AN INVESTIGATION OF EARNINGS MANAGEMENT AND EARNINGS MANIPULATION IN THE UK

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Abstract

What causes managers to manipulate their financial statements? How best can shareholders or prospective investors, auditors, financial analysts and regulators detect earnings manipulations? Addressing these questions is of critical importance to the efficient functioning of capital markets. For an investor it can result to improved returns, for an auditor it can mean avoiding costly litigation, for an analyst it can mean avoiding a damaged reputation, and for a regulator it can lead to enhanced investor protection and fewer investment disasters. The objective of this thesis is two-fold. The first objective is to investigate the frequency and the magnitude of earnings management. Second, is to provide an analysis of the characteristics of companies discovered to manipulate earnings and the determinants of these manipulations.

Exploratory interviews with the Financial Reporting Review Panel suggest that earnings manipulation usually results from escalating earnings management that after a certain stage violates accounting principles. This is analysed in a review of a series of companies publicly criticised for applying aggressive accounting practises. It is suggested that these cases involve specific accounting standards that require increased judgement from management.

In order to gain a broader view of the extent that companies manage earnings, this thesis examines the distribution of earnings among thresholds such as zero earnings and earnings decreases. This thesis documents evidence of unusually low frequencies of small decreases in earnings and small losses and unusually high frequencies of small increases in earnings and small positive earnings. Additional evidence suggests that three components of earnings, cash flow from operations, changes in working capital and discretionary accruals, are used to achieve increases in earnings.

Finally, this thesis presents evidence of the characteristics of firms that manipulate earnings and proposes a model for detecting earnings manipulation. Companies found to manipulate earnings appear to have lower accrual quality, declining performance, weaker corporate governance structure, weaker balance sheet and increased leverage. The output of this investigation is a scaled logistic probability model for discriminating accounting manipulations, where higher values suggest a greater probability of manipulation.

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Chapter 1

Introduction

1.1 Context and background

What causes managers to manipulate their financial statements? How best can shareholders or prospective investors, auditors, financial analysts and regulators detect earnings manipulations? Addressing these questions is of critical importance to the efficient functioning of capital markets. For an investor it can result to improved returns, for an auditor it can mean avoiding costly litigation, for an analyst it can mean avoiding a damaged reputation, and for a regulator it can lead to enhanced investor protection and fewer investment disasters.

An issue central to accounting research is the extent to which managers alter reported earnings for their own benefit. In the 1970s and early 1980s, a large number of studies investigated the determinants of accounting choice. These studies provided evidence consistent with managers' incentives to choose beneficial ways of reporting earnings in regulatory and contractual contexts (Holthausen and Leftwich, 1983; Watts and Zimmerman, 1986). Since the mid-1980s studies of managerial incentives to alter earnings have focused primarily on accruals.

The explosive growth in accrual-based earnings management research can be related to three likely causes. First, accruals are the principal product of accounting standards and, if earnings are managed, it is more likely that earnings management occurs on the accrual rather than the cash flow component of earnings. Second, studying accruals reduces the impact of issues associated with the difficulty to measure the effect of various accounting choices on earnings (Watts and Zimmerman, 1990). Third, if earnings management is an unobservable component of accruals, it is less likely that investors can distinguish the effect of earnings management on reported earnings.

The main challenge faced by earnings management researchers is that academics, like investors, are unable to observe, or for that matter, measure the earnings management component of accruals. Indeed, managerial accounting actions intended to increase compensation, avoid covenant default, raise capital, or influence a regulatory outcome are largely unobservable. Because the existing models of expected accruals provide imprecise estimates of managerial discretion, questions

have been raised about whether the unobservable earnings management actions do in fact occur[1]. Notwithstanding research design problems, a variety of evidence suggestive of earnings management has accumulated.

The remainder of the chapter is organised as follows. The next section discusses the aims and objectives of this research and section three presents the structure of the thesis.

1.2 Aims and objectives

The broad research objective of this thesis it to deepen the current understanding of earnings management and the mechanics of earnings manipulation. As already mentioned, empirical investigation in earnings management has been conducted in great extend using discretionary accrual methods but little attention has been given to specific accruals and how they can be applied in detecting earnings manipulation. This is somewhat surprising given the negative impact that follows the discovery of a company found to manipulate earnings. Therefore, the main objective of this thesis is to fill this gap in the literature by focusing on the extreme instances of earnings management where a company is found to violate accounting standards. It seeks to do so by empirically focusing on three broad areas: i) the distribution of earnings among thresholds in order to measure the characteristics of firms that manage earnings, ii) the characteristics of the FRRP (Financial Reporting Review Panel) investigated companies, iii) the association of the probability of earnings manipulation with changes in specific accruals. This thesis aims to propose a model for detecting earnings manipulation that could be useful for both academics and practitioners.

Recent literature and auditing standards provide no clear definition for earnings management or earnings manipulation (Section 2.2.1). Therefore it is not clear the stage at which earnings management becomes earnings manipulation. This research defines earnings management as the result of managerial discretion in accounting choices and estimates exercised within the limits of accounting standards

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[1] Criticism of the existing accrual models' ability to isolate the earnings management component of accruals includes McNichols and Wilson (1988), Holthausen, Larker and Sloan (1995), Beneish (1997, 1998), and McNichols (2000) who argue that when the incentive context studied is correlated with performance, inferences from the study are confounded; Guay, Khotari and Watts (1996) who suggest that accrual models estimate discretionary accruals with considerable imprecision and that some accrual models randomly decompose earnings into discretionary and non-discretionary components; Beneish (1997) who provides evidence that accrual models have poor detective performance even among firms whose behaviour is extreme enough to warrant the attention of regulators; Thomas and Zhang (2000) who suggest that the performance of accrual models is dismal.

without violating the true and fair view principle. On the other side, for the purpose of this research earnings manipulation is defined as the result of managerial actions that violate the true and fair view principle and fail to comply with the accounting standards. A detailed approach on the definition of earnings management and earnings manipulation is documented in section 2.2.3.

1.1 Structure of thesis

The second chapter of this thesis provides a discussion on the recent literature. It identifies the different research designs applied in prior studies together with their inherent limitations. It is found that earnings management literature currently provides only modest insights for practitioners like regulators and investors. Prior research has focused almost exclusively on understanding whether earnings management exists and why (McNichols, 2000). For the investment community, these findings are likely to confirm their intuition that companies do manage earnings. However, if there is to be a more informed debate about the implications of earnings management for market practitioners there is need for additional evidence on the following questions. Which accounting standards are used to manage earnings? What is the frequency of managers' use of discretion to manage earnings rather than to communicate company performance to investors? What are the characteristics of firms criticised for manipulating earnings? How earnings manipulation can be detected? The implication of this critical review is that earnings management area remains a fertile ground for academic research.

Chapter three addresses the research questions and forms the research hypotheses of this thesis. Additionally, this chapter suggest an analytical research framework that facilitates the investigation of earnings management and earnings manipulation, organising the research questions and hypotheses.

Chapter four describes the institutional framework for regulating compliance with accounting standards in the UK. This chapter focuses on the institutional role of the Financial Reporting Review Panel (FRRP) in regulating compliance with the requirements of accounting standards. This chapter considers the views of the FRRP in relation to earnings management and earnings manipulation. Exploratory interviews were carried out in order to investigate and evaluate the Panel's perceptions, functions, procedures and the impact of the regulator. The interviewees suggested that there is no clear border line between earnings management and

earnings manipulation. Though, both of the interviewees mentioned that earnings manipulation relates to "creative accounting of a bigger scale (than earnings management)" which is "intended to mislead investors".

Chapter five provides an analytical insight into the procedures used by directors to exercise discretion over accounting choices. This chapter contributes to prior research by documenting case-based examples of earnings management/manipulation and how this is achieved in practice. It can be inferred that investigated cases of earnings management are developed around accounting techniques exploiting the managerial discretion allowed by certain accounting standards. These findings can be seen as very preliminary evidence of the existence of earnings management and earnings manipulation and how specific accruals can be useful in investigating earnings manipulation.

Chapter six explores a large sample of UK firm-years and documents that earnings are distributed discontinuously around basic thresholds while non-discretionary earnings are not. This chapter provides empirical evidence that earnings decreases and losses are frequently avoided thought earnings management. Evidence suggests a significant percentage of the companies with small pre-managed earnings decreases or losses exercise discretion to report earnings increases or profits. Moreover it is found that earnings management to avoid losses is more pervasive than earnings management to avoid earnings decreases. Additionally, it is found that the discontinuity around zero earnings is increased with the number of prior years that a company reported positive earnings. Examining earnings management to avoid losses, it is found that two components of earnings, cash flow from operating activities and changes in working capital, are used to manage earnings. The results are robust to alternative methods of scaling earnings and different ways of subdividing the population.

Chapter seven examines the characteristics of firms judged by the Financial Reporting Review Panel to have issued defective financial statements. Two main findings are reported. First, FRRP companies (earnings manipulators) are characterised by weak earnings performance in the defect year. FRRP companies are more leveraged, less likely to decide dividend increases, more likely to have lower effective tax rate and more likely to have deteriorating performance and increased audit fees. Another interesting finding is that while the profitability of the FRRP sample is weak in the defect year, they do not appear to be persistent

underperformers. One interpretation of these results is that short-term performance problems are an important cause of poor accounting quality to the extent that they create strong incentives for managers to engage in earnings manipulation. This is consistent with the work of Degeorge et al. (1999), Burgstahler and Dichev (1997) and Peasnell et al. (2001), who provide evidence of earnings management to avoid losses and earnings declines between companies. The second main result of this chapter relates to the corporate governance characteristics of FRRP companies. Multivariate tests reveal that the FRRP companies are more likely to have higher paid directors and higher audit fees. Finally, tests reveal that FRRP companies are less likely to have a Big Four auditor.

The purpose of chapter eight is to estimate a model for detecting earnings manipulation. The chapter documents an analysis of the characteristics of 185 companies discovered to manipulate earnings. The analysis of earnings manipulators includes accrual quality, financial performance and balance sheet strength. Based on the findings of this analysis two logistic models are developed, aiming to estimate the probability of earnings manipulation. The first model utilises the eight variables included in Beneish's (1999) M-Score model. The second model includes three additional variables: (i) Audit fees to assets index, (ii) Effective tax rate index and (iii) Directors Remuneration to Sales index. These three variables are statistically significant and appear to improve the performance of the model in discriminating earnings manipulators. The robustness of the coefficients is tested at 100 different estimate and holdout samples, using the bootstrap method. Both defined models appear to be insensitive in random sampling. It is shown that both models have power to detect manipulations., It is documented that the suggested 11-variable model has lower error rates in misclassifying manipulators and controls and increased likelihood in identifying manipulators.

Chapter 2

Literature Review

2.1 Introduction

Companies have been using creative accounting for a long time, and this practice, well known in the literature, has been given various names: earnings management, income smoothing, big bath accounting, window dressing and even accounting fraud. This chapter aims to provide a review of the literature and propose a conceptual framework for earnings management and earnings manipulation. Creative accounting has fallen under heavy criticism. For instance, a former SEC Chairman, Arthur Levitt, in his September 28, 1998 speech 'The Numbers Game', attacked the earnings management and income smoothing practices of some public companies. Over a decade ago Turner and Godwin (1999) reported some of the efforts that were under way in the Office of the SEC Chief Accountant to help achieve objectives laid out in Chairman Levitt's speech. Then the Enron scandal (Benston and Hartgraves, 2002) meanwhile, put accounts manipulation in the spotlight for everyone, including the general public.

The remainder of the chapter proceeds as follows: Section two examines the distinction between earnings management and earnings manipulation. Section three explores the research designs applied in recent literature. Section four describes evidence of earnings management in different research settings and section five concludes.

2.2 Earnings Management and Earnings Manipulation

2.2.1 Earnings Management

The term 'earnings management' embodies a wide array of accounting techniques used by management to achieve a specific earnings' target. While there exists no single accepted definition of earnings management, accounting literature provides various descriptions of the practice. Schipper (1989, p.92) describes earnings management as '...a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gains...' Similarly, Healy and

Wahlen (1999, p.368) explain that earnings management occurs when managers use discretion to manipulate financial information '...to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers...' Consistent among these definitions is the notion of intentional smoothing of reported numbers by management. However, since managerial intent is unobservable, current definitions of earnings management are '....difficult to operationalise directly using attributes of reported accounting numbers...' (Dechow and Skinner 2000, p.247).

Earnings management is most likely to occur where there exists vagueness and subjectivity in Accounting Standards. Upon application of these Standards, management is permitted to exercise a certain level of judgement or discretion in the determination of the reported accounting numbers. Athanasakou et al. (2009) suggest that UK companies engage in earnings management through classification shifting of core expenses to non-recurring items. Similarly Bens and Johnston (2009) find an association between restructuring charges and earnings management. Somnath et al. (2009), show that reversals of earnings changes in the fourth quarter occur more frequently than would be expected in a random sample. Other indicators of earnings management, such as the size and direction of discretionary accruals, reversal of subsequent accruals, use of special items in the income statement, and adjustment of R&D spending and effective tax rate, suggest that firms with earnings reversals are more likely to have managed earnings than industry and performance-matched control firms (Iatridis and Kadorinis, 2009). Iatridis and Kadorinis (2009) document that UK companies with low profitability and high leverage measures are more likely to use earnings management.

Management can apply discretion in forming estimations required by certain accounting standards, in order to manage earnings towards a favoured direction. Levitt (1998, p.16) explains that when flexibility within accounting standards is exploited, '... abuses such as earnings management occur...(and) trickery is employed to obscure actual financial volatility...' Although the practice of earnings management has been suggested as being widespread (Levitt, 1998), the exact pervasiveness of managed earnings is not known. Levitt (1998) suggests that it can be assumed managers are unwilling to reveal the full extent of techniques used in the manipulation of earnings.

Interestingly, Dechow and Skinner (2000) suggest that regulators and practitioners may be 'overstating the extent of the problem' of earnings management, whilst academics may be understating it. Despite similarities amongst definitions of earnings management, Beneish (2001, p.5) states that academics have 'no consensus' on what earnings management actually is. There exist inconsistencies even in the attributed incentives to exercise earnings management. Beneish (2001) describes two perspectives on earnings management as being the information perspective and opportunistic perspective. The information perspective holds that earnings management is designed to signal to investors expectations about the company's future cash flows, while the opportunistic perspective maintains that managers manipulate earnings to mislead investors. In a similar way, Scott (1997) distinguishes between 'earnings management from an efficient contracting perspective' and opportunistic earnings management. The definitions of earnings management provided by both Schipper (1989) and Healy and Wahlen (1999) allow for the management of earnings to deceive or mislead investors by means of disguising poor performance. However, while the definition by Schipper (1989) also allows for the management of earnings to inform investors, the word 'mislead' in the definition provided by Healy and Wahlen (1999) seems to ' . . . preclude the possibility that earnings management can occur for the purposes of enhancing the signal in reported earnings' (Beneish, 2001, p.5). 'Much prior work has predicated its conclusions on an opportunistic perspective for earnings management and has not tested the information perspective' (Beneish, 2001, p.5). In other words, the general assumption is that earnings management is conducted to the detriment of investors because of the implied reduction in the transparency and reliability of the financial reports (Scott, 1997). While providing managers with an unlimited capacity for making judgements would not be practical, the elimination of management's judgement could be disadvantageous to investors (Healy and Wahlen, 1999).

Agency theory (Scott, 1997) suggests that permitting flexibility in reporting earnings is necessary for managers, as they are in the best position to choose the method of reporting that best aligns with shareholders' interests. In addition, earnings management is a vehicle by which inside information can be conveyed to the market (Scott, 1997), thereby promoting efficient decision-making (Arya et al., 2003).

Broadly, and from a research perspective, the detection of earnings management involves determining whether accounting accruals differ from

expectations (that is, whether they are 'abnormal'), and whether the difference is congruent with managers' incentives. Accrual models can be based on aggregate accruals (for example Healy, 1985; Jones, 1991; Dechow et al., 1995) or specific accruals (McNichols and Wilson, 1988; Beneish, 1999). Although accrual models have been extensively employed and researched, a number of recent studies have questioned the accuracy and usefulness of these models, and hence, of this type of research (McNichols, 2000; Thomas and Zhang, 2000). More recent research in the area of accruals management suggests that the method (or accrual) used to smooth earnings varies according to management incentives (Marquardt and Wiedman, 2004).

In respect of earnings management, auditors have a responsibility to adopt *'...an attitude of professional scepticism to determine whether management has intentionally misstated certain items (possibly by amounts below the materiality level) to manage reported earnings.*" (ISA 240: Par. 30). 'The Auditor's Responsibility to Consider Fraud in an Audit of Financial Statements' (IFAC 2004, par. 8) describes that: *'Fraudulent financial reporting involves intentional misstatements or omissions of amounts or disclosures in financial statements to deceive financial statement users. Fraudulent financial reporting may be accomplished by the following: Manipulation, falsification (including forgery), or alteration of accounting records'* The implication is that auditors should not be concerned with whether intentional misstatements are invoked for opportunistic or efficient motivations; either creates opacity in financial reporting.

Where the line between acceptable and unacceptable accounting practices is crossed, auditors have a professional and legal responsibility to confront those charged with the management of the entity (ISA 240). In addition to legal responsibilities, auditor constraint of aggressive earnings management is an essential component in providing reasonable assurance as to the truth and fairness of financial reports. Indeed, recent high profile corporate collapses have highlighted the auditor's role in credible, transparent financial reporting. Nonetheless, researchers have found that investors perceive a general decline in the quality of reported earnings and the reliability of audited financial information (Hodge, 2003). Such findings tend to suggest that auditor constraint of earnings management is perhaps more important now than at any other time. Extant research indicates that auditors possess, to varying degrees, the ability to constrain earnings management. Several studies have found that auditors employed by first tier accounting firms are more likely to demonstrate greater

reporting conservatism than auditors employed by other accounting firms (Becker, Defond, 1998; Jiambalvo and Subramanyam 1998; Krishnan 2003; Bartov et al., 2000; Kim et al., 2003, Francis et al., 2009). Further, within first tier accounting firms, those auditors possessing industry expertise are more likely to constrain earning management than those who do not possess such expertise (Krishnan, 2003).

In regard to aggressive earnings management, research suggests that auditors are more likely to permit aggressive reporting by clients where there exists flexibility within accounting standards, and significant judgement is required on behalf of management (Hackenbrack and Nelson, 1996). Factors found to influence auditors' judgement in relation to permitting aggressive reporting include the client's financial health (Becker et al., 1998; Braun et al., 2008), the size or importance of the client (Wright et al., 2006), and the risk of litigation against the auditor (Farmer, 1993). Other studies have examined how auditors, when faced with aggressive earnings management, generate less aggressive financial reporting alternatives (Johnstone et al., 2002). However, despite extensive research in relation to auditor constraint of earnings management, little evidence exists as to how aggressive accounting is distinguished from earnings manipulation.

2.2.2 Accounting Fraud

Numerous definitions of the term 'fraud' have been proposed within the academic and professional literatures. In the criminological, and most general, sense, fraud refers to '*...any crime for gain which uses deception as its principal modus operandi*' (Wells, 1997). Fraud encompasses a range of deceptions including employee fraud, payroll fraud, insurance fraud, credit card fraud, identity theft, bribery, kickbacks, insider trading, and the deliberate falsification of financial reports. The focus of this current research is on the latter deception, that is, financial reporting fraud. Financial reporting fraud constitutes one of the two forms of fraud relevant to the audit profession[2]. Consistent with the broad definition of fraud, financial reporting fraud involves deception; more specifically, deception of financial report users by preparers of those reports (ISA 240).

[2] The other form of fraud relevant to auditors, not dealt with in this research, relates to intentional misstatements resulting from misappropriation of assets.

This definition is consistent with the U.S. Statement on Auditing Standards, SAS No. 99[3] (AICPA 2002). The fact that the International Auditing and Assurance Standards Board (IAASB) released the revised ISA 240 (February 2007), after prior revision in only 2005, suggests the importance of this issue to the auditing profession, especially in the wake of high profile international accounting scandals and their impact on the already existing audit expectation gap (McEnroe and Martens, 2001).

Financial reporting fraud involves intentional deceit on behalf of the preparers of the financial reports, and attempted concealment of that deceit (Albrecht, 2003; Albrecht and Albrecht, 2004). Such actions result in the financial reports not representing a true and fair view of the company's underlying economic position. Fraudulent accounting can be perpetrated in a variety of ways including improper revenue and expense recognition, fictitious revenues and assets, over and/or undervalued assets and liabilities, improper disclosures, and related party transactions. A number of studies have found improper revenue recognition to be the most common type of fraudulent financial reporting; specifically, premature recording of revenues and recording of fictitious revenues (Loebbecke et al., 1989). Further studies have examined the relationship between the type of fraud and auditor litigation; findings indicate that frauds involving fictitious transactions result in a higher likelihood of litigation against auditors (Bonner et al., 1998).

Professional Auditing Standards, both in the UK and internationally, were recently revised as part of a wave of regulatory reforms, in an effort to, inter alia, improve detection of financial reporting fraud. A key component of the resulting expanded guidelines for auditors in relation to fraud is the adoption of the 'fraud triangle' approach. The fraud triangle approach, which is already well established within the psychological and criminological literature (Cressey, 1953; Cressey, 1986; Wells, 1997), involves decomposing fraud into its three basic elements: opportunity, incentive/pressure, and attitude/rationalisation. More analytically this involves:

a) **Incentive/Pressures**: Management or employees have an incentive or are under pressure, which provides a reason to commit the fraud. The incentive could be either the direct gain (e.g., misappropriation of assets–stealing petty cash), or a different benefit (e.g., financial statement fraud–manipulating accounting for sales to meet a target). The pressure could be that unrealistic

[3] SAS No. 99 'Consideration of Fraud in a Financial Statement Audit'

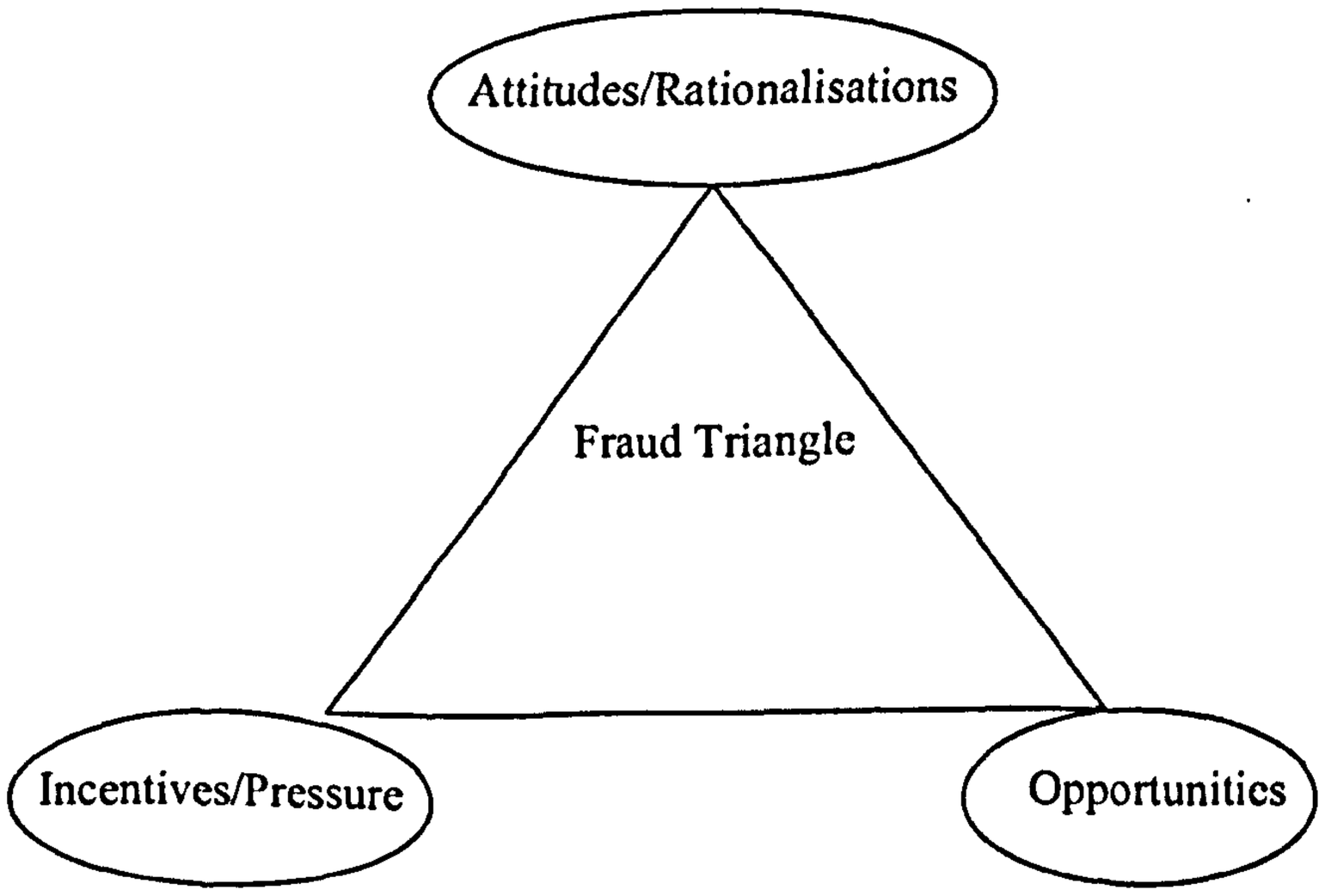
performance targets have been set and the individual is worried what will happen to them if the targets are not achieved.

b) **Opportunities**: Circumstances exist that provide an opportunity for fraud to be perpetrated. This could be a position of trust, which they can manipulate, or lack of controls, such as not getting a second person to authorise checks, which means they can write them to a personal bank account.

c) **Attitudes/Rationalizations**: Those involved are able to rationalize committing a fraudulent act. For example they could think that they work for a large company so what they are doing does not actually hurt anyone or that everyone else is doing it so why shouldn't they.

Figure 2.1 describes the concept of the fraud triangle. ISA 240 (par. 10) has also adopted this approach, and describes fraud in terms of incentives or pressures to commit fraud, a perceived opportunity, and the ability to rationalise fraudulent behaviour:

Figure 2.1: The three conditions generally present when fraud occurs



'Fraudulent financial reporting can be caused by the efforts of management to manage earnings in order to deceive financial statement users by influencing their perceptions as to the entity's performance and profitability. Earnings management

may start out with small actions or biased judgments by management. Pressures and incentives may lead these actions to increase to the extent that they are not acceptable under the applicable financial reporting framework and result in fraudulent financial reporting. Such a situation could occur when, due to pressures to meet market expectations or a desire to maximize compensation based on performance, management intentionally takes positions that lead to fraudulent financial reporting by materially misstating the financial statements. It is important for the auditor to be aware of circumstances that may be indicative of earnings management and particularly of positions'

Recent research suggests that decomposing fraud in this manner may, in fact, enhance auditors' sensitivity to opportunity and incentive fraud cues (Wilks and Zimbelman, 2004). The responsibility for the prevention and detection of fraud lies with management and those charged with the governance of an entity ISA 315 explains that the auditor's responsibility is to provide '...reasonable assurance that the financial report taken as a whole is free from material misstatement, whether caused by fraud or error' (Par. 28). Nonetheless, research suggests that much fraud is not detected by the external auditor (PWC 2009).

2.2.3 The Distinction between Aggressive Earnings Management and Financial Reporting Fraud

Both aggressive earnings management and financial reporting fraud involve the manipulation of reported financial information to achieve a desired result. In achieving that result, both aggressive accounting and fraud can involve (to varying degrees) the same accounting technique. Such techniques, particularly those involving discretionary accruals, result from the existence of subjectivity and management discretion within accounting standards, and fall into what has been described as a 'grey' area between aggressive earnings management practices and outright fraud (Levitt 1998). Consequently, defining the distinction between aggressive earnings management and fraud, and determining the existence of either aggressive accounting or fraudulent accounting under certain circumstances, can be difficult. Few studies have attempted to establish a distinction between aggressive earnings management and financial reporting fraud. Indeed the ambiguity associated with where aggressive accounting ends, and fraud begins, makes the task of distinguishing between the two

types of financial manipulations challenging at best. The ambiguity lies not just in existing research, but also in existing UK and International legislation. Current Auditing Standards, both in UK and internationally, have yet to provide guidance on distinguishing between aggressive accounting and fraudulent financial reporting. ISA 240 and SAS No. 99 do provide (what appear to be) relatively straightforward definitions of financial reporting fraud[4] (IFAC 2004). However the issue of aggressive accounting, and when aggressive accounting becomes fraudulent, is provided minimal discussion. Contributing to the ambiguous demarcation between the two types of financial manipulation are similarities amongst existing definitions of earnings management and fraud. A common factor described in definitions of both earnings management and financial reporting fraud is that of managerial intent, specifically, intent to mislead or deceive. Aggressive earnings management can involve, and fraud certainly does involve, intent on behalf of management to mislead financial report users.

Earnings management, especially when conducted opportunistically, can entail the misleading of stakeholders about a firm's underlying economic performance (Healy and Wahlen, 1999). Financial reporting fraud, by definition, involves intentional misstatements in the financial reports designed to deceive financial report users (IFAC 2004). As both aggressive accounting and fraudulent accounting can involve intent to deceive, and since the concept of intent is difficult to ascertain for other than perpetrators, the distinction between aggressive accounting and fraud cannot be established through managerial intent alone.

Existing research and professional literatures do attempt to provide recognised means of operationalising the distinction between aggressive earnings management and financial reporting fraud. Such methods include the establishment of compliance or non-compliance with GAAP (Dechow and Skinner, 2000; POB 2000; IFAC 2001), and the materiality level of the misstatements (Rosner, 2003). However, operationalising the distinction between aggressive and fraudulent accounting in practice using these methods may prove difficult. Dechow and Skinner (2000) describes the acceptability of the accounting treatment under GAAP as the distinguishing factor between aggressive accounting and fraudulent accounting.

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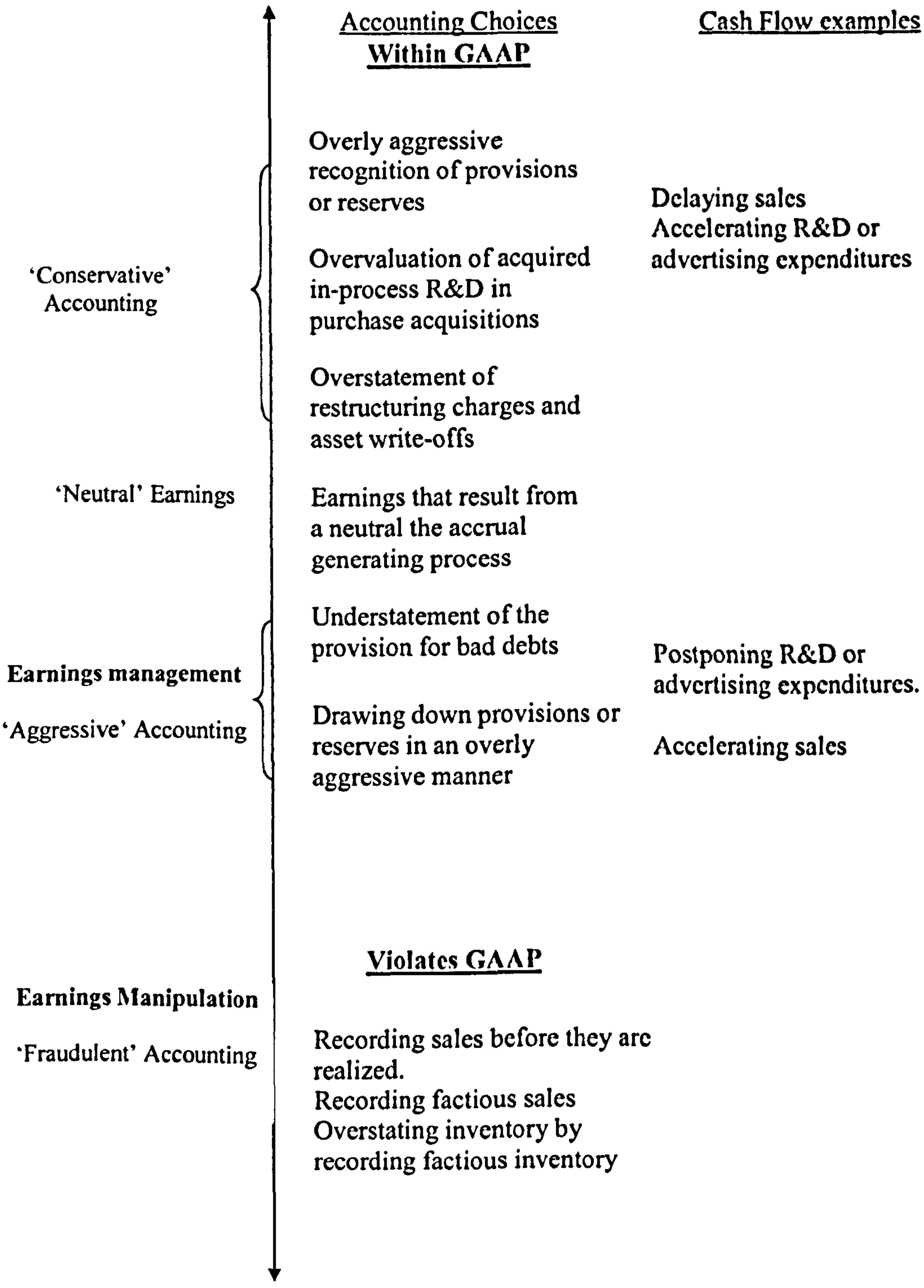
[4]According to ISA 240 (par. 6) the term 'fraud' refers to an intentional act by one or more individuals among management, those charged with governance, employees, or third parties, involving the use of deception to obtain an unjust or illegal advantage.

Accounting judgements and techniques that are acceptable within GAAP are described as a continuum from conservative accounting, to neutral accounting, and to aggressive accounting.

Accounting practices that violate GAAP are described as fraudulent accounting (represented diagrammatically in Figure 2.2). According to this model, behaviours such as an overly aggressive recognition of provisions constitute conservative accounting, and behaviours such as drawing down provisions or reserves in an overly aggressive manner constitute aggressive accounting. As both of these techniques are described as being acceptable within GAAP, they constitute a form of earnings management. In contrast, behaviours such as recording sales before they are realisable, recording fictitious sales, backdating sales invoices, and recording fictitious inventory are described as violating the boundaries of GAAP, and hence are fraudulent by their nature. An interesting point to note is that the model proposed by Dechow and Skinner (2000) use acceptability under GAAP to present earnings management practices as separate and distinguishable from fraudulent accounting practices. Furthermore, earnings management practices are distinguished from legitimate management discretion. Dechow and Skinner (2000) propose that judgements and estimates that fall within the bounds of GAAP may comprise either legitimate use of discretion or earnings management, depending on management intent. Only those accounting practices that violate GAAP and "clearly demonstrate intent to deceive" are described as fraudulent (Dechow and Skinner, 2000).

However, the concern with distinguishing accounting practices in this way is the restrictive nature of the classifications. It is quite possible that some of example accounting techniques described could represent either legitimate earnings management or financial reporting fraud. As a result, there is a potential for some of the example accounting techniques to be incorrectly classified. For example, backdating of sales invoices is described as fraudulent accounting because it violates GAAP and there exists a (seemingly) clear intent to deceive. Yet there may be circumstances (however rare) where the backdating of sales invoices represents a justifiable business decision. In such cases, this action would constitute a form of legitimate accounting, not fraudulent accounting (i.e. accounting for construction contracts, IAS 11).

Figure 2.2
The distinction between earnings management and earnings manipulation



Similarly, actions described by this model as earnings management may actually represent fraudulent financial reporting. Such is the case with subjectively measured misstatements, including the estimation of provision or reserve account balances. The understating of provisions is depicted as aggressive accounting, yet could readily constitute fraudulent accounting. ISA 240 explains that inappropriately adjusting assumptions and changing judgements used to estimate account balances, constitutes fraudulent financial reporting (APB 2004: Para. 09). If provision account balances are inappropriately estimated with an intention to deceive, then the understating of provisions would constitute fraudulent accounting, not merely aggressive accounting. There exists little research into measurement subjectivity, and the resulting classification, of a misstatement. ISA 240 explains that subjectively measured misstatements can constitute fraudulent accounting, while Dechow and Skinner (2000) propose otherwise. There does, however, exist evidence to suggest that measurement subjectivity is an important factor in auditors' book or waive decisions. Research by Braun (2001), Philips et al. (2001), finds that auditors are more likely to waive a detected misstatement when that misstatement is measured subjectively as opposed to objectively. The difficulty with accounting techniques involving subjectivity, however, is that intent to deceive is not easy to establish.

The Panel on Audit Effectiveness (POB 2000) takes a somewhat broader approach in describing the distinction between earnings management and financial reporting fraud. As with Dechow and Skinner (2000), the distinguishing factor between aggressive accounting and fraud is described as being the acceptability of the accounting treatment under GAAP. However, the POB report describes earnings management activities as forming a continuum along which the available accounting techniques vary from legitimate discretion at one end through to fraudulent accounting (with intent to deceive) at the other. According to the POB approach, accounting techniques such as estimating provisions or accelerating sales could constitute either legitimate management discretion or financial reporting fraud, depending upon the particular circumstances of each situation. The POB approach to describing earnings management and fraud appears to be less restrictive than that propounded by Dechow and Skinner (2000), and as such, seems less likely to result in misclassifications. Nonetheless, operationalising the distinction between aggressive accounting and fraudulent accounting in practice may be no less problematic.

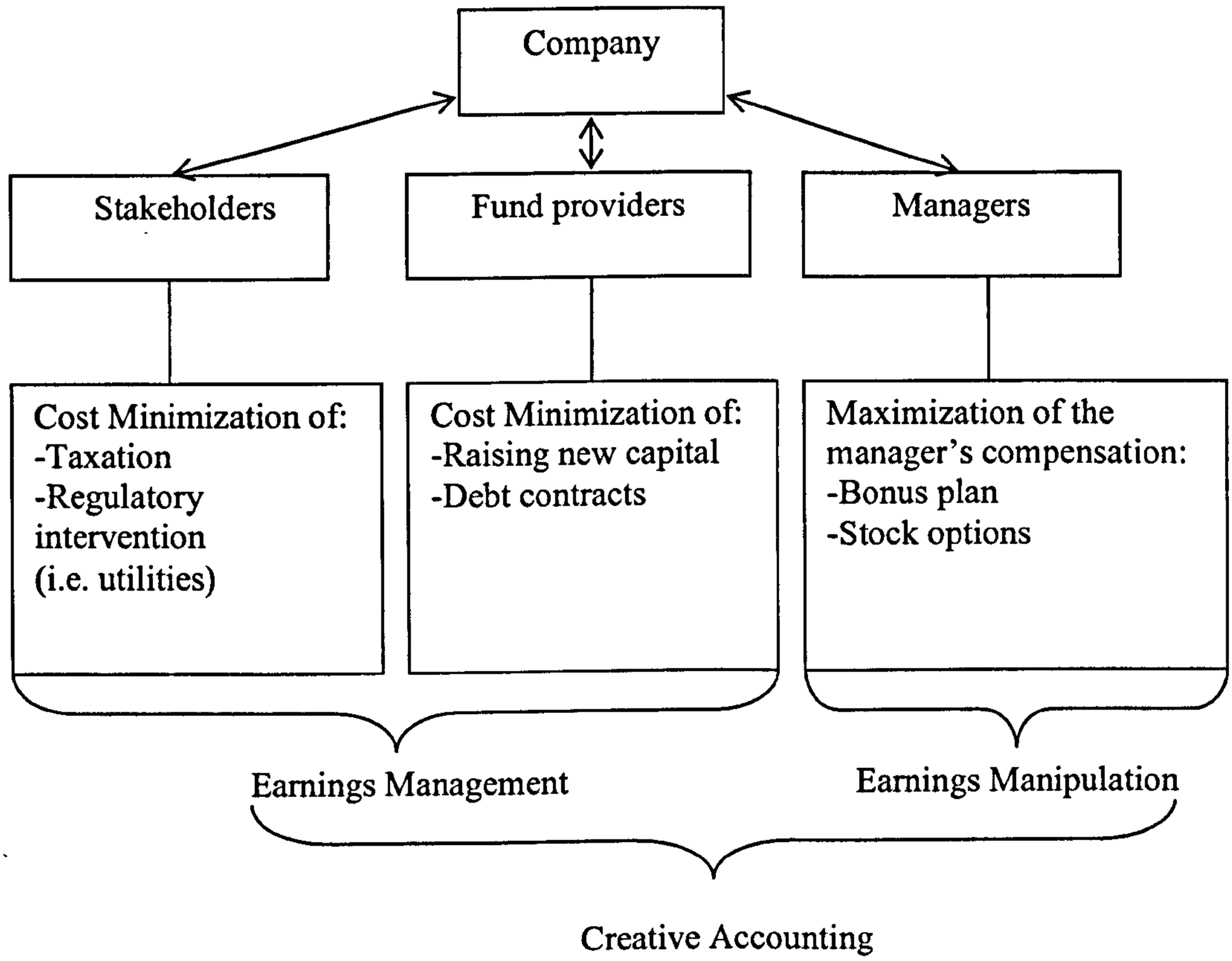
An alternative method of operationalising the distinction between aggressive earnings management and fraud in the research literature is adopted by Rosner (2003). She explains that accounts involving estimation, such as discretionary accruals, can represent either aggressive earnings management or fraud depending on the size of the disputed amount. She uses the term 'earnings manipulation' to incorporate both earnings management practices and fraudulent accounting. In examining the earnings management behaviour of (ex post) bankrupt companies, Rosner employs quantitative materiality as the key factor in her distinction between aggressive accruals management and fraudulent accruals management. Rosner suggests that material earnings overstatements (fraud under her classification) can be distinguished from (legitimate) earnings management by the magnitude of the earnings manipulation proxy variables; lower (immaterial) magnitudes are considered legitimate earnings management, with higher (material) magnitudes considered fraudulent. For accounts involving estimation, size may be a relatively straightforward method of distinguishing between aggressive accounting and fraudulent accounting in practice. However, consideration must still be held for underlying managerial intent.

Establishing a distinction between aggressive earnings management and fraud that encompasses all relevant factors is indeed challenging. While in the research and professional literatures there have been some attempts to provide a distinction between aggressive accounting and fraud, there has been little (if any) effort to explore how this distinction is operationalised in practice.

2.2.4 Definitions of earnings management and earnings manipulation

In this study the term 'earnings management' refers to directors' discretionary choices within the limits of the accounting standards and 'earnings manipulation' refers to fraudulent accounting, whereas the term creative accounting is used to incorporate both 'earnings manipulation' and 'earnings management'. Earnings management in this study is defined as the application of aggressive accounting practices that are within the limits of GAAP. Earnings manipulation in this study is defined as the use of managerial discretion to make accounting choices or design transactions that violate GAAP. The result of earnings manipulation is that financial statements fail to document a true and fair view.

Figure 2.3 – Earnings management - earnings manipulation and potential wealth transfers



2.3 Earnings Management and Earnings Manipulation Research Designs

Three approaches are used by researchers to evaluate the existence of earnings management. The first approach studies aggregate accruals and uses regression models to calculate expected and unexpected accruals. The second approach focuses on specific accruals such as the provision for bad debts, or on accruals in specific sectors, such as the claim loss reserve in the insurance industry. The third approach investigates discontinuities in the distribution of earnings.

2.3.1 Aggregate Accruals

The Jones (1991) model is the most widely used model in studies of aggregate accruals. The model follows Kaplan's (1985) suggestion that accruals likely result from the exercise of managerial discretion and from changes in the firm's economic

conditions. The model relates total accruals to the change in sales (Sales) and the level of gross property, plant and equipment (PPE):

$$\text{Total Accruals}_{it} = a_{1t} + b_{1t}\,\text{Sales}_{it} + c_{2t}\,\text{PPE}_{it} + i_{it} \qquad (1)$$

The model is based on two assumptions. First, that current accruals (changes in working capital accounts) resulting from changes in the firm's economic environment are related to changes in sales, or sales growth since equation (1) is typically estimated with all variables scaled by either lagged assets or lagged sales. Second, that gross property plant and equipment controls for the portion of total accruals related to nondiscretionary depreciation expense.

The second version uses current accruals as a dependent variable and only the change in sales as an explanatory variable:

$$\text{Current Accruals}_{it} = a_{2t} + b_{2t}\,\text{Sales}_{it} + u_{it} \qquad (2)$$

These models are either estimated in time series company-by-company or cross-sectionally using all companies in a given two-digit industry code and year. Each annual estimation is used to make a one-year ahead forecast of expected accruals which, subtracted from the dependent variable, yields unexpected accruals. Two alternative versions of the Jones (1991) model have also been proposed. In their total accrual form, the models are given by:

$$\text{Total Accruals}_{it} = a_{3t} + b_{3t}\,(\text{Sales}_{it} - \text{Receivables}_{it}) + c_{3t}\,\text{PPE}_{it} + u_{3t} \qquad (3)$$

$$\text{Total Accruals}_{it} = a_{4t} + b_{4t}\,\text{Cash Sales}_{it} + c_{4t}\,\text{PPE}_{it} + u_{it} \qquad (4)$$

The expectation model in equation (3) is typically attributed to Dechow et al. (1995), even though, the modified-Jones model presented in Dechow et al. (1995) is the same as the Jones model in the estimation period and only has the receivable adjustment in the prediction period. Indeed, the revenue based variable in (3) equals Cash Sales_{it}-Sales_{it-1}. Since it is not clear how the construct proxies for the effect on accruals of changes in the firm's economic environment, Beneish (1998b) proposed an alternative modification based on cash sales (equation 4). His evidence indicates that change in cash sales preserves the intuition behind using changes in sales to proxy for changes in economic performance and has the advantage of using as an explanatory variable an accounting construct that reduces the endogeneity problem[5].

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[5] It is less likely for management to exercise discretion over cash sales than over credit sales. Beneish (1997) finds that cash sales are rarely manipulated. He reports that one firm out of 64 (1.6%) engages in circular transfers of money to create the impression of receivable collection. In contrast, 43 of 64 firms (67.2%) engage in manipulations affecting credit sales (e.g., fictitious invoices, front loading with

Notwithstanding these modifications, the primary criticism on accruals models remains: The models fail to distinguish the accruals that result from managers' exercise of discretion from those that result from changes in the firm's economic performance (McNichols, 2000). This is intensified by the fact that it is unknown how changing operating decisions that are ex-ante value maximizing affect measures of earnings management. In other words, it is unclear whether estimates of earnings management reflect efficient operating decisions or reporting considerations. To this effect Beneish (1997, p.83) describes the following example: "...a firm's financial reporting strategy depends on its business strategy and should be evaluated ex-ante, not ex-post. To illustrate, consider a personal computer manufacturer who seeks to gain market share on a competitor increases production and offers, before the holiday season, incentives to distributors who increase their demand. If the strategy is not successful and translates into lower than expected earnings and a price drop, the manufacturer may be sued and its reporting criticised. While the firm ends with higher discretionary accruals, it is, conditional on its strategy, an aggressive competitor rather than an earnings manager. This firm is, however, not distinguishable from a firm who deliberately pushed sales on its distributors to improve earnings." An additional issue is that if managers indeed have an incentive to manage earnings, they are likely to do so in a manner that is difficult to detect, making more difficult the construction of an accurate model based on aggregate accruals.

Despite their widespread usage, models' of aggregate accruals have been subject to significant criticism. Criticism on the models' ability to isolate the earnings management component of accruals includes McNichols and Wilson, (1988); Holthausen et al. (1995); Beneish, (1997, 1998), and McNichols (2000) who argue that when the incentive context studied is correlated with performance, inferences from the study are confounded and Guay et al. (1996) who suggest that accrual models estimate discretionary accruals with considerable imprecision and that some accrual models randomly decompose earnings into discretionary and non-discretionary components; Beneish (1997) who provides evidence that accrual models have poor detective performance even among firms whose behaviour is extreme enough to warrant the attention of regulators and Thomas and Zhang (2000) who suggest that the performance of accrual models is gloomy.

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a right of return, keeping books open past the end of the fiscal period, overstating the percentage of completion).

In fact the estimation of discretionary accruals requires specification of an estimation and test period, and specification of company-year observations in which earnings were not managed. The underlying assumption is that earnings management occurs in the test period but not in the estimation period. Given that directors are hypothesised to manage earnings either upwards or downwards, this can be a difficult assumption to maintain in many studies.

A second issue regards the estimation approach. Jones (1991) used a company-specific model to estimate the relation between total accruals and explanatory factors. In order to estimate company-specific parameter estimates, a reasonable time series is required. Most studies impose the requirement that sample companies have at least 10 years of data, subsequently excluding companies that do not have a sufficient data series. This approach eliminates growth companies with less that 10 years trading history. An alternative is to use a cross-sectional estimation approach, which does not require a time-series for each company. However, then the benchmark for each company's accruals depends on the accounting policies of the other companies in the sample. Bagnoli and Watts (2000) suggest this can result in positive or negative discretionary accruals that may not reflect earnings management.

2.3.2 Specific Accrual Techniques

As noted above, many of the studies to date use unexpected accruals as a proxy for earnings management. Regulators and standard setters are very likely to be interested in evidence on which specific accruals or accounting methods are used for earnings management. Teoh et al. (1998) examine depreciation estimates and bad debt provisions surrounding initial public offers. They find that, relative to a matched sample of non-IPO firms, sample firms are more likely to have income-increasing depreciation policies and bad debt allowances in the IPO year and for several subsequent years. A similar study by Adams et al. (2009) yields similar results.

Banking and insurance companies have also provided a fertile ground for research on specific accruals used to manage earnings. Loan loss reserves of banks and claim loss reserves of insurers are directly related to their most critical assets and liabilities, are typically very large relative to net income and equity book values, and are highly dependent on management's judgment. Studies of bank loan loss provisions include Beaver et al. (1989), Moyer (1990), Scholes et al. (1990), Wahlen (1994), Beatty et al. (2002), Collins et al. (1995), Beaver and Engel (1996), Liu and

Ryan (1995) and Liu et al. (2006). Some of these studies also find evidence that financial institutions engage in earnings management by timing the realization of gains/losses on investment securities, e.g., Moyers (1990), Scholes et al. (1990), Beatty et al. (1995), and Collins et al. (1995). Overall these studies find compelling evidence of earnings management among banks, presumably (in part) for stock market purposes. Many of these studies, however, suggest that the market 'sees through' such earnings management.

Studies of property-casualty insurance claim loss reserves, including Petroni (1992), Anthony and Petroni (1992), Beaver and McNichols (1998) and Petroni et al. (1999), also find evidence of earnings management among insurers. It is not clear, however, whether this is motivated by stock market incentives or by regulatory concerns.

Other recent earnings management tests that use specific accruals have examined deferred tax valuation allowances. Under FAS No. 109, managers with deferred tax assets are required to forecast tax benefits that are not expected to be used. One criticism of this standard is that it permits too much judgment in reporting. Cook et al. (2008), Badertscher et al. (2009), Visvanathan (1998), Miller and Skinner (1998), and Ayers (2002) test this hypothesis, and all conclude that there is little evidence that managers misuse reporting judgment relating to the valuation reserve to manage earnings. However, since these studies have not directly examined settings in which managers have strong market incentives to manage earnings (e.g., to meet analysts' earnings expectations or to window-dress results prior to an equity issue), their tests may lack power.

Overall, there is remarkably little evidence on earnings management using specific accruals, suggesting that this is likely to be a fruitful area for future research, McNichols (2002). By examining specific accruals, researchers can provide direct evidence for standard setters and regulators of areas where standards work well and where there may be room for improvement. As a secondary benefit, such studies may be able to develop more powerful accrual models.

Recent research in specific accruals is used in estimating models for detecting earnings manipulation. Beneish (1997, 1999) suggests a model (M-score) designed to capture either the financial statement distortions or preconditions that might prompt companies to engage in such activities. The results suggest a systematic relationship between the probability of manipulation and specific accruals. The robustness of this

model is tested against Jones model using a sample of companies experiencing extreme financial performance. It is found that models which take into account managers' incentives have a better chance of identifying discretionary accruals.

The m-score model proposed by Beneish (1999) includes eight variables: Days in Receivables Index , Gross Margin Index, Asset Quality Index, Sales Growth Index, Depreciation Index, Sales General and Administrative Expenses Index, Leverage Index, Total Accruals to Total Assets. The definition of these variables is documented in chapter 7, Table 7.7. A review of the literature involving specific accruals is documented below:

Sales Growth Index:

Teoh et al. (1997) find that high growth companies can raise reported earnings by altering discretionary accounting accruals. This is consistent with the findings of Petrols and Lougee (2010), they find that companies discovered to manipulate earnings are more likely to inflate revenue and report significant growth, comparing to control companies. Specifically, the average revenue growth among companies engaging in earnings manipulation was 53% whereas for those in the control sample was 12%. Evidence of the link between earnings manipulation and high growth rates is also suggested in the research of Beasly (1996); Bell et al. (1991); Loebecke et al. (1989); Loebecke and Willingham (1998).

Gross Margin Index

A disproportionate (to sales) decrease in the gross margin balance (sales minus cost of sales) is viewed negatively by analysts (e.g., Hawkins, 1986). Gross margin is, in general, a less noisy indicator than earnings of the relation between the firm's input and output prices (Lev, 1993). This relation is driven by underlying factors, such as intensity of competition and the relation between fixed and variable expenses (operating leverage). Variations in these fundamental factors (indicated by disproportionate changes in gross margin) obviously affect the long-term performance of the firm and are therefore informative with respect to earnings persistence and firm values (Lev, 1993). Unusual movements in gross margin could be associated with earnings manipulation, as suggested by Chen and Sennetti, (2005) and Fanning and Cogger, (1998). Both papers document a positive relation between gross profit margin and earnings manipulation, which is evidence of inflated sales (or deflated cost of goods sold).

Sales General Administrative expenses

Most administrative costs are approximately fixed, (Lev, 1993), therefore, a disproportionate (to sales) increase is considered as a negative signal suggesting, among other things, a loss of managerial cost control or an unusual sales effort (Bernstein, 1988). This signal was estimated as the difference between the annual percentage change in Sales and Administrative expenses and the percentage change of Sales. Chen and Sennetti (2005) find that companies identified to manipulate earnings have lower ratios of research and development expenditures to sales as well as sales and marketing expenditures to sales than control firms do. Lower values for these ratios suggest reduced discretionary spending (or inflating revenue). Consistent with the idea of scaling revenue by a resource used to generate revenue, Fanning and Cogger (1998) and Kaminski et al. (2004) find that sales to general administrative expenses is a significant predictor of earnings manipulation.

Receivables/Inventory

SAS No. 47, Audit Risk and Materiality in Conducting and Audit (AICPA 1984, AU312.29), states that any account that requires subjective judgment in determining its value increases audit risk. Accounts receivable and inventory are noted as two such accounts due to the subjective judgment involved in estimating uncollectible accounts and obsolete inventory. Because subjective judgment is involved in determining the value of these accounts, management may use these accounts as tools for earnings manipulation (Summers and Sweeney, 1998). Jones et al. (2007) find that the inventory account and accounts receivable were involved in 35 percent and 61 percent, respectively, of manipulations in their sample.

Under both UK GAAP and IFRS, the receivables figure, appearing on the face of the balance sheet, is the net figure after taking into account the provision for doubtful debts. The provision for doubtful debts is largely discretionary, so unusual changes (relative to accounts receivable) can be associated to earnings management (McNichols and Wilson, 1988 and O'Glove, 1987). Firms with inadequate provisions for doubtful receivables are expected to suffer future earnings decreases from provision increases. McNichols and Wilson, 1988 frequently referred to the adverse implications of inadequate bad debt provisions (in recent years particularly for loan losses of financial companies) for the persistence and growth of earnings.

Directors' Remuneration Index

Cheng and Warfield (2005) test whether high equity incentive managers engage in earnings management by examining whether these managers are more likely to report earnings that meet or just beat analysts' forecasts. Their analysis indicates a significantly higher incidence of meeting or just beating analysts' forecasts for managers with high equity incentives. Additional analysis document that managers with high equity incentives, are less likely to report large positive earnings surprises.

Effective Tax Rate

Dhaliwal et al. (2004) in their research find that changes from third to fourth quarter effective tax rates are negatively related to whether and how much a firm's earnings absent tax expense management miss analysts' consensus forecasts. They provide robust evidence that firms lower their projected effective tax rate when they miss the consensus forecasts, which is consistent with firms decreasing their tax expenses if non-tax sources of earnings management are insufficient to achieve targets. They also find that firms that exceed earnings targets increase their effective tax rate, but this effect is less significant. These findings are consistent with the results of Cook et al. (2008) that suggest tax expense represents an opportunity for firms to manage earnings. They also find that tax fees paid to auditors significantly impact firms' third-to-fourth quarter changes in effective tax rate for firms that would miss consensus earnings forecasts absent tax expense management.

Audit fees

Larcker and Richardson (2004) find consistent evidence of a negative relation between the level of fees (both audit and non-audit) paid to auditors and accruals (i.e., higher fees are associated with smaller accruals). Ferguson et. al. (2004) examine a sample of U.K. firms over the period 1996 to 1998 and find a positive association between earnings management and fees paid to auditors (audit and non-audit fees). The results of Ferguson et al. (2004) are consistent with the proposition that higher levels of economic bonding between auditor and client resulting from the joint provision of non-audit-services may reduce auditors' willingness to restrain clients' opportunistic accounting practices and in turn, may reduce the quality of financial reporting. This is consistent with the findings of Antle et al. (2001) that suggest an association between increase in audit fees and increase in abnormal accruals. The findings of Antle et al. (2001) are consistent between both US and UK samples.

Depreciation Index

Healy et. al. (1987), find that changes in accounting methods from accelerated to straight-line depreciation are positively associated with earnings management. The findings of Holthausen (1980) suggest that companies close to breaching debt covenants are more likely to change depreciation method from accelerated to straight-line.

Total Accruals to Total Assets

Earnings management through accruals is the process where a manager may increase or decrease the levels of accounting accruals (such as accounts receivables, inventory, accounts payable, deferred revenue, accrued liabilities, and prepaid expenses) in order to reach a desired profit level.

As an example of such an accruals management, let us assume that a manager reports a cash expenditure of, say, £90,000 on a marketing campaign as an asset called "deferred subscriber acquisition cost" instead of an expense. (For illustration, let us assume that this is not in legal violation of the applicable accounting and disclosure rules.) The result of this accounting decision is to boost the bottom line of the division by £90,000. Generally accepted accounting principles and IAS 38 on intangible assets define assets as economic resources that provide future benefits to the company. It may well be that the above manager is convinced that the marketing expenditure will result in future benefits, and is simply trying to report the transaction properly as an asset. On the other hand, it could be that the manager is really trying to manipulate reported earnings using an accounting decision. In their recent research Bartov and Cohen (2009) find that companies with increased accruals are more likely to meet or beat analysts' earnings expectations.

Asset Quality Index

Asset quality is the ratio of non-current assets other than property plant and equipment (i.e. goodwill, development costs and intangible assets) to total assets. This ratio isolates the increase in assets for which future benefits are potentially less certain. AQI is the ratio of asset quality in year t, relative to asset quality in year t-1. If company has increased its involvement in cost deferral then the AQI estimation will yield a result greater than 1. Duh et al. (2009) examine whether the reversal of a previously recognized impairment loss provides an opportunity for earnings management and they find that firms recognising more impairment losses are more

likely to reverse impairment losses when doing so would avoid an earnings decline in a subsequent period.

In a more recent research Dechow et al. (2008) expand the model suggested by Beneish. They examine the characteristics of companies that are alleged to have manipulated their financial statements by the SEC. Their results suggest that manipulations are more common in growth companies experiencing deteriorating operating performance. Moreover, they compare manipulating companies to the broader population of public companies and develop a model to predict accounting manipulations. The output of this model is a scaled logistic probability, where higher values suggest a greater probability of manipulation.

2.3.3 Distribution Techniques

Several recent studies adopt a new approach to test for earnings management. These studies examine the distribution of reported earnings to assess whether there is any evidence of earnings management (Burgstahler and Dichev 1997, 1998; Degeorge et al. 1999). These studies hypothesize that corporate managers have incentives to avoid reporting losses or reporting declines in earnings, and examine the distribution of reported earnings around these points. The findings indicate that there is a higher-than-expected frequency of firms with slightly positive earnings (or earnings changes) and a lower-than-expected frequency of firms with slightly negative earnings (or earnings changes). These patterns also appear in studies using quarterly data (Burgstahler and Eames 2003) and using analysts' earnings forecasts as the threshold (Degeorge et al. 1999, Gore et al., 2007). The authors interpret these findings as evidence that some firms use earnings management to avoid reporting negative earnings, or earnings declines, or falling short of market expectations.

These studies have several appealing features. First, the authors do not have to estimate (potentially noisy) abnormal accruals; instead, they inspect the distribution of reported earnings for abnormal discontinuities at certain thresholds. A related advantage is that this approach captures the effects of earnings management through cash flows (i.e., reduced R&D or advertising expenditures), that may not be captured by unexpected accrual measures. Second, the authors are able to estimate the pervasiveness of earnings management at these thresholds. For example, Burgstahler and Dichev (1997, 1998) find that '8–12% of the firms with small pre-managed earnings decreases exercise discretion to report earnings increases' and '30–40% of

the firms with slightly negative pre-managed earnings exercise discretion to report positive earnings.' Evidence suggests that frequency of earnings management is relatively high among the subset of firms confronted with reporting losses. This approach has several disadvantages, however, because it does not capture the magnitude of earnings management or the specific methods by which earnings are managed.

In summary, these tests provide convincing evidence that some firms do manage earnings when they anticipate reporting a loss, reporting an earnings decline, or falling short of investors' expectations. As it stands, this evidence does not have direct implications for standard setters and regulators. What is currently lacking from these studies is a clear understanding of the steps that these firms take to increase reported earnings, the magnitude of earnings management, the effect of this type of earnings management on resource allocation, and whether such earnings management can be mitigated by additional standards.

2.4 Evidence of Income Increasing Earnings Management.

Four sources of incentives for income increasing earnings management are discussed: (1) debt contracts, (2) compensation agreements, (3) equity offerings, (4) insider trading. These sources have been hypothesized in prior positive accounting theory research and described as reasons behind earnings overstatement in recent research.

2.4.1 Contracting Motivations

Accounting information is used to help monitor and regulate the contracts between the company and its stakeholders. Explicit and implicit management compensation contracts are used to align the incentives of management and shareholders. Lending contracts are written to limit managers' actions that benefit the firm's shareholders at the expense of its creditors. Watts and Zimmerman (1978) suggest these contracts create incentives for earnings management because it is likely to be costly for compensation committees and creditors to reverse earnings management.

Earnings management for contracting reasons is likely to be of interest to standard setters and regulators for two reasons. First, earnings management for any reason can potentially lead to misleading financial statements and influence resource

allocation. Bhojraj et al. (2005) show that companies that just beat analyst forecasts with low quality earnings exhibit a short-term stock price benefit relative to firms that miss forecasts with high quality earnings. Second, financial reporting is used for communicating management information not only to stock investors, but also to debt investors and to investors' representatives on boards of directors. A large literature has emerged to test whether the incentives created by lending and compensation contracts can explain earnings management (Bergstresser and Philippon, 2006; Das et al., 2009; Othman and Zeghal, 2006; Meek et al., 2007; Ronen et al., 2006).

Earnings management via the accounting process (accrual based earnings management) involves exercising management's discretion over accounting policies and accounting estimates. For example a change of the depreciation policy from the accelerated method to straight line would fall in this category, as earnings are influenced through an adjustment in the accounting process.

Real activities manipulation is defined as: "management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds", Bens et al., 2003. An example of real activities earnings manipulation would be the deferral of discretionary expenses such as Marketing or R&D, to influence short-term earnings. Dechow and Sloan (1991) find that CEOs reduce spending on R&D toward the end of their tenure to increase short-term earnings. Baber et al. (1991) and Bushee (1998) also find evidence consistent with reduction of R&D expenditures to meet earnings benchmarks.

Roychowdhury (2006) finds evidence consistent with managers manipulating real activities to avoid reporting annual losses and develops empirical methods to detect real activities manipulation utilising accounting variables. The research of Roychowdhury (2006) finds evidence suggesting price discounts to temporarily increase sales, overproduction to report lower cost of goods sold, and reduction of discretionary expenditures to improve reported margins.

A further example of using accounting variables to investigate real-activities earnings management is the research of Bartov and Cohen 2009, 2007. They compare accrual-based earnings management and real activities earnings management. They estimate a model based on accounting variables and find that the level of real earnings management activities declined prior to SOX and increased significantly after the passage of SOX, suggesting that firms switched from accrual-based to real earnings management methods after the passage of SOX.

2.4.1.1 Debt Covenants

Debt contracts are an important area in financial accounting research as lenders often use specific financial limitations to regulate firms' activities, e.g., by requiring that certain performance objectives be met or imposing limits to allowed investing and financing activities. The linkage between financial ratios and debt contracts is used in studies investigating (i) why economic consequences are observed when companies comply with mandated, or voluntarily make, accounting changes that have no cash flow impact, (ii) the determinants of accounting choice and managers' exercise of discretion over accounting estimates that impact net income. The assumption is that debt covenants provide incentives for managers to increase earnings either to reduce the restrictiveness of accounting-based constraints in debt agreements or to avoid the costs of covenant violations.

A number of studies have examined whether firms that are close to lending covenants manage earnings. For example, Healy and Palepu (1993) examine whether companies close to their dividend constraint changed accounting methods, accounting estimates or accruals to avoid cutting dividends or making costly restructuring decisions. Holthausen (1981) examines whether companies close to their dividend constraint switched to straight-line depreciation. All three studies conclude that there is little evidence of earnings management among companies close to their dividend covenant. Instead, companies in financial difficulty tend to place more emphasis on managing cash flows by reducing dividend payments and restructuring their operations and contractual relations. Of course, dividend-paying companies can avoid violating their dividend constraint by cutting dividends when necessary, whereas companies may have fewer options available to meet other covenants, such as restrictions on interest coverage or debt-equity ratios. DeFond and Jiambalvo (1994) and Sweeney (1994) examine a sample of companies that actually violated a lending covenant. The evidence from these studies is mixed. DeFond and Jiambalvo (1994) find that sample firms accelerate earnings one year prior to the covenant violation. They interpret this as evidence of earnings management by companies that are close to their lending covenants. Sweeney (1994) also finds that covenant violators make income-increasing accounting changes, but these typically take place after the violation. This finding indicates that the sample firms did not make accounting

changes specifically to avoid violating the lending covenant. It is certainly possible, however, that the changes were made to reduce the likelihood of future covenant violations.

Sweeney (1994) also reports evidence on the frequency and resource allocation effects of earnings management for lending contract purposes. From a detailed analysis of 22 companies that violated debt covenants, she concludes that only 5 succeeded in delaying technical default by one or more quarters through an accounting change. Given the study's focus on firms that have a strong incentive to manage earnings, this frequency is quite low. However, because Sweeney (1994) only samples companies that actually violated loan covenants, her sample does not include firms that successfully managed earnings to avoid a technical default. As a result, her findings may understate the frequency of earnings management for debt covenant purposes. Charitou et al. (2007) find that companies receiving unqualified audit opinions four or five years prior to the bankruptcy-filing event manage earnings upwards in subsequent years, which is consistent with Rosner (2003).

Thus, the evidence in these studies on whether managers make income increasing accounting choices to avoid default is mixed. However, examining a large sample of private debt agreements, and measuring firms' closeness to current ratio and tangible net worth constraints, Dichev and Skinner (2002) find significantly greater proportions of firms slightly above the covenant's violation threshold than below. They suggest that managers take actions consistent with avoiding covenant default.

2.4.1.2 Compensation Contract

A number of studies examine actual compensation contracts to identify managers' earnings management incentives. On balance, the evidence reported in these studies is consistent with managers using accounting judgment to increase earnings-based bonus awards. For example, Guidry et al. (1998) find that divisional managers for a large multinational firm are likely to defer income when the earnings target in their bonus plan will not be met and when they are entitled to the maximum bonuses permitted under the plan. Healy (1985) and Holthausen et al. (1995) show that firms with caps on bonus awards are more likely to report accruals that defer income when that cap is reached than firms that have comparable performance but which have no bonus cap. Several other studies examine whether implicit compensation contracts have any

effect on earnings management incentives. These studies test whether their job security is threatened or their expected tenure with the firm is short. DeAngelo (1988) reports that, during a proxy contest, incumbent managers exercised accounting discretion to improve reported earnings. Dechow and Sloan (1991) show that CEOs in their final years in office reduced R&D spending, presumably to increase reported earnings. They argue that this behaviour is consistent with the short-term nature of their compensation contracts and their short employment horizons. In summary, these studies suggest that compensation and lending contracts induce at least some companies to manage earnings to increase bonus awards, improve job security, and mitigate potential violation of debt covenants.

A number of studies examine whether earnings management for compensation purposes increases executive compensation. Healy et al. (1987) find that changes in accounting methods from accelerated to straight-line depreciation or from FIFO to LIFO have little effect on bonus compensation for top management. Defeo et al. (1989) analyse the compensation effects of gains reported on equity-for-debt swaps and report similar findings. These open questions suggest many avenues for future research.

However, there is very little evidence on whether this behaviour is widespread or infrequent, and no evidence on which accruals are most likely being used to manage earnings for contracting purposes. In addition the existing studies do not provide evidence on the magnitude of earnings management. Finally, there is little evidence that earnings management for contracting reasons has any effect on share prices or resource misallocation.

2.4.2 Equity Offerings

A significant body of research examines managers' incentives to increase reported income in the context of security offerings. Information asymmetry between shareholders managers and investors, particularly at the time of initial public offerings, is recognised in prior research. Models such as Leland and Pyle (1977) suggest that the amount of equity retained by insiders signals their private valuation, and models such as Hughes (1986), Titman and Trueman (1986), and Datar et al. (1991) examine the role of the reputation of the auditor on the offer price. In these models, the asymmetry is resolved by the choice of an outside certifier or by a commitment to a contract that penalizes the issuer for untruthful disclosure. Empirical

studies assume that information asymmetry remains and use various models to estimate managers' exercise of discretion over accruals at the time of security offerings.

Four studies investigate earnings management as an explanation for the puzzling behaviour of post-issuance stock prices. Teoh et al. (1998) study earnings management in the context of initial public offerings (IPO), and Rangan (1998) do so in the context of seasoned equity offerings. These studies estimate the extent of earnings management using Jones-like models around the time of the security issuance, and correlate their earnings management estimates with post-issue earnings and returns. The evidence presented suggests that estimates of at-issue earnings management are significantly negatively correlated with subsequent earnings and returns performance.

The results in these studies suggest that market participants fail to understand the valuation implications of unexpected accruals. While the results are compelling, the conclusion that intentional earnings management at the time of security issuance successfully misleads investors is premature, Beneish (1998b).

2.4.3 Insider Trading

Like raising capital, insider trading is a trading-related incentive and a relatively new comer to the set of potential instances of income increasing earnings management. The reason is that, if one accepts two economic efficiency-based arguments, the study of such incentives becomes futile. Specifically, the arguments are: (1) capital markets are informationally efficient (a central hypothesis in capital market research), and investors see through managers' accounting actions, (2) reputation effects and the labour market discipline insiders, preventing them from profiting in firms facing declining prospects.

The evidence on insider trading as an incentive to increase income to mislead investors is less pervasive, but according to Beneish (1999) more compelling than the evidence on equity issuance as an incentive. One reason is that evidence is drawn from firms that have actually perpetrated financial statement fraud (Beneish, 1999), or committed illegal acts (Summers and Sweeney, 1998). It is consistent with professional views of the causes of earnings management (National Association of Certified Fraud Examiners 1993), and also with evidence that managers reduce their stake in the firm's equity in the years preceding bankruptcy filings (Seyhun and

Bradley 1997). The most direct evidence linking financial statement manipulations and insider trading is in Beneish (1999) who finds 'that managers of firms with earnings overstatements that violate GAAP are more likely to sell their holdings and to redeem stock appreciation rights during the period when earnings are overstated than managers in a control sample of firms.' Evidence in Beneish (1999) also suggest an average stock price loss of 20 percent when the overstatement is discovered and an average cost of settling litigation that is 9 percent of market value prior to discovery. This infers that managers' stock transactions during the period of earnings overstatement occur at inflated prices that reflect the effect of the earnings overstatement.

Beneish (1999) relies on prior insider trading research to develop hypotheses about manipulation incentives related to insider trading. This research suggests that managers act as informed traders, buying (selling) in advance of stock price increases (declines) (Jaffe 1974; Seyhun 1986) and views the managers' gains as an efficient means of compensating managers for providing their private information to investors on a timely basis (Carlton and Fischel, 1983; Dye, 1984; Noe, 1997).

Beneish (1999) thus argues that if managers act as informed traders, they are expected to use their information about earnings overstatement to trade for their own benefit. Thus, if managers overstate earnings to provide market participants with positive private information about the firm's prospects, they are expected to either strategically increase their stake in their firm's equity (perhaps to provide another positive signal about firm prospects) or abstain from trading. Alternatively, if managers overstate earnings to hide deteriorating firm performance, they are expected to sell their equity contingent wealth. If overstatement is intended to mislead investors, managers may limit their selling to reduce the likelihood of attracting the attention of the SEC's insider trading monitors. Alternatively, as argued by Summers and Sweeney (1998), managers who mislead investors may possess low personal ethics, low risk aversion and/or a downwardly biased assessment of the probability of getting caught. Yet another possibility is that, in the event of detection, managers could justify their selling for personal liquidity reasons. Beneish (1999) also investigates the penalties facing managers after the manipulations are discovered. His research concludes that if reputation losses and the consequent disciplining in the stock market preclude managers from engaging in earnings manipulation and making

profitable trades, employment and monetary penalties subsequently imposed on managers should be substantial if they are to serve as a deterrent.

Literature suggests (Sloan, 1996) that even sophisticated market participants such as analysts and auditors do not fully understand the persistence and valuation implications of accounting accruals. Two possible explanations for these findings include (1) the relation between the firm's accrual-generating process and future earnings is sufficiently complex that investors fail to identify the transitory nature of the accruals (Thomas and Zhang, 2002), or (2) managers opportunistically manage earnings and investors fail to recognise until later periods that accruals are less persistent than operating cash flows (Bradshow et al. 2001; DeFond and Park 2001). Whether they manage earnings or not, a firm's top executives likely possess private information regarding the underlying economic factors associated with the nature and persistence of accounting accruals, and it is suggested that their trading is informative ex ant about earnings management (Beneish, 2002).

2.4.4 Regulatory Motivations

The earnings management literature has explored the effects of two forms of regulation: industry-specific regulation and anti-trust regulation. Recent survey evidence in Nelson et al. (2002) suggests that income decreasing in earnings management in the form of "cookie jar" reserves is pervasive. Surveying 526 experiences of Big-4 audit partners and managers, they find that 40% of the responses describe attempts at income decreasing earnings management. While the ratio suggests that income decreasing earnings management is pervasive, it is difficult to make a more precise assessment because the survey was conducted in the autumn of 1998, a period characterized by economic expansion and a bull market.

2.4.4.1 Industry Regulations

Banking regulations require that banks satisfy certain capital adequacy requirements that are defined in terms of financial ratios. Insurance regulations require that insurers meet conditions for minimum financial health and liquidity. Utilities have historically been rate-regulated and permitted to earn only a normal return on their invested assets to prevent them from exploiting their dominant position. It is frequently asserted that such regulations create incentives to manage the income statement and balance sheet

accounts of interest to regulators. A number of studies provide evidence consistent with this hypothesis. There is considerable evidence that banks that are close to minimum capital requirements overstate loan loss provisions, understate loan write-offs, and recognize abnormal realized gains on securities portfolios (Moyer 1990; Scholes et al. 1990; Beatty et al. 1995; Collins et al. 1995). There is also evidence that financially weak property casualty insurers that risk regulatory attention understate claim loss reserves (Petroni, 1992) and engage in reinsurance transactions (Adiel, 1996). Several of these studies provide evidence on the frequency with which firms engage in earnings management for regulatory purposes. For example, Collins et al. (1995) find that nearly half of their sample banks use five or more of seven options for managing regulatory capital. Collins et al. (1995) also examine the use of two options to manage reported earnings. Across the sample of 60 banks, over 75 percent used at least one option, and almost 20 percent used both options to manage reported earnings. Adiel (1996) also provides evidence on the frequency of regulatory management behaviour. He examined data for 1,294 insurer-years in the period 1980 to 1990 and reported that for 1.5 percent of the sample insurer-years financial reinsurance appeared to be used to avoid failing regulatory tests.

This evidence offers strong support that accounting discretion is used to manage industry-specific regulatory constraints. However, the frequency of the accounting management varies considerably across studies. Further, little is known about whether regulators "see through" earnings management for regulatory purposes.

2.4.4.2 Anti-Trust and Other Regulations

Other forms of regulation can also provide firms with incentives to manage earnings. For example, it is often alleged that managers of firms vulnerable to an anti-trust investigation or other adverse political consequences have incentives to manage earnings to appear less profitable (Watts and Zimmerman 1978). Managers of firms seeking government subsidy or protection may have similar incentives.

A number of papers have examined whether regulatory scrutiny increases the likelihood of earnings management. Cahan (1992) showed that firms under investigation for anti-trust violations reported income-decreasing abnormal accruals in investigation years. Jones (1991) found that firms in industries seeking import relief tend to defer income in the year of application. Key (1997) examined unexpected accruals for firms in the cable television industry at the time of Congressional

hearings on whether to deregulate the industry. Her evidence is consistent with firms in the industry deferring earnings during the period of Congressional scrutiny.

Evidence from these studies on the frequency of earnings management for regulatory purposes is difficult to interpret. The number of firms sampled in the above studies is relatively small: Cahan's (1992) sample is 48 firms subject to anti-trust investigation during the period 1970 to 1983, Jones' (1991) sample comprises 23 firms in industries seeking import relief between 1980 and 1985, and Key (1997) examines 22 firms in the cable industry. The frequency of negative unexpected accruals for these firms is relatively high, however: 70 percent for the cable firms and 90 percent for firms seeking import relief. If the expected frequency of negative unexpected accruals is 50 percent, these findings suggest that as many as 20 percent of cable firms and 40 percent of import relief firms managed earnings. A question that is unanswered by these studies is whether regulatory motives for earnings management affect only the limited number of firms sampled, or a wider segment of the economy. Finally, there is no direct evidence on how regulators respond to earnings management. There is also no direct evidence on how investors respond to earnings management for anti-trust purposes. In summary, earnings management studies strongly suggest that regulatory considerations can induce firms to manage earnings. There is limited evidence on whether this behaviour is widespread or rare, however, and very little evidence on the effect on regulators or investors, McNichols (2002).

2.5 Conclusions

Overall, it can be concluded that earnings management literature currently provides only modest insights for standard setters. Prior research has focused almost exclusively on understanding whether earnings management exists and why. The findings suggest that earnings management occurs for a variety of reasons, like to meet analysts' expectations, to increase management's compensation, to reduce the likelihood of violating lending agreements, and to avoid regulatory intervention.

For regulators and standard setters, these findings are likely to confirm their intuition that companies do manage earnings. However, if there is to be a more informed debate about the implications of earnings management for standard setting and regulation there is need for additional evidence on the following questions. Which

accounting standards are used to manage earnings? What is the frequency of managers' use of discretion to manage earnings rather than to communicate company performance to investors? What factors limit earnings management?

For example, are companies with effective corporate governance or disclosure policies less likely to engage in earnings management? Chan et al. (2009) and Prawitt et al. (2009) find evidence that companies with material control weaknesses, as documented in their Sarbanes-Oxley Act report, are more likely to have material positive discretionary accruals. Answers to the above questions are difficult to infer from current studies for a number of reasons. First, most academic studies attempt to identify earnings management, but do not provide evidence on its magnitude and scope. Consequently, existing evidence offers limited help for standard setters and regulators to assess whether current standards are largely effective in facilitating communication with investors, or whether they encourage widespread opportunistic earnings management. Second, most studies have examined unexpected accruals for evidence of earnings management. While this approach provides a useful summary aggregate of earnings management it offers limited contribution in distinguishing between effective and less effective standards in facilitating communication between managers and investors.

Third, most studies examine research settings where earnings management is most likely to be observed. This increases the possibility of identifying earnings management, but it hinders extrapolating about the pervasiveness of earnings management. Finally, findings on specific accruals that can be used to detect earnings manipulation are limited, suggesting the need for future empirical and theoretical research.

The implication of this review is that earnings management area remains a fertile ground for academic research. This research aims to extend current literature in the area of earnings management, suggesting a model based on Beneish (1997, 1999) for detecting earnings manipulation.

Chapter 3

Research Questions and Hypotheses

3.1 Introduction

This study aims at critically analyzing the characteristics of earnings management and the parameters that can signal earnings manipulation. Chapter two shows that, no similar study has been conducted so far for the UK setting. The exemption is studies of earnings manipulation in the US and studies on earnings management in the UK. These studies attempt to understand the accrual generating process in cases of earnings management. Nonetheless, according to McNichols (2002), they lack reliability in the estimation of discretionary accruals under extreme circumstances such as earnings manipulation.

Therefore, the objective of this study is twofold: a) to understand how earnings management and earnings manipulation is invoked in the UK setting b) to determine and test a model for detecting earnings manipulation. Both (a) and (b) aim at filling a significant gap in the literature. There are strong reasons to expect differentiating characteristics in companies whose financial reports violate accounting standards.

a) Gore et al. (2007) provide evidence on discontinuities in the distribution of reported earnings using a sample of UK companies covering the period 1989-1998. They report that an empirical distribution of earnings before discretionary accruals does not reflect the unusually high frequency of small surpluses and unusually low frequencies of small deficits relative to targets found in the distribution of reported earnings. They find that discretionary accruals have the effect of significantly increasing the frequencies of companies achieving earnings targets.

b) Companies subject to adverse rulings by the FRRP are characterised by significantly weak financial performance. They have a higher frequency of losses or earnings decreases, higher leverage, a lower frequency of dividend increases, greater restructuring activity, and fewer optimistic management forecasts for the year ahead (Peasnell et al., 2001).

c) Companies censured by the FRRP are less likely to have an audit committee and high proportion of outside directors (Peasnell et al., 2001)

3.2 Research Questions

Managers that decide to manipulate earnings are facing increased pressure and they implement aggressive accounting practices, overriding the 'true and fair view'. These differences in companies that fail to comply with accounting standards are expected to be manifested in their financial statements and especially in their accrual generating process. This study examines the characteristics of companies that manage earnings and the characteristics of companies subject to adverse rulings by the FRRP. The main thesis of this research is that earnings manipulation is largely an escalation of earnings management. Therefore, the research questions seek to explore the nature of earnings management and earnings manipulation. The first two research questions aim at exploring the research subject (earnings management and earnings manipulation) from an official perspective (FRRP) and gaining an understanding of the mechanics involved in creative accounting. The next two research questions aim at exploring the characteristics of companies that engaged in creative accounting practices. The last question aims at modelling the financial characteristics of manipulators. Based on the literature review and interviews, the current research purports to answer the following questions:

Q_1 What is the FRRP's perceived difference between earnings management and earnings manipulation in terms of:

a) the nature of managerial discretion applied in accounting policies and estimates
b) the impact of those decisions in financial statements

Q_2 How earnings are managed operationally in specific cases regarding:

a) particular accounting standards that allow increased managerial discretion
b) the design of specific transactions aiming at influencing earnings towards a specific direction

Q_3 To what extent earnings are managed in UK listed companies, in terms of:

a) the number of cases and their pervasiveness among the population of public listed companies
b) the estimated magnitude of earnings management relative to reported earnings
c) the association between specific accruals and earnings management
d) the evolvement of earnings management over the most recent years

Q_4 What are the characteristics of companies that are subjected to adverse rulings from the FRRP for applying aggressive accounting practices?

a) company specific characteristics measuring balance-sheet strength and annual performance prior to the discovery of the accounts manipulation.
b) financial ratios and specific accruals that could signal increased likelihood for non-compliance with accounting standards
c) subsequent performance following the discovery of the accounts manipulation
d) quality of corporate governance in companies that have been publicly censured for aggressive accounting practices.

Q_5 Which are the financial variables that could signal non-compliance with accounting standards?

a) compare specific accruals and financial ratios between manipulators and controls
b) analyse and test the estimation of a model that signals earnings manipulation.

Linking the research questions to the questions identified in the introduction:

Q_2 refers to the question: Which accounting standards are used to manage earnings?

Q_3 refers to the question: What is the frequency of managers' use of discretion to manage earnings rather to communicate company performance to investors?

Q_4 refers to the question: What are the characteristics of firms criticised for manipulating their earnings?

Q_5 refers to the question: How earnings manipulation can be detected?

Following the above research questions, it can be inferred that the hypotheses of this research mainly relate to (a) *methods* that companies utilise to manage or even manipulate their earnings and (b*) techniques* that can be applied to identify earnings management and earnings manipulation. Under the *methods* analysis stage, the following issues are examined:

a) The frequency and magnitude of earnings management
b) The way companies manage their earnings, taking advantage of specific accounting standards or designing specific transactions

Under the *techniques*, there are examined company specific characteristics. The important dimensions which seem to require investigation involve:

(a) The distribution of earnings among specific thresholds, to test for discontinuities.

(b) The association between specific accruals and the likelihood of achieving earnings targets

(c) The examination of patters between companies that have been publicly criticised for non compliance with accounting standards, in terms of specific accruals and financial variables.

(d) The corroboration of these variables into a model.

3.3 Research Hypotheses

Figure 3.1 below, imposes a structure (rather artificially) in order to facilitate the analysis and the construction of the research hypotheses. Specifically, figure 3.1 depicts the believed two stages of earnings management, the first is presumed to take place within the limits of accounting standards and the second involves accounting choices that violate GAAP. This research examines also the key firm characteristics relating to each stage. The starting point is the research question on how earnings are managed and therefore, the potential two stages are examined. The research hypothesis will be organised around the same areas. For example, this thesis examines earnings distortions via two dimensions namely, 'earnings management' and 'earnings manipulation'. Therefore, the central cycle represents the main heading i.e., the 'earnings management' whereas adjacent boxes represent the sub-headings, under which the research hypotheses are organised. Finally, in each box the issue examined is stated next to the corresponding hypothesis.

According to figure 3.1, the sections that follow discuss the issues that this study examines and how they are actually being examined developing relevant research hypotheses[6]. Further, a link of this to the existing literature is made. However, readers are reminded again that the structure is rather artificially being imposed in order to facilitate the research process. Therefore, it must be acknowledged that in strict terms this does not actually represent what way may apply in practice.

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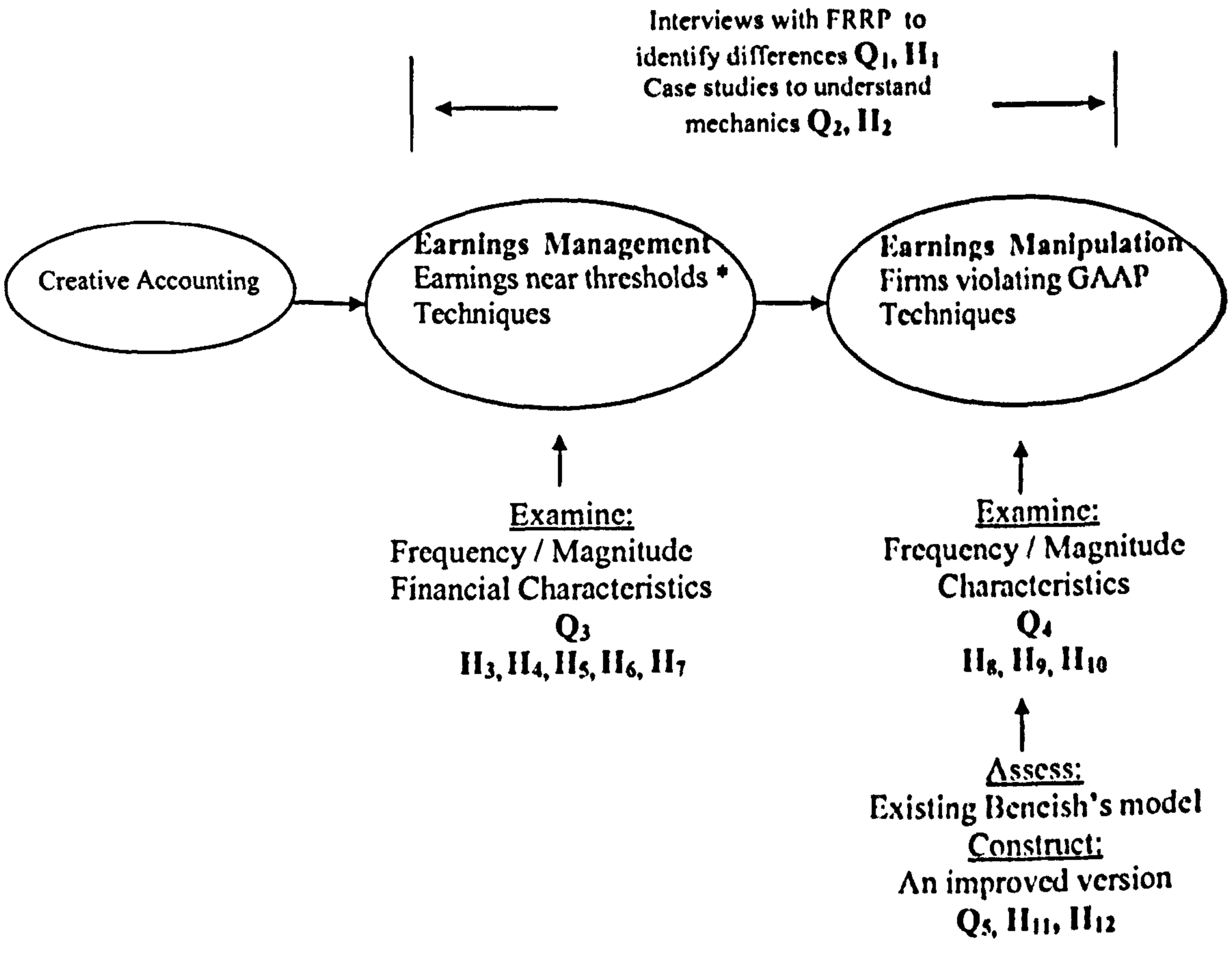
[6] The numbering used on research hypotheses refers to this chapter only.

Figure 3.1 Summary of the thesis



*thresholds: zero earnings, earnings decreases

3.3.1 Defining Earnings Management and Earnings Manipulation

As discussed in chapter two, the definition of earnings management in recent literature is vague. Moreover the relevant Auditing Standard does not specify the limits between earnings management and earnings manipulation. Some researchers suggest that earnings management and income smoothing is beneficial for markets as it gives an opportunity for managers to convey their private information on the future prospects of their company. Thus it can enhance the relevance of the accounting information. Though, examining the informative content of earnings is beyond the limits of this research.

Prior literature suggests that earnings management which involves accounting choices within the limits of accounting standards can be escalated to earnings manipulation, thus overriding the true and fair view concept. From a different perspective, it can be suggested that earnings manipulation refers to companies that report one-off transaction or accounting treatment that overrides accounting standards without having engaged into earnings management before. To gain a better understanding into the association between earnings management and earnings manipulation, two interviews took place with key employees of the FRRP. These research interviews are discussed in Chapter 4 that analyses the institutional framework for regulating financial reporting in the UK. The interviews with the FRRP refer to the research question Q_1 and test the following hypothesis:

H_1: Earnings manipulation is the result of escalated earnings management.

3.3.2 Case studies of Creative Accounting

After understanding the view of the regulator in the research interviews, the next research question seeks to analyse cases of aggressive accounting as described in FRRP press releases and other sources[8]. A detailed analysis into the mechanics of creative accounting is documented in Chapter 5 and provides an insight on how specific accruals can be used in identifying earnings manipulation. This analysis aims at answering the second research question and testing the following hypothesis:

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[8] Company Reporting, Financial Times, Lexis-Nexis

H_2: The instances of earnings management and earnings manipulation involve specific accounting treatments.

3.3.3 Earnings management to achieve specific thresholds

After exploring how earnings are managed in specific cases, the sixth chapter provides a broader view examining a wide sample of companies. This approach gives extensive systematic evidence about whether, how, and why, firms avoid reporting earnings decreases and losses, addressing the issues raised in Q_3. Earlier research (Shen, 2005; Brown, 2005; Gore et al. 2007) demonstrates that companies exercise discretion to increase earnings when the level of earnings is slightly below a threshold.

Chapter six examines whether earnings levels and changes are distributed with a discontinuity at zero applying an approach similar to Burgstahler and Dichev (1997), Degeorge et al. (1999) and Marinakis et al. (2009). Earnings management to avoid earnings decreases is expected to be reflected in the shape of the cross-sectional distributions of earnings changes in the form of unusually low frequencies of small earnings decreases and unusually high frequencies of small earnings. Similarly, management to avoid losses will be reflected in the form of unusually low frequencies of small losses and unusually high frequencies of small positive earnings.

The advantage of applying conditional distributions to investigate discontinuities among thresholds is that it avoids estimating (potentially noisy) abnormal accruals. A related advantage of this approach is that it captures the effects of earnings management through cash flows (i.e., reduced R&D or advertising expenditures), that may not be captured by unexpected accrual measures. Meanwhile it allows estimating the pervasiveness of earnings management at these thresholds. Therefore the hypotheses referring to Q3 are set as follows:

H_3: Earnings management aims at avoiding earnings decreases.

H_4: Earnings management aims at avoiding losses.

H_5: The frequencies of small negative non-discretionary earnings levels (changes) and small positive non-discretionary earnings levels (changes) are equal to the frequencies expected under a smooth distribution.

H_6: The proportion of observations with positive earnings levels (changes) is larger than the proportion of observations with positive non-discretionary earnings levels (changes).

H_7: Earnings discontinuity at zero has not declined over the last years of the sample.

3.3.4 The characteristic of companies criticised by the FRRP

After examining the characteristics of earnings management among earnings thresholds, the next session explores the area of earnings manipulation focusing on recent cases of companies censured by the FRRP. The characteristics of these companies are analysed in the seventh chapter.

Prior research has identified a number of causes that create motives for directors to manipulate and violate accounting principles. These include poor performance (Degeorge et al., 1999; Burgtahler and Dichev, 1997) and high leverage (Watts and Zimmerman, 1986). These factors are grouped as 'financial motives' and it is investigated whether they are associated with defective financial reporting. It is predicted that these factors could capture the increased probability of triggering an FRRP investigation.

Academic research (Fama and Jensen, 1983; Jensen, 1993) and policy initiatives (Cadbury Report, 1992; Greenbury Report, 1995) emphasise the importance of effective corporate governance for ensuring directors' accountability to shareholders. The corporate governance characteristics of companies censured by the FRRP are compared to a control sample. The board characteristics examined are: the size of the board, the proportion of independent directors and directors' remuneration. Additionally, chapter seven documents the characteristic of external auditors in terms of audit and non-audit fee, frequency of audit switch in current year and whether the auditor is an upper tier firm.

Beneish, 1999 and Dechow et al. (2008) suggest a model designed to capture either the financial statement distortions or preconditions that might prompt companies to engage in such activities. Their results suggest a systematic relationship between the probability of manipulation and increases in specific accruals. The variables suggested in the Benish's eight variable M-Score model are examined to assess whether they are positively correlated with the possibility of earnings manipulation in the UK setting. Therefore the following hypotheses, related to Q_4, are set:

H_8: FRRP companies are characterised by deteriorating performance in the defect year.

H_9: Corporate governance in FRRP companies is of a lower quality comparing to the control sample.

H_{10}: The financial variables described in M-Score model are positively correlated with the likelihood of earnings manipulation.

3.3.5 Predicting Earnings Manipulation

After analysing the characteristics of FRRP companies the next step is to estimate a model to capture either earnings manipulation or preconditions that might prompt companies to engage in such activity. Beneish (1999), Dechow et al., (1996), and Beasley (1996) use firms subject to SEC Enforcement Actions to investigate why and how US managers manipulate earnings. Publicly censured companies represent exogenously determined examples of poor accounting and as such help to overcome the measurement problems that confound other more commonly used earnings management proxies (i.e. discretionary accruals).

It is expected that variables described in Beneish's M-Score model will provide a fruitful approach in estimating a model to detect earnings manipulation. Furthermore, three additional variables are considered in an effort to improve the model's performance and reduce misclassification errors. These variables relate to (i) unusual increases in audit fees, (ii) unusual decreases in the effective tax rate and (iii) unusual increases in directors' remuneration.

As audit fees are set by the auditors to compensate for the audit work needed, they are expected to be a reliable proxy for increases in the internal risk of a company. Earnings manipulation is more likely to occur in an environment of low internal controls and lack of segregation of duties.

Similarly, the effective tax rate is estimated based on the tax accounting system that is less flexible in recognising revenues and expenses. For example a revision in the asset's useful lives, will not affect tax profits at the same magnitude as the financial accounting profits. Additionally, a company seeking to increase profits after tax would attempt to decrease the tax charge of the year. Holland and Jackson (2004) examine the association between deferred tax provisions and earnings management, and find that companies take an overall view in determining the required level of provision of deferred tax in order to manage earnings.

Directors' remuneration (excluding bonuses) is usually agreed at the beginning of the financial year and is likely to be associated to performance (Beneish, 1999). An

increase in the remuneration to sales index can be explained from an unexpected drop in sales. As sales are directly connected to profitability, directors' might result to earnings management in order to restore the unexpected decline. If the business environment continues deteriorating, escalating earnings management can result to earnings manipulation.

Considering the above considerations, the following research hypotheses, related to Q_5, are stated:

H_{11}: A probit model based on M-score's variables can be used as a classification tool for signalling earnings manipulation.

H_{12}: The inclusion of the three additional variables will increase the ability of the model to identify manipulators and decrease misclassification errors.

3.4 Summary and conclusions

This chapter develops a list of research hypotheses regarding earnings management and earnings manipulation. These are derived from the extant literature but also from the results of exploratory research interviews with the FRRP. The dimensions within which the research hypotheses are developed relate to the stages of accounting distortions induced by managerial discretion in the context of the escalation of creative accounting from earnings management to earnings manipulation.

Regarding the earnings management stage, this thisis examines to which extent and how frequent earnings are distorted to achieve specific thresholds. Then, the thesis explores the roles of discretionary and specific accruals in meeting earnings targets. Finally, there are examined the characteristics of companies that manage earnings to the extent that override accounting standards (earnings manipulation).

Chapter 4

Institutional Framework

4.1 Introduction

The Financial Reporting Review Panel (FRRP) was deemed as an innovation in the UK as it was responsible for the previously little considered issue of ensuring compliance with financial reporting regulations. This chapter explores the aims, objectives and operating procedures of the FRRP. The aim is to provide a richer understanding of the way in which this relatively new institution achieves its objectives. This chapter explores the original objectives of the FRRP, as well as subsequent public pronouncements on its aims, procedures and achievements. Discussions with key members of the FRRP have enabled further clarification of some of the issues. The role and the operating procedures of the Panel were explored in two semi-structured interviews. Interviews were carried out with a member of the Panel's board and the director of the Panel's operations who is also the Panel's secretary. These exploratory interviews aimed at analysing the role of the FRRP in the market and how the objectives of the Panel are achieved. The contact with the Panel helped also to gaining an understanding on the regulator's perceived difference between earnings management and earnings manipulation. Another objective of the interviews was to identify additional resources that report non-complying companies.

4.2 History and Operations of the FRRP

The FRRP was created in 1991, following recommendations of the Dearing Committee, to provide enforcement of accounting standards and to improve the quality of information available to shareholders (FRC, 2003). The Panel's objectives are described in Table 4.1. The FRRP was established as a subsidiary of the Financial Reporting Council (FRC), which had the overall objective of strengthening the regulatory framework for financial reporting in the UK[9]. Prior to the 1990s, 'creative

[9] Control of the process for setting accounting standards was transferred from the professional accountancy bodies to a legally mandated body, the FRC, and its subsidiaries. The FRC itself has the objectives of generally promoting good quality financial reporting, providing guidance to the Accounting Standards Board (ASB) and ensuring that the arrangements are conducted efficiently and are adequately funded (FRC,1991). The ASB have "the responsibility for making, amending and

accounting' excesses were widely reported and auditors were under pressure to conform to the interests of preparers rather than the spirit of accounting standards (McBarnet and Whelan, 1999). Then a regulatory model was chosen that maintained emphasis on self-regulation in the business sector. At the time of the FRRP's creation, setting of accounting and auditing standards was controlled by the accounting profession and stock exchange listing rules were set by the London Stock Exchange (Brown and Tarca, 2005).

Table 4.1 Financial Reporting Review Panel's Objectives

- Carrying out its formal responsibilities on behalf of the Secretary of State in relation to annual accounts and other documents falling within its remit
- Maintaining a Panel body that includes a wide and balanced representation, at the most senior level, of business people, accountants, lawyers and preparers and users of accounts such that those who come before the Panel knows that they are judged by their peers in the financial reporting community
- Developing and operating a selective programme of proactive review of annual accounts and other documents falling within its remit and which is based primarily on risk assessment
- Enquiring appropriately into specific sets of published financial statements and other documents falling within its remit which come to its attention, whether through proactive review, through complaints, or otherwise.
- Ensuring that any published findings of the Panel concerning any case considered by it are brought to the attention of relevant regulatory bodies and provide information to such regulatory bodies so far as permissible
- Liaising with FSA and other enforcement agencies in the U.K. and internationally to foster consistent application of accounting requirements and generally to improve the compliance of financial information with relevant reporting requirements
- Contributing to and seeking to sustain an EU approach to enforcement that, recognising the effectiveness of the U.K. arrangement, is vigorous and effective
- Seeking an appropriate level of knowledge, understanding and public recognition within the financial reporting community to maximize the Panel's deterrent effect

withdrawing standards" (FRC, 1991). The main role of the Urgent Issues Task Force (UITF) is to assist the ASB in areas where an accounting standard or Companies Act provision exists, but where unsatisfactory or conflicting interpretations have developed or seem likely to develop (FRC, 1991).

The structure chosen for the FRRP was compatible with the existing institutional framework for financial reporting and the cultural preferences of the business community, but was markedly different from the structure of a securities regulator like the SEC. The FRRP is funded by both private and public sector bodies as well as the accounting profession. The presence of an oversight body, the Financial Reporting Council (FRC), provides a barrier against undue influence by bodies providing funding and avoids possible problems with independence such as regulatory capture[10]. The FRRP members are drawn from the legal and accounting professions (FRC, 2003) and have practical experience useful for assessing cases brought before the Panel. This structure means directors and auditors discuss their financial reporting practices with their peers, which is a possible advantage compared to the securities regulator model. However, it can create the perception that the Panel lacks independence. In practice, Panel members serve on a part-time basis and can avoid participating in cases which would involve a potential conflict of interest.

The FRRP is authorised to examine departures from the requirements of the applicable accounting standards and is given a mandate to pursue directors of companies whose accounts do not comply with accounting standards and company law. The FRRP is concerned with the accounts of public limited companies and large private limited companies. Its authority extends only to company directors, not to auditors (although directors are encouraged to involve their auditors when an inquiry is initiated).

Despite not having regulatory authority over auditors, where defects are identified and the audit report is not qualified, the FRRP draws the case to the attention of the auditors' regulatory body. In all but one case to September 2009 this has been the Institute of Chartered Accountants in England and Wales (ICAEW) which is responsible for regulating the auditors of most large companies (Beattie and Fearnley, 1995). The company directors who are members of the auditors' regulatory body, mainly the ICAEW, may also be investigated. The establishment of the FRRP was greatly welcomed by the accounting profession (Plaistowe, 1992) but, despite the introduction of audit regulation, disciplinary action has only recently been taken against registered auditors in respect of FRRP cases (Fearnley et al., 2000).

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[10] Regulatory capture refers to the process by which the parties to be regulated come to control the regulator (Walker, 1987).

The Panel can seek a court order requiring the directors to revise the accounts at their personal expense (Companies Act 1985) but to date (September 2009) no court action has been taken as companies whose accounts have been deemed defective have voluntarily agreed to make amendments. The chairman (a lawyer) and deputy chairman (an accountant) of the FRRP are part time and remunerated. Approximately 18 other members (consisting of lawyers, accountants in practice and representatives from industry and commerce) are unpaid. Their work is supported by a secretary and other technical staff employed by the FRC.

Until 2004, the FRRP was described as a reactive body, because it acted only on cases brought to its attention. These arose from complaints made by individuals, companies and press comments[11] (Hines et al., 2001). Proactive surveillance activities were commenced during 2004. Thus, until 2004, the FRRP's actions related mainly to referred cases. The FRRP had discretion over the cases it pursued, but did not control the cases brought to it. Therefore it had limited control over the extent of matters it considered.

On receiving a complaint, a preliminary investigation is undertaken. The case is then classified as one of apparent substance, a minor issue or one which should not be pursued further. In cases of apparent substance the FRRP chairman writes to the chairman of the company concerned setting out the issue of concern and the FRRP's powers and procedures, and invites the directors to comment. If the FRRP is satisfied with the directors' response the matter may be dropped at this stage. If it cannot be resolved by correspondence then a meeting between the FRRP and directors may be arranged. The meeting may be formal or informal. A formal meeting involves a specially constituted group of five or more FRRP members which is formed when the chairman considers firm action to be necessary. Further meetings may be held until the matter is resolved to the FRRP's satisfaction (FRRP, 1993).

If remedial action is agreed with the directors of the company, a press notice is issued which names the company, briefly explains the defect and specifies the remedial action. This is distributed both to the financial press and the financial markets (FRRP, 1993). No information is released by the FRRP about cases which have been examined but not pursued, or minor matters which have been explored through "informal discussions" with a company.

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[11] Prior to 1997 the FRRP also acted on information about qualified audit reports and other disclosed non-compliance matters received from the London Stock Exchange (Fearnley et al., 2000).

FRRP cases appear to relate to companies experiencing financial difficulties. Peasnell et al. (2001) found that companies in FRRP cases were less likely to have a large auditor (Big 4), an audit committee and a high proportion of outside directors. The firms showed weak operating performance in the defect year, but not in subsequent years. Fearnley et al. (2000) reported a decline in referrals and press notices over the period 1991–2000, which was interpreted by the FRC as an improvement in compliance levels. McBarnet and Whelan (1999) explored the alternative view that the decline in cases was not a positive sign. They explained that there were deterrents to whistle-blowing, which could mean that serious cases were not being pursued. Hines et al. (2001) presented evidence that an FRRP investigation was not considered a favourable event by either the company or its auditor, providing support for the notion that preparers and auditors were likely to improve their level of compliance to avoid an investigation.

The FRRP received considerable publicity in its early years, which could have led to increasing compliance in the early years and thus fewer cases in the later years, Fearnley et al. (2000). The secretary of the FRRP (Carol Page) provided an explanation for the smaller number of cases in recent years. She suggests[12] that while the level of compliance by large companies was high, the complexity of their financial statements was a barrier to public queries, leading to fewer issues being raised with the Panel. In addition, some cases brought to the Panel related to less significant accounting issues and those without broader application in the financial community. Therefore, they were resolved without the Panel issuing a press notice.

From 2004 significant changes occurred in the FRRP's operations, involving widening its remit and commencing proactive surveillance (FRC, 2005). Adoption of IASB standards in 2005 created a demand for proactive, risk-based enforcement. In 2003, the Secretary of Trade and Industry announced a number of reforms to improve corporate governance, including proactive enforcement of accounting standards (FRC, 2003). This task could have been allocated to the Financial Services Authority (FSA), but the government decided to expand operations of the FRRP, clearly a vote of confidence in the Panel. A budget of twenty-one staff and £3.7m was proposed, a considerable increase from 2003 when it had approximately six full-time equivalent staff and a budget of £700,000.

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[12] In an interview with the author, see sections 4.4 and 4.5 for more details

Proactive monitoring commenced in 2004 with review of 226 sets of accounts. The FSA and the FRRP began to work more closely, with the FSA assisting in the identification of issues and companies to target, based on risk-based assessment models (Accountancy, 2003). The Companies Bill (Audit, Investigations and Community Enterprise) was introduced into the U.K. Parliament in December 2003 and received Royal Assent in October 2004 (GNN, 2004). It extended the remit of the FRRP to cover financial information other than annual accounts, certain listed entities that are not companies and foreign companies. The Bill also gave the FRRP power to require supplementary information from issuers and their auditors (FRC, 2003). In 2005, the Panel issued draft revised operating procedures and made its first report on proactivity (FRRP, 2005).

For the period 2007/08, the FRRP had an annual budget of £2.1m, employed 12 full time experts and a legal war-chest of £2m. During 2007/8, the Panel reviewed 326 sets of accounts (interim and year-end), 112 companies were approached by the Panel for further information or explanation. In the cases where no immediate action was required, 68 companies reflected the Panel's comments in their future reporting and two companies were the subject of a Panel's press release having agreed to restate amounts reported in prior periods.

As part of the Panel's proactive approach, every year a set of priority sectors is announced. For the period 2009/10 the Panel's monitoring activity is currently biased towards the following industry sectors: banking, retail, travel and leisure, commercial property and house builders[13].

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[13] Ian Wright, head of FRRP's corporate reporting, recently said (Accountancy, Sep. 2009) he was aware of credit arrangements which allowed homebuyers to stagger payments over time. "The housing industry is a good example of an industry which is under phenomenal stress," he said. "We have seen comments about new ways of selling houses, changing the terms and conditions of house sales." He said he will be investigating the issue and is reminding businesses to stick to the rules and make the proper disclosures when reporting revenue. It's not the first time the FRRP has signalled its concern over the issue. In its 2008 annual review it said revenue recognition criteria "is likely to require greater attention during the coming reporting season". Another example of the Panel's proactive approach is a recent article in FT (Oct. 2009) covering the Brewin Dolphin's accounts restatement after inquiry: '...The 15-month inquiry into Brewin's accounting was part of a larger look at the way UK companies account for intangible assets during acquisitions, said Carol Page of the FRRP. Several other companies in different industries were also in talks with the Panel about similar accounting questions, she said. The Financial Reporting Council is undertaking a project on the issue and hopes to publish new guidance on how companies should account for intangible assets before the end of December, when many UK companies conclude their fiscal year...'

4.3 Literature Review

As the FRRP is a relatively recently established institution, there have been few studies on its activities. Brandt et al. (1997) surveyed finance directors (FDs), audit engagement partners of listed companies (AEPs) and financial journalists (a proxy for financially literate users) to establish whether the changes to the regulatory framework, which were introduced in the UK in 1991, have enhanced the integrity of financial reporting. AEPs rank the FRRP as the top influence. Financial journalists and FDs rank it second to the reformed Financial Reporting Standards introduced by the ASB.

Beattie et al. (1999) surveyed financial journalists, listed company FDs and AEPs on their perceptions of the impact of factors enhancing auditor independence. From 45 factors, financial journalists rank the risk of referral to the FRRP for the auditor as the joint fifth most important factor in enhancing independence, with the risk of referral to the FRRP for the company ranked seventh. The FDs and AEPs surveyed consider the risk of referral to the FRRP for the auditor as being, respectively, the third and joint fourth most important independence enhancement factor.

There is some evidence that not all auditors consistently support the FRRP. Cooper, Lancaster Brewers, the auditors of Butte Mining, which was subject to two FRRP press notices, qualified the revised accounts resulting from the second case claiming that following the revisions the accounts no longer showed a true and fair view. This is the only occasion where an audit firm has publicly disagreed with the FRRP. Interestingly it was not one of the major firms. Fearnley et al. (2000, p. 61) find evidence of a FD being pressured by his auditor to defend his case in court. The FD felt that the big firms wanted to 'put a marker across the Panel' but interestingly they were not prepared to do it publicly themselves.

Taking an institutional theory perspective, Hines et al. (2001) find that the FRRP has created an institutional image for itself which somewhat overstates its achievements. It is believed to achieve its objectives through its own persistence and because the prospect of court proceedings are economically unattractive and could cause reputation damage to companies and to directors personally. An analysis of the FRRP's cases (Fearnley et al., 2000) shows that of the 54 press notices issued to June 2000, issues relating to recognition and measurement, which are most likely to affect

key financial indicators and represent material misstatement of accounting numbers, represent only 27.7% of the total defects found. The others relate to omission (4.8%), classification (25.3%) and disclosure (42.2%). Disclosure failings dominate, therefore, but although disclosure issues can be important they are not necessarily the most important. There has been continuing criticism (e.g. Peel, 2000) that the FRRP concerns itself with trivia and risks its own standing with the financial community by doing so.

Fearnley et al. (2000) find links between the issue of FRRP press notices and the introduction of new accounting standards. The FRRP may be developing a role which concentrates on the interpretation and enforcement of new standards and may be taking a different approach to materiality and the true and fair view from that which is currently understood and applied by practitioners. The FRRP can only normally deal with non-compliance, or creative compliance which is visible in a company's published accounts. Non-compliance or creative compliance which is not visible, such as an incorrect valuation, would not be picked up by the FRRP. Creative compliance is defined by McBarnet and Whelan (1991, 1992) as the application of rules to escape control without actually violating those rules. Therefore, some significant misstatements in the recognition and measurement categories could be missed. The FRRP set an interesting example in the Wiggins case (Fearnley et al., 2001) where, after an inquiry had started, it became apparent from a more detailed examination of the accounts that some large transactions had been recognised in the wrong accounting period. These recognition misstatements were corrected in the restated accounts.

Fearnley et al. (2002) find the FRRP to have motivated auditors to improve accounting compliance by increasing the possibility of some errors being exposed. It is also found to have enhanced the independence of auditors by changing the cost-benefit association of permitting non-compliance. FRRP inquiries cause auditors to incur non-recoverable costs that can undermine the auditor-client relationship and increase the risk of client loss. Possible career damage and the risk of an ICAEW disciplinary inquiry arise for the audit partner. The FRRP is found to provide auditors with an additional negotiating tool in dealing with directors, thus making in easier for auditors to prevent non-compliance, Fearnley et al. (2002).

Peasnell et al. (2001) examine companies judged by the FRRP as having published defective financial statement relative to a pair wise matched control sample.

They find that FRRP companies are average performers suffering temporary performance difficulties. FRRP companies are also less likely to have a Big Four auditor and less likely to have an audit committee and a high proportion of outside directors.

4.4 Research Method

In order to relate the FRRP's role to reducing earnings management and earnings manipulation, a member of the Panel's board and the Panel's secretary were interviewed. Both of them had extended experience of the Panel's operations. Dexter (1970) describes interviews as conversations with a purpose. The purpose of these interviews was to obtain detailed insights into the operations and the structure of the FRRP. Rich descriptive data of this type cannot be obtained by the use of questionnaires, and conversations with those involved enabled insights to be collected on the FRRP's procedures as explained by the participants. Lincoln and Guba (1985) justify the use of interviews, observing that they allow the researcher and researchee to move back and forth in time; to reconstruct the past, interpret the present and to predict the future. Thus the Panel members interviewed were able to comment on their experiences of the FRRP's pursuit of particular issues, the investigation process and on any subsequent outcomes.

A series of open ended questions was drafted from an analysis of publicly available evidence of the FRRP's activities. The semi-structured interview schedule was used for the member of the Panel's board and adapted as appropriate for the Panel's secretary. During the interviews, questions were used flexibly to enable the interview to flow and other related issues were explored as they arose. Both interviews were conducted in person, at the interviewee's premises and recorded in full. All recorded data were transcribed in full for analysis. It has been suggested that a grounded theory (Glaser and Strauss, 1967) approach provides a means of handling complex unstructured qualitative data (Henwood and Pigeon, 1995) and this method of taking the ideas of grounded theory as structured device was employed. The next section summarises the results of these interviews.

4.5 Findings

Research findings analyse the responses of FRRP members about the Panel's operations and procedures. Three major themes were identified from the transcript of each interview, which provide the structure for this section:

(a) The structure and investigation process of the FRRP.

(b) Earnings management and earnings manipulation.

(c) The wider role of the FRRP

The research interviews aim to test the following hypothesis described in chapter three:

$\mathbf{H_1}$: Earnings manipulation involves accounting treatments beyond the limits of true and fair view and results from escalating earnings management.

4.5.1 The structure and investigation process of the FRRP

Exploratory interviews with the FRRP took place in order to gain a better understanding of the Panel's functions and procedures. Since 2004, the Panel implements a proactive approach. This sections documents how this proactive approach is operationalised in practice

On receipt of a complaint by one of the Case Officers[14], a Reviewer will carry out a review for indications of potential breach of relevant accounting or reporting requirements. Discussions with the Panel suggest that at the time of the interview it employed five reviewers:

> *'...Well, it is a strange set up, we have, let me think, five reviewers. A couple those are employees who work a number of days per month and we also have two consultants who bill us for the work that they do on reviewing accounts. Those reviewers do nothing but review accounts. We send them the accounts we want them look at and we might give them some helpful information about why we want them reviewed ... '*

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[14] According to a recent job advertisement for Case Officers at the FRRP's website, the position Responsibilities include: a) Evaluating the reviews and recommending appropriate actions to the Panel. b) Drafting communications to companies, analysing responses and attending meetings with company representatives. c) Producing reports and papers on individual cases including reports of meetings. d) Assisting in the preparation of papers in respect of cases that are taken to Court. e) Contributing to the determination and application of the Panel's annual risk based approach and its periodic updating. f) Undertaking relevant research and comparative studies on issues as requested by the Chair and / or Deputy Chairs, as well as other opportunities to participate in ad hoc project and research work. The Panel requires that Role holders are fully qualified accountants with significant experience at a Senior Manager level in a major firm or a similar level within industry.

Reviewers are specialised at examining and reviewing accounts without being involved at the correspondence or the decision making process:

> *'...Some of the reviewers don't actually like doing the correspondence with the companies, they like just sitting down with a set of accounts and working on their own. We don't have a checklist; it's up to them how they work through these accounts... Similarly the case officers they will also review the accounts but not in the same amount of detail, so that's the check really...'*

The Panel employees seven full time Case Officers who are responsible for the correspondence with the companies:

> *'...The reviewers then send their accounts in and they are looked by case officers and that's really the Panel team that we have here at Aldwych House. And those case officers we have, let me think, seven, seven full time case officers. And their job is to process those reviews and to decide whether we want to write to the company about any of the issues...'*

In the course of its review, the Panel may find other issues which it may wish to raise with the company.

> *'...reviewers also review those accounts for other aspects as well, not just the issue that there has been a complaint about. It would be very embarrassing for example, if someone complained about the intangible fixed assets on somebody's balance sheet, we looked at the issue and we thought: "oh yes we do actually need to do something about this" but then when that correction is made public everybody says: "but the tangible fixed assets are also wrong, surely you must have seen that". We always do a full review of the accounts...'*

A preliminary analysis with a recommendation as to a course of action is provided to the Chairman and Deputy Chairman who then make a decision on whether or not to proceed with the case.

> *'...we have three Panel chairmen. Our main chairman is Bill Knight who is a lawyer and then we have two deputy chairmen who are both accountants. They are both actually from ex big four, we have David Lindsel from E&Y and Ian Wright who was at PWC so very experienced people who guide the team really and help us to make sure that if we challenge a company we are robust in how we do that...'*

A decision to proceed will generally result in a letter to the company asking for further information. This does not constitute a formal enquiry. Sometimes a company's reply will satisfactorily deal with the matters at issue, but where it does not, a decision may be taken to open a formal enquiry.

When a formal enquiry is opened, the company will be informed and a Panel Group will be set up. Independency is an important principle in the Panel's operations:

'...Obviously we wouldn't agree to participate in a case in which we have an interest. It would be impossible to appoint a Panel team which is inconsistent. Many people are ex-partners in accountancy firms that could create a conflict...'

A formal enquiry is begun when the Chairman and Deputy Chairman decide that there may have been a potentially significant breach of accounting or reporting requirements. This will usually be after an initial round of correspondence with a company, although in exceptional circumstances, a formal enquiry may be opened straight away. In order to commence a formal enquiry, a Panel Group is set up.

Where there may be a case to answer the Chairman appoints a group to conduct the enquiry, normally made up of five members including himself and the Deputy Chairman. The Group then decides whether to proceed with the enquiry.

'...There was a group of Chairman, Deputy Chairman and I think three others. We never actually met; we did everything by telephone and e-mail. The Panel wrote to the company, after the first teleconference, and we got some replies, and concluded to accept the company's treatment. So there is therefore no statement by the Panel about that case which has been investigated...'

Other members are chosen from the Panel to provide a balance of experience relevant to the enquiry, excluding any potential conflicts of interest. Members of the Panel outside the group are not normally involved and the group's exchanges with the company are confidential.

The group puts its concerns to the directors in correspondence and at meetings. The Panel encourages directors to consult their auditors, to involve their audit committee and to take any other advice they feel they need.

'...The first time we wrote to companies about their interim accounts, one set of auditors actually rung me up to say that the three issues we raised in their interims are exactly the three issues they have raised with the company. The company chose not to take their advice and the fact that we came independently to raise those issues, immediately increased the credibility of the Auditors. It's nice when that happens...' .

The process is informal but is intended to combine efficiency with fairness. As defective accounts could mislead the public, the procedures need to allow for speedy rectification.

'...In the first meeting I attended this year the Chairman did say: "we get faster responses because we put in the letter a request to be responded by a particular day". I think it is possible in the past with some letters; they actually do nothing. In the first case I was involved a small company responded very quickly and under detail...'

The group aims to reach agreement with the directors of the company by persuasion. If the group is satisfied by the company's explanations, the case is closed and the fact that an enquiry was made remains confidential.

> *'...I am not allowed to say anything; who it was, what it was about, it is in the general terms we have here. Clearly the company knows, or at least its financial director knows, because he was part of the correspondence. I would imagine the auditors know, or at least the key people involved in audit, but I have got no evidence to confirm that...'*

Where the directors agree to take remedial action the Panel issues a press notice. The Panel does not comment on or discuss its conclusions further. Panel members are qualified accountants or lawyers who specialise in company law and who hold or have held senior positions in financial reporting. They may be, or have been, in practice, in the public sector or in industry, for example as a senior partner in a major accounting firm or as Finance Director of a FTSE 100 company. They are recruited by public advertisement. Other than the Chairman and Deputy Chairman, they are unpaid. The underlying principle is that companies are reviewed by their peers. This ensures that the Panel's approach takes note of business considerations and is sensible and practical (FRC, 2005). The Panel started operating proactively in 2004, following the recommendation of the Committee of European Securities Regulators (CESR)

> *'...Then with the event of IFRS, and EU decided that all the stock exchange listed companies had to move to IFRS. EU also decided that we should have consistent audit and consistent enforcement. Therefore the regulators got together through CESR and agreed the set of standards for other issues CESR standard one. One of the things is CESR standard one, is that you do have to look at things on a sound proactive basis, not only on a complaints basis. CESR responded to IAS regulation; led the Review Panel to change its approach, and become proactive, to use this word...'*

There is evidence that Panel's proactive approach was welcomed by auditors as it provided them with an additional negotiating tool in dealing with directors, thus making it easier for auditors to prevent non-compliance.

> *'...Well in a way we think, we hope that we support the work of the Auditor. It's not very often that we found that we think a company's auditor should have qualified that accounts. That happens only very rarely where we think they should've been qualified because the error is so significant. We have had a number of accounts where the auditors have qualified the accounts and we support the auditors in that. And we started a project last year, or the year before, looking at qualified accounts. It's been quite successful, we wrote to the company saying we know you got a qualified audit report, under the companies act as directors you need to make sure that your accounts comply. We are not going to take issue this*

year but we're looking on next year's and if there's still an audit qualification then we'll pursue the mater in accordance with our operating procedures. So in effect we are giving them a year's notice to get their accounts tided up and the companies we have written to so far have managed things in a way that their accounts are no longer qualified. And we think that that's good news....'

In another instance it was mentioned that:

'...Up until 2003 we had to wait for a complaint to be made before we looked at a set of accounts. So the threat was pretty empty, by the Auditor. Whereas now accounts are being looked on a regular basis and it's not an empty threat. When the auditor says to a company "it's not material so we can't really qualify, we comfortably sign the audit report but if the Panel see it, they will raise a point..."

The Panel selects accounts for review in a number of ways and includes a control group within its sample. First, the Panel discusses with the Financial Services Authority and the Panel's Standing Advisory Group which sectors of the economy are under strain or likely to give rise to difficult accounting issues. Then the Panel chooses a number of sectors and reviews a selection of accounts in each. Next, the Panel is developing its own risk model to identify cases where accounting problems are more likely – cases of poor corporate governance for example.

'...But the ABI publishes lists of companies with what they call "red top companies" when the guide of corporate governance is not considered to be as good as it might be. We take this as a proxy for a company where perhaps corporate governance is not as good as it could be. As of June or July this year [2009] *we'll also be responsible for looking at the corporate governance statements in accounts. So we'll have more direct access to areas where corporate governance doesn't look to be very good. Our role will be restricted really just to make sure that they make all the statements. Clearly if a company cannot make those corporate governance statements that raises an issue...'*

Then the Panel looks at specific topical accounting issues and last but not least responds to complaints from the public, the press and the City. In all cases the selection is based on the Panel's assessment of the risk of non-compliance and the risk of significant consequences if there is non-compliance.

'...Well, a good complaint is a very good source. Referrals from other regulatory authorities and a lot of our proactive reviews are prompted by being in what we call the high priority industries and where we select a sample of those companies across the full remit. So this year we've got retail, building construction, property, travel and leisure, advertising, we'd looking at those companies in that industry and we'd look at a sample of very big FTSE 100s, smaller companies, a number of AIM companies and also larger private companies. A fair number of our accounts are selected on that basis. We also then have what we call a company specific target and this is where we try to build a model on how to choose these companies.

Where ignoring the industry they are in, there is something about the company that we think raises a bit of a red flag. And maybe one of the issues we always looked at is corporate governance. And if the ABI has highlighted a company with not very good corporate governance we tend to look at those companies. If there is a lot of merger and acquisition activity if we can see from the announcements that the company's doing a lot of, very complex transactions, like reverse acquisitions, fund raising, difficult things, all been dealt at the same time by a small company perhaps there is a change of board as well. That must indicate that with so much going on there are some difficult accounting questions to answer and they may be more likely not to get them all right. So that's what we'll choose to do, we might pick a third of the companies on that basis...'

The risk based approach was also mentioned by the second interviewee:

'...there is risk in the sense of the likelihood of the accounts to being wrong. But I guess it goes a bit more than that because one of the areas is concerned with is the credit boom here in UK [2007]. And if there is a credit boom what is the risk in terms of financial statements. And that is more than earnings management and manipulation, because it's got to be a concern that the sales or revenues are overstated and is not as simple as a misapplication of accounting standards....'

The Panel also considers for reviewing the companies reported for their aggressive accounting practices at *Company Reporting*[15]. This explains the high degree of correlation between the work of *Company Reporting* and that of the FRRP.

'...Well, it's interesting because Company Reporting are looking at the accounts at the same time that we are. But Company Reporting can ring the company and get a view from somebody and publish it next month. But once we review the accounts we have to go through due process. We have to do the review, make sure that it goes through manager review, goes to the chairman for approval, then the letter goes out, the company may take a month in which to respond and then we enter into the inquiry. So by the time we come to conclude and issue a press notice, if we think it's appropriate, of course Company Reporting will have it out before us, because the don't have all this process. Particularly when we're reactive we did pick a number of cases from them...'

The use of *Company Reporting* as a source of information for non-compliance with accounting standards was mentioned also by the second interviewee:

'...Anybody can make a complaint; the complaints can come from press, analysts, Company Reporting...'

The Panel would consider very useful a quantitative model that could be used as a screening instrument that highlights probable non-compliance with the Act, though no such model is formed yet.

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[15] *Company Reporting* is a service which identifies changes in corporate reporting practice and governance procedures by listed companies, including the development of, and instances of divergence from, generally accepted accounting practice under IFRS.

'...we have too many companies that come within our remit. We have all the listed companies that includes everything on AIM, except overseas plus all the large private companies. So it's about two hundred thousand sets of accounts. We don't have time, and I think its not very effective way, of reading even the top 350 sets of accounts, in order to find out which are the ones we want to pursue. So what we are trying to do, is there a model or an approach, or some kind of strategy we could adopt to identify those companies which are going to, not comply with the Act...'

Section 461 of the Companies Act 2006 lists a number of persons with whom the Panel is entitled to share information which would otherwise be confidential under the Act. These persons include the Secretary of State for Business, Enterprise and Regulatory Reform, the Treasury, the Bank of England, FSA, and HMRC. If requested by one of these authorities the Panel will normally be prepared to review a set of accounts and report its findings to the authority concerned.

'...Well there is a gateway between the IR (Inland Revenue) *and us and we cannot pass information to them but they can pass information to us. But it is a very tight gateway and we don't tell anybody if, as or when anything comes through that gateway.... In a way that gateway was put in place when we became proactive, because clearly the IR, they have sixty or seventy people who review sets of accounts and the government thought, if we're already paying people to review the accounts, why did the double work?...What would happen in practice is that they would raise an issue with us. We would then look at the company's accounts and would form our own view about how we take that forward with the company and we'd make sure that the information which is needed would come to us directly from the company...'*

The FRRP gained significant power after its memorandum of understanding with the Financial Services Authority (FSA), in 2005. The Panel informs the FSA of its findings and both bodies co-operate over action to be taken.

'...The one where there is more collaboration probably is with the FSA, because we have a memorandum of understanding with them whereby we have to notify them if we are investigating certain companies and we are at a serious state of negotiations. So we meet with the FSA on a monthly basis to discuss, some times the cases that we have in common where we are in our process, if we are likely to issue a press notice and they can raise issues with us, they can raise particular companies with us, if they have a concern. Because our powers are very different and if they pick up something that has to do with the accounting compliance then they pass it over to us. Similarly, some times, we come across with issues which are not issues for us but they might be for the securities regulator and we refer the mater back to them...'

The Panel will draw to the attention of that authority any matters apparent from its review which the Panel believes to be relevant to that authority's regulatory

function. Whether the Panel will go on to open a full enquiry itself will be a matter to be decided by the Panel in each case.

In many cases no question of substance arises from a review of the published accounts. In others, questions are resolved by explanation from the company. In a number of cases the company agrees to improve its disclosures or accounting in the future. The Panel only issues a press notice where a significant correction to published accounts is being made or where there is a case that the Panel considers otherwise merits publicity.

> *'...I mean we had Granger this year, which was a big case on a property; clearly we would not be satisfied with just a reference to the Panel, in those accounts. But some of them, I think really is just giving additional or better information about a past event. Then that's not really worth a press notice. Unless there's something absolutely critical that would have meant a contingency to crystallise, or something. But it all depends on the facts and circumstances. So it is the case when the issue is so small that really doesn't merit a press notice. We have difficulty to explain why it is a press notice...'*

4.5.2 Earnings management and earnings manipulation.

In the recent literature, there is no clear definition of earnings management and earnings manipulation nor on what is the difference between them. The same view is shared by the member of the Panel interviewed:

> *'...I would say that it seems to be like tax avoidance and tax evasion, isn't it? Its just earnings manipulation is a much bigger size earnings management. So I think the real difference is in terms of size. Because in both cases what's happening is that management is choosing accounting* policies *or is applying accounting policies to get a pre-determined result. That is what earnings management is. So we have a lot of issues in US about this.*
>
> *We have got the famous speech of the SEC Chairman, about six years ago, about the ways in which US companies manage their earnings to achieve Wall Street estimates, and if you look at some of the tricks that he talks about, clearly that sort is the gentle side of earnings management whereas there is the sort here and there to make sure that you don't surprise Wall Street. Manipulation always sounds a lot more, it s a bigger sort of value. You know the Isoft case here in UK which looks that it would be earnings manipulation in the sense it goes beyond the normal management of earnings, its just completely wrong...'*

The interviewee described an example that highlights the difference between earnings management and earnings manipulation:

> *'... I often talk of earnings management and particularly in my courses and I say: 'it is the way Wall Street is expecting you, or the market here in London is expecting you to make 95 cents/share and when you*

produce your accounts you make 93 cents, and therefore you do something to have 93 up to 95 or 94.5 so that the market would be happy. Whereas the manipulation of the Isoft type case is so big, it isn't a move from 93 to 95, it is a move from 50...'

A second example of earnings manipulation was given:

'...where the directors of an IT company wanted to mislead the market, because they had not performed as well as they felt the market expected. They therefore took into account the revenues of contracts which were not even signed. That is one good example because, size is the point, and it was clearly earnings manipulation. They were bringing forward sales from the future, because they performed badly. It is quite clearly manipulation because it is actually so big. They were getting themselves off from 20 to 100, and probably from loss. The CEO and the CFO were found guilty...'

At another instance, the interviewee mentioned the direction of earnings as the distinguishing characteristic between earnings management and earnings manipulation, emphasising that earnings manipulation shifts earnings upwards.

'...Another difference between earning management and earnings manipulation is that, I guess, is an implication of earnings management is that of trying to smooth earnings way up and way down. Whereas earnings manipulation is intending to boost earnings...'

The significance of the size of distortion is critical in distinguishing between earnings management and earnings manipulation and it was also mentioned at the following point:

'...If we interpret manipulation as doing something wrong, it can be something small. But manipulation implies deliberate, so you know that you are doing something wrong. I am trying to think of reasons why you do that instead of managing earnings. You talk about accounting fraud. So there is some point that earnings management becomes fraud, surely earnings manipulation becomes fraud earlier, consistently misleading the market. We can argue any management of earnings is probably technically a criminal offence, may not be worthwhile for regulators to pursue that particular case. Even the SEC and the Review Panel might take that view here, that the regulators need to have a good chance of success before to start a case...'

The limits between earnings management and earnings manipulation are unclear; the Panel's secretary mentioned that it is difficult to give a specific definition.

'...All that we are there to do is to determine whether the accounts comply with the accounting standards. And that can be too little profit or too much profit but that's not what we're looking at. We're looking at compliance with the accounting standards. So to what end and why they do it is not relevant. It's purely compliance with the act...'

Though, an example was given by the Secretary of the Panel that explains the operational difference between earnings management and earnings manipulation. It supports the view that earnings management refers to small deliberate actions to

smooth income, whereas earnings manipulation involves illicit and misleading alterations of a bigger scale.

> *'... things like: whether you capitalise intangible assets, there's generally more at stake than a company saying: "well I want to capitalise rather than write off". We don't ask a question of why they're doing it, why they're capitalising it. We look at the facts and circumstances to determine whether they're doing the right thing. And what happens in the income statement really folds out at the end. So it is not what we focus on, in particularly. But obviously, things like: if we've got an issue with the company about capitalising or not capitalising, if they over-capitalise, then obviously it's going to have a big impact. But again it's the compliance with standards that we focus on, rather than asking them for the motives...'*

The main pressures that result to earnings management appear to be market expectations to reach specific earnings targets and bank covenants.

> *'...We have not done as well as the market expected, or our finances expected, therefore there might be pressure on us. Or we might have done better and we want to play safe, planning years ahead. Maybe that accounting treatment probably is going to give us probably lower loan covenants; therefore we try to find a way, an accounting treatment to meet those loan covenants...'*

In cases where the reporting issue is not misleading then the Panel asks the company to adjust its accounts in the following year, without issuing a press notice. Though, the company has to disclose in its annual report that it had been in discussions with the FRRP. The secretary of the Panel mentioned that:

> *'...And there is an awful lot of dirt that attaches to the company. So, sometimes you think when it's not so significant that it needs a press notice, there is no lesson to be learnt here and they just got it wrong. It didn't probably affect the share price, because it's probably narrative, it tends to be narrative things, so what we do, when the company improves its narrative, the next year, we sometimes say, we think when you explain why you're giving additional information, we want you to refer to the Panel. So in their accounts, for next year, you might see, in some sets of accounts, it would say "following discussions with the Financial Reporting Review Panel, we have this year provided the additional information to further clarify x, y, z". So it is not as bad as a press notice, but it's something on a public record, that they did have to address something after a Panel intervention...'*

The point of view was expressed by the member of the Panel's boards, who described that:

> *'... And very often we find things that we don't really like in the accounts, they have been published but they are not misleading, perhaps they are not material, so we won't make the company revise those accounts but we'll seek an undertaking for an improvement next year...'*

The Panel can use the threat of issuing a press notice during the negotiations with companies for improving their financial statements in the next reporting period, in instances where minor issues are identified.

> *'...Well, that's the thing, whether we did it last year, we'll certainly do it next year. We say "we issued six press notices and asked five other companies to refer to our discussions in their annual reports". And most of the companies they don't argue very much because the alternative is we say "Ok, you don't want to refer to us in your note, would us issue a press notice?" and then they say "ok, ok we'll put you in the note"...'*

Both interviewees mentioned that there is an association between poor corporate governance and earnings management or earnings manipulation. The member of the Panel's board mentioned that:

> *'...where there has been earnings management/earnings manipulation very often there has been weak corporate governance. If you go back, there is a series of cases, middle of 70s, there is a legal process in UK when a company fails, and the guards of Trade/Industry can appoint inspectors. There is a series of reports in the late 70s from the DTI inspectors, and with each and every case of earnings management/manipulation came weak corporate governance for the standards, by 1970s standards...'*

The Panel's Secretary also mentioned the link between poor corporate governance and earnings manipulation:

> *'...Everybody talks about Maxwell, that kind of culture where you have an overarching chairman who just rules everything, decides everything and the culture is really that there's a fear of doing the right thing, a fear of reporting properly. Those are all bad things you don't want to see. We see very little of that in the companies that we deal with...'*

IFRS are argued to introduce greater flexibility for managers to choose between alternative treatments as a means of providing more relevant information to investors.

> *'...How you apply those policies, is a matter of judgment. I think under IFRS, now there's a requirement to disclose those judgements. I think there's more transparency. So if it is a significant judgement or a key estimate, or sort of uncertainty, whatever, the fact that companies have to disclose them, is I think an improvement. Because they should really think about them, rather carefully, if they're going to go public on them...'*

The Secretary of the Panel mentioned the need for efficient corporate reporting departments:

> *'...now they are taking sort of "through the eyes of management". Where management reports on the information it comes up to them and IFRS 7 and IFRS 8, I think that might become rather more significant than it has in the past. What sort of information does the board have, what's the quality of that information and the data that it has which makes its decision and I think that could become important in future. I suppose with a strong*

finance team and a culture within the company which recognises the importance of the financial department... '

On commenting on the opportunity for earnings management after the introduction of IFRS the member of the Panel's board mentioned that:

'...Someone argued that using the fair values might do that, but on the other hand that reduces the space for earnings management, because after measuring equity and/or securities in fair value instead of the lower cost of market value and lower cost of net realisable value removes the ability of management to simply shell things when it is completely to get the results they want. There are some who argue the difficulty of investment at fair value, allows flexibility for more earnings management. On the move from UK GAAP to IFRS, there are some who might argue that there is no UK GAAP equivalent to IFRS 5 and that may allow greater flexibility for earnings management. There definitely are ways to manage earnings... '

In discussing specific IFRS that provide firms with opportunities for earnings management, the member of the Panel's board mentioned that:

'...For example IFRS 5, on assets for sale, says when you commit to sell an asset (part of PPE), you stop depreciating that asset until you sell it. I argue with some scope, that classifying things at sale, avoids depreciation. You might argue that hedge accounting; IFRS 39 allows scope for earnings management. They rely on designation of something as a hedge so your decision whether or not to designate something as a hedge could be used to manage earnings. But on the other hand all the hedging is done off balance sheet. So the only thing that ever has to recognise will be basically expected losses from hedging contracts... '

And we can argue on with IAS 38 on intangible assets doesn't allow more flexibility for earnings management in that it requires you to capitalize internal created intangibles in certain circumstances. The circumstances require management judgement and it is quite easy that you don't meet the criteria and someone might use that as a way of managing earnings...

Companies just used to buy things and sell things. Nowadays the sales are a lot more complex, so you have to split the sales revenue in different components, and how do you allocate the profit between the components? Some people say: 'all the profit in the first components, no profit in the last ones'. The standards themselves don't create the options for earnings management. The standards say: 'recognise the revenue when you perform' The earnings management is coming from the way companies interpret them... '

The Secretary of the Panel highlighted that the current economic environment puts pressure on companies as credit is scarce and economic activity is in decline. Under such circumstance, companies might slash earnings with excess provisions, creating reserves that can be released in the future known as 'big bath' accounting.

'... Well, I think generally there 's more pressure on the boards, there 's more pressure on management and perhaps to meet their targets if they've announced at the market and under more pressure in the everyday management of the business. A considerable number of businesses will run

into financing difficulties and funding difficulties. We have heard but it's only anecdotal, but some banks the amount of cover they want for covenants. They perhaps are lending less, rolling over for three years, not five. Companies are going to have to deal with it their going concern disclosures. And also I think we're anticipating impairment charges. But there might be a tendency to try and take a significant impairment hit now, in advance, when they really need to. A kind of soaring up so people might be over impairing, Big Bath Accounting...'

4.5.3 The wider role of the FRRP

The FRRP's role is to ensure the provision of financial information by companies complies with relevant accounting requirements and to contribute to the continuous improvement in the quality of corporate reporting.

'...I think perhaps the way on which we do that and the focus of how we work is improving the quality of future financial reporting. If something stands and it is really wrong and we think the market needs to be aware then we will make revise their accounts or correct but our real impetus is to encourage companies always to improve the quality of what they are doing in next years accounts...'

The Panel aims to establish constructive dialogue with companies to understand their analysis and agree improvements to their corporate reporting where necessary. The Panel's remit has increased recently and now embraces annual accounts, interim reports and directors' reports.

'...we do look, at 300 a year. In the last two years we had our remit extended. First of all, we look at directors' reports. So in those 300 set of accounts, we now have to focus on the director's report as well and particularly the business review which is kind a difficult area to look at. It's much more judgemental than just the accounting disclosure that means more work...'

The Panel considers the directors' report as a significant statement that needs to be consistent with the underlying financial position of the company, otherwise it can be misleading to the non-sophisticated investor.

'... In a way is human nature because where we are now is much worst position that we thought we would've been 12 months ago. That's in people's minds and that's influencing how they behave and what they think what about the next 12 months, if I appear to be to confident that's not too good but I don't want to give the opinion that things are necessarily going to get worse. I think it's quite a difficult challenge for boards to get the words right. To get that tone right, in their narrative disclosures...'

The Panel has changed its operating procedure, since it became proactive. This can be explained by the decline in the number of press notices in the latest years. In the past the Panel had to issue a press notice for every complaint it received. However, currently if the reporting issue is considered to be minor, no press notice is

issued. Though, in the next reporting period the company has to treat the issue in question, following FRRP's instruction mentioning the contribution of the Panel.

> *'...I think there are several things. The original operating procedures of the Panel, when it was reactive, were that every complaint that came into the Panel had to have a group set up to look at it. Even if it was a tiny mistake, if it was a valid complaint, had to have a Panel group set up and if the Panel group supported the complaint there had to be a press notice. That was our operating procedure... Yes. In theory that worked very well, but in practice what happed was that we had a lot of very small complaints, about some very small companies and we had quite a few press notices where really the issue wasn't very significant and it was in a company that nobody ever heard of and it was a mistake, or oversight. Subsequently, chairman and deputy chairman felt that wasn't a very good way of using the Panel members, the Panel group, and it wasn't the sort of publicity that was helpful to anybody. So over the years what's happened was that we refined our operating procedures, to give our staff more flexibility about when we issue a press notice and what other public reference we might seek, if we've been in a correspondence with a company. What has happened the last two, I think, perhaps two or three years, some times we'll come across something which is not so bad that it needs a press notice, because we know a press notice is very bad news for a company...'*

Interviewees suggested that the FRRP has made a great impact on the quality of financial reporting in the UK. The view of the interviewees was that the FRRP has been a necessary and positive force in UK financial reporting, and that its presence has encouraged companies to be more diligent in complying with accounting standards. The secretary of the Panel mentioned that:

> *'...Most UK companies pride themselves on their accounts and are genuinely quite keen to improve. When we finish writing to a company we often get a letter saying "thank you for showing an interest in the company's accounts" and you know, they think that their accounting is improved as a result of that process, and that really what we 're there to do...It is, not everybody realises that but some people actually they do appreciate the fact that we spend time helping them, perhaps think more clearly why they do certain things. And the way which we work as well 'cause we do try to work on a consensual basis that it's fairly informal "how we can help you to improve" attitude, is very welcomed by most companies. It is not the same as the FSA or another regulator, saying "you must do it this way" or trying to tell them what to do. It's much more helpful, constructive approach we hope...'*

The same view was shared from the member of the Panel's board, who mentioned that:

> *'...The feeling is that it has a good, positive impact. It is sort of a very peculiar British type structure, it operates sort of in the private sector. It seems to be successful in that way. But it is very different from the SEC's approach which is doing the same sorts of things. The sense is that it does work. I wouldn't know, and I don't think the Panel would be able to tell you,*

how many cases have not been resolved and the Panel decided not to pursue. The only sanction that the Panel has got is to get someone to court...'

The Panel appears to apply a company-centric approach in conducting inquiries, while it has an 'iron fist in a velvet glove'.

'...companies recognise the way we have to work some times quickly to help people and they just like the manner in which we conduct the inquiry. We're not trying to find people guilty, there's no assumption that people are guilty. It's a genuine attempt just to try to find out the facts about an issue and then how best to deal with it. We have no powers, so we just want to make sure that we help the company and ourselves, we get to the right answer and we deal with it appropriately and then we move on...'

The broader role of the Panel is to improve compliance with the accounting standards and the informative content of the disclosures. The Panel criticizes companies that provide boiler plate statements in their financial reports.

'Yes, that's where we're trying to get them away from [boiler plate statements] *but it's not easy...'*

'...it could be the narrative disclosures in the business review, are as important as anything that a company puts out. We may find that there are more issues in there; companies have to say what their principle risks and uncertainties are. That's quite difficult for boards to do. How do you know in six months time, what are the principle risks, especially now...'

4.6 Conclusions

This chapter considered the views of the FRRP in relation to earnings management and earnings manipulation. Exploratory interviews were carried out in order to investigate and evaluate the Panel's perceptions, functions, procedures and the impact of the regulator. A fuller appreciation was gained of how it actually achieves its aims. It is worth noting that, as is usually the case with interview based research, it may be inappropriate to make broad generalisations. The views expressed relate to the specific people interviewed, using a framework provided by prior literature, which focused on the existence and occurrence of earnings management and earnings manipulation. Compared with the enforcement agency in the US (SEC), the FRRP has fewer powers at its disposal to deal with such cases.

Interviewees suggested that the Panel has been successful in improving corporate reporting in the UK by encouraging companies to avoid boiler-plate type disclosures. The Panel utilises both referrals and a risk based approach in identifying cases of non-compliance with accounting standards. In those cases the Panel writes to the company. The Panel aims to reach agreement with the directors of the company by

persuasion. If the group is satisfied by the company's explanations, the case is closed and the fact that an enquiry was made remains confidential. Where the directors agree to take remedial action the Panel issues a press notice. The Panel has the power to bring a case to court, if it does not receive adequate explanations from the company's directors.

The interviewees suggested that there is no clear border line between earnings management and earnings manipulation. Though, both of the interviewees mentioned that earnings manipulation relates to creative accounting of a bigger scale (than earnings management) intended to mislead investors. Both mentioned that earnings manipulation is associated with weak corporate governance and usually aims to reach the earnings figure expected from the market. The recent economic downturn sets an extra pressure to directors as it is more difficult to make realistic estimations on fair values and future cash flows.

Chapter 5

Earnings Management Methods

5.1 Introduction

Many of the accounting scandals that came to the public eye after 2001 had already been predicted in 1998 by Arthur Levitt[16], the President of the SEC, in his speech entitled 'The Numbers Game', in which he severely criticized the creative accounting practices used by North American companies to meet the earnings forecasts expected by the market and highlighted the main accounting techniques behind this abuse.

This chapter provides an analytical insight into the procedures used by directors to manage earnings. However, it cannot be assumed outright that such alterations constitute earnings manipulation, i.e. are illegal. Accounting standards leave room for different interpretations on the part of directors, and this subjectivity, taken to an extreme, might mean that financial information does not reflect the true and fair view, despite complying with the law. That would be earnings management (Chapter 2). The following sections in this chapter look at the areas where creative accounting is most common, using specific case studies to investigate the impact of such techniques. The chapter also explores cases of earnings manipulation that have been brought into the public arena by the FRRP or by *Company Reporting*.

The contribution of this chapter is twofold. First, documents specific cases of earnings management where reported earnings were influenced within the limits of accounting standards. It also explores how earnings management had been escalated to earnings manipulation in cases of publicly criticised companies. The second

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[16] According to Levitt, the five techniques used most were:

(i) 'Big Bath' charges to clean up balance sheets

This practice consisted of recording huge extraordinary charges, reducing the value of certain assets only to restate them later as ordinary income, thus generating greater income growth;

(ii) Creative acquisition accounting

The use of the pooling system to simulate mergers which in reality are acquisitions. Companies have also often treated acquired patens as goodwill and not as intangible assets, in order to write them off in twenty years and not in four or five as intangible assets should be amortised, normally in the case of research and development expenses;

(iii) Cookie jar reserves

These were overstated charges to generate reserves that were used in difficult years to mitigate earnings fluctuations;

(iv) Premature recognition of revenue; and

(v) Reporting potential losses as a specific percentage of possible losses and then reporting that their net income impact was too small to be relevant (under-provisioning).

contribution is that the difference between UK GAAP and IFRS is compared, in regulating specific areas and how companies exploited these differences in reporting a more favourable position. Finally this chapter contributes by documenting case-based examples of earnings management/manipulation and how this is achieved in practice. The examination of earnings management methods aims to test the following hypothesis described in chapter 3:

H_2: The instances earnings management and earnings manipulation involve specific accounting treatments.

Although the companies criticised for earnings manipulation are in public domain, this chapter documents how management manipulated earnings exploiting the discretion allowed in specific standards. The areas discussed in chapter 5 are selected from the sample of earnings manipulators, documented in Table 7.4. The chapter concludes that specific accounting treatments allow increased managerial discretion as they involve subjective accounting estimates (i.e. accounting for mergers and acquisitions, revenue recognition, capitalisation of development costs, depreciation policy, recognition of financial instruments).

5.2 Acquisition Accounting

IFRS requires that the assets and liabilities of a company being acquired should be brought into the acquirer's balance sheet at fair value. Fair Value, is defined by the IAS 18 (par. 7) as: 'the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.'

This means that in practice adjustments are applied to the values of these assess and liabilities to bring the acquired assets and liabilities into line with a) the acquirer's accounting policies, and b) current rather than historic values. This fair value adjustment on acquisition can be presented as a conservative approach, on the director's report: "we are writing down the value of the assets we have acquired, applying strict accounting valuations''

However, fair value adjustments on acquired assets and liabilities present an opportunity for acquisitive companies to manage earnings. Acquisitive companies write down the value of current assets such as stock and debtors aggressively, in order to realise profits from the disposal of these current assets. Similarly, if fixed assets are written down beyond their fair value, then the future depreciation charge is reduced,

so profits are boosted. Profits on disposals of fixed assets could also be boosted. This could result to the situation in which a company sold fixed asses at a loss compared with their costs, but above their written down value, showing profit on the transaction.

In order to prevent this type of accounting discretion in disposals, IFRS 5 regulates transactions relating to Assets Held for Sale. In general, the following conditions must be met for an asset (or 'disposal group') to be classified as held for sale (IFRS 5.6-8)

- Management is committed to a plan to sell
- The asset is available for immediate sale
- An active programme o locate a buyer is initiated
- The sale is highly probable within 12 months of classification as held for sale
- The asset is being actively marketed for sale at sales price reasonable in relation to its fair value

If these conditions are met, then the entity shall measure a non-current asset (or disposal group) classified as held for sale at the lower of its carrying amount and fair value less cost to sell (IFRS 5, par. 15).

There is another other aspect of fair value accounting which gives accounting discretion to the acquisitive company looking for a boost to its profits, the reorganisation provision. The acquiring company might need to take action to improve the profitability of its target. Plants need to be closed, work force reductions and there are costs associated with these actions in the form of redundancy payments and capital expenditures. These costs can be recognised at the outset of the acquisition by including reorganisation provisions in the fair value adjustments. These provisions could be retained on the balance sheet and be released gradually in future accounting periods, when profits are beyond management's threshold.

Though, IAS 37 reduces managerial discretion in manipulating provisions, setting specific conditions that need to be met in order for a provision to be recognised. Specifically, IAS 37 (par 14) requires that a provision shall be recognised when:

(a) an entity has a present obligation (legal or constructive) as a result of a past event;

(b) it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation; and

(c) a reliable estimate can be made of the amount of that obligation.

If these conditions are not met, no provision shall be recognised.

An example of recognising excess provisions in reorganisation costs is the case of Isoft plc in 2003, its aggressive approach was criticised by the FRRP. Following the acquisition of Torex, Isoft undertook a reorganisation to integrate the business that involved severance and redundancy costs, professional fees and property related costs. As a result, it created provisions of £7.9 million that it charged to income and was shown separately on the face of the profit and loss account classified as an exceptional item. A note (Table 5.1) disclosed that the company expected to utilise the provision relating to severance and redundancy next year while the property related provision was expected to be utilised during the next 8 years.

Figure 5.1: Extract from Isoft's Annual Report

1_Merger with Torex PLC

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Acquisitions

On 23 December 2003, the merger of iSOFT Group plc and Torex PLC ("Torex") was declared unconditional. Acquisition accounting has been adopted. The book and provisional fair values of Torex on acquisition were as follows:

	Book value £'000	Revaluations £'000	Provisional fair value £'000
Tangible fixed assets	9,922	(473)	9,449
Assets held for resale	1,475	67,685	69,160
Stocks	4,750	(1,193)	3,557
Debtors	52,388	(2,412)	49,976
Deferred tax	3,104	3,675	6,779
Overdraft	(5,134)	-	(5,134)
Corporation tax	(5,626)	(1,501)	(7,127)
Deferred consideration	(12,724)	4,057	(8,667)
Trade and other creditors	(56,244)	(8,489)	(64,733)
Debt	(69,675)	-	(69,675)
Provisions for liabilities and charges	(1,551)	(1,379)	(2,930)
Pension liability	-	(5,964)	(5,964)
Net liabilities acquired	(79,315)	54,006	(25,309)
Goodwill			397,187
Consideration			371,878
Satisfied by:			
Shares issued			367,825
Acquisition costs (of which £200,000 remains unpaid at 30 April 2004)			4,053
			371,878

Revaluation adjustments comprise:

- Write off of obsolete fixed assets of £473,000.
- The adjustment in respect of assets held for resale represents the actual net proceeds of £61,185,000 of the Retail Division of Torex which was disposed of on 14 February 2004 to Lynxangel Limited, together with £6,500,000 representing the estimated carrying value of Torex Laboratory Systems Limited. Both the Retail Division of Torex and Torex Laboratory Systems have not been consolidated into the acquisition balance sheet or the Group's post acquisition balance sheet on the grounds that they were/are held exclusively for resale.
- Write down of stocks by £1,193,000 to their estimated recoverable value.
- Additional provision for bad and doubtful debts of £2,412,000.
- Reassessment of the corporation tax liabilities of Torex to reflect an additional liability of £1,501,000 and inclusion of a deferred tax asset arising as a result of the fair value adjustments of £3,675,000.
- Reassessment of the amounts payable in respect of deferred consideration by £4,057,000 based on most recent available data.
- An adjustment to trade and other creditors of £8,489,000 comprising the reassessment of a number of onerous contracts to reflect an additional liability of £4,293,000 and the inclusion of £4,196,000 of liabilities in existence at the acquisition date but not recorded in the acquisition balance sheet
- Additional property provisions of £1,379,000 in respect of onerous lease commitments and dilapidations.
- Inclusion of the £8,519,000 pension liability of Torex calculated on an FRS 17 basis and stated net of the related deferred tax asset of £2,555,000. See note 22 for details of the assumptions used in assessing this liability.

From 24 December 2003 to 30 April 2004, Torex (excluding the Retail Division and Torex Laboratory Systems) contributed £43,268,000 to turnover, £6,329,000 to operating profit before goodwill amortisation and exceptional items and £5,321,000 to profit before taxation, goodwill amortisation and exceptional items. Torex contributed £6,266,000 to the Group's net operating cashflows, paid £902,000 in respect of interest, £nil in respect of taxation and utilised £1,521,000 for capital expenditure.

Source: Isoft annual report (2003) p.43

An example of accounting manipulation involving disposals after an acquisition is the case of Seymour Pierce plc (2002), which was also censured by the FRRP. During that year, Seymour Pierce (Seymour) made an acquisition for which consideration of £32.3 million was satisfied by the issue of 380 million shares valued at 8.5p per share. Additionally, acquisition expenses of £2.5 million were incurred. A table was published showing that the assets acquired consisted of investments and cash. A fair value adjustment reduced the £14.2 million book value of investments to a fair value of £4.8 million and results in goodwill arising of £6 million. A note disclosed that the fair value adjustment reflected the directors' valuation of the investments after taking into consideration the marketability of individual shareholdings within the portfolio. The note added that, since acquisition, all the investments had been either fully provided against or sold. Total sale proceeds amounted to £11 million net of costs and a profit on disposal arose of £8.3 million.

Surprisingly, Seymour disclosed that an alternative treatment in relation to the fair value of the investments sold was to equate their fair value with the net cash received. The company added that if it had adopted this treatment, the profit on disposal would had been reduced by £8 million and created a write back of negative goodwill of some £0.4 million. Describing this as an alternative accounting treatment is not in accordance with FRS 7 'Fair values in acquisition accounting' which specifies methods for determining fair values of assets acquired. While FRS 7 notes that, where quoted market prices are not available, subsequent sales of acquired assets may provide the most reliable evidence of fair value at the time of acquisition (par. 43), neither it nor FRS 6 'Acquisitions and mergers' provide for alternative fair values. FRS 6 requires that if additional information becomes available, adjustments should be made to fair values with corresponding adjustments to goodwill.

Another option available to companies is to deconsolidate from their group results a subsidiary at the time when they decide to sell it rather than when a sale is completed. The profits (or more likely the losses) of the subsidiary between the announcement and completion are added to the profit or loss on disposal. This technique has the major advantage of keeping the results of a loss-making subsidiary out of the core profit & loss account. More specifically, IFRS 5 (par. 33) states that an entity shall disclose a single amount on the face of the income statement comprising the total of:

(i) the post-tax profit or loss of discontinued operations and

(ii) the post-tax gain or loss recognised on the measurement to fair value less costs to sell or on the disposal of the assets or disposal group(s) constituting the discontinued operation.

Thus a company seeking to create a reserve for improving future profits, can recognise an increased impairment charge in the year of deconsolidation and a positive revaluation to the real fair value in the next year. A recent example is the case of Misisy plc (2008). In 2008, Misys disposed of three businesses, all classified prior to disposal as discontinued operations, recognising a pre-tax profit on disposal of £73.6 million which it disclosed as exceptional, net of £2.3 million tax charge on the income statement. This was in addition to the £48.9 million pre-tax profit from continuing operations quoted above and contributed to the return to a net asset position. Previously, only one of the businesses was classified as discontinued and, in the prior year, Misys recognised £17 million impairment of goodwill in it. In 2008, it recognised a profit on disposal of £0.7 million.

Following IFRS 5 'Non-current assets held for sale and discontinued operations', the company restated its comparative income statement in respect of the two reclassified businesses, reducing pre-tax profit from continuing operations by £18.1 million, or 81.9%, to £4 million.

5.3 Deferred Consideration

Deferred consideration is a payment, the value of which is contingent upon the future performance of the business acquired. More commonly known as 'earn-outs' (from the point of view of the vendors of the business acquired). This technique became popular in structuring acquisition in consolidating sectors particularly in business services. Typically, an acquirer would make an up-front payment with further payments in either cash or shares based on a multiple of future profits of the acquired company. This method of acquisition has a number of advantages:

(1) Limited downside risk – if the acquisition underperforms the future deferred consideration payments could be adjusted downwards accordingly.

(2) In the 'people' businesses of the services sector, in particular, tying-in the vendors of a business is important as the success of the business often depends heavily upon their creative talents and expertise. Nonetheless, most of these

companies have few tangible assets to secure the acquirer against the risk of a downside.

(3) There is often an immediate enhancement to earnings as the profits of the acquired company were consolidated at once, but the additional consideration was only paid some time later.

But further issues can arise. These relate to the ability of the acquirer to finance the future deferred consideration payments if they are in cash, to the dilutive effect of the shares to be issued and to the resulting cost of maintaining the dividend payout. It is usual to disclose these potential liabilities rather than providing for them as the amount is uncertain. If there is a reliable estimate on these future payments, then a provision needs to be recognised as these liabilities arise from a past event (the acquisition). The provision is recognised after discounting the deferred consideration at the Weighted Average Cost of Capital (WACC) of the acquirer [IFRS 3 'Business combinations' (par. 26)]. Though, if the deferred consideration is payable in shares and the share price of the acquirer is depressed at the time of payment, the result is often the need to issue a greater number of shares in order to fulfil the deferred consideration. This has a highly dilutive effect on Earnings per Share and increases the cost of the total dividend and the WACC. The amount of subjectivity involved in the measurement of the differed consideration and subsequently the recognition of the acquired goodwill, allows management to influence the reported amounts.

A recent example of managerial discretion in the estimation of differed consideration and goodwill is the case of Brewin Dolphin Holdings plc (2007). Brewin Dolphin changed its accounting policy on goodwill, stating that future anticipated payments in respect of earn-outs are based on the directors' best estimate of the obligations incurred. It discounted the consideration back to present value, with the annual unwinding of interest included in finance costs. Discounting of deferred consideration follows IFRS 3 'Business combinations' (par. 26). The company recognised £0.5 million such costs of unwinding in the current year and deducted from adjusted earnings per share the net £0.3 million post-tax effect.

The company disclosed that goodwill was the only asset of the investment management businesses it acquired, but did not disclose the factors that have given rise to it in the year, as required by IFRS 3 (par. 67(h)). It reduced the carrying value of goodwill by £9.8 million or 14.9% and described this as a revaluation. However, this referred to a change in estimate in relation to prior years. It attributed the

adjustment to a diminution of liabilities in respect of deferred consideration, with £8 million attributed to shares to be issued and £1.8 million to reduction in the value of deferred purchase consideration. This follows along the lines of IFRS 3 (par. 33). It was unclear whether the change is determined by changes in the cash consideration or in the market value or number of shares to be issued. In addition, it did not disclose which mergers or acquisitions are concerned and thus arguably fell short of IFRS 3 (par. 74), leading to a lack of clarity, though the current component of one acquisition was given. The company disclosed a cap to the maximum consideration paid exists that exceeded the amount it expected to be paid.

The company applied fair value less costs to sell in impairment testing its goodwill, but did not disclose the allocation of goodwill to cash-generating units (CGUs), though the disclosures indicated different bases for investment management, corporate broking and other units. This disclosure fell short of IAS 36 'Impairment of assets' (par. 134(a)).

Another case involving deferred consideration is the case of Northgate plc (2006). Northgate recognised £31.6 million goodwill on two acquisitions in the year and published tables in a note, giving the book value, adjustments and fair value of the assets and liabilities acquired, as required by IFRS 3 (par. 67(f)).

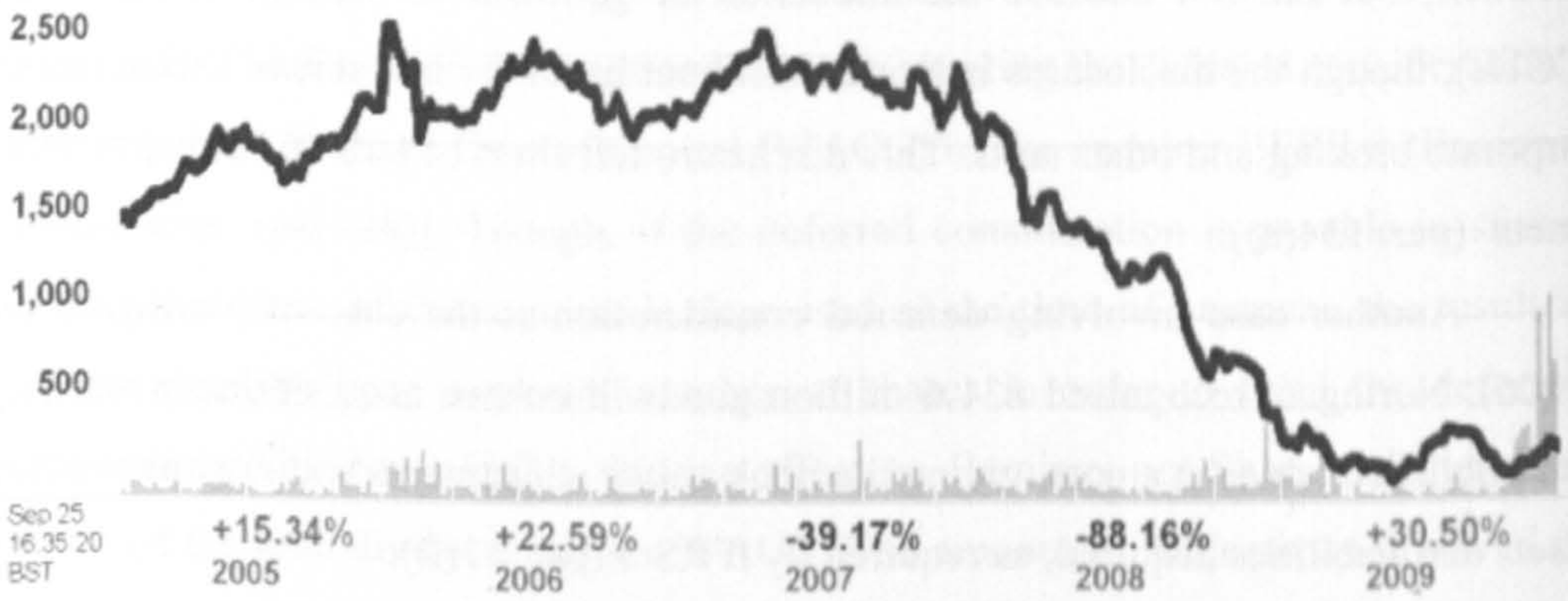
It disclosed in liabilities £10.3 million deferred consideration for an acquisition in the previous year and recognised £0.5 million amortisation of the deferred consideration in the income statement under finance costs. It stated that, at the point of purchase of a subsidiary, the amount due was discounted by the group's cost of capital and that the carrying amount represented the actual amount payable.

In carrying out impairment tests on cash-generating units (CGUs) including goodwill, if a company projects cash flows based on approved financial budgets over a period exceeding five years, IAS 36 'Impairment of assets' requires a company to explain why a longer period is justified (par. 134(iii))) Additionally, it requires an explanation of the use of any growth rate in value in use calculations that exceeds the average long-term growth rate for the products, industry or country in which the CGU operates, or for the market to which the CGU is dedicated (par. 134(d(iv))).

In 2006, Northgate adopted IAS 36 and tested goodwill for impairment at least annually. It disclosed four CGUs to which goodwill was allocated and stated that cash flow periods of five years were used for two and ten years for the other two units for value in use calculations (par. 134(d(iii))). The company disclosed that ten year

periods had been used on the basis that economic benefit was expected to flow to it over the longer period in these instances. For one CGU, it disclosed an annual growth rate of 25% and, following IAS 36, explained that the growth rate had increased above the average long-term growth rate for relevant markets to reflect the immature market in which the company operates. The company recognised no impairments of goodwill in that year. Though, shareholders appeared not to share the same view in the growth prospects of the company, as reflected in the company's share price in Figure 5.2

Figure 5.2 Share Price of Northgate



Source: FT.com

5.4 Revenue Recognition

Clearly revenue recognition is extremely important to investors. In fact, Anderson and Yohn (2002) conclude that when there are problems in a company's financial statements, investors are more concerned about revenue recognition problems than any other reporting issue. The FASB and the IASB in 2008 issued a joint discussion paper entitled, "Preliminary Views on Revenue Recognition in Contracts with Customers." The Boards requested comments on whether their proposed model for revenue recognition would improve the usefulness of the financial statement information for financial decision makers. Currently revenue recognition accounting policies need to comply with IAS 18. This standard specifies revenue (par. 7) as 'the gross inflow of economic benefits during the period arising in the course of the ordinary activities of an entity when those inflows result in increases in equity, other than increases relating to contributions from equity participants.' In respect of

measurement, the standard adds that (par. 9): 'Revenue shall be measured at the fair value of the consideration received or receivable.'

There are circumstances where revenue can be distorted by the recognition of gains on the disposal of fixed assets, especially when those assets are used as means of generating revenue. In order to prevent this, the IASB publication 'Framework for the preparation and presentation of financial statements' distinguishes income into revenue and gains (par. 74), the latter including income arising on disposal of non-current assets (par. 76). Hence the scope of IAS 18 'Revenue' does not extend to such gains.

An example of overriding the scope of IAS 18 is the case of Northgate. In 2005, Northgate recognised £458 million of revenue from the hire of vehicles, sale of used vehicles and the supply of related goods and services. It did not address the timing of revenue recognition.

In 2006, the company stated that all its revenue is from the rendering of services. It did not recognise in revenue the sale of used vehicles, which last year represented 26% of revenue. It classified its vehicle hire fleet as property, plant and equipment other than £14.7 million, which is classified as assets as held for sale. It did not disclose gains or losses on sale in the year of these items, despite the fact that the company reported that vehicles for hire with a carrying value of £152 million were sold in the year. The company adjusted depreciation on transferring vehicles to assets held for sale to equate these with open market values. It disclosed that revenue from vehicle rentals is recognised evenly over the rental period, with other sales recognised at the point of sale.

IFRS 5 'Non-current assets held for sale and discontinued operations' requires a non-current asset to be classified as held for sale if its carrying amount will be recovered principally through sale rather than through continuing use (par. 6). In 2005, Northgate classified £11.5 million used vehicles held for resale as inventory. In 2006, the company reclassified £14.7 million of these assets to non-current assets held for sale.

In 2000 Northgate was criticised by the FRRP for its revenue recognition policy. The matter at issue was the treatment in the consolidated financial statements of the credit relating to vehicle related bonuses. The company's accounting policy was to record such bonuses as deferred income and release them to turnover over the anticipated holding period of the vehicle category to which they related. The result of

this accounting policy was to overstate revenues and fixed assets by the amount of the bonuses. Financial Reporting Standard (FRS) 15 'Tangible Fixed Assets' requires a tangible fixed asset to be initially measured at cost (par. 6) where the cost comprises its purchase price after deducting any trade discounts or rebates (par. 8).

The Review Panel took the view that, to conform to FRS 15, the bonuses should have been credited to the purchase price of the vehicles whose purchase triggered the bonuses. The effect of the bonuses would then be to reduce the charge for depreciation over the useful economic lives of those assets. Accordingly, the bonuses should not have been recorded as deferred income nor released to turnover.

Another case of overstating turnover involves the recognition of government grants as revenue. In 2007, the automotive consultancy Ricardo plc which relocated £1.1 million income from government grants, representing 9% of profit, from revenue to cost of sales. The company disclosed that the grants relate to its technical consulting segment in Europe. This brought to light non-compliance in the previous year with the IAS 20 20 (par. 39(b)) requirement to disclose the nature and extent of government grants recognised. In 2007, related government grant income of £1.1 million for 2007 is shown as a deduction from cost of sales, with £1.2 million comparative figure for 2006 also disclosed.

Another means of overstating turnover is recognising revenue prematurely. There are industries were the completion of a sale spans in more that one financial year. Thus, there is involved managerial discretion is estimating the revenue generated. Such an example is the construction industry, where revenue is recognised on the basis of the completion rate. Revenue recognition policies in construction contracts need to comply with IAS 11 'Construction Contract'.

IAS 11 (par. 22) states that: 'When the outcome of a construction contract can be estimated reliably, contract revenue and contract costs associated with the construction contract shall be recognised as revenue and expenses respectively by reference to the stage of completion of the contract activity at balance sheet date.' For the instances where the outcome of a construction contract cannot be estimated reliably the standard states that (par. 32): 'revenue shall be recognised only to the extent of contract costs incurred that it is probable will be recoverable'.

An example of premature revenue recognition in building industry is the case of Berkeley plc that followed an FRRP sanction. In 2002, Berkely plc adopted a new revenue recognition policy, which may be more prudent than its old policy, but it still

allowed revenue to be recognised before legal completion and was less prudent than the policy of other house builders which recognised on legal completion. For residential properties Berkeley disclosed that it used to recognise revenue when building work was substantially complete, defined as plastered with a completed floor screed. However, the new policy was to recognise when contracts are exchanged and the building work is physically complete. The net impact of Berkely's revenue recognition policy change reduced turnover by £65 million. This policy was different from the majority of house builders that recognised revenue on legal completion which, in the building industry, represented the date of payment. This is in line with the principle that revenue is recognised when the seller transfers all the risks and rewards arising from the use of the asset to the buyer. Berkeley disclosed however that it was not beneficial to link revenue to the actual handover of the unit thus the completion basis was found not appropriate.

An example of earnings manipulation through sale and lease back is the case of Galliford Try plc, in 2007. The home builders recognised £10 million gains on sale and lease back transactions and pension curtailment, representing 17% of profit before tax. Galliford Try reported in a note profit of £4.8 million on sale and leaseback transactions. Its disclosure of no assets held under finance leases revealed that the sale and leaseback resulted in an operating lease. Recognition of the £4.8 million profit followed IAS 17 'Leases' (par. 61) which is different from par. 59 whereby, if a sale and leaseback transaction results in a finance lease, any gain is deferred and amortised rather than be recognised as income.

5.5 Cash flow accounting

Many of the techniques of creative accountancy have the effect of generating reported profits without producing as much cash flows, so investors often test a company's solvency and valuation by some form of cash flow analysis. An example is the practice of raising acquisition or other provisions to cover restructuring costs. As these provisions are utilised to cover future costs, they enhance profits. But to the extent that the costs being incurred are cash costs such as redundancy payments, rather than just write-downs of asset values, removing these costs from the profit and loss account will mean that profits may provide an optimistic picture of the cash the business is generating.

Another reason why profits often diverge from cash generated is the working capital circle. When a company expands its sales the effect is not often to generate cash immediately, since it first needs to purchase inventories with which to attract buyers and then needs to fund the buyers for a period of credit when they become debtors. Companies also need to invest in fixed assets, and capital expenditure can be a drain on cash. For these reasons profits often deviate from the cash generated and IAS 1 requires that financial statements include a cash flow statement.

The majority of the investors often focus on the cash flow from operations. A company seeking to report a favourable position is likely to include positive items related to investment activities in the operating cash flow. For example in 2006, Burberry plc classified cash flows from interest received and paid as financing activities. In 2007, the company reported them as operating activities. IAS 7 'Cash flow statements' states that interest received and paid are usually classified as operating cash flows for a financial institution. However, the company added that there is no consensus on their classification for other companies and states that they may be classified as operating or financing cash flows.

5.6 Capitalisation of interest

The most common capitalised cost is interest on property under development. Capitalisation is a process by which an item would otherwise be reported as an expense or debit in the profit and loss account is instead classified as an asset in the balance sheet. Capitalisation of costs is a legitimate technique. The Companies Act 1985 allows the inclusion in the cost of production of an asset of:

(a) a reasonable proportion of the costs incurred by the company which are only directly attributable to the production of that asset; and

(b) interest on capital borrowed to finance the production of that asset, to the extent that it accrues in respect of the period of production.

Similarly, after the adoption of IFRS, IAS 23 allows the capitalisation of borrowing costs. The standard describes that: 'The borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are those borrowing costs that would have been avoided if the expenditure on the qualifying asset had not been made.' (par. 13). A qualifying asset according to the standard is an asset that necessarily takes a substantial period of time to get ready for its intended use of sale.

This accounting treatment is normally associated with property development or the construction of properties for the use in business (i.e. stores, aircraft and stocks of goods which take a long time to mature such as whisky). But in a recession, companies that capitalised interest on property can encounter a problem. The cost of the property plus capitalised interest can exceed the market value, which leads to write-downs of the difference by which cost exceeds market value.

An example of interest capitalisation is the case of the property developer Minerva plc. In 2007, although there was no change in accounting policy, Minerva capitalised £10.5 million of its £21 million interest and similar charges. This followed the alternative treatment of IAS 23 'Borrowing costs' that borrowing costs directly attributable to the acquisition, construction or production of qualifying assets can be capitalised. It disclosed further in notes that the qualifying assets are in respect of its investment and trading properties and reported also the accumulated amount of borrowing costs capitalised. However, whilst IAS 23 requires disclosure of the capitalisation rate used, the company was silent in this respect. In the previous year, the company recognised all of its £19 million borrowing costs as an expense. It should be noted that despite the significant drop in turnover from £20 millions in 2006 to £12 millions in 2007, the company reported an increase in profit before tax from -£7 to £16 millions.

A second example of interest capitalisation is the case of White Young Green plc. In 2007 the company disclosed that borrowing costs of £0.5 million were capitalised during the year and were amortised over the length of the loan. This follows IAS 23 'Borrowing costs' (par. 29(b)). However, the company did not disclose the capitalisation rate used to determine the amount of borrowing costs eligible for capitalisation which is required by par. 29(c).

In the same financial year, the company increased the life of customer relationships from between two and four years to five and ten years and subsequently recognises an amortisation charge of £637,000. It stated that the impact is to decrease amortisation of acquired intangibles, which consisted of order books and customer relationships, from £4.2 million to £2.6 million for the year. In 2007, the company reported an increase in profit before tax from £11 millions to £13 millions. The net effect of capitalising interest expense and reassessing the intangibles' useful life was to increase profit before tax by £2.1 million. If the company had not adopted these accounting treatments, then it would report a decrease in profits of £0.1 million.

5.7 Capitalisation of Research and Development (R&D)

Before the implementation of the IFRS, the position adopted by the Accounting Standards Board for the accounting treatment of research and development expenditure was a middle ground compared to the mandatory capitalisation of development costs required by the International Accounting Standards Board and the immediate write off position adopted by the Financial Accounting Standards Board for costs with no alternative use. Under SSAP 13, which was replaced by FRS 24 "Accounting for research and development", UK companies faced a choice as to whether to capitalise or write off development costs with the decision ultimately left to directors.

This discretion was eliminated in 2005 with the introduction of IAS 38 'Intangible assets' which requires mandatory capitalisation of development costs where specific criteria are met. Although IAS 38 removed the discretion of directors it introduced more rigorous criteria before costs may be classified as 'development' within its meaning. To satisfy the criteria an entity must be able to demonstrate all of the following:

- the technical feasibility of completing the intangible asset so that it will be available for use or sale;
- its intention to complete the intangible asset and use or sell it;
- its ability to use or sell the intangible asset;
- the way intangible asset will generate probable future economic benefits. Among other things, the entity shall demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset;
- the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- its ability to measure reliably the expenditure attributable to the intangible asset during its development.

The distinction between research and development costs can be subjective allowing for managerial discretion, though managerial discretion is reduced with the introduction of IAS 38.

An example of aggressive capitalisation is the case of Finelot plc. In 2001, Finelot reported intangible assets amounting to £1 million. In a note to the accounts, Finelot disclosed that the intangible fixed assets comprise contracted development costs for the magazine 'FINE'. In its chief executives review, Finelot disclosed that all additional working capital requirements of the magazine will be funded by a third party.

The 2001 auditors' report of Finelot included a fundamental uncertainty section. This section states that the validity of preparing the financial statements on a going concern basis depended on the success of the 'FINE' magazine, which the directors believed, based on forecasts, that would be profitable and cash generative from its third issue in April 2002.

Taking into account the working capital requirements of the magazine had being provided and the adoption of the going concern assumption these development costs had been capitalised under FRS 24 'Accounting for research and development'. In the basis of consolidation note, it was stated however that if a going concern basis was not adopted the magazine development costs may not be fully recoverable. This accounting treatment triggered an FRRP investigation and the company had to restate its accounts charging the magazine costs to the income statement.

5.8 Intangible Assets

Accounting for brands has its roots in takeovers, mainly within the food manufacturing and processing, and drinks industries. On the one hand placing a valuation on brands was seen as a defence against a takeover 'on the cheap'. On the other, predators who had acquired companies with brand names but few tangible assets found in brand valuation a way to make their balance sheet look better, and to overcome technical problems caused by the intangible nature of brands. Though, the estimation of a brand's value includes an important amount of subjectivity, as it is based on assumptions on future performance.

Accounting for brands was developed during the 1980's (Smith, 1996) and its history is to be found in deals such as the 1978 bid by Allie Breweries for J Lyons at a price which was considered too high by conventional yardsticks, but gave Allied control of J. Lyons' brands. Hanson's battle with United Biscuits for control of Imperial Group in 1986 gave Hanson the ability to sell of brand name interests at a net

cost of only £197 million for a business (Imperial Tobacco) which produced operating profits of £240 million in 1991. This bid suggests that the stock market was not valuing J Lyons' brand assets correctly.

Merger acquisition and hostile takeovers continued behind the development of "brand accounting". In the first instance, this is because a potential target wishes to establish the value of its brand to prevent a predator getting them 'on the cheap' since they were not reflected in the company's balance sheet net asset value. An example is Cadbury Schweppes, with brands in confectionery and soft drinks, which faced stake building by the US company General Cinema, in 1988. Cadbury Schweppes' 1989 Accounts introduced the value of brands acquired since 1985 including Trebor and Basset at cost, thereby doubling shareholders' funds with over £300 millions of intangible assets. By doing so, Cadbury also reduced its reported gearing.

Though UK GAAP allowed a great amount of subjectivity in accounting for intangible assets, this subjectivity was later reduced with the adoption of IFRS. Under the UK GAAP (SAAP 13) the cost of developing an intangible fixed asset, should only be recognised in the balance sheet if:

(1) The historical cost associate with the asset is known or ascertainable

(2) The characteristics of the asset can be clearly distinguished from goodwill and other assets, and

(3) Its cost can be measured independently of goodwill

(4) The entity has reasonable expectations of future benefits

IAS 38 'Intangible Assets' sets a more specific framework making compulsory the capitalisation of development costs. More specifically, IAS 38 (par. 57) describes that an intangible asset arising from development shall be recognised if and only if, an entity can demonstrate all of the following:

(a) The technical feasibility of completing the intangible asset so that it will be available for use or sale.

(b) Its intention to complete the intangible asset and use or sell it.

(c) Its ability to use or sell the intangible asset

(d) How the intangible asset will generate probable future economic benefits. Among other things, the entity can demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or if it is to be used internally, the usefulness of the intangible asset.

(e) The availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset.

(f) Its ability to measure reliably the expenditure attributable to the intangible asset during its development.

Moreover the standard adds that internally generated goodwill (par. 48) or brands (par. 63) shall not be recognised as intangible assets, as expenditure on these items cannot be distinguished from the cost of developing the business as a whole.

In contrast IFRS 3, allows the recognition of intangible assets in business combinations. More specifically, the acquirer recognises separately an intangible asset of the acquiree at the acquisition date if it is separable and arises from contractual or other legal rights.

The transition from the UK GAAP to the IFRS revealed cases of aggressive recognition of intangible assets. An example is the case of the betting company Stanley Leisure plc. In 2005, Stanley Leisure held gaming licences within property, plant and equipment at valuation. Upon transition to IFRS, they were measured at cost and contributed to the company's net assets decreasing by £371 million. The impact included reclassification of £223 million licences within intangible assets; reducing assets held for disposal by £119 million and increased deferred tax liabilities of £96 million.

Measuring these assets at cost is in line with IAS 38 "Intangible assets" which permits a company to choose either the revaluation or the cost model and states that fair value is determined by reference to an active market (par. 75). However, it adds that it is uncommon for an active market to exist for most intangible assets (par 78). Stanley Leisure's disclosed also that its gaming licences were considered to have indefinite useful lives, although no further information was published.

The company reported that its experience was that it is unlikely an application for renewal would be turned down, or a licence forcibly removed. This follows IAS 38 which requires that, if an intangible asset arises from contractual or other legal rights that can be renewed; the useful life of the asset shall include the renewal period only if there is evidence to support renewal without significant cost (par. 94). It goes on to say that such evidence includes experience that a contract has been renewed adding that significant cost is determined by reference to the cost of renewal compared to the economic benefits expected to flow to a company from renewal.

As intangible assets can form a significant part of a company's non current assets, IAS 38 requires a detailed disclosure of the applied depreciation rates or the estimated assets' useful lives, by category. An example of deviation from the requirement is the case of Wolseley plc.

In 2005, except for goodwill Wolseley did not recognise any intangible assets. On transition to IFRs, the company recognised £133 million as intangibles with £101 million, previously within goodwill, recognised as trade names, brands and customer relationships. Additionally, it recognised £29 million software costs as intangible assets that were previously within property, plant and equipment. The company disclosed movements during the year including £220 million customer relationships and £26 million trade names and brands arising from acquisitions. It disaggregated in a table the net book values across: £39 million software costs; £34 million trade and brand names; and £253 million customer relationships.

The accounting policies note disclosed that software costs had a useful life of 3 to 5 years, whilst trade names, brands and customer relationships had useful lives that range from less than 1 year to 25 years depending on the nature of the asset. However the general nature of Wolseley's disclosure did not follow fully the IAS 38 'Intangible assets' requirement that a company disclose the useful lives or amortisation rates used for each class of intangible assets (par. 118(a)).

Another case of aggressive recognition of intangible assets is the case of 3DM Worldwide plc in 2004, where its auditors warned for a fundamental uncertainty. The company recognised intellectual property and investments of £15.2 million and £3.4 million respectively but stated that there can be no absolute certainty that sufficient income will be generated to recover the carrying value of both. However, it added that income is being received now and that, providing current trials are successful, further income streams are expected. Moreover, it was the directors' view that the carrying value of these assets is fair and reasonable given future potential income streams.

To this extent, the auditors' report included a fundamental uncertainty that referred to the adequacy of disclosures made by the company concerning the carrying value of intellectual property and investments. The report added that the appropriateness of the carrying values is dependent upon 3DM securing contracts for the commercial exploitation of its technology, which was uncertain.

5.9 Changes in Depreciation Policy

Changes in depreciation methods, periods and policies have been widely used as a source of managing earnings. The definition of depreciation under both the UK GAAP and IFRS induces a significant amount of subjectivity.

Depreciation is defined in FRS 15 as 'the measure of the wearing out, consumption or other reduction in the useful life of a fixed asset whether arising from use, defluxion of time or obsolescence through technological or market changes.' It is worth noting that it was intended as a measure of consumption, not a measure of change in value. FRS 15 required depreciation of all fixed assets except investment properties, goodwill, development costs and investments.

The most commonly used methods of depreciation are the straight line method, the reducing balance method, the annuity method and the unit of production method. A great deal of discretion is left to the management in the choice of depreciation method, as FRS 15 stated: 'There is a range of acceptable depreciation methods. Management should select the method regarded as most appropriate to the type of asset and its use in the business so as to allocate depreciation as fairly as possible to the periods expected to benefit from the asset's use.'

A change in the method of depreciation is allowed if the new method will better represent the company's results and financial position. But a change of method is not a change of accounting policy, and profits can be adjusted without even adopting a change of method, simply by altering the life of an asset over which a method is applied.

In December 1995, the UITF Abstract 14 implemented a new rule that the material impact of changes in accounting policy, including those on depreciation, should be shown for both the current accounting period and the prior period. Whilst this is a step forward in bringing to investors' attention the impact of accounting policy changes, there are still some drawbacks. Companies are adept at changing depreciation methods just before the depreciation charge on a new asset would have a substantial effect on profits. Moreover, a change in the length of the depreciation period remains outside the definition of a change in accounting policy, so that its impact was still not needed to be quantified under UITF Abstract 14.

The introduction of the IFRS removed the requirement from companies to restate prior year accounts after the adoption of a new accounting policy. IAS 16

(Property Plant and Equipment) (par. 60) describes that: 'The depreciation method used shall reflect the pattern in which the asset's future economic benefits are expected to be consumed by the entity. The depreciation method applied to an asset shall be reviewed at least at each financial year-end, if there has been a significant change in the expected pattern of consumption of the future economic benefits embodied in the asset, the method shall be changed to reflect the changed pattern. Such a change shall be accounted for as a change in an accounting estimate in accordance with IAS 8.' According to IAS 8 'Accounting Policies, Changes in Accounting Estimates and Errors' (par. 36) the effect of a change in an accounting estimate shall be recognised prospectively by including it in profit or loss in:

(a) the period of the change, if the change affects that period only; or

(b) the period of the change and future periods, if the change affects both.

An example of change in depreciation policy is the case of GNP plc. The financial review disclosed that, in order to bring the group into line with comparable engineering companies, GKN changed its method of charging depreciation on plant and machinery from a reducing balance basis to a straight line basis. The company stated that the effect is to increase 2004 profit by £11 million. This follows along the lines of FRS 15 'Tangible fixed assets' which states that a change from one method of providing depreciation to another is permissible only on the grounds that the new method will give a fairer presentation of the results and of the financial position (par. 82). In addition, GKN disclosed a £663 million exceptional profit, after charging £100 million in respect of goodwill previously written off to reserves, arising on the sale of its interests in two joint ventures.

A more aggressive approach to depreciation policy was adopted by Northgate Plc in 2001 and attracted FRRP's attention. During 2001, Northgate acquired freehold buildings with a net value of £3.5 million after revaluation (historical cost: £3.4 million). The directors stated that they did not believe the net book value of the freehold buildings to be 'significantly different' from their actual value. Further to this, in the accounting policies note, it was disclosed that, as freehold buildings were kept in 'a continual state of sound repair' with improvements made 'from time to time', an annual impairment review on the revaluated amount negated the need for depreciation as, at the end of the buildings useful economic lives, residual values would be greater than their present carrying values.

FRS 15 'Tangible fixed assets' states that the only ground for non-depreciation of tangible fixed assets is where the depreciation charge is immaterial (par. 90). However, it goes on to state that, an entity must be able to justify that the uncharged depreciation is not material in aggregate as well as for each tangible fixed asset. Where estimated residual values are material, the entity must have a policy and practice of disposing of similar assets well before the end of their economic lives; and the disposal proceeds of similar assets have not been materially less than their carrying amounts (par. 91).

Another example of change in depreciation rate is EasyJet plc. In 2005, the company disclosed a policy of depreciating its aircraft over a period of 7 years although they have an expected operational life of 20-30 years. This reflected EasyJet's policy of using recently manufactured aircraft and expectations of holding them for approximately 7 years before disposal.

In 2006, EasyJet disclosed that it has revised the depreciation period of its fleet of Airbus A319, which is its standard aircraft, to 23 years which was the estimated operational life of the aircraft. It added that it intended to hold all aircraft over any period up to the end of their operational lives but that this change did not have a material impact on depreciation and was not expected to have a material future impact.

5.10 Transfers from Current to Fixed Assets

An old saying in stock-broking is that: 'A long-term investment is a short-term investment which went wrong', which is reflected in the behaviour of a number of companies during recession. Particularly, since amongst the characteristics of the recession was a fall in property values accompanied by an absence of liquidity to enable developers to realise properties, even if they were prepared to accept the fall in values and the inevitable loss.

Property developers rely upon selling the buildings they develop. Even if the building is tenanted, the developer usually still intends to sell as higher margins are achieved. Unlike the property investor who arranges equity and long-term debt finance, a property developer is typically funded partly by short-term bank debt which needs to be repaid from the sale of the property. Indeed, in many cases, developers cannot even cover their loan interest without regular disposals.

A recent example is the case of Barratt Developments plc, in 2008, where a 30% drop in sales volume brought the developer near bankruptcy. An emergency cash call of £731 millions rescued the group[17].

Therefore, a property developer's buildings make the company's inventory. A company is required to show its inventory in its balance sheet at the lower of cost or market value. If the market value of the inventory follows below cost, the result is that it would be forced to show a loss which would appear in the income statement in the same way as a profit on sale appears when the inventory is sold in a higher value than its cost.

Though, a different treatment is usually applied to fixed assets. A company does not generally trade in its fixed assets. So instead of being valued at the lower of cost and realisable value, they are included in the balance sheet at historic cost less any depreciation (although, property assets held as investment are subject to periodic revaluations). It is possible that if the market value drops below the balance sheet value derived by this method, there is no loss shown through the profit and loss since they are not held for sale.

This presented an opportunity for companies, such as property developers and transport companies, who saw a sharp fall in the value of their stock below cost level during recession. They avoided the resulting loss passing through the profit and loss account if they transferred the assets from current assets to fixed assets prior to writing it down.

In fact, IAS 16 'Property Plant and Equipment' provides a choice between the cost model and the revaluation model in the measurement of fixed assets. Under the cost model (par. 30) the standard requires that after recognition as an asset, an item of property, plant and equipment shall be carried at its cost less any accumulated depreciation and any accumulated impairment losses. Under the Revaluation model, the standard requires (par. 31) that a fixed asset whose fair value can be measured reliably shall be carried at a revalued amount, being its fair value at the date of the revaluation less any subsequent accumulated depreciation and subsequent impairment losses.

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[17] 'Without this we would have had to continue shrinking the business to the point where we could not recover as a national volume house builder,' said Bob Lawson, Barratt chairman, to Financial Times on 23 September 2009.

An example of a company moving from revaluation model to cost model in a recession, is the case of Go Ahead Group plc. On its transition to IFRS on July 2004, Go-Ahead adopted the revaluation model for its land and buildings. In 2008, the company moved back to the cost model.

In line with IAS 8 'Accounting policies, changes in accounting estimates and errors', Go-Ahead applied the change of accounting policy retrospectively and adjusted the opening balance of each affected comparative amount. This reduced the closing carrying values of the land and buildings by £22.6 million, with a £6.6 million reduction in related deferred tax liabilities, and thus net assets decrease by £16 million or 11%.

A more aggressive approach, that attracted FRRP's attention, was applied by Grainger plc (Figure 5.3). As a result the company was ordered to restate its results for the year ended 30 September 2006. During the period in question, the company transferred trading properties with a carrying amount, at cost, of £43.5m to a Jersey Property Unit Trust (JPUT), a wholly-owned subsidiary of the company at 30 September 2006. On transfer, the properties were reclassified as investment properties and a gain on revaluation to market value of £23.5m was recognised in the income statement (Table 5.3). The Panel said it was concerned about the reclassification of these properties. IAS 40 'Investment property' limits the circumstances in which transfers to, or from, investment property can be made to those circumstances, specified in the standard that provide evidence of a change in use. More specifically, IAS 40 states that (par. 5): Investment Property is property held to earn rentals or for capital appreciation or both, rather than or:

(a) use in the production or supply of goods or services or for administrative purposes; or

(b) sale in the ordinary course of business.

No such change in use attended the company's transfer to the JPUT. The directors agreed that the transfer did not comply with the requirements of IAS 40 as it did not provide evidence of the required change in use, as a result of discussion with the Panel.

The correction resulted in the reduction of the 2006 reported profit after tax by £16.5m. Together with the effect of other changes described in the company's

announcement, the 2006 profit after tax reduces from £50.5m to £33.5m with net assets reducing by £0.5m to £250.1m.

Figure 5.3: Extract from the accounts of Grainger

NOTES TO THE ACCOUNTS
CONTINUED

1 SIGNIFICANT ACCOUNTING POLICIES
CONTINUED

PROPERTY PORTFOLIO
TENANT LEASES
Management has exercised judgement in considering the potential transfer of the risks and rewards of ownership in accordance with IAS 17 Leases for all properties leased to tenants and has determined that such leases are operating leases

DEVELOPMENT PROPERTIES
Properties acquired with the intention of redevelopment are classified as development properties and stated at fair value. Changes in fair value above cost are recognised in equity, and changes in fair value below cost are recognised in the income statement.

All costs directly associated with the purchase and construction of a development property are capitalised. When development properties are completed, they are [redacted] as investment properties and any accumulated revaluation surplus or deficit is transferred to retained earnings.

INVESTMENT PROPERTIES
Investment properties are stated at fair value, being market value determined by professionally qualified

Sourse: Graninger's 2006 Annual Report

5.11 Financial Instruments

5.11.1 Currency mismatching

The practice involves borrowing money in low interest rate currencies and depositing it in high interest rate currencies. The advantage of creating un-hedged currency positions lie in the boost which it can provide to profits, often at the expense of the balance sheet.

Barton and Simko (2001) presents evidence consistent with managers using derivatives, currency mismatching and discretionary accruals as partial substitutes for earnings management. Using 1994-1996 data for a sample of Fortune 500 firms, their research estimates a set of simultaneous equations that captures managers' incentives to maintain a desired level of earnings through hedging and accrual management. These incentives include increasing managerial compensation and wealth, reducing corporate income taxes and debt financing costs.

An example of this practice is the case of Hammerson plc, in 2007. The company published sensitivity analyses of movements on interest and currency rates in line with IFRS 7 'Financial instruments: disclosures' (par. 40). In respect of

floating rate borrowings, net of interest rate swaps, the company states that a 1% increase in interest rates would decrease profit before tax by £22.3 million, whilst a similar reduction would result in a £15.9 million increase.

For currency exposure from financial instruments alone, a 1.5% strengthening in sterling against the euro would reduce by £23.6 million a £131 million net loss recognised directly in equity, while a similar weakening would increase the loss by £24.3 million. Whilst IFRS 7 requires analysis of the effects of reasonably possible changes, actual events can differ significantly from assumptions. During that period, UK interest rates reduced from 5.5% to 3% since publication of the company's financial statements. Similarly, since publication of the financial statements, sterling weakened by 8.5% against the euro and has fallen by some 15% since the start of 2008.

5.11.2 Financial assets evaluation

Before the introduction of the IFRS, The Companies Act 1985 permitted the evaluation of investments at cost, rather than their fair value. This gave the opportunity to the Newspaper group Daily Mail and General Trust (DMGT), in 2004 to change its policy and recognises listed investments at cost rather than at market value.

DMGT amended its policy for recognising listed investments to measure at cost less any impairment whereas previously it adopted a market value basis. The company held 12.9 million shares in Reuters which in 2003 had a market value of £30.7 million but, following the change in policy, its book value reduced by £10.7 million.

The accounts disclosed that the policy change was effected as the company no longer held exchangeable bonds and that this change avoided the financial statements showing continual fluctuations in share price. The Companies Act 1985 permitted both policies although the policy change DMGT has made was reversed when IFRS were implemented, in 2005.

A more recent example of aggressive accounting is the case of Sports Direct, in 2008 that failed to adjust the treasury shares reserve to reflect share cancellations. This accounting treatment drew *Company Reporting*'s attention, which red flagged the company. During 2008, Sports Direct bought back 152 million of its own shares and, following along the lines of IAS 32 'Financial instruments: presentation',

recognised consideration paid of £201 million directly in a newly created treasury shares reserve (par. 33). The company disclosed that it subsequently cancelled 79.5 million of these shares and, in accordance with s170 of the Companies Act 1985, transferred their nominal value of £7.95 million from share capital to capital redemption reserve.

Sports Direct did not, however, adjust treasury shares reserve to reflect this share cancellation. The result is that the amount in the reserve, which was disclosed separately on the face of balance sheet, fell short of IAS 32 (par. 34). *Company Reporting* warned that this does not show a true and fair view of either treasury shares held or of distributable reserves and the auditors' report made no mention of this issue.

5.11.3 Financial Assets Classification

IAS 39 allows companies to classify financial assets in one of the three categories:

(a) held for trade

(b) held to maturity

(c) available for sale

The main difference between the three categories is that assets classified under the held-to-maturity are measured at amortised cost using the effective interest method (par. 46), whereas in assets held in the other tow categories need to be marked to market value with the changes being recognised through the income statement. Only non-derivative financial assets can be classified under the 'held to maturity' category and they need to have fixed or determinable payments and fixed maturity that an entity has the positive intention and ability to hold to maturity. In order to prevent opportunistic use of this category, the standard requires that an entity shall not classify any financial assets as held to maturity if the entity has, during the current financial year or during the two preceding financial years, sold or reclassified more than an insignificant amount of held-to-maturity investments before maturity. Though, the recent financial crisis changed the regulators' stance in this mater.

During 2008 banks and insurers contended with billion-pound write downs in asset values, huge hits to profits and depleted capital reserves have been exerting pressure on the EU and IASB to relax fair value accounting rules that force them to 'mark to market'. The resulted amendments to IAS 39 permit certain reclassifications out of fair value. Similar reclassifications were already permitted under US GAAP

The need for urgent action led the IASB to suspend its normal due process (exposure draft and comment letters, for example) so that the amendments could take effect in the third quarter of 2008. The amendment applied only to financial assets classified as available for sale or held for trading, which were measured at fair value. It did not apply to financial liabilities, derivatives, equity investments or financial assets designated as at fair value through profit and loss on initial recognition. In summary reclassifications were permitted in non-derivative financial assets. At the date of reclassification, the fair value of any financial asset reclassified under these provisions became its new cost or amortised cost as applicable. IFRS 7 was also amended to incorporate extensive disclosure requirements relating to any assets reclassified as a result of this amendment to IAS 39. In particular, an entity is required to disclose details of carrying amounts and fair values for all financial assets that have been reclassified until they are derecognised, together with details of the fair value gain or loss that would have been recognised in the income statement or equity if the financial asset had not been reclassified.

The scope of this amendment in IAS 39 according to regulators was to restore investors confidence and indicates how an accounting treatment that otherwise would have been classified as earnings manipulation, is now legitimate and within the limits of true and fair view.

5.12 Pension Fund Accounting

IAS 19 separated the accounting treatment of pensions between defined contribution plans and defined benefit plans, with the aim of establishing a systematic basis for reporting the impact on companies. At the defined contribution plans the cost to be recognised in the period is the contribution payable in exchange for service rendered by employees during the period (par. 44). For defined benefit plans, the amount recognised in the balance sheet should be the present value of the defined benefit obligation as adjusted for unrecognised actuarial gains and losses and reduced by the fair value of plan assets at the balance sheet date (par. 54). The rate used to discount estimated cash flows should be determined by reference to market yields at the balance sheet date on high quality corporate bonds. The standard also gives companies with a pension fund surplus a choice to account either by reorganising the surplus as a balance sheet item and create a prepayment asset as a prior year item, or by spreading the benefit of surplus forward in its profit and loss account over the

remaining service life of the scheme's members. The discretion involved in accounting for pension costs, is used in many instances from companies seeking to influence profits.

A recent example of pension fund accounting is the case of British Airways (BA). In 2007, BA recognised a credit of £396 million (65% of pre-tax profit) in the income statement with respect to changes in a pension scheme. The company disclosed that it has amended the terms and conditions of one of its pension schemes whereby it restricted future increases in pay for pensions, to movements in the Retail Price Index and increased the retirement age to 65. These changes are treated as curtailments which, in accordance with IAS 19 'Employee benefits', resulted in immediate recognition of the reduction in the defined benefit obligation (par. 109).

5.13 Goodwill

Goodwill is the accounting term given to the difference between the price paid for an acquisition and the fair value of the assets acquired. It has been an increasing feature of UK take-overs as the main industries have shifted gradually from manufacturing and other asset based activities towards service industries, consumer brand management and which have few fixed assets. Apart from the premium to asset fair values often paid for control in take-overs, the growth of business whose performance is not based upon assets has also increased the amount of goodwill recognised in take-overs. Another factor which has increased the amount of goodwill in take-overs is the use of pre-acquisition write-downs, discussed in the 'Acquisition Accounting' section of this chapter.

After the introduction of IFRS, directors were given increased discretion in accounting for goodwill as the annual amortisation under FRS 10 was replaced by the annual impairment reviews described in IAS 38. In UK GAAP, FRS 10 'Goodwill and intangibles' allowed an entity to amortise goodwill over its expected useful life if that expected useful life was less than twenty years. There was a rebuttable presumption whereby an entity may consider the life of the goodwill to be more than twenty years. However, where an entity stated that goodwill was deemed longer than twenty years, the directors had to undertake an 'impairment' review at the end of the first full financial year following the initial recognition of the goodwill or intangible asset and

in other periods, where events or changes in circumstances indicated that its carrying value may not be recoverable in full.

Under the provisions of IAS 38 'Intangible assets' amortisation is prohibited and the directors must undertake an impairment review on an annual basis. More specifically, the standard requires that (par. 80) for goodwill acquired in a business combination shall, from the acquisition date, be allocated to each of the acquirer's cash-generating units that are expected to benefit from the synergies of the combination. The standard adds (par. 90) that a cash generating unit to which goodwill has been allocated shall be tested for impairment annually and whenever there is in an indication that the unit may be impaired by comparing the carrying amount to the unit, including the goodwill, with the recoverable amount[18] of the unit. If the carrying amount of the unit exceeds the recoverable amount of the unit, the entity shall recognise an impairment loss.

During deteriorating economic conditions, managers can influence reported results by making impairment tests with optimistic assumption, thus avoiding impairment losses. In its 2008 annual report, FRRP commented that with the deterioration in economic conditions it is likely that many companies will need to reduce their forecasts and projections of future business growth and operating margins, which form the basis of goodwill impairment reviews. The FRRP reviewed goodwill impairment disclosures made during 2007 by 32 UK listed companies. The review concluded that the majority of companies disclosed more generic than company-specific information which limited the understanding and insight that could have been conveyed to investors. The panel advised that the most useful and informative disclosures were those that provided information specific to the business.

An example of unclear disclosure in goodwill impairment review is the case of Regent Inns plc, in 2007. The company made two acquisitions during that year with goodwill of £11.3 million and £0.7 million arising. However, whilst the company stated that goodwill on the smaller acquisition was provisional, it added that it was not tested for impairment of the £11.3 million goodwill as it undertook an exercise to fair value the assets and liabilities of the business combination at acquisition and considered impairment testing to be unnecessary. This did not follow IAS 36

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[18] The recoverable amount is the higher of an asset's fair value less costs to sell (sometimes called net selling price) and its value in use. Fair value is the amount obtainable from the sale of an asset in a bargained transaction between knowledgeable, willing parties. Value in use is the continuing use of an asset and from its disposal at the end of its useful life

'Impairment of assets' which requires that, if goodwill allocated to a cash-generating unit relates to a business combination during the current annual period, that unit need to be tested for impairment before the end of the period (par. 96).

Regent disclosed that it carried out an annual impairment review of its pre-existing goodwill using projected future pre-tax cash flows with an annual growth rate of 2.25% and a discount rate of 7.5%. The company concluded that no impairment was required. Following the acquisitions during the year, the company recognised intangible assets in addition to goodwill. It published a table showing accumulated amortisation and includes what was previously accumulated amortisation of goodwill in the schedule. This introduced lack of clarity and that could lead a non sophisticated reader to conclude that the company continues to amortise goodwill. For this reason the company was criticised by the *Company Reporting.*

Another case of aggressive goodwill recognition is ITE plc, which organises trade exhibitions and conferences. During 2008 ITE made four business acquisitions, of which it considered two to be material. Following IFRS 3 'Business combinations', it disclosed the book and fair values acquired in the two material combinations (par. 67(f)). Their combined consideration was £16.6 million, with £6.3 million goodwill and £13.1 million other intangibles recognised. The goodwill and intangibles acquired in 2008 year amounted to 44.2% of equity, whilst total goodwill and intangibles after the acquisition exceeded equity and represent 40.3% of total assets. This was noteworthy, as one of the company's business objectives, on which management remuneration is partly based, is to target a 'headline' earnings figure that excluded goodwill impairment, intangible amortisation and gains or losses on disposal of group undertakings.

The company disclosed that the acquired intangibles are principally customer relationships and trademarks and that the goodwill represented expected synergies and complementarity with its emerging market strategy. The reference to strategy gave new, company-specific information.

In relation to goodwill and intangible asset impairment testing, ITE disclosed that it estimated cash flows over a ten year period, as this represented its average expectation of the period over which value will be derived from cash-generating units. The company disclosed contributions to revenue and profit had the acquisitions taken place at the start of the year indicating that, since acquisition, both businesses made losses.

5.14 Deferred Tax

Before the introduction of the IFRS, deferred tax was governed by FRS 19 which superseded SSAP 15 'Accounting for deferred tax', in 2002. FRS 19 required that deferred tax be computed on a full provision basis where provision is required, rather than the partial provision basis formerly required by the SSAP. The standard was also explicit in its prohibitions as to the types of timing difference upon which deferred tax may not be provided. This prescription as to computation basis appeared to be likely to reduce the opportunity for earnings management via the deferred tax charge. Though, under the provisions of FRS 19 'Deferred taxation' a company could choose to 'discount' its deferred tax to present day values. Under the provisions of IAS 12 'Income taxes' a company cannot discount its deferred tax to present day values. Deferred tax, however, remains a relatively complex area of accounting: the new standard allows, indeed requires companies to form expectations concerning their future, apply judgment and make choices in accounting for deferred tax. An example of the judgment involved is that while losses incurred give rise to potential deferred tax assets, uncertainty about future profitability makes it very difficult to reliably estimate the amount, if any, of these assets that can be recognised.

The transition from SSAP 15 to FRS 19 had negative impact in companies that managed earnings through the partial provision basis formerly required by the SSAP. An example is the case of JD Wetherspoon (JDW) plc in 2001. In its accounting policies note, JDW disclosed that it had changed its accounting policy in relation to deferred tax following the adoption of FRS 19. Following along the lines of FRS 19, JDW disclosed that it recognised deferred tax on a full provisions basis on all timing differences which had originated, but not reversed, at the balance sheet date. JDW disclosed further that the impact of adopting FRS 19 on 2001 profits was to reduce them by £12.1 million. JDW disclosed also that the effect on the previous periods' shareholders' funds, which was disclosed at the foot of the statement of total recognised gains and losses, which were reduced by £35.7 million.

Another example of influencing reported earning through deferred tax accounting is the case of CLC Holidngs plc, in 2005, which *Company Reporting* red flagged for earnings manipulation. The main issue was that goodwill on property company acquisitions was not impaired in contrast to industry peers, as accounting policies move from UK GAAP to IFRS. CLS moved from preparing its consolidated

financial statements under UK GAAP to IFRS and disclosed that profit before tax increased by £37 million, which was mostly attributed to net gains from fair value adjustments on investment property. Net equity at 31 December 2004 decreased by £103 million as a result of recognition of additional deferred tax liabilities of £121 million on revaluation gains offset by recognition of a deferred tax asset of £14 million. During 2005, CLS acquired a German property company for consideration of £1.5 million, with goodwill of £0.2 million arising. The company stated the goodwill was attributable to the deferred tax which was expected to reverse in the future and that, having carried out impairment review; it concluded there was no requirement to impair goodwill. This contrasts with two industry peers that both acquired property companies during that year and recognised goodwill attributable to deferred tax liabilities, but chose to impair the goodwill immediately.

5.15 Conclusions

This chapter investigated cases of earnings management and earnings manipulation related to UK GAAP and IFRS, covering the following areas. First, accounting for mergers and acquisitions requires from the parent to bring the balance-sheet of the acquired company into fair value. This provides an opportunity for excess provisioning and write-downs, creating reserves that can be used in future periods. Additionally, if the acquisition involves differed consideration then a significant amount of subjectivity is required to estimate the future costs.

The second area covered in this chapter is the revenue recognition. There were discussed cases were revenue was inflated after including government grants, disposal proceeds or even proceeds of sale and lease back agreements. The third area highlighted a case were operating cash-flows were inflated after including items related to investments.

The fourth area covered expense capitalisation, investigating interest capitalisation, capitalisation of R&D and intangible assets. It was found that in two cases of capitalisation of borrowing costs, companies did not disclose the interest rate applied. In the area of capitalisation of R&D it was show that IFRS introduced a systematic basis for reporting the impact on companies. Though, accounting for intangible assets still involves subjectivity in estimating the parameters used in impairment testing.

The fifth area examined property plant and equipment in terms of recognition and measurement. More specifically, it was examined how changes in depreciation policy can be used to report a more favourable position. Moreover, it was examined how transfers from inventories to non-current assets and vice versa can be used to influence reported results.

The sixth area investigated how accounting for financial instruments was applied to influence earnings and how regulators relaxed the rules underpinning the assets-held-to-maturity category as a means of restoring investor confidence during times of financial turbulence. The following area covered the subjectivity involved in calculating pension fund liabilities and how actuarial estimations can influence earnings. The next area investigated cases of aggressive goodwill recognition and the last area explored how transitions to FRS and IFRS revealed cases of aggressive deferred tax recognition.

Overall, these findings can be seen as very preliminary documented and case-based evidence of the existence of companies that manage or even manipulate earnings. In the following chapters the focus shifts to analysing empirically the existence of specific patterns between companies that manage and manipulate earnings and how financial variables can be utilised to detect earnings manipulation.

Chapter 6

Earnings management to avoid earnings decreases and losses

6.1 Introduction

Anecdotal evidence proposes that there are strong incentives to avoid earnings decreases and losses. It is common for directors to emphasize the significance of increases in earnings in the opening lines of the directors' section of the annual report. For example, in J D Weatherspoon's 2007 annual report, Chairman Tim Martin opens the operating review section stating "I am pleased to report another year of good progress for the company. Operating profit increases by 9% (+12%) ". Similarly, for many years Tesco plc emphasized a sequence of earnings increases. In Tesco's 2008 annual report the Chief Executive Terry Leahy emphasises: "The results demonstrate that Tesco has again made strong progress. Sales, profits and returns have grown well..." Another example is the British American Tobacco 2007 annual report, where the Chairman Jan du Plessis states: "Over the past five years, our earnings have grown by 10 per cent compound, clearly demonstrating our ability to meet our goal of delivering high single-figure growth in earnings, on average, over the medium to long term." Thus, much anecdotal evidence suggests directors try to preserve a pattern of increasing earnings.

Several recent studies offer more systematic evidence of incentives to maintain earnings increases. DeAngelo et al. (1996) find that firms breaking a pattern of consistent earnings growth experience an average of 14% abnormal stock return in the year the pattern is broken. Thus, appears to be strong incentives for earnings management to avoid the reporting of earnings decreases, and the incentives appear to be increasing in the length of the preceding sequence of earnings increases. There is also much evidence of incentives to maintain positive earnings. Many annual reports, news releases and profit guidance announcements give emphasis on 'consistent profitability', suggesting that there are incentives to avoid losses.

Additionally, earlier research (Shen, 2005; Brown, 2005; Gore et al., 2007) demonstrates that companies exercise discretion to increase earnings when the level of

earnings is slightly below a threshold. This study contributes to the academic literature investigating a more recent sample (years: 1997-2007).

The purpose of this chapter is to provide extensive systematic evidence about whether, how, and why, firms avoid reporting earnings decreases and losses. Section 2 discusses the recent literature and section 3 describes the research design. Section 4 presents the descriptive characteristics of the examined sample. Section 5 explores pooled cross-sectional distributions which show that the frequencies of small earnings decreases and small losses are abnormally low relative to adjacent regions of distributions, while frequencies of small earnings increases and small positive earnings are unexpectedly high. Section 6 suggests different approaches on how discontinuities in earnings distribution could be explained and Section 7 concludes.

6.2 Theoretical Background

6.2.1 Existing Evidence and Motivation

Academic interest in the area of earnings management began before the corporate scandals of the late 1990s and early 2000s and has since grown, focusing on investigations into why and how earnings management is conducted. One particular line of research centres on the finding that the empirical distribution of earnings relative to basic targets displays discontinuities at zero. In particular, evidence that small negative earnings levels, changes and surprises occur with unexpectedly low frequency and small positive earnings levels, changes and non-negative surprises occur with unexpectedly high frequency (Hayn, 1995; Burgstahler and Dichev, 1997; Degeorge et al., 1999; Burgstahler and Eames, 2003, 2006). One potential explanation of this behaviour is earnings management to meet or beat thresholds, e.g. to avoid losses. Consistent with this explanation, Burgstahler and Dichev (1997) find that both operating cash flow and working capital accruals (WCA) rise sharply when reported earnings is just above zero.

Evidence on threshold beating earnings has been used in extensively in subsequent earnings management research (for example, Payne and Robb, 2000; Beaver et al., 2003, 2004; Dichev and Skinner, 2003; Beatty et al., 2002; Leuz at al., 2003; Leone and Van Horn, 2005; Philllips et al., 2003; Frank and Rego, 2004; Roychowdhury, 2006). However, recent research has raised doubts about whether earnings management does indeed explain the observed discontinuities in the

distribution of earnings (e.g. Dechow et al., 2003; Degeorge et al., 1999; Durtschi and Easton, 2005). The contribution to current literature is twofold. First, an extensive non-US dataset is analysed, extending the previous UK research findings of Gore et al. (2007) thereby confirming that the discontinuities previously reported in the literature are not specific to the US setting. Second, new tests are introduced, lending support on the hypothesis that the discontinuities in earnings distributions are associated with accrual-based earnings management in the examined sample.

Using a variety of tests, Dechow et al. (2003) are unable to find systematic evidence of accruals management connected to discontinuities in earnings distributions for their US sample. When they compare small profit firm-years with all others, they find that the former have higher average discretionary accruals (DACC), cash flows and total accruals than the latter. However, when they compare small profit firm-years with small loss firm-years, they find insignificant differences between the two groups. Dechow et al. (2003) also compare zero earnings surprise firm-years with all others and with small negative surprise firm-years. They find that zero surprise firm-years have higher DACC and WCA than all other firm-years and higher WCA than small negative surprise firm-years. However Dechow et al. (2003) find that the difference between average DACC for zero and small negative surprise firm-years is statistically insignificant. They conclude that earnings management to achieve targets via real (operating) decisions is a more likely explanation for the discontinuities.

Degeorge et al. (1999) suggest that the distributional irregularities could be a manifestation of scaling earnings. Durtschi and Easton (2005) also suggest that scaling is important in understanding the discontinuities in the distribution of deflated earnings per share. Durtschi and Easton argue that use of beginning of year stock price to deflate earnings per share can induce discontinuities for two reasons. First share price depends on earnings – the share prices for firms with small losses are systematically lower than stock prices for small profits. Second, loss firms are more likely to have missing values for beginning of year stock prices in their data, resulting in potential selection bias. Durtschi and Easton argue that both these effects can lead to 'spurious' discontinuities in the distribution of scaled earnings that are unconnected to earnings management. Beaver et al. (2006) suggest that the asymmetric treatment of profits and losses and the recognition of special items together might account for up to two thirds of the discontinuity. However, they do not rule out the possibility of other factors being important, including abnormal accruals.

In contrast, Jacob and Jorgensen (2005) show that fourth-quarter earnings are considerably more volatile. While annual earnings measured over the fiscal year display the expected discontinuities, these discontinuities are not evident in different annual periods ending in quarters one, two or three of the fiscal year. Overall, Jacob and Jorgensen (2005) conclude that their results are consistent with earnings management to meet specific thresholds. In summary, there is no clear consensus in the recent literature as to whether discontinuities in earnings distributions reflect earnings management or are research design biases.

In this chapter, a detailed examination of earnings management around earnings thresholds is undertaken, using a large sample of UK firms. This analysis focuses on earnings management involving working capital accruals. In contrast to Dechow et al. (2003), there are presented evidence consistent with earnings management to achieve targets. Earnings management through working capital accruals (WCA) suggests itself as a potentially popular technique for achieving earnings targets. Healy (1985) points out that accrual management is less costly and more feasible on a multi period basis than accounting method changes as a means of transferring earnings between periods. Further, DeFond and Jiambalvo (1994) view WCA as more susceptible to manipulation than non-working capital accruals. This chapter investigates the links between the discretionary component (termed discretionary accruals, thereafter DACC) of WCA, the frequency of earnings target achievement and the observed discontinuity in the distribution of earnings relative to basic targets. The targets considered are the achievement of positive earnings levels and changes and the avoidance of negative earnings. The primary objective is to determine whether DACC, a frequently used proxy for earnings management, contribute significantly to the unexpectedly high frequencies of positive, particularly small positive, earnings levels and changes.

This chapter aims at gaining an insight into the overall impact of DACC on the distribution of earnings relative to targets, and hence to provide evidence on whether manipulation of the accruals process is an important earnings management tool. The approach in this chapter is novel because it provides specific evidence on the manner in which firms use DACC with reference to basic earnings targets. Prior studies have typically used DACC as a proxy for earnings management without specifying the manner in which firms use DACC to manage earnings. For example, Becker et al. (1998) and Francis et al. (1999), although both hypothesising that Big 4 (then big 6)

auditors constrain earnings management more effectively than non-Big 4 auditors, they interpret this prediction differently. Becker et al. (1998) imply that signed DACC are negatively associated with the presence of Big 4 auditors while Francis et al. (1999) imply that it is absolute DACC that are negatively associated with the presence of Big 4 auditors. This reflects different underlying assumptions about the manner in which firms use DACC to manage earnings.

A further contribution of this analysis is to provide evidence on whether the phenomenon of discontinuities in the distribution of earnings extends beyond the US corporate environment and US GAAP regime. In recent years, there has been heightened interest in the impact of different economic environments and GAAP regimes on the attributes of accounting earnings (Pope and Walker 1999; Ali and Hwan'g 2000; Ball et al., 2000) and on the incidence of earnings and forecast management (Brown and Higgins 2001). In addition, Leuz et al. (2003) provide evidence of a correlation between loss avoidance and accruals-based measures of earnings management. This research extends and deepens this growing international accounting literature by reporting detailed evidence of the association between earnings discontinuities and accruals management based on a large sample of UK companies.

The UK context is interesting for a number of reasons. Firstly, the incentives for earnings management differ from those in the US (the basis of most research to date). Ball et al. (2000) point out that the UK has the least regulated and least litigious accounting environment among the common-law countries they investigate, and that corporate debt is primarily private in the UK. According to Ball et al. (2000), these factors imply a reduced incentive for timely incorporation of bad news into accounting earnings reported by UK firms. Such lower demand for timely reporting of bad news allows managers greater flexibility compared to the US to manage earnings through timing of recognition, Gore et al. (2007). In contrast, Brown and Higgins (2001) find evidence that UK managers have smaller holdings of stock options than their U.S. counterparts, and thus suggest that UK managers have less incentive to manage earnings to avoid reporting bad news that US managers. However in their 2005 paper, Brown and Higgins suggest that the impact of differences in the expectations management behaviour between countries may partially explain the difference in incentives for earnings management.

A UK specific feature is the regime change that occurred regarding the reporting of extraordinary items. Prior to FRS 3[19] (Accounting Standards Board, 1992) the majority of extraordinary debits (reducing earnings) concerned restructurings of companies, whereas many extraordinary credits (increasing earnings) were treated as merely "exceptional" and taken as "above the line" income. FRS 3 was issued thus to eliminate the use of extraordinary items as a means of earnings management.

Another feature is the mandatory adoption of IFRS in the European Union (EU). This consists one of the largest regulatory experiments in financial reporting ever undertaken. Almost all EU listed firms are legally required to adopt IFRS in their consolidated statements no later than 2005[20]. Thus it can be examined whether IFRS adoption had an adverse impact on earnings management to achieve thresholds.

The main contributions of this chapter can be summarised as follows. Firstly, it provides an empirical explanation of the discontinuity observed at zero in the distribution of earnings relative to targets. Specifically, there is documented that earnings management by non-financial companies thought discretionary accruals and working capital elements, is a significant contributor to this discontinuity. Secondly, there is quantified the extent to which companies achieve earnings targets with the aid of earnings management. The chapter thus also contributes further to the methodological debate by providing support for the use of discretionary accruals as a proxy for earnings management.

6.2.2 Threshold Heuristics

Executives manage earnings to influence the perception of stakeholders – such as investors, banks, suppliers, perspective investors – and to reap private benefits[21].

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[19] FRS 3 was issued on 29 October 1992, voluntary compliance being immediately optional and mandatory compliance required in relation to accounting periods ending on or after 22 June 1993. FRS 3 redefined ordinary and extraordinary activities with the effect of abolishing extraordinary items in the UK.

[20] EC 16/6/2002 requires all listed firms in a regulated market to comply with IFRS in their consolidated statements no later than 2005. Member counties can allow adoption to be postponed until 2007 for firms that comply with US-GAAP. The UK has decided not to use this option and all listed firms in a regulated market are, therefore, required to comply with IFRS from 2005.

[21] Even if Earnings Management is costly, it can be argued that it may be in the interest of shareholders ex-ante if it increases the information available to important parties (relevance). In some cases, managed earnings may contain more, not less, information about the firm's true prospects. For example, if a firm's earnings just meet some threshold, it is likely that the figure has been inflated. But this implies that executives are confident that the cost of earnings management (reduced earnings next year by the amount of the current overstatement) will not be so large as to reduce dramatically the

Whereas outsiders utilise thresholds as a standard for assessing and rewarding executives. When executives respond to theses thresholds, distributions of reported earnings get distorted: far too few earnings fall just below a threshold and too many just above it. Executives focus on thresholds for earnings because the parties concerned with the company's performance do. Executives may also manage earnings for their own reasons if, for example, they derive personal satisfaction from achieving a target.

Beyond boards, investors and analysts, earnings reports are important to those people concerned with the company's viability and profitability because they make company-specific decisions, such as customers and suppliers, bankers and workers. Many of these outsiders exhibit what is called in the literature a "threshold mentality", for both rational and perceptual reasons. In a range of circumstances, individuals perceive continuous data in discrete form; indeed "the tendency to divide the world into categories is a pervasive aspect of human thought" (Glass and Holyoak, 1986). For example, we perceive the continuous colour spectrum discretely, recognising seven primary colours. Similarly, if a diagram shades from dark to light and then remains light, humans perceive a bright line where the shading to light stops (Cornsweet, 1974). Below there are discussed three established thresholds for corporate earnings.

The understanding of thresholds arises from at least three psychological effects. First, according to behavioural scientists there is something fundamental about positive and negative numbers in human thought processes. Hence, this dividing line carries over for the threshold on absolute earnings. When looking at the benchmarks of quarterly earnings a year back and the analysts' consensus forecasts, there is a salient dividing line between meeting and failing to meet the target. Meeting the target is critical, as opposed to beating or falling to achieve it by a certain percentage. Meeting the analysts' consensus target makes itself a focal point, which reinforces its psychological properties.

Second, as prospect theory tells us, individuals choosing among risky alternatives behave as if they evaluate outcomes as changes from a reference point (Kahneman and Tversky 1979). The reference point is usually some aspect of the decision makers' current state (e.g. wealth) and it shifts over time, sometimes with

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prospect that the firm will meet the threshold next year, or draw the attention of the regulators. Thus, small managed earnings may contain more information than small unmanaged earnings.

how the decision is framed. The amount of shifting can dramatically affect director's decisions for two reasons: there is a discontinuity in the utility function at the reference point (zero change); and the overall curve is S – shaped (i.e., it is convex for losses and concave for gains, encouraging improvement in performance and discouraging deterioration). If the preferences of executives and investors are consistent with the predictions of prospect theory, then executives will have a threshold-related reward scheme and are likely to manage reported earnings in response. The thresholds they will wish to reach are the reference points in the value functions of the participants. The implication of the prospect theory is that executives would have positive motives to achieve earnings-related remuneration thresholds to maximise their payout.

Third, thresholds are an important feature in investment decisions because people depend on rules of thumb to reduce transactions costs (for example cost and time for storing, retrieving and processing information). The use of thresholds of acceptable performance is promoted by the discreteness of actions, like investment analysts recommending sell, hold or buy, rating agencies giving letter grades, bankers making or refusing loans or boards approving CEO bonuses. Earnings management to meet thresholds can also simplify executives' relations with shareholders and boards of directors. A report to shareholders that earnings have been up 6 years in a row is easier communicated from a statement that they have been up 5 out of 6 year, and only fell by 1% in the last year. A report showing a break in a string of earnings increases is less easily understood, so that inflating earnings to show a small increase becomes worthwhile. When a firm falls short of analysts' earnings projections and shareholders' expectations, the board may think that the executives did a poor job; bonuses and stock option awards may suffer. Such doubts are much less likely to arise if the analysts' earnings are just beaten.

Recent literature in earnings management suggests that executives care about three thresholds when they report earnings:

1) to report positive earnings (report earnings that are above zero)

2) to sustain recent performance, making at least last year's earnings; and

3) to meet analysts' expectations, particularly the analysts' consensus earnings forecast.

Due to data access limitations, this study does not explore the third threshold: "analyst's consensus".

6.3 Research Design

Prior research has typically approached the question of whether firms use discretionary accruals (DACC) to achieve earnings thresholds by examining average DACC conditional on either earnings or non-discretionary earnings relative to target. For example, DeFond and Park (1999) report that firms use DACC to achieve earnings thresholds. Cheng (2000) also investigates the relationship between DACC and earnings surprises and observes that firms with non-discretionary earnings below forecasts report positive DACC on average, while companies with non-discretionary earnings above forecasts report negative DACC on average. If earnings management underpins observed discontinuities in earnings distributions, then earnings management should be used by more firms to move from below to above thresholds than in the opposite direction.

This chapter first examines whether earnings levels and changes are distributed with a discontinuity at zero, similar to Burgstahler and Dichev (1997) and Degeorge et al. (1999). Earnings management to avoid earnings decreases is likely to be reflected in cross-sectional distributions of earnings changes in the form of unusually low frequencies of small earnings decreases and unusually high frequencies of small earnings increases (Degeorge et al, 1999). Similarly, management to avoid losses will be reflected in the form of unusually low frequencies of small losses and unusually high frequencies of small positive earnings. Degeorge et al. (1999) examined a sample of US companies for the years 1974-1996 to explore the discontinuities between earnings decreases and zero earnings. In this chapter, a similar approach is applied, to explore if UK companies manage earnings to avoid losses or decreases.

Two types of evidence are presented, to explore whether earnings management to avoid earnings decreases and losses exists. First, frequency histograms are presented, illustrating the cross-sectional distributions of scaled earnings and levels of earnings. Second, formal statistical tests of the following four research hypotheses are presented:

H_3: Earnings are managed to avoid earnings decreases

H_4: Earnings are managed to avoid losses.

To test the statistical significance of the H_1 and H_2, a statistical test is constructed, similar to the one used by Gore et al. (2007), assuming under the null

hypothesis of earnings management, the cross-sectional distributions of earnings changes and earnings levels are relatively smooth[22]. The definition of smoothness used, is that the expected number of observations in any given interval of the distribution is the average of the number of observations in the two directly adjacent intervals[23]. The test statistic used to test the null hypothesis that the distribution is smooth is the difference between the actual number of observations in an interval and the expected number of observations in the interval, divided by the estimated standard deviation of the difference[24]. Under the null hypotheses, the standardized differences between the actual and the expected number of observations in an interval, will be distributed approximately Normal with mean 0 and standard deviation 1. If the null hypothesis of smoothness at zero is rejected, the standardized differences of the interval immediately left of zero and immediately right of zero will be simultaneously affected.

To the extent that DACC largely causes the discontinuity in the earnings distribution, the removal of DACC from earnings is expected to reduce the discontinuity. Specifically, it is predicted that the distributions of non-discretionary earnings do not show pronounced discontinuities around earnings targets. The following hypothesis is tested:

H_5: The frequencies of small negative non-discretionary earnings levels (changes) and small positive non-discretionary earnings levels (changes) are equal to the frequencies expected under a smooth distribution. Further, the application of DACC to achieve earnings thresholds will be reflected in DACC having the effect of increasing the proportion of observations achieving earnings targets. This results to the following research hypothesis:

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[22] The distribution of earnings changes and earnings levels under the null hypothesis of no earnings management is unknown. For this reason, no strong assumption about earnings distribution has been made, to avoid spurious significance, i.e. significant results attributable to violations of distributional assumptions rather than to a false null hypothesis.

[23] Alternative models of expectations have been considered: 1) the expected number of observations in an interval is the average of the observations in four adjacent intervals, and 2) the expected number is the average of the next to adjacent intervals, i.e. the average of the two closest intervals other than the two immediately adjacent intervals. These alternative methods result in qualitatively similar results to those reported.

[24] As the number of observations in an interval is a random variable which is approximately independent of the number in adjacent intervals, the variance of the difference between the observed and expected number of observations is approximately the sum of the variances of the components of the difference. Denoting the total number of observations as n and the probability that an observation will fall into interval i by p_i, the variance of the difference between the observed and expected number of observations for interval i is approximately $Np_i(1-p_i)+(1/4)N(p_{i-1}+p_{i+1})(1-p_{i-1}-p_{i+1})$

H_6: The proportion of observations with positive earnings levels (changes) is larger than the proportion of observations with positive non-discretionary earnings levels (changes).

6.4 Sample and Data

The dataset includes all available observations on the "live" and "dead" Datastream database[25], for the years 1990-2006 which meet minimal data requirements[26]. Banks and financial institutions were deleted[27]. In the results reported below, Published After Tax Profits (E) have been examined (DataStream Item #624). Though, the main findings were also computed for earnings before extraordinary and exceptionally items and the results are generally consistent for these two alternative measures of profitability.

The earnings observations are drawn from a wide range for company sizes and are therefore scaled. A variety of approaches to scaling have been used in the accounting and finance literature including scaling by market value, book value, sales or total assets. In the reported results, the earnings variable is scaled by the beginning of the year market value of common equity for year t. The change in earnings variable (change in earnings between years t-1 and t) is scaled by beginning of the year market value of equity form year t-1. However, results have been also calculated using as scaling variable total assets at the beginning of the year or the previous year's net sales and obtained qualitatively similar results.

Empirical distributions of earnings changes and earnings document a discontinuity at zero which is robust in applying different deflators. In figures 6.1-4, earnings are scaled by market value. In figure 6.13 earnings are scaled by lagged sales and in figure 6.14 earnings are scaled by lagged assets.

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[25] Datastream is produced by Thomson Financial for commercial use and includes a vast number of economic, company and financial data for publicly quoted companies for over 175 countries and 60 markets worldwide with up to 50 years historical depth. The aggregate market capitalisation of companies on Datastream stands at about 95% of the total value of the world's markets. The data series are supplied by various sources both nationally and internationally. Sources such as IMF, OECD, Eurostat and national stock exchanges supply data series.

[26] The minimal data requirement is information about published after tax profits and market value at the beginning of the related year.

[27] For financial institutions, incentives to avoid earnings decreases or losses may be linked to regulatory oversight. To focus on cases without these complications, firms with SIC codes between 6511 and 6720 were deleted from the sample (1,293 observations).

Easton et al. (2003) and Christie (1987), document that there are several potential advantages of deflating by lagged assets. First, scale differences largely disappear. Second, risk differences tend to be smaller through time for a given company than across companies. Third, biases in coefficients on leverage and size would be inconsequential without deflating.

Barth and Clinch (2009), use data simulated to have scale effects and find that market value of equity mitigates more effectively the scale effects that do the other potential deflators such as book value, lagged market value, lagged assets and lagged sales.

DACC is estimated by applying a cross-sectional version of the Jones (1991) model to working capital accruals. The Jones model (Jones, 1991) and its modified version proposed by Dechow et al. (1995) are the most frequently employed in current research. In the current study, a time-series version of the standard Jones model is used, where discretionary accruals are the residuals from regression (1) estimated for each year and industry combination[28].

$$WCA_{ijt}/TA_{ijt-1} = \beta_1(1/TA_{it-1}) + \beta_2(\Delta REV_{it}/TA_{it-1}) + \beta_3(PPE_{it}/TA_{it-1}) + \varepsilon_{it} \quad (1)$$

Where i, j and t are firm, industry and time sub-scripts respectively. This regression facilitates partitioning of WCA into non-discretionary accruals (NDACC) and DACC. NDACC are measured as the predicted component of WCA[29] and DACC as the residual resulting from this regression. Thus:

$$DACC_{ijt}=A_{ijt}/TA_{ijt-1}-NDACC_{ijt}=$$

$$=WCA_{ijt}/TA_{ijt-1}-(\beta'_{0ijt}+\beta'_{1ijt}\Delta REV_{it}/TA_{it-1}+\beta'_{2ijt}\, PPE_{it}/TA_{it-1}) \quad (2)$$

Where β'_0 and β'_1 are the company OLS parameters estimated above. Accruals in the original Jones (1991) model are modelled as a function of the change in total sales (ΔREV) and Property Plant and Equipment (PPE). The former is argued to drive short term accruals or working capital accruals and the latter to drive long term accruals, most notably depreciation.

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[28] The results reported are robust to different ways of computing discretionary accruals. The analysis is repeated using three other models; the modified Jones model proposed by Dechow et al. (1995), which consists of estimating coefficients in the same way as the Jones model, and then replacing change in revenue with change in revenue less change in receivables, just to compute discretionary accruals and both the Jones model and modified Jones model including dummy variables to represent the different companies in the sample and estimating just one regression per company instead of one regression per year and industry sector. DeFond and Jiambalvo (1994), Gaver et al. (1995), Teo et al. (1998), Beneish (1997) and Peasnell et al. (2000) applied Jones model in earnings management studies.

[29] Working Capital Accruals (WCA), calculated as the non cash difference between Profit after tax and Cash flow from operating activities.

In the use of the Jones (1991) model rather than available alternatives, Peasnell et al. (2000) evaluate the specification and power of alternative methods of estimating DACC using UK data. The results they report suggest that, on the whole, alternative models currently available are non superior to the Jones (1991) model in terms of ability to detect plausible levels of earnings management. This study's measure of WCA and the DACC estimation technique closely resembles those used by Peasnell et al. (2000).

Having estimated DACC as described above, the next step is to measure non-discretionary earnings (NDE) and non discretionary earnings change (NDΔE). The earnings levels tests and empirical distributions are conducted on an earnings level sample defined as all observations from the above-described main sample for which Earnings (E), NDE and DACC are available, and having deleted the extreme percentiles[30] of E, NDE and DACC. The earnings change sample is defined in a similar manner, with E (NDE) being replaced by ΔE (NDΔE).

These criteria result in earnings level and change samples of 9,809 and 8,926 observations respectively. Basic descriptive statistics on these samples are presented in Table 6.1 and Table 6.2. Table 6.1 (Panel A) shows descriptive statistics for the market value scaled earnings change variable[31]. The total number of observations is 8,926 and the number of available observations per year increase from 340 for 1990, to 873 by 2006. The mean and the median earnings changes are primarily, but not exclusively, positive during the sample period. Table 6.1 (Panel B) shows descriptive statistics for level of earnings scaled by beginning-of-year market value. The total number of observations is 9,809 and the number of available observations per year increases steadily from 340 for 1990 to 875 for 2006.

Descriptive statistics on earnings level and earnings change for the whole examined period, are presented in Table 6.2 Mean (median) E and ΔE are 0.017 (0.057), and 0.021 (0.008) for earnings level and change samples respectively. As expected, mean (median) DACC is zero (zero) for both the earnings level and changes samples[32].

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[30] Data winsorised at 1%

[31] A few observations appeared with extreme values, so the means and standard deviations throughout Table 6.1 are calculated after eliminating the upper and lower 1% of the observations.

[32] Given that DACC is estimated as an OLS residual, the population average is zero by construction.

Table 6.1
Descriptive statistics by year for scaled values of change in earnings and earnings level

Panel A: Scaled change in earnings

Year	N	Mean	Std. dev.	25%	50%	75%
1991	340	-0.019	0.092	-0.050	-0.01	0.011
1992	364	0.001	0.087	-0.028	0.002	0.024
1993	370	0.030	0.129	-0.022	0.017	0.057
1994	374	0.032	0.125	-0.002	0.021	0.061
1995	382	0.035	0.127	-0.013	0.015	0.067
1996	398	0.017	0.105	-0.006	0.012	0.036
1997	420	0.032	0.114	-0.007	0.018	0.065
1998	442	0.012	0.114	-0.019	0.010	0.047
1999	545	0.017	0.112	-0.024	0.009	0.041
2000	593	0.000	0.124	-0.037	0.007	0.043
2001	637	-0.007	0.141	-0.070	0.000	0.035
2002	679	0.007	0.124	-0.042	0.003	0.051
2003	800	0.025	0.120	-0.021	0.010	0.063
2004	844	0.042	0.136	-0.012	0.018	0.090
2005	863	0.034	0.154	-0.034	0.019	0.100
2006	875	0.010	0.093	0.000	0.000	0.015
Total	8,926					

Panel B: Scaled earnings

Year	N	Mean	Std. dev.	25%	50%	75%
1990	340	0.070	0.109	0.049	0.088	0.120
1991	364	0.049	0.111	0.018	0.072	0.107
1992	370	0.043	0.154	0.022	0.084	0.129
1993	375	0.045	0.138	0.027	0.072	0.116
1994	382	0.054	0.137	0.046	0.076	0.112
1995	399	0.051	0.097	0.037	0.063	0.092
1996	420	0.061	0.123	0.049	0.086	0.117
1997	442	0.062	0.115	0.042	0.076	0.118
1998	550	0.039	0.129	0.005	0.065	0.104
1999	596	0.037	0.129	0.012	0.056	0.103
2000	637	0.029	0.164	-0.015	0.064	0.129
2001	679	0.015	0.133	-0.032	0.033	0.094
2002	800	-0.014	0.146	-0.073	0.009	0.075
2003	844	-0.024	0.164	-0.106	0.020	0.079
2004	863	-0.001	0.188	-0.091	0.053	0.126
2005	873	0.006	0.146	-0.043	0.041	0.089
2006	875	0.002	0.138	-0.035	0.044	0.080
Total	9,809					

Notes: MV_t: Market value at the end of year t (DataStream item MV)
$Earnings_t$: Published after tax profits (DataStream item DS625) in period t.
Scaled change in $Earnings_t$: $(Earnings_t - Earnings_{t-1})/MV_{t-2}$
Scaled $earnings_t$: $Earnings_t/MV_{t-1}$

Table 6.2

Panel A Descriptive Statistics

Variable	*Mean*	*Median*	*Q3*	*Q1*	*Std. Dev.*
E_t	0.017	0.057	0.103	-0.020	0.146
ΔE_t	0.021	0.008	0.050	-0.023	0.123
Curas	299,494	22,158	103,277	5,569	1,578,385
Curliab	274,787	15,350	76,151	3,528	1,563,499
OprCash	90,108	2,239	17,281	-170	636,455
MV	1,031	43	226	10	9,501
DACC	0.000	0.000	0.035	-0.042	0.076
NDACC	0.053	0.056	0.116	-0.001	0.116

E	: Earnings scaled by total assets
ΔE	: Change in earnings scaled by total assets
Curas	: Opening current assets balance
Curliab	: Opening current liabilities balance
OprCash	: Opening balance for cash flow from operating activities
MV	: Opening market value
DACC	: Discretionary working capital accruals scaled by opening total assets, estimated using Jones(1991) model.
NDACC	: Non-discretionary accruals scaled by opening total assets

The following cross-section OLS regression (Jones, 1991) model is estimated, for each industry-year, using all valid firm-years with available data but requiring a minimum of six observations per regression (DeFond and Jiambalvo (1994) and Young (1999) also require a minimum of six observations):

$$WCA_{ijt}/TA_{ijt-1} = \beta_{ojt} + \beta_{1jt}\,\Delta REV_{ijt}/TA_{ijt-1} + \varepsilon_{ijt} \quad (1)$$

$$DACCijt = WCAijt/ta_{ijt-1} - NDACCijt =$$

$$= WCA_{ijt}/TA_{ijt-1} - (\beta'_{ojt} + \beta'_{1jt}\,\Delta REV_{ijt}/TA_{ijt-1}) \quad (2)$$

where i, j and t are firm, industry and time subscripts respectively. This regression facilitates partitioning of working capital accruals (WCA) into non-discretionary accruals (NDACC) and Discretionary accruals (DACC). NDACC are measured as predicted component of WCA and DACC as the residual resulting from the regression (2). Where β'_o and β'_1 are the industry year OLS parameters estimated above.

6.5. Results

6.5.1 Earnings management to avoid decreases in earnings

Fig. 6.1 is a histogram of the scaled change in earnings with histogram interval widths of 0.01 for the range -0.25 to +0.25. The figure shows a single-peaked, bell-shaped distribution with an irregularity near zero which is consistent with H_1 (hypothesis for earnings management to avoid earnings decreases). It appears that earnings changes slightly less that zero occur less frequently than would be expected given the smoothness of the remainder of the distribution and earnings changes slightly greater that zero occur more frequently than would be expected. The significance of the irregularity near zero is confirmed by the statistical test in table 6.3. The standardized difference of the interval *imm*ediately to the left of zero is -4.32 (The difference for the interval immediately to the right of zero is 6.58). Thus, under the assumption that the standardized differences are approximately normal, the test statistics are significant, rejecting the null hypothesis of no earnings manipulation to avoid zero earnings.

Anecdotal evidence and findings from Degeorge et al. (1999) suggest that incentives to avoid earnings decreases become stronger with the length of the previous run of earnings increases. These stronger incentives should lead to a more intensive effect of earnings management in the intervals near to zero. To investigate, observations are categorised based on the length of the preceding string of earnings increases. The three categories are observations (a) flowing earnings decreases, (b) following one or two consecutive years of earnings increases, and (c) following three or more years of earnings increases. Fig. 6.2 shows the resulting distributions of earnings changes. For all three categories, the evidence of earnings management to avoid earnings decreases was statistically significant – the standardized differences of the intervals left to zero in Panels A, B and C are, respectively: -3.98, -4.23 and -5.89 (and, for the interval right of zero, 3.78, 4.51 and 5.41). The magnitudes of the standardized differences increase from Panel A to Panel B to Panel C in a pattern consistent with the prediction that incentives are increasing as the length of the previous run of consecutive earnings increases.

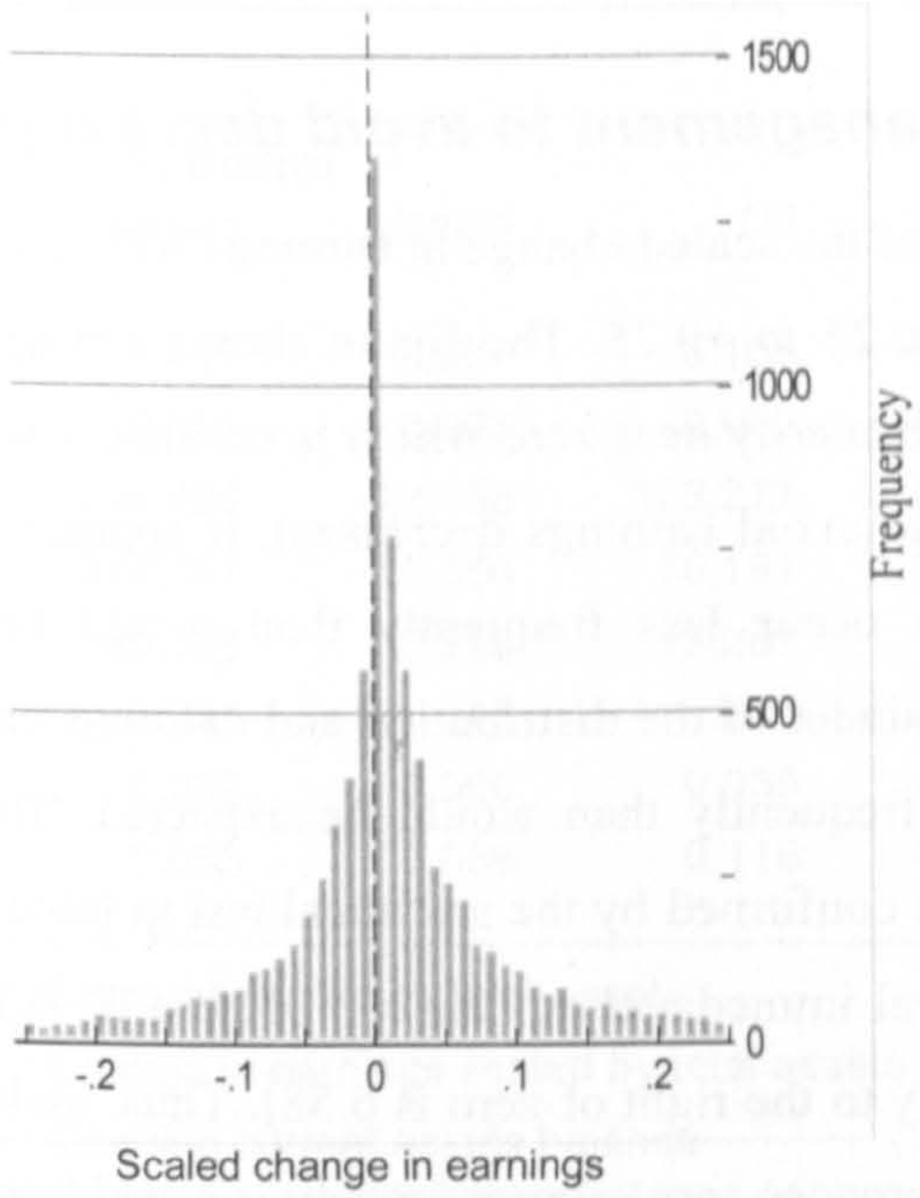


Fig. 6.1 Empirical distribution of changes in annual After Tax Profit (DataStream Item DS625) scaled by market value (DataStream item MV) as of the beginning of the first year, $(Earnings_t – Earnigs_{t-1})/MV_{t-1}$. The distribution interval widths are 0.01 and the location of the zero on the horizontal axis is market by the dashed line. For example, the first interval to the right of zero contains all scaled changes in earnings in the interval [0, 0.01), the second interval contains [0.01, 0.02), and so on. The vertical axis labelled frequency represents the number of observations in each earnings change interval.

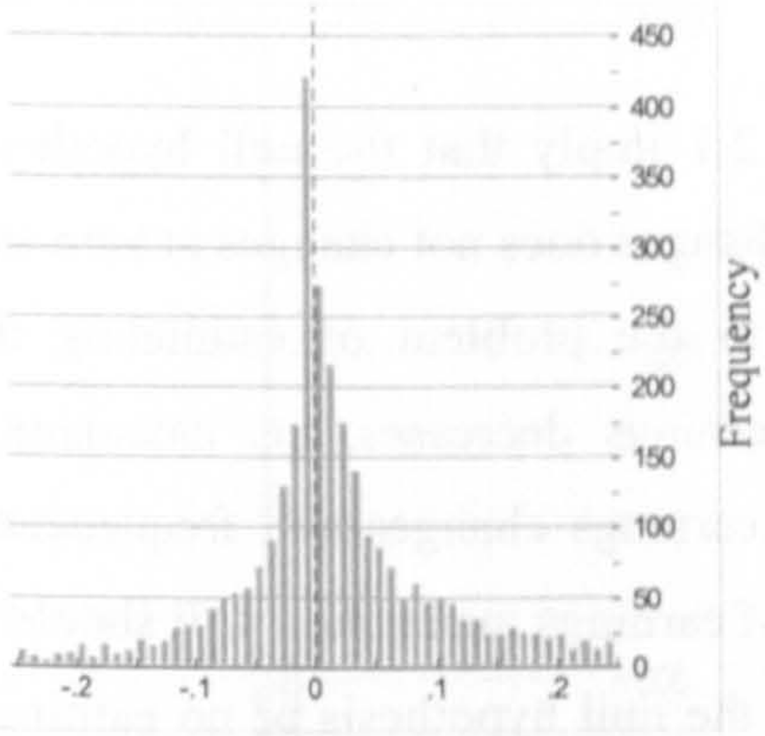
Though, visual inspection more strongly confirms the prediction. Moving from Panel A to Panel B and then to Panel C, there is evidence of a pattern of both an increase in the proportionate change in frequency at zero (which is reflected in the standardized differences) and an increase in the effects of earnings management in the intervals near to zero.

6.5.2 Frequency of Earnings management to avoid earnings decreases

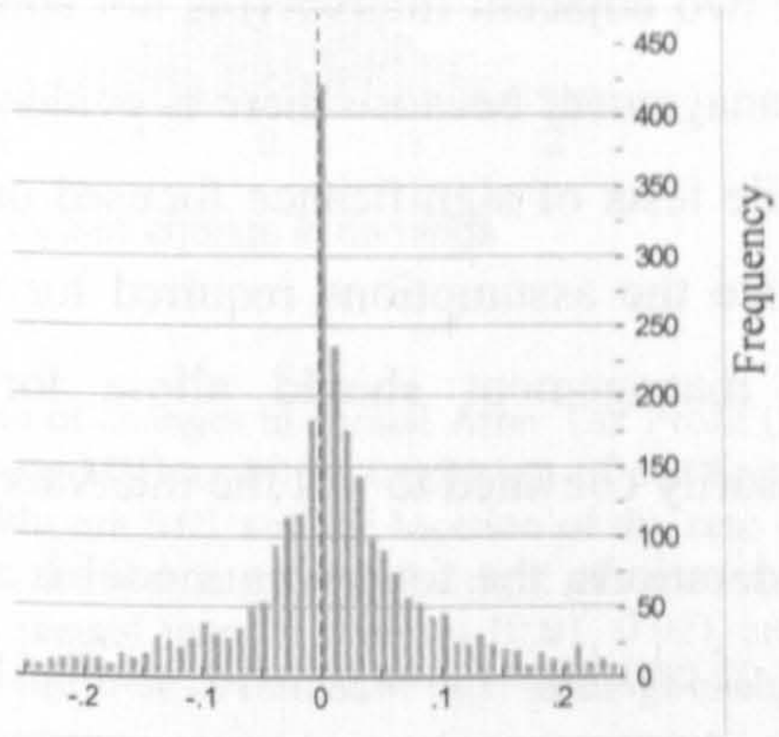
The results in section 6.2.1 imply that the null hypothesis that the density of the distribution of earnings changes does not changes at zero should be rejected. The next logical step is to turn to the problem of estimating the frequency of earnings management to avoid earnings decreases, i.e. calculating the difference between observed frequencies of earnings changes and frequencies which would have been expected in the absence of earnings management. It should be noted that the model of expectations used to test the null hypothesis of no earnings management (where the expected number of observations in an interval was defined as the average of the observed numbers in the two adjacent intervals) is not appropriate for estimating the frequency of earnings management because there is evidence that the null hypothesis does not hold. Also, while tests of significance focused on the change in density at zero (in order to minimize the assumptions required for the test), estimates of the frequency of earnings management should allow for the fact that earnings management is not necessarily confined to just the intervals adjacent to zero.

After those considerations, the following model is adopted for the purpose of estimating the frequency of earnings management, similar to Degeorge et al. 1999. It is assumed that in the absence of earnings management, the distribution of earnings changes would be approximately symmetric and that the right half of the empirical distribution is largely unaffected by earnings management to avoid earnings decreases. Using this model, the observed frequencies from intervals in the right half of the empirical distribution serve as measures of the expected frequencies in the corresponding interval in the left half of the distribution. Operationally, it is assumed that in the absence of earnings management, the distribution of earnings changes in Fig. 6.1 would be symmetric around 0.01 and that managed values of earnings changes do not fall to the right of 0.01.

Panel A: Year Subsequent to an Earnings Decrease



Panel B: Year Subsequent to 1 or 2 Years of Earnings Increases



Panel C: Year Subsequent to 3 or More Years of Earnings Increases

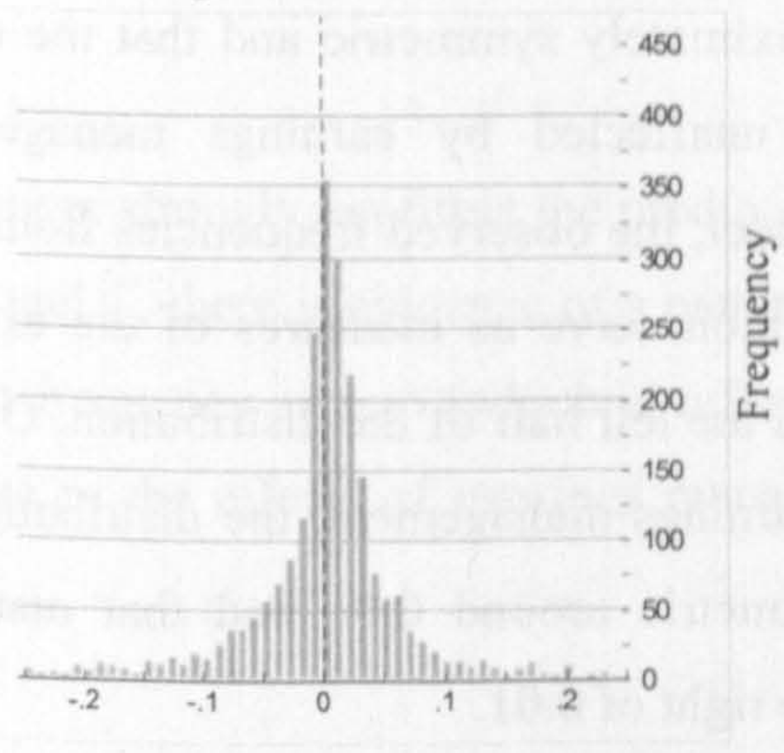


Fig.6.2 Three empirical distributions of changes in earnings scaled by market value categorised according to the pattern of preceding earnings changes for the firm. Panel A: the distribution for the years immediately following an earnings decrease; Panel B: the distribution for the years following one or two years (but not three) years of earnings increase; Panel C: The distribution for the years following three or more years of earnings increases (Detailed definitions of variables are given in Fig.6.1)

The estimated number of cases where firms have engaged in earnings management is the difference between the expected and the observed number of observations. Estimates are reported for a number of cases of earnings management related to three regions of increasing width, i.e. Three intervals defined to include earnings decreases ranging form: [-0.005, 0.000), [-0.010, 0.00) and [-0.015, 0.00). The estimates for the three increasingly broad intervals are, respectively, 429, 764 and 1046. Three bases of comparison are provided, to valuate the magnitude of these estimates. First, these estimates represent approximately 5.4%-13.3% of the 7,854 available observations. Second, the estimates are approximately 14.9%-36% of the 2,870 observations of negative earnings changes. Finally, focusing on just the three increasingly broad negative earnings change intervals closes to zero (where earnings management to avoid earnings decreases is expected to be least costly), the case of earnings management to avoid losses appear to be 23% 26% and 24% of the observations expected in the respective intervals in the absence of earnings management. As the intervals become broader and take in cases with higher expected costs of managing earnings to avoid earnings decreases, the estimated proportion of cases of earnings management is expected to decline. The sum, whatever base of comparison is adopted; the estimates suggest that earnings management to avoid earnings decreases is commonplace.

6.5.3 Existence of earnings management to avoid losses

Fig 6.3 shows the distribution of earnings scaled by beginning market value with histogram interval widths of 0.010 for scaled earnings ranging from -0.25 to +0.25. The histogram shows a single peaked, bell shaped distribution which is relatively smooth except in the area of zero earnings; Earnings slightly less than zero occur much less frequently than would be expected given the smoothness of the remainder of the distribution and earnings slightly greater than zero occur much more frequently than would be expected[33]. The standardized difference for the interval immediately to the left of zero is -12.27 (The standardized difference for the interval immediately to

[33] Published Profit After Tax on Datastream was exactly zero for 32 observations in the sample. These cases where investigated further by examining published copies of the annual reports on Companies House, Fame and LexisNexis. In most of the cases, annual reports from alternative databases showed again zero profits after tax. In a few cases, small mistakes where noted. Since it is impossible to verify that these cases of exactly zero earnings are correct or arise from rounding differences on the accounts, all observations with a value exactly zero were deleted. As theses observations fall in the interval immediately to the right of zero, deletion of these observations likely results in a small understatement of earnings management to avoid losses in the reported results.

the right of zero is 7.36). Thus, the irregularity around zero earnings apparent in Fig. 6.3 is statistically significant.

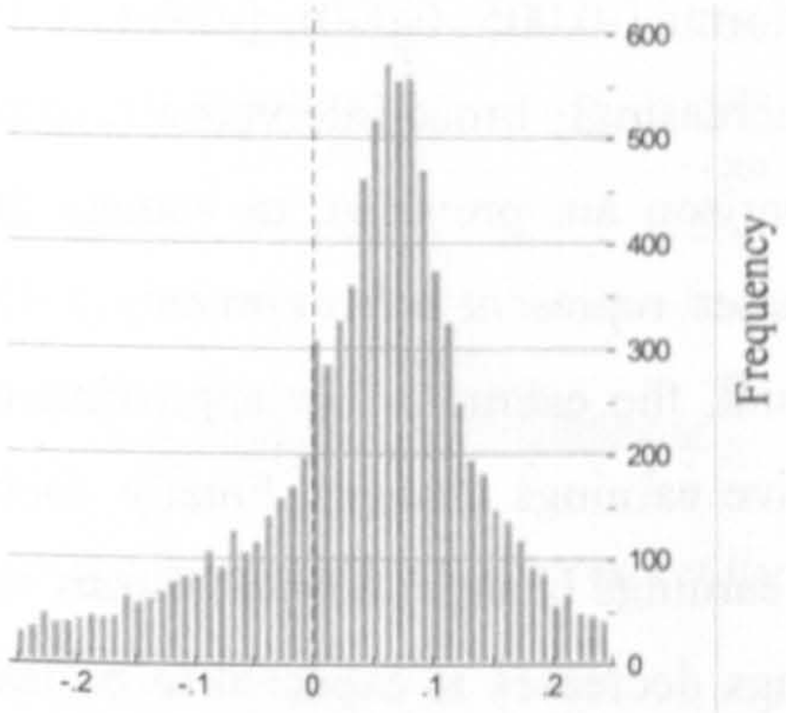


Fig.6.3 The distribution of Profits After Tax scaled by beginning of the year market value. The distribution interval widths are 0.010 and the location of zero on the horizontal axis is market by the dashed line. The first interval to the right of zero contains all observations in the interval (0.000, 0.010), and so on. "Frequency", is the number of observations in a given earnings interval

As with earnings decreases, there is reason to believe that incentives to avoid losses might be increasing in the length of the preceding sequence of positive earnings. Following an approach similar to the one used to examine earnings management to avoid earnings decreases, observations are again divided into categories. This time the categories are based on the preceding sequence of positive earnings. The three categories are observations (a) following negative earnings, (b) following one or two (but not three) consecutive years of positive earnings, and (c) following three or more years of positive earnings. Fig. 6.4 shows distributions of earnings for each of theses categories. For the categories represented in all three panels, the evidence of earnings management to avoid earnings decreases is significant – the standardized differences for the intervals left of zero in Panels A, B and C are, respectively, -6.48, -6.87 and -7.47 (and, for the intervals right of zero, 4.36, 5.26 and 5.84). It should be noted that the test statistic based on the standard differences is subject to an important limitations, as measure of the extent of earnings management. Standardized differences by definition focus on observations concentrated in just the intervals immediately adjacent to zero. There are theoretical and empirical reasons to expect some effects of earnings management in other intervals near, but not immediately adjacent to zero. Visual inspection of the distributions (Fig. 6.3) provides evidence

consistent with the limitation, though confirms the prediction for earnings management to avoid losses. Moving from Panel A to Panel C, there is evidence of an increase in both the proportion of observations managed and the extent to which earnings management affects intervals other than the two intervals immediately adjacent to zero.

To estimate the prevalence of earnings management to avoid losses, the operational assumption analogous to the assumption in Section 6.5.2 is adopted, that in the absence of earnings management, the distribution in Fig. 6.3 would be symmetric around the point 0.07 and that the values of earnings which have been managed do not fall to the right of this point. Thus, the expected number of observations in an interval to the left of 0.07 is assumed to be the observed number in the corresponding interval to the right of 0.07.

Estimates of the frequency of earnings management to avoid losses for three negative earning intervals of increasing width near zero are reported: (-0.01, 0.000), (-0.02, 0.00) and (-0.03, 0.00). The estimates for three increasingly broad intervals are, respectively, 194, 342, and 488. These estimates are approximately 2-4% of the 9,809 observations with available earnings data. Second, these estimates represent approximately 7% - 17% of the 2844 negative earnings observations. Finally, focusing on just the three increasingly broad negative earnings intervals closest to zero, the cases of earnings management to avoid losses appear to be 43%, 32% and 28% of the observations expected in the respective intervals in the absence of earnings management. In sum, this estimation suggests that earnings management to avoid losses is commonplace. Additionally, earnings management to avoid losses is more pervasive than earnings management to avoid earnings decreases.

These estimates also imply that the magnitude of earnings management to avoid losses is economically significant, especially in the light of the fact that typical levels of earnings are on range of 7% of the market value of equity (or an average price to earnings index of 14). The estimates in this section suggest that there are hundred more cases where earnings management has changed earnings by more that 1% of the market value of equity[34].

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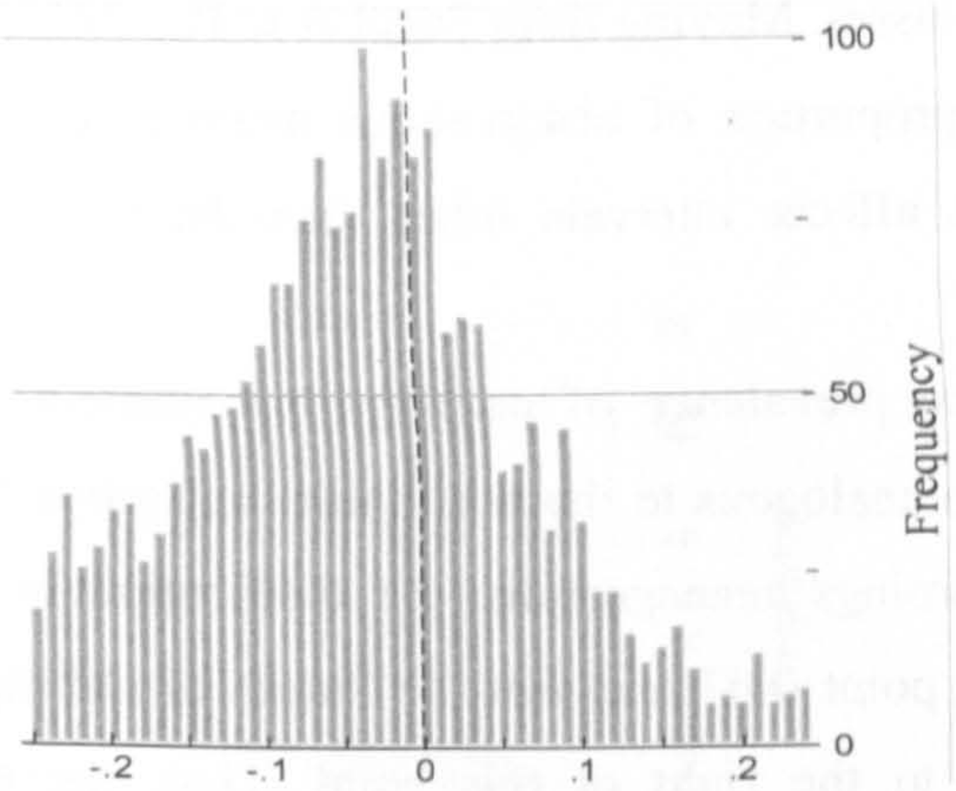
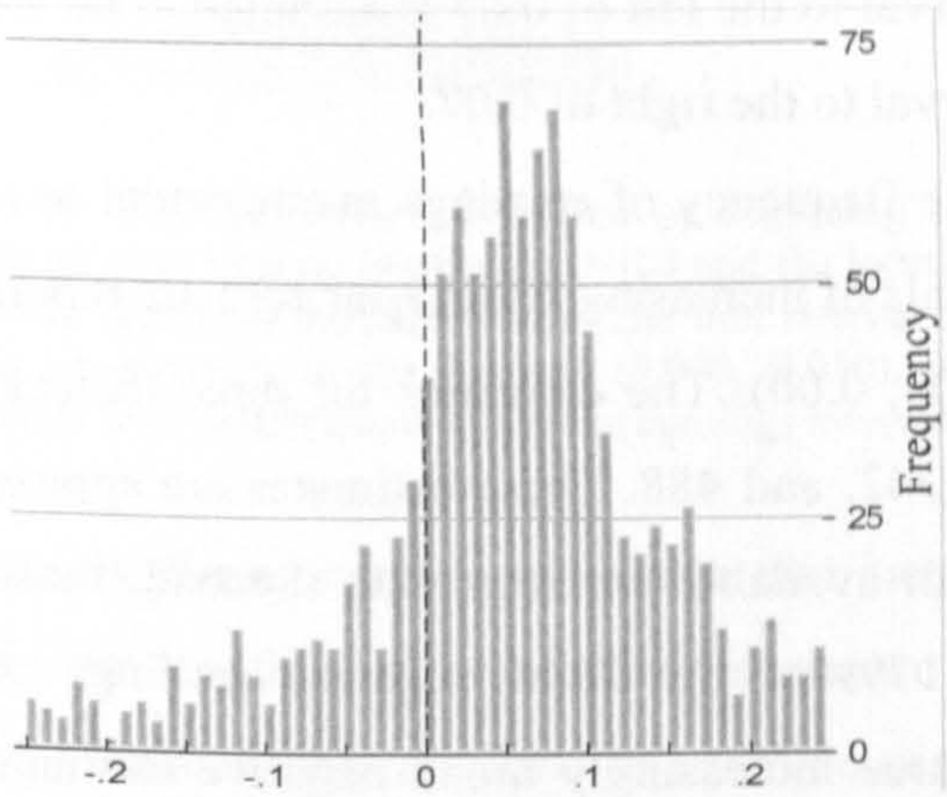
[34] In section 6 is also examined the relation of earnings management to firm size by classifying firms in to four groups with equal number of observations, based on beginning of the year market value of equity. There is clear statistical evidence of earnings management to avoid earnings decreases and losses for all size groups. Further, there is statistical evidence that earnings management to avoid earnings losses is more likely among larger firms.

Panel A: Year Subsequent to a Loss



Panel B: Year Subsequent to 1 or 2 Years of Positive Earnings



Panel C: Year Subsequent to 3 or More Years of Positive Earnings

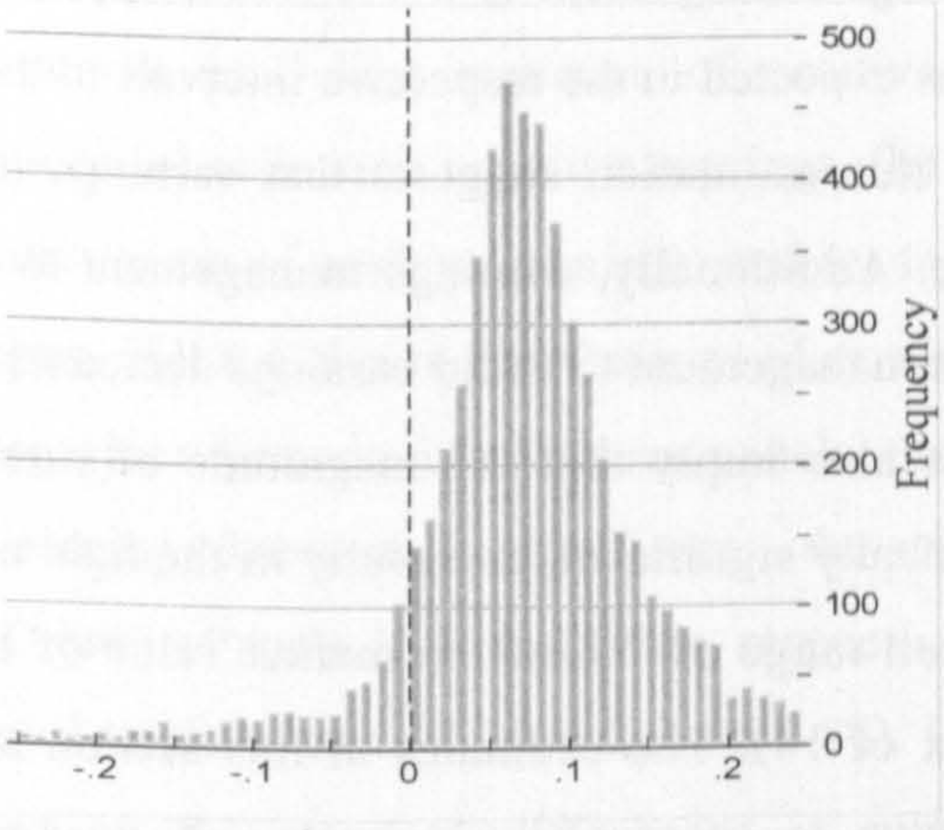


Fig.6.4. Three empirical distributions of earnings scaled by market value categorised according to the pattern of proceeding earnings for the firm. Panel A: The distribution for the years immediately following a loss; Panel B: the distribution for the years following exactly one or two years of positive earnings; and Panel C: the distribution for the years following three or more years of positive earnings. (See Fig.3 for detailed definitions of variables.)

6.5.4 Evidence on the methods of earnings management to avoid losses

Studies of earnings management typically consider a specific incentive for earnings management (e.g. incentives related to executive bonus plans) and then test whether earnings have been managed assuming a particular earnings management method (e.g. management of accruals). In contrast the cross sectional approach employed here allows identifying a large set of companies that potentially manage earnings, before invoking specific assumptions about motivation or methods. Consequently, information about the prevalence of earnings management near zero thresholds can be utilised to explore how earnings are managed and assess the relative importance of potential earnings management methods. In this section, the avoidance of losses is explored, because the evidence in Section 6.5.3 shows a more pervasive effect for management to avoid losses than for management to avoid earnings decreases.

Two types of evidence are presented, *ex ante* and *ex post*, about the manipulation of earnings to avoid losses. The first type of evidence is related to the *ex ante* cost of earnings management. Holding the benefits of earnings management to avoid losses constant, it can be conjectured that the extent of earnings management is likely to be a function of the ex ante costs of earnings management. In other words, firms that manage earnings are likely to be the ones which faced relatively lower ex ante costs of earnings management. Therefore given that, firms that managed earnings moved from slightly negative earnings to slightly positive earnings, firms with slightly negative earnings likely are those which faced higher ex ante earnings management costs than firms with slightly positive earnings. The second type of evidence is related to the ex post results of earnings management, i.e. evidence reflected in the components of income after the earnings management. As explained in more detail later, ceteris paribus, it is expected the managed component of income to be higher for firms with slightly positive earnings as compared to firms with slightly negative earnings.

6.5.5 Evidence on the ex ante costs of earnings management

Relying on previous research that has identified the alteration of working capital accruals as a common method of earnings management (e.g. Gore et al., 2007), two proxies for the ex ante costs of earnings management are identified. Firms with high levels of current assets and current liabilities before the earnings management are

likely to find it relatively less costly to manage earnings through changes in working capital than firms with low levels of current assets and current liabilities. For example, a firm which has high levels of receivables is likely to find it less costly to manage earnings through changes in the provision for bad and doubtful debt. Firms that can manage earnings at low cost are more likely to manage earnings to move from negative pre-managed earnings to positive post-managed earnings. If the levels of current assets and current liabilities serve as proxies for the cost of earnings management through changes in working capital, it is expected to find lower pre-managed levels of current assets and current liabilities for firms in the intervals immediately to the left of zero post-managed earnings and higher levels in the intervals immediately to the right of zero. Descriptive evidence is presented bellow, in the form of quartiles of the conditional distributions of current assets and current liabilities.

There are examined the pre-managed distributions of beginning of the year current assets and current liabilities conditional on the level of earnings. The observations are sorted on the earnings variable to form equal-sized portfolios of 200 observations per portfolio. The portfolio boundaries are defined relative to zero: The first portfolio right to zero consists of the 200 smallest positive earnings observations, the second portfolio right of zero consists of the 200 next smallest positive earnings, and so on. Similarly, the first portfolio left to zero consists of the 200 smallest magnitude negative earnings observations. Thus, within each portfolio, the earnings variable is approximately constant[35].

[35] Construction of portfolios with equal numbers of observations reduces the variance of the quartile statistics across portfolios, making it easier to compare quartiles across portfolios. An alternative approach would be to form portfolios consisting of all observations in equally-spaced earnings intervals e.g. 50 portfolios defined for the 50 earnings intervals shows in Fig. 6.3. However, this approach results in substantial variation in the variance of the quartile statistics.

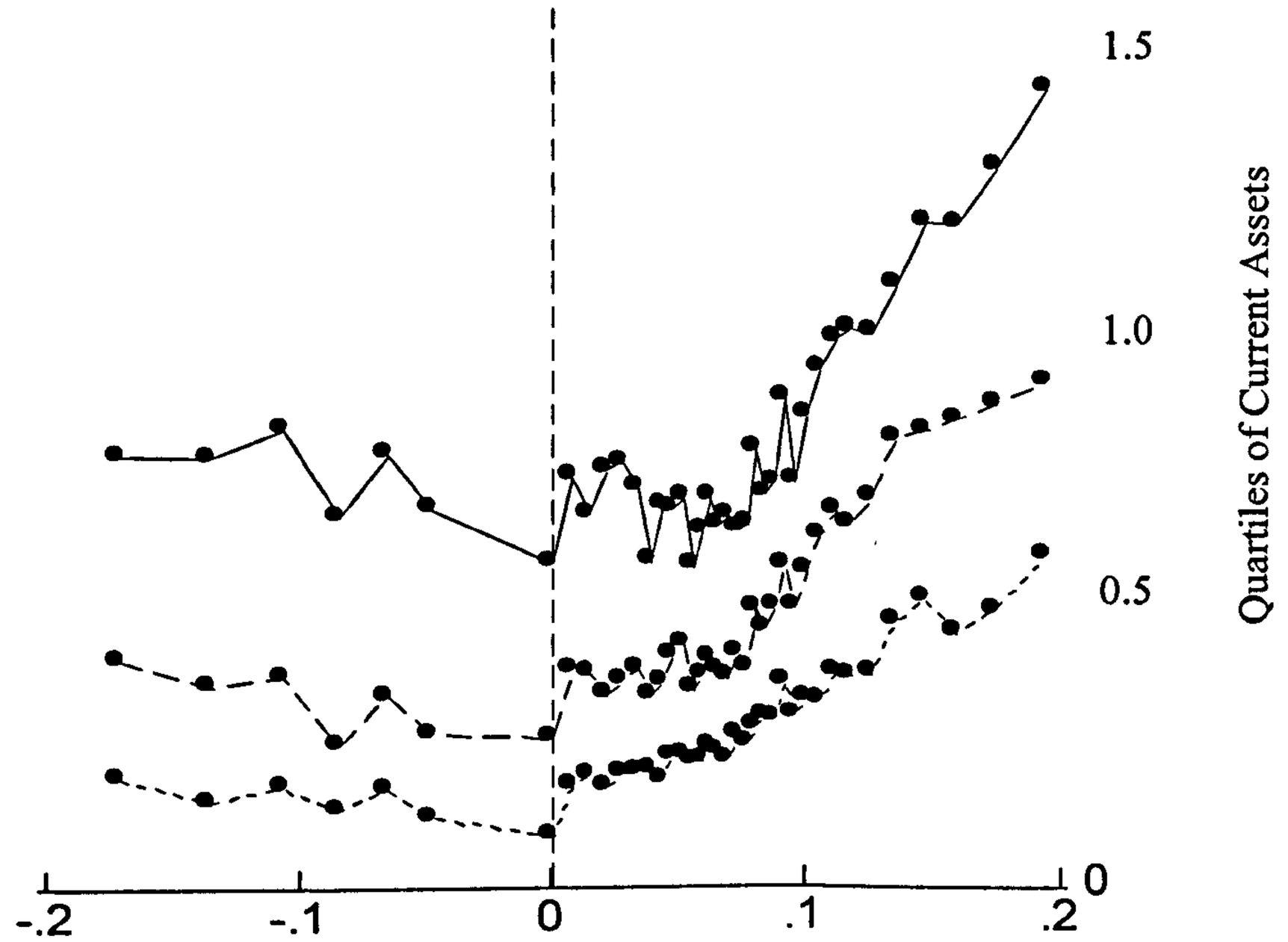


Fig.6.5 Earnings portfolios of 200 observations each are formed based on the magnitude of scaled earnings. Median portfolio earnings on the horizontal axis represent the median earnings for each portfolio. Three quartiles (the 25th, 50th and 75th percentiles) of the distribution of beginning of the year current assets (DataStream item 375) scaled by market value (DataStream item MV) for each portfolio are plotted against the median earnings for each portfolio.

Fig 6.5 shows the conditional distribution of the beginning of the year level of current assets. In the figure, the three quartiles of the distribution of current assets for each portfolio are plotted against the median earnings for the portfolio. Fig. 6.6 shows the conditional distribution of the beginning of the year level of current liabilities. Both figures show a clear downward shift in the conditional distributions for the portfolio immediately to the left of zero, and an upward shift in the distributions for the portfolio immediately to the right of zero, particularly for the upper quartiles of the distributions. Thus, firms which had a higher level of beginning of year current assets or current liabilities were more likely to manage earnings from a negative to a positive level. This suggests that changes in working capital play a role in earnings management to avoid losses.

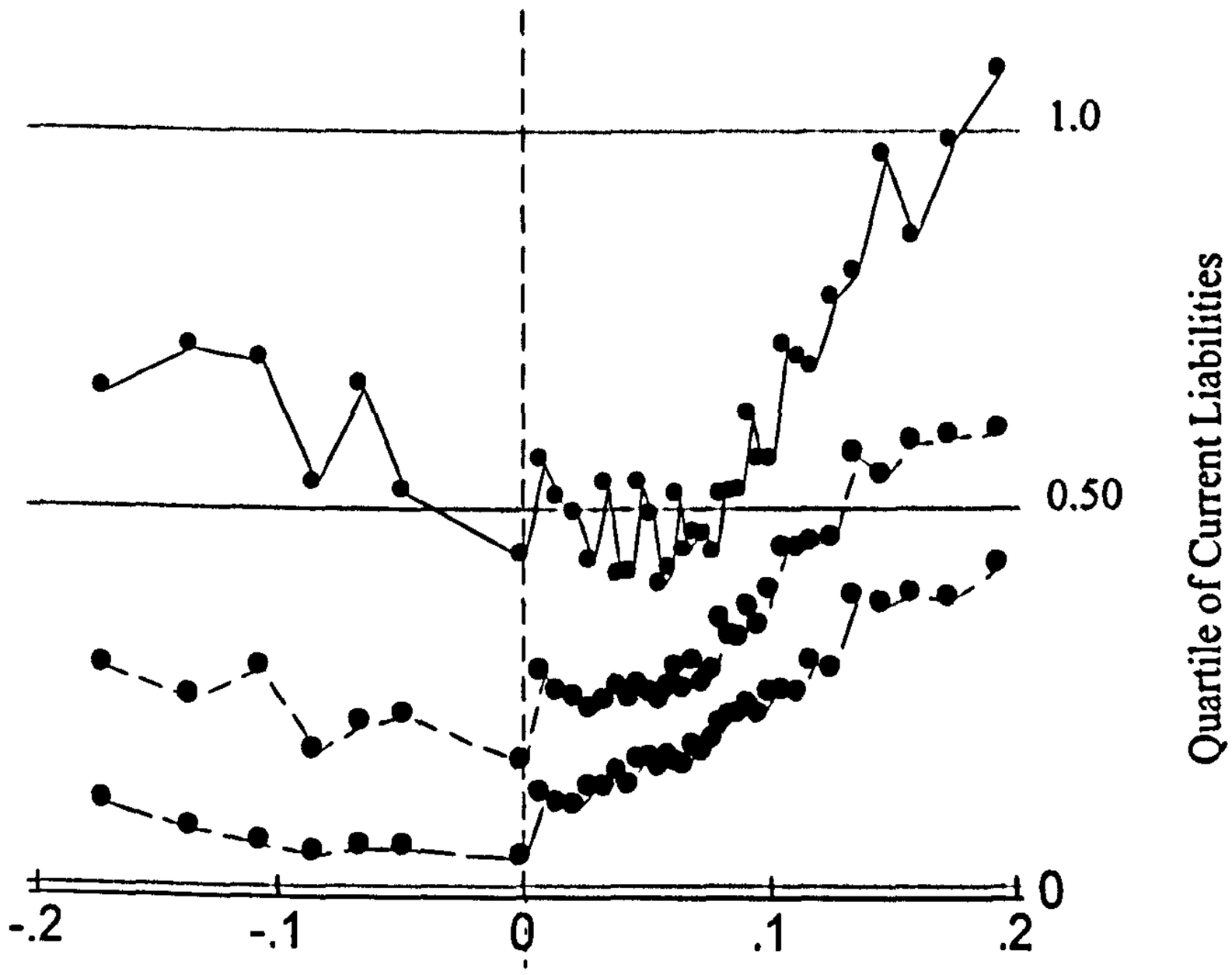


Fig. 6.6 Earnings portfolios of 200 observations each are formed based on the magnitude of scaled earnings. Median portfolio earnings on the horizontal axis represent the median earnings for each portfolio. Three quartiles (the 25th, 50th and 75th percentiles) of the distribution of beginning of the year current liabilities scaled by market value for each portfolio are plotted against the median earnings for each portfolio. Beginning of the year current liabilities are defined as the DataStream item DS389

6.5.6 Evidence on the ex post results of earnings management

For purposes of this analysis, earnings are decomposed in the three exhaustive and mutually exclusive components, closely related to components considered in previous research: Cash flow from operations and accruals. Accruals are decomposed to their discretionary and non discretionary components. As the discretionary and non-discretionary components of total accruals cannot be directly observed (Healy, 1985), researchers have proposed a series of models to obtain approximations.

The next logical step is to examine the conditional distributions of each of the three components of earnings for ex post evidence of a role in earnings management to avoid losses. If earnings management to avoid losses is concentrated in a component of earnings, then it is expected the conditional distributions of the managed component for slightly positive earnings levels to reflect a larger proportion of income increasing values. Thus, it is expected to see an upward (income

increasing) shift in the distribution for slightly positive earnings relative to the conditional distributions for firms with slightly negative earnings and possibly (but not necessarily because of the overall positive relation between earnings levels and the components of earnings considered) relative to the conditional distributions for firms in the adjacent regions with more positive earnings.

6.5.6.1 Cash flow from operations

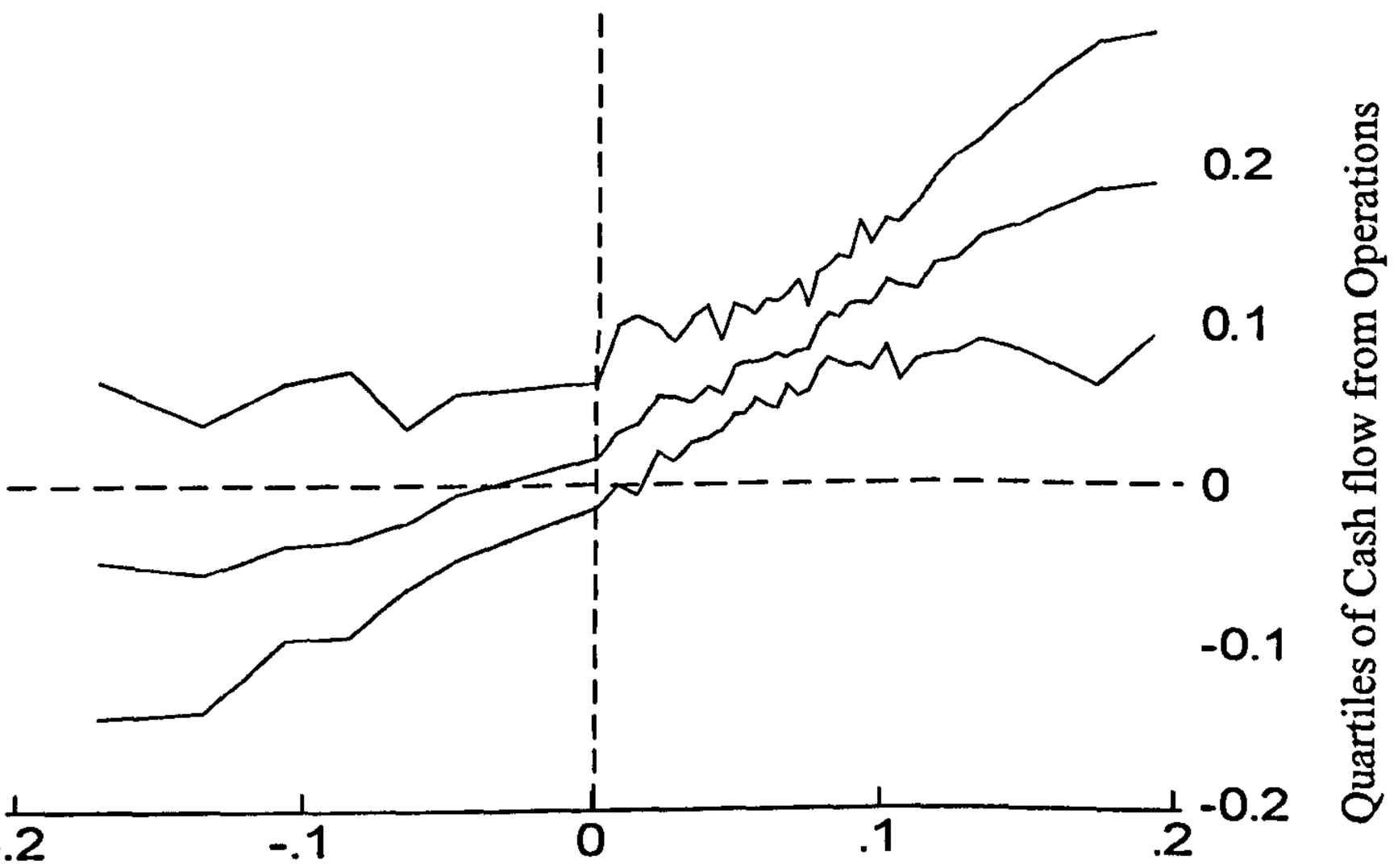


Fig. 6.7 Earnings portfolios of 200 observations each are formed based on the magnitude of scaled earnings. Median portfolio earnings on the horizontal axis represent the median earnings for each portfolio. Three quartiles (the 25th, 50th and 75th percentiles) of the distribution of cash flow from operations scaled by market value for each portfolio are plotted against the median earnings for each portfolio. DataStream item DS1015

Jones (1991) estimates discretionary accruals assuming that earnings consist of three components: operating cash flows, non-discretionary accruals and discretionary accruals. Operating cash flows could be subject to real activities manipulation. Real activities manipulation is defined by Bens et al. (2003) as: "management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds". Figre 6.7 documents the effect of real-activities manipulation on operating cash flows. Operating cash flow (IAS 7) is calculated as earnings before interest and tax adjusted for depreciation and working capital

movements. Subsequently, earnings management through real activities (i.e. apply a heavy discount policy) would increase both operating cash flows and earnings.

Fig. 6.7 shows quartiles of the conditional distributions of cash flow from operations for portfolios formed on the earnings variable. Consistent with the prediction, the quartiles of the distribution shift upward between the portfolio immediately to the left of zero and the portfolio immediately to the right of zero, particularly for the median and the upper quartile. Thus, there is evidence consistent with the management of cash flow from operations to effectively move observations from small losses to small positive earnings. Interpreting this evidence as combining features of both the results and the costs of earnings management, the firms that manage earnings through increases in cash flow from operations are likely to be the firms with the highest pre-managed cash flow from operations, i.e. these firms are likely to be concentrated in the upper half of the conditional distributions. The move of these firms from slightly negative earnings to slightly positive earnings explains the upward shift in quartiles between the left and the right side of zero. The reduced number of the firms that manage earnings from the portfolios of slightly negative post-managed earnings of the upper quartile, explain the almost flat distributions of cash flows for these portfolios. This interpretation is further supported after examining conditional distributions of cash flows from the previous year (Fig. 6.8). Medians and upper quartiles of conditional distributions of cash flows from the previous year show the same downward shift for intervals immediately left of zero, suggesting that firms which did not manage earnings tend to have lower levels of cash flows and presumably faced higher costs to manage earnings upwards.

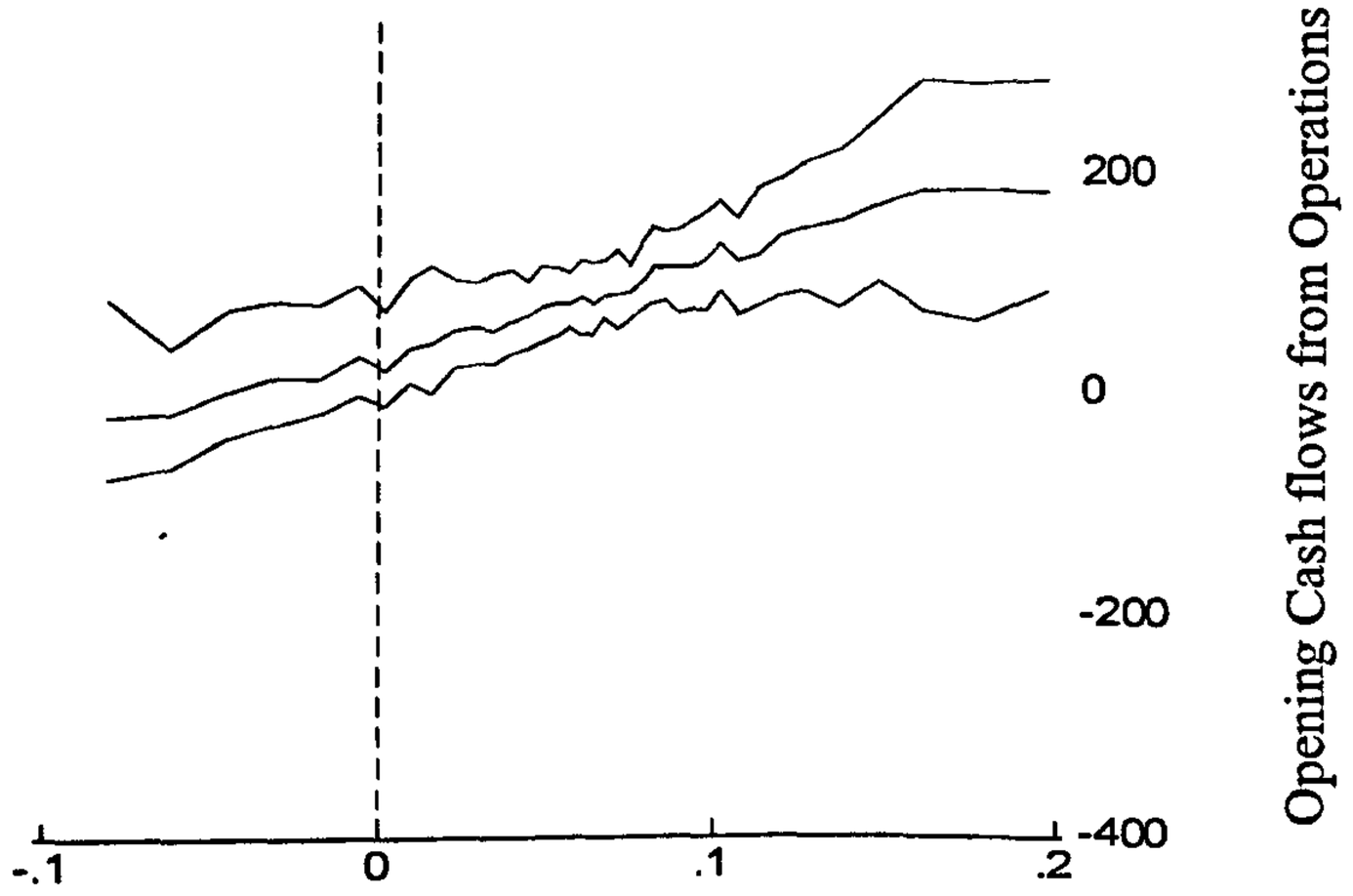


Fig.6.8 Earnings portfolios of 200 observations each are formed based on the magnitude of scaled earnings. Median portfolio earnings on the horizontal axis represent the median earnings for each portfolio. Three quartiles (the 25th, 50th and 75th percentiles) of the distribution of cash flow from operations at the beginning of the year, scaled by market value for each portfolio are plotted against the median earnings for each portfolio.

6.5.6.2 Changes in Discretionary Accruals

Fig. 6.9 shows the quartiles of the conditional distributions of changes in discretionary accruals. Consistent with the prediction, there appears to be an upward shift of the conditional distribution between the portfolio immediately to the left of zero and the portfolio immediately to the right of zero, for the upper end of the conditional distribution. A possible explanation for the pattern of results for changes in discretionary accruals could be clientele effects. Some firms choose to manage earnings through methods reflected in a marked increase in cash flow from operations, and the increase tends to be accompanied by a decrease in changes in working capital. For example, some firms increase cash sales which increases cash from operations but decreases non-cash working capital because of the decline in inventory.

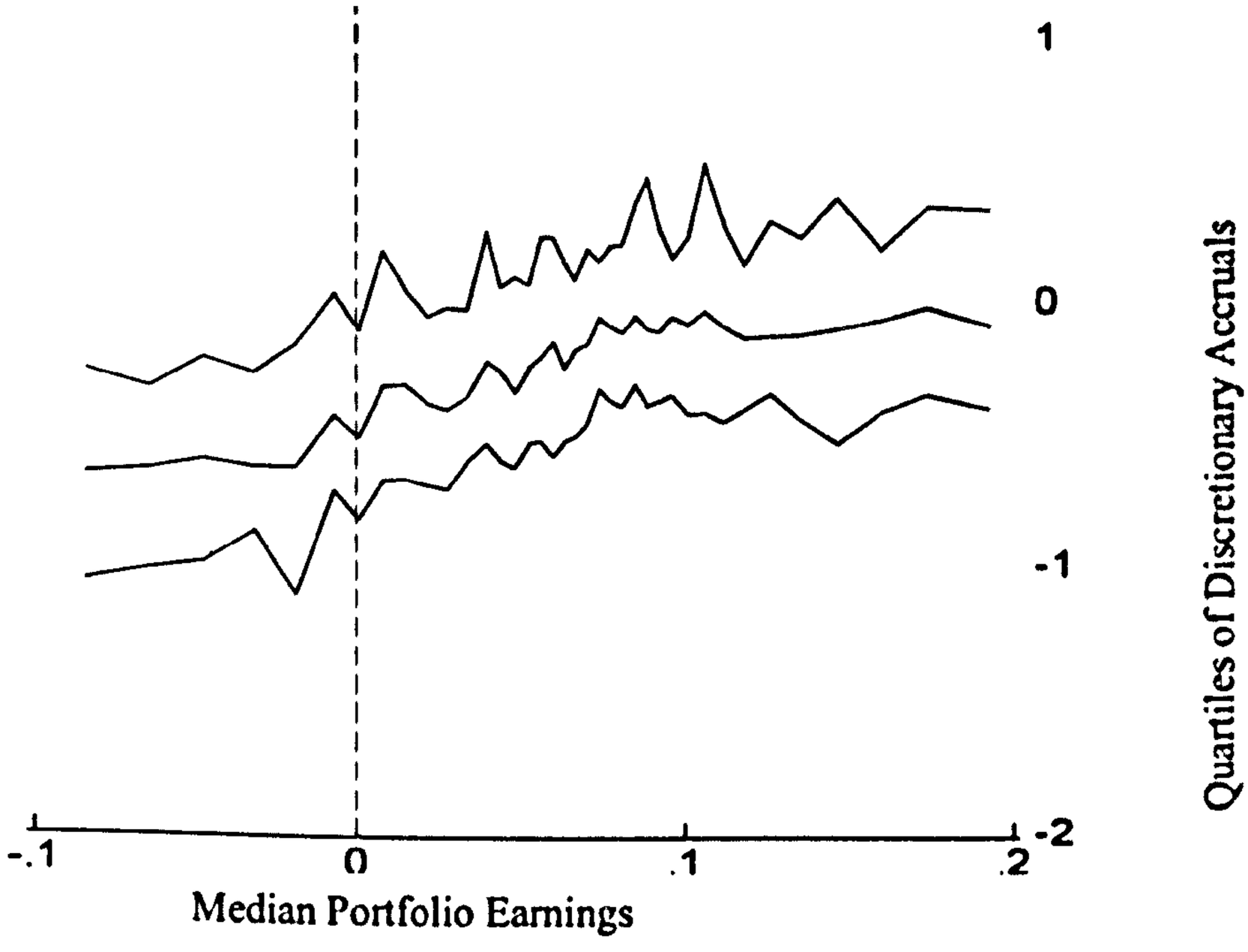


Fig. 6.9 Earnings portfolios of 200 observations each are formed based on the magnitude of scaled earnings by total assets. Median portfolio earnings on the horizontal axis represent the median earnings for each portfolio. Three quartiles (the 25th, 50th and 75th percentiles) of the distribution of discretionary accruals for each portfolio are plotted against the median earnings for each portfolio. The discretionary accruals are calculated with the Jones (1991) model.

These firms tend to appear in the upper ranges of the conditional distribution of cash flows in Fig. 6.7, and in the lower ranges of the distribution of changes in discretionary accruals in Fig. 6.9 which explains the less intensive increase for the lower quartile of Fig. 6.9. Alternatively, other firms choose to manage earnings through increases in working capital. For example, some firms make additional credit sales which do not affect cash from operations but increase receivables and decrease inventory for a net increase in working capital (assuming that sales are made on a positive profit margin). These firms tend to appear in the upper ranges of the distribution of Fig. 6.8, where there can be observed evidence of earnings management using changes of working capital, and in the lower quartiles in Fig. 6.7, where the evidence of earnings management through cash flow form operations is less pronounced.

6.5.6.3 Non-discretionary Accruals

Fig. 6.10 shows the quartiles of conditional distribution of non discretionary accruals by earnings portfolio. Other accruals are defined here as total accruals minus the discretionary accruals calculated through the Jones (1991) model. The evidence shows a pronounced downward shift in the distribution of the non-discretionary accruals. A downward shift would not be expected if non-discretionary accruals are used to manage earnings upward.

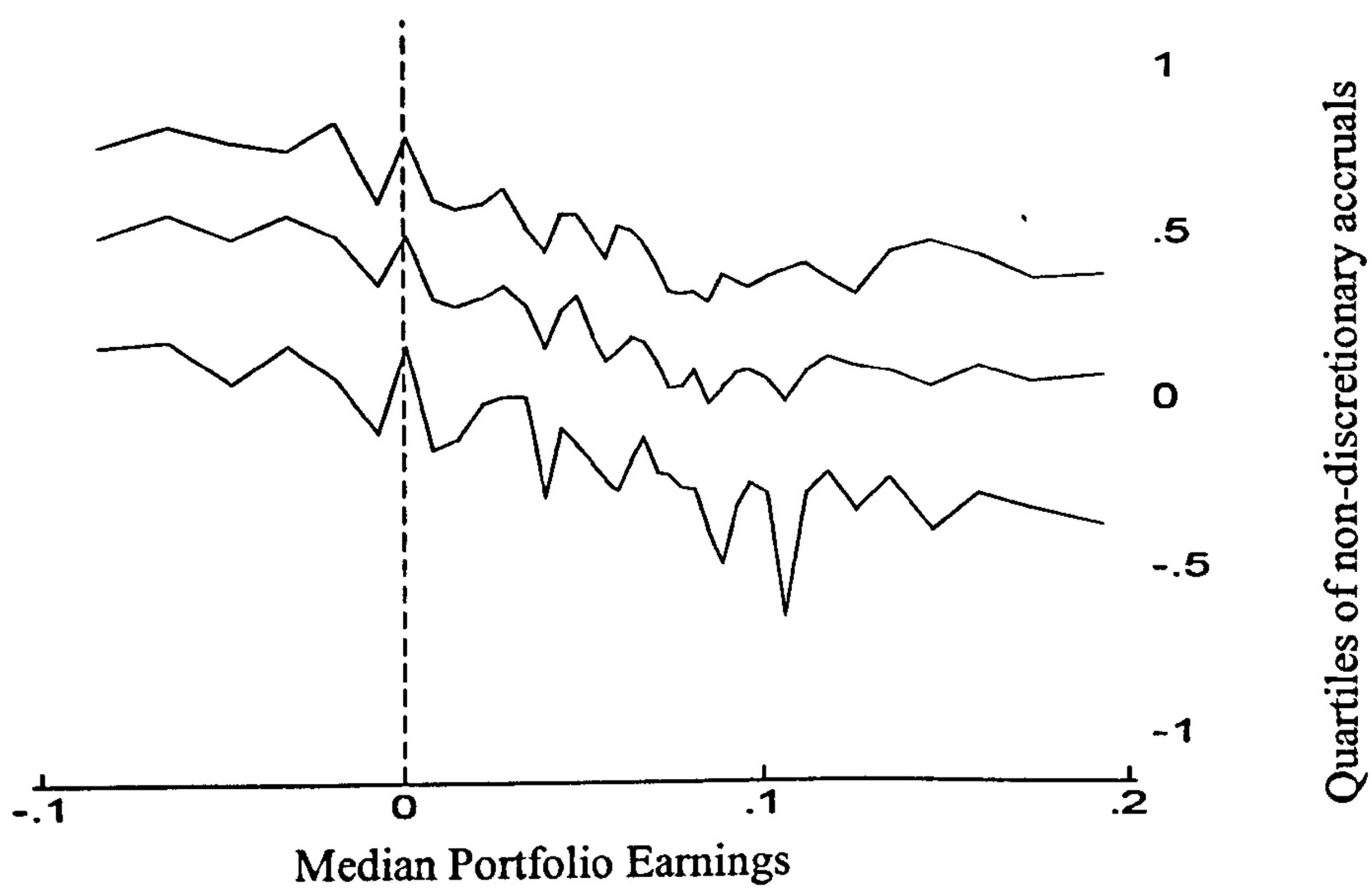


Fig. 6.10 Earnings portfolios of 200 observations each are formed based on the magnitude of non-discretionary accruals. Median portfolio earnings on the horizontal axis represent the median earnings scaled by total assets for each portfolio. Three quartiles (the 25th, 50th and the 75th percentiles) of the distribution of the non discretionary accruals value of each portfolio are plotted against the median earnings for each portfolio. Non-discretionary Accruals= Working Capital Accruals- Discretionary Accruals.

6.5.7 Discretionary Accruals to achieve earnings thresholds

It is predicted in H3 that the exclusion of discretionary accruals from current period earnings will cause the discontinuity around zero to significantly decline. The evidence on this hypothesis is reported in Table 6.3. Table 6.3 reports the Burgstahler and Dichev (1997) standardised difference statistics relating to the classes at both immediate sides of zero in the distributions reported in Figure 6.1 and Figure 6.3.

The distribution of earnings levels, shown in Figure 6.3 reveals a distinct discontinuity at zero. The frequency at the immediate left of zero is low and that on the immediate right of zero is high relative to expected frequencies under a smooth distribution. As predicted, Table 6.3 shows that the distribution of non-discretionary

earnings levels is relatively smooth around zero. There is little disparity between the frequencies immediately adjacent to zero.

More specifically, Table 6.3 Panels A1 and A2 confirm the H3 regarding the impact of DACC around zero earnings. Panel A1 indicates that the actual frequency of the class to the immediate left to zero in the earnings distribution is significantly less that the expected frequency of the class under the null hypothesis of a smooth distribution. On the other hand, Panel A2 indicates that the actual frequency of the class to the immediate left of zero in the non-discretionary earnings distribution is insignificantly different from its expected frequency. This confirms the H1, H2 and H3 research hypotheses that earnings are distributed discontinuously around zero while non-discretionary earnings are not.

Figure 6.1 shows the distribution of earnings changes. This histogram reveals a discontinuity at zero, caused by the frequency at the immediate right of zero appearing to be higher and that at the immediate left of zero lower than expected. As predicted, the distribution of non-discretionary earnings changes shown in Table 6.3 Panels B1 and B2 does not have a similar discontinuity at zero. The difference in frequencies at the immediate sides of zero declines significantly after extracting the discretionary element of earnings.

Evidence confirming H1 and H3 research hypothesis regarding the effect of DACC on the discontinuity in the distribution of earnings changes is presented in Table 6.3. Panel B1 indicates that the frequency of the class to the immediate left of zero in the earnings change distribution is significantly less than expected had the distribution been smooth. However, this is not the case in the distribution of non-discretionary earnings changes. Panel B2 shows that the frequency to the immediate left of zero is insignificantly different from that expected under a smooth distribution.

In summary, therefore, it is found that earnings levels and changes are distributed with visible and statistically significant discontinuities around zero. Specifically, in each of these distributions, the frequency to the immediate right of zero is greater than expected and the frequency to the immediate left of zero lower than expected under a smooth distribution. It is found, further, that the distributions of non-discretionary earnings levels and changes are not significantly discontinuous in this manner around zero. This suggests that the discontinuity in the distribution of earnings relative to basic targets is caused by DACC.

Table 6.3
Distribution of adjacent to zero earnings and non-discretionary earnings relative to targets

Panel A1

Earnings level

N= 9,809

Class	*-0.01<E_t ≤ 0*	*0<E_t ≤ 0.01*
N	198	322
Std. Diff.	-3.962	2.154
p value	0.002	0.058

Panel A2

Non-discretionary earnings level

N= 9,809

Class	*-0.01<NDE_t ≤ 0*	*0<NDE_t ≤ 0.01*
n	284	297
Std. Diff.	-0.972	0.1943
p value	0.791	0.192

Panel B1

Earnings Change

N= 8,962

Class	*-0.01<E_t ≤ 0*	*0<E_t ≤ 0.01*
N	582	820
Std. Diff.	-2.9934	3.125
p value	0.002	0.013

Panel B2

Non-discretionary earnings change

N= 8,962

Class	*-0.01<NDE_t ≤ 0*	*0<NDE_t ≤ 0.01*
n	434	514
Std. Diff.	-0.512	-0.712
p value	0.612	0.491

E : Earnings scaled by opening total assets

NDE : Non-discretionary earnings scaled by opening total assets

ΔE : Change in earnings scaled by opening total assets

NDΔE : Non-discretionary earnings change in earnings scaled by opening total assets

This table shows the Burgstahler and Dhichev (1997) standardised difference statistic for the classes at the immediate left and right of zero in the distributions of actual and non-discretionary earnings levels and changes scaled by opening total assets. This statistic is measured as the difference between the actual and expected frequencies in the class concerned, standardised by the standard deviation of this difference. The expected frequency of each class is assumed to be the mean of the two immediately adjacent classes. If the number of observations in class i is denoted by n_i, the probability of an observation occurring in class i denoted by p_i, and the total number of observations in the sample denoted by N, the test statistic for class i is given by:

$$\frac{n_i - \frac{(n_{i-1} + n_{i+1})}{2}}{\sqrt{Np_i(1-p_i) + \frac{N(p_{i-1} + p_{i+1})(1 - p_{i-1} - p_{i+1})}{4}}}$$

This statistic is evaluated against the standardised normal distribution and all p values reported are two tailed. Discretionary working capital accruals scaled estimated using Jones (1991) model

6.5.7.1 Proportions of observations achieving and missing earnings thresholds as a result of DACC

It is predicted in H_6 that DACC have the effect of increasing the proportion of observations reporting positive earnings levels and changes.Preliminary evidence on this prediction is obtained from Figures 6.9 and 6.10. These figures indicate that DACC increase the proportion of positive earnings, consistent with prediction. Also consistent with prediction, DACC reduce the proportion of small negative earnings levels.

Table 6.4 reports the results of formal tests of the prediction in H_4. Panel A shows that DACC have the effect of significantly increasing the proportion of positive earnings levels from 72.3% to 81.3%. In the case of positive earnings levels within this range, the proportion increases from 21.4% to 24.2%. In the case of negative earnings levels within the same range, the proportion decreases from 11.4% to 4.2%. These changes are consistent with the prediction that DACC are used to manage earnings to achieve positive earnings level and, in particular, to transform small negative earnings into small positive earnings.

Table 6.5 shows the impact of DACC in arriving at the earnings reported by firms. It takes the form of transition matrices (one each for levels and changes): rows show broad classes of non-discretionary (pre-managed) earnings, columns show such classes of reported earnings. Intersections of rows and columns show the number of observations (and proportion of the total) moving from a particular NDE_t ($ND\Delta E_t$, $NDES_t$) class to a particular E_t (DE_t) class.

Panel A presents details of the frequency with which firms move from specific classes of non-discretionary earnings, e.g. $NDE_t \leq -0.1$, to specific classes of actual reported earnings, e.g. $0 < E_t \leq 0.05$. It would be expected that companies use DACC to shift from negative non-discretionary earnings to positive reported earnings, and for this to be particularly so for observations close to targets. Panel A shows that 15%[36] of the entire sample move from negative non-discretionary earnings to positive earnings as a result of DACC. This compares to only 4%[37] of the same moving in the

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[36] The 15% comprise of those observations in the upper right quadrant of the panel. Those companies having negative NDE_t but reporting positive E
(108+147+481+49+69+186+114+63+222+653+524+1183)/9,809

[37] The 4% comprise those observations in the lower left quadrant, i.e. those having positive NDE but reporting negative E (20+20+20+39+20+20+147+49+98)/9,809.

opposite direction, i.e. from positive non-discretionary earnings, to negative earnings as a result of DACC, thus emphasising the direction in the use of DACC. Focusing particularly on those firms falling just short of target, i.e. in the range $-0.05<NDE_t<0$, the effect is even more pronounced: 75% of such firms report positive actual (post DACC) earnings ((481+186+222)/1,183), whereas only 9% of those companies with NDE_t just above break even, i.e. $0< NDE_t\leq 0.05$, move to negative earnings ((20+39+147)/2,183). Of particular interest is the movement of firms nearest to break even. Here 4.9% of the entire sample moves from negative non-discretionary earnings within 0.05 of opening TA to positive earnings within the same range, (i.e. the 481 observations in the lower left corner of the upper right quadrant). Although only a small proportion of the total sample, these 481 observations represent 41% of the 1,183 observations within this range.

Table 6.5 Panel B reports the impact of DACC on the proportion of observations achieving and missing positive earnings changes. DACC significantly increase the proportion of observations achieving positive earnings changes from 52% based on $ND\Delta E_t$ to 56% based on reported earnings, i.e. row totals 1,212+1,326+2,106 as a proportion of the total of 8,962 compared to the proportion represented by the column totals 2,877+1,273+905. As with earnings levels, focusing specifically on those firms falling just short of target, i.e. $-0.025<ND\Delta E_t\leq 0$, reveals that 71% of such firms report positive actual (post DACC) earnings changes ((565 + 99+ 18)/956)), whereas only 16% of those firms with $ND\Delta E_t$, just above target, i.e. $0< ND\Delta E_t\leq 0.025$, move to negative actual earnings changes ((36+63+101)/1,212)), again confirming a clear directional bias in movements. DACC also significantly increase the proportion of observations with small positive earnings changes, i.e. within 0.025 of opening TA from 14 % to 32% i.e. row total of 1,212 for $0<ND\Delta E_t\leq 0.025$ compared to column total of 2,877 for $0<\Delta E_t\leq 0.025$.

These results are consistent with DACC being used to achieve positive earnings changes. DACC significantly increase the proportion of negative earnings changes within 0.025 of opening TA from 11 % (row total of 956 for $-0.025<ND\Delta E_t\leq 0$) to 24%. (equivalent ΔE_t column total of 2178).

One potential reason for DACC increasing the proportion of observations with small negative earnings changes is the use of DACC to smooth earnings. Income smoothing would be reflected by the use of DACC to amortise fluctuations in earnings, i.e. to reduce the magnitude of earnings changes (volatility). Table 6.5 Panel

B shows that 1,058 (i.e. 571 + 487), or 48%, of the 2,178 observations with actual negative earnings changes within 0.025 of opening TA use DACC to reduce the magnitude of a larger negative earnings change. If these observations were excluded, the proportion of firm-years with small decreases would decline from 24% to 12 % (the $-0.025<NDE_t\leq 0$) column total of 2178 minus the 1058 firm-years specified above) as a result of DACC. Table 6.5 Panel B also indicates that 20%[38] % of the entire sample use DACC to move from negative to positive earnings changes, i.e. the cases in the top right-hand quadrant. These 1,792 observations represent 41 % of all firm-years with negative non-discretionary earnings changes, (i.e. 1,792 as a proportion of the relevant row totals of 2,130+1,230+956). Again focusing specifically on those companies close to the target, in this case matching the prior year's result; of the entire sample, 6% of all observations move from negative non-discretionary earnings changes within 0.025 of opening TA to positive earnings changes within a similar range (i.e. the bottom left figure in the upper right quadrant). Of the 956 observations with small negative non-discretionary earnings changes within this range, 71% actually report positive earnings changes with the aid of DACC ((565+99+18)/956)).

In summary, DACC significantly increase the proportions of observations publishing positive earnings levels and changes, as predicted. DACC also have the effect of significantly increasing the proportion of observations reporting small positive earnings and changes. This is consistent with DACC being used to achieve positive earnings levels and changes and with DACC causing the discontinuity in the distribution of earnings. However, DACC result in increases in the proportions of observations with small negative earnings changes. It is shown that this is mainly because DACC also serves the purpose of amortising the magnitude of large negative earnings changes in significant numbers of firm-years.

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[38] Sum of observations in the top right-hand quadrant: 439+323+565+152+72+99+9+117+18=1,792. 1,792:8,962=20%

Table 6.4

Proportion of observations missing an earnings threshold before and after discretionary accruals

Panel A

Earnings levels

N= 9,809

Class	*Proportion*	*z*	*p value*
$NDE_t > 0$	0.723		
$E_t > 0$	0.813	22.135	0.000
$0 < NDE_t \leq 0.05$	0.214		
$0 < E_t \leq 0.05$	0.242	9.315	0.000
$-0.05 < NDE_t \leq 0$	0.114		
$-0.05 < E_t \leq 0$	0.042	-14.185	0.000

Panle B

Earnings Changes

N= 8,962

Class	*Proportion*	*z*	*p value*
$ND\Delta E_t > 0$	0.454		
$\Delta E_t > 0$	0.593	18.135	0.000
$0 < ND\Delta E_t \leq 0.025$	0.184		
$0 < \Delta E_t \leq 0.025$	0.135	34.245	0.000
$-0.025 < ND\Delta E_t \leq 0$	0.125		
$-0.025 < \Delta E_t \leq 0$	173	9.134	0.000

E	: Earnings scaled by opening total assets
NDE	: Non-discretionary earnings scaled by opening total assets
ΔE	: Change in earning scaled by opening total assets
NDΔE	: Non-discretionary earnings change in earning scaled by opening total assets

Discretionary working capital accruals scaled by opening total assets are estimated using Jones (1991) model. This table evaluates the impact of DACC on the frequency of observations of positive, small positive and small negative earnings levels and changes. The Z statistic shown relates to the Z test for correlated proportions described by Kanji (1993, 48-49). This test has been used also by Gore et al. (2007). This test evaluates the impact of a given intervention on the proportion of observations satisfying a given criterion by measuring and comparing the proportion immediately before and immediately after the intervention. If the number of observations moving from negative to positive relative to the criterion of interest is denoted by b, the number moving from positive to negative denoted by c, and the total number of observations denoted by N, the test statistic is given by:

$$\frac{(b-c)/N}{\sqrt{\frac{(b+c)-(b-c)^2/N}{N(N-1)}}}$$

Table 6.5 Transition matrices indicating the frequency of movement of observations form classes of non-discretionary earnings to classes of earning relative to target.

Panel A

Earnings level sample

class	$E_t \leq -0.1$	$-0.1 < E_t \leq -0.05$	$-0.05 < E_t \leq 0$	$0 < E_t \leq 0.05$	$0.05 < E_t \leq 0.1$	$E_t > 0.1$	Total
$NDE_t \leq -0.1$	206	88	88	108	49	114	653
	0.021	*0.009*	*0.009*	*0.011*	*0.005*	*0.012*	*0.067*
$-0.1 < NDE_t \leq -0.05$	59	88	98	147	69	63	524
	0.006	*0.009*	*0.010*	*0.015*	*0.007*	*0.006*	*0.053*
$-0.05 < NDE_t \leq 0$	59	78	157	481	186	222	1183
	0.006	*0.008*	*0.016*	*0.049*	*0.019*	*0.023*	*0.121*
$0 < NDE_t \leq 0.05$	20	39	147	951	628	398	2183
	0.002	*0.004*	*0.015*	*0.097*	*0.064*	*0.041*	*0.223*
$0.05 < NDE_t \leq 0.1$	20	20	49	598	1099	564	2349
	0.002	*0.002*	*0.005*	*0.061*	*0.112*	*0.057*	*0.239*
$NDE_t > 0.1$	20	20	98	304	1,442	1,034	2917
	0.002	*0.002*	*0.010*	*0.031*	*0.147*	*0.105*	*0.297*
n	383	334	638	2,590	3,472	2,393	9809
proporion	*0.039*	*0.034*	*0.065*	*0.264*	*0.354*	*0.244*	*1*

Panel B

Earnings change sample

class	$\Delta E_t \leq -0.05$	$-0.05 < \Delta E_t \leq -0.025$	$-0.025 < \Delta E_t \leq 0$	$0 < \Delta E_t \leq 0.025$	$0.025 < \Delta E_t \leq 0.05$	$\Delta E_t > 0.05$	Total
$ND\Delta E_t \leq -0.05$	618	341	571	439	152	9	2,130
	0.069	0.038	0.064	0.049	0.017	0.001	0.238
$-0.05 < ND\Delta E_t \leq -0.025$	108	125	487	323	72	117	1231
	0.012	0.014	0.054	0.036	0.008	0.013	0.137
$-0.025 < ND\Delta E_t \leq 0$	63	108	105	565	99	18	956
	0.007	0.012	0.012	0.063	0.011	0.002	0.107
$0 < ND\Delta E_t \leq 0.025$	36	63	101	556	215	242	1,212
	0.004	0.007	0.011	0.062	0.024	0.027	0.135
$0.025 < ND\Delta E_t \leq 0.05$	27	36	188	511	233	332	1326
	0.003	0.004	0.021	0.057	0.026	0.037	0.148
$ND\Delta E_t > 0.05$	152	54	726	484	502	188	2106
	0.017	0.006	0.081	0.054	0.056	0.021	0.235
N	1,004	726	2,178	2,877	1,273	905	8962
proportion	0.112	0.081	0.243	0.321	0.142	0.101	1

E : Earnings scaled by opening total assets

NDE : Non discretionary earnings scaled by opening total assets

ΔE : Change in earnings scaled by opening total assets

$ND\Delta E$: Non discretionary earnings change in earnings scaled by opening total assets

Discretionary working capital accruals scaled by opening total assets are estimated using Jones (1991) model.

6.6 Alternative Explanations for the Discontinuity

6.6.1 Management Taking Real Actions to Improve Performance

One of the objectives of a company is to produce a profit. Managers could set targets and employees could work harder when there is a clearly defined objective (i.e., to be profitable). When companies are assessed on earnings and profitability related ratios, there can be observed the effect of this incentive in the data at the zero earnings reference point. The discontinuity could be reflecting efficient contracting. The first-order effect of setting a target is people work harder to achieve the target. The second-order effect is earnings management.

6.6.2 Scaling by Market Value

Investors could use different valuation approaches for loss versus profit firms. For example, investors could place more weight on the balance sheet and liquidation values when a firm reports a loss (e.g. Burgstahler and Dichev, 1997). This could in turn affect the denominator (market value) used to create the distribution of earnings.

In their research Eason and Sommers (2003) suggest that scaling by market value can induce heteroscedasticity into the modelling process due to the "scale effect" of the largest firms. This effect arises due to the non-linearity in the relation between market capitalisation and the financial statement variables. To analyse the impact of scaling by market value on the distribution of earnings, four earnings distributions have been drawn, one for each of the market value quartiles (Figure 6.11). Panels A, B, C and D show the earnings distribution for the first, second, third and fourth market value quartiles, respectively. It can be observed that the fourth quartile shows a higher degree of discontinuity, comparing to the A, B
and C.

To investigate further this finding, a separate histogram is plotted, for the observations with earnings scaled by market value in the region of (0, +0.07) (Figure 6.12, panel C). It can be inferred from the previous analysis in section 5.2 that the specific region contains a high number of companies that managed earnings to move from negative to small positive earnings. In panel C, it is shown that companies from the top quartile, by market value, are more likely to be found at the earnings region of

(0, +0.07) than companies in the smaller quarters. Panel C shows that companies with high market value are more likely to appear on the examined earnings region.

To assess the robustness of the findings in the sections 6.5.1, 6.5.2, 6.5.3 and 6.5.4, alternative scale measures to market value are utilised. The same plots have been drawn using Total Assets and Sales as scaling variables, in figures 6.12 and 6.13 respectively. The observed discontinuity remains robust in alternative scaling variables.

6.6.3 Time evolvement of earnings discontinuity

In their survey Choi et al. (2007) report a consensus view that the general quality of earnings improved over the last years, while earnings thresholds might be a widespread phenomenon, firms are now less likely to use discretionary accounting choices to meet thresholds. The evidence of Choi et al. (2007) suggest that a substantial proportion of the 500 largest UK listed non-financial firms (over 70%) exploited the option to disclose alternative earnings per share (EPS) on core earnings supports this concern.

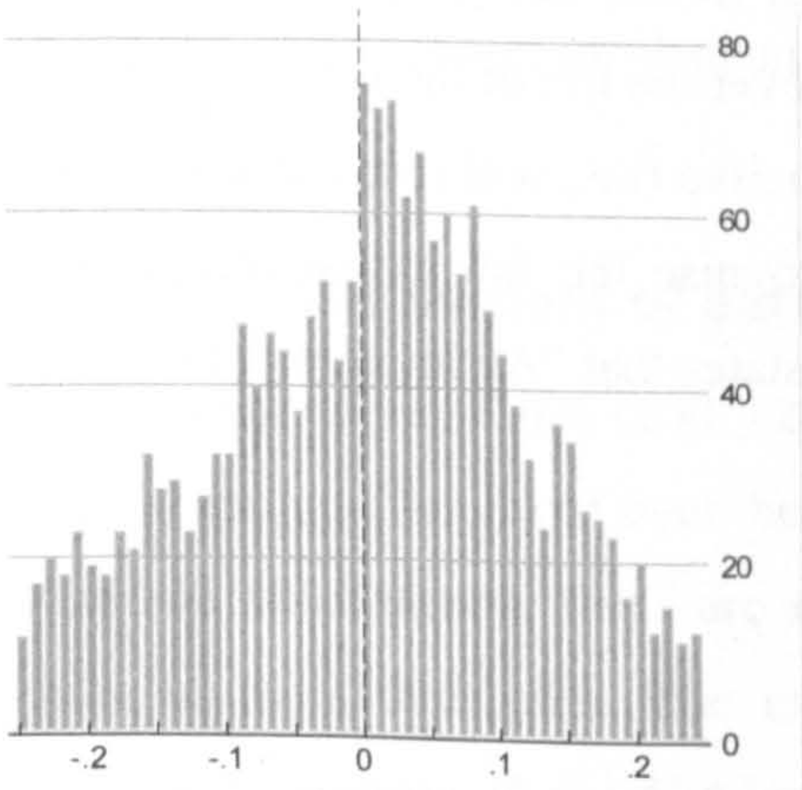
Panel B in Figure 6.11 shows a distribution by year for the observations with earnings level scaled by market value in the region of (0, 0.07). The previous analysis in this chapter suggests that this region has a high frequency of companies with managed earnings, as a result of the discontinuity at the zero level. Panel B shows that firms in latest years are more likely to appear in this region, as there are more than 300 observations from the year 2006 and less than 100 from the year 1990. The increased number of observations from the last years (after 2005) suggests that the introduction of the IFRS has not deteriorated the use of earnings management to move from small negative earnings to small positive.

This is consistent with Jeanjean and Stolowy (2008) that analyse the effect of the mandatory introduction of IFRS standards on earnings management. They find that the pervasiveness of earnings management did not decline after the introduction of IFRS. Aisbitt (2006) analyses the reconciliations of equity presented as part of the transition from UK GAAP to IFRS by the FTSE 100 companies and finds that the overall effect on equity is not significant. The research concludes that "*UK accounting practice is generally regarded as coming from a similar model of development to IFRS (the 'Anglo-Saxon' model), so users may not expect companies to make high levels of adjustments to their reported figures.*"

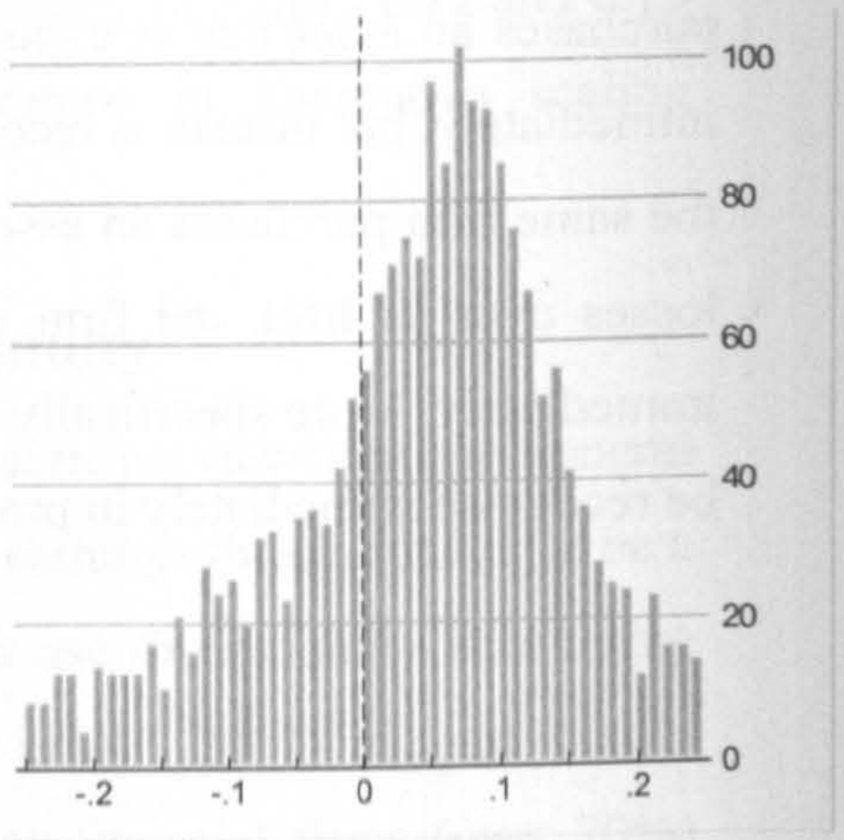
6.6.4 Accounting Rules and Conservatism

Another reason a discontinuity could be observed in earnings is because of accounting rules that encourage immediate loss recognition but prorate gain recognition (accounting conservatism). An example of this is asset impairment tests. If a firm purchases an asset that is expected to earn a high return, this gain is not recognised immediately, but instead is recognised as earned over the life of the asset. However, if the same firm purchases an asset that is not productive (i.e., will result in small future losses over its life), the firm is required to recognise the full extent of the losses immediately. More specifically IAS 36 (par. 60) states that "An impairment loss shall be recognise immediately in profit or loss."

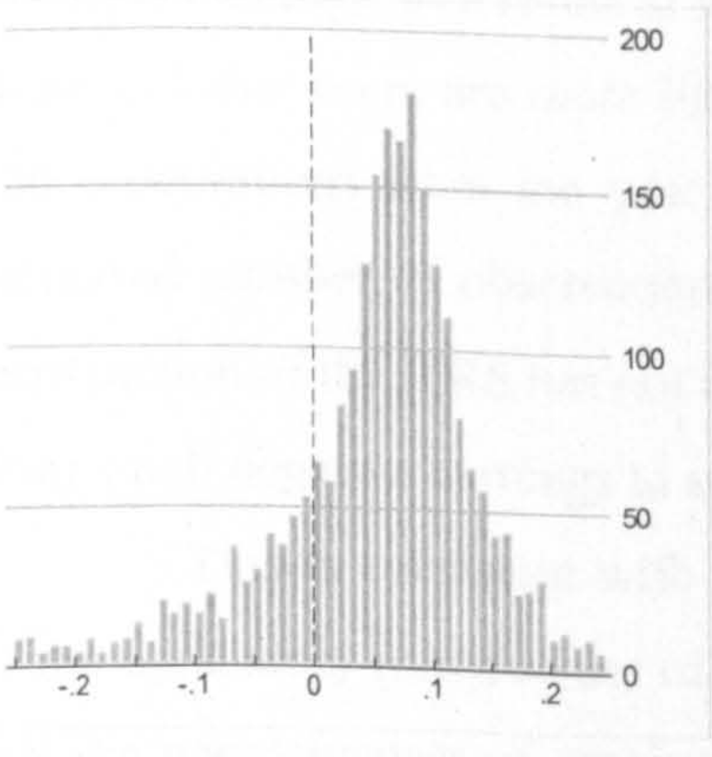
Panel A: Distribution of Earnings Scaled by Market Value for observations in the first inter-quartile market value range.



Panel B: Distribution of Earnings Scaled by Market Value for observation in the second inter-quartile market value range.



Panel C: Distribution of Earnings Scaled by Market Value for observations in the third inter-quartile range market value.



Panel D: Distribution of Earnings Scaled by Market Value for observations in the fourth inter-quartile market value range.

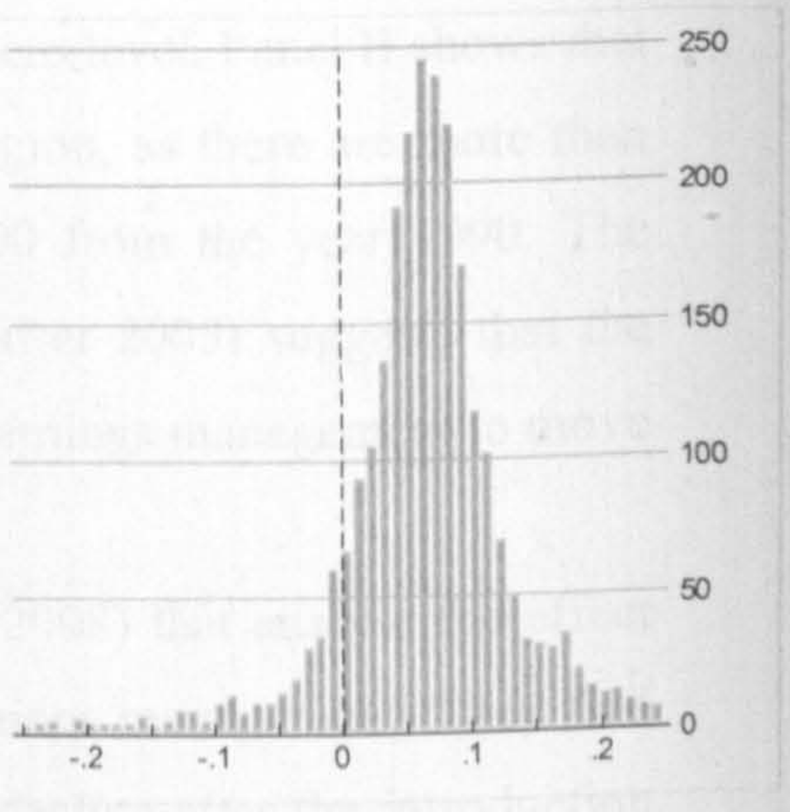
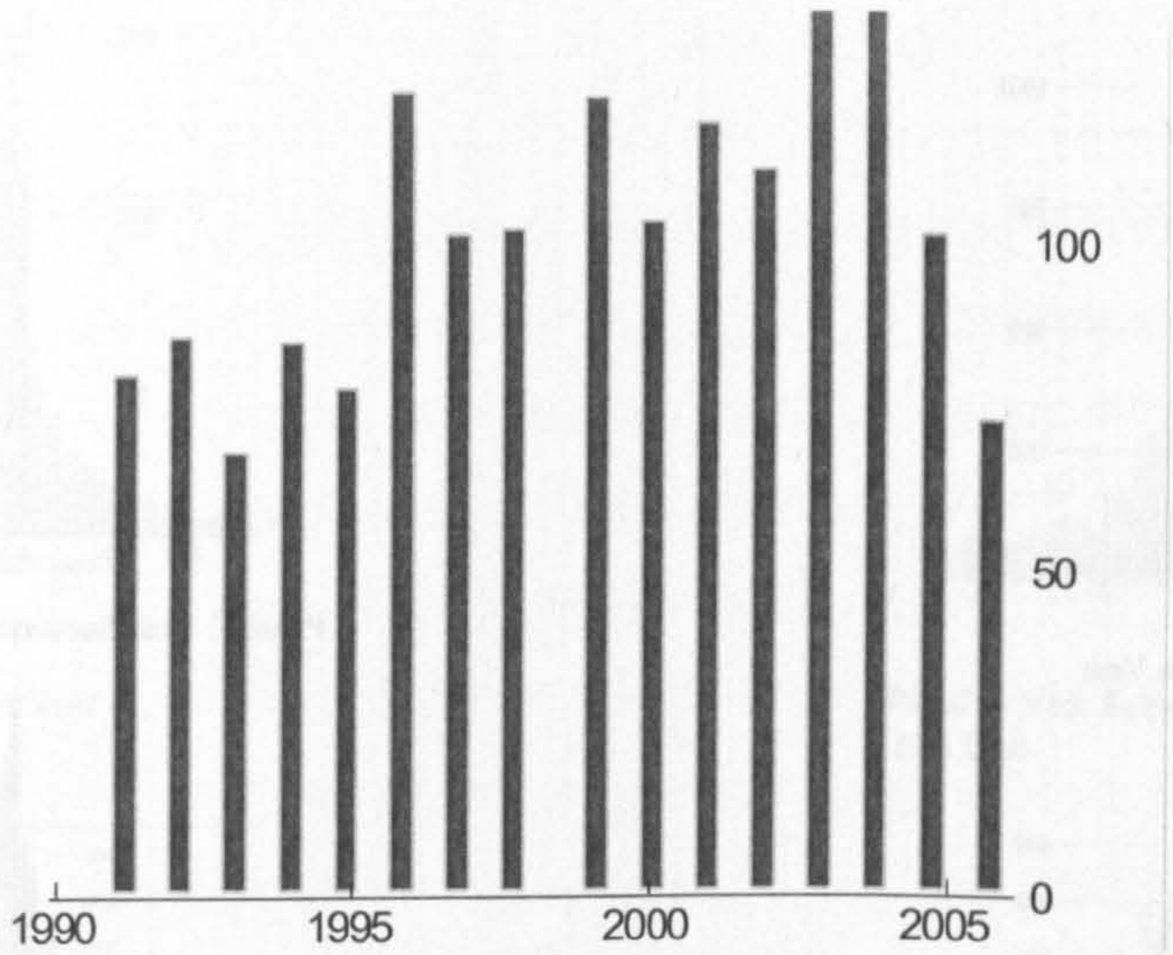
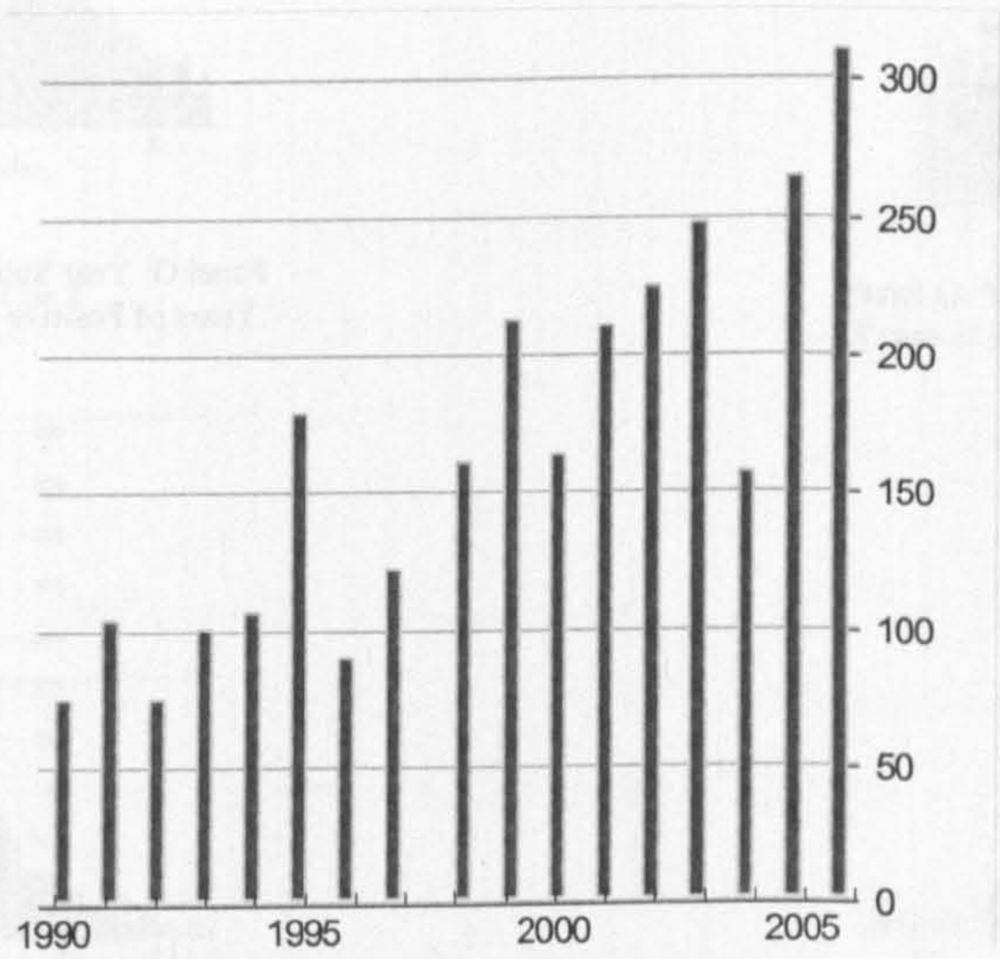


Fig 6.11: Four empirical distributions of earnings scaled by market value categorised according to the pattern of quartiles in the market value, from Panel A to Panel D

Panel A: Empirical Distribution of frequency by year for observations in the (0, +0.01) interval of earning increases scaled by Market Value.



Panel B: Empirical Distribution of frequency by year for observations in the (0, +0.07) interval of earning scaled by Market Value.



Panel C: Empirical Distribution of frequency by market value quartile for observations in the (0, +0.07) interval of earning scaled by Market Value.

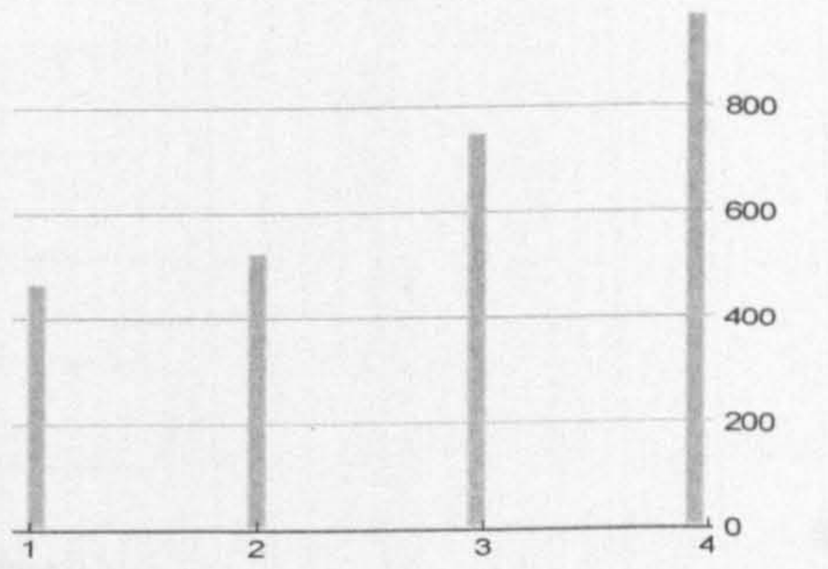
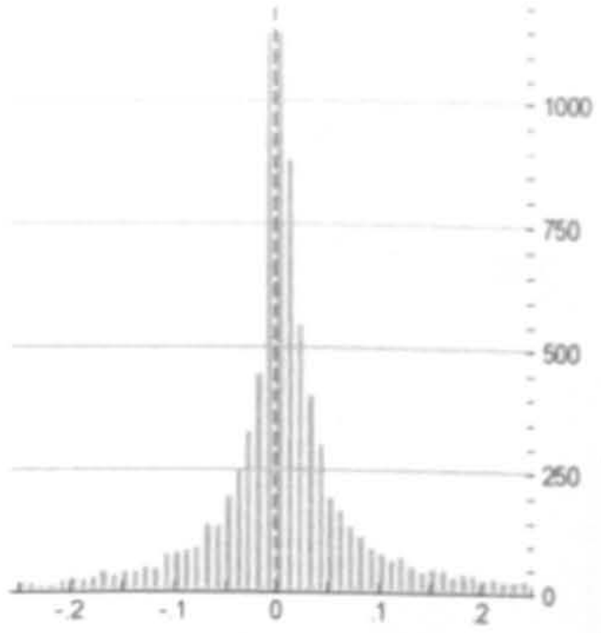
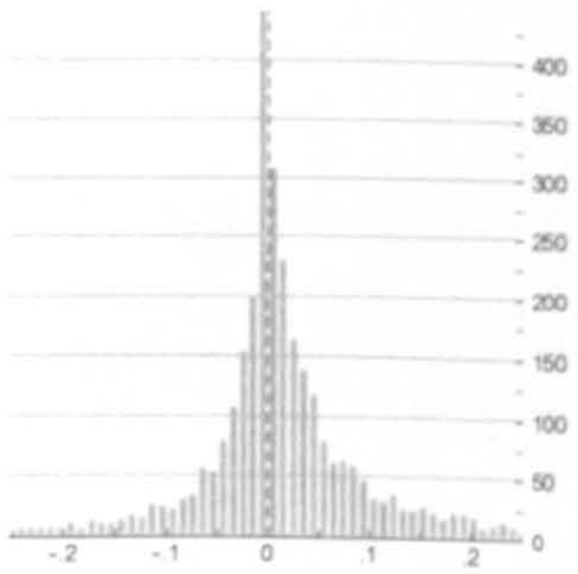


Fig 6.12 : Analysis by year and size for the intervals with high likelihood of earnings management. Panel A: Distribution of earnings changes scaled by market value in the interval (0, +0.001) for the years 1990-2006. Panle B: A distribution of earnings level scaled by market value in the interval (0, +0.07) for the years 1990-2006. Panle C: A distribution of the 4 quartile ranges of market value (lower 25%, 25%-50%, 50%-75%, 75%-100%) for the (0, 0.07) interval of earnings scaled by market value.

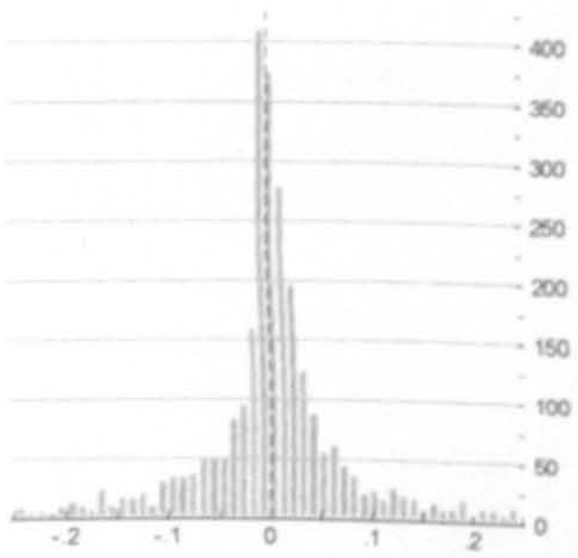
Panel A: Empirical Distribution of the Change in Earnings After Tax, scaled by Sales



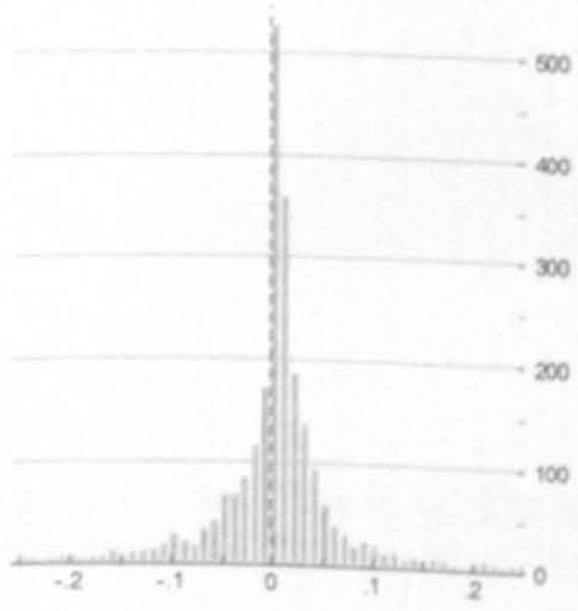
Panel B: Year Subsequent a Year of earnings decreases



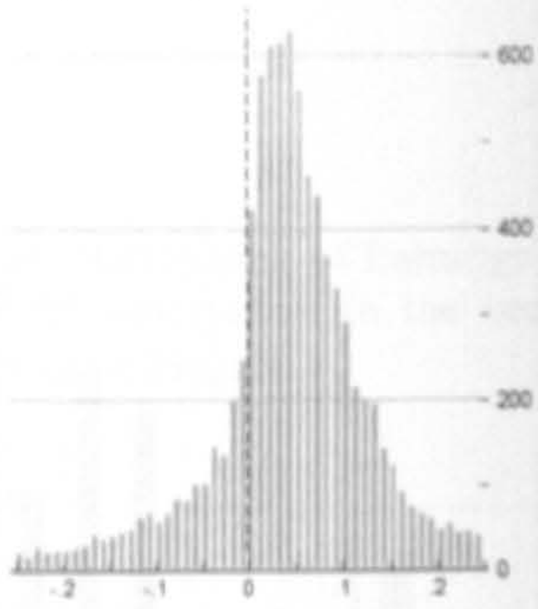
Panel C: Year Subsequent to 1 or 2 Years of Earnings Increases



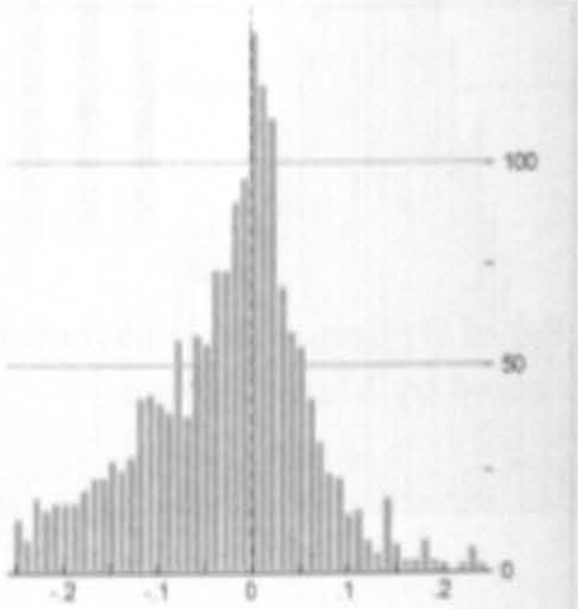
Panel D: Year Subsequent to 3 or More Years of Earnings Increases



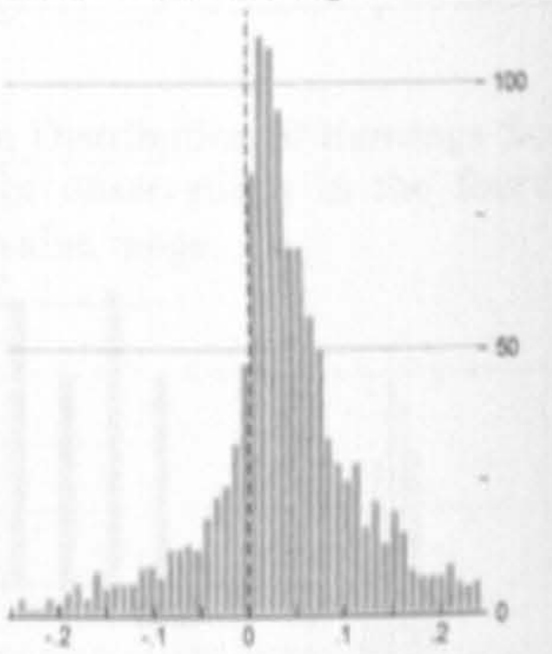
Panel E: Empirical Distribution of the Earnings After Tax, scaled by Sales



Panel F: Year Subsequent a Year of a Loss



Panel G: Year Subsequent to 1 or 2 Years of Positive Earnings



Panel H: Year Subsequent to 3 or More Years of Positive Earnings

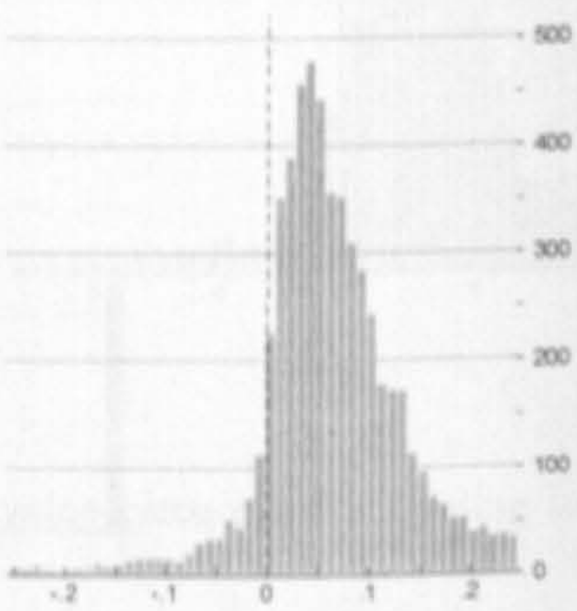
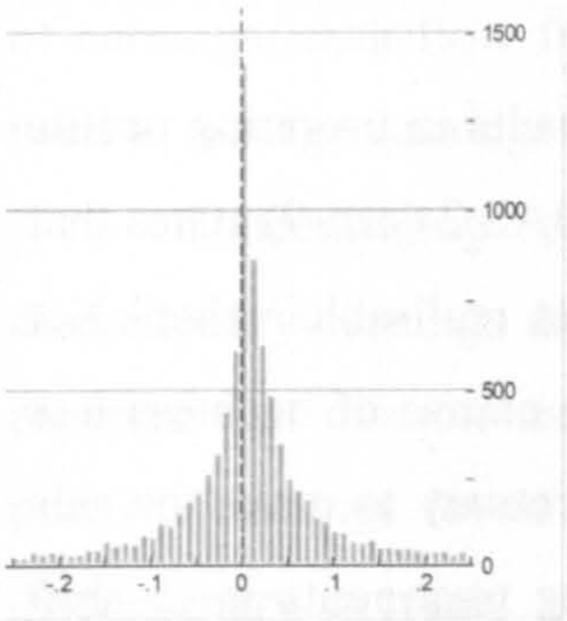
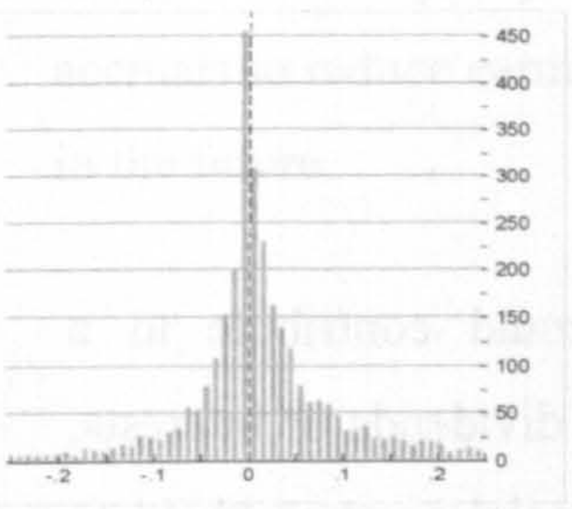


Fig. 6.13. Eight empirical distributions of earnings changes and earnings, scaled by beginning of the year total **sales** categorised according to the pattern of proceeding earnings for the firm. Panel A and E: The distribution of all observations for earnings changes and earnings, respectively, scaled by beginning of the year total assets; Panel B and F: the distribution for the years following an earnings decrease and a loss, respectively. Panels C and G the distribution for the years following exactly one or two years of earnings increases and positive earnings, respectively; and Panel D and H: the distribution for the years following three or more years of earnings increases and positive earnings, respectively.

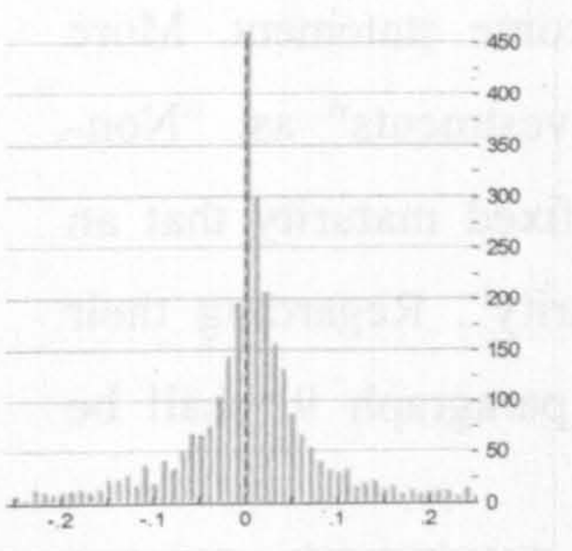
Panel A: Empirical Distribution of the Change in Earnings After Tax, scaled by Total Assets



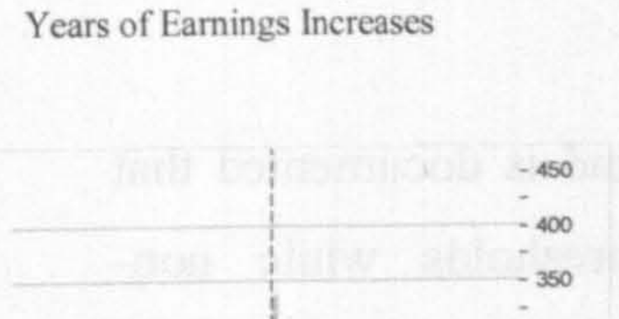
Panel B: Year Subsequent a Year of earnings decreases



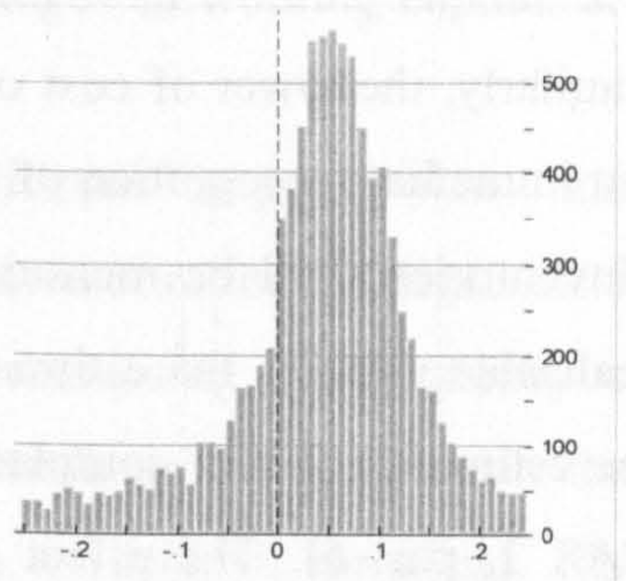
Panel C: Year Subsequent to 1 or 2 Years of Earnings Increases



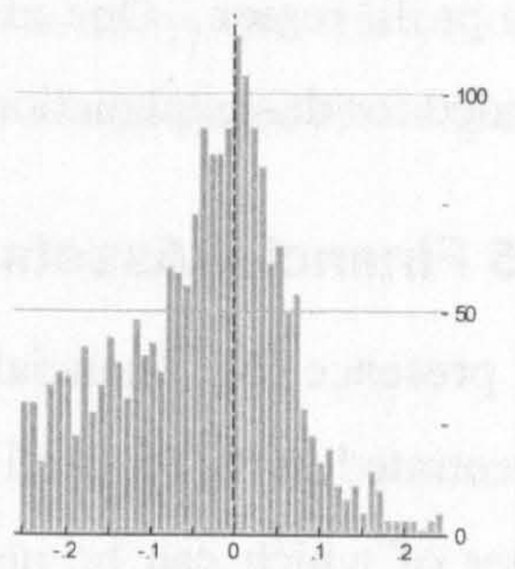
Panel D: Year Subsequent to 3 or More Years of Earnings Increases



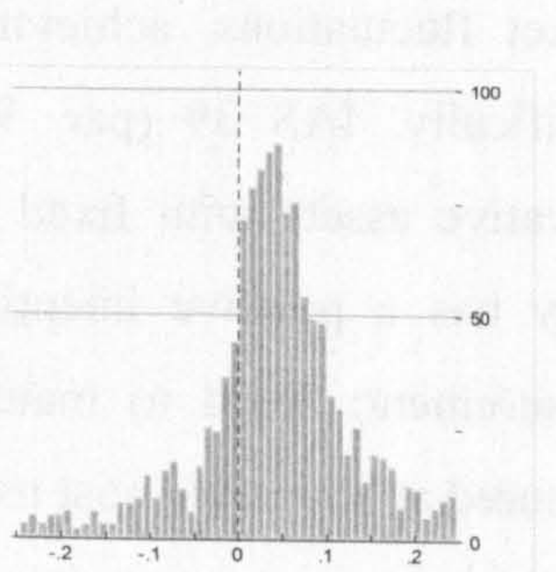
Panel E: Empirical Distribution of the Earnings After Tax, scaled by Total Assets



Panel F: Year Subsequent a Year of a Loss



Panel G: Year Subsequent to 1 or 2 Years of Positive Earnings



Panel H: Year Subsequent to 3 or More Years of Positive Earnings

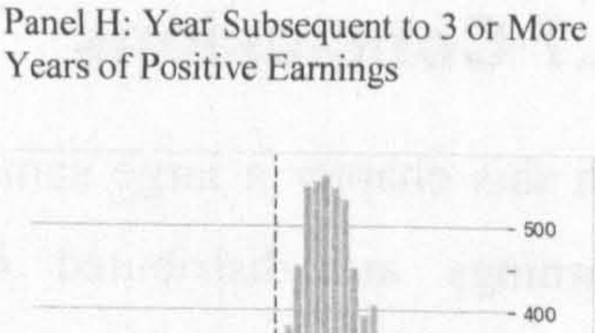


Fig. 6.14 Eight empirical distributions of earnings changes and earnings, scaled by beginning of the year total **assets** categorised according to the pattern of proceeding earnings for the firm. Panel A and E: The distribution of all observations for earnings changes and earnings, respectively, scaled by beginning of the year total assets; Panel B and F: the distribution for the years following an earnings decrease and a loss, respectively. Panels C and G the distribution for the years following exactly one or two years of earnings increases and positive earnings, respectively; and Panel D and H: the distribution for the years following three or more years of earnings increases and positive earnings, respectively.

Similarly, the lower of cost or market value for inventory results in prorating profits but immediate recognition of future losses. More specifically IAS 2 (par. 9) states that "Inventories shall be measured at the lower of cost and net realisable value" Net realisable value is the estimated selling price in the ordinary course of business less the estimated cost of completion and the estimated costs necessary to make the sale (IAS 2, par. 6). The effect of these asymmetric accounting treatments is to shift potential small loss firms to the left tail of the distribution and profitable firms to the small profit region. One of the limitations of this research is that no formal tests are provided for this explanation.

6.6.5 Financial Assets

The presence of financial assets on the balance sheet could contribute to a concentrated mass of small profit firms. Financial assets earn dividends or interests, neither of which can be negative. A company treating a financial asset as "held to maturity" can "lock" on a targeted income stream that remains unaffected from the market fluctuations, achieving a positive impact in the income statement. More specifically, IAS 39 (par. 9) defines "Held to maturity investments" as: "Non-derivative assets with fixed or determinable payments and fixed maturity that an entity has a positive intention and ability to hold to maturity". Regarding their measurement: "held to maturity investments as defined in paragraph 9, shall be measured at amortised cost using the effective interest method"

6.7 Conclusions

In this chapter a large sample of UK firm-years is studied and is documented that earnings are distributed discontinuously around basic thresholds while non-discretionary earnings are not. This chapter provides empirical evidence that earnings decreases and losses are frequently avoided thought earnings management. Evidence suggests a significant percentage of the companies with small pre-managed earnings decreases or losses exercise discretion to report earnings increases or profits. Moreover it is found that earnings management to avoid losses is more pervasive than earnings management to avoid earnings decreases. The results are robust to alternative methods of scaling earnings and various ways of subdividing the population. Examining earnings management to avoid losses, evidence suggests two components

of earnings: cash flow from operating activities and changes in working capital, are used to manage earnings.

Concentrating on discretionary accruals, evidence suggest that non-discretionary earnings are not distributed discontinuously around basic targets. It is reported that discretionary accruals have the effect of increasing the frequency of positive earnings levels and changes. This evidence confirms the hypothesis that discretionary accruals are used in managing earnings to achieve threshold. The specific manner in which firms use discretionary accruals should be considered when using them to proxy for earnings management. As firms may use discretionary accruals to reduce earnings in order to reduce the impact of a significant loss expected in the future.

Chapter 7

The characteristics of FRRP - investigated companies

7.1 Introduction

Chapter four discussed the organisation responsible for enforcing accounting standards in the UK being the Financial Reporting Review Panel (FRRP). It is responsible for reviewing apparent departures from the accounting requirements of the Companies Act or the IFRS and forcing remedial action where the financial statements in question appear to be defective. Prior research suggests that the FRRP is perceived to have a positive impact on the quality of financial reporting in the UK since it began operations in 1991 (Hines et al., 2001; Peasnell et al., 2004). Yet little work has been conducted on the characteristics of companies whose published financial statements have been concluded by the FRRP to be defective.

This chapter compares companies whose financial statements were publicly censured by the FRRP between January 1994 and December 2007 to a control sample of companies, matched by industry SIC code. The research findings can be summarised as follows: FRRP companies are characterised by significantly poorer performance during the period in which the defective financial statements were published. The comparative weak financial condition of FRRP firms is manifested in a number of ways. They have a higher frequency of losses and earnings decreases, they are more leveraged, with a higher frequency of dividend decreases and deteriorating return on assets. Further examination, however highlights that the performance difficulties experienced by the FRRP sample are largely concentrated at the defect year. Especially, their earnings performance is generally indistinguishable from that of the control sample in the years adjacent to the violation year.

This chapter also examines the characteristics of certain control mechanisms that companies might be expected to employ, to maintain the integrity of their financial statements. It is found that FRRP companies are significantly less likely to have a Big Four auditor and significantly more likely to have a new auditor at the defect year and more likely to pay higher audit fees that the control sample. There is also provided evidence that FRRP firms have weaker corporate governance structures, as reflected in a lower average proportion of non-executive directors.

The results of this chapter confirm many of the findings from the growing number of US studies that examine the characteristics of firms found to have issued defective financial statements. This is despite some important differences between the characteristics of the examined sample of UK companies and those that feature in US studies of poor or defective accounting. For example, the cases examined by Beasley (1996) and Agrawal et al. (1999) deal with instances of outright fraudulent financial reporting. The companies in most of the US studies tend to be small IPOs that have adopted aggressive earnings recognition methods. In the UK, companies engaging in fraudulent reporting would regularly fall within the scope of the Theft Act 1978 and Fraud Act 2006 and as such would not be the responsibility of the FRRP. Additionally, the average size of the companies in the FRRP sample is much larger than those in the US studies – the FRRP has censured some of the country's major companies (e.g. British Gas plc) – and accounting defects are generally less serious.

The remainder of the chapter is organised as follows. The next section provides further details of the FRRP and the financial reporting environment in which it operates. Section 3 presents the motivation and research questions. Section 4 describes the sample of FRRP cases and provides details of the research design. Section 5 provides a comparison of the characteristics of the FRRP and control samples while Section 6 explores a multivariate test. Section 7 summarises the main findings and discusses their implications.

7.2 Institutional Background

During the late 1980s and early 1990s a series of high profile accounting scandals and unexpected corporate failures raised concerns about the integrity of UK financial reporting and the effectiveness of accounting regulation (Shah, 1996; Smith, 1992). In the absence of a formal mechanism for enforcing accounting standards, creative accounting was perceived to be commonplace (Shah, 1996; Tweedie and Whittington, 1990) and while auditors, analysts, and the popular press partially constrained such activity, their impact appeared to be weak and inconsistent (Shah, 1998)

Chapter four discussed how the FRRP started operating in 1991 as part of a fundamentally restructured accounting standards-setting system[39]. The FRRP is an

[39] This restructured system saw the body previously charged with developing accounting standards, the Accounting Standards Committee, replaced by the Financial Reporting Council and its subsidiary bodies, the Accounting Standards Board, the Urgent Issues Task Force, and the FRRP. In addition, company law was also amended to give accounting standards statutory recognition for the first time.

enforcement agency whose role is to examine material departures from the accounting requirements of the Companies Act 1985 and IFRS. Its jurisdiction is restricted to companies' annual reports and its remit encompasses all public limited and large private companies. The agency recently adopted a proactive approach to the detection of defective financial reporting in the sense that it routinely scrutinises company reports falling within its remit. It also relies on complaints made by third parties and the public, to identify cases of defective accounting. The three primary sources of complaint that trigger an investigation are (i) a qualified audit report or disclosed non-compliance with accounting standards or other requirements, (ii) referral by an individual or a corporate body, and (iii) press comment. The FRRP never reveals the identity of the complainant, or in what context the complaint was made. The Panel's investigations may address not only the original subject of the complaint but also any additional financial reporting issues that come to light during the review process.

In the event that the FRRP deems the accounting treatment under question not to be justified on the grounds of providing a true and fair view, remedial action is required. This usually takes the form of either a revision or retrospective restatement of the published figures. In attempting to resolve cases requiring remedial action, the FRRP first seeks to persuade the company in question to voluntarily accept the decision and implement the required corrective action. Failing that, the FRRP has the legal power to apply to the court of an order requiring the financial statements to be restated. In the event that the court upholds such a request, all legal costs, together with any reasonable expenses incurred by the firm in revising its accounts, must be borne by the directors who approved the defective statements (Companies Act 1989).

In all cases to date, a voluntary solution has been agreed, although preparations for an application to the court have been at an advanced stage on several occasions. At the conclusion of a case where remedial action has been taken, the FRRP normally issues a public statement providing details of the cases and the method of resolution. In addition to simply reporting the details of a case, these public statements also play a wider role by providing information and guidance on contentious accounting treatments, often with the objective of deterring others (McBarnet and Whelan, 1999). For those firms investigated by the FRRP but against which no action is brought, neither the details of cases nor the identity of firms are publicly disclosed. The set off adverse public rulings issued by the FRRP therefore represents the only observable output of the whole process.

As discussed in Chapter four, the way the FRRP identifies firms for investigation is similar to the approach adopted in the US by Securities and Exchanges Commission (Feroz et al., 1991). However, the FRRP has fewer resources than the SEC and is therefore probably even more reliant on complaints from third parties, with the subsequent biases this involves[40] (Peasnell et al., 1991). Additionally, it is possible that considerations outside the scope of financial reporting influence the likelihood of an adverse ruling by the FRRP. For example, some academics have suggested that company size is an important consideration in the FRRP's decision to issue an adverse ruling because smaller companies represent 'softer' targets, in the sense that they are less likely to challenge the FRRP's decision (Brandt et al., 1997). On the other hand, the FRRP has also been accused of preferring to target large, high profile companies to enhance external perceptions of its work (Hines et al., 2001). The FRRP has always been keen to promote the notion that its decision making process to issue an adverse ruling is based merely on defective accounting practice.

7.3 Motivation and research questions

7.3.1 Motivation

The majority of the current research on the FRRP directly examines its procedures and activities as a means of assessing its effectiveness as an enforcement mechanism and its resulting impact on the quality of UK financial reporting (Fearnley et al., 2000; Hines et al., 2001; Brandt et al., 1997). In contrast, this chapter adopts a different perspective as it focuses on the outputs of the process (i.e. the set of firms censured by the Panel). Firms censured by the Panel are interesting for several reasons. First, an examination of censured firms may help to shed light on the drivers of low accounting quality. In the same way, Beneish (1999), Dechow et al., (1996), and Beasley (1996) use firms subject to SEC Enforcement Actions to investigate why and how US managers manipulate earnings. Publicly censured companies represent exogenously determined examples of poor accounting and as such help to overcome the measurement problems that confound other more commonly used earnings management proxies (i.e. discretionary accruals).

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[40] One of the major problems of reliance on complaints is that the motivation of the "whistle blower" may be other than the simple desire to promote good accounting. For example, Butte Mining (press notice #43) was referred to the FRRP by Roberson Group who held a 4% stake in Butte at the time but Butte were pursuing over a claim for £100m. McBarnet and Whelan (1999) point out that another common situation producing referrals is a contested takeover.

Companies censured by the FRRP are also interesting because they represent the only visible aspect of the enforcement process in the UK. Evidence on the characteristics of companies subject to adverse ruling may also provide a source of information about the way accounting standards are enforced in the UK. It should be recognised that this aspect of enforcement process also limits the inferences that can be formed from studying such companies. Especially, these unobservable aspects of the FRRP's operations create potential selection biases, the result of which is that the censured companies may not be representative of the population of defective reporters. Similar research of SEC Enforcement Action companies faces identical issues. Accordingly, while systematic differences between censured and non censured firms are expected to be observed, the extent to which those differences reflect the causes of low accounting quality, as opposed to the procedures of the censorship decision or the probability of referral, remain an open question.

7.3.2 Research Questions

Prior research has identified a number of causes that create motives for directors to manipulate and violate the GAAP. These include poor performance (Degeorge et al., 1999; Burgtahler and Dichev, 1997), high leverage (Watts and Zimmerman, 1986) and the desire to raise equity finance at low cost (Dechow et al., 1996). For the purpose of this research, these factors are labelled 'financial motives' and is predicted that they will be positively associated with the incidence of defective financial reporting. It is also predicted that these factors could also capture the increased probability of triggering a FRRP investigation. Especially, the financial statements of poorly performing companies, highly geared companies and companies seeking to raise equity from the capital markets are likely to have been subject to greater scrutiny by external parties, thereby increasing the probability that a specific reporting defect will be drawn to the FRRP's attention.

Academic research (Fama and Jensen, 1983; Jensen, 1993) and policy initiatives (Cadbury Report, 1992, Greenbury Report, 1995) emphasise the importance of effective corporate governance for ensuring directors' accountability to shareholders. Dechow et al., (1996) and Beasley (1996) present evidence that firms violating US GAAP tend to have weak corporate governance structures. It is therefore predicted that FRRP censure will be positively related to weak corporate governance

structures. Similar to Dechow et al., (1996), the following governance mechanisms are examined:

(i) Boards: Management is monitored by the board. Financial statements are significant tools in the monitoring process and their integrity is the responsibility of the board. Jensen (1993) argues that large boards are less likely to monitor management effectively and are easier for the CEO to control. Both Yermack (1996) for the US and Conyon and Peck (1998) for the UK present evidence consistent with the view that larger boards are less effective monitors of directors. It is therefore predicted that FRRP companies will be more likely to have larger boards. Outside directors (non-executive directors) are hypothesised to be key agents in the monitoring process (Fama and Jensen, 1985). Consistent with this hypothesis, Peasnell et al., (2001 and 2000) report a significant association between board composition and within-GAAP accruals management (earnings management) for UK companies. Thus, it is predicted that FRRP companies will have a lower proportion of outside directors. Finally, in addition to these measures of board quality, directors' remuneration is tested. This analysis is motivated by recent debates in the directors' remuneration domain (Conyon et al., 2006) concerning the possible link between directors' compensation and motivation for violating GAAP. However, given their uncertain relationship with director quality, there is offered no explicit prediction for this variable.

(ii) Auditing: The role of the audit is to assure the true and fair view of the financial statements. FRRP censure is *prima facie* evidence of defective financial reporting and therefore audit failure. Reputation considerations suggest that Big Four auditors may have more to lose from being associated with poor auditing (Lennox, 1999). Other things being equal, good audits also cost more (Craswell et al., 1995). It is therefore predicted that FRRP firms are more likely to be audited by a non Big Four firm and to switch auditor in the period surrounding the defect year either because of director-auditor disagreements over the accounting issue in question, or because of the perceived failure of the auditor to defend the agreed and reporting decision.

For the purpose of this research, these factors are referred to as 'governance constraints'.

The empirical analysis described in the next sections aims to test the following hypotheses, as stated in chapter three:

H_8: FRRP companies are characterised by deteriorating performance in the defect year.

H_9: Corporate governance in FRRP companies is of a lower quality comparing to the control sample.

H_{10}: The financial variables described in M-Score model are correlated with the likelihood of earnings manipulation.

7.4 Sample and research design

Based on a review of the earnings management literature, there are identified seven models that are commonly used to capture earnings management (Dechow et al. 1995; McNichols 2000; and Kothari et al. 2005). The models examined are described below:

Jones Model

$$TA_{it} = \beta_o + \beta_1(1/AT_{it-1}) + \beta_2\Delta REV_{it} + \beta_3 PPE_{it} + \varepsilon_{it} \quad (1)$$

TA_{it} is total accruals estimated as the difference between income and operating cash flows for year t; AT_{it-1} is assets at the beginning of the year; ΔREV_{it} is the change in sales from year t-1 to t; and PPE is gross property plant and equipment. In model (1) TA, ΔREV and PPE are scaled by AT_{it-1}.

Modified Jones Model

Following Dechow et al. (1995), the modified Jones model is estimated as follows:

$$TA_{it} = \beta_o + \beta_1(1/AT_{it-1}) + \beta_2 (\Delta REV_{it} - \Delta AR_{it}) + \beta_3 PPE_{it} + \varepsilon_{it} \quad (2)$$

ΔAR is the change in accounts receivable from year t-1 to t and other variables are the same as defined before. Dechow et al. (1995) point out that the Jones (1991) model implicitly assumes that discretion is not exercised over revenue in either in the estimation period or the event period. The modified Jones model assumes that all changes in credit sales in the event period are due to earnings management.

Modified Jones Model with Boot-to-Market Ratio and Cash Flows

Larcker and Richardson (2004) add the book-to-market ratio (BM) and operating cashlfows (CFO) to model (2) to mitigate measurement error associated with the discretionary accruals. BM controls for expected growth in operations and if left uncontrolled, growth will be picked up as discretionary accruals. CFO controls for

current operating performance. Controlling for performance is important because Dechow et al. (1995) find that discretionary accruals are likely to be misspecified for firms with extreme levels of performance. Larker and Richardson (2004) note that their model is superior to the modified Jones model in several ways: it has a far greater explanatory power, it identifies discretionary accruals that are associated with lower future earnings and lower future stock returns, and the estimated discretionary accruals detect earnings management identified in SEC enforcement actions.

$$TA_{it} = \beta_o + \beta_1(1/AT_{it-1}) + \beta_2 (\Delta REV_{it} - \Delta AR_{it}) + \beta_3 PPE_{it} + \beta_4 BM_{it} + \beta_5 CFO_{it} + \varepsilon_{it} \quad (3)$$

Where BM equals to book value of common equity over the market value of common equity and CFO is operating cash flows over AT_{t-1}. Other variables are the same as defined before.

Modified Jones Model with ROA

Kothari et al. (2005) argue that accruals of firms that have experienced unusual performance are expected to be systematically non-zero, and therefore, firm performance is correlated with accruals. Kothari et al. (2005) examine two ways to control for performance in estimating discretionary accruals. A performance variable such as ROA could be included as an additional independent variable in the discretionary accrual regression. Alternatively, performance matched discretionary accruals can be calculated by first matching the firm-year observation of the treatment firm with the firm-year observation for the control firm from the same two-digit SIC code and the year with the closest ROA in the current year or the prior year and then subtracting the control firm's discretionary accruals from the treatment firm's discretionary accruals. Kothari et al. (2005) find that matching based on the current year ROA performs better that matching on the prior year ROA and this performance-matched approach is superior to including a performance variable in the discretionary accruals regression.

Following Kothari et al. (2005), Jones et al. (2007), develop a measure of discretionary accruals to control for performance. Model (4) includes current year ROA, where ROA_t is income for year t over AT_{it-1}.

$$TA_{it} = \beta_o + \beta_1(1/AT_{it-1}) + \beta_2 (\Delta REV_{it} - \Delta AR_{it}) + \beta_3 PPE_{it} + \beta_4 ROA_{it} + \varepsilon_{it} \quad (4)$$

Measures of Accrual Quality

The next model is Dechow and Dichev's (2002) model of accrual estimation errors. Dechow and Dichev estimate the following firm-level time-series regression to derive a measure of working capital accrual quality:

$$\Delta WC_{it} = \beta_o + \beta_1 CFO_{it-1} + \beta_2 CFO_{it} + \beta_3 CFO_{it+1} + \varepsilon_{it} \quad (5)$$

ΔWC is the change in working capital from year t-1 to year t. All variables in model (5) are deflated by beginning total assets. Dechow and Dichev (2002) use the standard deviation of the residuals from model (5) as a firm-specific measure of accrual quality. Dechow and Dichev require at least eight years of data to estimate model (5).

McNichols (2002) presents evidence that model (5) can be enhanced by including ΔREV and PPE. The variables in the model are scaled by beginning total assets:

$$\Delta WC_{it} = \beta_o + \beta_1 CFO_{it-1} + \beta_2 CFO_{it} + \beta_3 CFO_{it+1} + \beta_4 \Delta REV_{it} + \beta_5 PPE_{it} + \varepsilon_{it} \quad (6)$$

Margin Model

Peasnell et al. (2000) test the standard-Jones (Jones. 1991) and modified-Jones (Dechow el al.. 1995) models in the UK setting; they also develop and test a new specification, labelled the 'margin model". The model is specified as follows:

$$WCA_{it} = \beta_o + \beta_1 REV_{it} + \beta_2 CR_{it} + \varepsilon_{it} \quad (7)$$

REV is total sales, CR is total sales minus the change in trade debtors and WCA is working capital accruals. The β_1 coefficient represents an estimate of the sales margin and is predicted to be positive, while the β_2 coefficient represents an estimate of the cash margin and is predicted to be negative. Regarding their relative performance, the standard-Jones and modified-Jones models are found to be more powerful for revenue and bad debt manipulations. In contrast, the margin model appears to be more powerful at detecting non-bad debt expense manipulations (Peasnell et al., 2000).

In this thesis discretionary accruals are estimated using Jones (1991) model rather than available alternatives, guided by Peasnell et al. (2000b). They evaluate the specification and power of alternative methods of estimating DACC using U.K. data. The results they report suggest that, on the whole, alternative models currently available are not superior to the Jones (1991) model in terms of ability to detect plausible levels of earnings management. The measure of WCA and the DACC estimation technique in this thesis closely resemble those used by Peasnell et al. (2000b).

The process used to identify the sample of FRRP adverse rulings is summarised in Table 7.1. From 1994 to 2007 FRRP investigated 871 cases, of which 581 (67%) were pursued beyond an initial investigation. From those cases pursued beyond an initial investigation, 108 (12%) were publicly censured for issuing

defective financial statements. Two further cases (First Choice Holidays plc and Isoft plc), while not the subject of a press statement, was discussed in the 1995 and 2006 Progress Reports and are therefore included in the population of adverse rulings. Of the remaining cases 338 were judged not to have been defective, while 9 were outstanding pending further investigation. These cases represent the starting point for the sample of defective annual reports. Five cases are not included in this initial population because they relate to private companies, for which the necessary data (including the matched control companies) could not be gathered, resulting in a final sample of 98 defective rulings issued against 92 companies. 89 companies received a single adverse ruling while 3 received two separate adverse rulings for unrelated matters[41].

The 98 public statements report 203 separate financial reporting issues in total. In only 21 cases (21%) were the defective statements accompanied by a qualified audit report, 3 of which are for reasons other than those investigated by the FRRP[42]. Many of the defects relate to the introduction of new accounting standards[43] . The defective accounting treatments impacted directly on reported earnings or equity in 93 cases (95%). In the majority of theses cases, the defective accounting treatment had a positive impact on earnings, increasing profits. The remaining 5 cases related to disclosure and classification issues. Remedial action was agreed in 91 cases, in the most cases was in the form of correcting the defect retrospectively in the subsequent year's accounts by restating comparatives or improving disclosure.

The companies discovered to manipulate earnings were matched with a control sample by industry code. Since earnings management literature suggests that industry membership is reported to influence the likelihood of earnings management (Stice, 1991), earnings manipulators were matched with control companies based on their SIC code. Focusing in industries with increased risk of financial reporting

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[41] The four companies with two adverse rulings are: Foreign and Colonial Investment Trust plc, Butte Mining plc, Associated Nursing Services plc and Stratagem plc. In the subsequent tests, adverse rulings for the same company are treated as independent events. In additional tests, all analyses are repeated restricting the sample to a single adverse ruling per company. Results bases on this restricted sample were not materially different from those reported using the full sample and are therefore not reported.

[42] In the cases where a defect is identified that is not referred to the auditors' report, the FRRP must also report the case to the audit firm's regulatory body (usually the Institute of Chartered Accountants in England and Wales), which may then take disciplinary action against the auditor. The ICAEW disciplines auditors involved in FRRP cases (Fearnley et al., 2000).

[43] For example, three cases associated with the reporting of cash flow statements followed soon after the introduction of FRS 1, two cases of non-consolidation of subsidiaries followed the redefinition of subsidiaries in FRS 2, and five cases dealing with the analysis of shareholders' funds followed the introduction of FRS 4.

misstatement is an approach applied in both US and UK earnings management research. In the US Bonner et al. (1998), Summer and Sweeney (1998), Kothari et al. (2005), Bartov et al. (2001) investigate the characteristics of companies engaging into earnings manipulation, comparing them to an industry matched sample. In the UK Peasnell et al. (2000) investigate earnings manipulation in the UK comparing a sample of manipulators, to a control sample matched by industry. Athanasakou et al. (2007, 2010) explore earnings management in the UK applying a similar approach, investigating earnings management in cross sectional samples, matched by industry type.

Table 7.1

Cases referred to the Panel and subsequent action taken by the FRRP in relation to the financial reports of UK companies with financial year-end beginning or after 1994

	Financial Reporting Review Council Progress Report Date														
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
Outstanding at beginning of year	11	14	15	13	5	7	8	7	6	7	8	9	9	10	
Drawn to attention of FRRP during the year	46	43	49	24	32	35	45	49	58	63	72	75	76	75	
Available for consideration	57	57	64	37	37	42	53	56	64	70	80	84	85	85	871
Less															
Not pursued	14	23	24	11	15	17	16	18	14	19	20	21	45	33	-290
Pursued beyond initial inspection															581
Action taken:															
Judged not to be defective	23	14	19	16	8	8	21	21	28	30	48	44	22	36	338
Judged defective (public statement issued)	6	4	8	5	7	9	9	11	15	13	7	5	5	4	108
Judged defective (no public statement issued)	0	1	0	0	0	0	0	0	0	0	0	2	3	3	9
Outstanding at year end	14	15	13	5	7	8	7	6	7	8	5	12	10	9	
Total cases judged defective at															
Less															
Not listed (Private Companies)	2	1	1	1		1									-6
Companies with missing data	4														-4
															98

Final sample: Data were obtained from the "Progress Reports" published by the Financial Reporting Review Council

In only 7 of the cases was the company required to issue statements to their shareholders, restating their current year accounts. Table 7.2 reports the distribution of adverse rulings by industry classification and calendar year. Results reported in Panel A provide no evidence of any significant industry clustering, with 29 Datastream level-6 industry groups represented in the final sample, General Engineering has the highest number of adverse rulings with 9 cases followed by Industrial Components with 8 cases. The lack of any specific industry patterns among censured firms contrasts with the sample of SEC Enforcement Actions examined by Dechow et al. (1996) and Beneish (1999). In those US studies, sample companies tend to cluster in certain industries (e.g. electronics, computing and financial services). These differences may be driven by the SEC's proactive focus on recognition issues that offer significant opportunities for earnings management (Dechow et al., 1995).

Panel B of Table 7.2 presents the frequency of defective financial statements across time. The earliest balance sheet date in the FRRP sample is 31 December 1992 and the latest is 30 June 2007. Except for 2001 with 11 defective reports (11%), there is little evidence of any substantial accumulation of events in calendar time, although there is some slight suggestion that the number of cases may have fallen in recent years.[44] In the subsequent sections, the period covered by the defective financial statements is referred to as 'defect year ()'.

Consistent with the approach used by Dechow et al., (1996) and Leuz et al., (2008) to study the characteristics of firms subject to SEC Enforcement Actions, a similar research design is applied; using a control sample matched by the four digit SIC code. The 98 FRRP cases in the final sample are matched with a control sample of 3,691 observations. Results presented in Table 7.3 indicate that the matching procedure has been successful in identifying control companies of similar characteristics. FRRP companies have medial total assets of £546m, compared with £745 for the control sample. A paired-Wilcoxon test fails to reject the null hypothesis that these values differ. Results presented in Table 7.3 also indicate that equity of the two samples does not differ significantly: median equity for the FRRP sample is 260m, compared with 328m for the control sample. Overall, FRRP companies appear

[44] The higher frequency of adverse rulings in 2001 is consistent with the hypotheses that the Panel was especially keen to establish its authority as an effective enforcement mechanism during the early part of its operation (Styles, 1999).

Table 7.2

Size, time and industry characteristics for a sample of 98 cases subject to adverse rulings by the FRRP.

Panel A: FRRP companies by Datastream 6 industry classification

Code	*Name*	*Observations*	*Code*	*Name*	*Observations*
AERSP	Aerospace	2	LEISR	Leisure facilities	5
BANKS	Banks	1	MEDPD	Medical prod. & suppl.	3
BMERC	Builders merchants	3	MIFIN	Mining	1
BRCAS	Broadcasting	1	MINES	other mining	1
BUSUP	Business support	3	OILIN	Oil, integrated	1
CHAIN	Chain stores	5	OTHBM	Other building materials	3
DCOMP	Industrial components	8	OTHCN	Other constructions	4
DIVIN	Diversified industrials	6	PAPER	Paper & packaging	4
ELETR	Electronic equipment	3	RLDEV	Property	6
ENGIN	General engineering	9	PUBLS	Publishing	4
FDPRD	Food producers	3	TELCM	Telecommunications	3
HOSPM	Hospital management	4	TEXOT	Textiles & leather goods	2
HOTEL	Hotel	3	WASTE	Waste control	1
INSNL	Insurance (non-life)	4	WINES	Spirits, wines & ciders	2
INVTR	Investment trusts	3	**Total**		98

Panel B: Calendar year of defective annual report

Year	Number of cases	Year	Number of cases
1994	7	2001	11
1995	6	2002	10
1996	3	2003	9
1997	5	2004	8
1998	2	2005	6
1999	8	2006	5
2000	7	2007	2
2001	9	**Total**	98

Table 7.3
Company financial characteristics, measured at beginning of defect year. The sample of the "manipulators" is compared against the control sample.

	£'000s				£'000s		
	FRRP (n=98)	Control (n=3,691)			FRRP (n=98)	Control (n=3,691)	
Variable	Median (Mean)	Median (Mean)	p-value	Variable	Median (Mean)	Median (Mean)	p-value
Total assets employed	546,454 (63,417)	744,658 (20,723)	0.224 0.315	Plant and Vehicles	11,197 (1,534)	19,955 (58)	0.115 0.004
Revenue	242,461 (13,512)	381,980 (47,315)	0.152 0.104	Total Current Assets	235,666 (26,161)	364,475 (7,265)	0.281 0.162
Cost of Revenue	118,749 (4,367)	200,136 (8,927)	0.070 0.041	Inventory	51,150 (972)	6,985 (52)	0.005 0.003
Sell. Gen. Admin Expenses	145,272 (7,391)	169,490 (15,556)	0.007 0.003	Trade Debtors	57,842 (4,889)	36,171 (1,300)	0.025 0.013
Dividend expense	7,917 (0)	9,866 (447)	0.153 0.125	Equity	259,749 (25,709)	328,397 (9,153)	0.348 0.256
Tax liability	7,746 (463)	3,255 (0)	0.002 0.001	Long term debt	439,469 (802)	112,937 (1,594)	0.262 0.017
Cashflow from operations	1,072 (2)	22,173 (2,557)	0.000 0.001	Current Liabilities	158,359 (6,645)	139,846 (19,193)	0.002 0.012
Depreciation Expense	11,327 (747)	14,037 (360)	0.027 0.021	Audit Fees	1,801 (45)	880 (75)	0.039 0.091
Profit after tax	1,027 (1,340)	30,307 (1,269)	0.000 0.013	Non Audit Fees	266 (20)	609 (25)	0.145 0.132
EBITDA	17,576 (2,918)	18,937 (1,201)	0.413 0.318	Directors Remuneration	12,030 (718)	11,620 (427)	0.000 0.002
Land and Buildings	71,881 (63)	921,187 (952)	0.004 0.002	Cash & Cash equivalents	35,996 (980)	76,800 (4,518)	0.000 0.001
				N	98	3,691	

A paired t-Wilcoxon test is used to evaluate the difference in means (medians) for the financial variables examined.

Five years of data beginning one year prior to and ending three years after the defect year were collected for the companies in each of the FRRP and control samples. The primary data source was FAME, supplemented by information from DataStream.

Table 7.4 reports the frequency of various types of GAAP violation. There were 98 instances of UK GAAP and IFRS violation identified for 92 companies. The most frequent type was the failure to comply with the revenue realisation principle (9 cases). Examples of revenue recording violations include creating false invoices, keeping the books open past the end of the accounting period, and recognising revenues before products were completed, shipped or contracts signed. The matching principle was also violated, by recording fictitious inventory, failing to write off or provide for impaired assets and capitalising expenses. Examples include the overstatement of inventory via double counting, treating non-existent inventory as in transit, failure to write off uncollectible debtors or obsolete inventory, and capitalising research costs.

Table 7.4
Type and Effect of GAAP Violation in the sample of 98 true and fair view Violators

Panel A: Type of Violation

	Number of companies
Revenue principle	
Recording fictitious revenue	7
Recording unearned or unrealisable revenue	6
Failing to book sales returns	7
Improperly using the percentage of completion method	6
Reporting on-time gains as ordinary income	4
Matching principle	
Recording fictitious inventory	7
Failure to write off uncollectibles and obsolete inventory	8
Capitalisation of marketing and R&D costs	6
Understating liabilities	5
Understating expenses	6
Other	
Reporting non-existing assets	8
Fraudulent scheme involving lease transactions	5
No disclosure of transactions with directors	6
Misleading reporting of inter-company transactions	6
Failure to provide for known warranty expenses	5
Failure to warn of contingent liabilities	4
Misclassification of financial assets held to maturity	2
Total	**98**

7.5 The characteristics of censured firms

7.5.1 Univariate analysis

7.5.1.1 Financial motives

Firstly, it is examined the profitability of the FRRP and control samples is analysed over the period surrounding the defect year. Panel A of Figure 7.1 reports median earnings levels from year -1 to year +3, while Panel B reports median earnings changes. Two graphs are presented in each Panel, one using the original reported earnings for the FRRP sample and the other using the year 0 restated figures for the FRRP sample.[45] The control sample series are the same for both graphs in each Panel. Both level and change specifications are scaled by beginning of period book value of shareholders' equity. A steep decline in both the level and change in earnings is clearly evident for the FRRP sample in the defect year, using either the published or the restated earnings figures. Additional examination of Panels A and B reveals that the performance issues experienced by the FRRPP sample appear to be largely confined to the defect year; their performance is similar to that of the control sample in years -1, +1 and +2 As such, their poor profitability appears to be related to short-term difficulties than any inherent long-term weaknesses. Furthermore, as the decline is evident for the as-published series in Panel A, it suggests that any efforts by directors of FRRP companies to use GAAP violations as a means of masking their company's deteriorating profitability were not successful.

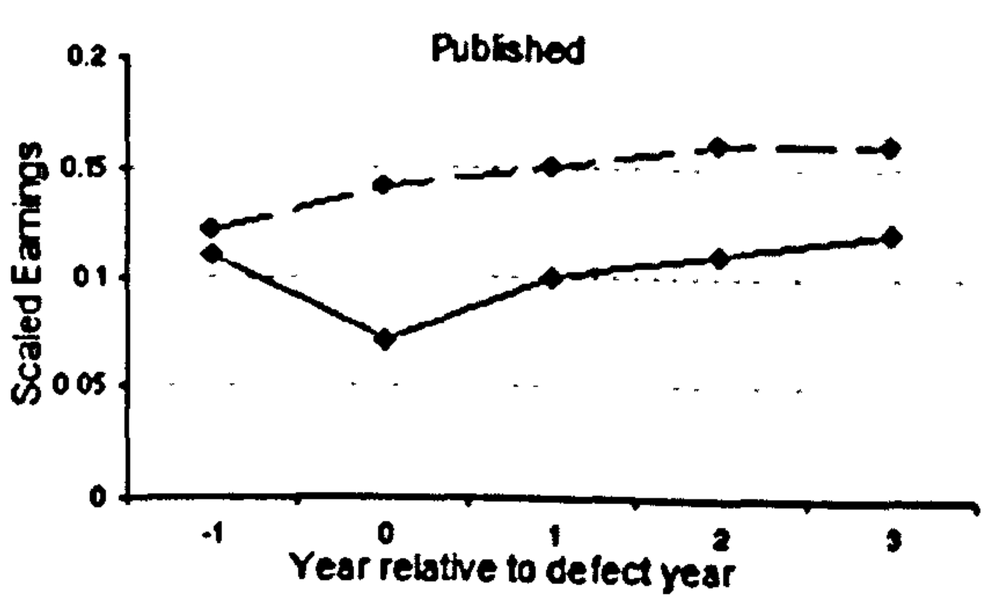
[45] The restated figures are obtained from the revised accounts and the retrospectively restated comparative figures presented in firms annual reports in year +1.

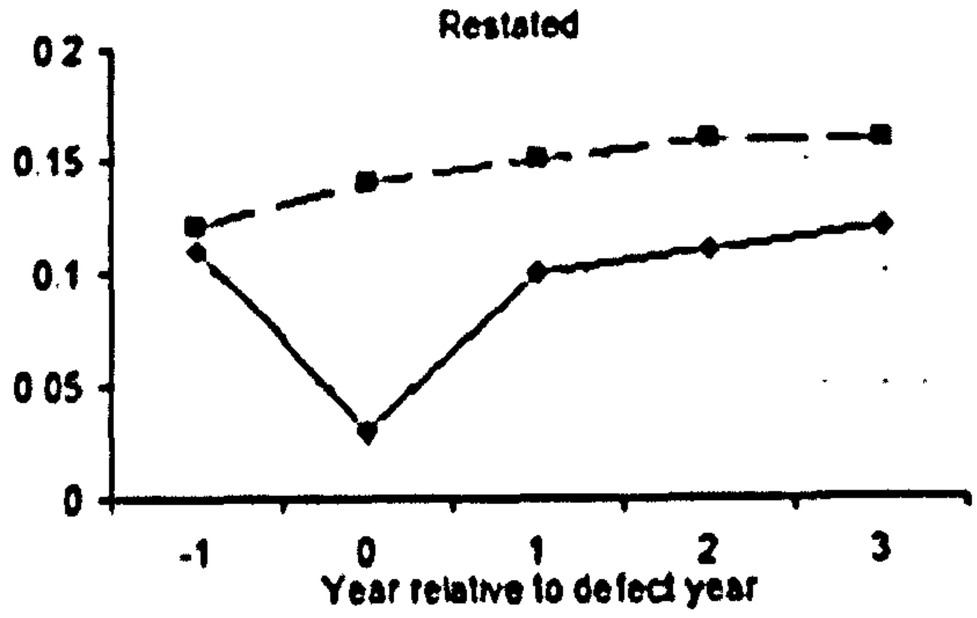
Figure 7.1

Median level and change in reported earnings, scaled by beginning of year equity, for the FRRP and control samples. Separate plots are presented using the Profit after tax, before and after the violation (restated figures in year 0 and published in years -1, +1,+2, +3) for the FRRP sample. The FRRP companies are matched with a control sample on the basis of their 4 digit SIC code. The solid line represents the FRRP sample and the broken line represents the control sample.

Panel A: Earnings Levels

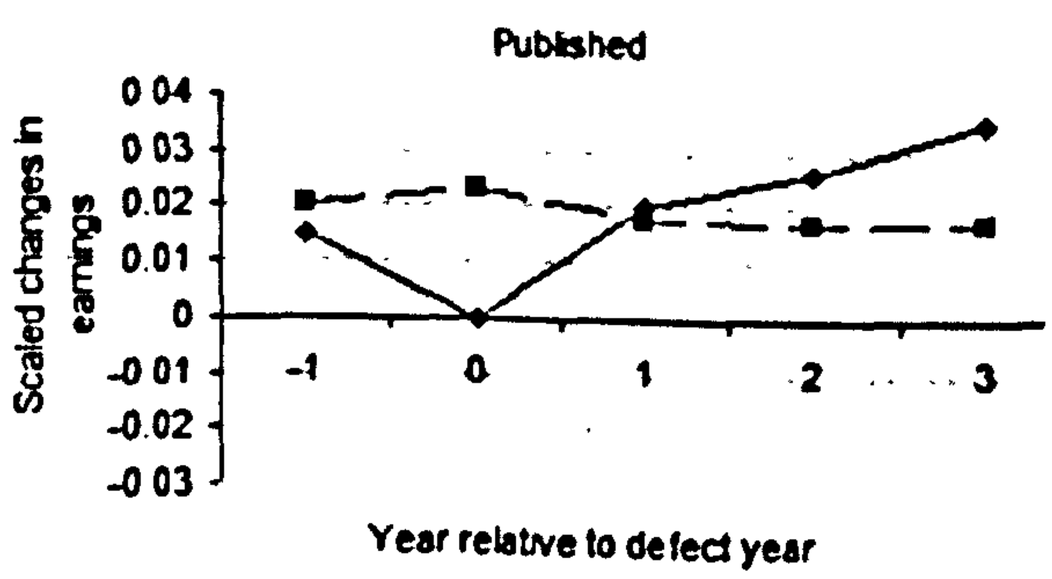
The solid (broken) line is the FRRP (Control) sample





Panel B: Earnings Changes

The solid (broken) line is the FRRP (Control) sample



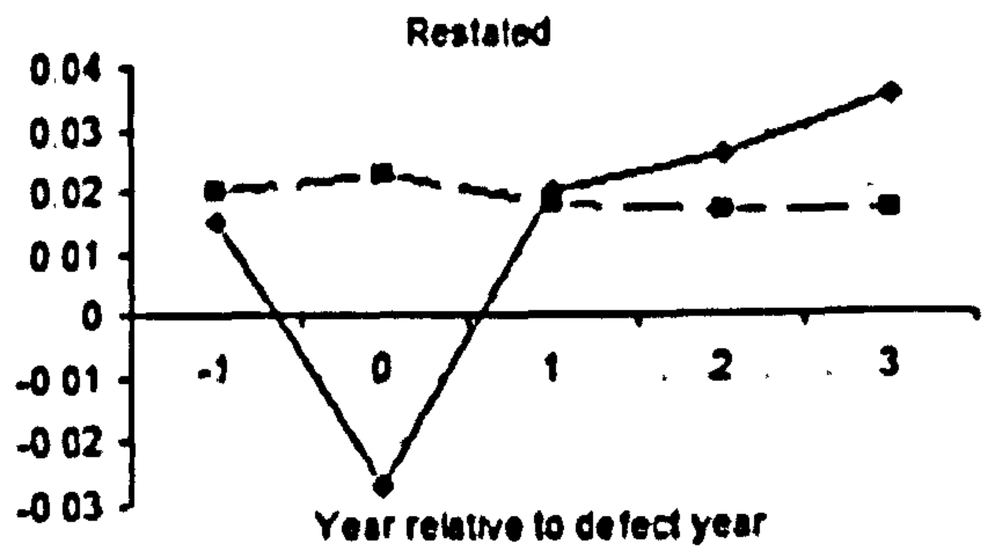


Table 7.5

Financial performance for FRRP and control samples. FRRP companies are matched with a control sample on the basis of their 4 digit SIC categorisation.

	Year relative to defect year								
	Year-1			Year 0			Year 1		
Variable	FRRP	Control	p-value	FRRP	Control	p-value	FRRP	Control	p-value
N	98	3,691		98	3,691		98	3,691	
Panel A: Earnings performance									
Earnings (published)									
Mean	0.094	0.215	0.094	0.019	0.041	0.098	0.46	0.023	0.068
Median	0.113	0.127	0.515	0.021	0.061	0.081	0.072	0.028	0.075
Earnings (restated)									
Mean	n.a.	n.a.	n.a.	0.005	0.041	0.071	n.a.	n.a.	n.a.
Median	n.a.	n.a.	n.a.	0.051	0.061	0.063	n.a.	n.a.	n.a.
Δearnings (published)									
Mean	0.027	0.039	0.292	0.017	0.003	0.315	0.028	0.011	0.083
Median	0.011	0.015	0.214	0.000	0.006	0.047	0.018	0.017	0.095
Panel B: Earnings relative to targets									
Earnings (published) ≤ 0 (%)	21.20	12.78	0.438	26.41	10.78	0.023	24.51	12.85	0.31
Earnings (restated) ≤ 0 (%)	n.a.	n.a.	n.a.	32.40	10.78	0.006	n.a.	n.a.	n.a.
ΔEarnings (published) ≤0 (%)	52.15	28.42	0.012	51.32	30.12	0.015	51.46	29.15	0.27
ΔEarnings (restated) ≤ 0 (%)	n.a.	n.a.	n.a.	55.21	30.12	0.004	n.a.	n.a.	n.a.
Panel C: Additional characteristics									
Dividend increase = 1 (%)									
Leverage									
Mean	0.824	0.695	0.015	0.727	0.582	0.082	0.764	0.724	0.086
Median	0.718	0.615	0.012	0.612	0.488	0.094	0.687	0.685	0.091
Operating cash flows									
Mean	0.002	0.035	0.092	0.001	0.041	0.129	0.012	0.041	0.072
Median	0.000	0.030	0.081	0.000	0.040	0.081	0.011	0.039	0.068

Probability values relate to one-tailed tests. Difference in means (medians) are assessed using a paired t test (Wilcoxon). Difference in sample proportions are assessed using a Chi-square test.
Earnings (Δearnings) are scaled by shareholders' equity measured at the beginning of the period

Two earnings targets are explored: avoid reporting a) a loss (Earnings ≥ 0 and b) an earnings decrease (ΔEarnings ≥ 0)).

Panel A of Table 7.5 reports scaled earnings levels and changes for the FRRP and control samples in years -1, 0 and +1. Mean (median) scaled earnings for the FRRP sample in year 0 are 0.019 (0.021) using the published figures and 0.005 (0.051) using restated data, compared with 0.041 (0.061) for the control sample. Similarly, the FRRP sample also displays lower earnings changes using both the published and restated data, although only the median differences are significant. In contrast, there is little evidence that earnings levels and changes for the FRRP sample differ from the control sample in year -1. Overall the earnings patterns reported for the FRRP sample in figure 7.1 and Panel A of Table 7.5 imply that they are more likely to experience weaker earnings performance in the defect year. In general, though, these companies appear average performers experiencing a temporary drop in reported performance as opposed to persistent underperformance.

Evidence presented by Degeorge et al. (1999) and Burgstahler and Dichev (1997) suggests that consideration of thresholds such as zero levels and zero changes in earnings may be important in the context of poor performance and low quality accounting. First, these thresholds provide a simple heuristic procedure for discriminating between 'good' and 'bad' performers. Secondly, the likelihood of failing to achieve these thresholds may be associated with the incidence of GAAP violations. Specifically, not achieving theses targets may impose significant costs on directors (e.g. lower compensation, increased scrutiny from external shareholders and lenders and a higher probability of dismissal), thus motivating them to manage earnings in an effort avoid such costs (Degeorge et al., 1999).

Panel B of Table 7.5 reports evidence on the frequency of losses and earnings decreases for the FRRP and control samples. Results suggest that FRRP companies are characterised by a higher frequency of losses and earnings decreases in the defect year. Specifically, while only 11% of companies in the control sample report losses in the defect year, the equivalent figure for the FRRP sample is 26% using the published data and 32% using the restated data. In both cases the differences are significant at the 0.05 level. Similarly, 51% of the FRRP sample report a decline in earnings in the defect year (55% using the restated data) compared with only 30% of the control sample. These differences are again significant at the 0.05 level. Results therefore suggest that FRRP companies are in fact characterised by poor performance in the defect year when earnings are benchmarked against standard performance thresholds.

Overall, losses and earnings declines appear to be important characteristics distinguishing FRRP companies from their peer group.

Further evidence of the performance difficulties and related pressures faced by FRRP companies in the defect year is presented in Panel C of Table 7.5. FRRP companies appear to be higher leveraged than the control sample, with weaker operating cash flows. Consistent with results reported by Dechow et al. (1996) for their sample of companies subject to SEC Enforcement Actions, FRRP companies are also more highly leveraged than companies in the control sample. All of theses differences are significant at the 0.05 level or better under a one-tailed test. Mutually, these findings provide additional evidence for the view that censured companies are characterised by deteriorating financial performance in the defect year.

7.5.1.2 Governance constrains

Table 7.6 reports descriptive statistics for a range of governance related characteristics including auditor characteristics and board structure. Auditor characteristics are presented in Panel A of Table 7.6. The frequency of Big Four auditors is significantly lower among FRRP companies compared with the control sample. For example, although 61% of FRRP companies have a Big Four Auditor in year -1, the equivalent figure for the control sample is 81% ($p<0.05$). Similarly, the frequency of Big Four auditors among the FRRP sample is 64% in the defect year, compared with 87% for the control sample ($p<0.05$). These results support the prediction that the frequency of Big Four auditors will be smaller in the FRRP sample and are consistent with the positive association between auditor size and audit quality documented in prior research (e.g., DeFond and Jiambalvo 1991; Palmrose 1988; DeAngerlo 1981). It should be noted that of the 35 companies in the FRRP sample with a non-Big Four auditor, 10 cases (28%) received a qualified audit report. In contrast, only 12 out of 63 cases (19%) involving Big Four auditors received qualified opinions.

Table 7.6

Corporate Governance characteristics for FRRP and control samples. FRRP companies are matched with a control sample on the basis of their 4 digit SIC categorisation.

		Year relative to defect year								
		Year-1			Year 0			Year 1		
Variable		FRRP	Control	p-value	FRRP	Control	p-value	FRRP	Control	p-value
N		98	3,691		98	3,691		98	3,691	
Panel A: Audit characteristics										
Audit fee (£000's)										
	Mean	1,151	692	0.221	1,801	880	0.114	2,438	942	0.291
	Median	39	72	0.214	45	75	0.112	57	86	0.172
Non Audit fee										
	Mean	227	519	0.414	266	609	0.614	372	714	0.324
	Median	18	21	0.142	20	25	0.042	27	28	0.061
Big4	%	61.23	81.42	0.061	64.49	87.49	0.081	62.17	89.72	0.072
Switch	%	10.92	4.91	0.241	17.87	5.17	0.000	19.72	5.12	0.214
		20	181		33	191		36	189	
Panel B: Board characteristics										
Board size										
	Mean	8.87	7.24	0.037	8.42	7.16	0.039	8.12	7.27	0.031
	Median	8.00	8.00	0.064	8.00	8.00	0.990	8.00	8.00	0.990
% Independent Outsiders										
	Mean	0.31	0.38	0.942	0.32	0.41	0.821	0.37	0.43	0.814
	Median	0.40	0.40	0.990	0.40	0.40	0.990	0.40	0.40	0.990
Directors Renumeration										
	Mean	10,497	10,815	0.432	12,030	11,620	0.824	10,762	11,982	0.272
	Median	647	317	0.062	712	427	0.072	691	541	0.094

The final row of Panel A presents the frequency of auditor switches for the two samples. While the frequency of switches for FRRP companies is higher in both the defect year and year -1, the differences are not significant. The aggregate number of auditor changes occurring during the full four year sample window (yeas -1 to +2) is higher than expected in the FRRP sample. In particular, 82 FRRP cases were associated with a single auditor change, with 4 others changing auditor twice. A chi-square test rejects the null hypothesis that the aggregate changes are equal at the 0.05 level (one-tailed). This evidence, suggest that the aggregate frequency of switches over the four-year sample window is higher in the FRRP sample. These findings are consistent with those reported by Brandt et al. (1997) and Peasnell et al. (2001), who conclude that the frequency of auditor changes among FRRP companies appeared to exceed that presented for other UK companies. One of the limitations of this research is that it is not examined whether these changes are the cause, or the result, of defective financial reporting.

Panel B of Table 7.6 reports board related data. The findings provide no clear evidence that the board structure in the FRRP sample is inferior to that of the control sample. The average board comprises approximately eight members in both samples, of which 40% are outsiders. Independent outsiders hold roughly 10% of board seats in both cases. The univariate results for board composition are not consistent with those of Beasley (1996) and Dechow et al. (1996), both of whom report a lower incidence of outside directors on the boards of US companies charged by the SEC with serious GAAP violations. Similarly, no significant differences in the director-specific variables such board remuneration is apparent. While FRRP companies appear to have a higher expense for directors' remuneration, the difference is not significant. Director's remuneration for FRRP companies is £12m (0.7m) mean (median), while for the control sample is £11.6m (0.4m).

7.6 Multivariate analysis

7.6.1 Variable Description

This research relies on three sources for choosing explanatory variables based on financial statement data. First, there are considered signals about future prospects that appear in the academic and practitioner literature. The presumption is that earnings manipulation is more likely when companies' future prospects are poor (Peasnell et al., 2001). Second, there are variables based on cash flows and accruals (Healy 1985;

Jones 1991). Third, there are variables drawn from prior literature on earnings management (Burgstahler and Eames, 2006).

Jones et al. (2007) examine the association between the existence and the magnitude of earnings manipulation and nine models of discretionary accruals, accrual estimation errors (Dechow and Dichev 2002 and McNichols 2002), and the Beneish (1999) M-score model. They find that while total accruals are associated with the existence of earnings manipulation, discretionary accruals derived from the Jones model, the modified Jones model and performance-matched models are not associated with earnings manipulation. Their research documents that the M-score has explanatory power for earnings manipulation beyond total accruals. They also find that the M-score is associated with the magnitude of earnings manipulation. Based on this evidence, this thesis builds on and is complementary to Beneish (1997, 1999).

Earnings management literature in the UK [Ferguson et al. (2004); Peasnell et al. (2005); Frankel et al. (2002); Peasnell et al. (2000)] suggests that earnings management models implemented under the US GAAP can be applied in the UK setting. Atwood et al. (2010) in their research investigate whether earnings persistence and the association between current accounting earnings and future cash flows differ for firms reporting under IFRS versus firms reporting under U.S. GAAP. Using samples comprised of 58,832 firm-year observations drawn from 33 countries from 2002 through 2008, they find that positive earnings reported under IFRS are no more or less persistent than earnings reported under U.S. GAAP. Moreover, they find that earnings reported under IFRS are no more or less persistent and are no more or less associated with future cash flows than earnings reported under U.S. GAAP. This evidence is indicative of the similarities between U.S. GAAP and IFRS

The result of the search for variables based on financial statement data was the construction of two models that are based on Beneish (1999) . The variables measured data from the financial year prior the violation. Variables are designed as indexes because they are intended to capture distortions that could arise from manipulation by comparing financial variables in the year of the first reporting violation with those in the year prior. The computation of each variable is documented in the Table 7.7.

Days Sales in Receivable Index (DSRI): The DSRI index is the ratio of days' sales in receivables in the first year in which earnings manipulation was discovered (year t) to the corresponding value in year t-1. This variable tests whether receivables and revenues are in line between two consecutive years. A large increase in days'

sales in receivables could signal a change in credit policy to increase sales in response to increased competition, but disproportionate increases in receivables relative to sales could also be associated with an aggressive revenue recognition policy (Beneish, 1999). Thus it is expected that a large increase in the DSRI to be related to a higher likelihood that revenues and earnings are overstated.

Gross Margin Index (GMI): The GMI is the ration of the gross margin in year t-1 to the gross margin in year t. When the GMI is greater than 1, gross margin is deteriorated. A declining gross margin is a negative signal about a company's future performance (Beneish, 1999). So, if companies with poor prospects are more likely to engage in earnings manipulation, it is expected a positive association between GMI and likelihood of earnings manipulation.[47]

Asset Quality Index (AQI): Asset quality in a given year is the ratio of non-current assets other than property plant and equipment (PP&E) to total assets and measures the proportion of total assets for which future benefits are potentially less certain. The asset quality index (AQI) is the ratio of asset quality in year t to asset quality in year t-1. The AQI is an aggregate measure of the change in asset realisation risk, which was suggested by Siegel (1997). If the AQI is greater than 1, the company has potentially increased its involvement in cost deferral. [48] An increase in asset realisation risk indicates an increased likelihood to capitalise expenses (i.e. marketing costs) and thus, defer costs (Beneish, 1999). Therefore, it is expected to find a positive association between the AQI and the probability of earnings manipulation.

Sales Growth Index (SGI): The SGI is the ratio of sales in year t to sales in year t-1. High growth companies are viewed by professionals as more likely than other companies to commit earnings manipulation because their financial positions and capital requirements put pressure on directors to achieve earnings thresholds (Beneish, 1999). In addition, concerns about internal controls and reporting policies tend to lag operations in periods of high growth (Eining and Willingham 1989).

Depreciation Index (DEPI): The DEPI is the ratio of the rate of depreciation in year t-1 to the corresponding rate in year t. The depreciation rate in a given year is equal to Depreciation/(Depreciation + Net PP&E). A DEPI greater than 1 indicates that the rate at which assets are being depreciated has declined – raising the possibility

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[47] Manipulation of inventories and other production costs could lead to increasing gross margins. Thus either increased or decreased gross margins could be related to earnings manipulation.

[48] Part of the increase could be attributable to acquisitions involving goodwill, but companies censured by the FRRP undertake few acquisitions.

that the company has extended the estimates of assets' useful lives or adopted a new policy that is income increasing (Beneish, 1999). It is thus expected a positive association between the DEPI and the probability of earnings manipulation.

Sales, General and Administrative Expenses Index (SGAI): The SGAI is the ratio of sales, general and administrative expenses to sales in year t relative to the corresponding measure in year t-1. The use of this variable follows the recommendation of Lev and Thiagrajan (1993) that analysts interpret a disproportionate increase in sales as a negative signal about a company's future prospects (Beneish, 1999). It is expected to find a positive association between the SGAI and the probability of manipulation.

Leverage Index (LVGI): The LVGI is the ratio of total debt to total assets in year t relative to the corresponding ration in year t-1. An LVGI greater than 1 indicates an increase in leverage. This captures incentives in debt covenants for earnings manipulation. The change in leverage in a company's capital structure is used on the basis of evidence in Beneish and Press (1993) that such changes are associated with the technical default of a company.

Total Accruals to Total Assets (TATA): Total accruals are calculated as the change in working capital accounts other than cash less depreciation (Beneish, 1999). Either total accruals or a partition of total accruals was used in prior literature to assess the extent to which managers make discretionary accounting choices to alter earnings (Jones 1991). Total accruals to total assets (TATA) are used to proxy for the extent to which cash underlines reported earnings. It is expected to find that higher positive accruals (less cash) are associated with a higher likelihood of earnings manipulation.

Return on Assets Index (ROAI): Is calculated as the ratio of profit after tax for the year t, to the year t-1. A value less than one, suggest that for the year t, the company has employed less efficiently the assets appearing on its balance sheet, comparing to the previous year. Prior literature suggests that companies applying aggressive accounting practices usually fail to conduct impairment tests on fixed assets and write-off obsolete stock (Beneish, 1999). Avoiding writing down assets on time, has a positive impact on profitability, though return on assets is expected to deteriorate.

Effective Tax Rate Index Index (EFTAXI): Is calculated as the ratio of effective tax rate for year t, to effective tax rate for year t-1. Effective tax rate is

calculated as the ratio of the tax paid, to the profit before tax. Tax accounting gives less discretion to directors, comparing to financial accounting. Thus it is expected that manipulators will appear to have lower profits under the tax accounting, comparing to the non-manipulators (Dhaliwal et al., 2004). Consecutively, manipulators are expected to account for taxe charges in a lower effective tax rate. Thus, it is expected a negative association between EFTAXI and the likelihood of earnings manipulation.

The estimation of tax expense in the EFTAXI variables accounts for deferred tax and it measures the extent of adjustment to prior year tax. Holland and Jackson (2002) find evidence of systematic differences between actual and required levels of deferred tax provision that are related to earnings management. This is consistent with Dhaliwall et al. (2004), they find evidence that changes from third- to fourth-quarter effective tax rates are negatively related to whether and how much a firm's earnings absent tax expense management miss analysts' consensus forecast, a proxy for target earnings. Dhaliwall et al. (2004) estimate effective tax rate as a ratio of tax charge to pre-tax income.

Dividend Signal Index (DIVSI): Is the ratio of dividend for year t divided by dividend in year t-1. Companies that manipulate earnings are expected to have poor liquidity, thus they are more likely to decrease dividend payments (Peasnell et al., 2001). Subsequently DIVSI is expected to be negatively associated with earnings manipulation.

Directors Remuneration to Sales Index (DIRSI): DIRSI is the ratio of the proportion of director's remuneration for the sales generated on year t, divided by prior year's remuneration to sales figure. Highly paid directors, in terms of their remuneration as a portion of the revenue generated, are expected to be more inclined to manage earnings, in order to maximize their bonuses (Cheng and Warfield, 2005). Companies that manipulate earnings are expected to have a higher DIRSI (higher than one), as the directors pay becomes more related to the underlying performance. Thus directors are more inclined to mask possible inefficiencies in order to secure performance related bonuses.

Audit Risk Index (AUDI): Audit Risk Index (AUDI) is calculated as the portion of audit fees to total assets for year t, to previous year's audit fees scaled by total assets. Practitioners suggest that the detection risk is the product of the inherent risk of a company multiplied by the audit risk (Larcker and Richardson, 2004). In order for the external auditors to assure the true and fair view of the financial

statements, the detection risk has to remain low, at immaterial levels. An increase in external audit risk could compensate deterioration in internal controls, where more audit work is needed to cover problematic areas (Larcker and Richardson, 2004). Audit fees scaled by total assets are used as a proxy for audit risk. Thus it is expected that there would be a positive association between Audi and the likelihood of earnings manipulation.

The explanatory variables in the model are primarily based on year-to-year changes and this introduces a potential problem when the denominator is small. To deal with this problem, the data is winsorised at the 1% and 99% percentiles for each variable. In addition, there were cases where the denominator of the Asset Quality Index variable was zero, as assets in the reference year (period t-1) consisted exclusively of current assets and PP&E. Since in such cases the Asset Quality Index was not defined, its value was set to one (its neutral value) instead of treating the observation as missing. Similarly, DEPI and SGAI indices were set to one, when elements of the computation (Depreciation and Amortisation, Sales and General Administrative Expenses, were not available on the FAME database).

7.6.2 Full Sample Analysis

Table 7.8 compares GAAP violators to the control sample along the variables suggested in Beneish's (1999) model and the ratios proposed in Models 3 and 4 of Table 7.8.The comparisons made in the financial year prior to GAAP violation revealed differences along three of these dimensions. Firstly, GAAP violators had a lower effective tax index (0.764 while the control sample 1.019), as they paid less taxes as ratio to the profits earned, comparing to the previous year. Secondly, GAAP violators had a deteriorating Asset Quality Index (AQI) (1.092 while for the control sample is 1.021), as their balance sheet included a lower portion of PP&E and current assets, probably due an increase in intangible assets or good will. Thirdly, GAAP violators appear to have an increased Audit Risk Index (Audi) (1.148 while for the control sample is 1.031), as they incur higher audit fees scaled by assets, comparing to the prior year.

To evaluate the marginal effect of performance factors on the probability of censure by the FRRP, a series of logistic regressions is estimated, similar to Beneish (1999). The dependent variable in these regressions takes the value of one if the company is from the FRRP sample and zero otherwise.

Explanatory variables include measures of performance, liquidity and balance sheet strength. Results for logistic regressions estimated using data from the defect year presented in Table 7.9. To start, in Model 1 examines the association between earnings manipulation, using the ratios in the 5 variable Beneish's model, and the probability of censure by the FRRP. Model 1uses the variables: SGI, GMI, DSRI, AQI and DEPI. The AQI and DEPI variables are significant at the 0.01 and 0.05 level respectively, in a one-tailed test and the positive coefficient indicates that FRRP companies are more likely to be manipulating depreciation charges and aggressively capitalise costs.

Model 2, uses the ratios applied in Beneish's 8 variable model; i.e. variables SGAI, TATA and LVGI are added to Model 1. The estimated coefficient on TATA in Model 2 is positive and significant at the 0.01 level, thereby confirming the univariate results which indicate that FRRP companies are more likely to experience operating cashflow shortages in the defect year.

Model 3 includes ROAI, DIRSI and Audi to assess the marginal association of each with the probability of censure. Audi is significant at conventional levels, suggesting that audit fee increases as a ratio on total assets, have an incremental positive association with the probability of a company manipulating earnings, thus receiving an adverse ruling from the FRRP.Model 4 uses EFTAXI and DIVSI. The resulting coefficient estimate on EFTAXI is negative and highly significant.The coefficient estimate on DIVSI is also negative and statistically significant, suggesting that companies censured by the FRRP are more likely have decreased dividends.

Table 7.7 Definitions of Variables

Variable	Definition
Performance-Profitability related variables	
SGI*	Sales growth index
GMI*	Gross Margin Index
SGAI*	Sales general expenses index
ROAI	Return on assets index
ROEI	Return on equity index
EFTAXI	Effective tax rate index
DIVSI	Dividend signal index
DIRAI	Directors remuneration to sales index
DIRSI	Directors remuneration to total assets index
TA	Accruals
TATA*	Accruals to total assets index
Liquidity - Leverage	
LVGI*	Leverage Index
Balance sheet strength	
DRSI	Days in receivable index
AQI*	Asset quality index
DEPI*	Depreciation index
Audi	Audit fees to total assets index

Formulas:

$$SGI_n = \frac{sales_n}{sales_{n-1}}$$

$$GMI_n = \frac{(sales_{n-1} - cgs_{n-1})sales_{n-1}}{(sales_n - cgs_n)sales_n}$$

$$SGAI_n = \frac{sga_n / sales_n}{sga_{n-1} / sales_{n-1}}$$

$$ROAI_n = \frac{Pat_n / Totas_n}{Pat_{n-1} / Totas_{n-1}}$$

$$ROEI_n = \frac{Pat_n / Equity_n}{Pat_{n-1} / Equity_{n-1}}$$

$$DIVSI_n = DIV_n / DIV_{n-1}$$

$$DSRI_n = \frac{\text{Receivables}_n / Sales_n}{\text{Receivables}_{n-1} / Sales_{n-1}}$$

$$Audi_n = \left(\frac{Auditfee_n}{TotalAssets_n}\right) \Big/ \left(\frac{Auditfee_{n-1}}{TotalAssets_{n-1}}\right)$$

$$LVGI_n = \left(\frac{Cur.Debt_n + Long.Debt_n}{TotalAssets_n}\right) \Big/ \left(\frac{Cur.Debt_{n-1} + Long.Debt_{n-1}}{TotalAssets_{n-1}}\right)$$

$$AQI_n = \left(1 - \frac{CurrentAssets_n + PPE_n}{TotalAssets_n}\right) \Big/ \left(1 - \frac{CurrentAssets_{n-1} + PPE_{n-1}}{TotalAssets_{n-1}}\right)$$

$$DEPI_n = \left(\frac{Depreciation_{n-1}}{Depreciation_{n-1} + PPE_{n-1}}\right) \Big/ \left(\frac{Depreciation_n}{Depreciation_n + PPE_n}\right)$$

$$EFTAXI_n = \left(\frac{Taxl_n + Taxexp_n - Taxl_n}{Pr_n}\right) \Big/ \left(\frac{Taxl_{n-1} + Taxexp_{n-1} - Taxl_{n-1}}{Pr_{n-1}}\right)$$

$$DIRAI_n = \left(\frac{Directors\ Renumeration_n}{TotalAssets_n}\right) \Big/ \left(\frac{Directors\ Renumeration_{n-1}}{TotaAssets_{n-1}}\right)$$

$$DIRSI_n = \left(\frac{Directors\ Renumeration_n}{Sales}\right) \Big/ \left(\frac{Directors\ Renumeration_{n-1}}{Sales_{n-1}}\right)$$

$$TATA_n = \frac{TA_n}{Totas_n}$$

$$TA_n = \Delta\text{Current Assets}_n - \Delta\text{Cash}_n - \Delta\text{Current L}_n - \text{Depr\& Amort}_n$$

where:

cgs: Cost of goods sold

sga: Sales and Administrative Expenses

Pat: Profit after tax

Totas: Total Assets

Taxl : Tax liability

Taxexp : Tax Expense

Pr: Profit before tax

Div: Dividend

Expense

Table 7.8

Financial characteristics for FRRP and control samples. FRRP companies are matched with a control sample on the basis of their 4 digit SIC categorisation.

	Year relative to defect year								
	Year-1			Year 0			Year 1		
Variable	FRRP	Control	p-value Wilcoxon	FRRP	Control	p-value Wilcoxon	FRRP	Control	p-value Wilcoxon
N	98	3,691	Z	98	3,691	Z	98	3,691	Z
Mean (Median)									
Performance-Profitability related variables									
SGI*	1.317 (1.152)	1.104 (1.051)	0.072	1.521 (1.327)	1.146 (1.094)	0.000	1.414 (1.172)	1.124 1.113	0.021
GMI*	1.142 (1.072)	1.057 (1.018)	0.152	1.241 (1.152)	1.051 (1.027)	0.002	1.113 (1.051)	1.042 1.061	0.014
SGAI*	1.211 (0.74)	1.251 (1.154)	0.421	1.162 (0.742)	1.246 (1.174)	0.000	1.194 (0.948)	1.262 1.172	0.072
TATA*	0.031 (0.039)	0.023 (0.006)	0.351	0.047 (0.051)	0.025 (0.012)	0.000	0.038 (0.027)	0.023 0.014	0.084
ROEI	1.184 (1.072)	1.121 (1.043)	0.657	1.427 (1.372)	1.127 (1.051)	0.004	1.184 (1.091)	1.132 1.072	0.142
ROAI	1.012 (0.972)	1.049 (1.036)	0.421	0.7123 (0.618)	1.051 (1.027)	0.007	1.001 (0.972)	1.031 1.017	0.072
DIVSI	1.014 (0.091)	1.128 (1.071)	0.084	0.811 (0.716)	1.172 (1.057)	0.004	1.001 (0.991)	1.147 1.072	0.241
DIRAI	1.214 (1.154)	1.147 (1.067)	0.071	1.352 (1.153)	1.158 (1.043)	0.006	0.954 (0.901)	1.101 1.072	0.024
DIRSI	1.242 (1.142)	1.172 (1.091)	0.147	1.623 (1.527)	1.192 (1.104)	0.000	0.901 (0.842)	1.153 1.084	0.014
EFTAXI	0.764 (0.672)	1.019 (1.051)	0.031	0.616 (0.516)	1.024 (1.017)	0.000	1.241 (1.124)	1.142 1.051	0.047
Liquidity - Leverage									
LVGI*	1.151 (1.117)	1.067 (1.042)	0.092	1.162 (1.153)	1.057 (1.021)	0.312	0.951 (0.851)	1.042 1.021	0.018
Balance sheet strength									
DSRI	1.342 (1.142)	1.152 (1.042)	0.153	1.827 (1.414)	1.072 (0.997)	0.000	1.242 (1.154)	1.127 1.078	0.247
AQI*	1.092 (1.012)	1.021 (1.003)	0.031	1.351 (1.213)	1.031 (1.001)	0.037	1.151 (1.072)	1.027 1.051	0.072
DEPI*	1.072 (1.012)	1.004 (1.003)	0.076	1.152 (1.047)	1.012 (1.004)	0.057	1.062 (1.042)	1.054 1.032	0.149
Audi	1.148 (1.092)	1.031 (1.024)	0.024	1.634 (1.253)	1.027 (1.012)	0.000	1.142 (1.042)	1.014 1.007	0.020

Table 7.9
Logistic regressions relating the probability of censure by the FRRP to measures of firm performance, leverage and balance-sheet strength. The sample comprises 98 FRRP firms and 3,691 control firms matched by industry.

Variable N	Model 1 Coefficient (p-value)	Model 2 Coefficient (p-value)	Mode3 Coefficient (p-value)	Model 4 Coefficient (p-value)	Marginal effect
Performance-Profitability related variables					
SGI*	0.746 (0.521)	0.721 (0.183)	0.681 (0.942)	0.674 (0.524)	0.268
GMI*	0.694 (0.832)	0.621 (0.391)	0.584 (0.637)	0.578 (0.518)	0.304
SGAI*		-0.157 (0.532)	-0.122 (0.417)	-0.116 (0.484)	-0.125
ROAI			-0.117 (0.416)	-0.101 (0.316)	-0.212
EFTAXI				-0.182 (0.001)	-0.318
DIVSI				-0.147 (0.072)	-0.294
DIRSI			0.253 (0.481)	0.274 (0.026)	0.241
TATA*		4.247 (0.001)	4.142 (0.81)	3.842 (0.114)	0.431
Balance sheet strength					
LVGI*		0.272 (0.721	0.157 (0.542)	0.124 (0.520)	-0.294
DSRI*	0.842 (0.712)	0.761 (0.128)	0.612 (0.657)	0.517 (0.221)	0.419
AQI*	0.482 (0.011)	0.427 (0.041)	0.394 (0.514)	0.371 (0.425)	0.214
DEPI*	0.242 (0.050)	0.154 (0.080)	0.127 (0.917)	0.104 (0.871)	0.171
Audi			0.169 (0.002)	0.181 (0.012)	0.278
Intercept	1.246 (0.327)	1.348 (0.302)	1.513 (0.284)	1.425 (0.251)	-
Model x^2 p-value	25.521 (0.011)	27.262 (0.009)	29.135 (0.007)	35.612 (0.003)	

Marginal effect of the regressors on the probability of censure computed using coefficient estimates from Model 4. Marginal effects are calculated at the means of the regressors as follows: $p(y)[1-p(y)]\beta$, where $p(y)$ is given by $1/(1+e^{x\beta}$ and β is the appropriate coefficient estimate from Model 4.

7.6.3 Sample characteristics

FRRP companies are not homogenous with respect to the gravity of the reporting defect. While in some cases the defect relates to relatively minor disclosure issues with no immediate asset measurement or earnings recognition implications, other cases are associated with a material impact on reported earnings and shareholders' equity. Although the FRRP emphasizes on its mission statement that all cases involving an adverse ruling represent defect, that in its approach, are materially misleading to investors (McBarnet and Whelan 1999), heterogeneity among the 185 cases raises the possibility that pooling all observations in a single group may not generate econometrically robust results.

To explore whether the results are affected by the nature of the accounting defect, a dummy variable (MAT) is created, set equal to "1" if the defect identified by the FRRP impacted on reported earnings and/or shareholders' equity and "0" otherwise. There are 162 (87%) cases involving accounting treatments that affected either reported earnings or shareholders' equity. The remaining 23 cases where MAT equals zero relate to disclosure and classification issues. The logistic models in Tables 8 and 9 are re-estimated, after interacting MAT with each of the explanatory variables. No material differences for the two defect sub-samples are found. Thus, these findings suggest that the sample model is applicable to all companies censured by the FRRP regardless of the defect type.

7.7 Summary and conclusions

The objective of this chapter is to examine the characteristics of firms judged by the Financial Reporting Review Panel to have issued defective financial statements. Two main findings are reported. First, FRRP companies are characterised by weak earnings performance in the defect year. As further evidence of the performance difficulties facing censured companies, additional tests reveal that FRRP companies are more leveraged, less likely to decide dividend increases, more likely to have lower effective tax rate and more likely to have increased audit fees. The coefficient of the variable that measures changes in effective tax rate is statistically significant, in contrast to the coefficients of the variables that measure leverage and dividend changes that appear not to be statistically significant. Both Beneish (1999) and

Dechow et al. (1996) find that companies subject tot SEC Enforcement Actions for violating US GAAP are characterized by poor performance in the violation year relative to a size, industry and time matched control sample. Though, while the profitability of the FRRP sample is weak in the defect year, they do not appear to be persistent underperformers. One interpretation of these results is that short-term performance problems are an important cause of poor accounting quality to the extent that they engage to earnings manipulation. This is consistent with the work of Degeorge et al. (1999), Burgstahler and Dichev (1997) and Peasnell et al. (2001), who provide evidence of earnings management to avoid losses and earnings declines between companies in general.

The second main result relates to the impact of the internal control mechanisms on the likelihood that a company is censured by the FRRP. Consistent with prior work examining US companies charged with serious GAAP violations, it is found that FRRP companies are characterized by weaker internal controls. In particular, while univariate tests indicate no difference in the use of outside directors between FRRP and control companies, multivariate tests reveal that the FRRP sample is associated with higher paid directors and higher audit fees.

There are several limitations that need to be addressed. First, an inherent limitation of this research is the lack of information concerning the identities of companies referred to the FRRP but not subsequently subjected to censure. This makes it difficult to rule out the possibility that the observed relationship between poor performance and censure is simply due to defective financial reporting being more likely to be discovered during periods of weak financial performance as shareholders and other stakeholders engage in additional monitoring activity. Likewise, it cannot be ruled out the possibility that the lower incidence of Big Four auditors in the FRRP sample may reflect aspects of the censure process. For example, it may be capturing the FRRP's preference for avoiding confrontation with the large audit firms because of a higher perceived risk that the case will be challenged (and it could be lost). Alternatively, it may reflect the Big Four firms' superiority at managing the investigation process and negotiating a resolution that does not result in public censure. Similar problems arise in interpreting the results of US studies that have examined the enforcement actions of the Securities and Exchange Commission (SEC) (e.g. Beneish, 1999; Dechow et al., 1996).

Second, caution needs to be exercised when interpreting these results. For example, based on these findings it could be concluded that poor performance is a key cause of defective financial reporting. However, to the extent that the companies initially referred to the FRRP for considerations represent only a sub-sample of the total population of the defective companies, this research may simply be exploring aspects of the referral process. In particular, the FRRP relied heavily on complaints, especially the first years of its operation, before taking a proactive role from 2003 and afterwards. The observed link between poor performance and an adverse ruling may reflect higher detection (and referrals from third parties) rates resulting from the increased scrutiny of published accounting data by disaffected stakeholders. While weak monitoring structures increase the likelihood that managers will violate GAAP (increased audit risk), other explanations are possible. For example, Hines et al., (2001), McBarnet and Whelan (1999) and Styles (1999) characterise the enforcement activities of the FRRP as a political process in which considerations other than those of a purely technical accounting issue influence the likelihood of an adverse ruling. From this perspective, the fact that FRRP appears less likely to criticise companies with Big Four auditors may simply reflect a preference for avoiding confrontation with the large audit firms because of a higher perceived risk of losing the case in a court and the greater resources that a Big Four firm can bring to bear to achieve a private settlement in order to avoid negative publicity.

Finally, it should be mentioned that this study does not explicitly attempt to measure the costs (for auditors and their clients) related to an FRRP investigation: therefore there are not examined the reasons why companies and auditors might seek to avoid censure. Finally, it is important to recognise that this study includes the first years of the FRRP's operations; several authors suggest that attempts to establish its authority as an effective enforcement mechanism may have influenced the activities of the Panel during this initial period (McBarnet and Whelan, 1999; Styles, 1999). If the Panel's censorship rulings made during this 'start-up' phase are not representative of its subsequent enforcement decisions, the research findings may not necessarily form a reliable basis for predicting future FRRP cases.

Chapter 8

The Detection of Earnings Manipulation

8.1 Introduction

The objective of this chapter is two-fold. The first objective is to develop a sample of companies discovered manipulating earnings and matched controls for the UK. The second objective is to analyse the characteristics of companies that manipulate earnings. Based on this analysis, a model is developed, improving the one suggested by Beneish (1999) for detecting earnings manipulation. The model provides an associated scaled probability that can be used to assess the likelihood of earnings manipulation.

For the purpose of this research, earnings manipulation is defined as an instance where directors violate either IFRS or UK GAAP, in order to beneficially represent the company's financial performance (Chapter 2). Financial statement variables are used to capture the effects of manipulation and preconditions that may lead companies to engage in such activity. Since manipulation usually results from a false inflation of revenues or depression of expenses, it is documented that variables that measure the simultaneous increase in asset line items have predictive content (Beneish, 1999). It is also found that a common characteristic of sample manipulators is that they have high revenue growth prior to the public discovery of the earnings manipulation (Beneish, 1999).

Statistical tests are conducted using a sample of 185 companies discovered to manipulate earnings and a control sample that consists of all public listed FAME companies matched by four-digit SIC for which data are available in the period 1994-2007. It is found that sample manipulators frequently overstate earnings by recognising fictitious or future revenue, recording overstated inventory or aggressively capitalising expenses. The sample of 185 manipulators consists of 98 companies censured by the FRRP and 87 companies flagged by the *Company Reporting* as companies for no compliance with the IFRS.

The model is estimated using a sample manipulators and a sample of industry-matched companies covering the period 1994-2003. The performance of the model is tested on a holdout sample in the period 2004-2007. The model discriminates manipulators from controls and has pseudo-R^2 of 25.1% and 31.8% for two different

estimation methods. The evidence indicates that the likelihood of manipulation increases with: (i) unexpected increases in receivables, (ii) declining gross margins, (iii) deteriorating asset quality, (iv) high revenue growth, (v) increasing accruals and (vi) increasing debt. It is documented that the model detects manipulators from controls in the holdout sample. The results are found to be robust to different estimations of the prior probability of earnings manipulation. The results are also robust to the choice of different estimation and holdout samples.

In an effort to enhance the discriminating ability of the models suggested by Beneish (1997, 1999) three additional financial ratios are proposed. These variables indicate that the probability of manipulation increases with: (i) unusual increases in audit fees, (ii) unusual decreases in the effective tax rate and (iii) unusual increases in directors' remuneration. It is documented that the enhanced model discriminates more accurately manipulators from controls in the holdout sample. The results are also robust to different estimations of the prior probability of earnings manipulation and the choice of estimation and holdout samples.

The findings need to be interpreted considering possible sample selection biases. The estimation sample is based on a group of publicly discovered manipulators. It is likely that there are successful manipulators that have not been identified yet, and the results need to be interpreted assuming that sample manipulators represent a significant share of the manipulators in the population. However, given this limitation, the evidence suggest a systematic relation between the likelihood of manipulation and financial statement variables inferring that accounting ratios can be utilise in detecting manipulation and measuring the reliability of accounting earnings.

This chapter is organised as follows. The next section briefly recapitalises the existing literature on earnings manipulation[49]. Section three describes the data used in the empirical analysis. Section four presents the empirical methodology and the model to be used in the econometric analysis. Section five reports the estimation results and predictions for Beneish's model. Section six presents an eleven variable model for detecting earnings manipulation and section seven concludes.

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[49] A more extensive discussion can be found in Chapter 2.

8.2 Previous Literature

Describing and predicting the types of companies that will manipulate financial statements or commit fraud is an extensive area of research. Many studies in the US have used samples that include companies subject to SEC enforcement actions, or FRRP sanctions in the UK. This section, briefly discusses some of the key findings, but does not attempt to document all literature examining characteristics of manipulating companies.

Feroz et al. (1991) examine 224 Accounting and Auditing Enforcement Releases (AEERs) issued between April 1982 and April 1989. Feroz et al. (1991) provide a detailed description of their sample of 188 companies of which 58 have stock price information. They document that receivables and inventory are most commonly misstated.

Two pioneering papers analysing manipulating companies are Beneish (1997, 1999). Beneish (1997) analyses 363 AAERs and obtains a sample of 49 companies that violate GAAP. He also collects a sample of 15 companies whose accounting was questioned by the news media between 1987 and 1993. Both sets of companies are classified in the manipulators sample. He creates a separate sample of companies he labels 'aggressive accruers' using the modified Jones model to select companies with high accruals. His objective is to distinguish the manipulators from companies that have high accruals and appear to be applying GAAP aggressively. Beneish (1997) finds that accruals, day's sales in receivables and prior performance are important for explaining the differences between the two groups. Beneish (1999) matches the sample of manipulators to 2,332 Compustat controls by two-digit SIC industry and year for which the financial statement data used in the model were available. For seven of the eight financial statement ratios that he analyses, he calculates an index. Higher index values indicate a higher likelihood of earnings overstatement. Beneish shows that the days' sales in receivables index, gross margin index, asset quality index, sales growth index and accruals (measured as the change in non-cash working capital plus depreciation) are important. He provides a probit model and analyses the probability cut-offs that minimise the expected costs of manipulation.

This present research supports and extends Beneish (1997, 1999). In addition to applying his model in the UK setting, this research extends it, by including financial statement variables related to earnings manipulation that increase the model's effectiveness in discriminating instances of earnings manipulation.

In other concurrent research, Ettredge et al. (2006) examine 169 AAER companies matched by size, industry and whether the company reported a loss. They find that deferred taxes can be useful for predicting manipulations, along with auditor change, market-to-book value, revenue growth and whether the company is an OTC company. Brazel et al. (2006) examine whether several non-financial measures (e.g., patents, trademarks) can be used to predict manipulation in 77 AAER companies. They find that growth rates between financial and non-financial variables are significantly different for AEER companies. Bayley and Taylor (2007) study 129 AAER companies and a match sample based on industry, company size and time period. They find that total accruals are better than various measures of unexpected accruals in identifying material accounting manipulations. In addition, they find that various financial statement ratio indices are incrementally useful. They conclude that future earnings management research should move away from further refinements of discretionary accrual models and instead consider supplementing accruals with other financial statement ratios.

Dechow et al. (1996) analyse 436 AAERs released between April 1982 and December 1992. Their final sample after eliminations consists of 92 companies. Each company is matched in the year prior to manipulation to a control company in the same three-digit SIC industry and with similar asset values. The authors provide some evidence that accruals appear to be high at the time of manipulation. However, the paper focuses primarily on showing that various corporate governance factors appear to be correlated with manipulation. For example, they find that manipulating companies have a higher number of insiders on the board and a CEO who is more powerful and entrenched. They provide matched-pairs logit analysis; however, they do not report how effective their model is at predicting manipulation. Skousen and Wright (2006) analyse 86 manipulation companies matched by industry and sales. Similar to Dechow et al. (1996), they focus on corporate governance variables. They find that manipulators tend to have managers with higher stockholdings (higher than five percent), have less effective audit committees, have more powerful CEOs and are more likely to have recently switched auditors.

Richardson et al. (2002) examine 255 companies that restate earnings between 1971 and 2000 and compare them to 133,208 non-restating companies. They obtain their sample through a Nexis-Lexis search using variations on the words 'restate'. They exclude restatements due to changes in FASB accounting rules, stock splits,

merger and acquisitions, etc. They test for differences in means for restating company-years relative to non-restating company-years and find that restating companies have lower earnings to price and book to market ratios, raise more financing, and have larger total accruals. They also find that restating companies have longer consecutive strings of growth in quarterly EPS. Similar to Dechow et al. (1996) they suggest that capital market pressures are likely to be a motivating factor for earnings management that results in restatements.

In the UK, Peasnell et al. (2001) examine the characteristics of companies judged by the FRRP as having published defective financial statements. They find that relative to a pair wise matched control sample, FRRP companies are associated with weak performance in the defect year. FRRP companies are less likely to have a Big Four auditor, less likely to have an audit committee and a high proportion of outside directors. Holland and Jackson (2004) examine the association between deferred tax provisions and earnings management. Using a sample of 58 companies they find that companies take an overall view in determining the required level of provision of deferred tax in order to manage earnings. They also find weaker evidence of the relationship between the levels of under/over provision and companies' levels of gearing and effective tax rates.

This chapter contributes to the literature on accounting manipulation on three dimensions. First, prior literature examining accounting manipulations has relied on either small samples of accounting manipulations or is based on US samples. This research, investigates a large sample of UK manipulators composed of 98 FRRP sanctions and 87 cases identified by *Company Reporting*. Second, this research systematically examines a comprehensive set of prediction variables that relate to accrual quality, performance and market related incentives. Finally, this research extends and improves the model proposed by Beneish (1997, 1999) for detecting earnings manipulation, by adding three additional financial ratios. By testing this new model in a large population of companies, detailed evidence is provided on the number of Type I and II errors.

8.3 Characteristics of the dataset

The sample of earnings manipulators is obtained either from companies subject to FRRP censures or from *Company Reporting* 'Red Flagged companies[50]'. Companies subjected to FRRP censures are published on the FRRP's website. Between 1994 and 2007 there are published 98 relevant press notices. The characteristics of the FRRP companies are examined in more detail in the previous chapter. The sample of manipulators is extended with 87 companies criticised in *Company Reporting*[51]. A comparison between the two sub-samples of manipulators, documented in Panel A of Table 8.1, suggests that both sub-samples are not drawn from different populations. Wilcoxon Z and median chi-square tests are applied to examine the association fundamental financial characteristics, between the two samples. The financial characteristics explored are related to the size of the companies (total assets, sales and market value), leverage (working capital to total assets, current ratio and total debt to total assets) and performance (return on assets and sales growth). These test yield p-values smaller than 5%, suggesting that the two sub-samples of manipulators are not drawn from different populations. Hence, the final sample consists of 185 companies that manipulated earnings and 3,961 control companies matched by 4-digit SIC industry and year.

Panel B of Table 8.1, compares the financial characteristics of manipulators to those of industry-matched controls. It is found that, in the financial year prior to the public disclosure of earnings manipulation; manipulators are less profitable and more leveraged. The median sales growth of manipulators (31%) is significantly larger than that of controls (8%). This raises the question whether growth is exogenous or results from manipulation. This profile of manipulators, as companies with high growth prospects could explain why it is found that manipulators have, on average, lower total assets (median total assets for manipulators is 22,347 whereas for controls is 63,713) but similar market value of equity.

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[50] *Company Reporting* warns with a Red flag when: Attention is required: (i) there is a significant compliance failure, or there are multiple compliance failures, or the accounting treatment differs from a company's peers, or there is a lack of adequate disclosure, or in some way *Company Reporting*'s team does not agree with the company's treatment or presentation; and (ii) the impact is sufficiently large that investors should be alerted.

[51] An interview with the FRRP revealed that the regulatory body uses the companies criticised by the *Company Reporting*, as part of its proactive approach. This is confirmed by the fact that in many cases *Company Reporting* alerted investors earlier than the FRRP. According to FRRP this lag is due to the bureaucratic procedures that need to be followed and they can take up to several months.

Table 8.1

Panel A: Comparing characteristics between the two sub-samples of manipulators: companies censured by the FRRP and companies red flagged by *Company Reporting*

	FRRP companies (n=98)		*Company Reporting* Companies (n=87)		Wilconxon z p-Value (two tailed)	Median chi-square p-value (two tailed)
Characteristic	Mean	Median	Mean	Median		
Size						
Total assets	429,203	17,975	517,942	27,271	0.006	0.012
Sales	207,856	15,848	314,724	19,172	0.004	0.008
Market Value	84,314	89,437	86,173	91,472	0.021	0.027
Liquidity/everage						
Working capital to total assets	0.29	0.34	0.27	0.36	0.002	0.008
Current ratio	2.01	1.94	1.98	1.89	0.001	0.004
Total Debt to total assets	0.97	0.72	0.95	0.67	0.007	0.011
Profitability/Growth						
Return on Assets	0.50%	1.60%	0.42%	1.32%	0.027	0.032
Sales Growth	42%	32%	37%	29%	0.018	0.024

Panel B: Comparing Characteristics of 185 manipulators vs. 3,691 controls matched by 2-digit SIC Industry in the year prior the year containing the earnings manipulation

	Manipulators (n=98)		Control Companies (n=3,691)		Wilconxon z p-Value (two tailed)	Median chi-square p-value (two tailed)
Characteristic	Mean	Median	Mean	Median		
Size						
Total assets	470,934	22,347	420,131	63,713	0.002	0.005
Sales	258,113	17,411	337,023	62,983	0.003	0.005
Market Value	85,188	90,394	95,375	115,724	0.034	0.052
Liquidity/average						
Working capital to total assets	0.28	0.35	0.22	0.10	0.351	0.385
Current ratio	2.00	1.92	2.15	1.30	0.152	0.274
Total Debt to total assets	0.96	0.70	0.64	0.50	0.124	0.197
Profitability/Growth						
Return on Assets	0.46%	1.47%	3.54%	4.32%	0.428	0.579
Sales Growth	40%	31%	5%	8%	0.581	0.627

n = the number of companies

Note: The Wilcoxon rank-sum and median x^2 tests were used to evaluate the null hypothesis that the size, liquidity, profitability and growth characteristics of manipulators and controls indicate that the groups were drawn from the same population.

8.4 Method

This section discusses the estimation of the earnings manipulation detection model and the selection of the model's variables, similar to Beneish (1997, 1999). The model is written as follows:

$M_i = \beta X_i + \varepsilon_i$

Where M is a dichotomous variable coded 1 for manipulators and 0 otherwise, X is the matrix of explanatory variables, and ε_i is a vector of residuals.

The estimation of the probit model is made under the following four assumptions (Wooldridge, 2008):

Assumption 1

The model in the population can be written as:

$y = \beta_o + \beta_1\chi_1 + \beta_2\chi_2 + ... + \beta_\kappa\chi_\kappa + \theta$ (1)

where $\beta_0, \beta_1, \beta_2,...,\beta_\kappa$ are the unknown parameters (constants) of interest, and u is an unobservable random error or random disturbance term.

Assumption 2

There is a random sample of n observations, $[(\chi_{i1}, \chi_{i2}, \cdots\chi_{ik}, y_i), i=1, 2, ..., n]$ from the population model described in (1)

Assumption 3

The error u has an expected value of zero, given any values of the independent variables, in other words,

$E(u|\chi_1, \chi_2, ..., \chi_k) = 0$

Assumption 4

In the sample (and therefore in the population), none of the independent variables is constant, and there are no exact linear relationships among the independent variables.

Earnings manipulators are over represented relative to the true percentage in the population of public listed companies, as they are matched by industry rather by the whole population. The econometric justification for such an industry-based sample is that a random sample would likely generate a lower number of manipulators (as it could include industry sectors not examined in this study), consequently making the estimation of a model that classifies earnings manipulation more difficult. Though, as estimation of a dichotomous state model that ignores the industry-based procedures yields asymptotically biased coefficient estimates, there is applied a

weighted exogenous sample maximum likelihood probit (WESML)[52]. The estimation sample spans the period 1994-2003 and consists of 132 manipulators and 2,636 controls.

Estimating WESML requires an approximation of the percentage of companies in the population that manipulate earnings. Assuming that the population from which the companies are sampled is the population of the UK listed companies, one estimate of the percentage of manipulators in the population equals 0.0228 (185/8,115). Where 8,115, is number of all available observations for the examined period. To assess the validity of this assumption, the model is also estimated and tested applying an un-weighted likelihood probit model.

The empirical analysis in the next sections aims to test the following research hypotheses, as described in chapter three:

H_{11}: A probit model based on M-score's variables can be used as a classification tool for signalling earnings manipulation.

H_{12}: The inclusion of the three additional variables will increase the ability of the model to identify manipulators and decrease misclassification errors.

8.5 Beneish's Model

8.5.1 Variables

Similar to the Chapter Seven, firstly a model for detecting earnings manipulation is estimated based on Beneish's (1999) variables and secondly an improved version with three additional variables is proposed. The first model includes eight variables: Days in Receivables Index (DSRI), Gross Margin Index (GMI), Asset Quality Index (AQI), Sales Growth Index (SGI), Depreciation Index (DEPI), Sales General and Administrative Expenses Index (SGAI), Leverage Index (LVGI), Total Accruals to Total Assets (TATA). The proposed improved version of Beneish's model includes Audit Fees to Total Assets Index (AUDI), Efficient Tax Rate Index (EFTAXI) and Directors' Remuneration to Sales Index (DIRSI). The definition of the eleven variables is discussed in the previous chapter.

The explanatory variables in the models are primarily based on annual changes and this introduces a potential issue when the denominator is very small. To

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[52] WESML accounts for state-based sampling by weighting the likelihood function according to the proportion of earnings manipulation in the sample and in the population. Prior research has employed weighted probit models to predict audit qualifications (Dopuch et a. (1987) and bankruptcy (Zmjewski, 1984)).

minimise distortions from extreme values, the data is winsorized at the 1% and 99% percentiles for each variable. In addition, in the instances where the denominator of the Asset Quality Index variable was zero, as assets in the prior year (period t-1) consisted only of current assets and property plant and equipment, Asset Quality Index was not defined. In these cases this value was defined as one, instead of treating the observation as missing. A similar approach was applied for DEPI and SGAI ratios and they were defined as one, when the denominator was missing. It was found that estimating the models after excluding those observations yielded similar results.

Table 8.2 compares the distribution of these variables for manipulators and controls in the estimation sample. The results indicate that on average, manipulators have significantly higher increases in days' sales in receivables, greater deterioration of gross profit margins, asset quality, larger growth, higher accruals and increased leverage.

Table8.2

Distribution of variables for manipulators and controls in the estimation sample (years: 1994-2003)

Characteristic	Manipulators (n=132)					Control Companies (n=2636)					Wilconxon - Z P-Value (two tailed)	Median chi-square P-value (two tailed)
	Mean	Median	St.Dev	Min	Max	Mean	Median	St.Dev	Min	Max		
Days in Receivables Index (DSRI)	1.24	0.95	1.38	0.00	10.84	1.22	0.99	1.41	0.00	11.78	1.15 (.24)	0.41 (.68)
Gross Margin Index (GMI)	1.11	1.00	0.84	-0.97	4.91	1.03	1.00	0.59	-0.92	5.29	-1.44 (.14)	0.15 (.88)
Asset Quality Index (AQI)	1.18	1.00	0.94	0.14	7.86	1.14	1.00	0.85	0.11	8.73	-0.95 (.34)	0.07 (.94)
Sales Growth Index (SGI)	1.69	1.02	2.74	0.09	19.72	1.51	1.10	2.21	0.01	22.41	2.81 (.00)	0.33 (.74)
Depreciation Index (DEPI)	1.36	0.99	2.27	0.00	17.73	1.40	1.00	2.20	0.00	19.14	1.94 (.05)	0.36 (.79)
Sales & General Admin Expenses Index (SGAI)	1.44	0.98	2.45	0.00	22.14	1.64	1.00	10.65	0.00	38.51	1.26 (.21)	0.27 (.79)
Leverage Index (LVGI)	1.46	1.07	1.18	0.10	6.20	1.11	0.99	0.72	0.10	8.19	-4.52 (.00)	-4.14 0.00
Accruals to Total Assets Index (TATA)	0.36	0.13	0.52	0.00	1.95	0.13	0.07	0.23	0.00	2.61	-7.41 (.00)	-4.03 (.00)
Audit Fees Index (Audi)	2.58	1.05	9.58	0	28	1.44	0.98	13	0	23	3.51 (.00)	3.67 (.00)
Effective Tax Rate Index (EFTAXI)	0.94	0.29	2.54	-5.98	6.92	0.63	0.51	2.56	-5.99	6.94	4.57 (.00)	4.72 (.00)
Directors' Remuneration to Sales Index (DIRSI)	0.41	0.33	0.3	0.11	1	0.34	0.25	0.28	0.09	1.01	4.21 (.00)	4.38 (.00)

8.5.2 Estimation Results and Holdout Sample Tests

Table 8.3 Panel A, documents the results of the WESML probit and unweighted probit estimations of the model. The likelihood ratio test indicates that for both estimations the model has significant power, with x^2 statistics (p-values) of 28.42 (0.00) and 57.25 (0.00). The model has descriptive validity with pseudo-R^2s of 0.251% and 0.318% for WESML and unweighted probit respectively.

The results of the unweighted probit estimation show the variable Days Sales in Receivables Index (DSRI) has a positive coefficient, 0.207 and is significant at the 5% level with an asymptotic t-statistic of 3.15. This is consistent with unexpected increases in receivables increasing the likelihood that a company has overstated sales applying an aggressive credit policy. The variable Gross Margin Index (GMI) has a positive coefficient of 0.72 that is over two standard deviations from zero. This is consistent with companies facing poor market conditions, under increased competition, having increased incentives for earnings manipulation. The Asset Quality Index (AQI) also has a significant positive coefficient (0.55, t-statistic 4.51), consistent with the likelihood of earnings manipulation raising when companies increase the capitalisation of expenses. A company that starts to capitalise expenses, will have increased profitability through deteriorating AQI index. The sales growth index (SGI) has a positive coefficient that is over two standard deviations from zero, consistent with growth companies facing declining growth having increased incentives to manipulate earnings. Growth companies usually have high pressure for external financing, comparing to the mature ones. Thus, they are more likely to resort in earnings manipulation when the underlying cash flow is not adequate to support the projected growth. The Total Accruals to Total Assets (TATA) index has a significant positive coefficient which is consistent with the notion that manipulators have weaker operating cash-flows to comparing to the reported accounting profits. .

The coefficients on the leverage (LVGI), Depreciation Index (DEPI) and Sales General Administrative Expenses Index (SGAI) are not statistically significant. One possible explanation is that these variables are related more closely with earnings management rather with earnings manipulation. Earnings management allows companies to achieve earnings targets without overriding accounting principles whereas earnings manipulation violates the true and fair view principle. Thus a company is more likely to apply all the means within GAAP to achieve an earnings

threshold (earnings management) before engaging into earnings manipulation, as it could lead to significant costs if it is publicly discovered. An example of earnings management would be a change from accelerated depreciation to straight line or a revision that increases useful lives. Such a change would have a positive impact on earnings, without overriding accounting principles and would result in increased values of the depreciation index. This is an instance of earnings management and the company would not be included in the sample of manipulators but in the sample of controls. Similarly, for the leverage ratio, incentives to comply with debt covenants may be an insufficient motive to resort in earnings manipulation. Another explanation would be that a company could avoid reporting increased leverage if recognises finance leased assets as operating lease, breaking the total period of the agreement into shorter and renewable periods. Thus, a company can recognise future obligations arising from the leased equipment in the notes of the accounts rather in the balance sheet[53]. Regarding the Sales and General Administrative Expenses, it is negatively associated with the probability of earnings manipulation. For example a company that increases the useful life of the goodwill (IAS 38), will report higher profits and lower Sales and General Administrative Expenses. Though, such a change in accounting estimate can be made within the limits of earnings management, without overriding accounting principles.

Panel B of Table 8.3, reports the estimated probabilities of earnings manipulation for both the estimation and holdout samples. For the estimation sample, the model estimated using WESML predicts higher average (median) probability of earnings manipulation 0.125(0.084) for manipulators than for controls 0.004 (0.008). Similarly, the model estimated using un-weighted probit predicts higher average (median) probabilities for manipulators 0.201 (0.102) than for controls. Wilcoxon and median tests reject the null hypotheses that estimated probabilities for manipulators and controls are drawn from the same population. Results for the holdout sample of 53 manipulators and 1,055 controls are similar to the estimation sample findings. The model predicts that manipulators are, on average, about 9 times more likely to manipulate earnings. The distributions of estimated probabilities for manipulators and controls based on unweighted probit illustrate these differences. For example, in the

[53] Considering alternative definitions of leverage, alternative leverage measures yielded similar results. The alternative definitions used were: total debt to equity, long-term debt to total assets as well as using leverage level variables instead of changes.

estimation sample, nearly all the controls (90.5%) have an estimated probability of manipulation less that 0.05 compared to the average probability of 12.5% that the 132 manipulators have. Similarly, in the holdout sample, 55.3% of the controls, had an estimated probability of manipulation of less than 0.01, compared with 26.4% of the manipulators.

Table 8.3

WESML and Unweighted Probit Estimation Results for Beneish (1999) Model, Based on an Estimation Sample of 132 Manipulators and 2,636 controls (Panel A). Estimated probabilities of Manipulation for the Estimation Sample and for a Holdout Sample of 53 Manipulators and on 1,055 controls (Panel B)

Panel A: Estimation Results

	Constant	Days in Receivables Index	Gross Margin Index	Asset Quality Index	Sales Growth Index	Depreciation Index	SGA Index	Accruals to Total Assets Index	Leverage Index	[b]Pseudo R^2	x^2 statistic (p-value)
Predicted Sign		(+)	(+)	(+)	(+)	(+)	(-)	(+)	(+)		
WESML	-4.82	0.184	0.627	0.482	0.621	0.098	-0.103	3.241	0.527	0.251	28.42
	(-3.41)	(2.94)	(2.53)	(3.94)	(2.84)	(1.01)	(-0.84)	(3.74)	(0.73)		(0.00)
Unweighted Probit[c]	-4.090	0.207	0.720	0.550	0.726	0.102	-0.122	3.320	0.624	0.318	57.25
	(-6.12)	(2.15)	(2.94)	(4.51)	(2.02)	(1.14)	(-0.98)	(4.59)	(0.91)		(0.00)

Panel B: Estimated Probabilities of Manipulation

	WESML				Unweighted Probit			
	Estimation Sample		Holdout Sample		Estimation Sample		Holdout Sample	
	Manipulators	Controls	Manipulators	Controls	Manipulators	Controls	Manipulators	Controls
Mean	0.125	0.004	0.087	0.006	0.201	0.019	0.172	0.012
St. Dev.	0.184	0.018	0.204	0.031	0.242	0.047	0.257	0.072
Maxim	0.824	0.672	1.000	0.989	0.984	0.951	0.999	0.999
Median	0.084	0.008	0.012	0.003	0.102	0.091	0.045	0.007
Minimum	0.001	0.001	0.001	0.001	0.001	0.001	0.008	0.001
[d]Wilcoxon Z	7.154		6.157		8.181		7.156	
(p-value)	(0.00)		(0.00)		(0.00)		(0.00)	
Median x^2	6.427		5.185		15.824		8.157	
(p-value)	(0.00)		(0.00)		(0.00)		(0.00)	

[a]The estimation sample consists of pre-2003 manipulators and their controls and the holdout sample of the post-2004 manipulators and their controls

[b]The pseudo-R^2 is equal to $(L^{2*}_0 - L^{2*}_1)/(1 - L^{2*}_0)$ where L_2 is the log likelihood for the WESML probit model (unconstrained), L_1 is the log likelihood with only the constant term in the model (constrained) and n the number of observations (Maddala, 1983). The log likelihood ration test statistic is equal to -2 times the difference in the log likelihood of the unconstrained and constrained models is asymptotically distribute Π^2 with degrees of freedom equal to the difference in the number of parameters of the two models.

[c]Weighted exogenous maximum likelihood probit is estimated assuming that prior probability of manipulation is 0.007. Sensitivity analysis on the prior probability of manipulation yields coefficients estimates of similar magnitude and significance. When the prior probability of manipulation is specified as 0.006, 0.008 and 0.009 the estimation yields x2 statistics of 30.14, 41.35 and 49.51, significant at the 1% level or lower. Unweighted probit implicitly assumes that the prior probability of manipulation is 0.0228 (185/8,115).

[d]Tests that the estimated probabilities for manipulators and non-manipulators are drawn from the same distribution.

8.5.3. Robustness Test

The robustness of the results is assessed in three ways, similarly to Beneish (1999). Up to five variables are dropped from the model to assess the stability of the coefficient estimates. Dropping the DEPI, SGAI, LVGI, TATA, GMI one at the time and in combination yields similar results for the remaining variables. Second, the sensitivity of the WESML is assessed, to the specification of the prior probability of manipulation. In addition the model is estimated with three alternatives prior probabilities of earnings manipulation, specifically 0.006, 0.008 and 0.009. The three new estimations yield similar results with χ^2 statistics ranging between 30.14 and 49.51 and pseudo – R^2s ranging from 22.72% and 29.42%. Moreover, the coefficients estimates are similar in size and significance across the four new specifications of the prior probability of manipulation.

Third, while the holdout sample is selected to be independent from the estimation sample, the sensitivity of the results is assessed to the choice of estimation of holdout samples. The assessment is made applying the Bootstrap function in STATA. There were generated 100 random samples of 132 manipulators and 2,636 controls to estimate the model 100 times. Similarly, there were obtained 100 random holdout samples by treating the complement of 53 manipulators and 1,055 controls as holdout sample and reproduce tests on estimated probabilities. The results are reported in Table 8.4 and evidence suggests findings are not sensitive to the choice of estimation/holdout samples.

The technique of bootstrapping is used to obtain a description of the sampling properties of empirical estimators using the sample data themselves, rather than broad theoretical results (Greene, 2002, Efron, 1979 and Efron Tibshirani, 1993). Suppose that θ_n is an estimate of a parameter vector θ based on a sample $\mathbf{X} = (x_1, ..., x_n)$ An approximation to the statistical properties of θ_n can be obtained by studying a sample of bootstrap estimators $\theta(b)m$, $b = 1, ..., B$, obtained by sampling n observations, *with replacement,* from **X** and recomputing θ with each sample. After a total of B times, the desired sampling characteristicis computed from:

$\Theta = [\theta(1)m, ..., \theta(B)m]$

For example, if it were known that the estimator were consistent and if n were reasonably large, then one might approximate the asymptotic covariance matrix of the estimator θ by using:

$$\text{Est.Asy. Var}[\hat{\theta}] = \frac{1}{B}\sum_{b=1}^{B}[\hat{\theta}(b)_m - \hat{\theta}_n][\hat{\theta}(b)_m - \hat{\theta}_n]'.$$

This technique was developed by Efron (1979) and has been appearing with increasing frequency in the applied econometrics literature. [Veall (1987,1992), Vinod (1993, 1994).] The bootstrap method has also appeared in accounting research. Clatworthy et al. (2007) apply a bootstrap technique to assess the reliability of prior studies of analysts' forecasts. Their results suggests that deflation may not be a successful method of correcting for heteroskedasticity, providing a strong rationale for using the bootstrap method.

To conclude, the estimation results provide evidence of a systematic association between the likelihood of manipulation and specific financial ratios. Since the model distinguishes manipulators from controls, its applicability as a classification tool is assessed below. The next section presents evidence on the probability cut-offs associated with different costs of making classification errors.

Table 8.4

Sensitivity Analysis to the choice of Estimation and Holdout Samples. Descriptive Statistics for Estimation Based on 100 Random Samples of 132 Manipulators and 2,363 Controls [Panel A], and Descriptive Statistics on the Estimated Probabilities of 100 Holdout Samples of 53 Manipulators and 1,055 Controls [Panel B][a]

Panel A: Descriptive statistics on 100 Estimation Samples

	Mean	Standard Deviation	Max	Median	Min	Percent Positive	Percentage Significant at 10%	Percentage Significant at 5%	Percentage Significant at 2.5%
Constant	-3.842	0.672	-2.152	-4.042	-5.017	0	100	100	100
Days in Receivables Index	0.153	0.073	0.272	0.217	0.104	100	100	100	100
Gross Margin Index	0.684	0.104	0.972	0.701	0.381	100	88	80	75
Asset Quality Index	0.492	0.142	0.876	0.518	0.297	100	96	90	86
Sales Growth Index	0.684	0.284	1.348	0.584	0.275	100	95	88	72
Depreciation Index	0.061	0.214	0.675	0.091	-0.514	78	30	22	10
SGA Index	0.050	0.228	0.684	-0.084	-0.423	48	25	9	5
Accruals to Total Assets	3.027	0.85	5.84	3.184	1.872	100	98	95	91
Leverage Index	-0.584	0.243	0.271	-0.519	-0.976	100	99	92	84
Pseudo - R^2	0.209	0.072	0.572	0.196	0.113	-	-	-	-
x^2 statistic	75.45	10.45	104.27	70.43	41.86	-	-	-	-

Panel B: Descriptive Statistics on Estimated Probabilities on 100 Holdout Samples

	Mean	Standard Deviation	Max	Median	Min	Wilcoxon-Z P-value	Median x^2 P-value
Manipulators	0.156	0.051	0.394	0.142	0.0571	11.196	39.42
Controls	0.031	0.018	0.042	0.028	0.018	(0.000)	(0.000)

[a] Random samples are generated using the Bootstrap function in Stata. Bootstrap function generates 100 random samples of 132 manipulators out of 185 and 2,363 controls Each time, the complement of 53 manipulators and 1,055 controls is considered as a holdout sample.

[b] Significance based on one-tailed test.

[c] Variables and statistics are defined in Tables 2 and 3.

[d] Tests that the estimated probabilities for manipulators and non-manipulators are drawn from the same distribution.

8.5.4 The Model as a Classification Tool

In order to estimate a model for classifying manipulators from non-manipulators, an assumption needs to be made, that the sample of controls contains no manipulators. Given the possibility that the control sample could include companies that manipulate earnings without being discovered, there is assumed that their proportion in the control sample is immaterial. Hence, thereafter the sample of controls is treated as it comprises of non-manipulators.

A model used as a classification tool makes two types of errors: it can classify a company as a non-manipulator when it manipulates its earnings (Type I error) and it can classify a company as a manipulator when does not manipulate (Type II error). The probability cut-offs that minimise the expected costs of misclassification depend on costs associated with the relative costs of making an error of either type. Classification error costs are likely to differ among users of financial statemetns. For example, a shareholder is likely to have high Type I error costs since the share price loss associated with the discovery of the manipulation is significant whereas the Type II error cost could be low given the availability of alternative companies for investment. On the other side, a regulator has to balance the protection of the investors against the costs of falsely censuring a company. Their relative costs cannot be measured precisely but it is likely that Type II error costs of regulators are higher than those of shareholders (Beneish, 1999).

As there is no accurate measurement for the cost of Type I and Type II errors, there are considered relative costs ranging from 1:1 to 100:1. For investors, however, the relevant range is likely between 20:1 and 30:1. To justify this range, following Beneish (1999), the typical manipulator in the UK, loses approximately 30% of its market value in the quarter containing the discovery of the manipulation (Peasnell et al., 2000). Assuming that, on a similar basis, a typical company's equity appreciates between 1 and 2% per quarter, it takes 20 to 40 non-manipulators in the shareholder's portfolio to recover the loss from a single manipulator in that quarter (Beneish, 1999). Considering this assumption, one possibility is that investors view a type I error as 20 to 40 times as costly as a type II error.

Table 8.5 presents the probability cut-offs that minimise the expected costs of misclassification. The results are similar across estimation methods. Panel B documents the results of the unweighted probit model. In the estimation sample, at

relative error costs of 10:1, the model classifies companies as manipulators when the estimated probabilities exceed 0.073 (a score greater than -1.14); it misclassifies 48.3% of the manipulators and 8.4% of the non-manipulators. Similarly, at relative error costs of 20:1 the model classifies companies as manipulators when the estimated probabilities exceed 0.043 (a score greater than -1.52); it misclassifies 42.1% of the manipulators and 17.2% of the non-manipulators. At the relative error costs of 30:1 the model classifies manipulators when the estimated probabilities exceed 0.041 (a score greater than -1.58); it misclassifies 37.8% of the manipulators and 19.4% of non-manipulators.

In the holdout sample, at relative error cost of 20:1, the model classifies companies as manipulators when the estimated probability exceeds 4.3% (a score greater than -1.62); it misclassifies 48.3% of the manipulators and 8.9% of the non-manipulators. Similarly, at relative error cost of 30:1 the model misclassifies 43.2% of the manipulators and 9.8% of the non-manipulators.

Figures 8.1 and 8.2 report the performance of the un-weighted probit model. The figures present the following information: (1) the probability cut-offs associated with each relative error cost assumption, (2) the percentage of correctly classified manipulators, and (3) the percentage of incorrectly classified non-manipulators. For the estimation sample in Figure 8.1, percentage of correctly classified manipulators ranges from 51.7% to 62.2%, while the percentage of incorrectly classified non-manipulators ranges from 8.4% to 19.4%. For the holdout sample in figure 8.2, the percentage of correctly classified manipulators ranges from 41.6% to 56.8%, while the percentage of incorrectly classified non-manipulators ranges from 7.2% to 9.8%.

While these results suggest that the model identifies potential manipulators, it does so with error rates in the range of error costs those are likely to be of relevance to investors. In order to improve the model's performance, three additional variables are introduced. The next session explores the performance of the improved model.

Table 8.5

Cut-off probabilities and Probability of Type I and Type II Errors for Various Levels of Relative Costs in the Estimation Sample (132 manipulators and 2,636 controls) and in the Holdout Sample (53 manipulators and 1,055 controls) [a]

Panel A: WESML		Estimation Sample		Holdout Sample	
Relative costs of Type I and Type II errors	Cut-off Probability	Probability of Classification errors		Probability of Classification Errors	
		Type I	Type II	Type I	Type II
1:1	1.000	1.000	0.000	1.000	0.000
10:1	0.328	0.913	0.001	0.924	0.002
20:1	0.061	0.551	0.038	0.661	0.033
30:1	0.058	0.542	0.041	0.628	0.037
40:1	0.032	0.476	0.057	0.512	0.042
60:1	0.016	0.382	0.157	0.517	0.072
100:1	0.009	0.279	0.183	0.537	0.087

Panel B: Unweighted Probit		Estimation Sample		Holdout Sample	
Relative costs of Type I and Type II errors	Cut-off Probability	Probability of Classification errors		Probability of Classification Errors	
		Type I	Type II	Type I	Type II
1:1	1.000	1.000	0.000	1.000	0.000
10:1	0.073	0.483	0.084	0.584	0.072
20:1	0.043	0.421	0.172	0.483	0.089
30:1	0.041	0.378	0.194	0.432	0.098
40:1	0.038	0.356	0.217	0.427	0.099
60:1	0.031	0.327	0.227	0.418	0.112
100:1	0.026	0.284	0.248	0.391	0.128

[a] A Type I error is defined as classifying an observation as a control when it manipulates. A type II error is defined as classifying and observation as a manipulator when it is a control.

Figure 8.1: The Classification Performance of the Unweighted Probit Model for Different Relative Error Cost Assumptions (Estimatin Sample)

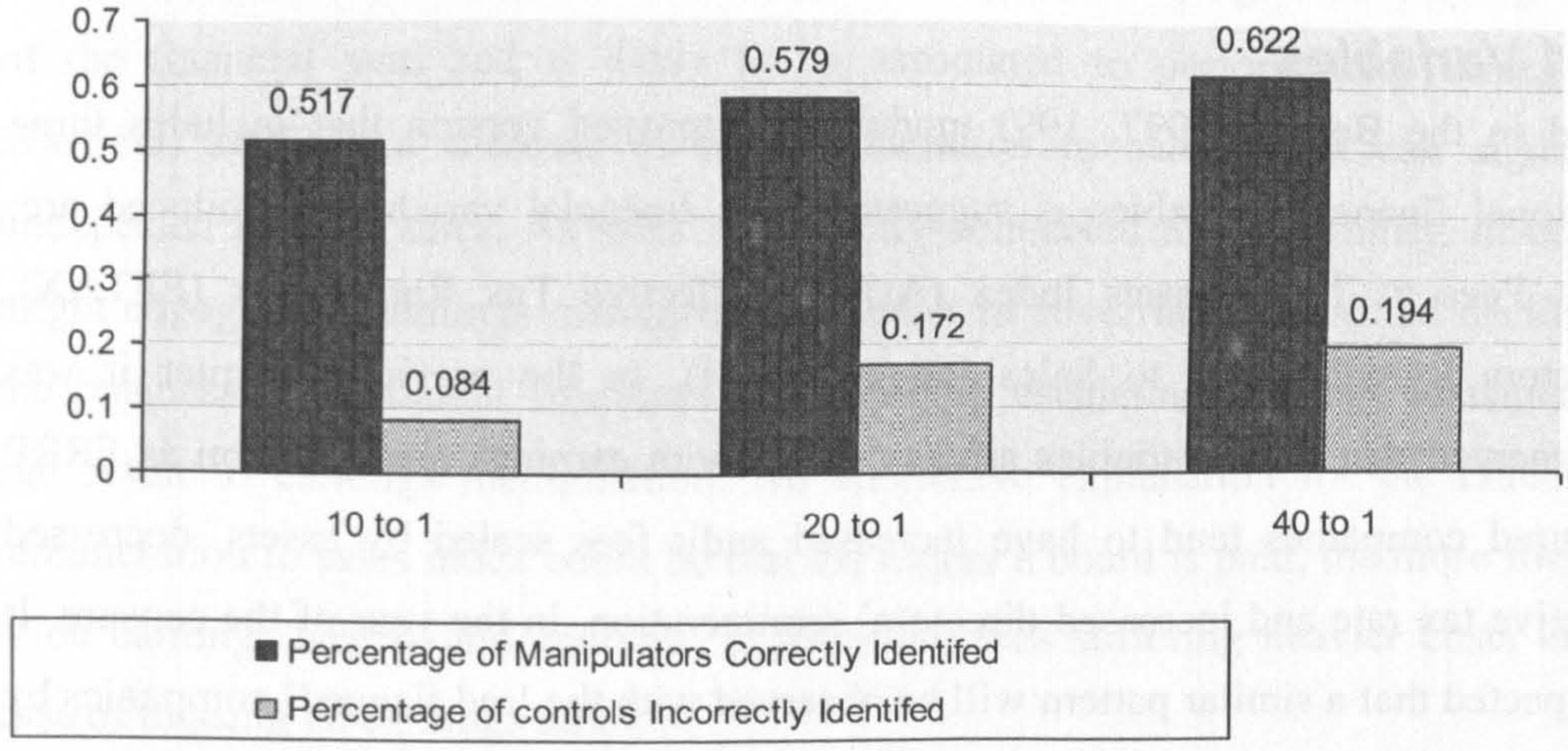
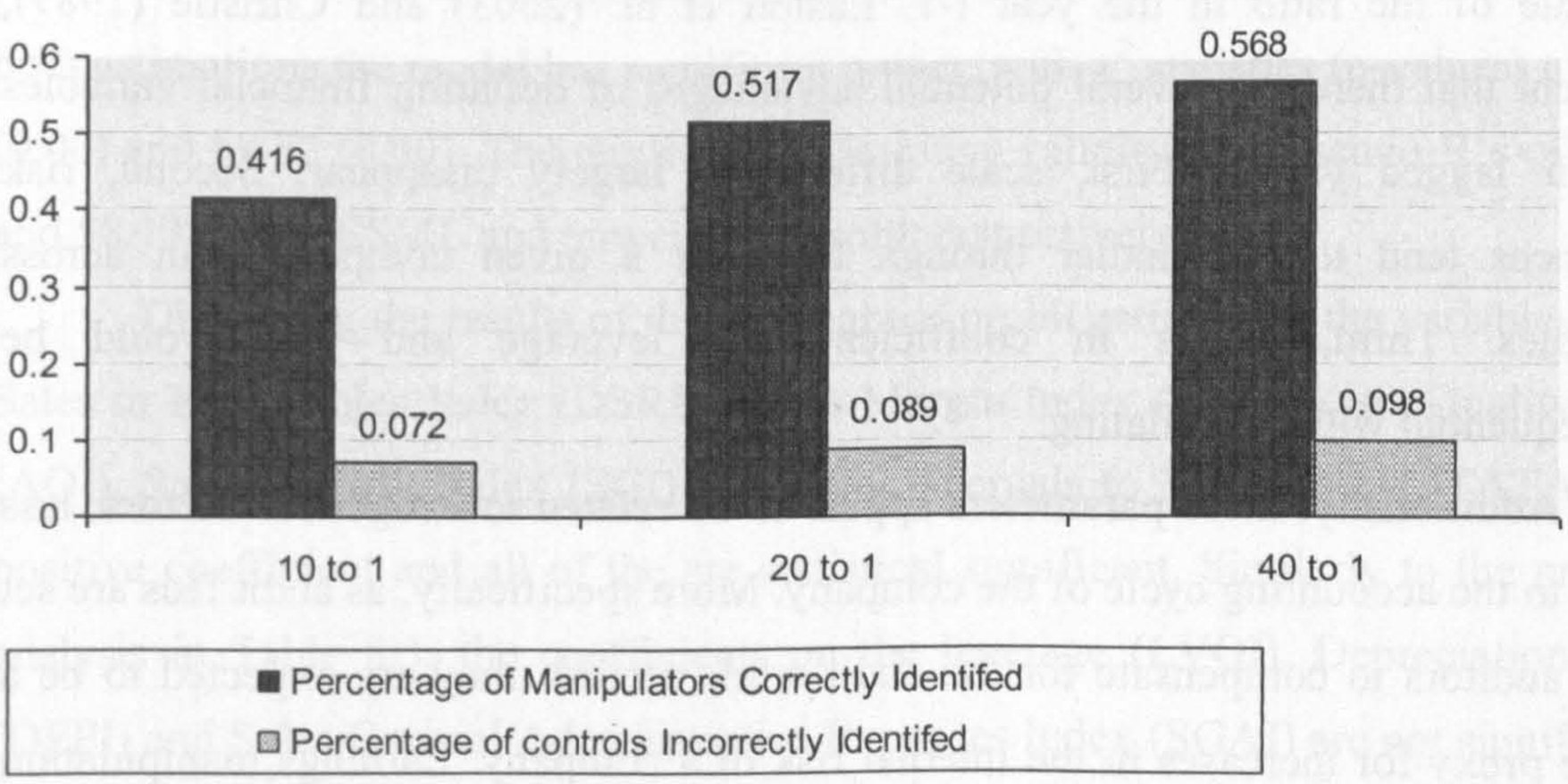


Figure 8.2: The Classification Performance of the Unweighted Probit Model for Different Relative Error Cost Assumptions (Holdout Sample)



8.6 Specification of the Enhanced Model

8.6.1 Variables

Based in the Benish (1997, 199) model, an improved version that includes three additional financial variables is suggested. The financial variables introduced are: Audit Fees to Total Assets Index (AUDI), Effective Tax Rate Index (EFTAX), Directors Remuneration to Sales Index (DIRSI). In the previous chapter it was documented that these variables are associated with earnings manipulation as FRRP censured companies tend to have increased audit fees scaled by assets, decreased effective tax rate and increased directors' remuneration, in the year of the censure. It is expected that a similar pattern will be observed with the 'red flagged' companies by the *Company Reporting*.

The independent variables used in the process of defining a model for detecting earnings manipulation are defined as financial ratio in the year t deflated by the value of the ratio in the year t-1. Easton et al. (2003) and Christie (1987), document that there are several potential advantages of deflating financial variables by their lagged values. First, scale differences largely disappear. Second, risk differences tend to be smaller through time for a given company than across companies. Third, biases in coefficients on leverage and size would be inconsequential without deflating.

Additionally, these parameters appear to be related to exogenous factors, less related to the accounting cycle of the company. More specifically, as audit fees are set by the auditors to compensate for the audit work needed, they are expected to be a reliable proxy for increases in the internal risk of a company. Earnings manipulation is more likely to occur in an environment of low internal controls and lack of segregation of duties (Larcker and Richardson, 2004).

Similarly, the effective tax rate is related to the tax accounting system that is less flexible in recognising revenues and expenses. For example a revision in the asset's useful lives, will not affect tax profits at the same magnitude as the financial accounting profits. Additionally, a company seeking to increase profits after tax would attempt to decrease the tax charge of the year. Holland and Jackson (2004) examine the association between deferred tax provisions and earnings management,

and find that companies take an overall view in determining the required level of provision of deferred tax in order to manage earnings.

Directors' remuneration (excluding bonuses) is usually agreed at the beginning of the financial year and is likely to be associated to performance (Cheng and Warfield, 2005). An increase in the remuneration to sales index can signal an unexpected drop in sales. As sales are directly connected to profitability, directors' might engage into earnings management in order to cover the unexpected decline. If the business environment continues deteriorating, escalating earnings management can result to earnings manipulation. An alternative explanation for the Directors' remuneration to sales index could be that the higher a board is paid, the more focused is on earnings targets and analysts' expectation, thus suffering heavier costs in the case of missing an earnings target.

8.6.2 Estimation Results and Holdout Sample Tests

Panel A of Table 8.6 documents the results of the WESML probit and unweighted probit estimations of the improved model. The likelihood ratio test indicates that for both estimations the model has significant power, with x^2 statistics (p-values) of 48.57 (0.00) and 69.72 (0.00). The model has descriptive validity with pseudo-R^2s of 42.1% and 58.1% for WESML and unweighted probit respectively.

Discussing the results of the unweighted probit estimation, the variables: Days Sales in Receivables Index (DSRI), Gross Margin Index (GMI) Asset Quality Index (AQI), Sales Growth Index (SGI) and Total Accruals to Total Assets (TATA) have positive coefficient and all of the are statistical significant. Similarly to the previous analysis in Table 8.3, the coefficients on the leverage (LVGI), Depreciation Index (DEPI) and Sales General Administrative Expenses Index (SGAI) are not significant.

The variable Audit Fees to Assets Index (AUDI) has a positive coefficient of 0.421 that is over four standard deviations from zero. This is consistent with companies having increased detection risk having higher possibilities to manipulate earnings. The Effective Tax Rate Index (EFTAXI) also has a significant negative coefficient (-0.391, t-statistic -3.24), consistent with the likelihood of earnings manipulation increasing when companies' profits recognised under the tax accounting are lower. The Directors' Remuneration to Sales Index (DIRSI) has a positive coefficient that is over three standard deviations from zero, consistent with the notion

that highly paid directors having more incentive to manipulate earnings when sales fail to reach the expected levels.

Table 8.3 Panel B, reports the estimated probabilities of earnings manipulation for both the estimation and holdout samples. For the estimation sample, the model estimated using WESML predicts higher average (median) probability of earnings manipulation 0.85(0.142) for manipulators than for controls 0.004 (.002). Similarly, the model estimated using un-weighted probit predicts higher average (median) probabilities for manipulators 0.228 (0.143) than for controls. Wilcoxon and median tests reject the null hypotheses that estimated probabilities for manipulators and controls are drawn from the same population. Results for the holdout sample of 53 manipulators and 1,055 controls are similar to the estimation sample findings. The model predicts that manipulators are, on average, about 12 times more likely to manipulate earnings. The distributions of estimated probabilities for manipulators and controls based on unweighted probit illustrate these differences. For example, in the estimation sample (not reported in the tables) nearly all the controls (93.5%) have an estimated probability of manipulation less that 0.12 compared to the average probability of 18% that the 132 manipulators have. Similarly, in the holdout sample, 63.5% of the controls, had an estimated probability of manipulation of less than .01, compared with 21.4% of the manipulators.

Table 8.6

WESML and Unweighted Probit Estimation Results Based on an Estimation Sample of 132 Manipulators and 2,636 controls (Panel A). Estimated probabilities of Manipulation for the Estimation Sample and for a Holdout Sample of 53 Manipulators and on 1,055 controls

Panel A: Estimation Results

	Constant	Days in Receivables Index	Gross Margin Index	Asset Quality Index	Sales Growth Index	Depreciation Index	SGA Index	Accruals to Total Assets Index	Leverage Index	Audit Fees to Assets Index	Effective Tax Rate Index	Rem. to Sales Index	[b]Pseudo R^2	x^2 statistic (p-value)
Predicted Sign		(+)	(+)	(+)	(+)	(+)	(-)	(+)	(+)	(+)	(-)	(+)		
WESML	-5.831	0.162	0.418	0.391	0.351	0.218	-0.103	2.98	0.527	0.381	-0.351	0.281	0.421	48.57
	(-2.51)	(2.51)	(2.12)	(3.15)	(2.11)	(0.98)	(-0.71)	(2.61)	(0.73)	(4.27)	(-3.11)	(2.99)		(0.00)
Unweighted Probit[c]	-5.124	0.242	0.512	0.424	0.421	0.317	-0.152	3.210	0.624	0.421	-0.391	0.317	0.581	69.72
	(-5.18)	(2.98)	(2.17)	(3.72)	(2.74)	(1.01)	(-0.92)	(3.52)	(0.91)	(4.85)	(-3.24)	(3.19)		(0.00)

Panel B: Estimated Probabilities of Manipulation

	WESML				**Unweighted Probit**			
	Estimation Sample		Holdout Sample		Estimation Sample		Holdout Sample	
	Manipulators	Controls	Manipulators	Controls	Manipulators	Controls	Manipulators	Controls
Mean	0.185	0.004	0.141	0.006	0.228	0.008	0.198	0.012
St. Dev.	0.151	0.018	0.161	0.028	0.224	0.042	0.231	0.0051
Maxim	0.915	0.583	1.000	0.85	0.991	0.891	0.989	0.904
Median	0.142	0.002	0.017	0.001	0.143	0.012	0.024	0.004
Minimum	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001
[d]Wilcoxon Z	8.186		7.172		9.724		8.451	
(p-value)	(0.00)		(0.00)		(0.00)		(0.00)	
Median x^2	14.72		10.724		17.745		14.185	
(p-value)	(0.00)		(0.00)		(0.00)		(0.00)	

8.6.3 Robustness Test

The holdout sample is chosen to be independent from the estimation sample. Table 8.7 assesses the sensitivity of the results to the choice of estimation and holdout samples. With the Bootstrap function in Stata there are generated 100 random samples of 132 manipulators and 2,636 controls and the model is estimated 100 times. Similarly, there are constructed 100 random holdout samples, by treating the complement of 53 manipulators and 1,055 controls to each random estimation sample as a holdout sample. Thus the model is re-estimated 100 times, in order to reproduce the tests on estimated probabilities. The results are reported in Table 8.7 and the evidence suggest that the results are not sensitive to the choice estimation and holdout samples.

Table 8.7

Sensitivity Analysis to the choice of Estimation and Holdout Samples. Descriptive Statistics for Estimation Based on 100 Random Samples of 132 Manipulators and 2,363 Controls (Panel A), and Descriptive Statistics on the Estimated Probabilities of 100 Holdout Samples of 53 Manipulators and 1,055 Controls (Panel B)

Panel A: Descriptive statistics on 100 Estimation Samples

	Mean	St.Dv	Max	Median	Min	% +	% Sign.at 10%	% Signi. at 5%	% Sign. at 2.5%
Constant	-5.123	0.512	-4.002	-5.01	-6.427	0	100	100	100
Days in Receivables Index	0.182	0.062	0.251	0.204	0.184	100	100	100	100
Gross Margin Index	0.517	0.081	0.801	0.421	0.281	100	84	81	76
Asset Quality Index	0.402	0.103	0.721	0.381	0.301	100	96	92	87
Sales Growth Index	0.351	0.181	0.584	0.381	0.201	100	95	91	87
Depreciation Index	0.211	0.154	0.384	0.201	-0.241	83	38	26	12
SGA Index	-0.108	0.058	0.384	-0.084	-0.034	58	28	11	6
Accruals to Total Assets	2.881	0.767	5.81	2.491	2.724	100	98	96	93
Leverage Index	0.554	0.189	0.724	0.482	0.213	100	99	94	92
Audit Fees to Assets Index	0.374	0.094	0.517	0.342	0.211	100	99	96	94
Effective Tax Rate Index	-0.415	-0.116	-0.108	-0.351	-0.724	0	98	96	95
Remuneration to Sales Index	0.267	0.074	0.384	0.224	0.0987	100	97	93	89
Pseudo - R^2	0.43	0.057	0.55	0.196	0.113	-	-	-	-
x^2 statistic	88.75	11.84	115.45	70.52	50.48	-	-	-	-

Panel B: Descriptive Statistics on Estimated Probabilities on 100 Holdout Samples

	Mean	Standard Deviation	Max	Median	Min	Wilcoxon-Z P-value	Median x^2 P-value
Manipulators	0.224	0.048	0.351	0.184	0.142	25.564	55.679
Controls	0.008	0.007	0.018	0.006	0.001	(0.000)	(0.000)

8.6.4 The Enhanced Model as a Classification Tool

Similarly to figures 8.1 and 8.2, the model can make two types of errors: it can classify a company as a non-manipulator when it manipulates (Type I error) and it can classify a company as a manipulator when it does not manipulate (Type II error). The probability cut-offs that minimise the expected costs of misclassification are presented in Table 8.8. The results are qualitative similar across WESML and unweighted probit estimation methods, thus the discussion is focused on the unweighted probit estimation, in Panel B. In the estimation sample, at relative error costs of 10:1, the model classifies companies as manipulators when the estimated probabilities exceed 0.301 (a score greater than -0.87); it misclassifies 38.4% of the manipulators and 6.5% of the non manipulators.

Similarly, at relative error costs of 20:1 the model classifies companies as manipulators when the estimated probabilities exceed 10.4% (a score greater than -1.12); it misclassifies 35.1% of the manipulators and 8.6% of the non-manipulators. At the relative error costs of 30:1 the model classifies companies as manipulators when the estimated probabilities exceed 0.095 (a score greater than -1.31); it misclassifies 32.1% of the manipulators and 14.5% of non-manipulators. In the holdout sample, at relative error cost of 20:1, the model classifies companies as manipulators when the estimated probability exceeds 10.4% (a score greater than -1.12); it misclassifies 38.1% of the manipulators and 9.1% of the non-manipulators. Similarly, at relative error cost of 30:1 the model misclassifies 34.2% of the manipulators and 11.1% of the non-manipulators.

Figures 8.3 and 8.4 report the performance of the un-weighted probit model. The figures present the following information: (1) the probability cut-offs associated with each relative error cost assumption, (2) the percentage of correctly classified manipulators, and (3) the percentage of incorrectly classified non-manipulators. For the estimation sample in Figure 8.3, the percentage of correctly classified manipulators ranges from 61.6% to 67.9%, while the percentage of incorrectly classified non-manipulators ranges from 6.5% to 14.5%. For the holdout sample in figure 8.2, the percentage of correctly classified manipulators ranges from 57.3% to 65.8%, while the percentage of incorrectly classified non-manipulators ranges from 7.1% to 11.1%.

These results suggest the improved model identifies potential manipulators, with smaller error rates than the 8-variable Beneish (1999) Model. Comparing the misclassifications at the holdout sample, between the improved model and the 8-variable model, it can be inferred that the improved model classifies manipulators with a lower misclassification rate. More specifically, at relative error cost 10:1 in the holdout sample the improved model classifies correctly 57.3% of the manipulators, while the 8-variable model correctly classifies 41.6%. Similarly, at relative error cost 20:1 the 11-variable model classifies correctly the 61.9% of the manipulators, misclassifying only 9.1% of the controls as manipulators. In contrast, the 8 variable model correctly classifies the 51.7% of the manipulators and classifies incorrectly 8.9% of the controls. A similar pattern is observed at the 40:1 relative error cost. This evidence suggests the proposed 11-variable model classifies manipulators at a lower Type I and Type II error rate.

Table 8.8

Cut-off probabilities and Probability of Type I and Type II Errors for Various Levels of Relative Costs in the Estimation Sample (132 manipulators and 2,636 controls) and in the Holdout Sample (53 manipulators and 1,055 controls) [a]

Panel A: WESML		Estimation Sample		Holdout Sample	
Relative costs of Type I and Type II errors	Cut-off Probability	Probability of Classification errors		Probability of Classification Errors	
		Type I	Type II	Type I	Type II
1:1	1.000	1.000	0.000	1.000	0.000
10:1	0.451	0.856	0.002	0.915	0.002
20:1	0.154	0.405	0.024	0.437	0.025
30:1	0.105	0.364	0.031	0.413	0.038
40:1	0.075	0.315	0.041	0.384	0.047
60:1	0.055	0.271	0.107	0.311	0.127
100:1	0.004	0.201	0.151	0.251	0.184

Panel B: Unweighted Probit		Estimation Sample		Holdout Sample	
Relative costs of Type I and Type II errors	Cut-off Probability	Probability of Classification errors		Probability of Classification Errors	
		Type I	Type II	Type I	Type II
1:1	1.000	1.000	0.000	1.000	0.000
10:1	0.301	0.384	0.065	0.427	0.071
20:1	0.104	0.351	0.086	0.381	0.091
30:1	0.095	0.321	0.145	0.342	0.111
40:1	0.054	0.271	0.195	0.304	0.184
60:1	0.031	0.242	0.204	0.273	0.224
100:1	0.002	0.198	0.221	0.224	0.257

[a] A Type I error is defined as classifying an observation as a control when it manipulates. A type II error is defined as classifying and observation as a manipulator when it is a control.

Figure 8.3: The Classification Performance of the Unweighted Probit Model for Different Relative Error Cost Assumptions (Estimation Sample)

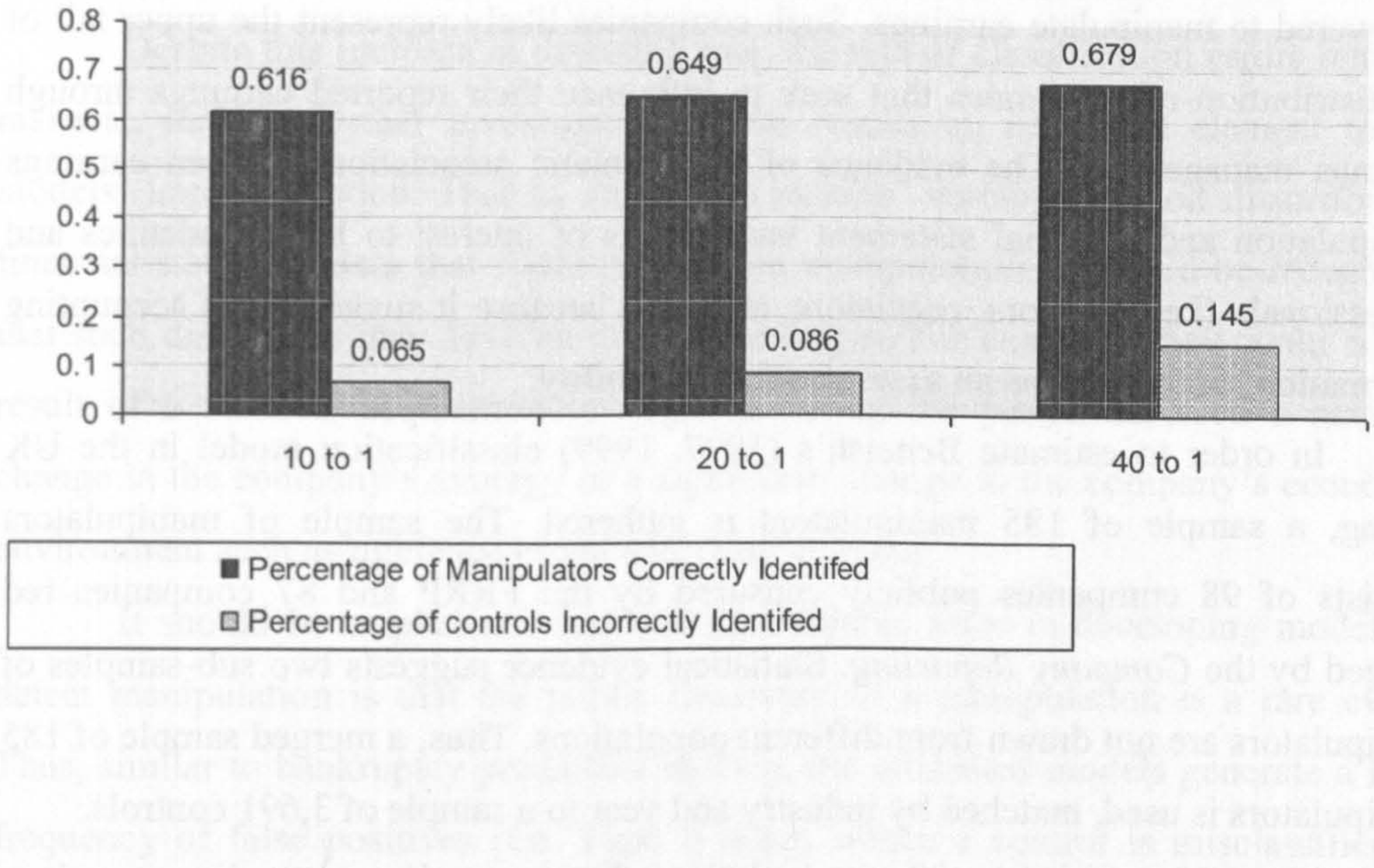
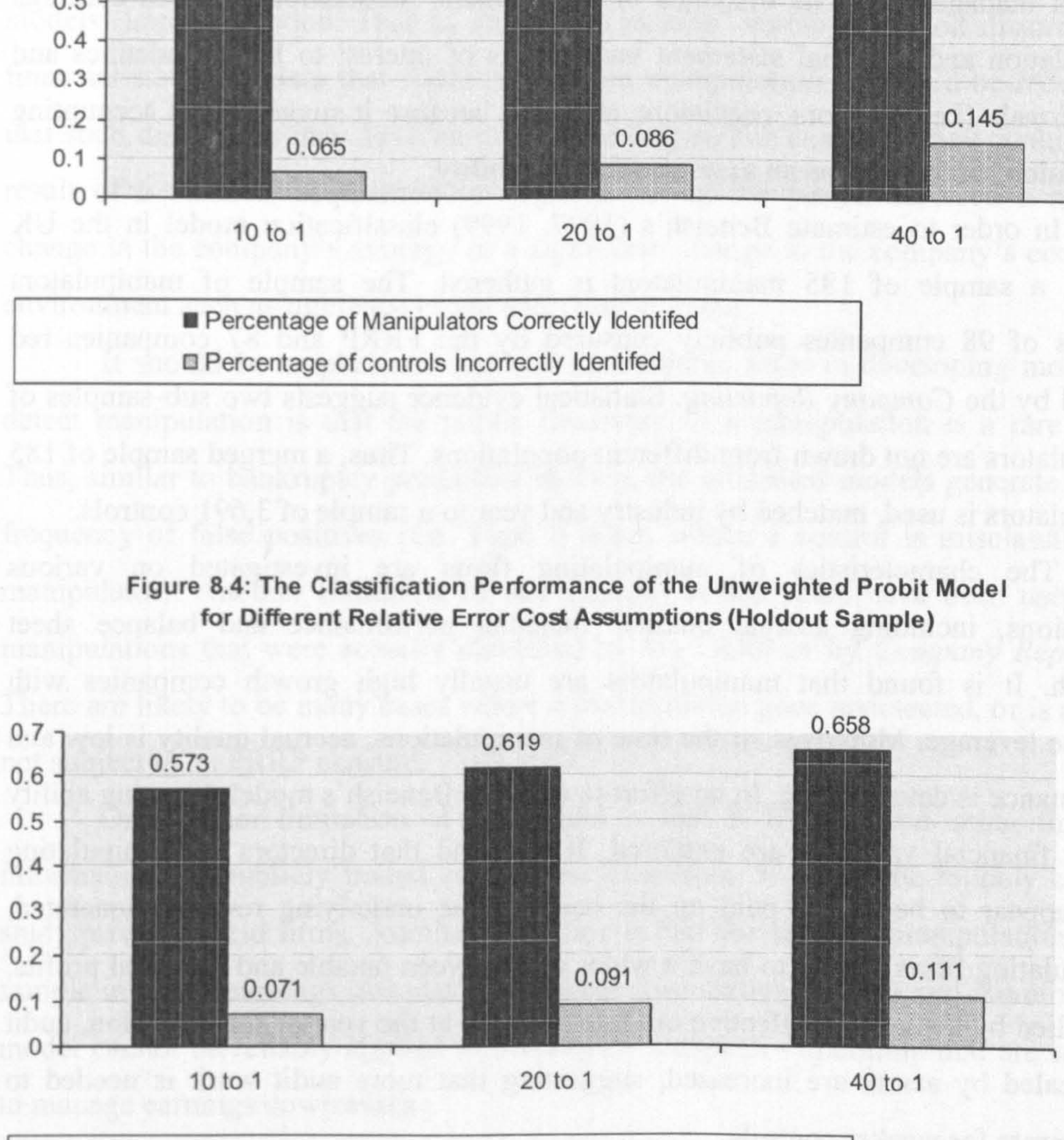


Figure 8.4: The Classification Performance of the Unweighted Probit Model for Different Relative Error Cost Assumptions (Holdout Sample)



8.7 Conclusions

The evidence in this chapter is based on a sample of companies that were publicly discovered to manipulate earnings. Such companies likely represent the upper tail of the distribution of companies that seek to influence their reported earnings through earnings management. The evidence of a systematic association between earnings manipulation and financial statement variables is of interest to both academics and professionals (i.e. investors, regulators, auditors) because it suggests that accounting information can be used as an assessment of reliability.

In order to estimate Beneish's (1997, 1999) classification model in the UK setting, a sample of 185 manipulators is gathered. The sample of manipulators consists of 98 companies publicly censured by the FRRP and 87 companies red flagged by the *Company Reporting*. Statistical evidence suggests two sub-samples of manipulators are not drawn from different populations. Thus, a merged sample of 185 manipulators is used, matched by industry and year to a sample of 3,691 controls.

The characteristics of manipulating firms are investigated on various dimensions, including accrual quality, financial performance and balance sheet strength. It is found that manipulators are usually high growth companies with increase leverage. Moreover, at the time of manipulations, accrual quality is low and performance is deteriorating. In an effort to enhance Beneish's model detecting ability further financial variables are explored. It is found that directors of manipulating firms appear to be highly paid on the basis of the underlying revenue generated. Manipulating firms appear to have a wider gap between taxable and financial profits, as implied by their lower effective tax rate. Finally, at the year of manipulation, audit fees scaled by assets are increased, suggesting that more audit work is needed to compensate for weaker controls.

Based on the above findings, two logistic regression models to determine the probability of manipulation are developed. The first model utilises the eight variables described in Beneish (1997, 1999). The second model includes three more variables: (i) Audit fees to assets index, (ii) Effective tax rate index and (iii) Directors Remuneration to sales index. The robustness of models' coefficients is tested in 100 different estimating and holdout samples. Both defined models appear to be insensitive in random sampling. It is shown that both models have power to detect

manipulations within estimation and holdout samples. It is shown that the 11-variable model has lower error rates in misclassifying manipulators and controls. For example at the relative cost of misclassification of 20:1, the 11-variable model's detection rate for manipulators is 10% higher than the rate of the 8-variable model.

Despite this increase in detection rate, the rate of classification errors remains material, making further investigation of the results an important element to the models' implementation. That is, since both models' variables exploit distortions in financial statement data that could result from manipulation, it should be recognised that such distortions may have an alternative origin. For example, they could be the result of a material acquisition or disposal during the period assessed a material change in the company's strategy or a significant change in the company's economic environment such as tightened credit and weak demand.

It should be emphasised that one unavoidable issue in developing models to detect manipulation is that the public discovery of a manipulation is a rare event. Thus, similar to bankruptcy prediction models, the estimated models generate a high frequency of false positives (i.e. Type II error, where a control is misclassified as manipulator). Another limitation of this analysis is that there have been used only manipulations that were actually identified by the FRRP or by *Company Reporting*. There are likely to be many cases where a manipulation goes undetected, or is at least not subject to an FRRP censure.

One further limitation of the model is that it is estimated using financial information for publicly traded companies. Therefore, it cannot be reliably used to study privately-held firms. Another limitation is that the earnings manipulation in the sample involves earnings overstatement rather than understatement and therefore, the model cannot be reliably applied to investigate companies operating that are seeking to manage earnings downwards.

An interesting path for future research would be to investigate other companies with a high probability to manipulate earnings. For example, do they engage in earnings management, within the limits of accounting standards? Do they experience declines in subsequent financial performance and in market value? Are they more likely to record future asset write-offs ?

This chapter provides useful insights into research on earnings management. Prior research has generally focused on measures of discretionary accruals as proxies for incentives to engage in earnings management. The results of this research suggest

that researchers could also consider Beneish's models as an alternative proxy for detecting the likelihood of earnings manipulation. In addition, it is found that taxable profits are unusually low during manipulation years. An important avenue for future research is to better understand the role of real transaction management from companies seeking to achieve specific earnings' targets.

Finally, the analysis in this chapter could provide useful insights to auditors, regulators, investors and other financial statement users about the characteristics of manipulating companies. By better understanding these characteristics, financial statement users would be in a better position to identify and eliminate manipulation activity in the future. The efficient operation of capital markets depends significantly on the quality of the financial information provided to the interested parties. Eliminating manipulation activity should lead to improved financial information and hence more efficient allocation of capital.

Chapter 9

Conclusions

9.1 Introduction

This research is concerned with understanding the influence of managerial discretion allowed in accounting estimates and policies on earnings, through earnings management and earnings manipulation. In doing so, there are analysed specific case studies involving earnings management, the conditional distribution of earnings among thresholds and the characteristics of companies that have been publicly criticised for earnings manipulation.

This thesis contributes to the empirical earnings management literature by investigating the characteristics of companies that breach accounting standards and fail to provide a true and fair view in their published financial statements. These instances of earnings manipulation are analysed using company-level data and cross-sectional panel data. While others have documented the characteristics of companies manipulating earnings in the US, this line of research provides new evidence, investigating the UK market.

This chapter provides a summary of the main findings and contributions. In addition, it offers a discussion of the limitations of the analysis and suggests new avenues for future research. The remainder of this chapter is organised as follows. Section two presents a summary of the main findings of each chapter. Section three discusses possible limitations and section four suggests extensions for future research.

9.2 Summary of main findings

In the second chapter of the thesis provides a discussion of the recent literature in earnings management and earnings manipulation. In addition there is identified a gap in accounting literature and auditing standards in setting a robust definition for earnings management and earnings manipulation. It is discussed that earnings manipulation is considered to be associated with accounting fraud whereas earnings management usually is treated as the application of aggressive accounting practices within the limits of accounting standards. The main hypotheses tested in this thesis are summarised in table 10.1

Table 10.1 Summary of Hypotheses

Chapter	Hypothesis	Result
4	H_1 Earnings manipulation involves accounting treatments beyond the limits of true and fair view and results from escalating earnings management.	Confirmed through interview with FRRP
5	H_2: The instances earnings management and earnings manipulation involve specific accounting treatments.	Confirmed examining case studies
6	H_3: Earnings are managed to avoid earnings decreases.	Confirmed, Figure 6.1
6	H_4: Earnings are managed to avoid losses.	Confirmed, Figure 6.3
6	H_5: The frequencies of small negative non-discretionary earnings levels (changes) and small positive non-discretionary earnings levels (changes) are equal to the frequencies expected under a smooth distribution.	Confirmed, Table 6.3
6	H_6: The proportion of observations with positive earnings levels (changes) is larger than the proportion of observations with positive non-discretionary earnings levels (changes).	Confirmed, Tables 6.3, 6.4
6	H_7: Earnings discontinuity at zero has not declined over the last years of the sample.	Confirmed, Figure 6.12
7	H_8: FRRP companies are characterised by deteriorating performance in the defect year.	Confirmed, Figure 7.1
7	H_9: Corporate governance in FRRP companies is of a lower quality comparing to the control sample.	Confirmed, Table 7.6
7	H_{10}: The financial variables described in M-Score model are correlated with the likelihood of earnings manipulation.	Confirmed, Tables 7.8, 7.9
8	H_{11}: A probit model based on M-score's variables can be used as a classification tool for signalling earnings manipulation.	Confirmed, Figures 8.1, 8.2
8	H_{12}: The inclusion of the three additional variables will increased the ability of the model to identify manipulators and decrease misclassification errors.	Confirmed, Figures 8.3, 8.4

Further, there are provided methodological details of different approaches into earnings management research together with the main limitations of each methodology. These approaches are grouped under three categories namely: (a) discretionary accruals models, (b) specific accruals models and (c) conditional distributions. Additionally, there are discussed the main motives behind earnings management, as they are identified in recent literature. It is discussed that it would be useful for regulators, standard setters and stakeholders the investigation of earnings manipulation in the UK, expanding the findings of Peasnell et al. (2004) about companies censured by the FRRP. Finally, it is suggested that it could be fruitful to research the application of Beneish's (1999) model in the UK setting and to suggest possible improvements.

Chapter three provides an analysis of the research questions implementing an artificially imposed framework in exploring the mechanics of earnings management and earnings manipulation. The purpose of this framework is to facilitate the testing of the research hypotheses. Previous studies on earnings management have focused on the impact of discretionary accruals and relatively little attention has been given to specific accruals and how they can be used in signalling earnings manipulation.

Chapter four provides an analysis of the exploratory research interviews with the FRRP and aims at understanding the investigation process of the panel, the regulators perceived difference between earnings management and earnings manipulation and the wider role of the panel. It is found that the Panel recently adopted a proactive approach while in the past was operating only in a reactive basis responding to complaints and referrals. Interviews with the Panel revealed the increased importance for research in the field of earnings manipulation in the UK, as a model for detecting non compliance with accounting standards would be useful for both regulators and investors. It is also documented that Panel's view is that earnings manipulation usually results from earnings management. This is consistent with anecdotal evidence suggesting that firstly companies manage earnings within the limits of accounting standards and gradually these aggressive accounting practises can escalate, violating the true and fair view principle. Nonetheless, it remains unclear at which stage earnings management becomes earnings manipulation. Finally, it is discussed the broader role of the Panel which is to improve the quality of financial reporting in the UK. To achieve this, the Panel has adopted a risk based approach in selecting companies for reviewing. Panel's focus shifts into business sectors under

increased financial and commercial pressures. In these sectors the Panel seeks to identify companies that fail to comply with accounting standards and requests paradigmatically from them to restate their accounts.

Chapter five provides an analysis of specific case studies of earnings management and earnings manipulation. These cases are examined systematically under specific categories: accounting treatments in acquisitions, revenue recognition, capitalisation of expenses or R&D costs, amortisation or impairment of goodwill, recognition/classification of financial or non-current assets, estimations in depreciation or pension funds, provisions for deferred tax or future liabilities. It is suggested that earnings management cases involve specific accounting techniques exploiting the managerial discretion allowed by certain accounting standards. These findings can be seen as very preliminary evidence of the existence of earnings management and earnings manipulation and how specific accruals can be useful in investigating earnings manipulation.

Chapter six investigates a large sample of 9,809 UK firm-years and documents that earnings are distributed discontinuously around basic thresholds. This chapter provides empirical evidence that earnings decreases and losses are frequently avoided thought earnings management. It is suggested that a significant percentage of the companies with small pre-managed earnings decreases or losses exercise discretion to report earnings increases or positive earnings. Moreover it is found that earnings management to avoid losses is more pervasive than earnings management to avoid earnings decreases. The results are robust to alternative methods of scaling earnings. Examining earnings management to avoid losses, it is found that the two main two components of earnings: cash flow from operating activities and changes in working capital, are used to manage earnings.

It is reported that discretionary accruals have the effect of increasing the frequency of positive earnings levels and changes. Additionally, firm-year observations with small positive reported earnings are investigated, as they are the ones more likely to manage earnings. It is found that observations with small positive earnings are more likely to relate to companies in the upper market value quartiles. Additionally it is found that these observations are more likely to relate to the latest years covered in the sample.

Chapter seven of this thesis examines the characteristics of companies that had to restate financial statements after an FRRP enquiry. First it is found that FRRP

companies (earnings manipulators) are characterised by weak earnings performance in the defect year. As further evidence of the performance difficulties facing censured companies, additional tests reveal that FRRP companies are highly leveraged, less likely to decide dividend increases, more likely to have a lower effective tax rate, more likely to have deteriorating performance and increased audit fees. Though, while the profitability of the FRRP sample is weak in the defect year, they do not appear to be persistent underperformers.

The second main result of chapter seven, relates to the association between corporate governance characteristics and the likelihood that a company is censured by the FRRP. While univariate tests indicate no difference in the use of outside directors between FRRP and control companies, multivariate tests reveal that the FRRP sample is associated with higher paid directors and higher audit fees. To the extent that cases identified by the FRRP represent examples of low accounting quality, these results support the hypothesis that effective corporate governance can improve the quality of published accounting reports. Tests also reveal that FRRP companies are less likely to have a Big Four auditor. This is consistent with other research that has uncovered a negative association between auditor size and discretionary accruals.

Finally, this chapter analysed the dynamics of earnings manipulation in relation to balance-sheet strength, performance and accrual quality using the variables suggested in Beneish's (1999) M-score model. It is found that companies censured by the FRRP are usually high growth companies facing declining profitability and pressured margins. Non-current assets in these companies are more likely to include material balances in items like goodwill and capitalised development costs. Furthermore, they are more likely to have higher paid directors comparing to their peer group. Additionally they are more likely to have a lower effective tax rate and incur higher audit fees on their asset value basis. Finally, they are more likely to have a decreased depreciation expense and increased accruals.

The purpose of chapter eight is to estimate a model for detecting earnings manipulation. In doing so, the sample of FRRP censured companies was compared to a sample of companies publicly criticised by *Company Reporting* for non compliance with accounting standards. Discussions with the Panel revealed that it often uses this source for initiating investigations. A comparison of the two sub samples suggests that they are drawn from the same population.

The characteristics of the 185 companies discovered to manipulate earnings are investigated on various dimensions, including accrual quality, financial performance and balance sheet strength. Based on the above findings, two logistic models to determine the probability of manipulation are developed. The first model utilises the eight variables described in Beneish's (1999) M-Score model. The second model includes three more variables: (i) Audit fees to assets index, (ii) Effective tax rate index and (iii) Directors Remuneration to sales index. The robustness of the models' coefficients is tested in 100 different estimating and holdout samples. Both defined models appear to be insensitive in random sampling. It is shown that both models have power to detect manipulations within estimation and holdout samples. Though, it is shown that the 11-variable model has lower error rates in misclassifying manipulators and controls and increased likelihood in identifying manipulators.

9.3 Limitations

Recent literature and auditing standards provide no clear definition for earnings management or earnings manipulation. Therefore it is not clear the stage at which earnings management becomes earnings manipulation. This research defines earnings management as the result of managerial discretion in accounting choices and estimates exercised within the limits of accounting standards without violating the true and fair view principle. On the other side, for the purpose of this research earnings manipulation is defined as the result of managerial actions that violate the true and fair view principle and fail to comply with the accounting standards.

Some researchers suggest that earnings management is beneficial for market participants as it provides managers with the opportunity to communicate to investors their private information about the future prospects of their company. It is further suggested that it enhances the relevance of accounting information making it more useful for investment decisions even thought the reliability of accounting information is compromised. The examination of the impact of earnings management to investment decisions as well as the debate on relevance-reliability of accounting information are beyond the objectives of this research.

The panel data used in this research exclude financial institutions as they follow a different accrual generating process and they are more likely to manage

earnings for different purposes, as they are highly regulated and they are required to preserve specific liquidity requirements.

Whilst chapter two discusses that there are instances of earnings management to decrease earnings this falls outside the research objective of the current thesis. However, earnings management to reduce earnings and big-bath accounting practises can introduce noise in the discontinuities of earning among thresholds observed in chapter six. Earnings management to decrease earnings is possible to be escalated, violating accounting principles, though these instances fall outside the area of this research.

It should be emphasised that one unavoidable issue in developing models to detect manipulation is that the revelation of a manipulation is a rare event. Thus, similar to bankruptcy prediction models, the estimated models generate a high frequency of false positives. Another limitation of this analysis is that there have been used only manipulations that were actually identified by the FRRP or *Company Reporting*. There are likely to be many cases where a manipulation goes undetected, or is at least not subject to an FRRP censure.

The role of the FRRP is to ensure that the provision of financial information by public and large private companies complies with relevant accounting requirements. There were a small number of instances of non compliance where companies had to restate their accounts without having to decrease their earnings. The investigation of these companies falls outside the remit of this research. Finally, a limitation of this research is that it investigated publicly traded companies. Therefore, it cannot be reliably used to study privately-held firms.

9.4 Extensions and suggestions for future research

There has been an effort in identifying periods of recessions/credit crunch and the datasets used include the period 1999-2000 which is characterised by economic downturn. Though, the recent recession after the collapse of Lehman Brothers in the US and the nationalisation of Northern Rock in the UK has put companies' finances under immense pressure. It would be interesting to investigate earnings management in the current setting and estimate the pervasiveness of 'big bath' accounting.

An interesting avenue for future research would be to investigate companies that appear to have a high probability to manipulate earnings but have not been

censured. For example, do they engage in earnings management, within the limits of accounting standards? Do they experience declines in subsequent financial performance and in market value? Are they more likely to record future asset write-offs?

This chapter provides useful insights into research on earnings management. Prior research has generally focused on measures of discretionary accruals as proxies for incentives to engage in earnings management. The results of this research suggest that researchers could also consider Beneish's (1997, 1999) models as an alternative proxy for detecting the likelihood of earnings manipulation. In addition, it is found that taxable profits are unusually low during manipulation years. An important avenue for future research is to better understand the role of real transaction management from companies seeking to achieve specific earnings' targets and how models for detecting earnings manipulation can be improved. Another avenue for further research would be to investigate further earnings thresholds, such as analysts' consensus and whether the expected discontinuities can be attributed to discretionary or specific accruals.

Finally, the introduction of IFRS in the EU aims to form a homogeneous capital market improving comparativeness and consistency. To ensure that the single market for financial service operates efficiently, there is the need for consistent supervision and enforcement. It would be interesting to investigate how the enforcement bodies operate in other EU member countries as well as the characteristics of companies that manipulate earnings in those markets.

Appendix

Background on audit quality and audit oversight the bodies PCAOB and AIU

The global significance of Enron and other such scandals (WorldCom, Global Crossing, Parmalat and Ahold) arising in the immediate aftermath gave weight and momentum to a new regulatory emphasis on "audit quality":

"*Recent corporate failures have...also led to questions as to the effectiveness of audits and the integrity of the audit process and emphasized the key role of high quality auditing standards*" (IAASB, 2003a, p. 3)

The introduction of inspections of audit work was initiated by the Public Company Accounting Oversight Board (PCAOB) in the US and the Audit Inspection Unit (AIU) in the UK. AIU is part of the Professional Oversight Board (POB) and reflected concerns with the effectiveness of self-regulatory, professional "peer review" systems and a desire to validate the process of providing an audit opinion (PCAOB, 2004, 2006; AIU, 2005, 2006).

Accordingly, while the primary regulatory focus has become "audit quality", this has been coupled with a process intended to enable audit practices to become more "auditable" (FRC, 2006a, b; POB, 2006a, b, 2007). This focus is particularly evident in the formal remit of the regulatory inspections. For example, the AIU in the UK states that:

"*The overall purpose of our work is to monitor and promote improvements in audit quality, thereby enhancing investor confidence in the audit process and financial reporting. Our responsibility extends beyond compliance with specific requirements of the regulatory framework and includes an assessment of the key audit judgments made*" (AIU, 2005, para.4.1).

The emphasis on monitoring is reflected in regulatory requirements for audit firms to set out in writing how their audit methodology meets the requirements of UK Auditing Standards. Audit firms must show they have in place an annual compliance review process which covers a sample of completed audits (referred to by the UK's AIU as the Audit Quality Review (AQR) process) (AIU 2005/6).

In the USA, the Sarbanes-Oxley Act required the PCAOB to perform a continuing programme of inspections to review the degree of compliance (in terms of audit performance) of each registered accountancy firm. Such inspections are required

to include reviews of selected audit engagements and an overall evaluation of the sufficiency of the quality control system of the firm, and the manner of the documentation and communication of that system by the firm. The PCAOB undertook limited inspections of the Big Four firms in 2003 (see PCAOB, 2004), followed by the first full series of inspections of all the registered public accounting firms in 2004.

Khalifa et al., (2007) investigate how audit practices changed audit methodologies to reflect the requirement of regulators for increased audit quality. They identify major discursive shifts in audit methodologies, with the dominant audit discourse switching from one of "business value" to one of "audit quality". This study also illustrates how conceptualisations of "risk" are now clearly appended to the term "audit risk", as opposed to the "business" or "strategic" risks which were central to the mid-1990s methodological leanings of most of the big audit firms. In their research Humphrey et al., (2009) explore how regulatory relationships in the global audit arena are being affected by the current financial crisis.

Background on earnings management to decrease earnings

Badertscher et al. (2009) analyse a set of firms that restated earnings upward because of accounting irregularities identified by SEC. Their results are consistent with the restatement sample firms having managed earnings downward in their original financial statements to create cookie jar reserves, to depress share prices prior to corporate and insider stock purchases.

Former SEC Chairman Levitt, in his widely cited "numbers game" speech (Levitt 1998), made explicit the SEC's concerns that earnings management raises questions about the integrity of financial reporting. Levitt highlighted five common "accounting gimmicks," of which three were examples of downward earnings management:

"A third illusion played by some companies is using unrealistic assumptions to estimate liabilities for such items as sales returns, loan losses or warranty costs. In doing so, they stash accruals in cookie jars during the good times and reach into them when needed in the bad times."

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