics of $(\frac{CFO}{E})_{i,g,k}$ across different industries for large, medium-sized and small companies with positive E (Earnings), where, $i = 1, \dots, n_{g,k}$; $g = L$ (Large companies), M (Medium-sized companies), S (Small companies); $k =$ Industry 1, 2, ... 10.

Variable definitions: E = Net income after interest, tax and extraordinary items for company i in group g and industry k in the observation year of 2010; CFO = Net cash flow from operation for company i in group g and industry k in the observation year of 2010, it is defined as Net income after interest, tax and extraordinary items for the observation year of 2010 + Depreciation – Changes in Working Capital.

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

^a t -statistic for two-tailed of difference between large and medium-sized companies' means.

^b t -statistic for two-tailed of difference between large and small companies' means.

^c t -statistic for two-tailed of difference between medium-sized and small companies' means.

*, **, *** represent statistically significant different at the 0.10, 0.05 and 0.01 levels, respectively.

3.5.1.3 Results of cash flows to earnings ratio – Negative Earnings Group

If companies with negative earnings with positive cash flows, which give rise to a negative $\frac{CFO}{E}$. This suggests that companies have enough cash flows to back up the negative earnings, i.e. less tendency to manage earnings. If the $\frac{CFO}{E}$ turns to positive, it means companies have negative earnings with negative cash flows. The extremely high level of accruals may be an indication of poor accounting quality.

[Table 3.5 Here]

In Table 3.5, the overall means for three types of companies are all negative, suggesting companies have cash flows to back up their losses, especially in large companies (-33.15). This also suggests that level of accruals is higher in large companies than medium and small companies. The means of $\frac{CFO}{E}$ are not statistically different between each group of companies with losses. Again, the standard deviations of $\frac{CFO}{E}$ for three types of companies are different, with large companies having the greatest (846.00).

Considering within industry variation, large companies in Construction, which amount the positive means with negative earnings (21.44), suggesting that large companies in this industry have more negative cash flows relative to losses. The standard deviations of $\frac{CFO}{E}$ across industries are relatively small except in Construction (128.00) and Education & Health (1281.00). In general, large companies with losses behave relatively similar except in Construction and Education & Health, which the level of accruals is high and variations in accounting quality are high.

Medium companies with losses behave similarly except in Construction and Other Services, where means of $\frac{CFO}{E}$ are positive, suggesting that medium companies in these two industries have more firms with negative cash flows relative to negative earnings. The standard deviations of $\frac{CFO}{E}$ across industries are relatively different though the overall variances are smaller than those in large companies.

The results of small companies in Table 3.5 are similar to large companies, as only Construction amounts the positive means of $\frac{CFO}{E}$. However, the standard deviations of $\frac{CFO}{E}$ are large in Utility (87.76) and Education & Health (68.38).

Overall, medium companies in Primary, Utility, and Service behave differently from large and small companies. Furthermore, the variances within each industry in medium companies group are larger than those in large and small companies, suggesting the variations in accounting quality within medium companies group is the largest.

Key findings from Table 3.5:

1. Level of accruals in large companies is higher than medium and small companies, but the mean of $\frac{CFO}{E}$ is negative (positive cash flows with negative earnings). This may be due to the financial crisis, that large companies are required to write off huge losses during this period.
2. The variation in accounting quality within medium companies group is still the largest.
3. Considering variation within each industry, Construction is different from other industries, which has higher variation in accounting quality and less cash flows to back up the losses.

TABLE 3.5: Industrial Distribution and Summary Statistics for ratio of CFO to Earnings (Negative Earnings)

$$\text{Ratio of Cash Flows from Operation to Earnings} = \left(\frac{CFO}{E}\right)_{i,g,k}, \text{ where, } E < 0$$

Large Companies (g=L)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	67	157	4	32	53	14	24	7	9	283	650
Mean	-0.65	-0.37	-0.48	21.44	-3.10	-0.70	-7.08	-13.08	0.37	-76.66	-33.15
Std Deviation	3.88	4.99	2.42	128.00	24.47	1.49	26.31	32.09	2.04	1,281.00	846.00
Min	-21.65	-40.43	-4.07	-28.07	-170.10	-5.44	-128.20	-85.67	-1.28	-21,554.00	-21,554.00
1st Percentile	-21.65	-26.89	-4.07	-28.07	-170.10	-5.44	-128.20	-85.67	-1.28	-35.29	-36.75
5th Percentile	-7.21	-8.14	-4.07	-17.50	-6.44	-5.44	-22.35	-85.67	-1.28	-11.36	-9.21
25th Percentile	-0.44	-0.05	-1.88	-0.73	-1.03	-0.66	-3.37	-4.39	-0.83	-0.91	-0.68
Median	0.21	0.51	0.56	0.34	-0.09	-0.26	-0.41	-0.08	-0.17	0.20	0.26
75th Percentile	0.79	0.92	0.93	1.01	0.91	0.02	0.64	0.86	0.61	1.00	0.94
95th Percentile	2.73	3.39	1.03	10.80	3.80	0.27	1.22	0.93	5.41	8.85	4.23
99th Percentile	2.91	8.23	1.03	722.00	28.72	0.27	7.22	0.93	5.41	15.00	14.67
Max	2.91	8.29	1.03	722.00	28.72	0.27	7.22	0.93	5.41	52.75	722.00

Medium-sized Companies (g=M)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	155	1,692	83	465	1,175	431	404	95	283	4,107	8,890
Mean	-3.24	-7.51	-4.65	2.89	-5.20	-3.45	-6.24	-0.16	3.47	-2.19	-3.42
Std Deviation	15.23	204.70	19.43	105.80	84.41	15.03	57.23	19.71	117.10	424.60	305.60
Min	-98.71	-8,138.00	-142.00	-544.00	-1,842.00	-182.20	-992.00	-80.64	-254.20	-13,040.00	-13,040.00
1st Percentile	-96.82	-95.36	-142.00	-110.70	-149.00	-84.03	-128.30	-80.64	-146.00	-120.50	-125.00
5th Percentile	-21.36	-13.68	-35.77	-20.44	-31.20	-13.81	-29.41	-9.51	-14.96	-16.54	-18.07
25th Percentile	-1.56	-1.27	-2.23	-2.76	-2.61	-1.68	-2.83	-1.08	-1.79	-1.28	-1.61
Median	0.11	0.26	0.04	0.07	-0.09	-0.31	-0.20	0.35	-0.07	0.52	0.23
75th Percentile	0.95	1.00	1.00	1.46	1.00	0.65	0.97	1.00	0.99	1.00	1.00
95th Percentile	4.23	6.09	3.29	11.33	7.75	1.26	5.58	3.32	2.92	5.00	5.70
99th Percentile	25.73	31.06	13.55	166.60	51.77	7.62	55.80	149.40	77.82	72.83	49.71
Max	33.50	1,191.00	13.55	1,882.00	743.80	16.55	274.00	149.40	1,924.00	18,349.00	18,349.00

(Continued on next page)

TABLE 3.5 (Continued)

<i>Small Companies (g=S)</i>											
Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	33	51	7	222	312	56	51	27	63	700	1,522
Mean	-9.10	0.18	-33.73	2.56	-2.56	-1.24	-7.57	-1.89	-0.26	-2.03	-1.77
Std Deviation	32.47	6.16	87.76	48.55	24.72	4.90	31.79	9.16	3.97	68.38	52.12
Min	-139.00	-23.00	-232.50	-242.00	-228.00	-18.50	-182.00	-37.00	-22.36	-1,298.00	-1,298.00
1st Percentile	-139.00	-23.00	-232.50	-103.00	-116.00	-18.50	-182.00	-37.00	-22.36	-112.00	-128.60
5th Percentile	-128.60	-6.62	-232.50	-15.52	-17.80	-10.60	-48.20	-28.86	-6.00	-19.50	-18.17
25th Percentile	-1.68	-1.54	-8.31	-1.06	-0.98	-1.10	-1.15	-0.72	-0.86	-0.39	-0.78
Median	-0.22	0.44	-0.32	0.38	0.53	0.49	0.59	0.60	0.64	0.83	0.68
75th Percentile	0.99	1.06	2.40	1.39	1.40	0.91	1.35	1.00	1.10	1.13	1.17
95th Percentile	3.00	13.51	5.44	9.92	8.63	1.82	4.56	3.87	4.75	7.27	7.05
99th Percentile	8.18	26.00	5.44	99.00	33.67	12.00	6.18	5.40	10.00	153.10	84.00
Max	8.18	26.00	5.44	493.80	101.00	12.00	6.18	5.40	10.00	326.70	493.80
<i>t</i> -stat (L-M) ^a	1.97**	1.43	1.70*	0.80	0.50	3.33***	-0.14	-1.05	-0.44	-0.97	-0.89
<i>t</i> -stat (L-S) ^b	1.49	-0.58	1.00	0.83	-0.15	0.70	0.07	-0.91	0.75	-0.98	-1.44
<i>t</i> -stat (M-S) ^c	1.01	-1.52	0.87	0.06	-0.93	-2.27**	0.25	0.65	0.53	-0.02	-0.21

This table presents the summary statistics of $(\frac{CFO}{E})_{i,g,k}$ across different industries for large, medium-sized and small companies with negative E (Earnings), where, $i = 1, \dots, n_{g,k}$; $g = L$ (Large companies), M (Medium-sized companies), S (Small companies); $k = \text{Industry } 1, 2, \dots, 10$.

Variable definitions: E = Net income after interest, tax and extraordinary items for company i in group g and industry k in the observation year of 2010; CFO = Net cash flow from operation for company i in group g and industry k in the observation year of 2010, it is defined as Net income after interest, tax and extraordinary items for the observation year of 2010 + Depreciation – Changes in Working Capital.

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

^a t -statistic for two-tailed of difference between large and medium-sized companies' means.

^b t -statistic for two-tailed of difference between large and small companies' means.

^c t -statistic for two-tailed of difference between medium-sized and small companies' means.

*, **, *** represent statistically significant different at the 0.10, 0.05 and 0.01 levels, respectively.

3.5.1.4 Overall Comments for the ratio of cash flows to earnings:

Under this method, there are a few findings. The variations of accounting quality within medium companies are higher than large and small companies. The level of accruals in medium companies is higher than large and small companies.

Large and small companies have less variation when earnings are positive and more variation when earnings are negative. However, medium companies have more variation when earnings are positive and less variation when earnings are negative.

Under effects of accounting standards and differential reporting framework, the accounting quality for medium companies is different from large and small companies.

The advantage of this method is that it gives us the basic idea of what is going on in the actual data for public and private companies. This method gives a general understanding of level of accruals across different groups of companies as well as across industries. However, it does not present the comparison within each industry. Therefore, in the next method, we take account of this issue.

3.5.2 Deviation (from the Industries' average) of the CFO/E ratio

The ratio of CFO/E reflects both accounting characteristics and economic characteristics. The quality of earnings differs in different accounting frameworks as well as in different economic environments. The previous method provides a general view of accounting quality across different industries. Companies in different industries may have different reporting behaviour. Firms that operate in different industries may have different fundamental business characteristics that affect the quality of earnings. For instance, values of the cash flows may be affected by the industry in which the company operates. Therefore, the comparison of accounting quality within each industry needs to be further analysed. In this section, we compare the accounting quality within each industry for three groups of companies.

We examine $\frac{CFO}{E}$ within each industry for three groups of companies, by taking deviations from the average of $\frac{CFO}{E}$ in each industry for each group of companies.

$(\frac{CFO}{E})_{i,g,k}$ is the ratio of cash flow from operations to earnings for company i in group g and industry k :

where, $i = 1, \dots, n_{g,k}$.

$g = L$ (large), M (medium), S (small).

$k = 1, 2, \dots, 10$.

The average ratio of cash flow from operations to earnings, for group g companies in industry k is as follows:

$$AVG_CFO_{g,k} = \sum_{i=1}^{n_{g,k}} (\frac{CFO}{E})_{i,g,k} / n_{g,k}$$

The deviation of the ratio of cash flow from operations to earnings for company i from the industry average of group g is as follows:

$$DEV(\frac{CFO}{E})_i = (\frac{CFO}{E})_{i,g,k} - AVG_(\frac{CFO}{E})_{g,k}$$

In order to be consistent with previous method, the analysis is based on each group of companies with all earnings group, positive earnings group and negative earnings group.

3.5.2.1 Results of Deviation from Industry Average

Results of how each group of companies deviate from its own industry average are shown in Table 3.6-3.8. With the mean constructed to be 0, the analysis will not focus on the mean but on the variance.

[Table 3.6 Here]

The standard deviations for three types of companies are different, medium companies amount the largest (775.30), follow by large companies (576.20) and small companies (31.48). The standard deviations from each industry for large companies are relatively small and similar, except the variance in Education and Health (897.10) is large, which drives the overall variations of large companies greater. The standard deviations from each industry for medium companies are relatively larger than those in large and small companies.

Deviations of ratio ($\frac{CFO}{E}$) for large and small companies from 5th to 95th percentile are relatively smaller than that from medium companies, suggesting variations within each industry are larger for medium companies. Furthermore, medium companies have higher extreme values for each industry.

Education & Health amounts the highest variations for large and medium companies. As for small companies, Utility, Constructions and Education & Health amount higher variations.

Key Findings from Table 3.6

1. From the comparison of deviation from its own industry average, medium companies still amount the largest variations, implying that accounting quality in medium companies varied the most within each industry.
2. Education & Health have higher variations in accounting quality for all groups of companies.

TABLE 3.6: Summary Statistics of Deviation of ratio of CFO to Earnings from Industry Average

$$DEV\left(\frac{CFO}{E}\right)_i = \left(\frac{CFO}{E}\right)_{i,g,k} - AVG_{-}\left(\frac{CFO}{E}\right)_{g,k}$$

Large Companies (g=L)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	94	528	29	127	318	55	97	39	37	929	2,253
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Std Deviation	4.28	10.92	2.31	64.72	14.54	10.76	22.96	14.75	2.77	897.10	576.20
Min	-21.68	-141.10	-6.20	-36.14	-171.50	-47.09	-130.60	-86.15	-6.64	-21,537.00	-21,537.00
1st Percentile	-21.68	-21.48	-6.20	-26.18	-26.54	-47.09	-130.60	-86.15	-6.64	-40.18	-26.54
5th Percentile	-7.03	-3.77	-2.12	-17.20	-4.71	-4.50	-7.66	-4.87	-2.99	9.25	-7.30
25th Percentile	-0.32	-1.07	-0.87	-7.97	-1.37	-2.32	-1.86	0.44	-1.10	17.41	-0.71
Median	0.31	-0.36	-0.22	-7.08	-0.28	-0.91	-0.87	1.47	-0.53	18.49	1.43
75th Percentile	1.10	0.71	0.59	-5.35	0.66	0.17	0.96	2.53	1.03	19.64	18.30
95th Percentile	3.10	6.81	6.38	11.04	4.58	13.35	10.68	12.07	5.99	29.93	23.68
99th Percentile	22.64	20.73	6.68	52.74	27.31	55.72	175.60	17.51	10.55	101.20	55.72
Max	22.64	159.50	6.68	713.90	142.40	55.72	175.60	17.51	10.55	10,835.00	10,835.00

Medium-sized Companies (g=M)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	675	7,494	273	1,975	6,438	1,282	1,731	339	1,087	14,302	35,596
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Std Deviation	36.52	103.40	25.59	128.40	60.62	32.82	71.63	48.73	85.60	1,219.00	775.30
Min	-885.50	-8,139.00	-143.70	-3,929.00	-2,457.00	-185.90	-995.00	-171.40	-1,621.00	-13,058.00	-13,058.00
1st Percentile	-58.81	-28.32	-69.55	-149.80	-51.19	-41.73	-58.08	-28.84	-58.74	-69.81	-57.85
5th Percentile	-5.15	-5.50	-11.86	-12.63	-8.48	-8.36	-10.58	-10.29	-7.52	-24.21	-20.22
25th Percentile	0.62	-0.53	-1.49	2.00	-0.32	-3.58	-2.83	-4.95	-0.79	-17.49	-16.82
Median	1.43	0.31	-0.57	3.84	0.85	-2.47	-1.75	-4.17	-0.15	-16.85	-2.03
75th Percentile	2.58	1.37	0.56	5.68	2.19	-1.07	-0.07	-3.20	0.84	-16.05	0.90
95th Percentile	8.00	8.22	6.88	16.69	10.90	6.96	10.27	7.49	7.59	-7.52	7.66
99th Percentile	30.12	44.05	68.71	88.11	50.59	83.58	62.18	86.74	59.50	58.23	54.64
Max	155.50	1,862.00	304.70	1,884.00	1,072.00	717.30	2,319.00	664.30	1,923.00	118,221.00	118,221.00

(Continued on next page)

TABLE 3.6 (Continued)

<i>Small Companies (g=S)</i>											
Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	168	367	37	1,092	1,485	204	320	111	359	4,154	8,297
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Std Deviation	25.26	19.88	38.62	40.55	22.37	7.19	62.17	5.16	5.76	31.50	31.48
Min	-140.20	-162.10	-227.50	-563.80	-463.50	-41.17	-186.10	-37.44	-23.41	-1,299.00	-1,299.00
1st Percentile	-129.80	-25.60	-227.50	-52.71	-67.12	-19.67	-48.09	-29.29	-14.19	-29.56	-37.44
5th Percentile	-5.41	-7.18	-3.29	-11.07	-8.45	-7.17	-9.19	-2.52	-3.78	-3.92	-6.79
25th Percentile	-0.51	-2.40	5.61	-2.88	0.57	-0.59	-3.87	0.02	-0.28	-0.03	-1.10
Median	-0.14	-1.63	6.09	-1.72	1.51	-0.07	-3.08	0.56	0.00	0.28	0.28
75th Percentile	0.49	-1.12	6.44	-0.47	2.35	0.55	-2.18	0.94	0.22	0.60	0.98
95th Percentile	7.00	3.40	10.46	12.37	9.38	5.77	2.73	3.43	1.92	4.78	6.65
99th Percentile	135.10	115.10	24.15	72.85	34.55	26.83	55.91	7.01	8.95	34.28	40.01
Max	203.80	188.40	24.15	679.30	101.50	60.33	1,072.00	18.21	89.95	326.30	1,072.00

This table presents the summary statistics of the deviation of $(\frac{CFO}{E})_{i,g,k}$ from average of each industry in each group of companies (i.e. large, medium-sized and small companies), where, $i = 1, \dots, n_{g,k}$; $g = L$ (Large companies), M (Medium-sized companies), S (Small companies); $k = \text{Industry } 1, 2, \dots, 10$.

Variable definitions: E = Net income after interest, tax and extraordinary items for company i in group g and industry k in the observation year of 2010; CFO = Net cash flow from operation for company i in group g and industry k in the observation year of 2010, it is defined as Net income after interest, tax and extraordinary items for the observation year of 2010 + Depreciation – Changes in Working Capital; $AVG_CFO_{g,k} = \sum_{i=1}^{n_{g,k}} (\frac{CFO}{E})_{i,g,k} / n_{g,k}$, is defined as the average ratio of cash flow from operations to earnings, for group g companies in industry k .

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

[Table 3.7 Here]

The results of how each group of companies deviate from its own industry average with positive earnings is given in Table 3.7. The variations in large companies across industries are relatively similar and small, except in Education and Health, which is consistent with the result in Table 3.6. The standard deviations of large and small companies are generally less than the results presented in Table 3.6, suggesting that the accounting quality for large and small companies is more packed when earnings are positive. However, the standard deviation for medium companies has increased when earnings are positive, implying that there are large discrepancies in earnings quality within medium companies group with positive earnings.

The deviations within each industry for medium companies still varied the most comparing with large and small companies. Education & Health have the highest variations in large and medium companies when earnings are positive. Constructions and Transport are more varied in small companies when earnings are positive.

Key Findings from Table 3.7:

1. When earnings are positive, medium companies have even higher variation in accounting quality than large and small companies.
2. The variation within each industry is high in medium companies.
3. Education & Health have more varied accounting quality in large and medium companies.
4. The accounting quality for Constructions and Transport are more varied in small companies when earnings are positive.

TABLE 3.7: Summary Statistics of Deviation of ratio of CFO to Earnings from Industry Average with Positive Earnings

$$DEV\left(\frac{CFO}{E}\right)_i = \left(\frac{CFO}{E}\right)_{i,g,k} - AVG_{-}\left(\frac{CFO}{E}\right)_{g,k}, \text{ when } E > 0$$

Large Companies (g=L)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	27	371	25	95	265	41	73	32	28	646	1,603
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Std Deviation	4.80	12.55	2.05	11.39	11.45	12.29	21.03	4.08	2.87	661.90	420.10
Min	-8.73	-141.80	-2.54	-21.68	-31.31	-48.15	-20.99	-6.08	-7.07	-5,142.00	-5,142.00
1st Percentile	-8.73	-21.77	-2.54	-21.68	-21.54	-48.15	-20.99	-6.08	-7.07	-124.10	-37.31
5th Percentile	-4.47	-3.73	-2.46	-12.69	-4.80	-2.69	-6.72	-5.62	-2.92	-13.93	-10.05
25th Percentile	-1.76	-1.39	-0.94	-3.18	-1.74	-2.42	-4.39	-1.76	-1.07	-7.95	-6.90
Median	-0.83	-0.78	-0.54	-2.39	-1.06	-1.44	-3.42	-1.28	-0.48	-7.13	-2.07
75th Percentile	0.56	0.35	0.24	-0.61	-0.17	-0.03	-1.80	0.04	0.74	-5.69	-0.52
95th Percentile	3.55	8.69	5.96	18.71	3.67	12.29	10.13	9.10	5.56	6.83	7.57
99th Percentile	20.94	25.31	6.27	57.24	36.94	54.65	172.50	14.55	10.11	116.60	57.11
Max	20.94	158.70	6.27	57.24	141.50	54.65	172.50	14.55	10.11	10,809.00	10,809.00

Medium-sized Companies (g=M)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	520	5,802	190	1,510	5,263	851	1,327	244	804	10,195	26,706
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Std Deviation	40.74	39.57	27.44	134.60	53.83	38.34	75.26	56.02	71.35	1,418.00	877.50
Min	-886.40	-913.10	-72.33	-3,927.00	-2,458.00	-65.98	-285.30	-173.40	-1,621.00	-3,431.00	-3,927.00
1st Percentile	-29.46	-16.61	-68.99	-159.00	-29.13	-19.55	-27.81	-24.76	-43.29	-51.93	-41.39
5th Percentile	-2.35	-5.77	-5.53	-8.30	-6.90	-7.47	-8.62	-9.98	-1.95	-28.64	-26.05
25th Percentile	0.32	-2.52	-3.50	4.27	-1.11	-6.14	-4.92	-6.40	0.46	-24.98	-24.41
Median	0.85	-1.91	-2.88	5.86	-0.15	-5.28	-4.19	-6.07	0.89	-24.88	-3.18
75th Percentile	2.02	-0.79	-1.78	7.79	1.21	-3.76	-2.34	-4.80	1.98	-23.63	-0.07
95th Percentile	8.05	6.29	7.00	19.08	10.49	9.10	8.38	7.69	11.54	-14.24	7.96
99th Percentile	29.23	45.12	158.40	74.47	49.39	125.70	59.36	84.67	58.35	52.01	54.49
Max	154.60	1,859.00	301.90	1,596.00	1,071.00	713.70	2,316.00	662.30	689.30	118,213.00	118,213.00

(Continued on next page)

TABLE 3.7 (Continued)

<i>Small Companies (g=S)</i>											
Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	135	316	30	870	1,173	148	269	84	296	3,454	6,775
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Std Deviation	22.61	21.27	3.52	38.27	21.68	7.70	66.19	2.58	6.04	15.65	24.53
Min	-88.13	-162.50	-3.50	-563.90	-464.00	-42.08	-50.31	-10.39	-19.83	-446.30	-563.90
1st Percentile	-23.74	-15.50	-3.50	-39.45	-37.32	-24.97	-16.44	-10.39	-14.47	-14.28	-23.29
5th Percentile	-4.83	-6.12	-3.43	-8.73	-7.22	-3.81	-10.13	-1.90	-1.86	-2.90	-5.92
25th Percentile	-2.72	-2.58	-0.80	-2.61	0.19	-1.11	-5.83	-0.45	-0.39	-0.45	-1.34
Median	-2.55	-2.00	-0.50	-1.71	1.01	-0.82	-5.23	-0.14	-0.26	-0.28	-0.28
75th Percentile	-1.91	-1.42	-0.26	-0.37	1.87	-0.08	-4.35	0.22	-0.04	0.08	0.46
95th Percentile	5.30	3.00	2.77	13.25	8.98	4.92	4.70	1.91	1.62	3.72	5.94
99th Percentile	132.60	114.70	17.45	51.45	34.01	39.10	56.03	17.46	15.58	23.79	34.06
Max	201.30	188.00	17.45	679.20	98.01	59.42	1,070.00	17.46	89.67	325.70	1,070.00

This table presents the summary statistics of the deviation of $(\frac{CFO}{E})_{i,g,k}$ from average of each industry in each group of companies (i.e. large, medium-sized and small companies) with positive E (Earnings), where, $i = 1, \dots, n_{g,k}$; $g = L$ (Large companies), M (Medium-sized companies), S (Small companies); $k =$ Industry 1, 2, ... 10.

Variable definitions: E = Net income after interest, tax and extraordinary items for company i in group g and industry k in the observation year of 2010; CFO = Net cash flow from operation for company i in group g and industry k in the observation year of 2010, it is defined as Net income after interest, tax and extraordinary items for the observation year of 2010 + Depreciation – Changes in Working Capital; $AVG_CFO_{g,k} = \sum_{i=1}^{n_{g,k}} (\frac{CFO}{E})_{i,g,k} / n_{g,k}$, is defined as the average ratio of cash flow from operations to earnings, for group g companies in industry k ;

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

[Table 3.8 Here]

Table 3.8 presents the deviation from each industry's average when earnings are negative. Standard deviations of large and small companies have increased comparing with the results in Table 3.6 and Table 3.7, implying that the earnings quality in large and small companies are more varied when earnings negative.

Overall, variations in large companies for each industry are relatively small, except variations in Construction and Education & Health, which drive the overall variations in large companies bigger. The overall variations of medium companies has decreased, but still amount larger variances for each industry.

When earnings are negative, Education & Health still have the highest variations in large and medium companies. As for small companies, Utility and Education & Health have larger variations in accounting quality.

Key Findings from Table 3.8:

1. Variations in accounting quality for large and small companies are larger in negative earnings than that in positive earnings.
2. The variation in medium companies is still larger comparing with large companies, except Construction and Education & Health.
3. Education & Health still have higher variation among industries for each group of companies.

TABLE 3.8: Summary Statistics of Deviation of ratio of CFO to Earnings from Industry Average with Negative Earnings

$$DEV\left(\frac{CFO}{E}\right)_i = \left(\frac{CFO}{E}\right)_{i,g,k} - AVG_{-}\left(\frac{CFO}{E}\right)_{g,k}, \text{ when } E < 0$$

Large Companies (g=L)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	67	157	4	32	53	14	24	7	9	283	650
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Std Deviation	3.88	4.99	2.42	128.00	24.47	1.49	26.31	32.09	2.04	1,281.00	845.10
Min	-21.00	-40.06	-3.59	-49.51	-167.00	-4.74	-121.10	-72.59	-1.65	-21,478.00	-21,478.00
1st Percentile	-21.00	-26.52	-3.59	-49.51	-167.00	-4.74	-121.10	-72.59	-1.65	41.37	-38.93
5th Percentile	-6.56	-7.77	-3.59	-38.93	-3.33	-4.74	-15.28	-72.59	-1.65	65.30	-20.42
25th Percentile	0.21	0.33	-1.41	-22.17	2.07	0.04	3.71	8.69	-1.20	75.75	0.80
Median	0.86	0.88	1.04	-21.10	3.01	0.44	6.66	13.00	-0.54	76.86	4.20
75th Percentile	1.44	1.29	1.41	-20.43	4.02	0.72	7.72	13.94	0.25	77.66	76.72
95th Percentile	3.38	3.76	1.51	-10.64	6.90	0.97	8.29	14.01	5.04	85.51	78.92
99th Percentile	3.56	8.61	1.51	700.60	31.82	0.97	14.30	14.01	5.04	91.66	90.23
Max	3.56	8.66	1.51	700.60	31.82	0.97	14.30	14.01	5.04	129.40	700.60

Medium-sized Companies (g=M)

Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	155	1,692	83	465	1,175	431	404	95	283	4,107	8,890
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Std Deviation	15.23	204.70	19.43	105.80	84.41	15.03	57.23	19.71	117.10	424.60	305.60
Min	-95.47	-8,131.00	-137.30	-546.90	-1,837.00	-178.70	-985.80	-80.49	-257.70	-13,038.00	-13,038.00
1st Percentile	-93.57	-87.85	-137.30	-113.60	-143.80	-80.58	-122.00	-80.49	-149.50	-118.30	-118.80
5th Percentile	-18.12	-6.17	-31.13	-23.33	-26.00	-10.36	-23.17	-9.36	-18.42	-14.35	-15.12
25th Percentile	1.68	6.24	2.42	-5.65	2.59	1.77	3.41	-0.93	-5.26	0.91	0.63
Median	3.35	7.77	4.68	-2.82	5.10	3.15	6.04	0.50	-3.54	2.72	3.19
75th Percentile	4.19	8.51	5.65	-1.43	6.20	4.10	7.21	1.16	-2.48	3.19	5.92
95th Percentile	7.47	13.61	7.94	8.44	12.95	4.71	11.82	3.47	-0.54	7.19	10.84
99th Percentile	28.97	38.57	18.19	163.70	56.97	11.07	62.04	149.60	74.36	75.03	52.37
Max	36.74	1,199.00	18.19	1,879.00	748.90	20.00	280.20	149.60	1,921.00	18,351.00	18,351.00

(Continued on next page)

TABLE 3.8 (Continued)

<i>Small Companies (g=S)</i>											
Industries	Primary	Manufacturing	Utility	Construction	Wholesale	Service	Transport	Telecom	Other Service	Education&Health	All Industries
No. of observations	33	51	7	222	312	56	51	27	63	700	1,522
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Std Deviation	32.47	6.16	87.76	48.55	24.72	4.90	31.79	9.16	3.97	68.38	52.02
Min	-129.90	-23.18	-198.80	-244.60	-225.40	-17.26	-174.40	-35.11	-22.10	-1,296.00	-1,296.00
1st Percentile	-129.90	-23.18	-198.80	-105.60	-113.40	-17.26	-174.40	-35.11	-22.10	-109.90	-120.90
5th Percentile	-119.50	-6.80	-198.80	-18.09	-15.24	-9.36	-40.64	-26.97	-5.74	-17.47	-16.44
25th Percentile	7.43	-1.72	25.42	-3.62	1.58	0.14	6.41	1.17	-0.60	1.64	-0.82
Median	8.88	0.26	33.41	-2.19	3.08	1.73	8.15	2.49	0.91	2.86	2.55
75th Percentile	10.09	0.88	36.13	-1.18	3.96	2.15	8.91	2.89	1.36	3.16	3.40
95th Percentile	12.10	13.33	39.17	7.36	11.18	3.06	12.12	5.76	5.01	9.30	10.76
99th Percentile	17.29	25.82	39.17	96.44	36.22	13.24	13.74	7.29	10.26	155.10	83.03
Max	17.29	25.82	39.17	491.20	103.60	13.24	13.74	7.29	10.26	328.70	491.20

This table presents the summary statistics of the deviation of $(\frac{CFO}{E})_{i,g,k}$ from average of each industry in each group of companies (i.e. large, medium-sized and small companies) with negative E (Earnings), where, $i = 1, \dots, n_{g,k}$; $g = L$ (Large companies), M (Medium-sized companies), S (Small companies); $k =$ Industry 1, 2, ... 10.

Variable definitions: E = Net income after interest, tax and extraordinary items for company i in group g and industry k in the observation year of 2010; CFO = Net cash flow from operation for company i in group g and industry k in the observation year of 2010, it is defined as Net income after interest, tax and extraordinary items for the observation year of 2010 + Depreciation – Changes in Working Capital; $AVG_CFO_{g,k} = \sum_{i=1}^{n_{g,k}} (\frac{CFO}{E})_{i,g,k} / n_{g,k}$, is defined as the average ratio of cash flow from operations to earnings, for group g companies in industry k ;

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

3.5.2.2 Overall Comments for deviation from industry average

Overall, results of deviation from industry average are consistent with the results of $\frac{CFO}{E}$ ratio, that medium companies have the highest variations across and within each industry.

Large and small companies have smaller variations when earnings are positive, and larger variations when earnings are negative. As for medium companies, it is the opposite, that behavior is more varied when companies make profit. In terms of behavior in industries, Construction, Transport and Education & Health amount higher variation in earnings quality.

This method presents the variation within each industry for three groups of companies. However, it does not indicate how many companies behave differently and whether they behave differently in the entire distribution when comparing three types of companies. Therefore, in next method, we compare the distribution of the ratio of cash flows to earnings for three groups of companies.

3.5.3 Distributions of CFO/E

The descriptive results for $\frac{CFO}{E}$ ratio only present the comparisons of large, medium and small companies in terms of mean, variation of the ratio and extreme values. In order to compare the accounting quality across three groups of companies, we also need to obtain the entire distribution of $\frac{CFO}{E}$ ratio. This approach allows us to understand how each group of companies is distributed entirely and how many companies have fallen out of the distribution.

With the descriptive statistics of $\frac{CFO}{E}$, we are able to obtain a frequency distribution. Firstly, we take the mean and $\pm 2\sigma$ of $\frac{CFO}{E}$ as dividing point in the distribution, which means we will have a distribution with four regions (i.e. $\frac{CFO}{E} < -2\sigma$, $-2\sigma \leq \frac{CFO}{E} < \text{mean}$, $\text{mean} \leq \frac{CFO}{E} \leq 2\sigma$, and $\frac{CFO}{E} > 2\sigma$). Secondly, we calculate the frequency of companies, which fall into each region for each group of companies. Thirdly, we convert the frequency number into percentage of number of each group. Companies have higher absolute value of $\frac{CFO}{E}$ suggest companies have higher level of accruals in earnings. Therefore, if companies' $\frac{CFO}{E}$ fall out the region of $\pm 2\sigma$, that may indicate underlying have extreme level of accruals.

As discussed earlier, negative $\frac{CFO}{E}$ could be due to two situations, where positive cash flows with negative earnings and negative cash flow with positive earnings. Companies with positive cash flows and negative earnings have fewer tendencies to manage earnings. However, those companies with negative cash flow and positive earnings have more tendencies to manage earnings.

Hence, each group of companies' distribution will then be split into two groups of distributions – distribution for the positive earnings group and distribution for the negative earnings group. Due to the two possible situations of negative $\frac{CFO}{E}$, we revise the regions of the frequency distribution for positive and negative earnings group respectively. The regions for positive earnings group will be -2σ , 0, mean $+2\sigma$. The regions for negative earnings group will be -2σ , mean, 0, $+2\sigma$.

The reason of constructing the distribution of $\frac{CFO}{E}$ ratio is to examine how differently that large, medium and small companies distributed. It is able to show the entire distribution for each group of companies so as to give us an overview of how

each group of companies behave in terms of accounting quality. Furthermore, it is able to show how many proportions of companies with extreme level of accruals.

3.5.3.1 Results of Distribution of cash flows to earnings ratio

[Figure 3.1 Here]

Figure 1 presents the result of frequency distribution of $\frac{CFO}{E}$ using the mean and standard deviation of each large, medium and small companies sample. Panel A presents the frequency distribution of $\frac{CFO}{E}$ based on all companies-observations. Panel B presents the frequency distribution of $\frac{CFO}{E}$ based on companies positive earnings group. Panel C presents the frequency distribution of $\frac{CFO}{E}$ based on companies with negative earnings group.

Panel A indicates that, small companies (57.78%) have more proportions of observations greater than mean, comparing with large (9.99%) and medium companies (7.05%). The majority of observations for large (89.66%) and medium (92.85%) companies fall below the mean. Further, the proportions of large and small companies fall out the $\pm 2\sigma$ regions are relatively more than medium companies, suggesting there are more large and small companies with extreme level of accruals.

From Panel B, companies fall below 0 have negative cash flows and positive earnings, suggesting that companies have more tendencies to use accruals to manage negative cash flows into positive earnings. The proportions of observations fall into $-2\sigma \leq \frac{CFO}{E} \leq 0$ are relatively similar for three groups of companies, which are around 15% of each sample. When earnings are positive, there are fewer proportions of medium companies (5.13%) lie into the range of $mean \leq \frac{CFO}{E} \leq 2\sigma$, but more proportions of medium companies (79.72%) fall into the range of $0 < \frac{CFO}{E} < mean$, comparing with large and small companies. Furthermore, there are still more proportions of large and small companies fall out the $\pm 2\sigma$ regions in positive earnings group.

When earnings are negative, companies fall below 0 have positive cash flows and negative earnings, implying companies have more cash flows to back up their

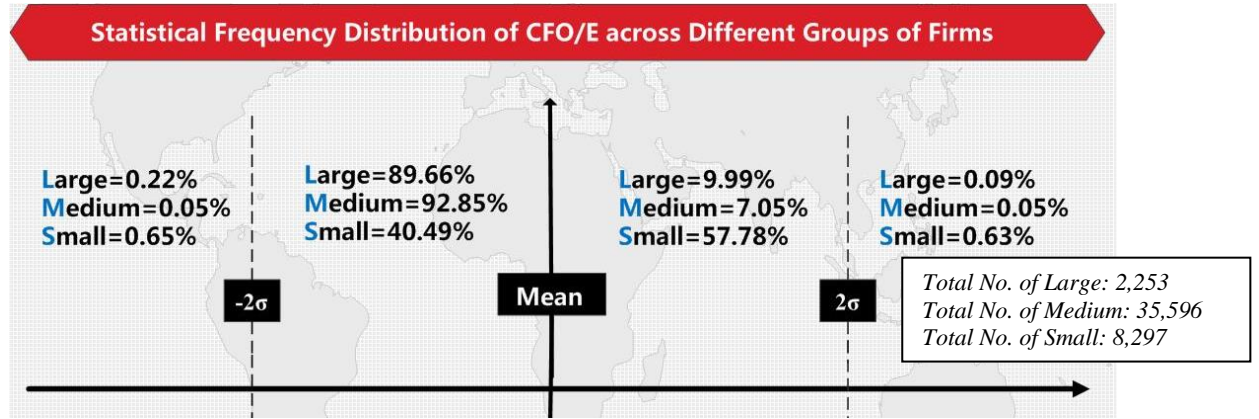
losses, i.e. fewer tendencies to manage earnings. From Panel C of Figure 1, the proportions of large (38.92%+1.08%) and small (15.97+17.87%) companies below 0 are less than medium (28.30+16.72%) companies. This suggests that when earnings are negative, there are more proportions of medium companies that are able to cover their losses with the positive cash flows comparing with large and small companies. However, there are more proportions of medium and small companies fall out the $\pm 2\sigma$ regions, suggesting that medium and small companies have more proportions of companies with extreme level of accruals when earnings are negative.

Key Findings from Figure 3.1:

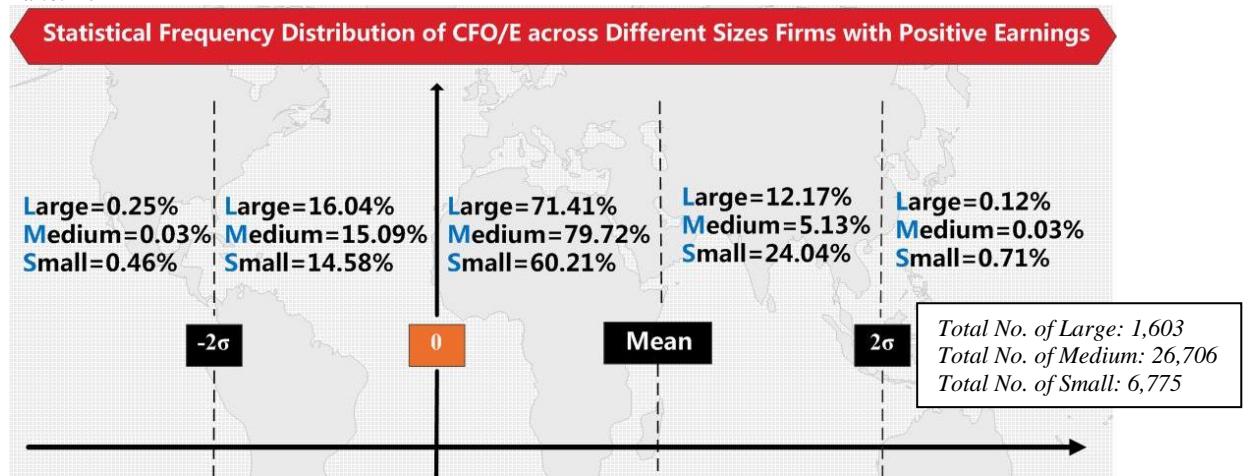
1. Overall, the distribution of medium companies is different from large and small companies.
2. When earnings are positive, the distributions for large and small companies are similar, that more proportions of companies have extreme level of accrual.
3. When earnings are negative, there are more proportions of medium companies that are able to cover their losses comparing with large and small companies.
4. Furthermore, there are more proportions of small companies with extreme level of accruals across different earnings group.

Figure 3.1: Statistical frequency distribution of ratio of CFO to Earnings

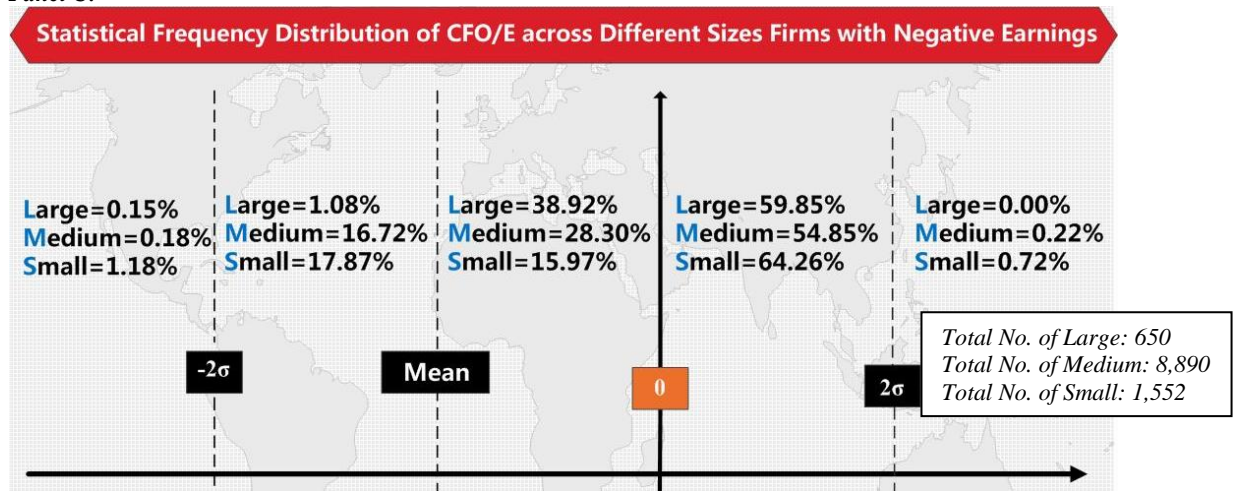
Panel A:



Panel B:



Panel C:



This figure presents statistical frequency distribution of $\frac{CFO}{E}$ based on the mean and standard deviation of each companies sample, where, $mean = \text{mean of } \frac{CFO}{E}$ for each type of companies in each earnings group, $\sigma = \text{standard deviation of } \frac{CFO}{E}$ for each type of companies in each earnings group.

Variable definitions: E = Net income after interest, tax and extraordinary items for company i in group g and industry k in the observation year of 2010; CFO = Net cash flow from operation for company i in group g and industry k in the observation year of 2010, it is defined as Net income after interest, tax and extraordinary items for the observation year of 2010 + Depreciation – Changes in Working Capital.

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

The percentage is calculated as the number of companies in each slot divided by the total number of each group of companies in each earnings group.

The region is defined based on the mean and standard deviation (σ) of statistical distribution of $\frac{CFO}{E}$. The distributions consist of three earnings groups – all companies, companies with positive earnings, and companies with negative earnings. Each mean and 2σ belongs to each type of companies (i.e. large, medium and small companies) in each earnings group.

3.5.4 Distributions of SMEs vs. Distribution of Large companies

Previously, we obtain the distribution of CFO/E ratio for large, medium and small companies from previous tests. In order to compare the three types of distributions, we then examine whether the observations in medium and small companies have come from the same distribution as large companies. The intuition is to test whether the observations in medium and small companies could have occurred in the distribution of large companies.

Large companies follow full IFRS, which is more detailed accounting standards than UK GAAP and FRSSE. Under effects of accounting standards, we take the accounting quality as benchmark to compare with medium and small companies. That means we take the measure of $\frac{CFO}{E}$ for large companies as benchmark. Firstly, we take the mean and $\pm 2\sigma$ of $\frac{CFO}{E}$ from large companies to set up different regions for comparisons with medium and small companies. That means we have a distribution with four regions with three dividing points: $-2\sigma_L$, $mean_L$, $+2\sigma_L$. Secondly, we calculate how many proportions of observations from each group of companies fall into each region in order to examine how observations in medium and small companies could have occurred in the distribution of large companies.

For each group of companies, sample will again be split into two parts – distribution for positive earnings group and distribution for negative earnings group. The regions of distribution for each earnings group will be based on the mean and $\pm 2\sigma$ of $\frac{CFO}{E}$ from large companies. Due to two situations discussed earlier when $\frac{CFO}{E}$ is negative, following with previous distribution method, the regions for positive earnings group will be $-2\sigma_L$, 0, $mean_L$, $+2\sigma_L$; and the regions for negative earnings group will be $-2\sigma_L$, $mean_L$, 0, $+2\sigma_L$.

The advantage of this method is that allows us to compare how differently that SMEs behave from large companies.

3.5.4.1 Results of comparisons of distributions cash flows to earnings ratio

[Figure 3.2 Here]

Figure 3.2 presents the comparisons of frequency distribution of $\frac{CFO}{E}$ between large, medium and small companies based on the mean and standard deviation of $\frac{CFO}{E}$ from large companies across different earnings group. Panel A of Figure 3.2 presents the comparisons of distribution based on all earnings groups. Panel B presents the comparison based on positive earnings group, whereas Panel C presents the comparison based on negative earnings group.

Panel A of Figure 3.2 presents the result of comparisons of distribution from all earnings groups, there are more proportion of small companies have occurred in $-2\sigma_L \leq \frac{CFO}{E} < mean_L$ comparing with large and medium companies. Furthermore, medium and small companies have fewer proportions with extreme level of accruals comparing with large companies. Overall, the distribution of medium and small companies are similar with large companies.

When earnings are positive, the comparisons of distribution between large, medium and small companies are shown in Panel B. The distribution of medium companies is quite similar with large companies. The proportions of three groups of companies fall below 0 are similar, suggesting proportions of companies have more tendencies to manage earnings are similar. As for small companies, there are more proportions of $\frac{CFO}{E}$ just above 0 and below the $mean_L$ (77.92%), but less proportions of $\frac{CFO}{E}$ above the $mean_L$ comparing with large and small companies. This suggests that there are more proportions of large and small companies have higher level of accruals comparing with small companies.

When earnings are negative, as shown in Panel C, the distribution of medium companies is different from large and small companies. There are nearly 46% of medium companies that is smaller than 0, which are more than the proportions of large and small companies. This suggests that there are more proportions of medium companies have positive cash flows when earnings are negative. Furthermore, medium companies have more proportions of companies fall out the $\pm 2\sigma$, suggesting that more proportions of medium companies with extreme level of accruals than large and small companies.

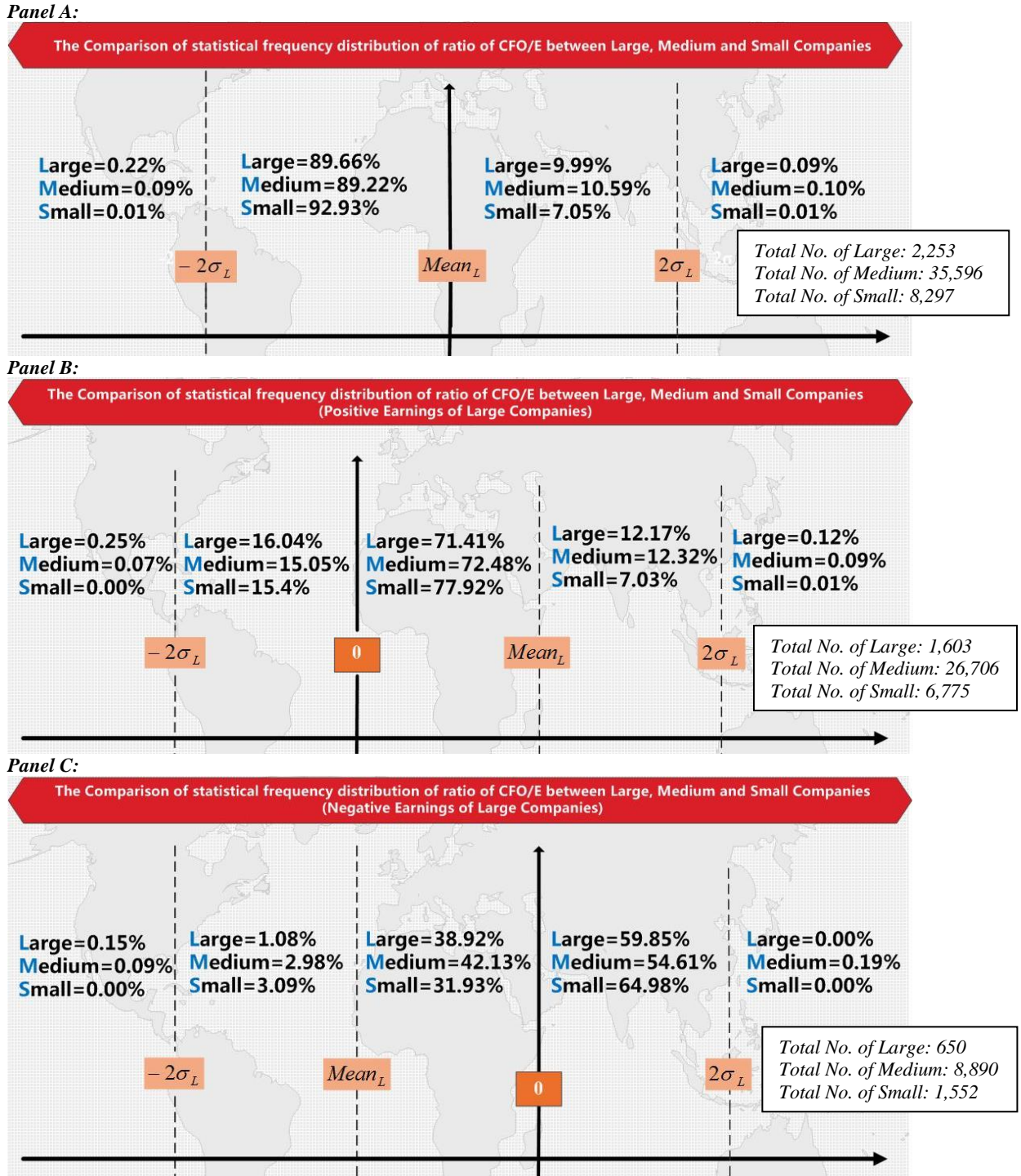
Key Findings from Figure 3.2:

The findings are generally consistent with previous findings from Figure 3.1.

When earnings are positive, distributions of large and medium companies are similar, that there are more proportions of companies have higher level of accruals. However, the proportions of companies below 0 are similar across three groups of companies. The proportions of large companies with extreme level of accruals are larger than medium and small companies.

When earnings are negative, medium companies seem to outperform large and small companies, because the proportions of medium companies with positive cash flows relative to negative earnings are more than that of large and small companies. However, there are more proportions of medium companies with extreme level of accruals than large and small companies.

Figure 3.2: The Comparison of statistical frequency distribution of ratio of CFO to Earnings between Large, Medium and Small Companies



This figure presents the comparison of statistical frequency distribution of ratio of $\frac{CFO}{E}$ between large, medium and small companies based on the sample mean and standard deviation of large companies in each earnings group, where, $mean_L =$ mean of $\frac{CFO}{E}$ in large companies in each earnings group, $\sigma_L =$ standard deviation of $\frac{CFO}{E}$ in large companies in each earnings group.

Variable definitions: $E =$ Net income after interest, tax and extraordinary items for company i in group g and industry k in the observation year of 2010; $CFO =$ Net cash flow from operation for company i in group g and industry k in the observation year of 2010, it is defined as Net income after

interest, tax and extraordinary items for the observation year of 2010 + Depreciation – Changes in Working Capital.

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

The percentage is calculated as the number of companies in each slot divided by the total number of each group of companies in each earnings group.

The region is defined based on the mean and standard deviation (σ) of statistical distribution of $\frac{CFO}{E}$ from large companies. The distributions consist of three earnings groups – all companies, companies with positive earnings, and companies with negative earnings.

In order to compare the statistical distribution of $\frac{CFO}{E}$, we take the distribution of large companies as benchmark, and calculate the number of each medium and small companies happens to fall into the regions of distribution of large companies in each earnings group. The $mean_L$ and $2\sigma_L$ belongs to the distribution of large companies in each earnings group.

3.6 Conclusion

The objective of this chapter is to compare the accounting quality of large (public companies), medium and small companies under current differential reporting framework. The variation of accounting quality for each group depends on the objectives of differential reporting. However, the regulators do not specify the expectation of accounting quality and consequences that different groups of companies should follow. The purpose of this chapter is to compare the accounting quality of different groups companies under different accounting standards, so as to examine whether differential reporting framework has led any variation of accounting quality between groups.

From the analysis of ratio of cash flows relative to earnings, the basic understanding of financial reporting behaviours for each group of companies is obtained. Overall, large companies and small companies have similar financial reporting behaviour across industries. Medium companies are different from large and small companies, that they have higher level of accruals in general and the most varied earnings quality across and within each industry. That means, under current regulatory reporting regimes, the variation of accounting quality exists in medium companies, whereas for large and small companies, their behaviours are quite similar.

Possible explanations of less variation in accounting quality for large and small companies may be that large companies are closely regulated and small companies have little opportunities to manage earnings. Medium companies have higher level of accruals and the most varied accounting quality. This may be due to medium companies are small enough to have possible exemption from regulations but big enough to have opportunities to manage earnings.

Given the quality of differential reporting standards are equal, the accounting quality is different across different groups of companies. This suggests that accounting standards do not restrain the variations in accounting quality for medium companies, whereas large and small companies are disciplined.

However, the ratio $(\frac{CFO}{E})$ only measures the level of accruals, and it is not a sophisticated measure of accounting quality, as quality of accruals is driven by other economic factors. Hence, this chapter provides only some preliminary results and

basic understanding of financial reporting behaviours across three groups companies. In the next chapter, we will examine the cash flows and earnings in more sophisticated ways with controls of economic factors.

Chapter 4: Effects of Regulation on Accounting Quality: Variability and Loss Recognition Tests

4.1 Introduction

Overview of Chapter 3

The main motivation of this study is driven by the development of differential reporting standards from ASB as well as IASB. The objectives of having differential reporting standards include the concern of size issues, cost issues, agency issues, and economic importance of companies. Further, these concerns are major factors driving accounting quality to be different. However, both regulation boards (IASB and UK ASB) have not made clear of what they expect in terms of accounting quality.

Therefore, the main objective of this thesis is to analyse the quality of financial reporting for public and private companies under current reporting framework in the UK in order to inform the discussion about the suitability of existing boundaries (differential reporting framework) between the groups. Firms' accounting quality is disciplined by legal forces and market forces, and hence, we examine accounting quality from the discipline of legal forces and market forces.

In the previous chapter (chapter 3), we examine the effects of accounting regulations on accounting quality. That we compare accounting quality between large, medium, and small companies under current regulatory reporting regimes. We use the ratio of cash flows relative to earnings to measure accounting quality. We examine accounting quality across and within each industry and distribution of accounting quality for each group of companies.

The results indicate that accounting quality for medium companies is different from large and small companies. Medium companies have higher level of accruals and more variations across and within each industry. Furthermore, there are more proportions of large and small companies with extreme level of accruals when earnings are positive. When earnings are negative, there are more proportions of medium companies have extreme level of accruals.

Objective of the Chapter 4

In this chapter, we continue to examine whether there is any variation in accounting quality across three groups of companies under the effects of accounting regulations. The objective, hypothesis and data of this chapter will be the same as chapter 3. Samples of companies are still based on large, medium and small companies. We adjust for the different factors which may affect accruals, so we can properly compare the differences between large, medium and small companies under current regulatory reporting regimes.

In the previous chapter, ratio $(\frac{CFO}{E})$ measures the level of accruals, which only provides some preliminary results and basic understanding of financial reporting behaviours across three groups of companies. Furthermore, accruals are influenced by different factors. In this chapter, firstly, we take account of the economic factors by looking at the volatility of earnings and volatility of cash flows to measure accounting quality. This measure is able to give us a view of general earnings management. Secondly, we measure accounting quality by target beating. This measure gives us a view of how earnings are being specifically managed across different groups of companies.

Outline of the chapter

Following this introduction, previous literature on accounting quality across different accounting standards as well as different sizes of firms is presented in section 4.2. Discussion of sample and data is in section 4.3. First measures of accounting quality (earnings smoothing) and results are discussed in section 4.4. Second measure of accounting quality (target beating) and results are provided in section 4.5. Conclusion of this chapter is provided in the last section of this chapter, section 4.6.

4.2 Literature Review

Prior Literatures on Accounting Quality

From prior studies, earnings are explored from different aspects, in this chapter, in order to be consistent with measures of accounting quality from previous chapter, we further examine earnings and cash flows with associated factors and distribution of earnings. The measures of accounting quality are based on Barth et al (2008) and Givoly et al (2010).

Most of researches on accounting quality are based on comparability and employ various measures and proxies for accounting quality such as accrual proxies, earnings persistence, earnings smoothing, conservatism and target beating. Dechow et al (2010) indicate that no single measure of accounting quality is superior to others, as different proxies measure different aspects of accounting quality. Hence, studies tend to use different measures of accounting quality to better facilitate the findings. The summary of some prior studies on the comparability of accounting quality across different accounting standards as well as across different sizes of companies is presented below in the format of authors' names, major findings and methods they use to measure accounting quality.

4.2.1 Accounting quality across different accounting standards

Some prior studies on accounting quality across different accounting standards are listed below. Some studies find that accounting quality in common-law accounting standards is higher than in code law countries' accounting standards (Ball, Kothari and Robin, 2000; Bartov, Goldberg and Kim, 2005). Furthermore, studies also find firms adopt IAS have better accounting quality than firms adopt domestic standards (Barth et al, 2008). However, some studies find that accounting quality under IAS is not better than (or does not differ with) those under domestic accounting standards (Van Tendeloo and Vanstraelen, 2005; Hung and Subramanyam, 2007; Eccher and Healy, 2003).

The results from prior studies on accounting quality across different accounting standards are mixed. This could be due to studies differ in the effectiveness of controls for incentives from a particular set of accounting standards and effects of the economic environment (Barth, Landsman and Lang, 2010).

Ball, Kothari and Robin (2000)

- Findings: Accounting earnings in enhanced common-law accounting standards countries are substantially more timely and conservative than code law countries', particularly in incorporating losses.
- Methods: Conservatism (following Basu, 1997) – unrealized increases in cash flows generally do not flow into reported earnings until when the underlying cash flow increases occur, but unrealized decreases are more likely to be incorporated quickly.

Van Tendeloo and Vanstraelen (2005)

- Findings: They find no differences in the level of earnings management of companies reporting under German GAAP and IAS.
- Methods: (1) Cross-sectional Jones (1991); (2) Correlation between cash flows and accruals

Bartov, Goldberg and Kim (2005)

- Findings: They have found that earnings based on IAS are more value relevant than earnings based on German standards.
- Methods: Value relevance model (they estimate the model on based time-series and cross-sectional analysis, in order to find the value relevance of reported earnings and stock returns)

Hung and Subramanyam (2007)

- Findings: They find that accounting amounts based on German standards and those based on IAS that are disclosed in accordance with requirements for first-time adopters of IAS do not differ in value relevance and conservatism.
- Methods: (1) Relative Value Relevance model (taking market value of equity as dependent variables and book value of equity, income before extraordinary items, inverse mill ratio as control variables; the higher the R-square implying that higher value relevance of book value of equity and income); (2) Conservatism following Basu (1997).

Eccher and Healy (2003)

- Findings: They compare accounting amounts based on IAS and Chinese standards and find that those based on IAS are not more value relevant than those based on Chinese standards for firms that can be owned by foreign investors.
- Methods: Estimate future cash flows with current cash flows, accruals, changes

in inventory, and changes in receivables as control variables. The coefficients on accruals and the coefficients on changes in receivables and inventory themselves will be non-zero if management judgment in reporting accruals is useful for forecasting future operating cash flow performance.

Barth, Landsman and Lang, (2008)

- Findings: They find firms adopt IAS report earnings of higher quality for a large sample of countries.
- Methods: (1) Earnings variability (variance of residuals from changes in earnings with control variables of size, growth, cash flows, auditors etc; smaller variance of residuals implies earnings smoothing, and poor accounting quality); (2) Earnings smoothing; (3) Small loss avoidance; (4) Timely loss recognition

4.2.2 Accounting Quality across different sizes of firms

Studies on accounting quality across public and private companies are listed below. Most of studies find that public companies have higher accounting quality than private companies (Beatty, Ke and Petroni, 2002; Ball and Shivakumar, 2005; Burgstahler, Hail and Leuz, 2006; Hope, Thomas and Vyas, 2012). However, Givoly et al (2010) find that public companies report more conservative but have more incentives to manage earnings than private companies.

Studies on comparability of accounting quality across different sizes of companies are mixed, that public companies tend to report more conservatively because of higher demand and tough regulations whereas private companies have lower accruals quality because of less market demand and less legal enforcement.

Beatty, Ke and Petroni (2002)

- Findings: They examine the earnings quality of public banks and private banks. They find that public banks have a greater propensity to manage earnings than private banks.
- Methods: (1) Target beating; (2) Discretionary Accounting Choice with financial variables in banking sector.

Ball and Shivakumar (2005)

- Findings: They find that private companies (excluding small companies) in the

UK have poorer loss recognition timeliness than public companies. This is the effect of the financial market demand.

- Methods: (1) Timely loss recognition (following Basu 1991); (2) Accrual based timely loss recognition (measures the contemporaneous relationship between accruals and cash flows).

Burgstahler, Hail and Leuz (2006)

- Findings: Private companies (excluding small companies) in the EU have more earnings management than public companies. Earnings management is lower in countries with strong legal systems.
- Methods: (1) Proxies of Earnings Management (including small profit relative to small losses, absolute values of accruals over cash flows, standard deviation of earnings over standard deviation of cash flows, correlation between changes in accruals and changes in cash flows)

Givoly, Hayn and Katz (2010)

- Findings: They find that US private equity companies (with public debt) have better quality than public equity companies. This is the effect of earnings opportunism. Interestingly, on loss recognition timeliness they find similar to Ball and Shivakumar (2005), that public equity companies report more conservatively than private equity companies.
- Methods: (1) Earnings persistence (expect coefficient in accruals component is larger, that accruals are more informative about future earnings); (2) Accruals model proposed by Dechow and Dichev (2002) and modified by McNichols (2002) and Francis et al (2005); (3) Small profit relative to small losses; (4) Accruals based timely loss recognition following Ball and Shivakumar (2005)

Hope, Thomas and Vyas, (2012)

- Findings: They present clearer results than Givoly et al (2010). Private firms have lower financial reporting quality and are less conservative than public firms.
- Methods: (1) Accruals estimation errors following McNichols (2002); (2) Absolute values of accruals over absolute values of cash flows following Burgstahler et al (2006); (2) Conservatism following Ball and Shivakumar (2005)

4.3 Sample and Data

In order to be consistent with previous chapter, in this chapter, we use the same data as the previous chapter from FAME database under current financial reporting structure, which include public EU quoted companies are following full IFRS to prepare consolidated accounts, private non-small (medium) companies are following UK GAAP⁷ and small companies are following FRSSE.⁸

Under the definition of size of companies from sections 382 and 465 of the Companies Act 2006, we select active public companies for the years of 2008-2010, private medium companies with turnover greater than £6.5 million and balance sheet worth greater £3.26 million for the years of 2008-2010, and small companies with annual turnover of £6.5 million or less and have an annual balance sheet worth no more than £3.26 million for the years of 2008-2010. We therefore obtain three groups of companies-observations based on the size criteria from Companies Act, which are large companies (public companies), medium companies (private medium-sized companies) and small companies.

We exclude companies that are subsidiary as their reporting requirement is different. The criterion for subsidiary in FAME is that the minimum path of ultimate owner is 50.01%. We also screen out private firms whose legal form is not equal to the status of corporations such as legal forms like sole proprietorships or partnerships. We exclude banks, insurance companies and other financial institutions (SIC codes 6000-6799). We also exclude companies that without known value of total assets in the years of 2008, 2009 and 2010 in order to mitigate the data errors.

Each sample of companies (Large, medium and small companies) are then grouped into 10 major industry sectors based on UK SIC 2007, which include⁹: Primary, Manufacturing, Utility, Construction, Wholesale, Service, Transport, Telecom, Other service, Education & Health. The reason of using two digits SIC codes is to analyse the difference in accounting quality across different industry

⁷ UK GAAP is a mixture of Financial Reporting Standards (FRS), Statements of Standard Accounting Practice (SSAP) and IFRS-based standards.

⁸ There are still public companies following UK GAAP and private companies following IFRS, these companies are excluded in our studies, given our intuition of this research is to compare three classes companies that are public quoted companies following IFRS, medium companies following UK GAAP and small companies following FRSSE respectively.

⁹ Refer to List of Abbreviation for details.

groups in a broader range. Finer or detailed SIC codes may not present any significant difference in accounting quality across groups.

However, using broad two digits SIC codes may introduce noise in the results, we therefore control outliers using winsorizing. We winsorized accounting items needed in the calculation of our earnings quality proxies at the 5th and 95th percentile as in Barth et al (2008). We exclude those companies-observations where accounting items include profit, turnover, total assets and equity are exactly equal to zero since most likely they indicate missing data for the years of 2008-2010.

4.4 First Measure of Accounting Quality and Results

In the previous chapter, we use ratio ($\frac{CFO}{E}$) to measure the level of accruals, which only provides some preliminary results and basic understanding of financial reporting behaviours across three groups of companies. However, the level of accruals only measure one aspect of accounting quality, and the accruals are affected by different economic factors. Therefore, in this chapter, we adjust for the different factors that may affect accruals, so we can properly compare the differences between large, medium, and small companies under current regulatory reporting regimes.

Prior to discussing the measure of accounting quality in this chapter, the discussion about different factors that may affect accruals are provided in next section.

4.4.1 Factors associated with Earnings and Cash flows

Sloan (1996 pg.37) indicates that high level of accruals represents lower quality of earnings whereas Dechow and Dichev (2002 pg.54) suggest that high level of accruals signifies greater improvement over the cash flows. The ratio of cash flows relative to earnings may indicate the level of accruals used in transforming cash flows into reported earnings. The higher absolute value of the ratio is, the higher level of accruals component in the earnings. The ratio is only a crude measure, which only measure one aspect of accounting quality. There are some other effects associated with earnings and cash flows.

The quality of accruals are associated with various firm's characteristics such as size, ownership, turnovers, and leverage and etc. Dechow and Dichev (2002 pg.46) suggest that factors such as firm size, cash flow volatility, sales variability, length of operating cycle and incidence of negative earnings realizations are summary indicators that capture the influence of the operating environment and business model on accruals quality.

According to works by Lev (1992) and Gibbins, Richardson & Waterhouse (1992) about accounting quality and earnings management, accounting quality is a response to environment incentives. These incentives come from shareholders, investors, creditors, government, environmental pressure groups, unions, media,

accounting profession and regulation bodies, competitors. Financial markets, industry economic environment and some of the firm's characteristics (such as size, performances, assets in place, internationalisation) can strengthen those incentives (Michaïlesco, 1999). Various studies (for example, Ashbaugh 2001; Pagano et al, 2002); Lang et al, 2003; Lang et al, (2006); and Barth et al, 2008) include control variables for size, growth, leverage, and sales for examining quality of earnings.

Therefore, in this chapter, we take account of different factors to measure accounting quality. We use earnings smoothing as the first measure of accounting quality in this chapter. Following Lang et al (2003) and Barth et al (2008), we adjust for different factors in estimating volatility of earnings and volatility of cash flows for the further analysis of accounting quality across different groups of companies.

4.4.2 Literature on Earnings Smoothing

Recently, the accounting quality literature has generated significant other measurement methods, such as earnings smoothing. Beidleman (1973 pg.653) define earnings smoothing as “an attempt on the part of the firm's management to reduce abnormal variations in earnings to the extent allowed under sound accounting and management principles”. Beidleman (1973 pg.655) point out effective smoothing requires specification of the magnitude of the accruals with some precision and knowledge of techniques used to accomplish the desired adjustment (accruals). The magnitude (level) of the accruals depends upon the prospective level of current earnings relative to normal accruals. Ronen and Sadan (1981 pg.3) suggest that the income smoothing is used to reduce earnings fluctuations rather than to maximize or minimize reported earnings. Trueman and Titman (1988 pg.138) indicate that corporate manager may rationally want to smooth reported income, to reduce the estimate of various claimants of the firm about the volatility of its underlying earnings process, which, in turn, lowers their assessment of the probability of bankruptcy and could have a positive effect on the firm's market value.

Further, Dechow et al (2010 pg.361) indicate that smoothing is an outcome of accrual-based system, since the basic idea of an accrual-based earnings system is that accruals mitigates the timing issues of cash payments and receipts, so as to make earnings more informative about firms' performance than cash flows. The role of accruals component in earnings is to reduce and adjust the volatility of cash flows, so

as to make earnings better reflect firms' financial performance. Therefore, earnings smoothing is related to earnings persistence. We would expect a certain level of volatility of earnings, and the volatility of earnings is expected to be less than volatility of cash flows. Therefore, too little variability of earnings may be the product of earnings smoothing (earnings management).

Income smoothing is desirable for management is still in debate. There is some evidence that income smoothing can reduce share price volatility, but this literature is underdeveloped (Walker, 2013). Even it is desirable, the questions on whether it is an intentional outcome of management or whether earnings smoothing is used to normalize reported income will be raised (Beidleman, 1973 pg.653). Accruals that lead to smoothness can hide or delay the measurement of changes in fundamental performance, which presumably would be decision useful, thus, smoothness may not be an indication of greater decision usefulness or higher earnings quality (Dechow et al, 2010 pg.361).

Studies have found that earnings smoothing is a case of earnings management, it attempts to make earnings look less variable over time. For instance, Gordon (1964) predicts that so long as managers have discretion over accounting methods, they smooth reported income and the rate of growth in income. Dye (1988) demonstrates that a risk-averse manager who is precluded from borrowing and lending in the capital markets has an incentive to smooth his firm's reported income under agency setting. Beidleman (1973) identifies that the size and timing of discretionary revenue and expenses play an important role in the smoothing process. Goel and Thakor (2003) indicate that earnings smoothing is a special case of earnings management involving inter-temporal smoothing of reported earnings relative to economic earnings.

Earnings smoothing attempts to make earnings look less variable over time (Goel and Thakor, 2003). Prior studies suggest that firms with less earnings smoothing exhibit more earnings variability (Lang, Raedy, and Yetman, 2003; Leuz, Nanda and Wysocki, 2003; Ball and Shivakumar, 2005; Barth, Landsman and Lang, 2008). Especially, Leuz, Nanda, and Wysocki (2003) find that earnings smoothing is less pronounced in common law countries. Ball and Shivakumar (2005, 2006) suggest that timely recognition of gains and losses, which is consistent with higher earnings quality, tends to increase the volatility of earnings relative to cash flows.

Ewert and Wagenhofer (2005) show managers with less incentive to manage earnings should exhibit higher variability in reported earnings.

Based on the above discussions, good accounting quality is expected to have certain level of smoothing, because too little earnings smoothing or too much earnings smoothing may be an indication of poor accounting quality. However, the optimal level of earnings smoothing is unknown.

In this thesis, our main objective is to analyse how differently that different groups of companies behave. We are not in the position to comment which group of companies has better accounting quality. This is because earnings smoothing only measures one aspect of accounting quality, and the literature on whether earnings smoothing is desirable provides unclear conclusion.

4.4.3 Variability of Earnings

Methodology of Variability of Earnings

We have considered variety of accounting characteristics in quality of earnings, which have been examined in prior studies. The ratio of cash flows relative to earnings ratio has been determined as the measure of accounting quality in previous chapter. The simple cash flow from operation over earnings (CFO/E) ratio captures the fundamental financial reporting behavior across different sizes of firms. Given the reported earnings is made of cash flows and accruals, that accruals are used to solve to the timing and matching problems of cash flows. Hence, CFO/E ratio is able to present the level of accruals.

However, the CFO/E ratio only measures one aspect of accounting quality, and quality of accruals is sensitive to a variety of other factors. Prior tests might be an initial indication of firms' financial reporting behavior in a general view. Therefore, in order to further examine how reported earnings are related to operating cash flows, following Barth et al (2008), we estimate each reported earnings and cash flows with controls of factors that related to accounting quality.

As discussed earlier, accruals and earnings are influenced by both economic effects and accounting effects. Thus, in order to compare the quality of earnings between each group of companies (large, medium and small companies), firstly we need to adjust economic factors for earnings and then compare their earnings based

on accounting effects. These factors should be at least partially mitigated by our inclusion of control variables. To incorporate our controls we first estimate a regression of the change in annual net income scaled by total assets (Lang et al, 2006). We then use the residuals from underlying regression to compute our measure of earnings variability. Accordingly, variability of ΔNI is the variance of the residuals from the regression of the change in earnings scaled by total assets [$Var(\varepsilon_{i,g,k})$]. Hence, following Lang et al (2006) and Barth et al (2008), our regression model on earnings variability is as follows:

$$\Delta NI_{i,g,k} = \alpha_0 + \alpha_1 Size_{i,g,k} + \alpha_2 Growth_{i,g,k} + \alpha_3 Lev_{i,g,k} + \alpha_4 Dissue_{i,g,k} + \alpha_5 Turn_{i,g,k} + \alpha_6 CF_{i,g,k} + \varepsilon_{i,g,k}$$

Where,

$i = 1, \dots, n_{g,k}$;

$g = L$ (Large), M (Medium), S (Small);

$k = \text{Industry } 1, 2, \dots, 10$;

ΔNI = changes in net income scaled by total asset;

$Size$ = the natural logarithm of end of year value of equity;

$Growth$ = percentage change in sales;

Lev = end of year total liabilities divided by end of year equity book value;

$Dissue$ = percentage change in total liabilities;

$Turn$ = sales divided by end of year total assets;

CF = annual net cash flow from operating activities divided by end of year total assets.

Basic intuition is that accruals that lead to smoothness can hide or delay the measurement of changes in fundamental performance, which presumably would be decision useful, thus, smoothness may not be an indication of greater decision usefulness or higher earnings quality (Dechow et al, 2010 pg.361). Hence, we adjust economic factors according to prior studies (e.g. Lang et al 2003; Lang et al 2006; Barth et al 2008) and use the measure of volatility of change in earnings deflated by total assets as the measure of earnings quality. If firms smooth their earnings, the volatility of change in earnings is expected to be small.

In order to compare the differences in accounting quality between each group of companies, following Barth et al (2008), we test for the significant differences between each group of firms based on the empirical distribution of R-squares from the regression. We obtain the empirical distribution of differences for each group of companies (i.e. large companies, medium companies and small companies) by estimating the above regression using the method of bootstrapping.

Specifically,

- We firstly estimate the above equation by splitting observations into three groups of companies to fit into the equation.
- We randomly select (5% of number of each group of companies), with replacement, firm-observations from each group of companies and then run the value relevance regressions for each group 1,000 times.
- We will then obtain 1,000 R-squared for each group of firms for particular test. In testing the significant difference between each group, we take the differences between 1,000 R-squared from each group of companies and then use the variance of 1,000 differences to compute the z-stat to see whether the difference is greater than zero.

Results of Variability of Earnings

[Table 4.1 Here]

Descriptive Statistics for all variables

Table 4.1 presents the descriptive statistics relating to each variable used in the measure of earnings smoothing. Values below 5th level and above 95th level are different from values at other percentiles for all variables. Therefore, we winsorized each variable at 95% level in testing the variability of earnings and ratio of variability of earnings to variability of cash flows.

In terms of test variables, large companies and small companies have less variance in changes in earnings than medium companies. Especially large companies, they have the lowest variances in changes in earnings and changes in cash flows. Medium companies are more likely to manage earnings downwards compared with previous years.

Large and medium companies tend to have more growth than small companies. Large companies are more highly levered than medium and small companies. Medium and small companies are more likely to issue debts and have higher sales turnover than large companies. Cash flows of each group companies are varied.

[Table 4.2 Here]

Variability of Earnings

Table 4.2 presents results of the variability of change in earnings across large (public companies), medium and small companies in the observation year. Medium companies exhibit the lowest variability of changes in earnings (0.0056) and small companies have the highest variability of changes in earnings (0.021). The variability of changes in earnings for large companies (0.0073) is in between of medium and small companies. Based on the assumption of Barth et al (2008), lower variability of changes in earnings is the evidence of earnings smoothing. This suggests that medium companies are more likely to smooth their earnings than large and small companies.

[Figure 4.1 Here]

Empirical Distribution of R-squares

In order to compare the differences in accounting quality between each group of companies, we test for the significant differences between each group of firms based on the empirical distribution of R-squares from regression. That means, we firstly randomly select firm observations for each group of companies, and then fit these observations into the variability of changes in earnings model. We then obtain the empirical distribution of R-squared by repeating above procedures by 1,000 times. The distributions of 1,000 R-squared for each group of companies are presented in Figure 3. The distribution of medium companies is significantly different from large and small companies.

Key Findings from Table 4.2:

1. Medium companies have lower variability of change in earnings than large and small companies.

2. The variability of changes in earnings for medium companies is significantly different from large and small companies, given the distribution of R-squares of medium companies is different from large and small companies
3. These suggest that accounting quality for large and small companies is quite similar, whereas medium companies have different reporting behaviour from large and small companies.

TABLE 4.1: Summary Statistics Relating to Variables used in Earnings Quality Model Analysis

$$\Delta NI_{i,g,k} = \alpha_0 + \alpha_1 Size_{i,g,k} + \alpha_2 Growth_{i,g,k} + \alpha_3 Lev_{i,g,k} + \alpha_4 Dissue_{i,g,k} + \alpha_5 Turn_{i,g,k} + \alpha_6 CF_{i,g,k} + \varepsilon_{i,g,k}$$

$$\Delta CF_{i,g,k} = \alpha_0 + \alpha_1 Size_{i,g,k} + \alpha_2 Growth_{i,g,k} + \alpha_3 Lev_{i,g,k} + \alpha_4 Dissue_{i,g,k} + \alpha_5 Turn_{i,g,k} + \alpha_6 CF_{i,g,k} + v_{i,g,k}$$

Large Companies

	Number	Mean	Std Deviation	Min	1st Percentile	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	99th Percentile	Max
<i>Test Variables</i>												
ΔNI	2,253	0.09*	1.47	-2.75	-0.57	-0.19	-0.02	0.01	0.05	0.25	1.03	42.19
ΔCF	2,253	0.09*	3.37	-6.94	-0.68	-0.27	-0.05	0.00	0.06	0.31	0.93	158.00
<i>Control Variables</i>												
<i>Size</i>	2,128	9.03*	2.27	1.39	3.99	5.82	7.53	8.72	10.27	13.27	15.20	18.29
<i>Growth</i>	1,987	2.45*	76.01	-1.27	-0.78	-0.36	-0.06	0.05	0.18	0.76	3.44	3,143.00
<i>Lev</i>	2,253	128.10*	2,635.00	-11,358.00	-17.72	-1.49	0.34	1.04	2.60	14.00	306.10	103,022.00
<i>Dissue</i>	2,248	0.53*	7.91	-1.16	-0.88	-0.49	-0.11	0.01	0.20	1.14	4.13	304.70
<i>Turn</i>	2,039	1.39*	1.44	0.00	0.00	0.02	0.35	1.09	1.93	3.89	6.15	22.33
<i>CF</i>	2,253	0.13*	3.02	-2.14	-0.55	-0.20	-0.01	0.05	0.13	0.32	0.73	143.00

Medium Companies

	Number	Mean	Std Deviation	Min	1st Percentile	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	99th Percentile	Max
<i>Test Variables</i>												
ΔNI	35,560	-3.21*	612.00	-114,506.00	-0.71	-0.18	-0.02	0.00	0.04	0.24	0.99	5,778.00
ΔCF	35,560	-3.42*	622.80	-116,338.00	-1.03	-0.40	-0.08	0.00	0.07	0.37	1.29	5,894.00
<i>Control Variables</i>												
<i>Size</i>	32,123	8.47*	1.75	0.00	4.23	5.95	7.47	8.28	9.34	11.65	13.57	18.84
<i>Growth</i>	30,482	2.33*	197.00	-1,258.00	-0.80	-0.39	-0.06	0.04	0.18	0.69	3.29	31,117.00
<i>Lev</i>	35,560	7.29*	5,958.00	-942,675.00	-40.58	-4.84	0.32	1.16	3.06	17.28	118.20	595,936.00
<i>Dissue</i>	35,274	1.72*	99.83	-17.57	-0.97	-0.53	-0.11	0.01	0.20	0.94	4.41	16,632.00
<i>Turn</i>	31,270	2.66*	51.99	-0.27	0.01	0.05	0.57	1.36	2.26	4.54	8.97	5,479.00
<i>CF</i>	35,560	-2.92*	674.10	-126,806.00	-0.64	-0.19	0.00	0.06	0.14	0.38	1.05	3,500.00

(Continued on next page)

TABLE 4.1 (Continued)

Small Companies												
	Number	Mean	Std Deviation	Min	1st Percentile	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	99th Percentile	Max
<i>Test Variables</i>												
ΔNI	8,205	0.05*	66.53	-5,809.00	-1.10	-0.29	-0.03	0.01	0.11	0.65	4.21	818.50
ΔCF	8,205	-0.06*	66.11	-5,809.00	-1.54	-0.57	-0.11	0.01	0.18	0.87	4.00	765.50
<i>Control Variables</i>												
<i>Size</i>	7,124	6.07*	1.48	0.00	1.10	3.30	5.30	6.28	7.16	7.87	8.61	10.73
<i>Growth</i>	7,561	1.36*	46.45	-9.32	-0.76	-0.36	-0.06	0.06	0.26	1.34	7.78	3,546.00
<i>Lev</i>	8,205	4.68*	74.51	-3,084.00	-33.41	-3.87	0.15	0.70	2.28	15.08	103.80	2,781.00
<i>Dissue</i>	8,122	1.068*	38.57	-19.26	-0.96	-0.60	-0.15	0.03	0.31	1.62	7.22	3,251.00
<i>Turn</i>	7,691	3.70*	30.15	-0.41	0.02	0.07	1.05	2.01	3.13	6.80	19.01	1,746.00
<i>CF</i>	8,205	2.21*	105.30	-198.50	-0.94	-0.31	0.00	0.11	0.29	1.05	4.85	9,232.00

This table presents the descriptive statistics for variables used in models of testing earnings quality. Sample of firms are selected in the observation years of 2009 and 2010 from FAME database.

Variable Definition: *Test Variables*: ΔNI is the change in earnings, where earnings is scaled by end-of-year total assets; ΔCF is the change in cash flow from operations, where cash flow is scaled by end-of-year total assets, cash flow from operation is defined as Net income after interest, tax and extraordinary items in the observation year + Depreciation – Changes in Working Capital;

Control Variables: *Size* is the natural logarithm of value of equity in millions of dollars as of the end of the year; *Growth* is the percentage change in sales; *Lev* is end-of-year total liabilities divided by end-of-year book value of equity; *Dissue* is the percentage change in total liabilities; *Turn* is sales divided by end-of-year total assets; *CF* is the cash flow from operating activities, scaled by end-of-year total assets

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

*, indicates significantly different from other types of companies at 0.05 level (two-tailed).

TABLE 4.2: Result of Volatility of Earnings for Large, Medium and Small Companies

$$\Delta NI_{i,g,k} = \alpha_0 + \alpha_1 Size_{i,g,k} + \alpha_2 Growth_{i,g,k} + \alpha_3 Lev_{i,g,k} + \alpha_4 Dissue_{i,g,k} + \alpha_5 Turn_{i,g,k} + \alpha_6 CF_{i,g,k} + \varepsilon_{i,g,k}$$

	Large Companies (N=2253)	Medium Companies (N=35596)	Small Companies (N=8297)
Variability of ΔNI	0.0073	0.0056*	0.021
R-square	0.072	0.116	0.286

This table presents results of regression from ΔNI on various control variables. We based the analysis on control variables as defined in Table 4.1. We define variability of ΔNI as the variance of residuals from a regression of the ΔNI on the control variables. We compute the residuals from the regression of each variable on the control variables. ΔNI is defined in Table 4.1.

Variable Definition: *Test Variables*: ΔNI is the change in earnings, where earnings are scaled by end-of-year total assets;

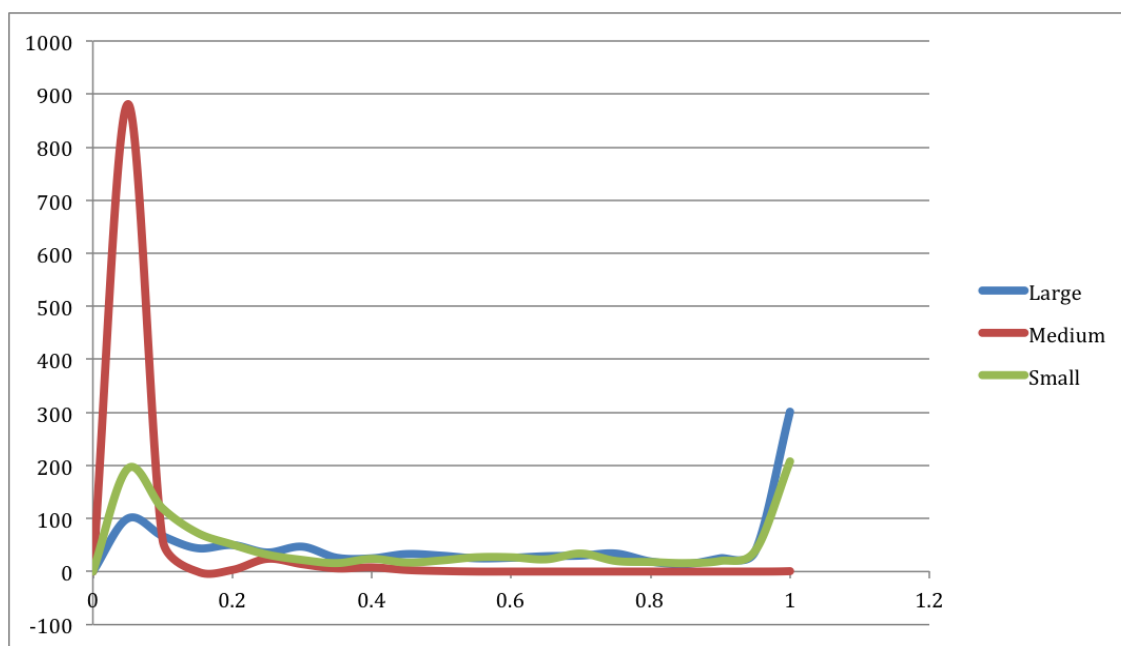
Control Variables: *Size* is the natural logarithm of market value of equity in millions of dollars as of the end of the year; *Growth* is the percentage change in sales; *Lev* is end-of-year total liabilities divided by end-of-year book value of equity; *Dissue* is the percentage change in total liabilities; *Turn* is sales divided by end-of-year total assets; *CF* is the cash flow from operating activities, scaled by end-of-year total assets

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

Each sample of companies is winsorized at the 5th and 95th percentile in order to control the influence of outliers.

* indicates significantly different from other types of companies at 5% level (one-tailed).

Figure 4.1: The empirical distribution of 1,000 R-squares for each group of companies



This figure presents the empirical distribution of R-square from bootstrapping regression model of changes in earnings.

The model of variability of changes in earnings is:

$$\Delta NI_{i,g,k} = \alpha_0 + \alpha_1 Size_{i,g,k} + \alpha_2 Growth_{i,g,k} + \alpha_3 Lev_{i,g,k} + \alpha_4 Dissue_{i,g,k} + \alpha_5 Turn_{i,g,k} + \alpha_6 CF_{i,g,k} + \varepsilon_{i,g,k}$$

- *Dependent Variable:* ΔNI is the change in earnings, where earnings is scaled by end-of-year total assets;
- *Control Variables:* *Size* is the natural logarithm of market value of equity in millions of dollars as of the end of the year; *Growth* is the percentage change in sales; *Lev* is end-of-year total liabilities divided by end-of-year book value of equity; *Dissue* is the percentage change in total liabilities; *Turn* is sales divided by end-of-year total assets; *CF* is the cash flow from operating activities, scaled by end-of-year total assets

The bootstrap procedures are as follows: we firstly randomly select firm observations from each group of companies to fit into the model of variability of changes in earnings; the sample size is 5% of number of firms from each group of companies. Secondly, we repeat above procedure by 1000 times. We then obtain 1000 R-squares for each group of companies. The frequency distribution is plotted based on 1000 R-squares.

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

4.4.4 Variability of Earnings relative to Variability of Cash flows

Methodology of Variability of Earnings relative to Variability of Cash flows

According to Dechow (1994 pg.19), who suggests that the proper role of accruals in earnings is to smooth the variability of cash flows encounter (such as timing and match problems). Therefore, we would expect the volatility of earnings is less than volatility of cash flows. But, too little variability of earnings relative to volatility of cash flows may be the product of earnings management.

However, the previous test only presents the level of volatility of earnings across three groups of companies. It does not adjust for inherent variability of business. It does not distinguish between high/low variability of cash flows.

Therefore, in this section, we use the ratio of variability of changes in earnings to variability of changes in cash flows while adjusting economic factors as in the previous earnings quality test. To adjust for the underlying volatility of cash flows, we include same control variables as in previous test to mitigate the effect of other factors. We estimate following equation similar to the previous model of volatility of changes in earnings, but with ΔCF as the dependent variable:

$$\Delta CF_{i,g,k} = \alpha_0 + \alpha_1 Size_{i,g,k} + \alpha_2 Growth_{i,g,k} + \alpha_3 Lev_{i,g,k} + \alpha_4 Dissue_{i,g,k} + \alpha_5 Turn_{i,g,k} + \alpha_6 CF_{i,g,k} + v_{i,g,k}$$

where,

$i = 1, \dots, n_{g,k}$;

$g = L$ (Large), M (Medium), S (Small);

$k =$ Industry 1, 2, ... 10;

ΔCF = changes in cash flow scaled by total asset;

$Size$ = the natural logarithm of end of year value of equity;

$Growth$ = percentage change in sales;

Lev = end of year total liabilities divided by end of year equity book value;

$Dissue$ = percentage change in total liabilities;

$Turn$ = sales divided by end of year total assets;

CF = annual net cash flow from operating activities divided by end of year total assets.

As in the previous measure, we take a two-step approach of first estimating separate regressions of change in earnings with the control variables and then compare the variance residuals from each regression. Our resulting variable, variability of ΔNI relative to ΔCF is the ratio of the variance of residual from change in net income model to the variance of residual from change in cash flows model:

$$Var(\varepsilon_{i,g,k})/Var(v_{i,g,k})$$

where,

Var = variance;

$(\Delta NI_{i,g,k})^*$ = residual from regressing $\Delta NI_{i,g,k}$ with control variables;

$(\Delta CF_{i,g,k})^*$ = residual from regressing $\Delta CF_{i,g,k}$ with control variables.

The role of accruals component in earnings is to reduce and adjust the volatility of cash flows, so as to make earnings better reflect firms' financial performance. For example, Dechow (1994 pg.19) suggests that the proper role of accruals in earnings is to smooth the variability of cash flows encounter (such as timing and match problems). Therefore, we would expect the volatility of earnings is less than volatility of cash flows.

However, accruals component in earnings mitigates the timing and matching problems in cash flows, but in the mean time accruals that lead to smoothness can hide or delay the measurement of changes in fundamental performance (Dechow et al, 2010). Therefore, based on this, we would expect a certain level of volatility of earnings, which is less than volatility of cash flows. However, too little variability of earnings relative to variability of cash flows may be the product of earnings management.

Result of Variability of Earnings relative to Variability of Cash flows

[Table 4.3 Here]

Table 4.3 presents the result of volatility of earnings relative volatility of cash flows.

Medium and small companies have higher volatile cash flows (0.018 and 0.050) than large companies (0.011). Medium companies have the lowest ratio of variability

of changes in earnings over variability of changes in cash flows (0.311). Large companies have the highest ratio (0.663). Small companies (0.42) are in between large and small companies.

Based on Dechow (1994), the proper role of accruals in earnings is to smooth the variability of cash flows encounter, the variability of the change in earnings should be lower than the variability of change in cash flows. Three groups of firms have lower volatility of earnings relative to volatility of cash flows.

However, if the volatility of earnings is too small comparing with volatility of cash flows, this may be an indication of earnings management. According to Barth et al (2008), firms with more volatile cash flows typically have more volatile earnings. Medium companies have more volatile cash flows but less volatile earnings (i.e. the lowest ratio of volatility of earnings to volatility of cash flows), suggesting medium companies have more incentives to manage earnings by accruals.

Key Findings from Table 4.3:

1. Accounting quality of medium companies is different from large and small companies.
2. Basically, more volatile cash flows are associated with more volatile earnings, large and small companies behave similarly based on this assumption. However, medium companies have less volatile earnings but more volatile cash flows, suggesting medium companies have incentives to smooth their earnings.
3. Consistent with previous finding, medium companies are more likely to smooth their earnings than large and small companies.

TABLE 4.3: Volatility of Earnings relative to Volatility of Cash Flows across Large, Medium and Small Companies

$$\Delta NI_{i,g,k} = \alpha_0 + \alpha_1 Size_{i,g,k} + \alpha_2 Growth_{i,g,k} + \alpha_3 Lev_{i,g,k} + \alpha_4 Dissue_{i,g,k} + \alpha_5 Turn_{i,g,k} + \alpha_6 CF_{i,g,k} + \varepsilon_{i,g,k}$$

$$\Delta CF_{i,g,k} = \alpha_0 + \alpha_1 Size_{i,g,k} + \alpha_2 Growth_{i,g,k} + \alpha_3 Lev_{i,g,k} + \alpha_4 Dissue_{i,g,k} + \alpha_5 Turn_{i,g,k} + \alpha_6 CF_{i,g,k} + v_{i,g,k}$$

	Large Companies (N=2253)	Medium Companies (N=35596)	Small Companies (N=8297)
Variability of ΔNI	0.0073	0.0056	0.021
R-square	0.072	0.116	0.286
Variability ΔCF	0.011	0.018	0.050
R-square	0.294	0.363	0.419
Variability of ΔNI over ΔCF	0.663	0.311	0.42

This table presents results of regression from ΔNI and ΔCF on various control variables. We based the analysis on control variables as defined in Table 4.1. We define variability of ΔNI (ΔCF) as the variance of residuals from a regression of the ΔNI (ΔCF) on the control variables, i.e. $\text{Var}(\varepsilon_{i,g,k})$ and $\text{Var}(v_{i,g,k})$; and the variability of ΔNI over ΔCF as the ratio of the Variability of ΔNI divided by the Variability ΔCF . We compute both sets of residuals from a regression of each variable on the control variables. ΔNI and ΔCF are defined in Table 4.1.

Variable Definition: *Test Variables*: ΔNI is the change in earnings, where earnings is scaled by end-of-year total assets; ΔCF is the change in cash flow from operations, where cash flow is scaled by end-of-year total assets, cash flow from operation is defined as Net income after interest, tax and extraordinary items in the observation year + Depreciation – Changes in Working Capital;

Control Variables: *Size* is the natural logarithm of market value of equity in millions of dollars as of the end of the year; *Growth* is the percentage change in sales; *Lev* is end-of-year total liabilities divided by end-of-year book value of equity; *Dissue* is the percentage change in total liabilities; *Turn* is sales divided by end-of-year total assets; *CF* is the cash flow from operating activities, scaled by end-of-year total assets

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

Each sample of companies is winsorized at the 5th and 95th percentile in order to control the influence of outliers.

4.5 Second Measure of Accounting Quality and Results

Previously, we use earnings smoothing as a proxy to measure accounting quality. Earnings smoothing measures one aspect of accounting quality, which is a general measure that provides evidence on whether earnings management existed or not. However, it does not provide specifically why and how earnings are managed.

Therefore, in this section, we focus on the specific measure of earnings management, which provides evidence on whether managers have incentives to manage earnings to report small profit rather than small losses. This measure examine earnings quality from the aspect of managers' incentives, which suggests that managers have incentives to manage earnings to meet certain target, such as avoiding to report losses.

4.5.1 Target Beating – Distribution of Small Profit and Small Loss

Researchers have documented a “kink” in the distribution of reported earnings around zero: a statistically small number of firms with small losses and a statistically large number of firms with small profits (Hayn, 1995; Burgstahler and Dichev, 1997). A common interpretation of this discontinuity in the distribution is that firms with small losses intentionally manage earnings enough to report a small profit. Based on this finding, earnings measures such as small profits and small loss avoidance have been identified as an indication of earnings management, as one specific dimension of earnings quality.

Therefore, following Degeorge et al (1999) and Burgstahler and Dichev (1997), we examine the distribution of earnings in terms of small profit and small losses in order to compare the accounting behaviours between each group of companies.

4.5.2 Literature on Distribution of Small Profit and Small Loss

Prior studies have found a discontinuity in the distribution of reported earnings around zero level: a statistically small number of firms with small losses and a statistically large number of firms with small profits (Hayn, 1995; Degeorge, 1996; Burgstahler and Dichev, 1997). This discontinuity is widely interpreted as evidence that firms' managers manage earnings in order to avoid losses. Specifically, prior research interprets the discontinuity as evidence that firms tend to exercise discretion

to move from the region of small loss to the region of small profit in the earnings distribution.

Hayn (1995) first introduced the concept of the distribution of reported earnings approach to examine whether there is any evidence of earnings management. Hayn (1995) plots a histogram illustrating the distribution of the ratio of EPS (earnings per share) to price, based on the assumption that a greater than expected frequency of firms with small profit relative to firms with small losses reflects earnings management. The result of studies of Hayn (1995) has shown that there is a concentration of firms just above zero, while there are fewer than expected firms with small losses (i.e. just below zero).

Burgstahler and Dichev (1997) construct a statistical test with assumption that the cross-sectional distribution of earnings levels should be relatively smooth under the null hypothesis of no earnings management. They assume that there will be a decreased frequency of observations below the earnings threshold and an increased frequency of observations above the earnings threshold, relative to what would be expected if the underlying distribution without earnings management were smooth. Similarly, Degeorge et al (1999) have documented that meeting or beating an analyst forecast is an indication of earnings management based on the discontinuity in the distribution of forecast errors: reported earnings less consensus analyst forecasts.

Following with Hayn (1995), Burgstahler and Dichev (1997), and Degeorge et al (1999), several studies find association between earnings management incentives and small profit relative small losses. For example, small positive profits are associated with greater incentives for earnings management in the fourth quarter (Kerstein and Rai, 2007; Jacob and Jorgensen, 2007). The low audit effort will result strong association between target beating and greater opportunities for earnings management (Caramanis and Lennox, 2008). Small positive profits are also associated with greater incentives for earnings management because of the availability of aggressive revenue recognition techniques (Altamuro, Beatty and Weber, 2005). Further, Phillips, Pincus and Rego (2003) find association between deferred tax expenses and target beating, i.e. that deferred tax expense is useful in detecting earnings management to meet benchmarks such as avoiding losses.

Burgstahler et al (2006) suggest that managers have incentives to avoid losses of any magnitude, they only have limited reporting discretion and are consequently unable to report profits in the presence of large losses. However, this is argued by the

“Big Bath” theory, when companies make losses, managers will find all losses they can possibly make and write-off against income to reduce asset in the current year, so future periods can show positive net income.

However, the concentration (discontinuity) around zero earnings has the assumption that earnings follow a smooth distribution when earnings management is absent. The distribution of earnings without earnings management is unknown in the first place. In addition to the research on target beating, some studies have argued that there may be other reasons for discontinuities in the earnings distribution. For example, Durtschi and Eason (2005, 2009) have shown that discontinuity is explained by statistical and sample bias issues related to scaling by price. Beaver, McNichols and Nelson (2007) suggest that the discontinuity around zero earnings can be interpreted as the effect of asymmetric taxes on the earnings of profit and loss rather than opportunistic management. If firms were managing earnings up to avoid a loss, discretionary accruals are expected to be higher in the small profit group, however, Dechow, Richardson and Tunam (2003) have found that discretionary accrual presents no difference in small profit versus small loss firms.

4.5.3 Methodology of Small Profit and Small Loss

It is difficult to detect the presence or absence of earnings management, since earnings that are free of manipulation is not observable (Givoly, Hayn and Katz, 2010). However, Hayn (1995) has shown that there is a concentration of firms just above zero, while there are fewer than expected firms with small losses (i.e. just below zero). Burgstahler and Dichev (1997) construct a statistical test with assumption that the cross-sectional distribution of earnings levels should be relatively smooth under the null hypothesis of no earnings management.

Degeorge et al (1999) present evidence that managers use accounting discretion to avoid reporting small losses. Small losses are more likely to lie within the bounds of insiders’ reporting discretion. Thus, the incidence of small profits relative to small losses indicates the extent to which a set of firms uses accounting discretion to avoid losses (Burgstahler et al, 2006).

In line with Burgstahler and Dichev (1997) and Degeorge et al (1999), we analyse the distribution of earnings level across different groups of companies as well as across industries in this section. The earnings level in the frequency

distribution (histogram) is deflated by lagged total assets. In order to obtain the distribution of earnings level, there are two important features of the distributional tests, which are the choice of the bin width and the test statistic for testing the significance of an expected discontinuity.

According to Wand (1997 pg.59), bin width is the important parameter that needs to be specified when constructing a histogram. This is simply the length of the subintervals of the real line, sometimes called “bins,” on which the histogram is based. Ideally, the bin width should be chosen so that the histogram displays the essential structure of the data, without giving too much credence to the data set at hand (Wand, 1997 pg.59).

Based on Degeorge et al (1999), we divide the distribution of earnings level into bins based histogram, and then identify the frequency numbers of companies lie in the regions of “just above zero earnings” and “just below zero earnings”. The bin widths are determined by Scott (1992) into a formula and followed by Degeorge et al (1999) in their studies. Hence, following Degeorge et al (1999), we postulate that the optimal bin width is a positive function of the variability of data (i.e., inter-quartile range) and a negative function of the number of observations:

$$h = 2(IQR)N^{-1/3}$$

where:

h = optimal bin width;

IQR = interquartile range;

N = number of observations.

Once distribution of earnings level is obtained for each industry across three groups of companies, based on the procedures proposed by Burgstahler and Dichev (1997) and Givoly et al (2010), we test for the significance of the difference between the actual and theoretical frequency in a bin. We calculate the standardized differences for the interval just below zero and the interval just above zero.

In testing the significance of the expected discontinuity in the empirical distributions for three groups of companies across industries, we follow the test statistic proposed by Burgstahler and Dichev (1997) with the expected number of

observations equal to an average of the number of observations in the two adjacent intervals:

$$\tau = \frac{n_a - n_e}{\sigma} = \frac{n_j - \frac{n_{j-1} + n_{j+1}}{2}}{\sqrt{Np_j(1 - p_j) + 0.25N(p_{j-1} + p_{j+1})(1 - p_j - p_{j+1})}}$$

where:

τ = test statistic approximately distributed under a normal distribution;

n_a = actual number of observations in the interval;

n_e = expected number of observations in the interval;

σ = standard deviation of the difference, calculated as:

p_j = fraction of observations in the j-th interval.

Under the assumption of no earnings management, the expected number of observations in any given interval is equal to the average of the number of observations in the two adjacent intervals (Burgstahler and Dichev, 1997; Degeorge et al, 1999; Givoly et al, 2010). If managers manage earnings to meet the threshold or target, we would expect to find a shift of observations (significant difference will be presented between actual and expected frequency) from the bins that earnings are just below zero to the bins that earnings are just above zero.

However, Durtschi and Eason (2009) indicate that discontinuity in the earnings distribution is affected by deflation, sample selection criteria, differences between characteristics of observations lie in the intervals of “just below zero” and “just above zero”. Durtschi and Eason (2005, 2009) also show that the discontinuity is explained by statistical and sample bias issues related to scaling by price. Furchter, Beaver, McNichols and Nelson (2007) suggest that the discontinuity around zero earnings can be interpreted as the effect of asymmetric taxes on the earnings of profit and loss rather than opportunistic management. If firms were managing earnings up to avoid a loss, discretionary accruals are expected to be higher in the small profit group, however, Dechow, Richardson and Tunam (2003) have found that discretionary accrual presents no difference in small profit versus small loss firms.

Again, the intuition of this chapter is to compare the accounting quality between each group of companies under current differential reporting framework. We do not compare which companies have better accounting quality, but instead we

examine whether there is variation in accounting quality between each group of companies. By using this measure of accounting quality (small profit and small losses), we are able to obtain the distribution of small profit and small losses for each group of companies to analyse how differently each group of companies manage earnings specifically.

4.5.4 Results of Distribution of Small Profit and Small Loss

[Table 4.4 Here]

Results of Large Companies

The first part of Table 4.4 presents the frequency distribution of earnings around zero-earnings for large companies, where earnings are defined to intervals just above and just below the zero-earnings that correspond to two bin-widths using the bin definition based on Degeorge et al (1999) and Givoly et al (2010). Overall, the actual frequency of large companies just above and just below the zero thresholds is larger than the expected frequency for these intervals. The standardized difference between the expected and accrual frequency is positive and significant (2.02) for the “just-below” region. This finding suggests there are more large-companies are likely to report losses than expected. The standardized difference between the expected and actual frequency for the “just-above” region is 9.78, which is statistically significant at 1% level. The second finding is that there are more than expected of public companies reporting small profit.

Large companies tend to have more companies to report small profit than expected in all industries except Primary, given the standardized difference between actual and expected frequency for the “just-above” region is positive. The differences are not statistically significant in Industry Primary, Manufacturing, Utility, and Wholesale, under the null hypothesis according to Degeorge et al (1999) would be distributed approximately normal (0,1). This suggests that “just-above” intervals as indication of earnings management are not obvious in these four industries for large companies.

More than half of industries for large companies have fewer cases to report small loss than expected. Only Primary and Education & Health have significant

standardized difference between actual and expected frequency for “just-below” region. Primary has more than expected companies to report small loss and Education & Health have less than expected companies to report small loss.

Overall, large companies across different industries have quite similar reporting behaviours that more than expected companies report small profit and small loss, suggesting that upward earnings management from small loss to small profit is not obvious in large companies. However, large companies in Education & Health tend to manage earnings upwards that too many companies report small profit and too few companies report losses.

Results of Medium Companies

Most of medium companies across industries have more (than expected) cases reporting small profit and fewer (than expected) cases reporting small loss. The standardized differences between actual and expected frequency are significant for “just-above” regions in most of industries except Primary and Transport. However, the standardized differences between actual and expected frequency in “just-below” region are not significant in most of industries except Primary (-2.22), Service (-1.79), and Education & Health (-1.98).

Service and Education & Health have too many companies report small profit and too few companies report small loss, suggesting medium companies in these industries have incentives to manage earnings upwards. Given differences in “just-below” region are not significant, that concentration in “just-above” intervals as indication of earnings management is less obvious in other industries.

Overall, medium companies have different reporting behaviours from large companies. Large companies have more companies report losses, whereas medium companies have fewer companies report losses. This finding suggests that medium companies have more incentives to manage earnings upwards as there are too many companies reporting small profits and too few companies reporting small losses.

Results of Small Companies

There are more small-companies reporting profits and fewer small-companies reporting losses, given the standardized difference between actual and expected for “just-above” and “just below” intervals are positive and negative respectively.

The standardized differences between actual and expected frequency are positive for “just-above” regions in most of industries except Service (-0.22). The underlying differences in “just-above” regions are significant in four industries only, which are Manufacturing (1.96), Utility (2.12), Construction (3.31), and Education & Health (4.37). The standardized differences between actual and expected frequency in “just-below” intervals are negative across most of industries except Service (1.51) and Telecom (1.03). However, the differences in “just-below” regions are not statistically significant in most of industries except Utility (-2.94) and Education & Health (-1.75). Consistent with large and medium companies, that Education & Health have too many small-companies report small profit and too few small-companies report small loss, suggesting small companies in Education & Health have incentives to manage earnings upwards.

Overall, there are more small-companies reporting profits and fewer small-companies reporting losses, but the standardized difference in “just-below” region is not significant (-1.02). This suggests that upward earnings management is not pronounced in small companies, though there is a significant concentration of companies in “just-above” intervals (4.99).

Comparisons between large, medium and small companies

Under the null hypothesis of Degeorge et al (1999), the standardized difference between actual and expected frequency would be distributed approximately normal (0,1). Generally, three groups companies have significant concentration of companies in “just-above” intervals. However, only medium companies have significant fewer companies reporting losses. Large companies have significant more companies in “just-below” intervals, suggesting large companies report more conservatively. Small companies do not have significant concentration in “just-below” regions, implying upward earnings management is not pronounced in small companies.

Therefore, consistent with our previous finding, that medium companies have different accounting quality from large and small companies.

Key Findings from Table 4.4:

1. Large companies have significant more companies in “just-below” intervals, suggesting large companies report more conservatively.

2. Small companies do not have significant concentration in “just-below” regions, implying upward earnings management is not pronounced in small companies.
3. However, there are significant fewer medium companies than expected reporting losses, implying medium companies have incentives to manage earnings upwards to avoid reporting small losses.
4. There are more companies than expected reporting small profit and fewer companies than expected report small losses in Education & Health across three groups of companies.
5. Consistent with previous finding, medium companies are different from large and small companies.

TABLE 4.4: Frequency Distribution of Earnings around Zero-Earnings

Industries	Interval ^a	Large Companies				Medium Companies				Small Companies			
		Actual	Expected ^b	Std Diff ^c	N	Actual	Expected	Std Diff	N	Actual	Expected	Std Diff	N
Primary	Just above zero	3	3.5	-0.24	93	46	39.5	0.84	675	21	13	1.64	168
	Just below zero	12	5	1.97*		12	22.5	-2.22**		5	8.5	-1.19	
Manufacturing	Just above zero	25	16.5	1.51	528	221	172.5	2.82***	7493	44	30	1.96*	367
	Just below zero	7	5.5	0.48		102	104	-0.16		10	13	-0.76	
Utility	Just above zero	7	4.5	0.95	29	27	17	1.77*	273	14	7	2.12**	37
	Just below zero	0	0.5	-1.02		9	12	-0.80		0	3.5	-2.94***	
Construction	Just above zero	15	7.5	1.84*	127	93	68.5	2.23**	1975	78	46	3.31***	1090
	Just below zero	3	7	-1.63		37	38.5	-0.20		17	20	-0.58	
Wholesale	Just above zero	28	23.5	0.75	318	239	168	4.03***	6437	86	71.5	1.36	1484
	Just below zero	7	9.5	-0.74		76	93.5	-1.59		33	38	-0.71	
Service	Just above zero	15	4.5	2.94***	55	47	31	2.07**	1282	15	16	-0.22	204
	Just below zero	2	0.5	1.02		16	25.5	-1.79*		6	8	-0.65	
Transport	Just above zero	22	14	1.71*	97	77	63.5	1.33	1730	33	23.5	1.51	320
	Just below zero	5	6	-0.37		36	37	-0.14		13	7	1.51	
Telecom	Just above zero	15	4.5	3.17***	39	27	16.5	1.85*	339	13	9	1.02	111
	Just below zero	1	2	-0.73		14	9.5	1.06		7	4	1.03	
Other Service	Just above zero	12	4	2.57**	37	123	79	3.68***	1087	32	28.5	0.55	358
	Just below zero	2	1.5	0.31		52	42	1.20		9	10.5	-0.41	
Education&Health	Just above zero	105	50	5.12***	929	414	331.5	3.49***	14300	247	170	4.37***	4143
	Just below zero	21	33.5	-2.08**		226	263	-1.98**		75	94	-1.75*	
All	Just above zero	181	73.5	9.78***	2252	765	613.5	4.69***	35591	368	259.5	4.99***	8282
	Just below zero	56	43	2.02**		383	445.5	-2.56**		133	147.5	-1.02	

TABLE 13 (Continued)

*, **, *** represents significant at the 0.10, 0.05 and 0.01 levels, respectively (two-tailed)

This table presents the frequency distribution of earnings scaled by lagged assets (Earnings/Lagged Total Assets) across 10 industries for large, medium and small companies.

^a Following Degeorge et al. (1999), the optimal bin width for each sample is a positive function of the variability of data (i.e., inter-quartile range) and a negative function of the number of observations, the bin width is calculated as $2(IQR)N^{-1/3}$, where IQR is the sample inter-quartile range and N is the number of observations.

^b The expected frequency in the interval is computed as the average of the number of observations in the two adjacent intervals ($\frac{n_{j-1} + n_{j+1}}{2}$).

^c Following Burgstahler and Dichev (1997), the standard difference (std diff) is measured as the difference between the actual and expected frequencies in the interval concerned, standardized by the standard deviation of this difference. The expected frequency of each interval is assumed to be the mean of the two immediately adjacent classes. In other words, if the number of observations in interval j is denoted by n_j , the probability of an observation occurring in interval j denoted by p_j , and the total number of observations in the sample denoted by N, the standardized difference for interval j is given by:

$$\frac{n_j - \frac{n_{j-1} + n_{j+1}}{2}}{\sqrt{Np_j(1 - p_j) + 0.25N(p_{j-1} + p_{j+1})(1 - p_j - p_{j+1})}}$$

Large companies are companies that are public quoted companies following with International Financial Reporting Standards (IFRS). Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

4.6 Conclusion

The current financial reporting system in the UK follows three-tier differential reporting framework, that different group of companies follow different sets of accounting standards. It is very difficult to analyse efficacy of the differential reporting framework because the regulators do not specify the expectation of accounting quality and consequences that different groups of companies should follow. The variation of accounting quality for each group very much depends on the objectives of differential reporting. The purpose of this chapter is to compare the accounting quality across different groups of companies under different accounting standards, so as to examine whether differential reporting framework has led any variation of accounting quality between groups.

We firstly measure accounting quality by earnings smoothing, which is a measure of general earnings management. This measure provides the evidence of whether earnings management exists across different groups of companies. We use earnings variability (with controls for various economic factors), and the ratio of the variability of earnings relative to the variability of cash flows (after adjusting economic factors). We find that accounting quality of medium companies is different from large and small companies, because the earnings in medium companies are smoother than large and small companies.

Secondly, we measure accounting quality by examining the distribution of small profit and small loss, which is a measure of specific earnings management. This measure provides the evidence of whether managers have incentives to manage earnings to report small profit rather than small losses. We further find that the accounting quality of medium companies is different from large and small companies. There are more than expected number of medium companies reporting profit, and less than expected number of medium companies reporting losses. This suggests that medium companies have more incentives to manage earnings to avoid reporting losses. As for large and small companies, the upward earnings management is not pronounced.

The results are generally consistent with the finding in previous chapter. Under the differential reporting framework, accounting standards do not ensure equal accounting quality across different groups of companies. There are more variations

in accounting quality for medium companies, whereas large and small companies are disciplined. Possible explanations of less variation in accounting quality for large and small companies may be that large companies are closely regulated and small companies have little opportunities to manage earnings. Medium companies have higher level of accruals and the most varied accounting quality. This may be due to medium companies are small enough to have possible exemption from regulations but big enough to have opportunities to manage earnings.

As discussed earlier, accounting quality is disciplined by legal forces (effects of accounting standards on accounting quality) and market forces. Furthermore, from our findings, those large companies have good accounting quality. Large companies are closely regulated and disciplined by the market. Therefore, in the next chapter we consider the effects of market on accounting quality to further analyse the accounting quality across as well as within medium and small companies only.

Chapter 5: Effects of Debt-Holders on Accounting Quality

5.1 Introduction

5.1.1 Overview of previous chapters

Currently, the IASB and the UK ASB have adopted different financial reporting rules for different classes of company. The IASB have IFRS and IFRS for SMEs. In the UK, companies follow IFRS, UK GAAP and FRSSE; furthermore, some companies are exempted from audit. However, it is difficult to evaluate the efficacy of this approach to regulation since the ASB (and IASB) do not specify what consequences should follow.

The objectives of having differential reporting standards include the concern of size issues, cost issues, agency issues, and economic importance of companies. Further, these concerns also influence the accounting quality.

Hence, the main objective of previous chapters is to compare the accounting quality across different groups of companies under the effects of accounting regulations in order to inform future policy and discussion about differential reporting.

In previous chapters, we measure accounting quality by level of accruals (CFO/E), earnings smoothing, and distribution of small profit and small losses, in order to assess the general earnings management and specific earnings management across different groups of companies. We find that public companies have a similar accounting quality to small companies. Medium-sized companies have the most varied accounting quality within its own group and different reporting behaviour compared with public and small companies.

Possible explanations of less variation in accounting quality for large and small companies may be that large companies are closely regulated and small companies have little opportunities to manage earnings. Medium companies have higher level of accruals and the most varied accounting quality. This may be due to medium companies are small enough to have possible exemption from regulations but big enough to have opportunities to manage earnings.

Furthermore, if cost and economic importance were main concerns in differential reporting, the accounting quality of small companies would have possessed the lowest accounting quality, followed by medium companies and large

companies. If size and agency issues were the main objectives in differential reporting, the accounting quality of three groups of companies would not have many variations. Having the results of medium companies present the most variations in its own group and different accounting quality from large and small companies, would suggest that regulators are regulating in the dark without knowing what is actually happening in the market. That is consistent with finding of Watts and Zimmerman (1979) and Young (2003) who suggest that the process of policymaking is the process of lobbying and negotiations.

Based on our previous findings, accounting regulations do not ensure accounting quality across different regimes of companies. Therefore, in this chapter, we consider the impacts of market forces on accounting quality, and compare accounting quality across as well as within different regimes of medium and small companies only.

Prior to discussing the main objective of this chapter, the discussions about disciplines for different groups of companies are provided in next section.

5.1.2 Disciplines of accounting quality

There are two forces discipline accounting quality for firms, which are legal forces and market forces. Legal forces include accounting standards, auditors and tax authorities. Market forces include investors, shareholders, debt-holders, and creditors. The discussion about the effects of accounting regulations and the effects of market forces are provided below.

5.1.2.1 Effects of Regulations on Accounting Quality

Accounting standards are firstly emerged in early 1930s in the US because companies were trying to manage earnings to report better financial performances than it actually was (Business Accounting Basics, 2012). Hence, accounting standards are in the position to discipline companies so as to report high quality of earnings that could better reflect firms' financial performance. Studies on association between accounting standards and accounting quality have increased significantly. The main objective of the IASC and IASB in developing accounting standards is to

develop an internationally acceptable set of high quality financial reporting standards. In achieving this, the IASC and IASB have issued principles-based standards, which remove allowable accounting alternatives and require accounting measurements that better reflect a firm's economic position and performance (IASC, 1989).

Ewert and Wagenhofer (2005) show that accounting standards that limit opportunistic discretion result in accounting earnings that are more reflective of a firm's underlying economics and, therefore, are of higher quality. Ball (2001) suggests that accounting quality will not be good if the accounting standards are not properly enforced. Further, Ball, Robin and Wu (2003) suggest that lax enforcement of accounting standards can result in limited compliance, thereby limiting effectiveness of accounting standards. Reported earnings that better reflect a firm's underlying economics, resulting from either principles-based standards or required accounting measurements, can increase accounting quality it provides investors with information to aid them in making investment decisions (Barth et al, 2008).

However, studies suggest that accounting standards have no independent effect on accounting quality. For example, Ball and Shivakumar (2005) analyse the accounting quality in UK private firms, suggesting that the lower earnings quality in private firms does not imply the failure of accounting standards; it is the matter of market demand and supply for accounting quality. Further, there is so much information around for large companies that investors could access, and accounting information only plays small part of role in making decisions. Christensen, Lee, and Walker (2008) find that accounting quality improvements in conjunction with the application of new standards are dependent on the incentives of those preparing the accounts, rather than on whether the new standards are perceived to be of higher quality.

Further, Watts and Zimmerman (1986) suggest that based on positive accounting theory, firms and market forces could produce an appropriate level of information disclosure without the need for accounting regulation. Sunder (2005) argues that heavy reliance on standards-based financial reporting, may have led accounting to focus narrowly on the objectivity of individual numbers, sacrificing fairness of the big picture.

5.1.2.2 Market discipline on Accounting Quality

The market is mainly made of equity markets and debt markets and both markets have effects on accounting quality. Investors, equity-holders, and debt-holders demand good accounting quality. Higher accounting quality improves the decision usefulness for investors and debt-holders. Givoly, Hayn and Katz (2010) indicate companies will have demand for good accounting quality from the external parties (market forces) such as shareholders, investors or debt-holders. Public companies and private companies have different market demands. Public companies have demands from both equity market and debt market to have good accounting quality. Since equities of private companies are not publicly traded in the open market, the demand of good accounting quality may come mainly come from the debt-holders. This is because Ball Robin and Sadka (2008) suggest debt-holders demand higher accounting quality from companies, as financial statements are their primary information source about the firm.

Market Discipline for A.Q in Public Companies

The equities and debts of public companies are publicly traded in the market. Further, public companies encounter agency issues. The shareholders, investors and debt-holders demand good quality of financial information from public companies. Public companies are deemed to have higher market demand for reporting higher quality of accounting information because accounting information is the main type of information contractually available to public equity holders (Givoly et al, 2010). Ball and Shivakumar (2005) suggest that higher accounting quality is demanded from public companies because public companies face greater deal of legal obligations than private companies.

According to Skinner (1997), who examines whether managers can reduce stockholder litigation costs by disclosing adverse earnings news “early”. He finds that voluntary disclosures occurred more frequently in quarters that result in litigation than in quarters that did not. He suggests that this result occurred because managers’ incentives to pre-disclose earnings news increase as the news becomes more adverse, presumably because this reduces the cost of resolving litigation that inevitably follows in bad news quarters. In addition, consistent with Skinner (1997), Givoly et al (2010) confirm the result that public companies have stronger incentives

to improve their accounting and disclosure regulations and enhance their financial transparency so as to mitigate potential lawsuits and to reduce the cost of their equity capital. Therefore, the accounting quality is well disciplined by the market forces for public companies.

Debt-holders' Discipline for A.Q in SMEs

Since public companies have higher demand and discipline from market to report higher quality of accounting information, what kind of demand and discipline could small- and medium-sized entities (SMEs) face? SMEs do not suffer the agency problems and the market will demand less information from SMEs. However, there is a scenario when SMEs seek external financing, the external lenders (such as bank, creditors) will require SMEs to disclose more information in order to get financing. The major external financing for SMEs is from debt-holders. Debt-holders will examine firms' accounting information by adopting stringent screening standards and monitor borrowers. Frankel et al (2011) find that active banks' monitoring can improve accounting quality of borrowing firms. Further, the presence of banks suggests they perform some function intermediating between borrowers and savers more efficiently than is available via direct exchange in capital markets (Frankel et al 2011).

Furthermore, Ball, Robin and Sadka (2008) suggest that debt-holders demand more conservative accounting information than investors, because financial statements are their primary source of getting information about the firms. LeLand and Pyle (1977) suggest financial intermediation such as banks, by screening and monitoring borrowers, are able to solve potential moral hazard and adverse selection problems caused by the imperfect information between borrowers and lenders. Therefore, debt-holders discipline firms' accounting quality and demand firms to have good accounting quality.

5.1.3 Objective of this chapter

There are two forces discipline accounting quality of firms, which are legal forces and market forces. Legal forces include accounting standards, auditors and tax authorities. Market forces include investors, shareholders, debt-holders, and creditors. Obviously, investors, shareholders, and debt-holders demand good

accounting quality. Accounting standards are in the position of disciplining companies to report good quality of earnings, but the results from previous chapters, large and small companies have similar accounting quality, whereas medium-sized companies have the most varied accounting quality within its own group and different accounting quality from large and small companies. This suggests that accounting regulations do not ensure the same accounting quality across different groups of companies, that large and small companies are quite similar.

Market forces such as investors, equity-holders and debt-holders are in the position of expecting firms reporting good quality of accounting information. Large companies (public companies) are well disciplined from the market as users of accounting information have access to loads of information that is available in the market (Ball and Shivakumar, 2005). As for private companies, they do not have demand from equity holders (because their equities are not publicly traded), but they may have demand of reporting good accounting quality from debt-holders. Will market discipline result any difference in accounting quality for private companies?

Public companies are closely regulated and disciplined by the market. Furthermore, there are little studies have analysed the effects on accounting quality for SMEs. Therefore, the main objective of this chapter is to analyse the effects of debt-holders' discipline for accounting quality across as well as within medium-sized and small companies only.

5.1.4 Structure of Chapter

Previous literature on debt and accounting quality and factors driven accounting quality are discussed in the next section 5.2. Hypothesis of this chapter is developed in section 5.3. Sample and data are provided section 5.4. First measure of accounting quality (earnings conservatism) and results are described in section 5.5. Second measure of accounting quality (earnings persistence) and results are discussed in the following section 5.6. Discussion of two tests is provided in section 5.7. Conclusion of this chapter is in the last section 5.7.

5.2 Literature Review

5.2.1 Effects on Accounting Quality

Givoly et al (2010 pg.195) investigate the accounting quality from two different perspectives. One is from market demand, that companies have discipline from the market to disclose their financial information, and hence investors (shareholder and debt-holders) demand high quality of accounting information from companies. The other one is from management incentives, that companies may have greater incentives to manage earnings in order to meet certain targets or demand. Therefore, there are two effects driven the quality of accounting information, one is demand effect from market (such as investors, shareholders, and debt-holders) and the other one is incentives effect from managers of firms to manage earnings in order to meet this demand. They do not conclude that which effect is stronger to drive earnings quality high or low, unless weights are assigned to different dimensions of earnings quality and attributes.

Therefore, based on Givoly et al (2010), the demand and incentives effects are expected to exist between debt-holders and firms. The discussion of demand and incentives are provided below in details.

5.2.1.1 Demand Effects

Skinner (1997) indicates that companies have stronger incentives to improve their accounting information and disclosure, and enhance their financial transparency so as to mitigate potential lawsuits and to reduce the cost of their equity capital. In addition, consistent with Skinner (1997), Givoly et al (2010) suggest that investors will demand high quality of accounting from firms because accounting information is the main type of information contractually available to public equity holders. Ball and Shivakumar (2005) suggest that the reason why public companies have higher accounting quality than private companies is because public companies have more market demand to report higher accounting quality than private firms.

Demand effects from debt

Public companies face demand from their potential investors, equity-holders and debt-holders. The equities of private companies are not publicly traded, thus, the

demand may come from their debt-holders since the majority of funding resources for private companies are from debt-holders (including banks). Ball Robin and Sadka (2008) find that debt-holders demand higher accounting quality from companies, as financial statements are their primary information source about the firm. Frankel et al (2011) find that active banks' monitoring can improve earnings quality. Chen et al (2011) find that bank-financing influence the role of accounting quality played in the investment efficiency. Basically, companies with bank financing have stronger relation between accounting quality and investment efficiency.

5.2.1.2 Incentives Effects

On the other hand, according to Givoly et al (2010) there is an opportunistic incentive for companies to manage earnings to counteract the effects of market demand for reporting good accounting quality. Management of public companies is facing continuous pressure from investors to meet certain performance thresholds (Givoly et al, 2010). For instance, management has incentives to manage earnings to meet analysts' forecasts (e.g., Degeorge et al. 1999; Bartov et al. 2002) or to avoid reporting losses (e.g., Hayn 1995; Burgstahler and Dichev 1997) or earnings decreases (e.g., Burgstahler and Dichev 1997; Barth et al. 1999).

Incentives effects from debt

According to Frankel et al (2011), perhaps, bank access to information can deter managers from manipulating accounting information to avoid debt covenants. Watts and Zimmerman's (1986) positive accounting theory predicts that firms with larger debt loads tend to use income-increasing accounting methods to violate restrictive debt covenants (Martin, 2003).

The market for financial reporting differs substantially between public and private companies. Private companies may face pressure from external lenders if they seek external financing. Therefore, managers may have incentives to manage earnings in order to meet debt-holders' demand. Managers of private companies may have incentives to manage earnings because of the presence of earnings-based bonuses as well as to avoid violating earnings-based debt covenants (Givoly et al, 2010). Kim, Lei and Pevzner (2010) suggest that managers have incentives to

employ various methods to avoid violating debt covenant. Sundgren (2007) finds that private firms have incentives to use income-increasing methods when they seek continuous support from external lenders.

5.2.2 Existence of Debts and Accounting Quality

Firms vary considerably in terms of fundamental characteristics such as ownership structure, external financing and leverage (Isidro and Raonic, 2012). Leverage is usually defined by firms' debt-to-assets ratio. Firms with more debts will have higher leverage compared with companies with fewer debts.

According to Givoly et al (2010), the existence of debts could create demand of reporting good quality of accounting information from debt-holders; in the mean time, the existence of debts could generate incentives for managers to manage earnings in order to meet this demand.

5.2.2.1 Existence of debts improve accounting quality

Grossman and Hart (1982) considered debt as an example of a pre-commitment or bonding device. Debt bonds managers' act in the interest of shareholders because of the desire to avoid bankruptcy, which in turn increases market value. They also offer three reasons why self-interested managers have incentives to issue debt to increase firm value. First, managers' salaries are often dependent on firm value through incentive schemes. Second, the probability of a takeover is low for firms with high market value because acquiring firms have to pay more. A third reason is that it is easier to raise capital for managers when firm value is high, which increases the opportunities for perquisite consumption (Valipour and Moradbeygi, 2011).

Similarly, Jensen (1986) views debt as a disciplinary instrument. Because contractual debt payments absorb free cash flows and reduce internal cash flows available for unprofitable investments, managers are unable to invest excess cash in negative net present value projects (positive effect of debt).

Shleirer and Vishny (1997) conduct a survey on corporate governance, which deals with agency problems (i.e. the separation of ownership). They find that bank finance is a universal method of control that helps investors to get their money back.

Further, they suggest that the existence of debt could be an important governance mechanism (Shleifer & Vishny, 1997).

Frankel et al (2011) find that active banks' monitoring can improve earnings quality. Chen et al (2011) find that bank-financing influence the role of accounting quality played in the investment efficiency.

Ball, Robin and Sadka (2008) study the timely financial statements in both debt market and equity market, they find that debt-holders demand high scores of timely loss recognition than firms' investors.

5.2.2.2 Existence of debts creates incentives to manage earnings

On the other hand, when the debt is high, due to different conflicts of agency between creditors and managers, managers try to interfere a role in the accounting reports to reduce the likelihood of violating debt obligations and creditors, resort to the contractual agreement which are mostly based on the financial accounting department, and this, leads to the expropriation of wealth (Watts and Zimmerman, 1986). Furthermore, agreements of creditors like contractual obligations provide protection for lender loans and restrictions for the receiver (negative effect of debt) (Valipour and Moradbeygi, 2011).

Sweeney (1994) find that managers of firms approaching default respond with income-increasing accounting. Defond and Jiambalvo (1994) argue that specifically, debt forces managers to generate cash flows to pay interest and the principal, mitigating agency conflicts created by free cash flows. It also increases demand for credible financial reporting as a way to monitor debt contracts. The counter-argument is that excess debt can create incentives to manipulate accounting numbers in order to meet debt commitments.

Dichev and Skinner (2002) examine the earnings management incentives for avoiding debt covenant violations. They report that unusually fewer observations of covenant slack just below zero and unusually many observations just above zero, providing strong evidence that managers use accounting distortion to avoid violating covenant thresholds.

5.2.2.3 Leverage is associated with accounting quality

Isidro and Raonic (2010) investigate how firms' reporting incentives and institutional factors (taking leverage as one of factors) affect accounting quality in

firms from 26 countries. They exploit a unique multi-country setting where firms are required to comply with the same set of international reporting standards. They also develop an approach of cross-country comparisons allowing for differences between firms within a country and investigate the relative importance of country- versus firm-specific factors in explaining accounting quality. They find firm-specific incentives play a greater role in explaining accounting quality than countrywide factors. Furthermore, they find that financial reporting quality is positively associated with leverage and increases in the presence of strong monitoring mechanisms by external financing needs, leverage and etc.

However, several studies find that companies with a high leverage tend to manage earnings. For instance, Holthausen and Leftwich (1983) review the research into the economic consequences of voluntary and mandatory choices of accounting techniques and standards. Their empirical tests reveal two systematic associations with accounting choice: size, a proxy for political visibility, and leverage, a proxy for contracting and monitoring costs of lending agreements. Specifically, firms with high leverage tend to adopt income increasing accounting methods. They didn't interpret results that leverage is related to contracting and monitoring costs due to general limitation of the tests.

Simpson (1969) find that firms with more conservative accounting information have significantly smaller leverage (debt-to-equity ratios) and significantly larger sales (as a proxy for size) than similar liberal-method firms.

In addition, Sundgren (2007) examines whether earnings management is a function of leverage with a sample of 99 public companies and 99 private Finnish companies. Various earnings management proxies (i.e. discretionary accruals, the ratio of small profits to small losses, the variation in earnings in relation to the variation in cash flows and the correlation between the change in earnings and the change in cash flows) are applied in the studies and he finds that highly leveraged companies are more likely to use income increasing accounting methods (manage earnings) than companies with a low leverage.

5.3 Hypothesis Development

5.3.1 Demand and Incentives Approach

Givoly et al (2010) indicate there are two effects affecting the quality of accounting information, one is demand effect from market (such as investors, shareholders, and debt-holders) and the other one is incentives effect from managers of firms to manage earnings in order to meet this demand.

Financial statements of private companies are not widely distributed to the public and they have different ownership, governance, financing, management and compensation structures than public companies (Ball and Shivakumar, 2005). The demand for higher accounting quality is not from their shareholders but from external lenders such as bank, long-term loan holders and creditors. Skinner (1997), companies improve the accounting information and disclosure and enhance their financial transparency so as to mitigate potential lawsuits and to reduce the cost of their equity capital. As discussed in literature review section, several studies (Ball et al, 2008; Chen et al, 2011; Frankel et al, 2011) find that debt-holders expect higher accounting quality from companies, and companies will increase the quality of accounting when they have external financing such as from bank.

SMEs face demand from debt-holders (including banks) to report higher quality of accounting information if they seek for external financing. In the mean time, SMEs have incentives to manage earnings in order to meet this demand so as to obtain or renew the financing contracts with debt-holders (Sweeney, 1994; DeFond and Jiambalvo, 1994). Watts and Zimmerman's (1986) positive accounting theory predicts that firms with larger debt loads tend to use income-increasing accounting methods to violate restrictive debt covenants (Martin, 2003). Managers of private companies may have incentives to manage earnings because of the presence of earnings-based bonuses as well as to avoid violating earnings-based debt covenants (Givoly et al. 2010). Sundgren (2007) finds that private firms have incentives to use income-increasing methods when they seek continuous support from external lenders.

In this chapter, based on the demand and incentive approach from Givoly et al (2010), we examine the accounting quality for SMEs from two effects, which are (1) demand from debt-holders to report better accounting quality (demand effects) and

(2) incentives from managers to manage earnings in order to meet the underlying demand (incentive effects). Givoly et al (2010) compare accounting quality between public and private companies from “investors-managers”¹⁰ perspective, while in this chapter we examine accounting quality from “lenders-managers” perspective for SMEs. The debt-holders of SMEs include banks, long-term loan holders, and creditors, who will require SMEs to disclose more financial information in order to lend money to SMEs.

5.3.2 Association Between Leverage and Accounting Quality

Companies with more loans and debts will have higher leverage. This suggests that companies with more external financing will have debt-holders acting as police to ensure the reliability and quality of accounting information that SMEs report.

Literature on leverage and accounting quality has mixed findings. Some studies suggest that higher leverage firms have higher accounting quality. For instance, Chen et al (2011) investigate the role of financial reporting quality in private firms from emerging markets, a setting in which extant research suggested that accounting quality would be less conducive to the mitigation of investment inefficiencies. They find that the relation between accounting quality and investment efficiency is increasing in bank financing.

Gormley et al (2009) examine the impact of changes in the banking sector on firms’ timely recognition of economic losses. In particular, they focus on the foreign banks entry in India during the 1990s. They find that foreign bank entry is associated with more timely loss recognition and this increase is positively related to a firm’s subsequent debt levels. They comment that increase in timely loss recognition is concentrated among firms more dependent on external financing: private firms, smaller firms, and non-group firms.

Isidro and Raonic (2010) investigate how firm reporting incentives and institutional factors (taking leverage as one of factors) affect accounting quality in firms from 26 countries. They exploit a unique multi-country setting where firms are required to comply with the same set of international reporting standards. They also develop an approach of cross-country comparisons allowing for differences between

¹⁰ Agency issues which is due to separation of ownership in public companies.

firms within a country and investigate the relative importance of country- versus firm-specific factors in explaining accounting quality. They find firm-specific incentives play a greater role in explaining accounting quality than countrywide factors. Furthermore, they find that financial reporting quality is positively associated with leverage and increases in the presence of strong monitoring mechanisms by external financing needs, leverage and etc.

However, some other studies suggest that firms with more debts (higher leverage) are more likely to manage earnings. For example, Simpson (1969) find that firms with more conservative accounting information have significantly smaller leverage (debt-to-equity ratios) and significantly larger sales (as a proxy for size) than similar liberal-method firms. Holthausen and Leftwich (1983) review the research into the economic consequences of voluntary and mandatory choices of accounting techniques and standards. They find that firms with high leverage tend to adopt income increasing accounting methods. Sundgren (2007) examines whether earnings management is a function of leverage with a sample of 99 public companies and 99 private Finnish companies. He finds that that highly leveraged companies are more likely to use income increasing accounting methods (manage earnings) than companies with a low leverage.

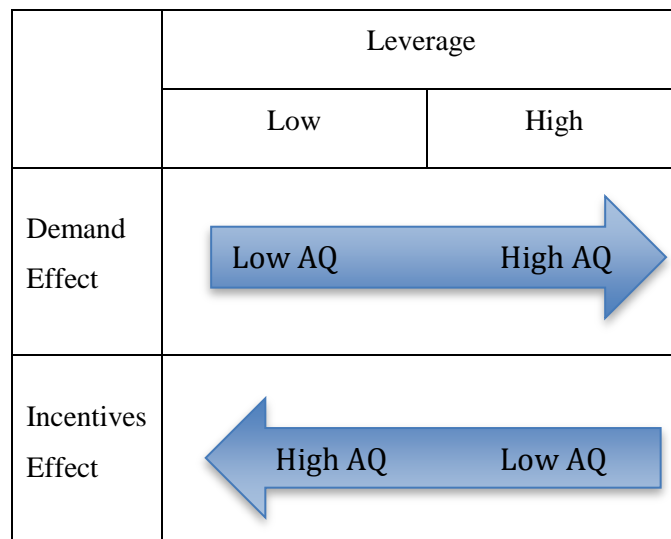
5.3.3 Hypothesis of this chapter

Based on the discussion above, companies with high leverage may possess more loans from debt-holders or external lenders who will be the one review companies' financial information in detail so as to ensure the quality of companies' financial information. Hence, companies with more debts from their debt-holders such as banks, long-term loan holders and etc. will have higher demand from debt-holders to report good quality of financial information.

However, managers of companies with higher leverage may have greater incentives to manage earnings (lower the accounting quality) in order to meet the underlying demand of debt-holders. When companies need financial support from lenders, they face pressure from the external lenders to report better accounting quality, which suggests that managers of companies will have incentives to manage earnings in order to get the loan or to renew the financial contracts.

Leverage is measured by companies' liabilities (debts/assets), thus, companies with more debts have high leverage and companies with fewer debts have low leverage. We expect there are differences in accounting quality between companies (medium and small companies) with high leverage and companies with low leverage. Therefore, based the demand and incentives approach from Givoly et al (2010), we propose (which is illustrated in the diagram below):

1. Firms with high leverage have higher demand from debt-holders to report higher accounting quality, comparing with firms with low leverage (Demand effects)
2. Firms with high leverage have more incentives to manage earnings (i.e. lower the accounting quality) in order to meet the underlying demands, comparing with firms with low leverage (Incentives effects)



We analyse effects of debt-holders on accounting quality for SMEs based on the demand and incentives approach between high and low leverage groups. The purpose of this is to demonstrate the questions, such as which effect (demand or incentives effect) dominates the accounting quality for medium and small companies? Will the effect of debt-holders lead to any difference in accounting quality between medium-sized and small companies?

5.4 Sample and Data

In this chapter, we examine the effects of debt-holders' discipline on accounting quality for private companies only.

In order to be consistent with previous chapter, in this chapter, we will use the private firm-observations from same dataset in the previous chapters collected from FAME database, which include private non-small (medium) companies small companies. Under the definition of size of companies from sections 382 and 465 of the Companies Act 2006, we select private medium companies with turnover greater than £6.5 million and balance sheet worth greater £3.26 million for the years of 2008-2010, and small companies with annual turnover of £6.5 million or less and have an annual balance sheet worth no more than £3.26 million for the years of 2008-2010. We therefore obtain two groups of companies-observations based on the size criteria from Companies Act, medium companies (private medium-sized companies) and small companies.

We exclude companies that are subsidiary as their reporting requirement is different. The criterion for subsidiary in FAME is that the minimum path of ultimate owner is 50.01%. We also screen out private firms whose legal form is not equal to the status of corporations such as legal forms like sole proprietorships or partnerships. We exclude banks, insurance companies and other financial institutions (SIC codes 6000-6799). We exclude companies that without known value of total assets in the years of 2008, 2009 and 2010 in order to mitigate the data errors. We also exclude those companies-observations where accounting items include profit, turnover, total assets and equity are exactly equal to zero or most likely indicating missing data for the years of 2008-2010.

We winsorize each variable at 95% level (consistent with previous chapters) in order to control the effects of outliers.

We then split each group of companies (medium and small companies) based on leverages. We use three definitions of leverage, which includes total liabilities over total assets, long-term loan over total assets, and creditors over total assets. Taking the median of leverage as benchmark, any firms with values of leverage above the median will be considered as high leverage; those firms fall below the median will be in the low leverage group. We then divide the each group of firms based on high and low leverage.

5.4.1 Divide samples based on Total Liabilities/Total Assets

Total liabilities divided by total assets is a common measure of leverage in various studies. Total liability consists of total long-term loan and total current liabilities. This definition of leverage shows the percentage of total assets is financed through liabilities. If the percentage is higher, that suggests the companies have low borrowing capacity and are associated with greater risk.

If the ratio is less than 0.5, most of the company's assets are financed through owners' capital (equity). If the ratio is greater than 0.5, most of the company's assets are financed through debt. Companies with high debt/asset ratios are "highly leveraged". The major source of financial funding for SMEs is from banks, which means banks will be the one who review companies' accounts in detail. Since the debt-to-ratio is used to measure leverage, we expect there are differences in accounting quality between companies with high leverage and companies with low leverage. Therefore, we divide samples of medium and small companies based on high and low leverage respectively.

5.4.2 Divide samples based on Long-term Loan/Total Assets

Ratio of Total liability to Total Assets will consist of the effects from the short-term creditors, suppliers and long-term loan altogether. It represents the financial position of the company and the company's ability to meet all its financial requirements.

The advantage of using this definition is that allows us to examine the percentage of company's assets is financed through long-term loan. Companies obtain a number of long-term loans from banks or external lenders to finance their business, which suggests that the discipline of accounting quality might come from those who issued long-term loan to companies. Lower percentage indicates companies are less dependent on debts for their business needs. Therefore, we would expect different accounting quality between high and low leverage groups.

5.4.3 Divide samples based on Creditors/Total Assets

Ratio of Creditors over Total Assets shows the percentage of total assets is financed through creditors. Some private companies may not have loans at all, so the

majority of their liabilities are from creditors. The discipline might come from creditors. Therefore, we use creditors over total assets as measure of leverage.

This definition of leverage captures the effects of creditors on accounting quality for SMEs. We would expect there are differences in accounting quality between high creditors/assets ratio and low creditors/assets ratio for different groups of companies.

5.5 First Measure of Accounting Quality – Earnings Conservatism

We examine the accounting quality by different accounting quality proxies with sufficient data to control for the level of leverage across medium and small companies. The first measure of accounting quality is earnings conservatism, which measure one aspect of accounting quality. The reason of using this measure is that debt-holders value conservatism from contracting companies.

Watts (2003) indicates that conservatism “arises because it is part of the efficient technology employed in the organisation of the firm and its contracts with various parties”. He also suggests that conservatism is a mechanism used to address the management distortions arising from managers of a firm having an informational advantage relative to other parties contracting with the firm. Earnings conservatism is used to mitigate agency conflicts for debt-holders (Jayaraman and Shivakumar, 2013). Zhang (2008) suggests that conservatism improves the effectiveness of debt covenants. Ball, Robin and Sadka (2008) study the timely financial statements in both debt market and equity market, they find that debt-holders demand high scores of timely loss recognition than firms’ investors.

Therefore, in this chapter, we use conservatism as the first measures of accounting quality in order to analyse the effects of debt-holders’ discipline on companies’ financial reporting.

5.5.1 Literature of Conservatism and Debt

Earnings conservatism in some studies is being addressed as asymmetric timeliness and timely loss recognition. Assuming that the degree of asymmetric timeliness in a firm’s earnings is controllable by managers, at least in part, and that managers rationally respond to demand through their reporting choices, the correlation between demand and asymmetric timeliness suggests that asymmetric timeliness is decision useful (Dechow et al, 2010).

Ball and Shivakumar (2005) suggest that financial reports can recognise economic income, which encompasses both current-period cash flow and revisions to the present value of the expected future cash flows of a firm, either in a deferred manner or in a timely manner. Under the deferred approach, the reporting system awaits the realisation of cash flows before recognising these as profits or losses in the income statement. In contrast, under the timely recognition approach, financial

reports incorporate economic gains or losses in the income statement as soon as they are incurred, irrespective of when cash is realised. Conservative reporting is the approach under which timely recognition approach is more prevalently employed for recording economic losses, while the deferred approach is more generally used for recording economic gains (Shivakumar, 2013).

Earnings conservatism may represent high quality earnings. Basu (1997) suggests a conditional conservatism, which future bad news is anticipated, whereas future good news is not. Therefore, under current accounting system, the foreseeable losses have to be recognised immediately in the accounts, which gives an asymmetric relation between earnings and stock returns.

DeFond (2010) pointed out if debt-holders value earnings conservatism, and earnings management is used to avoid covenant violations (e.g., DeFond and Jiambalvo, 1994; Sweeney, 1994; Dichev and Skinner, 2002), then debt holders are also potentially influenced by earnings management.

Zhang (2008) documents that more conservative borrowers are more likely to violate debt covenants, implying that conservatism improves the effectiveness of debt covenants. Nikolaev (2010) hypothesises that, if conservatism is valued by lenders for use in debt covenants, then borrowers with more extensive use of covenants should exhibit timelier loss recognition in their financial statements. Supporting this hypothesis, he documents that reliance on covenants in a sample of public debt contracts is positively associated with the degree of timely loss recognition.

Wittenberg and Moerman (2008) provides evidence for an indirect benefit from conservatism for debt contracting. She reports that conservative borrowers have lower bid–ask spreads in the secondary market for the firm’s syndicated loans, which is consistent with lower information asymmetry regarding a borrower. By lowering frictions in secondary loan markets, conservatism potentially benefits borrowers, both by improving credit availability and by improving the borrowers’ credit terms.

Beatty et al. (2008) investigate whether lenders’ demand for conservatism is accommodated through contractual adjustments to accounting numbers employed in the contracts.¹² They document that such modifications exist in a sample of syndicated loans, but that the modifications are not all-pervasive. They also find that the contractual modifications are greater when a firm’s financial reports are

conservative, suggesting that contractual modifications alone do not fulfil lenders' demands for conservatism.

However, the net effect of timely loss recognition on earnings quality is unknown because it results in lower persistence during bad news periods than during good news periods (Basu, 1997), since both persistence and conservatisms affect the decision usefulness of earnings. Therefore, whether timely loss recognition improves earnings quality is still in debate, because timely loss recognition is associated with accounting conservatism, which is inconsistent with the persistence of earnings. Furthermore, timely loss recognition is measure of earnings quality relies strong assumption that accounting setters are producing a high quality earnings number and returns are providing an equal representation of timely loss recognition, which creating problems in cross-country studies where variation in market structures and information flow are significant (Dechow et al, 2010).

5.5.2 Measure of Conservatism

In measuring earnings conservatism, the model is based on Ball and Shivakumar (2005) in order to test the contemporaneous relation between accruals and cash flows.

Based on the assumption of Ball and Shivakumar (2005), that accruals compensate for cash flows in the calculation of income (timing issues), giving a negative relation between the two. The model is as follows:

$$ACC_t = \alpha_0 + \alpha_1 DCF0 + \alpha_2 CFO_t + \alpha_3 DCF0 \times CFO_t$$

where

ACC_t = Accruals in year t, standardised by beginning total assets, defined as earnings after extraordinary items minus cash flows from operations in period t.

$DCF0$ = Dummy variable, taking 1 when CFO_t is negative, 0 otherwise

CFO_t = Cash flows from operations in year t, standardised by beginning total assets, defined as earnings after extraordinary items in period t + Depreciation – Changes in Working Capital

According to Ball and Shivakumar (2005), this regression is used to test the contemporaneous relations between accruals and cash flows levels. The intuition

behind this is that the role of accruals is to mitigate the noise in cash flows; hence, they expect negative α_2 and positive α_3 and make no assumption of α_1 .

In the regression model, α_2 measures the link between cash flows and accruals, since the role of accruals is to compensate the timing and matching problems of cash flows, the relation between the accruals and cash flows is expected to be negative. (i.e. α_2 is negative).

Ball and Shivakumar (2005) argue that timely loss recognition mitigates the agency problems associated with managers' investment decisions. Conservative reporting is the approach under which timely recognition approach is more prevalently employed for recording economic losses (Shivakumar, 2013). Managers are expected to report losses under a timely loss recognition approach – that is, financial reports incorporate economic losses in the income statement as soon as they are incurred, irrespective of when cash is realised. Ball and Shivakumar (2005) make the point that when cash flows are negative, accruals do not compensate so much since the losses are impounded, instead, accruals are expected to recognise current and future losses in the accounts. This suggests that the relation between cash flows and accruals is less negative when cash flows are negative. Therefore, α_3 is expected to be incremental positive.

In the study of Ball and Shivakumar (2005), they compare accounting quality between public and private companies with the hypothesis include accruals are used to mitigate noises in cash flows which give a negative relationship between accruals and cash flows when cash flow is in gain; and private companies are less likely to recognize losses as transitory items, which means their asymmetric (negative) relationship between accruals and cash flows is lower. In another words, their assumption is that companies with lower accounting quality (conservatism) will have lower asymmetric relationship between accruals and cash flows, hence they predict α_2 is negative and α_3 is positive for public companies (higher accounting quality); and offer no prediction about α_2 and predict α_3 is negative for private companies (lower accounting quality).

5.5.3 Results of Conservatism

Table 5.1 to Table 5.3 present our results from the following regression for medium and small companies, in which accruals are regressed on contemporaneous cash flows variables. Each group of companies' samples is winsorized at 95% level in order to control the effects of outliers. This regression is used to test the relations between accruals and cash flows levels.

$$ACC_t = \alpha_0 + \alpha_1 DCFO + \alpha_2 CFO_t + \alpha_3 DCFO \times CFO_t$$

Descriptive Statistics

[Table 5.1 Here]

Table 5.1 presents the descriptive statistics of variables used in the measure of earnings conservatism. Values below 5th level and above 95th level are different from values at other percentiles for medium and small companies. Therefore, we winsorized each variable at 95% level in testing the earnings conservatism.

Small companies have less variation in all variables than medium companies. The level of accruals in small companies is less than that in medium companies. However, cash flows in small companies have a positive mean whereas cash flows in medium companies have a negative mean. There are extreme values of cash flows and accruals in medium companies, which influence the overall results. Therefore, we need to winsorize each variable in order to take away the effects of outliers.

Results for Medium Companies

[Table 5.2 Here]

Table 5.2 presents the results for medium companies with different quartiles of leverage groups based on 95% level of winsorized sample. α_2 is negative and statistically significant, implying that this is consistent with accruals compensating timing and matching problems in cash flows from earnings (Ball and Shivakumar, 2005; Dechow, 1994; and Dechow et al., 1998). In general, accruals in medium companies in all high leverage groups (Q3 and Q4) have stronger role of mitigating noises in cash flows compared to companies with low leverage (Q1 and Q2),

because the relation between accruals and cash flows is more negative, given α_2 is more negative in high leverage groups than in low leverage groups.

As for coefficient α_3 , the results are rather mixed. Medium companies present positive α_3 in very low leverage group (Q1) and very high leverage group (Q4), and negative α_3 for Q2 and Q3. Furthermore, based on the assumption of Ball and Shivakumar (2005), medium companies in high leverage groups (Q3 and Q4) do not have more conservative reporting than medium companies in low leverage groups (Q1 and Q2), since the positive α_3 in all Q4 is not significant. This is because accruals are used to recognise current and future losses when cash flow is negative, which lead an incremental positive correlation between accruals and cash flows (α_3 is expected to be positive). In Q2 and Q3, the negative relation is more pronounced when cash flow is negative, given α_3 is negative. This indicates that accruals compensate even more and recognise less unrealised losses when cash flows are negative.

Overall, these results suggest that in Q2 and Q3 leverage groups, medium companies accrue less unrealised losses and recognise losses in less timelier basis when cash flow is negative. Based on the assumption of Ball and Shivakumar (2005), medium companies in very high leverage group (Q4) and very low leverage group (Q1) appear to have higher quality compared with medium companies in leverage Q2 and Q3 groups, because α_3 is negative and is not as expected. This does not support our hypothesis that companies with higher leverage have higher quality of earnings, as external debt-holders demand high accounting quality from companies. In this test, debt-holders effects on accounting quality are rather weak.

TABLE 5.1: Descriptive Statistics of Variables in Testing Earnings Conservatism

Variables	Medium Companies			Small Companies		
	<i>ACC</i>	<i>CFO</i>	<i>DCFO CFO</i>	<i>ACC</i>	<i>CFO</i>	<i>DCFO CFO</i>
No. of observations	35,591	35,591	35,591	8,278	8,278	8,278
Mean	-0.06	-2.90	-3.75	-0.01	2.72	-0.11
Std Deviation	23.56	673.80	672.60	6.59	108.10	2.51
Min	-1,452.00	-126,806.00	-126,806.00	-286.20	-198.50	-198.50
1st Percentile	-0.76	-0.65	-0.65	-1.14	-0.96	-0.96
5th Percentile	-0.26	-0.19	-0.19	-0.37	-0.32	-0.32
25th Percentile	-0.09	0.00	0.00	-0.09	0.00	0.00
Median	-0.02	0.06	0.00	0.00	0.11	0.00
75th Percentile	0.01	0.14	0.00	0.05	0.30	0.00
95th Percentile	0.17	0.39	0.00	0.30	1.16	0.00
99th Percentile	0.48	1.07	0.00	0.73	5.61	0.00
Max	3,704.00	3,500.00	0.00	433.50	9,232.00	0.00

*, **, *** represents significant at the 0.10, 0.05 and 0.01 levels, respectively.

This table presents the summary statistics for variables used in regression of earnings conservatisms for medium companies and small companies.

Variable Definitions: *Dependent Variables*: ACC_t = Accruals in year t, standardised by beginning total assets; ACC_t is defined as earnings after extraordinary items minus cash flows from operations in period t.

Independent Variables: $DCFO$ = Dummy variable, taking 1 when CFO_t is negative, 0 otherwise. CFO_t = Cash flows from operations in year t, standardised by beginning total assets; CFO_t is defined as earnings after extraordinary items in period t + Depreciation – Changes in Working Capital.

Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

TABLE 5.2: Results of Conservatism for Medium Companies

$$ACC_t = \alpha_0 + \alpha_1 DCFO + \alpha_2 CFO_t + \alpha_3 DCFO \times CFO_t$$

	Predict	Leverage Q1		Leverage Q2		Leverage Q3		Leverage Q4	
		Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
Intercept (α_0)	?	0.00284*	(2.18)	0.00749***	(5.84)	0.00432***	(3.47)	-0.0239***	(-14.18)
$DCFO$ (α_1)	?	0.0120***	(4.62)	0.0132***	(4.88)	0.0120***	(4.84)	0.0109***	(3.40)
CFO_t (α_2)	-	-0.320***	(-41.54)	-0.486***	(-62.89)	-0.583***	(-75.68)	-0.530***	(-52.23)
$DCFO \times CFO_t$ (α_3)	+	0.140***	(6.00)	-0.0652*	(-2.57)	-0.0563*	(-2.51)	0.00848	(0.34)
R-square		24.7%		49.6%		60.8%		46.1%	
No. of Observations		9228		8923		8901		8539	

*, **, *** represents significant at the 0.10, 0.05 and 0.01 levels, respectively.

This table presents the results from regression of conservatism for medium companies with different measures of leverages.

Leverage is defined as total liabilities divided by total assets at the end of year. Medium companies are divided into groups based on quartiles of leverage ratio. Furthermore, the regression is also run based on other types of leverage (long-term loan/total assets; creditors/total assets), results are consistent.

The sample in this table is being wisorized at 95% level.

Variable Definitions: *Dependent Variables*: ACC_t = Accruals in year t, standardised by beginning total assets; ACC_t is defined as earnings after extraordinary items minus cash flows from operations in period t.

Independent Variables: $DCFO$ = Dummy variable, taking 1 when CFO_t is negative, 0 otherwise. CFO_t = Cash flows from operations in year t, standardised by beginning total assets; CFO_t is defined as earnings after extraordinary items in period t + Depreciation – Changes in Working Capital.

Results for Small Companies

[Table 5.3 Here]

Table 5.3 presents the results for small companies with different quartiles of leverage groups based on 95% level of winsorized sample. The coefficient of CFO_t , α_2 , is significantly negative across all leverage groups, implying that accruals play a strong role in compensating the timing and matching problems in cash flows. The coefficient of CFO_t , α_2 , is generally more negative in high leverage groups (Q3 and Q4) than in low leverage groups (Q1 and Q2), indicating that accruals in high leverage groups have stronger role of mitigating noises in cash flows than those in low leverage groups. Therefore, the negative relation between accruals and cash flows is more pronounced in high-leverage companies than that in low-leverage companies.

However, the coefficient of the interactive variable $DCFO \times CFO_t$, α_3 , is significantly negative across all leverage groups. This implies that accruals in small companies over compensate when cash flow is negative. Especially in leverage Q3 group (-0.163 and -0.437), nearly 60% of cash flows from this group are offset by accruals in cash-loss situation. This suggests that companies compensate even more cash flows in Q3 than that in other leverage quartile groups.

Overall, results from small companies indicate that accruals seem to play its role to mitigate noises in cash flows when cash flow is positive, but when cash flow is negative, small companies may not report conservatively. Generally, high leverage groups have more negative relation between accruals and cash flows than low leverage groups have. Further, the percentage of over-compensation for cash flows through accruals is highest in leverage Q3 group than in other leverage groups. We can then interpret that small companies in high leverage groups are not more conservative than those in low leverage groups. Again, debt-holders effects on accounting quality are weak in small companies.

From the analysis above, we can comment that the disciplines of debt-holders on accounting quality are weak in both medium and small companies.

TABLE 5.3: Results of Conservatism for Small Companies

$$ACC_t = \alpha_0 + \alpha_1 DCFO + \alpha_2 CFO_t + \alpha_3 DCFO \times CFO_t$$

	Predict	Leverage Q1		Leverage Q2		Leverage Q3		Leverage Q4	
		Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
Intercept (α_0)	?	-0.00427	(-1.34)	0.00184	(0.45)	-0.0229***	(-5.13)	-0.0614***	(-9.49)
$DCFO$ (α_1)	?	0.0359***	(4.64)	0.0597***	(5.90)	0.0753***	(7.43)	0.0825***	(6.49)
CFO_t (α_2)	-	-0.0821***	(-10.65)	-0.145***	(-14.47)	-0.163***	(-15.54)	-0.0807***	(-6.33)
$DCFO \times CFO_t$ (α_3)	+	-0.214***	(-4.74)	-0.378***	(-6.21)	-0.437***	(-7.45)	-0.166**	(-3.20)
R-square		15.7%		29.2%		36.6%		19.9%	
No. of Observations		2152		2072		2069		1985	

*, **, *** represents significant at the 0.10, 0.05 and 0.01 levels, respectively.

This table presents the results from regression of conservatism for medium companies with different measures of leverages.

Leverage is defined as total liabilities divided by total assets at the end of year. Small companies are divided into groups based on quartiles of leverage ratio. Furthermore, the regression is also run based on other types of leverage (long-term loan/total assets; creditors/total assets), results are consistent.

The sample in this table is being wisorized at 95% level.

Variable Definitions: *Dependent Variables*: ACC_t = Accruals in year t, standardised by beginning total assets; ACC_t is defined as earnings after extraordinary items minus cash flows from operations in period t.

Independent Variables: $DCFO$ = Dummy variable, taking 1 when CFO_t is negative, 0 otherwise. CFO_t = Cash flows from operations in year t, standardised by beginning total assets; CFO_t is defined as earnings after extraordinary items in period t + Depreciation – Changes in Working Capital.

Comparison between Medium and Small Companies

Overall, according to the assumption from Ball and Shivakumar (2005), α_2 is expected to have negative sign to indicate that the role of accruals is to compensate cash flows from earnings when there is a gain in cash flows. α_3 is expected to have positive sign to indicate the less negative relations between accruals and cash flows, implying that accruals should be used to recognise current and unrealised losses when cash flows are negative. From the results, α_2 and α_3 in very high leverage group and very low leverage group for medium companies are generally consistent with the hypothesis of Ball and Shivakumar (2005), while leverage Q2 and Q3 groups present a negative α_3 (which is not as expected). Medium companies in Q2 and Q3 leverage groups seem to compensate even more when cash flows are negative. Therefore, based on the assumption of Ball and Shivakumar (2005), we can comment that accounting quality in high leverage groups is not higher than those in low leverage groups in medium companies.

On the other hand, from the results of small companies, α_2 is negative across all leverage groups, which is consistent with the assumption that accruals is to mitigate the noises in cash flows so as to give a negative relation between accruals and cash flows. However, α_3 is negative across all leverage groups suggesting that small companies (even more negative than medium companies) are likely to compensate more cash flows through accruals when there is a loss in cash flows.

Medium companies with very high leverage and low leverage seem to have conservative effects on their earnings, whereas medium companies with middle range of leverage and all small companies do not have conservative effects on earnings based on the assumption of Ball and Shivakumar (2005). Generally, the disciplining effects of debt-holders on accounting quality are weak, suggesting that debt-holders do not play the main role in disciplining accounting quality for medium and small companies.

Key Findings from Table 5.2 and 5.3:

1. Medium-very-high-leverage and medium-very-low-leverage firms tend to report more conservatively than firms in other leverage groups, implying the demand effects of debt-holders on accounting quality are not strong in disciplining accounting quality.
2. Based on Ball and Shivakumar (2005) assumption, small companies are not conservative, as they tend to compensate even more when cash flows are negative. The effects of debt-holders on small companies are not strong in small companies.
3. Generally, demand effects from debt-holders are not strong in disciplining accounting quality for both medium and small companies.

5.5.4 Comment about the Results of Conservatism

Does negative relation between accruals and cash flows when cash flows are negative in companies indicate that companies are not recognising losses at a timely basis? As shown in the results from small companies' sample, that α_2 is relatively small among all groups (all of them less than -0.163), implying that only a small percentage of cash flow is offset by accruals when cash flow is in gain, further, the percentage of cash flow being offset has increased significantly when cash flows are negative ($\alpha_2 + \alpha_3$). These results support the business characteristic of private companies, that is private companies are not given much credit.

Based on Ball and Shivakumar (2005), we test the contemporaneous relation between accruals and cash flows (the conservatism test). The assumption of Ball and Shivakumar (2005) is that accruals and cash flows are expected to have negative correlation (α_2 is expected to be negative in the model) as accruals are used to compensate the timing and matching problems of cash flows. When cash flows tend to be negative, accruals will be in the position of recognising current losses and informing future losses. This will drive the negative correlation between accruals and cash flows to be less negative (α_3 is expected to be positive in the model).

From the results of this test, only medium-very-high-leverage and medium-very-low-leverage companies (positive α_3) meet the expectation of Ball and Shivakumar (2005). Accruals in other leverage groups of medium companies and small companies seem to compensate cash flows even more when cash flows are negative (negative α_3 is presented). Especially, small companies in leverage Q3 group have the most negative α_3 . Does that suggest these groups of companies have lower accounting quality?

Furthermore, Givoly et al (2010) find similar result between public and private companies, that public companies have incremental positive relation between accruals and cash flows, and private companies have even more negative relation between accruals and cash flows. However, they do not interpret results clearly.

When cash flows are negative ($CFO < 0$), the relation between cash flows (CFO) and accruals (ACC) will be influenced by two situations.

1. When $CFO < 0$, the company is in trouble and ACC does not compensate for this sort of cash flow; and indeed the company may make provisions in ACC for future losses (e.g. a write down of stock value). Accruals and cash flows

will have a less negative relation (positive α_3). This is what Ball and Shivakumar (2005) expected. (B&S effects)

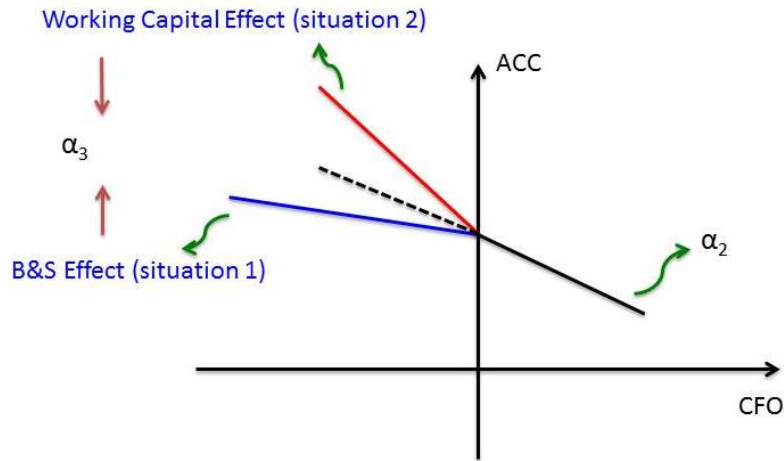
2. When $CFO < 0$, the company is not doing well or company is too small, stock builds up (changes in stock rises). In the mean time, company may find it difficult to get working capital finance (debts are more difficult to collect and suppliers less willing to give credit for so long). So (changes in debtors – changes in creditor) may also rise. This means negative cash flows are associated with positive accruals, suggesting accruals and cash flows have more negative relation when $CFO < 0$. (Working capital effects)

Obviously, when $CFO < 0$, both situations will take place. Ball and Shivakumar (2005) assume that the effect of situation (1) is larger than the effect of situation (2). However, if the provision has been made earlier, this may not be the case. Companies may have recognised the losses prior to $CFO < 0$, that means the first situation may dominate the relation between cash flows and accruals, i.e. more negative relation between accruals and cash flows (as what we have found for medium-low-leverage, small-high-leverage, and small-low-leverage companies).

The empirical proof of situation 2 will be provided in the Appendix. That suggests when effect of situation (2) dominates (working capital increases), the relation between accruals and cash flows will be more negative. When situation (1) dominates, accruals are used to recognise the current and future losses (decrease in working capital), the relation between accruals and cash flows will be less negative.

Generally, the assumption of Ball and Shivakumar (2005) only takes account of one situation, i.e. accruals are used to recognise current and future losses when cash flows are negative. However, this is obscured by accruals rising naturally – the situation 2 (when $CFO < 0$, stocks build up, and debts will be more difficult to collect and creditors are less willing to provide finance).

Therefore, the relationship between accruals and cash flows is illustrated in the graph below.



Based on the above discussion, we can only comment that medium-very-high-leverage and medium-very-low-leverage companies report conservatively (positive α_3) according to the assumption of Ball and Shivakumar (2005). Medium companies in leverage Q2 and Q3 groups, and small companies (negative α_3) may not be of lower accounting quality because the increase in working capital may dominate the situation of recognising losses.

5.6 Second Measure of Accounting Quality – Earnings Persistence

Previously, we measure accounting quality by earnings conservatism as debt-holders expect firms to report conservatively. However, earnings conservatism only measures one aspect of debt-holders' expectation and accounting quality.

Debt-holders may also value earnings persistence as they expect firms' earnings to be stable over time. This is because debt-holders are generally risk-averse. Higher quality of accounting information is that current earnings are more informative about firms' future financial performance. However, managerial incentives that are related to debt covenant may affect the earnings persistence in financial reporting (Healy and Wahlen, 1999).

Therefore, the second measure of accounting quality is based on earnings persistence, in order to analyse the impacts of debt-holders' on companies' financial reporting quality. Earnings persistence measures another aspect of debt-holders' demand and accounting quality.

5.6.1 Literature of Earnings Persistence

Basically, if earnings are persistent, the level of earnings will be continually recurring from accounting to accounting period. Earnings persistence means that the sustainability of current earnings. More earnings persistence is the ability to retain more profits; also the earnings quality of company is higher (Valipour and Moradbeygi, 2011). Generally, when we use reported earnings to help the users to take better decisions, then the quality of earnings is better.

Earnings persistence fits well with the view of earnings forecast. It helps investors, since they are typically concerned with permanent performance. Earnings persistence captures the smoothness of earnings. Economic performance is quite persistent, so earnings should be too. If earnings are more persistent, it will be easier to forecast firms' future earnings with less earnings volatility and less transitory components.

This type of measure are usually adopted for the research of usefulness of earnings to equity investors for valuation, higher persistence of earnings will yield better inputs to equity valuation models and will be able to generate sustainable cash flows in the future, implying high quality of earnings (Dechow et al, 2010).

Therefore, higher persistence of earnings will produce better inputs to equity valuation models and will be able to generate sustainable cash flows in the future (cash flows component greater than accruals component), implying high quality of earnings.

Penman and Zhang (2002) define accounting quality as that current year's reported earnings are a good indicator of future earnings. They consider high-quality earnings to be "sustainable earnings". Studies of Richardson et al. (2005) and implicitly Sloan (1996) suggest a related dimension of earnings quality is the reliability of accruals as captured by earnings persistence. Richardson et al. (2005, 438) find that "less reliable accruals result in lower earnings persistence." Therefore, the basic idea of earnings persistence is that how informative of firms' current earnings reflect their future performance.

However, the lower persistence of the accrual component does not imply that accruals are not useful. The result simply tells us that when earnings are composed predominantly of accruals, they will be less persistent than when earnings are composed predominantly of cash flows. Interpreting this result as evidence that accruals do not improve earnings quality, however, does not allow accruals to be decision useful except through their impact on persistence. Accrual adjustments are useful, even though factors such as measurement error, managerial discretion, and growth affect their relation to persistence (Dechow et al, 2010).

Sloan (1996) suggested that lower persistence is the result of accounting measurement problems in the system, either because of how it reflects fundamental performance or because of the discretion allowed in the accounting system. Furthermore, if analysis is based on short-term data, the earnings management could be engaged to achieve earnings persistence in the short run, which then lowers the power of underlying proxy to measure earnings quality.

5.6.2 Measure of Earnings Persistence

We test the earnings persistence based on how cash flows and accruals inform next years' earnings. Following Sloan (1996) and Givoly et al (2010), we take cash flows and accruals as explanatory variables and next year's earnings as dependent variable.

$$E_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \beta_2 ACC_{i,t}$$

where,

$E_{i,t+1}$ = Earnings after extraordinary items in period t+1 for firm i, standardised by lagged assets

$CFO_{i,t}$ = Cash flows from Operation in period t for firm i, standardized by lagged assets. It is defined as earnings after extraordinary items in period t + Depreciation – Changes in Working Capital

$ACC_{i,t}$ = Accruals in year t, standardised by beginning total assets, defined as earnings after extraordinary items minus cash flows from operations in period t for firm i, standardised by lagged assets.

The intuition of this model is that β_1 is expected to be larger than β_2 , based on Sloan (1996) and Givoly (2010). They compare accruals component and cash flows component in earnings for earnings persistence test. β_1 is expected to be larger than β_2 , based on Sloan (1996), implying cash flows component should be more persistent than accruals component. Accruals are used to solve the timing and matching problems of cash flows, so would not expect accruals to have any permanence, whereas cash flows are related to economic activity. Therefore, cash flows are expected to be more persistent about $Earnings_{t+1}$ than accruals. If accruals are more informative, it is probably due to earnings management (an overestimate of sales in one period needs to be corrected in the next).

Further, the bigger size of coefficients on accruals and cash flows, the greater persistence in earnings.

Sloan (1996) also expects the accruals component and cash flows component do not have much difference. In order to compare these two components, following Givoly et al (2010), we use an F-test to test the equality of these coefficients (that is, testing whether $\beta_1 = \beta_2$).

According to Givoly et al (2010), this model is subject to endogeneity, because cash flows and accruals are correlated, which may affect the overall results. In order to mitigate the effects of endogeneity, we use two-stage procedure following Heckman (1979): We firstly taking size (measured as total assets), growth in sales, leverage (Total Debt/Total Assets), profitability (Earnings/Total assets), and

operating cycle as predictors of $E_{i,t+1}$ in a PROBIT model. Secondly, the estimates of PROBIT model are used to compute the inverse Mill ratio for each sample; this ratio (LAMBDA) is included in the regression as control variable to capture the effects of unobserved factors. Therefore, there are two sets of results, first set is the result without controlling endogeneity, and second set is the result after controlling the effect of endogeneity.

In order to be consistent and comparable with the test of conservatism that captures the relationship between accruals and cash flows when cash flows are negative, we further divide the sample into positive cash flows group and negative cash flows group. Givoly et al (2010) also test earnings quality by the same measure (earnings persistence), but this paper does not provide clear interpretation between positive and negative cash flows. Hope, Thomas and Vyas (2013) test earnings persistence based on the conditional conservatism when changes in earnings are negative. When changes in earnings are negative, conservatism kicks in, resulting earnings to be less persistent than those changes in earnings are positive. This suggests that when cash flows are negative, conditional conservatism will result earnings to be less persistent than that of positive cash flows.

For the definition of leverage, we only use total liabilities divided by total assets at end of year, because from previous finding, different measures of leverage do not give much different results. The differences in results are driven by outliers (different levels of winsorizing), hence in this section of test, we winsorize medium and small companies' sample at 95% level (consistent with previous chapter) to control the influence of the outliers. This means that, for each group of companies (i.e. medium companies and small companies) will have four groups of results, positive cash flows with high leverage, positive cash flows with low leverage, negative cash flows with high leverage and negative cash flows with low leverage.

5.6.3 Result from Earnings Persistence

Table 5.4 and Table 5.6 below present the results from following regression model which test the accrual persistence for medium and small companies.

$$E_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \beta_2 ACC_{i,t}$$

In this section of test, consistent with previous tests, we winsorize medium and small companies' sample at 95% level to control the influence of the outliers. Each group of companies (i.e. medium companies and small companies) has two sets of results, which are result without control of endogeneity and result with control of endogeneity. Each set of result includes four groups, positive cash flows with high leverage, high cash flows with low leverage, negative cash flows with high leverage and negative cash flows with low leverage.

Descriptive Statistics

[Table 5.4 Here]

Table 5.4 presents the descriptive statistics of all variables in the measure of earnings persistence. There are differences in the variables of two samples of companies (medium and small companies). Typically, small companies are more profitable, have more cash flows and higher accruals. Notably, earnings and cash flows in small companies have higher variation than medium companies. However, the variation of accruals in small companies is much smaller than that in medium companies.

TABLE 5.4: Descriptive Statistics for Variables in Testing Earnings Persistence

Variables	Medium Companies			Small Companies		
	E_{t+1}	CFO_t	ACC_t	E_{t+1}	CFO_t	ACC_t
No. of observations	35,587	35,587	35,587	8,272	8,272	8,272
Mean	0.27	0.07	-0.14	2.54	1.34	-0.03
Std Deviation	21.01	49.47	14.71	128.30	111.40	0.82
Min	-302.00	-5,785.00	-2,769.00	-1,458.00	-1,288.00	-21.56
1st Percentile	-0.50	-0.72	-0.71	-0.85	-1.81	-0.89
5th Percentile	-0.14	-0.20	-0.30	-0.21	-0.45	-0.41
25th Percentile	0.00	0.00	-0.11	0.01	-0.01	-0.11
Median	0.03	0.07	-0.03	0.09	0.10	-0.01
75th Percentile	0.09	0.16	0.00	0.28	0.28	0.04
95th Percentile	0.28	0.40	0.15	1.49	0.95	0.32
99th Percentile	0.85	0.86	0.43	6.91	2.67	0.70
Max	3,500.00	7,075.00	51.45	11,038.00	10,000.00	53.00

*, **, *** represents significant at the 0.10, 0.05 and 0.01 levels, respectively.

This table presents the summary statistics for variables used in regression of earnings persistence for medium companies and small companies.

Variable Definitions: *Dependent Variables*: $E_{i,t+1}$ = earnings after extraordinary items in period t+1 for firm i, standardised by lagged assets.

Independent Variables: $CFO_{i,t}$ = Cash flows from Operation in period t for firm i, standardized by lagged assets. It is defined as earnings after extraordinary items in period t + Depreciation – Changes in Working Capital. $ACC_{i,t}$ = Accruals in year t, standardised by beginning total assets, defined as earnings after extraordinary items minus cash flows from operations in period t for firm i, standardised by lagged assets.

Medium companies are those have turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees, following with UK GAAP. Small companies are those have turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees, following with FRESSE.

Result for Medium Companies

[Table 5.5 and 5.6 Here]

Overall, β_1 and β_2 in two sets of results (Table 5.5 and 5.6) for medium companies are positive and statistically significant. Table 5.5 shows the results without control of endogeneity. Table 5.6 presents the results with consideration of endogeneity. The inverse mill ratio (LAMBDA) is significant positive (0.053) in medium companies high leverage group when cash flows are positive, suggesting the appropriateness of controlling for endogeneity in medium high leverage companies with positive cash flows. Positive LAMBDA indicates that the unobserved factors are positively associated with earnings, implying the unobserved economic factors boost medium companies' earnings in high leverage group when cash flows are positive.

As defined in earlier sections, under the assumption of Sloan (1996), β_1 is expected to be larger than β_2 , based on Sloan (1996), implying cash flows component should be more persistent than accruals component. Accruals are used to solve the timing and matching problems of cash flows, so would not expect accruals to have any permanence, whereas cash flows are related to economic activity. Further, the bigger size of coefficient on accruals and cash flows, the greater persistence in earnings. In order to compare the earnings quality between companies in high leverage group and companies in low leverage group, we compare coefficient β_1 and β_2 across groups as well as within groups. If companies' earnings are more persistent, β_1 should be larger than β_2 , and the difference of β_1 and β_2 should be small. If companies' earnings in high leverage group are more persistent than low leverage group, both β_1 and β_2 in high leverage should be larger than β_1 and β_2 in low leverage group.

When comparing medium companies in high leverage group and low leverage group, β_2 is smaller than β_1 in both high and low leverage groups in Panel A (positive cash flows) from Table 5.5 and Table 5.6. Further, the differences of β_1 and β_2 between high and low leverage group are quite similar. Hence, earnings are generally persistent when cash flows are positive, and persistence in high leverage and low leverage is quite similar. This suggests, under the effects debt-holders on

accounting quality, there is not much difference in accounting quality between high and low leverage group for medium companies.

However, when cash flows are negative (showing in Panel B) from Table 5.5 and Table 5.6, β_1 and β_2 are both significant, and β_2 is larger than β_1 . Especially in low leverage groups when cash flows are negative, accruals component is more informative about future earnings in low leverage group than high leverage group for medium companies. Further, β_1 and β_2 in low leverage group is larger than in high leverage group, suggesting earnings in low leverage group are more persistent in high leverage group.

Medium companies have smaller β_2 for positive cash flows (showing in Panel A) and larger β_2 presenting in negative cash flows (showing in Panel B) from both Table 5.5 and 5.6 when comparing β_2 with β_1 . This suggests that accruals component in negative cash flow are more informative about future earnings than that of cash flows component.

Furthermore, the coefficients on β_1 and β_2 are smaller when cash flows are negative comparing than cash flows are positive. This suggests that earnings are less persistent when cash flows are negative.

When cash flows are positive, there is not much difference in persistence. When cash flows are negative, earnings are more persistent and accruals are more informative about future earnings in low leverage group than that in high leverage group. From the results for medium companies, the demand effects of debt-holders on their quality of accounting information are not strong.

Result for Small Companies

[Table 5.5 and 5.6 Here]

Overall, β_1 and β_2 in two sets of results (Table 5.5 and 5.6) for small companies are statistically significant when cash flows are positive (Panel A). Panel B presents insignificant accruals component (-0.005, -0.0971) in high leverage group from Table 5.5 and Table 5.6. Table 5.5 shows the results without control of endogeneity. Table 5.6 presents the results with consideration of endogeneity. The inverse mill ratio (LAMBDA) is significantly negative (-0.1074, -0.054) in small companies when cash flows are negative, suggesting the appropriateness of controlling for endogeneity in small companies with negative cash flows. Negative LAMBDA indicates that the unobserved factors are negatively associated with earnings, implying the unobserved factors have negative effects on companies' earnings in when cash flows are negative. This could capture the effect of depreciation.

From the results for small companies in Table 5.5 and Table 5.6, β_1 and β_2 are statistically significant when cash flows are positive for small companies. β_1 is negative and statistically significant in high leverage group when cash flows are negative. β_2 is statistically significant in low leverage group but not significant in high leverage when cash flows are negative. In general, β_2 is smaller than β_1 when cash flows are positive, which is consistent with the assumption that cash flows component should be more persistent than accruals component. However, β_2 is greater than β_1 when cash flows are negative. This suggests that accruals are more informative about future earnings when cash flows are negative.

β_2 is smaller than β_1 in both high and low leverage groups in Panel A from Table 5.5 and Table 5.6, implying that cash flows component are more persistent than accruals component. Accruals in high leverage (0.876) and low leverage (0.851) groups from Panel A are not very different, suggesting that the effects of debt-holders are not strong in this test for small companies. In Panel B, β_2 is larger than β_1 in both leverage groups, but β_2 in high leverage is not significant. This implies that accruals are more informative about future earnings in low leverage group when cash flows are negative. However, accruals and cash flows component in low

leverage group (0.535, 0.104) are more persistent than in high leverage group (-0.0971, -0.041) when cash flows are negative.

Furthermore, the coefficients on β_1 and β_2 are smaller when cash flows are negative. This suggests that small companies are less persistent with negative cash flows than with positive cash flows.

When cash flows are positive, persistence between high leverage and low leverage is not so different. When cash flows are negative, high leverage group has less persistence of earnings than low leverage group. This suggests that demand effects from debt-holders are not strong in this test for small companies.

TABLE 5.5: Result of Earnings Persistence Without Control of Endogeneity

$$E_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \beta_2 ACC_{i,t}$$

	Medium Companies				Small Companies			
Panel A:	Positive Cash Flows				Positive Cash Flows			
	High Leverage group		Low Leverage group		High Leverage group		Low Leverage group	
	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics
Intercept (β_0)	0.007***	5.76	0.016***	13.32	0.019*	2.20	0.007	1.23
$CFO_{i,t}(\beta_1)$	0.542***	55.77	0.528***	65.46	1.231***	53.09	1.128***	63.83
$ACC_{i,t}(\beta_2)$	0.369***	49.03	0.348***	42.43	0.874***	28.96	0.923***	29.29
R-square	20.50%		23.40%		51.30%		55.60%	
No. of Observations	13054		14077		2728		3313	
Statistical Test:								
F-test: ($\beta_1 = \beta_2$)	557.24***		594.98***		145.55***		44.71***	
Panel B:	Negative Cash Flows				Negative Cash Flows			
	High Leverage group		Low Leverage group		High Leverage group		Low Leverage group	
	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics
Intercept (β_0)	0.005	1.77	0.008**	3.04	0.061	2.74	0.043***	3.52
$CFO_{i,t}(\beta_1)$	0.160***	14.17	0.184***	13.78	-0.096***	-2.93	0.159**	2.66
$ACC_{i,t}(\beta_2)$	0.284***	17.19	0.430***	18.56	-0.005	-0.07	0.471***	6.95

(Continued on next page)

TABLE 5.5 (Continued)

R-square	8.90%	11.70%	24.2%	14.60%
No. of Observations	4926	3501	1463	741
Statistical Test:				
F-test: ($\beta_1 = \beta_2$)	39.41***	98.40***	12.26***	94.83***

*, **, *** represents significant at the 0.10, 0.05 and 0.01 levels, respectively.

This table presents the results from regression of earnings persistence for medium and small companies. The sample in this table is being wisorized at 95% level.

Panel A of this table presents results from regression of earnings persistence based on high and low leverage of medium and small companies with positive cash flows.

Panel B of this presents results from regression of earnings persistence based on high and low leverage of medium and small companies with negative cash flows.

Variable Definitions: *Dependent Variables*: $E_{i,t+1}$ = earnings after extraordinary items in period t+1 for firm i, standardised by lagged assets.

Independent Variables: $CFO_{i,t}$ = Cash flows from Operation in period t for firm i, standardised by lagged assets. It is defined as earnings after extraordinary items in period t + Depreciation – Changes in Working Capital. $ACC_{i,t}$ = Accruals in year t, standardised by beginning total assets, defined as earnings after extraordinary items minus cash flows from operations in period t for firm i, standardised by lagged assets.

F-test is used to test the equality of coefficients on $CFO_{i,t}$ (β_1) and $ACC_{i,t}$ (β_2), the hypothesis is that β_1 and β_2 are equal

TABLE 5.6: Result of Earnings Persistence With Control of Endogeneity

$$E_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \beta_2 ACC_{i,t}$$

	Medium Companies				Small Companies			
Panel A:	Positive Cash Flows				Positive Cash Flows			
	High Leverage group		Low Leverage group		High Leverage group		Low Leverage group	
	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics
Intercept (β_0)	0.013***	-4.30	0.014	1.92	0.030**	3.05	0.030***	3.98
$CFO_{i,t}(\beta_1)$	0.540***	44.52	0.572***	55.10	1.219***	50.32	1.069***	51.55
$ACC_{i,t}(\beta_2)$	0.367***	40.05	0.378***	36.80	0.876***	28.59	0.851***	24.14
LAMBDA	0.053***	6.81	0.001	-0.04	-0.035***	-4.25	-0.037***	-5.09
R-square	20.50%		23.40%		51.30%		55.60%	
No. of Observations	13054		14077		2728		3313	
Statistical Test:								
F-test: ($\beta_1 = \beta_2$)	404.79***		451.82***		135.18***		42.50***	

Panel B:	Negative Cash Flows				Negative Cash Flows			
	High Leverage group		Low Leverage group		High Leverage group		Low Leverage group	
	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics	Coefficient	<i>t</i> -statistics
Intercept (β_0)	0.024	0.90	0.011	0.65	0.458***	6.75	0.0678**	2.71
$CFO_{i,t}(\beta_1)$	0.193***	12.92	0.217***	12.77	-0.041**	-2.53	0.104*	2.28

(Continued on next page)

TABLE 5.6 (Continued)

$ACC_{i,t} (\beta_2)$	0.282***	13.79	0.485***	17.95	-0.0971	-0.62	0.535***	6.65
LAMBDA	-0.051	-0.89	-0.006	-0.17	-1.074***	-4.02	-0.054*	-2.23
R-square	18.90%		11.70%		11.65%		5.58%	
No. of Observations	4926		3501		1463		741	
Statistical Test:								
F-test: ($\beta_1 = \beta_2$)	12.37***		87.85***		4.82**		29.99***	

*, **, *** represents significant at the 0.10, 0.05 and 0.01 levels, respectively

This table presents the results from regression of earnings persistence for medium and small companies. The sample in this table is being wisorized at 95% level.

Panel A of this table presents results from regression of earnings persistence based on high and low leverage of medium and small companies with positive cash flows.

Panel B of this presents results from regression of earnings persistence based on high and low leverage of medium and small companies with negative cash flows.

Variable Definitions: *Dependent Variables:* $E_{i,t+1}$ = earnings after extraordinary items in period t+1 for firm i, standardised by lagged assets.

Independent Variables: $CFO_{i,t}$ = Cash flows from Operation in period t for firm i, standardised by lagged assets. It is defined as earnings after extraordinary items in period t + Depreciation – Changes in Working Capital. $ACC_{i,t}$ = Accruals in year t, standardised by beginning total assets, defined as earnings after extraordinary items minus cash flows from operations in period t for firm i, standardised by lagged assets.

F-test is used to test the equality of coefficients on $CFO_{i,t} (\beta_1)$ and $ACC_{i,t} (\beta_2)$, the hypothesis is that β_1 and β_2 are equal.

In order to mitigate the effects of endogeneity, we use two-stage procedure following Heckman (1979): we firstly taking size (measured s total assets), growth in sales, leverage (Total Debt/Total Assets), profitability (Earnings/Total Assets), and operating cycle as predictors of E predictors of companies choice in a PROBIT model. Secondly, the estimates of PROBIT model are used to compute the inverse Mill ratio for each sample; this ratio (LAMBDA) is included in the regression as control variable to capture the effects of unobserved factors.

Comparison between Medium and Small Companies

When cash flows are positive, small companies have larger cash flows and accruals components (1.219 and 0.876 for high leverage; 1.069 and 0.851 for low leverage) than medium companies (0.0540 and 0.367 for high leverage; 0.572 and 0.378 for low leverage). This suggests that small companies have more persistent earnings than medium companies. Furthermore, the difference between β_1 and β_2 is significantly larger in medium companies than in small companies. These imply that earnings are more persistent in small companies than that in medium companies when cash flows are positive. However, there is not much difference between high leverage and low leverage, suggesting effects of debt-holders are not strong when cash flows are positive.

When cash flows are negative, the results are quite mixed. In high leverage group, medium companies have more persistence in cash flows and accruals (0.193 and 0.282) than small companies (-0.452 and -0.0971). In low leverage group, medium companies have better cash flows than small companies (0.217 vs. 0.104), whereas small companies have better accruals than medium companies (0.485 vs. 0.535). Generally, when cash flows are negative, medium companies have better persistence than small companies. However, high-leverage companies are associated with less persistence in earnings than low-leverage companies. This implies that demand effects of debt-holders are not strong as high-leverage companies present lower earnings persistence.

Furthermore, R-square in small companies is larger than that in medium companies, implying that higher percentage of future earnings ($E_{i,t+1}$) is explained by current year's cash flows and accruals ($CFO_{i,t}$ and $ACC_{i,t}$) in small companies than in medium companies.

Therefore, in this test, result is mixed. When cash flows are positive, small companies have better persistence in cash flows and accruals, but no difference between high leverage and low leverage. When cash flows are negative, medium companies seem to have better persistence of earnings in high leverage. But high-leverage companies have less persistence in earnings than low-leverage companies. The effects of debt-holders on accounting quality is not strong as high leverage groups do not have better accounting quality than low leverage groups.

Key Findings from Table 5.5 and Table 5.6:

1. Generally, the effects and controls of debt-holders on accounting quality are not strong for both medium and small companies, as high-leverage companies do not have better accounting quality than low-leverage companies.
2. Lower earnings persistence is associated more with negative cash flows rather than positive cash flows.
3. When cash flows are positive, small companies are more persistent than medium companies.
4. When cash flows are negative, medium companies seem to have better persistence of earnings than small companies. As medium-high-leverage companies have better persistence of earnings than small-high-leverage companies. In low leverage group, the earnings persistence in medium and small companies is not so different.

5.7 Discussion of Two Tests

Link between two tests (conservatism and persistence)

According to Ball and Shivakumar (B&S throughout) (2005), when cash flows are negative, accruals will not compensate too much on the cash flows, instead, accruals are used to recognise current and future losses. This suggests less negative relation between accruals and cash flows (positive α_3). Our results show that only medium-high-leverage companies have B&S effects (as predicted a less negative relation when $CFO < 0$), but the others medium-low-leverage, small-high-leverage, and especially small-low-leverage have even more negative correlation between accruals and cash flows when cash flows are negative. These three classes of companies seem to use accruals compensate even more when cash flows are negative, that is not recognising current and future problems.

Do results of persistence test give any support to the assumption of Ball and Shivakumar (2005)? Walker (2013) suggests that if managers have access to more timely information about future free cash flows than external investors, they may be able to communicate some of this information via their accruals choices. Based on the assumption of B&S, when cash flows tend to be negative, accruals are used to recognise current and future losses so as to give a less contemporaneous negative correlation between accruals and cash flows. When all the losses are recognized at current period (t), the E_{t+1} will be improved (i.e. purged of the negative cash flows), so if the assumption of B&S holds, this implies that ACC_t and E_{t+1} may have negative correlation. When accruals are used to recognize current and future losses, if the assumption of B&S holds, this implies that ACC_t should be more informative about E_{t+1} .

Therefore, if the assumption of B&S is correct, we should expect medium-high-leverage have more informative accruals about future earnings or more negative accruals in earnings than medium-low-leverage, small-high-leverage and small-low-leverage companies. However, from the results of persistence test, when cash flows are negative, medium-high-leverage firms are not more persistent than other groups of companies. Instead, medium-low-leverage and small-low-leverage have more informative accruals about future earnings than medium-high-leverage companies. There does not seem to be much support of interpretation of B&S.

Furthermore, if B&S is correct, accruals are used to recognise future losses when cash flows are negative, then accruals with negative cash flows should be as informative as accruals with positive cash flows. That means earnings in medium-high-leverage companies with negative cash flows should be as persistent as medium-high-leverage companies with positive cash flows. However, results do not support this interpretation of B&S, as earnings in medium-high-leverage companies with negative cash flows are less persistent than in medium-high-leverage companies with positive cash flows.

Therefore, the conflict between conservatism (B&S) and persistence might be due to a few reasons.

- For example, the conservatism test from B&S is imprecise as there are other reasons that accruals may rise when cash flows are negative. As discussed earlier in the comments of B&S test, companies may have provided for future losses earlier, not waiting until cash flows to be negative but when cash flows are declining. The effects of working capital (situation 2 in the comments of B&S) may dominate the effects of accruals of recognising current and future losses (situation 1 in the comments of B&S), so as to give an even more negative contemporaneous correlation between accruals and cash flows when cash flows are negative.
- On the other hand, the conflict could be due to the limitation of persistence test that only deals with next year's earnings and not further into the future.

5.8 Conclusion

Results from previous chapter suggest that accounting regulations do not ensure equalised accounting quality across different groups of companies. Therefore, in this chapter we examine the effects of debt-holders on accounting quality for medium-sized and small companies. The purpose of this is to analyse whether debt-holders discipline accounting quality despite that accounting standards encounter variations in accounting quality across different classes of firms.

We measure accounting quality by earnings conservatism based on Ball and Shivakumar (2005) and earnings persistence based on Givoly et al (2010). Based on the assumption of Ball and Shivakumar (2005), we find that high-leverage companies report more conservatively than low-leverage companies. Specifically, only medium companies with high leverage conform to the assumption of Ball and Shivakumar (2005), while other groups (medium-low-leverage, small-high-leverage and small-low-leverage groups) of companies do not satisfy the underlying assumption. The effect of debt-holders on accounting quality is strong as firms with more debt-holders (high leverage) have stronger discipline on accounting quality. Variation exists in accounting quality between medium and small companies.

From the earnings persistence test, we find that small companies have better persistence in cash flows and accruals than medium companies, but no difference between high leverage and low leverage when cash flows are positive. When cash flows are negative, medium companies seem to have better persistence in cash flows and accruals, and high-leverage companies have less persistence in earnings than low-leverage companies. The demand and control effects of debt-holders on accounting quality is not strong, as high leverage groups do not have better accounting quality than low leverage groups. Furthermore, there is variation in accounting quality between medium and small companies.

However, the persistence test does not support the conservatism test. Ball and Shivakumar (2005) expect accruals to recognise current and future losses to correspond to the future bad news, otherwise, accruals are not performing their conservative roles (not anticipating future losses). In contrast, the results of the earnings persistence test do not support the assumption of Ball and Shivakumar (2005).

If the assumption of Ball and Shivakumar (2005) holds, the persistence test should have shed some light on the results. Hence, the conflicting results may suggest that conservatism test from Ball and Shivakumar (2005) is imprecise. There are other reasons that accruals may rise when cash flows are negative. Companies may have provided for future losses earlier, not waiting until cash flows to be negative but when cash flows are declining. The effects of working capital may dominate the effects of accruals of recognising current and future losses. On the other hand, the conflict may be due to the limitation of persistence test that only deals with next year's earnings and not further into the future.

Generally, results from both tests suggest that effects of debt-holders disciplining accounting quality for medium and small companies are not strong. This suggests that medium and small companies need accounting standards to discipline the accounting quality. This is consistent with the findings of Ball and Shivakumar (2005), who suggest that accounting standards are mainly for private companies as public companies are well disciplined by the market.

General Conclusion

Currently, different sizes of firms in the UK are following different sets of accounting standards and different auditing standards. There are different regulations for three groups: public companies; medium sized private companies; and small private companies. Under the process of developing accounting regulations, regulators have not made clear what they expect in terms of accounting quality. Do they expect variation of accounting quality across different sizes of firms? Or do they expect equally accounting quality across different sizes of firms?

Due to the lack of expectation from IASB and UK ASB on accounting quality across different tiers of companies and the IFRS for SMEs are not yet adopted in the UK, the main objective of this PhD thesis is to compare accounting quality across existing boundaries, that is we compare the accounting quality between companies which are subject to IFRS, UK GAAP, and FRSSE. The purpose of this is to inform discussion about the suitability of existing boundaries between groups (public listed, medium-sized and small companies). We propose no formal criteria on the desired differences between each group of companies.

The comparisons of accounting quality across different tiers of companies are based on two disciplines – the discipline from legal forces (accounting standards) and discipline from market (debt-holders). The purpose of this is to examine whether there is variation in accounting quality under these two types of discipline for each group of companies.

In Chapter 3 and Chapter 4, we analyse whether the discipline of regulation results any variations in accounting quality across different classes of companies under differential reporting framework. We measure accounting quality by ratio of cash flows to earnings, earnings smoothing and distribution of small profit and small loss. We find that financial reporting behaviour of medium sized entities is significantly different from public and small companies. Public companies are closely regulated and small companies have little opportunities to manage earnings. Medium companies are small enough to have possible exemption from regulations but big enough to have opportunities to manage earnings. This suggests the regulation on medium companies may need to be strengthened.

In Chapter 5, we examine whether debt-holders discipline accounting quality despite accounting regulations encounter variation in accounting quality across different sizes of companies. We measure accounting quality by earnings conservatism and earnings persistence, which are widely used in accounting research.

Based on the assumption of Ball and Shivakumar (2005), we find that debt-holders discipline companies to report more conservatively for medium companies when the leverage is very high or very low. Based on the assumption of Givoly et al (2010), we find that discipline of debt-holders is not strong in earnings persistence test, that low-leverage companies report more persistent earnings than high-leverage companies. Small companies have better persistent earnings than medium companies when cash flows are positive. When cash flows are negative, medium companies have better persistence than small companies.

Generally, high-leverage companies do not have better accounting quality than low-leverage companies. Further, medium companies have different financial reporting quality than small companies. Therefore, the demand and control effects of debt-holders on accounting quality are not strong in both medium and small companies. This suggests that medium and small companies accounting standards to discipline their accounting quality. This is consistent with the findings of Ball and Shivakumar (2005), who suggest that accounting standards are mainly for private companies as public companies are well disciplined by the market.

Overall, accounting quality of public companies is disciplined by accounting regulations, equity market, and debt market. Accounting quality of private companies should be disciplined by accounting regulations and debt-holders. However, our results suggest that it is up to regulations to discipline accounting quality for medium and small companies because debt-holders do not have strong disciplining effects on their accounting quality. Furthermore, our results show that under the discipline of accounting regulations, medium companies have the most varied earnings and more incentives to manage earnings. Therefore, the regulations for private companies need to be further strengthened.

In the mean time, we raise a few issues concerning the interpretation of the accounting quality measurements in regards of earnings conservatism and earnings persistence. The conservatism test from Ball and Shivakumar (2005) is imprecise as

there are other reasons that accruals may rise when cash flows are negative. Companies may have provided for future losses earlier, not waiting until cash flows to be negative but when cash flows are declining. The effects of working capital may dominate the effects of accruals of recognising current and future losses. The empirical support for this discussion is provided in appendix. On the other hand, the conflict could be due to the limitation of persistence test that only deals with next year's earnings and not further into the future.

Limitation of the studies

The sample collected from the database of FAME for small companies may not represent the whole population of small companies in the UK. Due to limited accounting information of small companies available in the public, we can only examine those small companies that file balance sheet and income statement. However, the main objective of this study is to analyse the effects of differential accounting standards on accounting quality for different groups of companies. The results of small companies could provide preliminary evidence for further research in effects of accounting standards on accounting quality.

Appendix

This appendix provides the empirical proof of contemporaneous correlation between accruals and cash flows based on Dechow, Kothari and Watts (1998). The purpose of this is to raise a few issues concerning the interpretation of the accounting quality measurements (earnings conservatism) and provides theoretical and empirical support for the discussion.

Assumption from Dechow et al (1998)

Dechow et al (1998) develop the model of earnings, cash flows and accruals, assuming a random walk sales process, variable and fixed costs, and that the only accruals are accounts receivable and payable, and inventory. They predict the negative correlation between changes in accruals and changes in cash flows.

Model and Assumption of Ball and Shivakumar (2005) (B&S throughout)

B&S (2005) proposed the model based on the prediction of Dechow et al (1998) accruals and cash flows have negative correlation. The role of accruals is to compensate the timing and matching problems of cash flows. Furthermore, when there is economic loss, accruals are expected to recognise the losses in a timely manner. The asymmetry arises because economic losses are more likely to be recognized on a timely basis, as unrealized (i.e., non-cash) accrued charges against income. Economic gains are more likely to be recognized when realized, and hence accounted for on a cash basis. This asymmetry implies that the positive correlation between cash flows and accruals arising from the timely recognition is greater in the case of losses (Ball and Shivakumar, 2005).

The model is as follows:

$$ACC_t = \alpha_0 + \alpha_1 DCFO + \alpha_2 CFO_t + \alpha_3 DCFO \times CFO_t$$

where

ACC_t = Accruals in year t, standardised by beginning total assets, defined as earnings after extraordinary items minus cash flows from operations in period t.

$DCFO$ = Dummy variable, taking 1 when CFO_t is negative, 0 otherwise

CFO_t = Cash flows from operations in year t, standardised by beginning total assets, defined as earnings after extraordinary items in period t + Depreciation – Changes in Working Capital

They predict a negative coefficient for cash flows α_2 as in Dechow et al. (1998). B&S (2005) make the point that when cash flows are negative, accruals do not compensate so much since the losses are impounded, instead, accruals are expected to recognise current and future losses in the accounts. This suggests that the relation between cash flows and accruals is less negative when cash flows are negative. Therefore, α_3 is expected to be incremental positive.

Empirical Proof of contemporaneous relation between accruals and cash flows

Situations may arise when cash flows are negative

Generally there is a negative relation between ACC and CFO as predicted in Dechow et al (1998). This is because ACC is compensating for CFO. For example, when stock is purchased and paid for, CFO goes down but stock goes up.

When CFO is negative, there will be two situations going on:

1. B&S's idea is that when $CFO < 0$ then the company is in trouble and ACC does not compensate for this sort of cash flow; and indeed the company may make provisions in ACC for future losses (e.g. a write down of stock value). This means that ACC and CFO have a *less negative* relation when $CFO < 0$ (i.e. for a unit decline in CFO, ACC does not compensate so much).
2. When $CFO < 0$ the company is not doing well and stock builds up, i.e. Δ Stock rises. When $CFO < 0$ the company may find it difficult to get working capital finance (debts are more difficult to collect and suppliers less willing to give credit for so long). So $[\Delta$ Debtors - Δ Creditors] may also rise. (Working Capital Effect)

The provisions in ACC for future losses may have been made by the company *prior to* $CFO < 0$. This may mean that items under situation (1) above may dominate. Obviously, when $CFO < 0$, then both the B&S effect and the increase in working

capital effect may take effect. The B&S test assumes that their effect is larger than the working capital effect. But if the provision has been made earlier, then this may not be the case.

The relation between accruals and cash flows

$$ACC_t = \beta_0 + \beta_1 CFO_t$$

The model of B&S is based on the assumption of slope (β_1) in the above equation. β_1 is generally expected to be negative, and less negative when cash flows are negative. Since the B&S effect is about the slope of the line between accruals and cash flows (see equation below), not the goodness of fit. We can see the situation 2 above more formally.

The slope is $\beta_1 = Covariance(ACC, CFO) / \sigma_{CFO}^2$.

Assuming a random walk sales process, variable and fixed costs, and that the only accruals are accounts receivable and payable, and inventory, hence, we have variables defined according to the definitions from Dechow et al (1998):

$$\text{Sales} = S_t = S_{t-1} + \varepsilon_t \text{ (equation 1, pg136)}$$

Expected long term operating cash cycle, expressed as a fraction of a year = δ (top of pg138)

$$\text{Accruals} = A_t = \delta \varepsilon_t \text{ (equation 14 and 15, pg141)}$$

$$\text{Net profit margin} = \pi$$

$$\text{Earnings} = E_t = \pi \cdot S_t \text{ (middle pg136)}$$

$$\text{CFO} = \pi S_t - \delta \varepsilon_t \text{ (equation 8, pg138)}$$

$$\begin{aligned} Covariance(ACC, CFO) &= E\{[ACC - E(ACC)]. [CF - E(CFO)]\} \\ &= E\{[\delta \varepsilon_t - E(\delta \varepsilon_t)]. [CFO - E(CFO)]\} \\ &= E\{[\delta \varepsilon_t - E(\delta \varepsilon_t)]. [(\pi S_t - \delta \varepsilon_t) - E(\pi S_t - \delta \varepsilon_t)]\} \end{aligned}$$

Since ε_t is a random error term, its expectation is 0, $E(\varepsilon_t) = 0$, and δ is a constant, then above equation can write as:

$$= E\{[\delta \varepsilon_t]. [(\pi S_t - \delta \varepsilon_t) - E(\pi S_t)]\}$$

$$\begin{aligned}
&= E\{\delta\varepsilon_t \cdot \pi S_t - \delta^2 \varepsilon_t^2 - \delta\varepsilon_t \cdot E(\pi S_t)\} \\
&= E\{\delta\varepsilon_t \cdot \pi S_t - \delta^2 \varepsilon_t^2 - \delta\varepsilon_t \cdot (\pi S_{t-1})\} \text{ (from equation 1, since } E(\varepsilon_t)=0) \\
&= E\{\delta\varepsilon_t \cdot \pi(S_t - S_{t-1}) - \delta^2 \varepsilon_t^2\} \\
&= E\{\delta\varepsilon_t \cdot \pi(\varepsilon_t) - \delta^2 \varepsilon_t^2\} \text{ (from equation 1)} \\
&= E\{\delta\varepsilon_t^2 \cdot \pi - \delta^2 \varepsilon_t^2\} \\
&= E\{\delta\varepsilon_t^2 \cdot (\pi - \delta)\} \\
&= \sigma_\varepsilon^2 \cdot \delta \cdot (\pi - \delta), \text{ (since } E\{\varepsilon_t^2\} = \sigma_\varepsilon^2 = \text{the variance of the random term } \varepsilon_t).
\end{aligned}$$

Therefore:

$$Covariance(ACC, CFO) = \sigma_\varepsilon^2 \cdot \delta \cdot (\pi - \delta)$$

Since $\beta_1 = Covariance(ACC, CFO) / \sigma_{CFO}^2$, so the same arguments apply:

$$\begin{aligned}
\sigma_{CFO}^2 &= E\{CFO\} - E(CFO)\}^2 \text{ (this is always positive)} \\
&= E\{(\pi S_t - \delta\varepsilon_t) - E(\pi S_t - \delta\varepsilon_t)\}^2 \\
&= E\{(\pi S_t - \delta\varepsilon_t) - \pi E(S_t)\}^2 \text{ (since } E(\varepsilon_t)=0) \\
&= E\{(\pi S_t - \delta\varepsilon_t) - \pi(S_{t-1} + \varepsilon_t)\}^2 \text{ (from equation 1)} \\
&= E\{\pi S_t - \delta\varepsilon_t - \pi \cdot S_{t-1} - \pi \cdot \varepsilon_t\}^2 \\
&= E\{\pi S_t - \pi \cdot S_{t-1} - \delta\varepsilon_t - \pi \cdot \varepsilon_t\}^2 \\
&= E\{\pi(S_t - S_{t-1}) - \delta\varepsilon_t - \pi \cdot \varepsilon_t\}^2 \\
&= E\{\pi \cdot \varepsilon_t - \delta\varepsilon_t - \pi \cdot \varepsilon_t\}^2 = E\{-\delta\varepsilon_t\}^2 = \delta^2 \cdot \sigma_\varepsilon^2
\end{aligned}$$

$$\text{So the coefficient, } \beta_1 = \{\sigma_\varepsilon^2 \cdot \delta \cdot (\pi - \delta)\} / \delta^2 \cdot \sigma_\varepsilon^2 = (\pi - \delta) / \delta$$

In order for the coefficient to be negative, $\delta > \pi$, and as the length of the operating cycle gets longer δ increases, i.e. the coefficient gets more negative (although the increase in the denominator works against this, but see examples below). This is much the same argument as in situation 2 above.

Therefore, what we find that the relation between ACC and CFO gets *more negative* when $CFO < 0$ is explained by the empirical proof for situation 2.

References

- Accounting Standards Board (ASB) (1999) “Statement of Principles for Financial Reporting,” December, London: Accounting Standards Board
- Accounting Standards Board (ASB). (2007). “*Background to FRSSE*”. Available at <http://www.asb.co.uk/asb/technical/frsse.cfm> [Accessed on 03 Dec 2012]
- Accounting Standards Board (ASB) (2012a) “Key Facts, FRED 46, 47 and 48”, Available at: [http://www.frc.org.uk/Our-Work/Publications/ASB/Revised-FRED-The-Future-of-Financial-Reporting-\(1\)/The-Key-Facts-FREDS-46,-47-and-48-\(January-2012\).aspx](http://www.frc.org.uk/Our-Work/Publications/ASB/Revised-FRED-The-Future-of-Financial-Reporting-(1)/The-Key-Facts-FREDS-46,-47-and-48-(January-2012).aspx) [Accessed on 01 March 2012]
- Anton (2011) “UK And US Accounting Standards” *Essay24.com*, Available at: <http://essays24.com/print/Uk-Us-Accounting-Standards/39312.html> (Accessed on July 27, 2012).
- ASB, (2012b) “*ASB issues revised proposals for the Future of Financial Reporting Standards in the UK & Republic of Ireland*,” Accounting Standards Board – Press Notices <http://www.frc.org.uk/News-and-Events/FRC-Press/Press/2012/January/ASB-issues-revised-proposals-for-the-Future-of-Fin.aspx> [Accessed on 20 Mach 2012]
- Alexander Schiebel, (2006) “To what extent would the proposed IFRS for SMEs be independent of the full IFRS system,” Working Paper, Vienna University
- Alexander Schiebel, (2008) “Is there a solid empirical foundation for the IASB’s draft IFRS for SMEs?” Working Paper, Vienna University
- Ali, A. and Hwang, L.-S. (2000) “Country-specific factors related to financial reporting and the value relevance of accounting data,” *Journal of Accounting Research*, 38 (1): 1-21
- Altamuro, J., Beatty, A., and Weber, J., (2005) “The effects of accelerated revenue recognition on earnings management and earnings informativeness: evidence from SEC Staff Accounting Bulletin No. 101.” *The Accounting Review* 80, 373–401
- Ashbaugh, H. “Non-U.S. Firms’ Accounting Standard Choices.” *Journal of Accounting and Public Policy*, 20 (2001): 129–53
- Ashbaugh, H., and M. Pincus, (2001) “Domestic accounting standards, international accounting standards, and the predictability of earnings,” *Journal of Accounting Research* 39 (3): 417-434
- Ball, Ray (2001), “Infrastructure Requirements for an Economically Efficient System of Public Financial Reporting and Disclosure,” *Brookings-Wharton Papers on Financial Services*, 2001, pp. 127-169

- Ball, R., S.P. Kothari, and A. Robin, (2000) “The effect of international institutional factors on properties of accounting earnings,” *Journal of Accounting and Economics* 29 (1):1-51
- Ball, R., Robin, A., & Sadka, G. (2008). “Is financial reporting shaped by equity markets or by debt markets? An international study of timeliness and conservatism.” *Review of Accounting Studies*, 13(2-3), 168-205
- Ball, R., Robin, A. and Wu, J. (2003) “Incentives versus standards: properties of accounting income in four East Asian countries,” *Journal of Accounting and Economics*, 36: 235-270
- Ball, R. and L. Shivakumar, (2005) “Earnings quality in UK private firms: comparative loss recognition timeliness,” *Journal of Accounting and Economics*, 39(1), page 83-128
- Ball, R. (2006) “IFRS: pros and cons for investor,” *Accounting & Business Research*, International Accounting Policy Forum: 5-27
- Barker, Patricia and Noonan, Colette (1996) “Small company compliance with accounting standards: the Irish situation”, DCU Business School Research Paper Series. (Paper No. 10). Dublin City University Business School, Ireland. ISSN: 1393-290X
- Barth, M., J. Elliott, and M. Finn (1999) “Market rewards associated with patterns of increasing earnings.” *Journal of Accounting Research* 37 (2): 387–413
- Barth, M., W. Landsman, M. Lang and C. Williams, (2007) “Accounting Quality: International Accounting Standards and US GAAP,” Working Paper, Stanford University and University of North Carolina
- Barth, M., Landsman W., and Lang, M., (2008) “International Accounting Standards and Accounting Quality,” *Journal of Accounting Research*, Vol. 46 page 467-498
- Bartov, E., D. Givoly, and C. Hayn (2002) “The rewards to meeting or beating earnings expectations.” *Journal of Accounting and Economics* 33 (2): 173–204
- Basu, S. (1997) “The conservatism principle and the asymmetric timeliness of earnings”, *Journal of Accounting & Economics*, 1997, 3-37
- Beatty, A., Ramesh, K., & Weber, J. (2002). “The importance of accounting changes in debt contracts: the cost of flexibility in covenant calculations.” *Journal of Accounting and Economics*, 33(2), 205-227.
- Beaver, W., McNichols, M., Nelson, K., (2007). “An alternative interpretation of the discontinuity in earnings distributions.” *Review of Accounting Studies* 12, 525–556
- Beaver, W., Landsman, W., Owens, E., (2008). Asymmetry in earnings timeliness and persistence: a simultaneous equations approach. *Review of Accounting Studies*

(Forthcoming)

Beatty, A., B. Ke, and K. Petroni. (2002) "Earnings management to avoid earnings declines across publicly and privately held banks." *The Accounting Review* 77 (3): 547-570

Beatty, A., Weber, J. and Yu, J.J., (2008). "Conservatism and debt." *Journal of Accounting and Economics*, 45 (2-3), 154-174

Beidleman, Carl R., (1973), "Income Smoothing: The Role of Management." *The Accounting Review*, Vol. 48 (4), page 653-667

Berle, A. A., & Means, G. G. C. (1932). *The modern corporation and private property*. Transaction Books. Distribution of ratio should put in front

Bertoni, M., and Rosa B., (2010) "The Evolution of Financial Reporting for Private Entities in European Union," University of Trento and University of Trieste

Bhattacharya, U., H. Daouk and M. Welker, (2003) "The World Price of Earnings Opacity," *The Accounting Review* 78(3), page 641-678

Bradshaw, M., S. Richardson, and R. Sloan (2001) "Do analysts and auditors understand information in accruals?" *Journal of Accounting Research* 39 (1): 45-74

Brown, P. and Tarca. A. (2005) "A Commentary on Issues Relating to the Enforcement of International Financial Reporting Standards in the EU," *European Accounting Review*, 14 (1): 181-212

Burgstahler, D. and I. Dichev, (1997) "Earnings management to avoid earnings decreases and losses," *Journal of Accounting and Economics* 24: 99-126

Burgstahler, D.C., Hail, L. and Leuz, C. (2006) "The importance of reporting incentives: earnings management in European private and public firms," *The Accounting Review*, 81(5): 983-1016

Business Accounting Basics (2012), "A brief accounting history - from 1494 to the present day," available at <http://www.businessaccountingbasics.co.uk/accounting-history.html> [Accessed on 10 Oct 2012]

Caraiani, C., Dascalu, C., and Lungu, C., (2007) "New Directions of Financial Reporting within Global Accounting Standards for Small and Medium-Sized Entities," Academy of Economic Studies, Bucharest

Caramanis, C. and Lennox, C., (2008) "Audit effort and earnings management." *Journal of Accounting and Economics* 45, 116-138

Carruthers, Bruce G. & Espeland, Wendy Nelson, *Accounting for Rationality: Double-Entry Bookkeeping and the Rhetoric of Economic Rationality*, *American Journal of Sociology*, Vol. 97, No. 1, July 1991, pp. 40-41, 44-46

Carsberg, B, V, Page, M, J, Sindall, A, J and Waring, I, D, (1985) "Small Company Financial Reporting," *Englewood Cliffs: Prentice-Hall International*

Chand, Parmod and White, Michael (2007) "Embracing International Financial Reporting Standards (IFRSs) and SME IFRSs: Implications for Emerging Economies" Available at: <http://www.afaanz.org/openconf/2007/papers/176.doc> [Accessed on 21 March 2011]

Chen, F., O. Hope, Q. Li, and X. Wang (2011) "Financial reporting quality and investment efficiency of private firms in emerging markets." *The Accounting Review*, 86(4), 1255-1288

Chen, H., Q. Tang, Y. Jiang, and Z. Lin, (2010) "The Role of International Financial Reporting Standards in Accounting Quality: Evidence from the European Union," *Journal of International Financial Management and Accounting* 21(3), pp. 221-278

Christensen, H., E. Lee and M. Walker, (2008) "Incentives or Standards: What Determines Accounting Quality Changes Around IFRS Adoption?" Working Paper, Manchester Accounting and Finance Group and Manchester Business School

Cole, V., and Breesch, D., (2008) "Are users of financial statements of publicly and non-publicly traded companies different or not?" An empirical study

Collins, D. W., S. P. Kothari, J. S., and R. Sloan, (1994), "Lack of timeliness and noise as explanations for the low contemporaneous return-earnings association." *Journal of Accounting and Economics* 18: 289-324

Collis, Jill (2010), "Audit Exemption and the Demand for Voluntary Audit: A Comparative Study of the UK and Denmark", *International Journal of Auditing*, Vol. 14, Issue 2, pp. 211-231

Collis, J and Jarvis, R, (2000) "How Owner-Managers use Accounts," *London: ICAEW*

Collis, Jill and Jarvis, Robin (2003), "International Financial Reporting Standards and Differential Reporting Standards: a UK case study", European Institute for Advanced Studies in Management (EIASM) Workshop on Implementing IFRS, 11-12 Sep 2003, Brussels, Belgium

Collis, J., Jarvis, R. and Skerratt, L., (2004) "The demand for the audit in small companies in the UK", *Accounting and Business Research*, 34, pp. 87-100

Day, R. (2000). *UK accounting regulation: An historical perspective*. Bournemouth University School of Finance and Law.

Deaconu, A., Irimie, P., Anuta, B., and Melinda, F., (2008) "Impact of Analysis of Future Accounting Regulation for SMEs in Europe"

Deaconu, A., Cristina, N., and Irimie, P., (2009) "Analysis of the Stakeholders' Needs and Their Inference Upon Financial Reports of SMEs"

- Dechow, P.M., (1994) “Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals,” *Journal of Accounting and Economics*, 18(1), pp. 3-42
- Dechow, P.M., R. Sloan and A. Sweeney, (1995) “Detecting Earnings Management,” *The Accounting Review* 70(2), pp. 193–226
- Dechow, P. M., R. G. Sloan, and A. P. Sweeney (1996) “Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC.” *Contemporary Accounting Research* 13 (1): 1–36
- Dechow, P.M., S.P. Kothari, and R. L. Watts (1998) “The relation between earnings and cash flows.” *Journal of Accounting and Economics* Vol. 25(1998) pp. 133-168
- Dechow, P.M. and I.D. Dichev, (2002) “The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors,” *The Accounting Review* 77, pp. 35–59
- Dechow, P.M., S.A. Richardson and I. Tuna, (2003) “Why are Earnings are Kinky? An Examination of the Earnings Management Explanation,” *Review of Accounting Studies* 8, pp. 355–384
- Dechow, P., W. Ge and C. Schrand, (2010) “Understanding earnings quality: A review of the proxies, their determinations and their consequences,” *Journal of Accounting and Economics*, 50 (2010), page 344-401
- DeFond, M. L., & J. Jiambalvo (1994). “Debt covenant violation and abnormal accruals.” *Journal of Accounting and Economics*, 17, 145-176
- DeFond, M. (2010) “Earnings quality research: Advances, challenges and future research” *Journal of Accounting and Economics*, Vo. 50(2-3), pages 402-409
- DeGeorge, F., J. Patel, and R. Zeckhauser. 1999. “Earnings management to exceed thresholds”. *Journal of Business* 72 (January): 1–33
- Deloitte & Touche (2008) Webcast, “International Financial Reporting Standards” February 20
- Demski, J. S. and H. Frimor (1999) “Performance measure garbling under renegotiation in multi-period agencies..” *Journal of Accounting Research* 37 (Supplement): 187-214
- Diamond, D. W. (1984). “Financial Intermediation and Delegated Monitoring.” *Review of Economic Studies* 51(1984): 393-414
- Dichev, I., and Skinner, D., (2002). “Large-sample evidence on the debt covenant hypothesis”. *Journal of Accounting Research* 40, 1091–1123
- Dietrich, J., Muller, K., Riedl, E., (2007). Asymmetric timeliness tests of accounting conservatism. *Review of Accounting Studies* 12, 95–125

- Domenico Nicolo, (2007) “Internationalization, competitiveness and development of small and medium-sized enterprises: segment reporting by geographical area and the strategic time and cost management of logistical processes,” Università Mediterranea Reggio Calabria
- Durtschi, C., Easton, P., (2005) “Earnings management? The shapes of the frequency distributions of earnings metrics are not evidence ipso facto.” *Journal of Accounting Research* 43, 557–592
- Durtschi, C., Easton, P., (2009) “Earnings management? Erroneous inference based on earnings frequency distributions.” *Journal of Accounting Research* 47 (2009), 1249–1282
- Dye, R., (1988), "Earnings Management in an Overlapping Generations Model." *Journal of Accounting Research* (Autumn 1988), page 195-235
- Eccher, E. and Healy, P., (2003) “The Role of International Accounting Standards in Transitional Economies: A Study of the People's Republic of China,” Working paper, Massachusetts Institute of Technology
- Ewert, R., and A. Wagenhofer, (2005) “Economic Effects of Tightening Accounting Standards to Restrict Earnings Management.” *The Accounting Review*, Vol. 43, page 1101–24
- Fairfield, P., Whisenant, S., Yohn, T., (2003) “Accrued earnings and growth: implications for future profitability and market mispricing.” *The Accounting Review* 78, 353–371
- Fama, E. (1985) “What’s Different About Banks?” *Journal of Monetary Economics* 15 (1985): 29-39
- Fanni M., and Cossar L., (1994) “Il metodo contabile,” La Nuova Italia Scientifica, Roma
- Fosbre, A., E. Kraft and P. Fosbre, (2009) “The Globalization of Accounting Standards: IFRS versus US GAAP,” *Global Journal of Business Research*, 3(1), pp. 61-71
- Francis, J., LaFond, R., Olsson, P., Schipper, K., (2005). “The market pricing of accruals quality.” *Journal of Accounting and Economics* 39, 295–327
- Frankel, R., Kim, B., Ma, T., X., Martin (2011) “Bank Monitoring and Accounting Recognition: The case of aging-report requirements.” Working Paper, Washington University
- Friedlob, G. Thomas & Plewa, Franklin James, (1996) *Understanding balance sheets*, John Wiley & Sons, NYC, 1996, ISBN 0-471-13075-3, p.1
- Gaffinkin, Michael (2005) “Regulation as Accounting Theory,” Working Paper, Faculty of Commer, University of Wollongong

- Gibbins M., Richardson A. et Waterhouse J. (1992), “*The management of financial disclosure : theory and perspectives*”, La Fondation de Recherche de l'Association des Comptables Généraux Licenciés du Canada, monographie de recherche no. 20
- Giroux, Gary (1999) “A Short History of Accounting & Business,” <http://web.acct.tamu.edu/giroux/shorthistory.html> (Accessed on 2 July 2012)
- Givoly, Dan, and Carla Hayn. (2000). “The Changing Time-Series Properties of Earnings, Cash Flows and Accruals: Has Financial Reporting Become More Conservative?” *Journal of Accounting and Economics*, Vol. 29(2) pp. 287– 320
- Givoly, D., Hayn, C., Natarajan, A., (2007). “Measuring reporting conservatism.” *The Accounting Review* 82, 65–106
- Givoly, D., C. Hayn and S. Katz, (2010) “Does Public Ownership of Equity Improve Earnings Quality?” *The Accounting Review*, Vol. 85(1), pp. 195-225
- Goel, A. and A. Thakor, (2003) “Why do firms smooth earnings?” *Journal of Business* 76(1), page 151-192
- Goncharov, I., J. Zimmermann, (2007), “Do Accounting Standards Influence the Level of Earnings Management? Evidence from Germany,” *Die Unternehmung: Swiss Journal of Business Research and Practice*, 61, page 371-388.
- Gordon, M. J. (1964) “Postulates, principles and research in accounting.” *The Accounting Review* 39 (2), page 251-263
- Graham, R.C., and R.D. King, (2000) “Accounting practices and the market valuation of accounting numbers: Evidence from Indonesia, Korea, Malaysia, the Philippines, Taiwan, and Thailand,” *The International Journal of Accounting* 35 (4): 445-470
- Gormley, T. A., B. H. Kim, and X. Martin (2012) “Do firms adjust their timely loss recognition in response to changes in the Banking Industry?” *Journal of Accounting Research*, 50 (1): 159-196
- Graham, B., Dodd, D., (1934) In: *Security Analysis*. The McGraw-Hill Book Company, Inc.
- Graham, J.R., C. R. Harvey, and S. Rajgopal (2005), “The economic implications of corporate financial reporting.” *Journal of Accounting and Economics* 40: 3-73
- Greeff, M. E., (2008) “The need for and development of differential reporting globally,” Working Paper, Faculty of Management, University of Johannesburg
- Haller, A., and Eierle, B., (2004) “Accounting Standards for Small and Medium-sized Entities - erste Weichenstellung durch das IASB,” *Betriebs-Berater*, pp. 1838-1845
- Hanlon, M., Maydew, E., Shevlin, T., (2008) “An unintended consequence of

book-tax conformity: a loss of earnings informativeness." *Journal of Accounting and Economics*, 46, 294–311 Ramanna (2008)

Harvey, D. and Walton, P. (1996) "*Differential Reporting - an analysis*," London: The Foundation for Manufacturing and Industry, January

Hayn, C (1995) "The information content of losses." *Journal of Accounting and Economics* 20 (2): 125–153

Healy, P. M. (1985), "The Effect of Bonus Schemes on Accounting Decisions." *Journal of Accounting and Economics* Vol. 7 (1985): 85–107

Healy, P., and Wahlen, J., (1999). "A review of the earnings management literature and its implications for standard setting." *Accounting Horizons* December, 1999

"History and Development of Accounting Standards," *StudyMode.com*. (2005)
<http://www.studymode.com/essays/History-Development-Accounting-Standards-65482.html> [Accessed 09, 2005]

Holland, David (2004). "Earnings management: A methodological review of the distribution of reported earnings approach". Working Paper, Monash University

Holthausen, R. and R. Leftwich (1983) "The economic consequences of accounting choice implications of costly contracting and monitoring," *Journal of Accounting and Economics* 5: 77-117

Hope, Thomas, Vyas, (2012), "Financial reporting quality in US private forms", Working Paper, SSRN Abstract 1995124 (Forthcoming in *Accounting Review* 2013)

Houge, T., & Loughran, T. (2000). "Cash flow is king? Cognitive errors by investors." *The Journal of Psychology and Financial Markets*, 1(3-4), 161-175

Hughes, J. and L. J. Mester (2008) "Efficiency in Banking: Theory, Practice and Evidence." Working Paper, Federal Reserve Bank of Philadelphia Working Paper No. 08-1

Hung, M., and K. R. Sumramanyam. (2007) "Financial Statement Effects of Adopting International Accounting Standards: The Case of Germany." *Review of Accounting Studies* 12 (2007): 623–57

Huyghebaert, N., H. V. Bauwhede and M. Willekens (2007) "Bank Financing as an Incentive for Earnings Management in Business Start-ups." SSRN, Working Paper Series 967386

IASPlus. (2008), "*IASB agenda project – Accounting Standards for Small and Medium-sized Entities: December 2004*". Available at:
<http://www.iasplus.com/agenda/0412.htm> [Accessed on 10 Dec 2009]

International Accounting Standards Board (IASB) (2003a), *SME Presentation: World Accounting Standards Setters Meeting – London 22 September 2003*.

Available at:

http://www.iasb.org/current/iasb.asp?showPageContent=no&xml=16_33_67_30102003.htm [Accessed on 19 Dec 2010]

IASB, (2003b). Information for observers. *Standards for Small and Medium-sized Enterprises*. 19 September 2003. England: IASB

IASB, (2004a). *Accounting Standards for Small and Medium-Sized Entities – Topic summary*. February 2004. Available at <http://www.iasplus.com/agenda/0402.htm> [Accessed on 10 Dec 2010]

IASB, (2004b). *Discussion paper: Preliminary Views on Accounting Standards for Small and Medium-sized Entities*. June 2004. London: IASB

IASB, (2005a). *Constitution 2005*; July, Available at : <http://www.iasb.org> [Accessed on 07 Jan 2011]

IASB, (2005b). *Staff Questionnaire on Possible Recognition and Measurement Modifications for Small and Medium-sized Entities (SMEs) 5 April 2005*. Available at: <http://www.iasplus.com/resource/0504smequestionnaire.doc> [Accessed on 10 Dec 2010]

IASB, (2007a). *Exposure Draft of a Proposed IFRS for Small and Medium-sized Entities*. February 2007. Available at: <http://www.iasb.org/NR/rdonlyres/DF3CB5E-7C89-4D0B-AB85-BC099E84470F/0/SMEProposed26095.pdf> [Accessed on 10 Dec 2010]

IASB, (2007b). *Draft implementation guidance: IFRS for small and medium-sized entities* London, UK: International Accounting Standards Board

IASB. (2007c) *Insight: The Journal of the IASB and the IASC Foundation*. Q4, 2007, available at: <http://www.iasb.org/Home.htm> [Accessed on 10 Nov 2012)

IASB, (2009). *Basis for Conclusions: IFRS for small and medium-sized entities*, International Accounting Standards Board

ICAEW (2012), “*The development of the accountancy profession in the UK and ICAEW’s role*”, available at <http://www.icaew.com/~media/Files/Library/subjects/accounting-history/the-development-of-accountancy-in-the-uk.pdf> [Accessed on 19 Oct 2012)

Isidro, H. and I. Raonic (2012) “Firm Incentives, Institutional Complexity and the Quality of ‘Harmonized’ Accounting Numbers.” *The International Journal of Accounting*, Vol. 47 (4), page 407-436

Jacob, J. and Jorgensen, B., (2007) “Earnings management and accounting income aggregation.” *Journal of Accounting and Economics* 43, 369–390

- Jayaraman, S., & Shivakumar, L. (2013). "Agency-based demand for conservatism: evidence from state adoption of antitakeover laws." *Review of Accounting Studies*, 1-40
- Jensen, M., and Meckling, W., (1976) "Theory of the firm: managerial behaviour, agency costs and ownership structure," *Journal of Financial Economics*, Vol. 3, page 305-360
- Jones, J., (1991). "Earnings management during import relief investigations." *Journal of Accounting Research* 29, 193–228
- Jones, K.L., G.V. Krishnan and K.D. Melendrez, (2008) "Do Models of Discretionary Accruals Detect Actual Cases of Fraudulent and Restated Earnings? An Empirical Analysis," *Contemporary Accounting Research* 25(2), pp. 499–531
- Kabir, M. Humayun, and F. Laswad, (2007) "An international comparison of accrual quality under IFRS," Working Paper, Auckland University of Technology and Massey University
- Kerstein, J. and Rai, A., (2007) "Intra-year shifts in the earnings distribution and their implications for earnings management." *Journal of Accounting and Economics* 44, 399–419
- Kim, B. H., Lei, L., & Pevzner, M. (2010). "Debt covenant slack and real earnings management." George Mason University Working Paper.
- Kothari, S.P., A.J. Leone and C. Wasley, (2005) "Performance Matched Discretionary Accrual Measures," *Journal of Accounting and Economics* 39(1), pp. 163–197
- Lambert, R. (1984), "Income smoothing as rational equilibrium behavior." *The Accounting Review* 41 (4): 604-618
- Lang, M., J. Raedy and W. Wilson, (2006) "Earnings Management and Cross Listing: Are Reconciled Earnings Comparable to US Earnings?" *Journal of Accounting and Economics* 42(1–2), pp. 255–283
- Lang, M., J. Raedy and M. Yetman, (2003) "How Representative are Firms that are Cross-listed in the United States? An Analysis of Accounting Quality," *Journal of Accounting Research* 41(2), pp. 363–386
- Larcker, D.F. and S.A. Richardson, (2004) "Fees Paid to Audit Firms, Accrual Choices, and Corporate Governance," *Journal of Accounting Research* 42(3), pp. 625– 656
- Lauwers, Luc & Willekens, Marleen (1994) "Five Hundred Years of Bookkeeping: A Portrait of Luca Pacioli" (*Tijdschrift voor Economie en Management*, Katholieke Universiteit Leuven, 1994, vol:XXXIX issue 3, p.302)
- LeLand, H., and D. Pyle (1997) "Informational Asymmetries, Financial Structure,

and Financial Intermediation.” *Journal of Finance*, 32 (1977): 371-415

Leuz, C., D. Nanda and P.D. Wysocki, (2003) “Earnings Management and Investor Protection: An International Comparison,” *Journal of Financial Economics* 69, pp. 505–527.

Leuz, C., and Verrecchia, R., (2000) “The economic consequences of increased disclosure,” *Journal of Accounting Research* 38 (Supplement): 91-124

Leuz, C., (2003) “IAS versus US GAAP: information-asymmetry based evidence from Germany’s New Market,” *Journal of Accounting Research* 41 (3): 445-472

Lev B. (1992), “Information disclosure strategy”, *California Management Review*, été, vol 34 (4), pp. 9-32

Li, S. (2008) “Does mandatory adoption of International Accounting Standards reduce the cost of equity capital?” Working Paper, University of Southern California

LIS (Library & Information Service), ICAEW (2012), “*Knowledge guide to International accounting standards*,” available at <http://www.icaew.com/en/library/subject-gateways/accounting-standards/knowledge-guide-to-international-accounting-standards> [Accessed on 21 Oct 2012]

Michaïlesco, Céline (1999) “The Determinants of the quality of accounting information disclosed by French listed companies.” EAA Congress, Bordeaux: France (1999)

Moses, O. Douglas (1987), “Income Smoothing and Incentives: Empirical Tests Using Accounting Changes.” *The Accounting Review*, Vol. 62 (2), page 358-377

Munya Mtetwa, (2011) “Barriers to the Harmonisation of Accounting Standards,” *Accounting @ Suite101* <http://munya-mtetwa.suite101.com/barriers-to-the-harmonisation-of-accounting-standards-a339559> (Accessed on 23 October 2011)

Nikolaev, V.V., (2010). “Debt covenants and accounting conservatism.” *Journal of Accounting and Economics*, 48 (1), 137–175

Nobes, Christopher (1999), “International Accounting and Comparative Financial Reporting”, *Edward Elgar Publishing Inc.* Northampton MA

Nzekwu, Victor., (2001) “Historical Development of Accounting” <http://victornzekwu.hubpages.com/hub/-Approaches-To-The-Study-Of-Comparative-Religion> (Accessed on 21 August 2012)

Ogneva, M., Raghunandan, K., Subramanyam, K.R., (2007) “Internal control weakness and cost of equity: evidence from SOX section 404 disclosures.” *The Accounting Review*, 82, 1255–1297
Myers et al., (2003)

- Othman, H. B., and D. Zeghal (2006) “A study of earnings-management motives in the Anglo-American and Euro-Continental accounting models: The Canadian and French cases”. *The International Journal of Accounting*, 41, 406-435
- Paoloni, M. and P. Demartini (1998) “Small company financial reporting: Users and information needs,” *Quaderni di Economia Aziendale (Working Papers)*, Urbino University, Italy
- Patatoukas, P., Thomas, J., (2010). “Evidence of conditional conservatism: fact or artifact?” Working Paper, Yale University
- Pagano, M.; A. Roell; AND J. Zechner., (2002) “The Geography of Equity Listings: Why Do Companies List Abroad?” *Journal of Finance*, 57: 2651–94
- Paul Pacter, (2008) “An IFRS for Private Entities,” *International Journal of Disclosure and Governance*, Vol. 6, 1, 4–20
- Penman, S. H., and X. J. Zhang (2002) “Accounting conservatism, the quality of earnings, and stock returns.” *The Accounting Review* 77 (2): 237–264
- Phillips, J., Pincus, M. and Rego, S. O. (2003) “Earnings Management: New Evidence Based on Deferred Tax Expense.” *The Accounting Review*, 78, 2, pp. 491-521
- Pope, P., Walker, M., (1999). “International differences in the timeliness, conservatism, and classification of earnings.” *Journal of Accounting Research* 37, pp. 53–87
- Pratten, C., (1998) “The Uses of the Accounts of Small and Medium-sized Companies and the Effect of the Audit Exemption Regime,” *London: ICAEW*
- Richardson, Douglas A., (2012) “Accounting Services”, http://douglasrichardsoncpa.com/business_write_up_services.php (accessed July 21, 2012)
- Richardson, S. A., R. G. Sloan, M. T. Soliman, and A. I. Tuna (2005) “Accrual reliability, earnings persistence and stock prices.” *Journal of Accounting and Economics* 39 (3): 437–485
- Ronen, J., and S. Sadan, (1981), “*Smoothing Income Numbers: Objectives, Means and Implications*” Addison-Wesley, 1981
- Roychowdhury S., (2005) “Manage of earnings through the manipulation of real activities that affect cash flow from operations. Working paper, Sloan School of Management, MIT
- Rudra, T. and D. Bhattacharjee (2012) “Does IFRs Influence Earnings Management? Evidence from India,” *Journal of Management Research*, Vol. 4, No. 1: E7
- Samujh, R. Helen, (2007) “IFRS for SMEs: A New Zealand perspective,” Working

Paper Series, The University of Waikato

Sawani, Assma (2009) “The Changing Accounting Environment: International Accounting Standards and US implementation,” *Journal of Finance and Accountancy*, pp. 1-9

Schipper, K. (2005) “The introduction of International Accounting Standards in Europe: implications for international convergence,” *European Accounting Review*, 14 (1): 101– 126

Scholz, S., (2008) “The changing nature and consequences of public company financial restatements.” The Department of the Treasury, Washington, DC 1997–2006 DeFond et al., (2002)

SEC (US Securities and Exchange Commission), (2000) *SEC Concept Release: International Accounting Standards, Release NoS.33-7801, 34-42430*; International Series No. 1215)

SEC Release (2008), “Roadmap for the Potential Use of Financial Statements Prepared in Accordance with International Financial Standards by U.S. Issuers”, available at: <http://www.sec.gov/rules/proposed/2008/33-8982.pdf> (pp1-165) [Accessed on 09 Nov 2011]

Shivakumar, L. (2013). “The role of financial reporting in debt contracting and in stewardship.” *Accounting and Business Research*, 43(4), 362-383

Shleifer, A., & Vishny, R. (1997) “A survey of corporate governance.” *Journal of Finance*, 52 (2), 737–783

Skerratt, Len (2001) “The Demand for the Audit in Small Companies in the UK,” available at: <http://lenskerratt.0catch.com/smallaudit.pdf> (Accessed on July 27, 2012).

Skinner, D. J (1997) “Earnings disclosures and stockholder lawsuits.” *Journal of Accounting and Economics* 23 (3): 249–282

Sloan, R. G. (1996) “Do stock prices fully reflect information in accruals and cash flows about future earnings?” *The Accounting Review* 71 (3): 289–315

Soderstrom, N. S. and Sun, K.J. (2007) “IFRS adoption and accounting quality: a review,” *European Accounting Review*, 16: 675-702

Small and Medium Practice Committee (SMPC) (2006) “Micro Entity Financial Reporting: Perspective preparers and users” Information Paper, International Federation of Accountants

Sunder, Shyam (2005) “Minding our manners: Accounting as social norms,” *The British Accounting Review*, Vol. 37, page 367-387

Sundgren, Stefan (2007). "Earnings management in public and private companies – evidence from Finlan." *Finnish Journal of Business Economics*, 1/107, 35-63

Sweeney, A., (1994). "Debt-covenant violations and managers' accounting responses". *Journal of Accounting and Economics* 17, 281–308

Technical Resource, ICAEW (2012), "Audit exemptions and change of accounting framework", Available at: <http://www.icaew.com/en/technical/financial-reporting/other-reporting-issues/companies-act/audit-exemptions-and-change-of-accounting-framework> [Accessed on 02 Dec 2012]

Teoh, S., I. Welch, and T. Wong, (1998a) "Earnings management and the underperformance of seasoned equity offerings," *Journal of Financial Economics*, 50: 63-39

Trueman, Brett and Titman, Sheridan (1988), "An Explanation for Accounting Income Smoothing." *Journal of Accounting Research*, Vol. 26 (Supplement), page 127-139

Tucker, J. and P. Zarowin, (2006) "Does income smoothing improve earnings informativeness?" *The Accounting Review*, 81(1), page 251-270

US Department of the Treasury, (2008) "Report of the advisory committee on the auditing profession to the department of the treasury, Washington, DC

Valipour, H., & Moradbeygi, M. (2011). "Corporate debt financing and earnings quality." *Journal of Applied Finance & Banking*, 1(3), 139-157

Van Tendeloo, B., and A. Vanstraelen. (2005) "Earnings Management under German GAAP versus IFRS." *European Accounting Review* 14 (2005): 155–80

Walker, Martin (2013), "How far can we trust earnings numbers? What research tells us about earnings management?" *Accounting and Business Research*, Vol. 43 (4), page 445-481

Wand, M. P., (1997) "Data-based Choice of Histogram Bin Width," *The American Statistician*, Vol. 51 (1), page 59-64

Watts, R. L. and J. L. Zimmerman (1977), "Corporate Financial Statements, A Product of the Market and Political Processes," *Australian Journal of Management*, pp. 53-75

Watts, R. L. and J. L. Zimmerman (1979), "The Demand for and Supply of Accounting Theories: The Market for Excuses", *The Accounting Review*, Vol. LIV, No. 2, page 273-305

Wilson, J. (1969) "The Need for Standardization of International Accounting," *Touche Ross Tempo* Winter 16-31

Wittenberg-Moerman, R., (2008). "The role of information asymmetry and financial

reporting quality in debt trading: evidence from the secondary loan market.” *Journal of Accounting and Economics*, 46 (2–3), 240–260

Wulandari, E. and A. Rahman (2004) “A Cross-Country Study on the Quality, Acceptability, and Enforceability of Accounting Standards and the Value Relevance of Accounting Earnings,” Working Paper, Nanyang Technological University of Singapore

Young, Joni (2003), “Construction, persuading and silencing: the rhetoric of accounting standards”, *Accounting, Organizations and Society*, Vol. 28 (2003), page 621-638

Zhang, J., (2008). “The contracting benefits of accounting conservatism to lenders and borrowers.” *Journal of Accounting and Economics*, 45 (1), 27–54