Financial reporting quality across listed, medium-sized, and small companies in the UK: a preliminary look

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Abstract

The International Accounting Standards Board (IASB) and the UK Accounting Standards Board (ASB) have adopted different financial reporting rules for different classes of company. The IASB have issued IFRS for Small and Medium-sized Entities (SMEs) in addition to full International Financial Reporting Standards (IFRS); in the UK, currently companies follow IFRS (for public companies), UK GAAP (for medium-sized companies) or FRSSE (for small companies). It is difficult to evaluate the efficacy of this approach to regulation since the ASB (and IASB) are not clear as to what consequences should follow. Is the more extensive regulation for public companies expected to result in higher accounting quality than medium and small companies; or is it necessary to combat the increased opportunity and incentive for earnings management in public companies, so that there is the same accounting quality across the different groups of companies?

The main objective of this study is to undertake a preliminary investigation of cash flow to earnings ratios as a measure of accounting quality in order to inform the future policy and discussion about the differential reporting framework.

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.

1. Introduction

1.1 A three tier system of financial reporting

In 2009, the International Accounting Standards Board (IASB) issued a new set of accounting standards – IFRS for Small and Medium-sized Entities (SMEs) to exist alongside full IFRS. 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. Following the IASB's move, in 2012 the UK Accounting Standards Board (ASB) proposed in Financial Reporting Exposure Draft (FRED) 48, that there should be a three-tier system of financial reporting. FRED 48 proposes that medium-sized companies should follow Financial Reporting Standards 102, which is based on IFRS for SMEs; public listed should continue to follow full IFRS and small companies should continue to follow the FRSSE (Financial Reporting Standards for Smaller Entities).

1.2 Consequences for accounting quality

But what will happen to accounting quality across the different classes of company as a result of these differential reporting standards? Will accounting statements be comparable across the different classes of company? One justification for the system is that agency issues and complexity vary across the three tiers and that accounting regulations should therefore reflect this. Different regulations are required to deal with the fact that where there is separation of ownership from control, tighter regulation may be required to constrain opportunistic reporting behaviour by managers. In such a setting, the objective of the regulation system would seem to be to equalise accounting quality across the classes of company. This consequence seems to be implied by ASB (2012, p16).

Another view is that differential regulation arises from the differential ability of companies to shoulder the cost burden of reporting and the differential needs of users and their ability to obtain information from the company outside of the annual reporting cycle to shareholders. In this case, it would seem that the quality of reporting may differ across companies. Such a consequence seems to be implied in IASB (2009, BC47).

The lack of clarity from both the ASB and the IASB as to the consequences of their regulatory stances is to be expected. Watts and Zimmerman (1979) argue that process of developing new accounting standards is a political one, a process of negotiation because regulators do not have enough understanding of how companies are going to respond. More recently, Young (2003) suggests that regulators are seemly passive, since they act as diplomats in aligning the differing needs of companies and users. They are specific only in so far it is necessary for the parties to agree, for example by engaging in rhetorical strategies to persuade users that standards are appropriate, correct and useful. Therefore, it is not surprising that the important issue of what consequences will follow from differential regulation is not discussed explicitly by the IASB and ASB.

1.3 Contribution

In order to understand the potential impact of FRED 48, we compare accounting quality across existing boundaries, that of 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 for the desired differences between each group of companies.

We use a sample of UK public, medium-sized and small companies in the period of 2010 and examine firms' behaviour cross-sectionally based on the industrial classification in the UK. The reason why we choose this year 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.

1.4 Method and findings

We measure accounting quality based on the relation between the most fundamental measure of firms' performance, cash flows and earnings. Accounting quality is linked with how a firms' cash flows have been transformed into reported earnings, so as to improve the information content of earnings. Accruals play a crucial role in the transforming process, because cash flows encounter timing and matching issues, which do not adequately reflect a firms' underlying financial

performance. Hence, accounting quality is very much related to whether accruals are being correctly used to transform cash flows into informative reported earnings. The purpose of using this method is to identify whether there is any variation in accounting quality across different groups of companies based on their fundamental performance under current differential reporting framework.

We begin by comparing the distribution of the cash flow to earnings ratio for three groups of companies. We find that the distribution of the ratio for medium-sized companies is different from large and small companies. In contrast, when earnings are positive, large and small companies have a greater proportion of companies with extreme level of accruals than medium-sized companies. When earnings are negative, medium-sized companies have a greater proportion of companies with extreme level of accruals than large and small companies.

We next compare the cash flows to earnings ratio across the groups by industry. We find that medium-sized companies have the highest level of accruals compare with large and small companies. Furthermore, medium-sized companies have the largest variations in accounting quality within its own group as well as across industries. We contribute to the literature on differential reporting requirements for different classes of company in the UK (listed, medium, and small) as proposed in FRED 48. First, we raise the issue of whether or not the requirement should lead to variation in the quality of reporting across the groups. Secondly, our preliminary analysis suggests that the accounting quality of medium sized companies may be different from listed and small companies.

The remaining part of the paper is structured as follows: the literature review of development of differential reporting and accounting quality are discussed in next section; followed by the potential issues in section 3; sample and data is discussed in section 4; methodology of measuring accounting quality is provided in section 5; results and analysis are discussed in section 6; and conclusion are provided in the last section.

2. Literature Review

2.1 Development of Differential Reporting

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 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).

IFRS for SMEs

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 to reduce the costs and burden of SMEs in complying with full IFRS, 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). On 9 July 2009, the International Financial Reporting Standard (IFRS) designed for use by small and medium-sized entities (SMEs) was published by IASB.

IFRS for SMEs is for those companies that do not have public accountability, regardless of size. 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).

The IASB only put focus on users' needs and cost-benefit analyses between full IFRS and IFRS for SMEs – "the nature and degree of the differences between full IFRS and an IFRS for SMEs must be determined on the basis of users' needs and cost-benefit analyses." However, the objective of IASB 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.

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.

However, different from IASB, the main objective of ASB's move is to enable users of accounts to receive high-quality understandable financial reporting, "which is 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).

2.2 Factors Driving Differential Reporting Standards

With the development of differential reporting framework, factors driven private companies to have different sets of accounting standards include users' needs, agency issues, complexity, and costs.

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).

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.

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 (2012a, 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.

Costs

Compliance with IFRS is 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 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 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.

2.3 Role of Accounting Quality in Policy Making

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) suggested there is ample evidence that accounting quality plays a role in the process of policy-making. For example, 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).

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, from the development of differential reporting framework, regulators (ASB and IASB) have 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.

2.4 Accounting Quality for Public Companies and Private Companies

Beatty, Ramesh and Weber (2002) and Beatty, Ke and Petroni (2002) find that public firms have a greater propensity to manage earnings than private firms; whereas Burgstahler, Hail and Leuz (2006) report the opposite, they find that private companies (excluding small companies) in the EU have more earnings management than public companies.

Ball and Shivakumar (2005) find that financial reporting in public companies is more informative than in private companies. 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. 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. 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.

Findings in the literature regarding accounting quality for public and private 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.

2.5 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 late1960s, 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, 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.

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.

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, the process of developing new accounting standards is the process of negotiation (Watts and Zimmerman, 1979; Young, 2003), because the regulators 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.

3. Potential Issues

3.1 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. 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.

Situations in which variations in accounting quality are acceptable

IASB (2009 page 18) proposed that "the differences between full IFRS and IFRS for SMEs must be determined on the basis of users' needs and cost-benefit analyses." If differential reporting is a response to differential importance of companies, users' needs and the differential cost of compliance, the variations between each class of companies are acceptable. Public companies have more economic importance, hence, users from legal forces (accounting regulations and government) and market forces (investors, share-holders, and debt-holders) would have demanded more information from public companies. 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).

Situations in which variations in accounting quality are not acceptable

ASB (2012 page 16) proposed that "FRS for 102 is a proportionate solution written specifically for smaller and medium-sized entities whilst maintain the quality of financial reporting." 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.

Issues Arising

IASB has not made clear of what they expect in terms of accounting quality, whereas ASB expects firms to have equalised accounting quality. Does differential reporting framework promote equalised accounting quality across different sizes of companies?

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?

3.2 Research Question

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 study is to examine the discipline of current differential accounting regulations 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.

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?

4. Sample and Data

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 GAAP[1] and small companies are following FRSSE.[2]

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 minimum path of the ultimate owner is 50.01%. We also screen out private firms

[2] 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.

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).[3]

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 SIC 2007, which include: Primary[4], Manufacturing[5], Utility[6], Construction, Wholesale[7], Service[8], Transport, Telecom[9], Other service[10], Education & Health.

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.

[3] 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.

[4] Primary sectors include agriculture, mining, and etc.
[5] 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.
[6] Utility sector includes gas, water, and electricity.
[7] Wholesale sector includes wholesale and retail trade.
[8] Service sector includes hotels and restaurants.
[9] Telecom sector includes post and telecommunication.
[10] Other services sector includes other services, public administration and defence.

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

Industries	Description	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.

5. Methodology

5.1 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 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 encounter timing and matching issues, which could not be the best measure for firms' real financial performance. Hence, accounting quality is very much related to whether accruals are being correctly used to transform cash flows into informative reported earnings.

Therefore, in this study, we adopt the most fundamental rationales for measuring accounting quality for different groups of companies. The purpose of this is to obtain a preliminary view of how different groups of companies behave under current differential reporting framework.

5.2 Cash flows to Earnings Analysis

Cash flows 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).

Basically, if earnings are persistent (or in high quality), 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). 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 because 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. The 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).

Since we examine 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 on firms' earnings, cash flows and accruals. Therefore, we assume that cash flows are free of manipulation[11] and analyse the accounting quality for each group of companies based on earnings relative to cash flows. In this study, we use cash flows from operation (CFO) to earnings (E) ratio to obtain the level of accruals. The purpose of this is to obtain the basic understanding of financial behaviour for

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

each class of companies in order to compare the differences in their accounting quality. Ratio is applied into large (public listed companies), medium-sized and small companies respectively.

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

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:

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

where:

i = 1, …, $n_{g,k}$;

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

k = Industry 1, 2, … 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.

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.

Distributions of CFO/E

In order to compare the accounting quality across three groups of companies, we firstly 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.

Firstly, we take the mean and ±2σ of $\frac{CFO}{E}$ as dividing point in the distribution, which means we will have a distribution with four regions (i.e. $\frac{CFO}{E}$ < -2σ, -2σ ≤ $\frac{CFO}{E}$ < mean, mean ≤ $\frac{CFO}{E}$ ≤ 2σ, and $\frac{CFO}{E}$ > 2σ). 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 ±2σ, that may indicate underlying ratio has extreme level of accruals.

Negative $\frac{CFO}{E}$ could be due to two situations, where positive cash flows with negative earnings and negative cash flows with positive earnings. Companies with positive cash flows and negative earnings have fewer tendencies to manage earnings. However, those companies with negative cash flows 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, +2σ. The regions for negative earnings group will be -2σ, mean, 0, + 2σ.

The reason of constructing the distribution of $\frac{CFO}{E}$ ratio is to examine how differently those 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.

Distributions of SMEs vs. Distribution of Large companies

Previous method is used to analyse the distribution of three groups of companies based on their own means and standard deviation. 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 ±2σ 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 ±2σ 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 those SMEs behave from large companies.

Variations of CFO/E across groups and industries

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, ..., $n_{g,k}$.

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

k =1,2...,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:

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

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.

Companies in different industries may have different reporting behavirour. 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.

If the ratio is high in absolute value, which may indicate the level of accruals is 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.

6. Results and Analysis

6.1 Descriptive Statistics of CFO and E

Table 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 2 Here]

TABLE 2: Summary Statistics for CFO and Earnings

	Large Companies		**Medium-sized Companies**		**Small Companies**	
Variables	CFO	E	CFO	E	CFO	E
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.

6.2 Distributions of CFO/E

[Figure 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 ±2σ 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 ±2σ 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

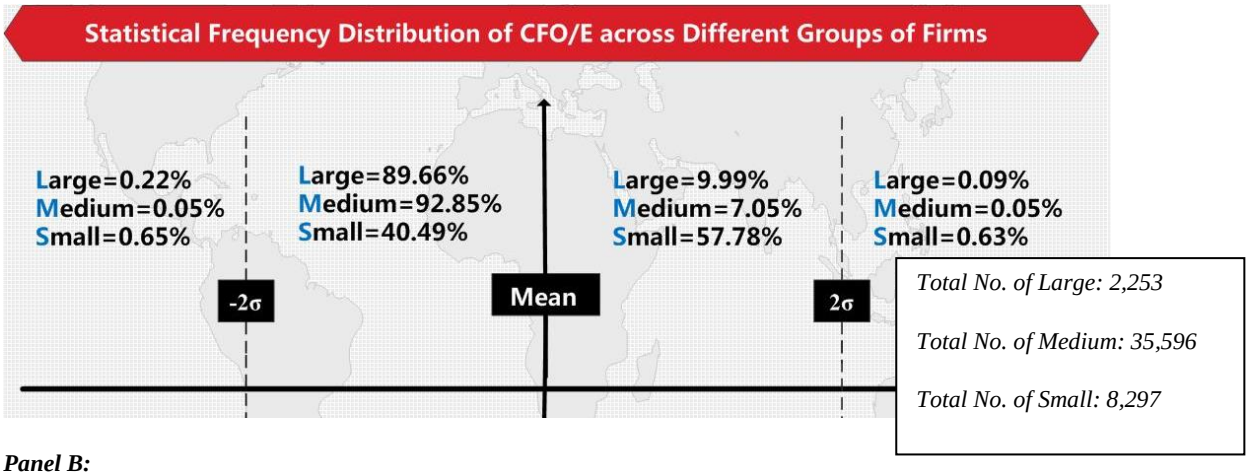
are less than medium (28.30+16.72%) companies. This suggests that when earnings are negative, there are more proportions of medium companies that are able to cover their losses with the positive cash flows comparing with large and small companies. However, there are more proportions of medium and small companies fall out the ±2σ 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 1:

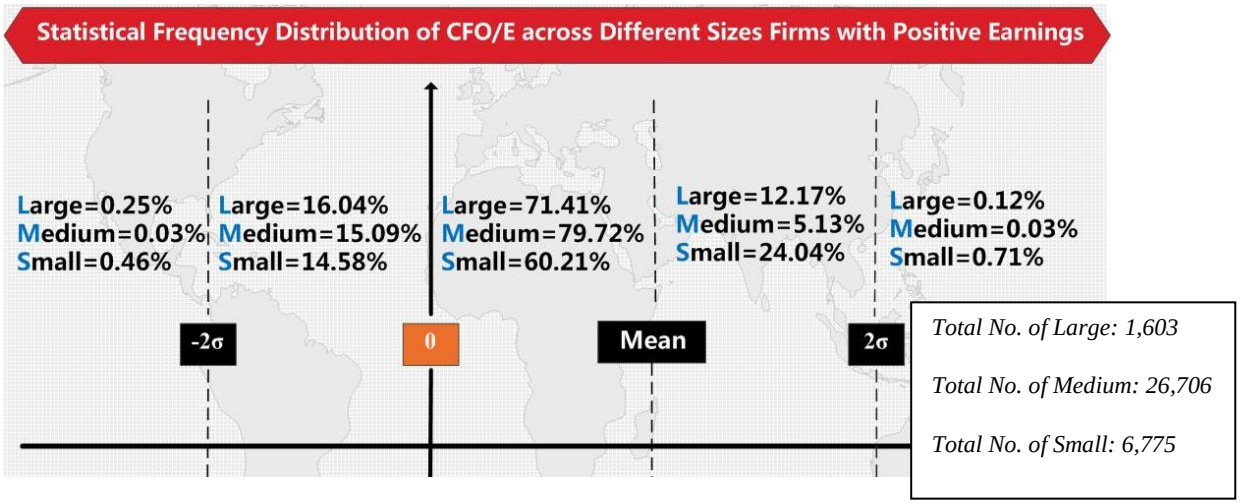
1. Overall, the distribution of medium companies is different from large and small companies.
2. When earnings are positive, the distributions for large and small companies are similar, that more proportions of companies have extreme level of accrual.
3. When earnings are negative, there are more proportions 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 1: Statistical frequency distribution of ratio of CFO to Earnings

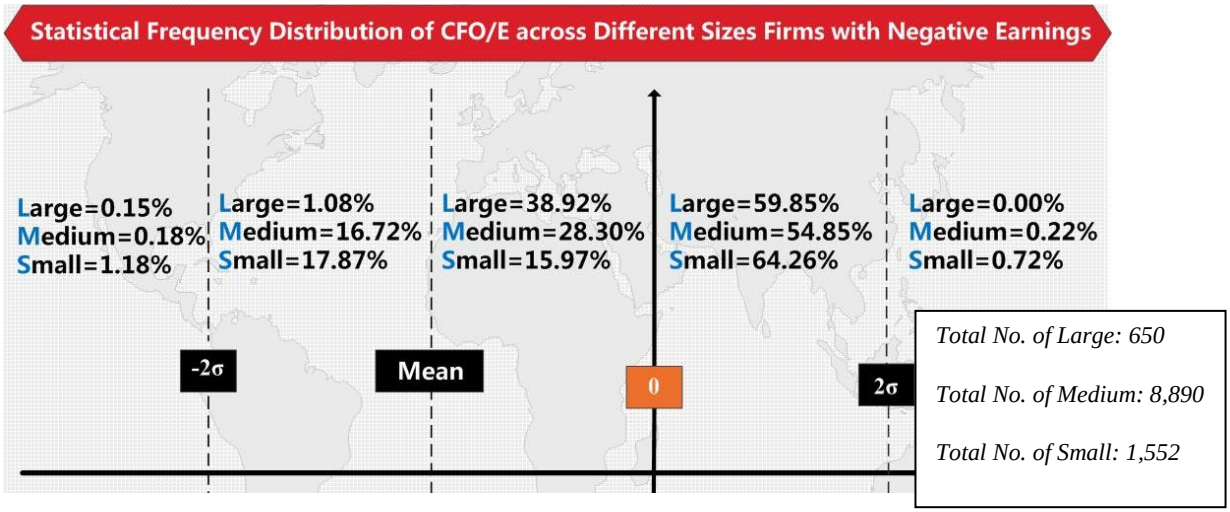
Panel A:



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, $mean$= mean of $\frac{CFO}{E}$ for each type of companies in each earnings group, σ = 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.

6.3 Distributions of SMEs vs. Distribution of Large companies

[Figure 2 Here]

Figure 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 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 ±2σ, suggesting that more proportions of medium companies with extreme level of accruals than large and small companies.

Key Findings from Figure 2:

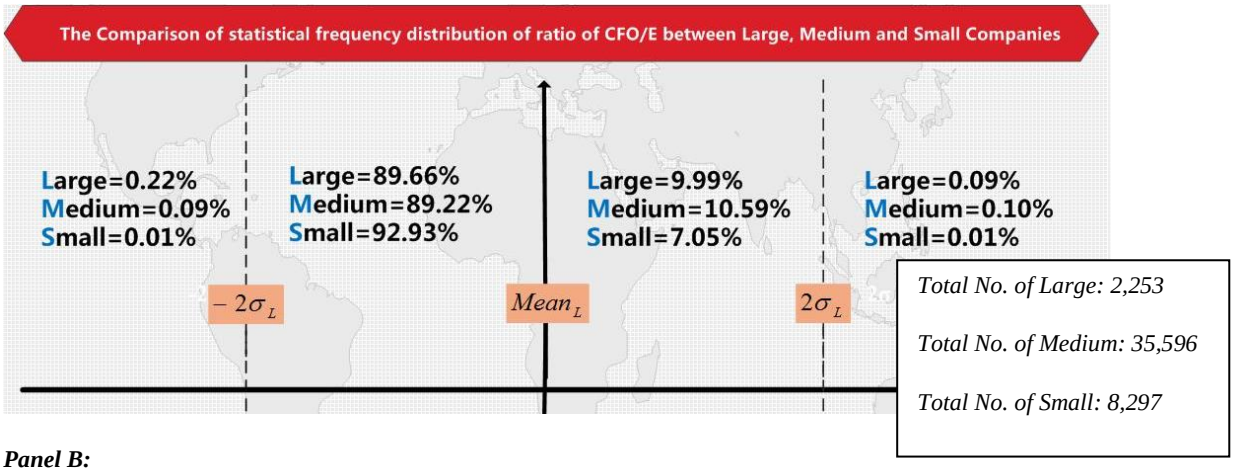
The findings are generally consistent with previous findings from Figure 1.

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

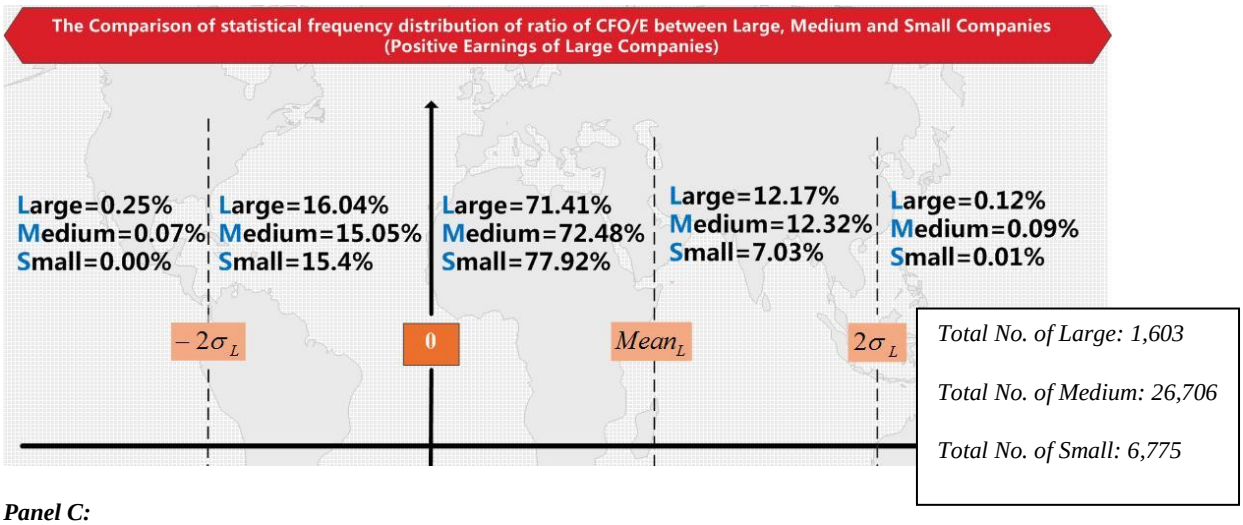
When earnings are negative, medium companies seem to outperform large and small companies, because the proportions of medium companies with positive cash flows relative to negative earnings are more than that of large and small companies. However, there are more proportions of medium companies with extreme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

Figure 2: The Comparison of statistical frequency distribution of ratio of CFO to Earnings between Large, Medium and Small Companies

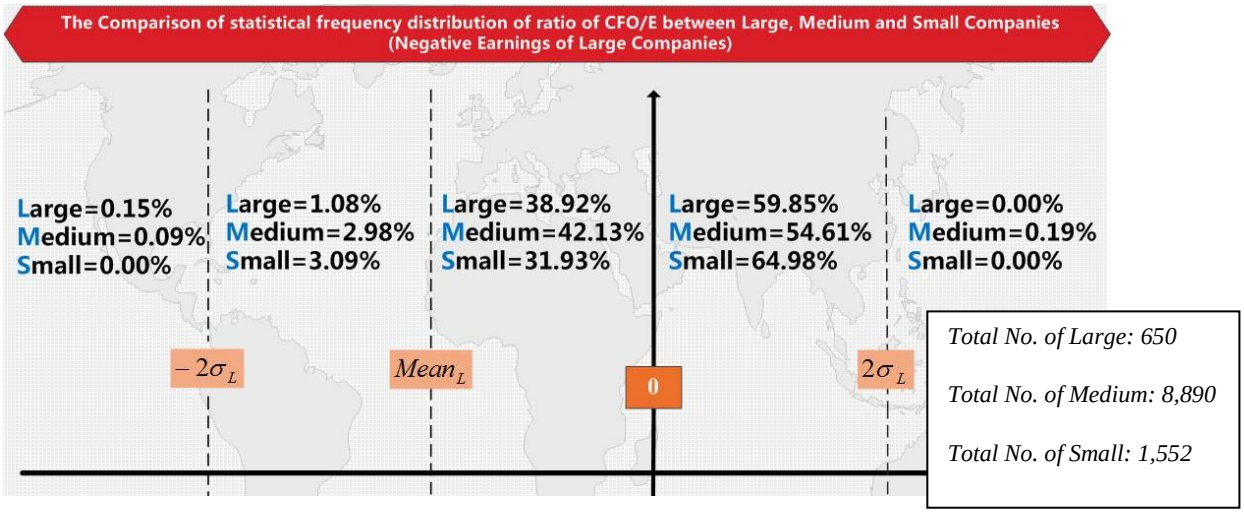
Panel A:



Panel B:



Panel C:



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, σ_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.

6.4 Variations of CFO/E across groups and industries

[Table 3 Here]

Table 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 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 deviatoin in medium companies and the smallest standard deviation in small companies.

Table 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 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 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:

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

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

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 (Continued)

Small Companies (g=S)

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, …, $n_{g,k}$; 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.

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, 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 4) and the other one is with negative earnings (Table 3.5).

6.5 Positive Earnings Group

[Table 4 Here]

Table 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, that large companies have negative mean of $\frac{CFO}{E}$. However, after splitting companies into positive and negative earnings groups in Table 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 4 is consistent with Table 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 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, the mean of Primary is the smallest and the mean of Education & Health is negative, however, in Table 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 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, 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 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 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 4:

1. In consistent with Table 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 4: Industrial Distribution and Summary Statistics for ratio of CFO to Earnings (Positive Earnings)

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

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TABLE 4 (Continued)

Small Companies (g=S)

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
t-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
t-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
t-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, …, $n_{g,k}$; 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.

6.6 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 5 Here]

In Table 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 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 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 5: Industrial Distribution and Summary Statistics for ratio of CFO to Earnings (Negative Earnings)

$Ratio\ of\ Cash\ Flows\ from\ Operation\ to\ Earnings = (\frac{CFO}{E})_{i,g,k}$, 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 5 (Continued)

Small Companies (g=S)

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
t-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
t-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
t-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, …, $n_{g,k}$; 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.

7. Summary and Concluding Remarks

The objective of this study 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 clearly specify the expectation of accounting quality and consequences that different groups of companies should follow. The purpose of this study 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.

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