EFFECTS OF INSTITUTIONAL STRUCTURES ON ACCOUNTS MANIPULATION, AND CONSEQUENCES FOR FIRMS EXPOSED IN THE ACT: AN INTERNATIONAL STUDY

BY

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A thesis submitted in fulfilment of the requirements for the award of the degree of Doctor of Philosophy, PhD

2010
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Etumudon Ndidi Asien
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List of abbreviations

AAERs  Accounting and Auditing Enforcement Releases
ACCA  Association of Chartered Certified Accountants, the
AR    Abnormal Returns
AAR   Average Abnormal Returns
CAR   Cumulative Abnormal Return
CAAR  Cumulative Average Abnormal Returns
CPI   Corruption Perceptions Index
CRSP  Centre for Research in Security Prices
EMH   Efficient Markets Hypotheses
GAAP  Generally Accepted Accounting Practices
ICEAW Institute of Chartered Accountants in England and Wales
ICRG  International Countries Risk Guide Index
IFRS  International Financial Reporting Standard
IOSCO International Organisation of Securities Commissions
NASDAQ National Association of Securities Dealers Automated Quotations, the
ROC   Republic of China (Taiwan)
SEC   Securities and Exchange Commission
SESC  Securities & Exchange Surveillance Commission
SOEs  State-Owned Enterprises
SPSS  Statistical Package for the Social Sciences
TI    Transparency International
This research is dedicated to all those who desire to go to school but are hindered by lack of funds.

The research is also dedicated to those vulnerable men and women, old and young (especially from poor, third world countries) who face rapacious exploitation, maltreatment and dehumanisation in whatever form by the prevailing economic systems of the world.
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Abstract

The first part of this study identifies, and then examines, whether institutional structures can be used to explain the occurrence of accounts manipulation. Specifically, at the country level, we investigate whether legal origin, level of corruption, press freedom, State's ownership of enterprises, and the State's attempts at investor-protection are likely to affect the occurrence of accounts manipulation. The second part of the study investigates whether, for firms exposed in accounts manipulation, there is any difference between ex ante and ex post abnormal stock returns. We also investigate whether ex post abnormal stock returns are associated with (a) the magnitude of the amount mentioned in the news of accounts manipulation, and (b) the section used in publishing the news in newspapers.

Archival data cover the period January 2000-August 2008, inclusive. They are analysed using multivariate data analysis techniques, paired samples tests, and chi-square tests.

We document evidence suggesting that legal origins can be associated with the occurrence of accounts manipulation. Our finding also suggests that the institutional structures explain more than 66% of the variation in likely occurrence of accounts manipulation after controlling for national cultural values and countries' level of wealth. Specifically, we find that the State's ownership of enterprises and the State's attempt at investor-protection are likely to encourage the occurrence of accounts manipulation. We document evidence that there are statistically significant differences between means of ex post and ex ante abnormal stock returns, for firms exposed in the act. Our result did not find evidence of a strong association or correlation between ex post abnormal returns and the magnitude of the amount mentioned in the news after controlling for firm size. Finally, we find evidence suggesting that the section where news of accounts manipulation is inserted in newspapers is not associated with investors' reactions.

Keywords: Accounts manipulation, corruption perceptions, press freedom, legal origin, State-owned enterprises, investor-protection, efficient market hypothesis, abnormal returns, contingency theory, limited attention, political economy, political cost hypothesis.
Chapter 1

Introduction

1.1 Introduction

The problem of accounts manipulation in organisations appears to be increasing. In this study we define accounts manipulation as a situation whereby the management of a firm acting opportunistically or efficiently misleads parties (other than themselves) by misrepresenting or misstating the firm’s situation through income statements, statements of cash flow, balance sheet and other non-financial items. This definition closely follows Stolowy and Breton (2004) who define accounts manipulation as the use of management’s discretion to make accounting choices or to design transactions so as to affect the possibilities of wealth transfer between the company and society (political costs), funds providers (cost of capital) or managers (compensation plans).

Our definition has in mind what Gowthorpe and Amat (2005) describe as “micro-manipulation”, which is the management of accounting figures by preparers to produce a biased view of the firm. Accounts manipulation becomes a possibility when “preparers of financial statements are in a position to manipulate the view of economic reality presented in those statements to interested parties” (Gowthorpe and Amat, 2005, p. 56).

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1 We need to amplify this definition by saying that misleading may be as a result of innocuous but inappropriate reporting and not necessarily with an intention to commit impropriety or fraud, although this is often the case.

2 Some researchers refer to this term generically as earnings management. We shall use the two terms interchangeably until a certain point in this chapter and the next chapter (and the rest of the thesis) where accounts manipulation will predominate, for reasons explained there. We use the term accounts manipulation with an all-inclusive meaning to encompass income statements, balance sheet, cash flow statement as well as other non-financial items containing (un) intentional errors meant to mislead others.
The definitions of earnings management available are difficult to operationalise; see for example, Dechow and Skinner (2000) who essentially dwell on this definitional issue. One definition offered by Bedard and Johnstone [2004, fn 1] is that earnings manipulation is management's intervention in the external reporting process using reporting practices with the intent of biasing users' views of the firm.

Beneish (1999a, b) offers another definition of earnings manipulation as an instance in which a firm's managers violate generally accepted accounting principles (GAAP) to favourably represent the firm's financial performance.

Stolowy and Breton (2004), Gowthorpe and Amat (2005) and Blake and Amat (1996) consider schemes used in accounts manipulation to comprise earnings management, income smoothing, big bath accounting, creative accounting, window-dressing, among others; saying that these schemes fall within GAAP.

As it is conceptualised in the present study accounts manipulation goes beyond GAAP to include non-GAAP and other non-financial items manipulations, hence our study does not control for GAAP- and non-GAAP-related manipulations in gauging share prices reactions to the news; we are interested in any kind of accounts manipulation as we defined it earlier in this study.

Wiedman (1999, fn 1) offers yet another definition of earnings management. She defines it as situations where management undertakes actions to intentionally misrepresent the firm's financial performance (italics in the original). As in the case of Beneish (1999a, b), Wiedman (1999) does not indicate whether earnings manipulation is beneficial to managers, or the firm, or both.

Schipper (1989, p. 92) considers earnings management to mean the purposeful intervention in the external financial reporting process, with the intention of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process).
Healy and Wahlen (1999, p. 368) define earnings management as when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers. Healy and Wahlen (1999) go to great lengths to amplify or embellish their definition of earnings management.

From a practitioner's point of view, McAuley (2004) defines earnings management or manipulation (note the introduction of the word manipulation) as the technique(s) used in preparing financial information that is either misleading or inaccurate. McAuley (2004) recognises this problem when he posits that the distinguishing characteristic between manipulation and management is somewhat subjective, pointing out that the difference can rest in whether the technique used falls within or outside of the requirements of GAAP. Gowthorpe and Amat (2005), McAuley (2004), Rosner (2003), and Beneish (1999a, b) argue that it is earnings management where the technique(s) used by managers fall within GAAP, earnings manipulation otherwise.

However defined, while some of manipulations are caught and exposed in the news media others remain unreported. But what contributions or explanations have accounting academics and practitioners been able to proffer for likely institutional factors that induce managers to engage in the act?

In our considered view, the existing literature has not addressed this question using country-level institutional factors identified in this study. Furthermore, what are the consequences for firms exposed in accounts manipulation? Does the stock market listen to some second-order stimuli in reacting to the news of the act? These are what we aim to investigate in this study.

Inspired by prior research (e.g., Bushman and Petrioski (2006), Bushman et al. (2004), Miller (2006), La Porta et al. (1998, 2008), Dyck et al. (2008) and Watts and Zimmerman (1986), amongst others), the first strand of the study identifies,
and investigates, some institutional structures or environment-wide factors that can likely militate or aid accounts manipulation. Specifically, it investigates whether legal origin is associated with the occurrence of the act.

It also investigates whether a combination of factors such as the level of corruption perceptions, extent of press freedom, the State’s dominance of the economy, and its efforts to protect investors can affect or explain the occurrence of the act. We expect that these factors can explain a reasonable variation in probability of occurrence of accounts manipulation.

Watts (1977), Cooper and Sherer (1984), Ball et al. (2003), Belkaoui (2004), and Holthausen (2009)) argue that accounting standards alone do not bring about quality financial reporting, hence they call for the recognition of economic, political and other institutional structures on financial reporting. In particular, Cooper and Sherer (1984) propose that the political economy of accounting may be a fruitful alternative approach to studying the relationship between accounting and the wider society. Their proposal seeks to empower an alternative approach with a descriptive nature that seeks to go beyond the “...ideologies of the status quo” (Cooper & Sherer (1984, p. 221)).

Explicit in the first part of this study is the argument that accounting is contextually embedded; hence the need to understand “how accounting systems operate in social, political and economic context” (Cooper and Sherer, 1984, p. 207) may be useful.

In the following few paragraphs, there are provided some additional general backgrounds to the study.


1.2 Backgrounds to the study

In the field of management, contingency theory suggests that the environment in which a manager operates can influence managerial actions and decisions, and vice versa.

The type of legal system which a country operates can be stern or lenient towards accounting and other financial misdemeanor. While some legal systems may demand or require full disclosure by firms, others may simply encourage it. Some legal systems are likely to protect investors more than the others.

La Porta et al. (1997, 1998, and 2000) investigate legal origin across a number of countries. They find that legal origin affects investor-protection across countries. Other studies (for example, Leuz et al. (2003)) find that earnings management is more pervasive in countries where the legal protection of outside investors is weak. It will be interesting to see whether legal origins can be associated with the occurrence of accounts manipulation.

Belkaoui (2004) observes that one consequence largely ignored in the economics and accounting literature is the impact of corruption on the quality of accounting; so, it is worth investigating the effect of corrupt environment on accounts manipulation.

Existing anecdotal and empirical research evidences are suggesting that a free press is good for corporate governance (see Dyck et al. (2008)). There is also evidence that a free press is bad for corruption (e.g., Brunetti and Weder (2003)). Consistent with this view of the press, it will be interesting to see whether a free press environment can affect the occurrence of the act of accounts manipulation, and managers’ tendencies to engage in it.

Compared to some countries where the State owns a sizeable proportion of a number of firms operating in it, the extent of accounts manipulation may be

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Defined as one where the level of corruption ("cleanness") in a country is highly (lowly) pervasive.
different from countries where the State owns less proportion of firms in it. There may be differences in the extent to which accounts manipulation occurs in the two States. For example, Bushman et al. (2004) opine that States that directly own enterprises may suppress firm-specific information.

The level of investor-protection can vary among/across countries. It can be the case that in order to protect the investor, one State pokes its nose in the affairs of industry and commerce more than another State. Coming from the angle of political cost hypothesis (see Watts and Zimmerman (1986, 1978)), one would expect the extent of accounts manipulation to be different in the two States.

If an environment in which a manager operates influences managerial accounting choices, will managers operating in these environments be influenced to engage (or not to engage) in acts of accounts manipulation? In view of this question, one can reason that the intuition for investigating the relationship between these country-level factors and accounts manipulation is not far-fetched.

In addition to the contingency theory, the first part of the study operates on two other theories. These include political cost hypothesis (aka Watts (1977), Watts and Zimmerman (1978, 1986, 1990)) and political economy theory (e.g., Cooper and Sherer (1984), Bushman et al. [2004], Haw et al. [2004], Bushman and Petrioski (2006), Miller [2006], and Dyck et al. (2008)). Cooper and Sherer (1984) is one of the early papers in accounting that attempts to propagate the need for accounting to consider a societal or social welfare standpoint.

A political economy of accounting tries to emphasise the relationship between institutional infrastructures or environments and accounting method choices. It seeks to understand and evaluate the functions of accounting within the context of the economic, social and political environment in which firms operate. Among the three features proposed by Cooper and Sharer (1984) as characterising this relationship, two are worthy of note. The first is the recognition of power and conflict in society as reflected in income distribution, wealth and power in societies. The second is the adoption of a more critical view of human motivation.
and the role of accounting in society. Cooper and Sharer (1984) and other prior studies observe that existing research on choice of accounting methods exhibit a pronounced shareholder orientation.

These theories are discussed in chapters 2, 7 and 8.

**Consequences**

The literature lists a number of probable consequences of exposed accounts manipulation. These have been exhaustively discussed by Bernile and Jarrell (2009), and Karpoff *et al.* (2008a, b). Karpoff *et al.* (2008a, b) and (Dechow *et al.* 1996, p. 5) argue that earnings management that is revealed can lead to loss of reputation by both management and firm. Karpoff *et al.* (2008a, b), especially, quantify corporate reputational loss in terms of dollar amounts of legal penalties as well as penalties imposed by the market on firms whose financial misrepresentation is revealed.

Management loss of reputation can also involve personal costs (Dye, 1988, p.198). Some personal cost for anyone caught in accounts manipulation may include (i) getting fired from current employment and hence loss of source of income; (ii) fine, or imprisonment to jail terms for those found culpable; (iii) restitution or disgorgement of what has been expropriated; (iv) discipline by managerial labour market (Fama, 1980) whereby the person may face adverse career and job implications because they may not readily find another (suitable) job.

As an entity, the firm may endanger its corporate reputation because it diminishes the confidence of customers, trading partners, government agencies and other stakeholders. Diminished reputation can also reflect an increase in the firm's cost of capital or bid-ask spreads (see for example, Dechow *et al.* (1996)), or reduced trade credits as suppliers of inputs used by the firm are likely to impose stricter (sometimes harsher) terms with which they do business with the firm; Roychowdhury (2006) also acknowledges these practices in supplier-firm relationship.
In addition, the firm can suffer real economic losses as “authorities” divert scarce resources to the investigation and away from normal company businesses. The revelation of improper accounting behaviour or malfeasance can also force the firm to implement new monitoring and control policies, thereby increasing the cost of operations at the same time. In extreme cases, the consequence can result in possible cessation of the firm and its auditors as going concerns, like the case of Enron and Arthur Andersen. Furthermore, both management and firm caught in accounts manipulation may face legal actions through, for example, shareholders’ class-action suits in the law courts.

At the level of regulation, another consequence of exposed accounts manipulation may include the creation of legal or quasi-legal institutional regulatory frameworks as quick fix measures to “fix” the problem. Indeed, Carnegie and Napier (2010, p. 1) note that “professional accountants are currently striving to absorb and effectively deal with an ever-growing mix of new rules on corporate governance, audit independence and financial reporting, among other prescriptions.”

As a recent example, the spate of vexatious accounting scandals in the U.S. procreated the Sarbanes-Oxley Act of 2002 in that country. In Australia, the HIH accounting scandal (see Carnegie and Napier (2010, p. 18)) together with those in the U.S. and elsewhere have warranted the promulgation of The Corporate Law Economic Reform Programme (Audit Reform and Corporate Disclosure) Act 2004. A dated example is “the failure of the City of Glasgow Bank under conditions of fraud” (Watts 1977, p. 65), which gave birth to the Companies Act of 1879 in U.K.

Consequences can also result in securities exchanges and regulators to unleash more rules, regulations or guidelines on the capital market. It can also result in positively strengthening corporate governance mechanism of firms as concerned bodies look for innovative ways to forestall future occurrences.

The present study does not examine nor control for these amalgams of consequences; its main interest lies in the informational efficiency of the news.
In this respect, using daily stock returns as a platform, and following events study methodology, the second part of the study investigates how the news of accounts manipulation impounds share prices.

It is expected that investors will react to the news when they are published in newspapers.

We recognise the existence (or possible) use of electronic-based sources of information such as Jones and Associated Press newswires, televisions and cable channels, and Bloomberg, which are likely to provide more timely news about companies than newspapers. But we also realise that electronic sources use the newspaper as one of the sources of their own news. For example, in England Sky News, BBC and other television stations preview tomorrow mornings’ newspapers beginning from 1945hrs up to 2300hrs today.

Furthermore, we have decided to use newspapers because, comparatively, they are cheaply and widely available. Both individual and institutional investors still largely use the newspaper, unlike electronic sources which may be mainly accessible to institutional investors because they can afford them, no matter the costs involved.

Our decision to use the newspaper is supported by the research evidence that

"...every weekday, some 55 million newspaper copies are sold to individual readers in the United States, reaching about 20% of the nation's population. If we consider online subscriptions and multiple readers per copy, the actual readership of the printed press is even larger, and certainly far broader than other sources of corporate information such as analyst reports. Given mass media's broad reach, one might expect it to affect securities markets." (Fang and Peress, 2009, p. 2023)

Anecdotal evidence from Financial Times of London also supports us. It says,

"From the tens of thousands of newspaper articles...being analysed every day, MarketPsy builds a picture of investor feelings about 6,000 companies. Measuring investor sentiment is not new; Dow Jones publishes an economic sentiment index based on textual analysis of 15 U.S. newspapers, while investment
banks measure everything from ratios of derivatives to the number of times the word "crisis" is used in the media.” (Financial Times, London, July 17/July 18 2010, p. 21)

These research and anecdotal evidences are pointers to the relevance of using the newspaper in capturing investors’ decision calculus, even in this twenty-first century.

Tabulated below are comparative statistics regarding newspaper circulation, internet users and internet subscribers around the world between 2000 and 2004. The statistics show that newspapers are doing relatively well.

<table>
<thead>
<tr>
<th>Year</th>
<th>Newspaper circulation per 1,000 people</th>
<th>Internet users per 100 inhabitants</th>
<th>Fixed broadband Internet subscribers/100 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>101.31</td>
<td>6.45</td>
<td>0.40</td>
</tr>
<tr>
<td>2001</td>
<td>101.11</td>
<td>7.97</td>
<td>0.60</td>
</tr>
<tr>
<td>2002</td>
<td>103.91</td>
<td>10.72</td>
<td>1.10</td>
</tr>
<tr>
<td>2003</td>
<td>104.83</td>
<td>12.31</td>
<td>1.70</td>
</tr>
<tr>
<td>2004</td>
<td>104.63</td>
<td>14.11</td>
<td>2.60</td>
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Sources: **World Bank/World Development Indicators. *International Telecommunications Union

Moreover, research (e.g., Miller 2006, p. 1015) has shown that the press is the first information intermediary to publicly identify accounting issues. He shows that up to 36% of caught cases of accounting malfeasance originated from reporter-generated information in daily newspapers.

There are prior literatures that use the newspaper in gauging market reaction to accounting news. These include Bernile and Jarrell (2009), Klibanoff et al. (1998), Miller (2006), Fang and Peress (2009), Beneish (1999a, b), among others.

It is possible that investors in their reaction to news of accounts manipulation also consider the magnitude of the amount mentioned in the news publication, following the materiality concept in accounting. This leads us to investigate whether there is a second-order effect between the magnitude of the amount mentioned and stock market reaction. In this wise, it will be interesting to investigate the association (or

*We could have shown up to 2009 figures, but for the fact that 2004 is the most recent year with statistics on newspaper circulation. International Telecommunications Union’s statistics are available up to 2009.*
lack thereof) between the magnitude of the amount mentioned and investors’
reactions.

For various reasons that we shall illuminate later in the thesis, investors may not be
able to read in detail every news item in a newspaper. But one thing can be taken
for granted for now, and that is that investors have limited time, which may not
allow them to give equal attention to every item in a newspaper. They are likely to
concentrate on the ones that matter most to them. Because of this, the section
where news of accounts manipulation is inserted in newspapers may (or may not)
play a second-order effect in investors’ reactions to the news5.

In broad terms, in this part of the study, we aim to investigate three main issues:
1) The behavior of stock returns pre/post news of accounts manipulation
2) The correlation between *ex post* abnormal returns and the amount mentioned in
newspapers;
3) Whether stock market reaction is associated with the section where the news is
inserted in newspapers. There is no existing research that has used the
newspaper in their investigation, save for Klibanoff *et al.* (1998). In chapter 2
we will examine the improvements of our study over Klibanoff *et al.* (1998).

The second part of the study operates on two theories, and we will examine them in
detail later in the study. The theories include the semi-strong form efficient market
hypotheses (e.g., Fama, 1970, 1991), and limited attention theory (e.g., Hirschleifer
and Teoh (2003), Daniel *et al.* (2002)).

To provide a focus for the study, as a primer, the research questions for the study
will revolve around the following sets: (a) Can the legal origins in which firms
operate be associated with occurrence of accounts manipulation? (b) Does corrupt
environment, free press, State ownership of enterprises, and the State’s attempts at

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5 The section of a newspaper is likely to be the same whether the newspaper is read as a hard copy or soft
copy on the internet. It is most likely that the same file uploaded on the internet is used as “template” in
the mill on the printing floor.
investor-protection affect the occurrence of accounts manipulation? These questions relate to the first strand of the study.

For the second part of the study, we will be asking questions such as: (c) how will stock returns react to news of accounts manipulation? (d) Can the amount mentioned in the newspaper affect stock returns immediately after the news? (e) What role does the section where the news is inserted in a newspaper publication play in share prices behaviour?

In a number of ways, our ability to provide answers to these questions will fill a number of gaps in the literature. Except for (e), to the best of our knowledge, we are not aware of any existing empirical research in accounting that has examined these research questions with respect to accounts manipulation that is published in newspapers. However, we are aware of the research on information content of news/announcements, generally; including the works of Beneish (1999a, b). We are also aware of Files et al. (2009), Bowen et al. (2008), and Gordon et al. (2008) who variously studied the prominence effect in relation to management’s earnings or accounting restatement in a press release. In addition, we are also aware of Klibanoff et al. (1998) who studied market reactions to news published on the front page of the New York Times. The latter is one prior pioneering empirical research that has examined the effect on share prices of news based on exogenous placement by parties other than the management of a firm. However, as we shall see in chapter 2, Klibanoff et al. (1998) is narrow in scope, coverage and treatment.

Overall, our main aims and objectives in this study are to:

- Complement and contribute to the literature on likely institutional factors that can impact accounts manipulation.
- Gauge the informational efficiency of the stock market.
- Understand whether the magnitude of the amount mentioned in newspapers is likely to have a second-order effect on ex post abnormal stock returns.
Understand whether investors are influenced, as a second-order stimulus, by the section where news of accounts manipulation is inserted in newspapers.

1.3 Motivation for the study

Motivation for the study derives from both anecdotal and research evidences to date. The evidences show that some or all of the variables identified in the first part of the thesis can have potential impact in some ways. For example, Watts (1977), Ball et al. (2003), Belkaouï (2004), and Holthausen (2009) argue that accounting standards alone do not bring about quality financial reporting.

This literature calls for the recognition of economic, political and other institutional structures on financial reporting. Ball et al. (2003) show that accounting standards and preparers' incentives interact to produce generally low quality financial reporting in four East Asian countries: Hong Kong, Malaysia, Singapore and Thailand. Holthausen (2009, p. 449) argues that many forces shape the quality of financial reporting, and that accounting standards should be viewed as but one of those forces.

Holthausen 2009 is emphatic that

"Only the alignment of the overall portfolio of countries' institutional and economic forces affecting financial reporting outcomes will lead to more uniform financial reporting quality across countries. Further, without the alignment of this portfolio of countries' institutional and economic forces, uniform financial reporting quality across countries, even if achievable, is not likely to result in substantive economic benefits in all countries."

Considered together, this prior literature has been calling for alternative means to ensure quality financial reporting, and hence to explain the occurrence of accounts manipulation. The present study will be attempting to answer this call.
In view of the inadequacy of using accounting standards to explain why accounts manipulation continues to happen, it would be worthwhile to turn to institutional structures for help.

Increasingly, cases of accounts manipulation are being brought to the public attention by the media. The information contained in newspapers is likely to be value-relevant in the stock market.\(^6\)

The types of publicly available information that one comes across in the literature include earnings announcements, stock splits, release of annual or quarterly financial reports, new and seasoned equity offerings, dividend omissions and initiations, mergers and acquisitions deals, and so on.

Whatever may be the type of news, share prices are expected to impound the news — according to the *semi-strong form* efficient market hypothesis (e.g., Fama, 1991; 1970; and Fama et al., 1969; to be reviewed in the next chapter)\(^7\).

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\(^6\) People read the newspaper either as a "hard"/printed copy or on the internet. This does not change the fact that they are published and publicly available information. And, we like to emphasise that in using the newspaper, we do not foreclose the impact of other sources of information such as those based on real time online sources identified in the footnote above. In addition, we have listened to television and other electronic news analysis (e.g., BBC at 1900hrs) concerning stock prices movement. We observe that they focus on the index of the world’s major stock markets rather than on share prices movement of one single company.

\(^7\) We know as a matter of fact that all the stock markets involved in our study may not follow the *semi-strong* efficient market hypothesis. There are many individual markets in our sample that are found to exhibit *weak form* efficient market hypothesis (see, for examples, Hung (2009), Kim and Shamsuddin (2008), and Chan, Gup, and Pan (1997)). In this study, we do not test for market efficiency of the *individual* markets in our sample. We use the newspaper as a public source of information, in a general sense, to test the semi-strong-form efficient market hypothesis of all the markets where accounts manipulation occurred. We note that none of our hypotheses specifically mentions the semi-strong efficient market hypothesis; however, we explicitly test for it anyway as that is what using the newspaper is actually suggesting.
Chapter I. Introduction

The research evidence to be presented in chapter 6 of this thesis also suggests that the stock market is informationally efficient by impounding the news of accounts manipulation.

Stolowy and Brenton (2004) propose that a very important field to investigate is the reaction of market participants to financial information, which, in the context of the present study can be construed to include accounts manipulation.

1.4 Importance of the study

The importance of this study cannot be overemphasised. A study that attempts to understand the vexed problem of accounts manipulation, factors that likely contribute to its occurrence and the consequences thereof should be encouraged. There are potential lessons that can be learned from the study.

Knowledge of the impacts or effects of the institutional variables on accounts manipulation can explain how or where to use them to reduce the practice.

Accounts manipulation can affect the capital market in some three related ways, at least. First, it can distort investors' assessment of the relative performance, position and value of different firms.8

Economically, in their investment decisions, it can lead investors to make wrong investment decisions based on misleading information, which, in turn, can lead to resource misallocation, and thus sub-optimisation. If the wrong information is fed to the capital market it can lead to assets mispricing. This could be risky for investors whose preferences and risk perceptions may be altered as reflected in their desire to buy/sell the firm's securities when it is not planned.

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8 Where ever investors are mentioned in this study, they refer to equity investors, reasons being that they bear the residual risk of a firm, and there is no listed firm without equity shareholders, unlike preferred shareholders or bondholders.
Second, there are risks for investors investing in firms involved in accounts manipulation (see e.g., Bedard and Johnstone, (2004)) because the market value of those firms may be eroded.

Third, it is important to know whether share prices reaction to news of accounts manipulation are partly influenced by the magnitude of the amounts mentioned in the news and the section where the news is inserted in newspapers.

In light of the above, therefore, the research is important, because of (hopefully) new knowledge that can be gained, especially when accounts manipulation is related to the institutional structures and the consequences described in this study. Moreover, as for its practical implications, there are potentials that the results of the study can have implications for securities market regulators (for example, International Organisation of Securities Commission and its member-countries) in view of the current collaborative efforts to see how the capital market can function better.

1.5 Definition of term

1.5.1 Exposed accounts manipulation

We define exposed to mean information that is made known about a firm’s accounts manipulation. Publicly exposed means a situation whereby acts of accounts manipulation are brought to the public domain so that, literally, any interested members of the public become aware of it.

Accounts manipulation can be exposed by groups or persons inside and outside the firm, such as employees not in management cadre, investors, analysts, the media, accountants and external auditors, etc. However, the profile, professional standing

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and credibility of that person or body may determine the weight or credence attached to the news.\footnote{Notwithstanding the fact that anybody can detect and expose accounts manipulations, auditors have been placed in a statutory position to expose accounts manipulations through qualified audit opinions. However, most qualified audit opinions are not about accounts manipulation, and auditors shirk their statutory responsibility by the possibility that they can be "bribed" (Dye 1988, p. 198) not to report the act. Therefore, we caution against over reliance on auditors to expose acts of accounts manipulation. Also, please see Karpoff \textit{et al.} (2008b, p. 198) for trigger events that attract attention. These include self-disclosures of malfeasance, restatements, auditor departures, and unusual trading. Others include routine reviews or investigations by agencies, delayed filling of audited annual reports, management departures, whistle blower charges, etc.}

\section{Epistemological dialectic}

There is a need to explain and/or motivate the choice of the word "accounts" in the title of this study, as opposed to the word "earnings" that is commonly or predominantly used in the literature. Most prior research in accounting has taken for granted the view that every conceivable financial act that is not what it should be is classified as earnings management, but this study differs and offers a broader connotation that leads to the adoption of its title.

For purposes of this study, prior literature's use of the word \textit{earnings} is restrictive, to say the least. Some manipulations affect the balance sheet without affecting earnings; for example, overstatement of value of properties, plants, and equipment which are compensated for by increasing revaluation reserves on the balance sheet. This may not be connected with write-downs in the income statements as a result of impairment tests.

\textbf{Figure 1.1} is a conceptual framework for understanding accounts manipulation and it serves as an attempt to delineate the proper remit of earnings management. Most items or schemes used in manipulating accounts can be located in any of the four numbered inner rectangles, but \textit{not} all in rectangle 1 as earnings management is erroneously implied by some people.
Figure 1.1 A Conceptual Framework for Understanding Accounts manipulation

Table 1.2 is a further attempt to show that newspaper reports of the nature or schemes used to manipulate accounts border on all areas of financial statements as well as items that are not financial in nature. The location of items in categories on the list may not be a perfect one but it has done the job of pointing to the fact that everything is not (exclusively) income statements-related. However, we recognise that some items may overlap one subheading, as the double-headed arrows in Figure 1.1 would indicate.

So, one may ask why researchers continue to use the term earnings management in spite of this restriction, and the broad themes involved? Ball (2009, p. 4, fn 4) seems to provide the answer. In the process he appears to hold brief for these researchers by saying that earnings management appears to be popular because most financial statements manipulation involves earnings.
Table 1.2 Themes mentioned in newspaper publications of accounts manipulation

| 1. Balance sheet related:                      | -Channel stuffing          |
|                                               | -Illegal round tripping    |
|                                               | -Evading customs duties by incorrectly reporting country of origin |
|                                               | -Under-/overstating demand for products |
| -Failing to reconcile balance sheet accounts  |                           |
| -Overstatement of trade receivables, closing inventories, and properties, plants and Equipment |                           |
| -Deliberately classifying prepaid expenses as fixed assets |                           |
| -Overstatement of debtors                     |                           |
| -Scheme designed to increase inventory        |                           |
| -Overstating oil and gas reserves             |                           |
| -Exaggerating impairment provisions          |                           |
| -Under-/overstatement of liabilities          |                           |
| -Misclassification of transactions to increase goodwill |                           |
| -Questionable equipment leasing practices     |                           |
| -Concealing bad debts                         |                           |
| -Overvaluation of unrecoverable debts         |                           |
| -Understatement of property market values     |                           |
| -Failing to report negative worth             |                           |
| -Overvaluation of work in progress            |                           |
| 2. Income statement related:                  |                           |
| -Overstatement or understatement of sales     |                           |
| -Hiding income                                |                           |
| -Suspicious write-down of assets              |                           |
| -Understatement of administration costs       |                           |
| -Misstating revenues                          |                           |
| -Overcharging customers                       |                           |
| -Timing of revenue                            |                           |
| -Pricing goods below their market value to transfer profit to low tax jurisdictions |                           |
| -Scaling back current profit due to earlier overstatement |                           |
| -Under-/over-reporting losses                 |                           |
| -Revenue recognition problem                  |                           |
| -Failing to declare taxable income            |                           |
| -Inflating management fees                    |                           |
| -Deliberate concealment of costs              |                           |
| -Raising false invoices                       |                           |
| -Offering cash to distributors to ditch rivals |                           |

Furthermore, apart from the fact established here that *earnings management* can embrace many things other than earnings; we look further to jurisdictional labeling to justify the use of the word *accounts* in the title of the thesis. In some jurisdictions (such as United Kingdom) the year-end financial document that is made available to regulatory agencies and shareholders are usually christened “annual reports and *accounts*”, not annual reports and *earnings*. As a document, it (or any section of it) could be manipulated such that when the manipulation is exposed it can make the headlines.
Chapter 1. Introduction

For example, there are separate sections in annual reports and accounts that are, depending on financial jurisdiction, titled “income statements” or “profit and loss accounts” or “statements of income”, “balance sheet” or “statement of financial position”, “cash flow statements” or funds flow statement”, “statement of changes in shareholders’ equities”, and “management discussion and analysis”, among others.

From the foregoing, therefore, the present study’s choice of the word accounts, and hence accounts manipulation in its title is more appealing and more embracing than the usual connotation attached to the term earnings or earnings management. This argument is augmented further in subsection 2.3.2 of the next chapter.

1.7 Contributions of the study to the literature

We will show that this research makes some significant contributions to the literature.

First, to the best of our knowledge, this study is the first in the annals of accounting and finance research to investigate in one-go the effects of corrupt environment, role of the press, State-ownership of enterprises and State’s attempts at investor-protection on the likely occurrence of accounts manipulation. We will present evidence that shows that these variables explain more than 66% of the variation in the likely occurrence of accounts manipulation, after controlling for the effects of inequality and uncertainty avoidance in national cultures, and managers’ economic status as captured by countries’ level of wealth in which they operate.

Second, this study contributes to the literature by showing that State’s dominance of the economic activities of a country and the State’s attempt at protecting investors through regulation/legislation is likely to lead to the occurrence of accounts manipulation.
Chapter 1

Third, we contribute to the literature by showing that due (perhaps) to exposed accounts manipulation differences in means of ex post and ex ante abnormal returns are statistically and economically different from zero.

Fourth, the study contributes to the literature on limited attention by showing that investors' reactions to the news of accounts manipulation may not be associated with the type of section used in publishing the news in newspapers. This contribution is unique in that we show this through exogenous placement of news in newspapers.

Firth, we will also show that magnitude of the amount mentioned in the news of the act is not likely to have a second-order effect on investors' reactions to the news.

Finally, from theoretical and epistemological or ontological standpoint, this study contributes to the literature by proffering an alternative name to earnings management.11 In specific terms, the study proposes a conceptual framework for understanding accounts manipulation.12

1.8 Scope and delimitation of the study

It is appropriate to delimit the scope of this study by saying what is of, and not of, interest to it; so, we would like to situate the remit of this study.

Although we have used the term earnings management in this study, and said that the title of accounts manipulation is more embracing, the study is not based on any accruals models as one would find in most accruals-based earnings management studies. What we have done in this study is to investigate those things that can

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11 For example, in support of our position, it is the view of Beneish (2001, 4) “that academics have no consensus on what is earnings management.”

12 We note that this is not one of the original aims of the study, but this contribution should not be overlooked or downplayed in view of the fact that one needs to understand the theoretical/epistemological foundation of what one is doing.
Chapter 1

likely cause earnings management or accounts manipulation to happen (or not to happen). So, rather than providing measures for accounts manipulation as studies on earnings management would do, we examine the information content of the news of the act.

In its examination, the study is guided by the going concern principle or concept in accounting, especially in relation to the number of sample used in analysing the data of the second part of the study. The going concern principle restricts us to use firms whose stock data can be found for the analysis in chapter 6.

It is pertinent to make it clear that this study does not investigate the environment-wide variables in their own right, or as a topic. We examine the impact the variables are likely to have on managerial behaviour with respect to accounts manipulation: to wit, whether they can influence managers in engaging (not engaging) in accounts manipulation.

The remainder of the thesis is organised as follows. Chapter 2 discusses the theories underpinning the study. It also reviews extant related literature. Chapter 3 considers the research questions and develops the hypotheses for the study.

Chapter 4 deals with methodology and research designs issues including description of sample, sample selection method, methods of data collection, and data analysis, and so on.

Chapter 5 carries out the analyses and interpretations of data relating to the first strand of the study while Chapter 6 does the same for the second strand. Chapter 7 presents the research findings and results (together with discussions) while chapter 8 makes conclusions, looks at policy implications, and suggests areas for further future research.

To aid a visual grasp of the entire thesis processes or stages, its structure or schema is presented in Figure 1.2 on the next page.
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Chapter 2
Theories and related literatures

2.1 Introduction

This chapter is in two sections, 2.2 and 2.3, each addressing issues relating to the study. Section 2.2 presents the several foundational theories upon which the study is based. Section 2.3 reviews related literatures according to the themes of the study.

2.2 Theories used by the study

Eclectically, this study draws upon a number of theories, ranging from accounting to behavioural finance and other related domains in the social sciences.

Some of the theories that the research draws upon include, but not limited to:

1. Political cost hypothesis (Watts and Zimmerman (1986, 1978))
2. Contingency or situational theory (e.g., Lawrence and Lorsch (1967) and Mockler (1971))
3. Political economy theory (e.g., Cooper and Sherer (1984), Bushman and Petrioski (2006), Bushman, et al.(2004), and Dyck et al. (2008))
4. Efficient market hypothesis (e.g., Fama 1970, 1991)

The remaining part of the chapter provides a brief exposition of these theories along with the agency theory, which underscores any study in management. At the end of the review the study shows how these theories are relevant to it.
2.2.1 Principal-agent theory

This theory is not in the list above, but in a global sense it is very relevant to the entire study because the study looks at publicly traded companies which face conflict of interests between outside owners and managers. In publicly traded companies there is separation between ownership and control hence the agency problem is bound to arise.

In free market economies, the owners of publicly traded companies are the equity investors who the agency theory refers to as principals. They invest money in the company and bear the residual risks in case of eventualities. The people who control the companies are the management who are directly or by proxy appointed by the owners (principals). In some cases, members of management are found to own equities in the companies they manage. The managers of the companies are expected to behave in ways that add value to the wealth of equity holders.

The owners of a company select or appoint members of management because of the latter's specialised knowledge (see Jensen and Meckling (1976, p.308)). However, owners "can never hope completely to check the agent’s performance" (Arrow (1968, p.538)) in the day-to-day running of their companies. It is the view of Arrow (1968) that the principal-agent relation is very pervasive in all economies, especially the modern ones. This is why the separation between outside equity owners and management is a proper setting for accounts manipulation, which forms the fulcrum of this research.

Lins (2003, p. 161) argues that since it is the management group that actually administers a firm, the reduction in value from potentially costly agency problems may be even worse when the management group has sufficient control to exploit minority shareholders.
Chapter 2

The separation of ownership and control creates a situation of moral hazard whereby it turns out that managers may not behave in ways that would enhance the welfare of outside equity holders.

Authors generally agree that the principal-agent problem arises "where the owner of the firm delegates the running of the firm to a manager" (e.g. Grossman and Hart (1983, p. 5)), wherein the owner is not able to completely monitor the actions of the manager (Arrow, 1968). Grossman and Hart (1983) argue that one of the ways the owner can observe the actions of the manager is through the profit obtained by the firm.

Jensen and Meckling (1976, p. 312) show that managers will behave differently when they own 100 per cent of the residual claims of a firm from when they own a fraction of the claims. They argue that if a wholly-owned firm is managed by the owner, he will make operating decisions which maximise his utility. Jensen and Meckling (1976) further argue that as the managers' fraction of the equity falls – or if they have no equity at all in the firm – they will tend to engage in appropriating larger amounts of the corporate resources or perquisites to themselves.

This means that when managers own partial or no equity at all in a firm, they are likely to shirk; reminiscent of the case of the large modern corporation that has a dispersed outside equity holders, which is discussed by Arrow and Lind (1970, pp. 375-376) and analysed by Fama (1980).

Arrow and Lind (1970, p. 376) observe that while an investment may constitute a major part of a firm's assets, if each stockholder's share in the firm is small relative to his income, the cost of risk-bearing to an individual shareholder will be very negligible.

Jensen and Meckling (1976) posit that there are positive agency costs where the ownership of a firm or corporation is partially owned between (1) outside equity holders, (2) inside equity holders (management), and (3) bond or debt holders. Part
of agency costs includes the cost of monitoring and bonding the behaviour of managers.

The ways equity holders can monitor managers include the requirement that managers prepare financial statements at regular intervals, and that those financial statements be audited by qualified or certified public accountants.

Jiraporn et al. (2008) link the occurrence of opportunistic or beneficial earnings manipulation to agency theory. They posit that opportunistic or beneficial earnings manipulation may occur depending on the severity of agency cost. (See the literature review section below for a detailed discussion of this issue). Jiraporn et al. (2008) suggest that managers massage earnings more in firms where their agency costs are lower, which is consistent with Jensen and Meckling's (1976) view that as owner-manager's fraction of the equity falls, this will tend to encourage him to appropriate larger amounts of the company's resources to himself.

The possibility (and in some cases, spectre) of managers' ability to consume excessive resources or shirk on the job can be likened to what Grossman and Hart (1983) describe as welfare loss on the part of owners. This arises when the principal is unable to monitor the agent, and because of "information asymmetry" (Akerlof (1970) where the agent possesses information about his actions/activities, which the principal does not have.

Jensen and Meckling (1976, p. 309) argue that the issue associated with the separation of ownership and control in the modern diffuse corporation are intimately associated with the general problem of agency. While managers are employed to run the firm on a day-to-day basis, equity holders are distant from their firm since they do not participate in the day-to-day decision making activities of the firm. Hence, there is the principal-agency problem which arises because of information asymmetry (see Akerlof (1970)).

13 Managers act opportunistically where they elect, *ex post*, to exercise discretion over accounting method choices that advantageously redistribute wealth to themselves.
Jensen and Meckling (1976) say that there will be some divergence between the agent’s decisions and those which would maximise the welfare of the principal. Being concerned that the divergence may incubate some downside consequences, Jensen and Meckling (1976, p.308) are led to suggest that there are reasons to believe that agents will not always act in the best interests of principals if both parties in the relationship are utility maximisers. Jensen and Meckling (1976) characterise the agency conflict as more severe when the manager has the tendency to appropriate perquisites out of the firm’s resources for his own consumption. Fama (1980, p. 296) argues that a manager is likely to shirk or consume more perquisites on the job when he, on an ex post basis, perceives that he can beat the game.

Their argument is that managers may take operational or investment decisions that may erode the wealth of outside equity holders, such as transferring or capturing non-pecuniary benefits to themselves. Other actions which management may take include manipulating the accounts of the firms to mask the real situation of things.\(^{14}\)

Arrow (1968, p. 538) suggests that there should exist a sufficiently strong relation of trust and confidence between principals and agents so that the latter will not cheat even though it may be a rational economic behaviour to do so.

For the avoidance of doubt, we do not test nor operationalise the agency theory in this study; we merely demonstrate its relevance in situations where there is separation between ownership and control and where there are divergences between the interest of owners (principals) and those of the agents (managers).

\(^{14}\) That is not to say that it is not possible that a firm which is entirely owned by management cannot experience accounts manipulation. The point being made is that accounts manipulation is more likely to occur in quoted companies because of the separation of outside equity ownership and management, management which may (may not) hold stocks in the firm.
We are of the strong contention that one outcome of these divergences is the possibility that acts of accounts manipulation can occur\(^\text{15}\).

Research evidence that suggests that managers manipulate opportunistically or efficiently is mixed and inconclusive. For example, Watts and Zimmerman (1990, p.136) posit that most researches assume managers transfer wealth to themselves at the expense of other parties to the firm.\(^\text{16}\)

### 2.2.2 Political cost hypothesis

Watts (1977) and Watts and Zimmerman (1978, 1986, 1990) postulate what they call positive accounting theory. The political cost hypothesis is one aspect of the positive accounting theory. The present research borrows from the political cost hypothesis branch of this positive accounting theory, which in simple term states that political costs influence management’s attitudes in their choice of accounting methods.

Firms have direct and indirect contacts with the government or the State. These contacts influence management’s attitudes and actions in the choices they make (or do not make). Essentially, the political cost hypothesis suggests that large firms which are likely to attract government or State attention or intervention are likely to reduce their reported net incomes to deflate public attention.

Watts and Zimmerman (1978) write that

> “Firms having contact (actual or potential) with governments, directly through regulation... or procurement, or indirectly through possible governmental intervention..., can affect their future cashflows by discouraging government action through the reporting of lower net incomes” (Watts and Zimmerman 1978, p. 131).

\(^{15}\) We hasten to say that this study does not rule out cases of collusive behaviour or consent where representatives of outside equity holders collude with management to engage in the act. See Dye (1988) for the competing interest between existing and potential equity investors.

\(^{16}\) Watts and Zimmerman (1990) cite prior studies that assume managers manipulate earnings for efficient reasons.
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The authors further suggest that “the existence of costs generated by government intervention may have (...) fundamental and important effects on the firm’s decisions...”

Given that the likelihood exists that the large profits declared by large corporations are likely to attract public attention, and therefore governmental intervention, Watts (1977) and Watts and Zimmerman (1978) expect firms to manage earnings.

Government or State involvement in firms is multi-faceted, remotely and proximately. For example, government and its agencies can own firms partially or in whole. For national economic planning; and for regulatory, and tax purposes, the government or the State is interested in firms. (This topic is discussed further below in section 2.3.1).

Ball et al. (2003) opine that “manager and auditor incentives, as well as political and tax considerations, influence the decision, and hence whether economic losses are recognised in a timely fashion or are incorporated in income gradually over the entire life of the impaired future cash flows. Thus, financial reporting practice is determined by the interaction between accounting standards and preparers’ incentives”.

In utilising the political cost hypothesis, this study is interested in investigating whether political costs considerations as manifested through State ownership of firms, can influence management behaviour by engaging (not engaging) in accounts manipulation.

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2.2.3 Contingency or situational theory

In the field of management, contingency theory suggests that managerial behaviour is constrained or contingent upon internal and external factors in the environment in which a manager operates. Because managers encounter externally imposed factors that limit their ability to use rational behaviour they can be influenced otherwise.

Whether at the international or national level, environmental factors that influence managerial choices include factors such as societal/national culture, organisational culture, educational, technological environment, economic environment, political/regulatory constraints, among others. Elsayed and Hoque (2010) focus their attention on the international environment. They identify perceived international environmental factors that are likely to influence a firm’s decisions as the intensity of global competition, international socio-political institutions, international accounting standards, and international financial institutions.

Elsayed and Hoque (2010, p. 19) write that what constitutes effective management is situational, depending upon the unique characteristics of each circumstance.

Lawrence and Lorsch (1967) who appear to influence many a writer on contingency theory opine that the determinants of effective internal organisational processes are dependent (or contingent) upon variations in the environment including external influences in which the organisation operates. Luthans and Stewart (1977) argue that “the contingency approach is generically situational in orientation...” They further describe the contingency approach as “identifying and developing functional relationships between environmental, management and performance variables.” (Luthans and Stewart (1977, p. 183). [Italics in the original]

Arguably, most of the works in accounting that draw upon the contingency theory are found in the management accounting arena, however financial accounting is beginning to apply the theory. We do not intend to embark on a literature review of
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this research but would like to refer the reader to Elsayed and Hoque (2010, p. 19) who mention some of these studies.

The literature in general suggests that situational variables have an important influence on the effectiveness of managerial behaviour (See Elsayed and Hoque (2010), Wofford (1971), Gardin and Greve (2004), and David et al. (2010)). David et al. (2010, p. 257) write that “an optimal fit may require different organisational characteristics to suit different external conditions.” Mockler (1971) posits that “in doing any job, the manager’s first step is to identify the major characteristics of the situation confronting him.” Furthermore, Mockler suggests that the manager has to study the factors (industrial, market, economic, political, social and so on) in the business environment that will affect future operations.

Not many people would argue with the suggestion that managerial behaviour is constrained or contingent upon internal and external forces in the environment in which a manager operates and the view that “there has developed a general consensus that situational variables have a critical influence on managerial effectiveness” (Wofford (1971, p. 10).

Strategic management teaches that the firm must have a proper ‘fit’ with, and adapt to, the external environments. This is worthy of attention. Alchian (1950) while speaking in term of economic Darwinism, talks about the ability to adapt one’s self by various methods to an “appropriate” situation. In contrast, he also speaks about the ability of the environment to adopt “appropriate” survivors even in the absence of any adaptive behaviour. He argues that survivors may appear to be “those having adapted themselves to the environment”. Gardin and Greve (2004, 307) opine that “it is (implicitly) assumed that fit is the result of a natural selection process that ensures that only the best-performing organisations survive to be observed at any point of time.” [Italics in original]
In the same vein Mockler (1971) argues that

"the situational approach starts with a manager working in a specific job situation who recognises that he must adapt any theory to meet his specific need (...) For example, if the work situation involves reconciling behavioural and business needs, the manager looks at both kinds of factors (human and business), determines the impact of each on the situation, and balances any conflicting requirements in his selection of and administration of a course of action. A conflict between behavioural mathematical schools of thought has no relevance to him at this point. He may look to both parts for his solution."

Mockler (1971, p. 151)

Jermias and Gani (2004, p.186) make us to know that "contingency theories of accounting provide discerning and testable hypotheses of why there is no one universal system of accounting that is optimal for every environment and context in which these systems operate." They hypothesise that the degree of contingent fit between a chosen strategy and its contextual variables has a positive correlation with organisational performance (performance defined as the ability of the organisation to survive in the market place). They point out that "contingency theory also predicts that the most important determinant of performance is the fit between strategic choice and its contextual variable[s] and not the type of strategies" (p.187). Jermias and Gani (2004) findings indicate that contingent fit has a significant positive relationship with business unit effectiveness regardless of the strategic choice, which is consistent with the proposition from contingency theory that no systems are universally appropriate to all organisations and to all circumstances.

The present study capitalises on the reference to proper ‘fit’ and adaptation to the external environment to investigate what that means for managers who either by chance or design (or both) find themselves operating in certain types of countries or environments. Will they adapt to the environment or be adopted by it to engage (not engage) in accounts manipulation?
2.2.4 **Limited attention theory**

Limited attention theory is an interesting and a growing area of scholarship and research in behavioural finance.\textsuperscript{18,19} Files et al. (2009), Peng et al. (2007), Gifford (2005), Hirshleifer et al. (2004), Daniel et al. (2002), and Hirshleifer and Teoh (2003) have been examining the theory in various ramifications. In their examinations, they use the platform of press releases that are dependent on managerial whims and caprices.

With the exception of Klibanoff et al. (1998), to the best of our knowledge, the literature has not yet used the newspaper to test investors' reaction to a news event. In this study, we apply the theory to test market reactions to news of accounts manipulation. Klibanoff et al. (1998) appears to be the first research to have investigated whether the high level of salience generated by the coverage of a major news event in a newspaper publication is correlated with the degree of reaction in financial asset prices. We think that Klibanoff et al. (1998) did not go far enough because they examined only the front page of The New York Times, which is only one major newspaper in U.S. On the following points, we depart markedly from Klibanoff et al. (1998). First, we look at newspapers from 36 countries around the world (some of the newspaper titles we used are listed on page 85 of this thesis); second, we will be looking at any number of newspapers from any country that reports cases of accounts manipulation; and third, we will be looking at several sections of a newspaper, rather than just the front page alone.

Hirshleifer et al. (2004, p.302) predicts that limited attention will affect market prices in systematic ways. Hirshleifer and Teoh (2003, p. 342) write that,

\textsuperscript{18} See Daniel et al. (2002) for a rich survey of this behavioural finance literature.

\textsuperscript{19} We would like to emphasise that this theory is \emph{but} one of the theories being tested in the second part of the study. It is not intended to make it subsume, override, or predominate other theories being drawn upon in the second part of the study. Indeed, this disclaimer applies to the rest of the theories as well.
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"Salience influences judgments about causality, the importance of a stimulus, and how extreme it is. For example, if the salience of a footnote disclosure is not high, some investors may fail to process it."

Daniel et al. (2002, p. 178) write that

"A modest extension of this idea is that owing to limited attention, people focus on only a few ideas or theories at a time while neglecting others. If the idea or theory that needs to be recognised is that some party is strategically manipulating information, then there will tend to be too little skepticism on average."

Daniel et al. (2002) also say that it has long been recognised that a source of judgment and decision biases is that cognitive resources such as time, memory, and attention are limited.

Hirshleifer and Teoh (2003) argue that it is a psychological fact that individuals focus on salient components of their environment at the expense of information items that are less salient or require additional cognitive processing. Hirshleifer et al. (2004) contribute by arguing that people simplify their judgments and decisions by using rules of thumb, and by processing only subsets of available information. With reference to using a bloated balance sheet information, they posit that "investors with limited attention may fail to make full use of available accounting information" (p. 300), hence mispricing of securities. Hirshleifer et al. (2004, p. 306) say that,

"Investors with limited attention do not put sufficient weight on the possibility that the high cumulative investment of these firms represents either overinvestment, replacement of obsolescent fixed assets, or investment with relatively transient payoff. They will therefore overvalue firms with high net operating assets and undervalue firms with low net operating assets."

Peng et al. (2007) analyse the effect on investors' attention allocation and asset price comovements of macroeconomic shocks that increase market-wide
uncertainty. According to them, "a large body of psychological research demonstrates that people have limited attention, i.e., they can only process a limited amount of information during a given period" (Peng et al. [2007]). They further note that investors can strategically shift their attention in response to changing conditions. According to Peng et al. (2007, p. 396),

"In particular, when market-wide uncertainty rises upon the arrival of a macroeconomic shock, investors temporarily shift attention away from processing asset-specific information to processing more market-level information, shifting attention back to asset-specific information over the ensuing days."

They opine that when investors with limited attention are faced with vast amounts of information in the financial markets, they become selective in their information processing, depending on priority and urgency. Investors allocate attention across either market-level or asset-specific information processing tasks. They find result consistent with their hypothesis that investors' attention allocation is time-varying.

It is plausible for us to speculate that most busy people have the newspaper but do not read all the news or articles in it. They quickly flip or skim through the newspaper looking for what will catch their attention. This cognitive selection (as we refer to it in this study) may be as a result of every day information overload on investors, because of their busy schedule, energy fatigue or because of other reasons such as benefit-cost consideration. For example, Hirshleifer and Teoh (2003, p.345) argue that "...attention demands time, which has a monetary opportunity cost."

Gifford (2005, p.27) opines that the limitless number of available targets of attention make information overload a common problem. He further adds that "optimal decision making with limited attention appears to imply that the agent uses satisficing approximations of the environment in order to optimally allocate limited attention in this perceived environment."
Our reading of this literature suggests that the theory of limited attention may have some explanation to offer for the observed stock returns with the publication of incidences of accounts manipulation in daily newspapers.

With respect to the relevance of this theory to the present study, it is worth investigating whether the theory can be used to test the speed and completeness of stock prices reactions to the publication of news of accounts manipulation in newspapers.

Intuitively, the present study believes that the section where news of accounts manipulation is published in newspapers may be one of the factors that may suggest how severe investors react to the news. In addition to this intuition, cognitive selection may hinder people from reading every news item in a newspaper.

Hirshleifer and Teoh (2003) mention several experimental studies that find that the disclosure of equivalent information about a firm presented in different ways affects the valuations and trades of investors and even experienced financial analysts. We investigate this further by using the section where the news of accounts manipulation is inserted in newspapers vis-à-vis stock price reactions.

Like most busy people, investors are faced with every day information overload. Their daily schedule may be too crowded to read every bit of news in a newspaper. Therefore, they may be attracted to the news that occupies a certain position, or section in the publication.

Daniel et al. (2002) argue that the media likes to report on what is new, and to paint what is new as important. The present study argues that the attention the media pays to accounts manipulation as reflected by where the news is inserted in newspapers can influence the direction of change in stock prices.

\[^{20}\text{For the studies cited, see footnote 6 of Hirshleifer and Teoh (2003, p. 343).}\]
To the discerning mind, limited attention appears to be antithetical to the semi-strong form efficient markets hypothesis (discussed later in section 2.3.6.1 of this chapter). Briefly, the hypothesis says that security returns reflect \textit{all publicly} available information. However, investors may be choosy in their use of all such publicly available information, to reconcile the antithesis.

In sum, this study attempts to demonstrate how it operationalises the limited attention theory by investigating whether or not the section occupied by news of accounts manipulation can have differential effect on share prices behaviour. By so doing, this research will be one of the first in empirical accounting research to examine this issue using the newspaper as a podium.

2.3 Review of related literature

The literature is reviewed based on the dictates of the structure of the research, i.e., the two strands of the study. But before then there are some preambles to be looked at. These are (a) a review of the literature on earnings management or earnings manipulation, (b) a review of the literature as it affects the motivation of the study, and (c) a review of the literature that identifies the actors involved in accounts manipulation. After the preambles in subsections 2.3.1-2.3.4, subsection 2.3.5 embarks on a thematic review of the stylised institutional structures of accounts manipulation. Subsection 2.3.6 reviews the literature on the consequences of publicly exposed accounts manipulation on stock prices and firm value.
2.3.1 Earnings Management/Earnings Manipulation/Accounts manipulation

Healy and Wahlen (1999, p. 380) observe that the “earnings management” area remains a fertile ground for academic research. From the brief epistemological discussion in section 1.6 of chapter 1, it is said that the term earnings management appears to be nebulous.

Although earnings management is a generic term used by some researchers to summarily describe their work, the term is mostly used ambiguously by some people. However, note is taken of the fact that some people use earnings management synonymously with earnings manipulation (see e.g., Gowthorp and Amat, 2005; Bedard and Johnstone, 2004; Rosner 2003; Beneish 1999b; Wiedman, 1999, and Dechow et al., 1996; amongst others).

On epistemological grounds this study offers two arguments here: First, it appears that the academic and practitioner literature in accounting is imprecise about the actual use of, or when to use, the term. Second, it also appears that there is a definitional problem of earnings management in the literature, as chapter 1 shows.

Allowing the terms again to be used interchangeably, Jiraporn et al. (2008, p. 623) writes that

"If earnings management is utilised primarily opportunistically by managers, firms where agency costs are more severe should exhibit a higher degree of earnings management. In other words, the extent of earnings management is positively related to the gravity of agency conflicts.

Jiraporn et al. (2008, p. 624) argue further that opportunistic earnings management is harmful to firm value while beneficial earnings management has a positive relation with firm value.

21 We like to note that because of sparsity of materials with the title "accounts manipulation" the bulk of the literature review is on earnings management. However, we like to emphasise that this is not a review of the literature on earnings management/manipulation in its narrow focus, but a review that is guided by the more embracing accounts manipulation as define in this study.
This is not a critique, but we observe that Gowthorpe and Amat (2005), Blake and Amat (1996), and Feinstein (1995) do not make matters easy in the way they address earnings management because they equate accounting or accounts with the word earnings or profits.

In particular, Feinstein (1995, p. 50) in one breadth writes that "[...] a second effect is due to accounting manipulations, in which a partnership shifts profits from a less informative activity's line-item account to a more informative activity's account..." In another breadth Feinstein (1995, p. 53) writes that "an accounting manipulation arises when a firm shifts line-item entries in its accounting statements to misrepresent the relative contributions of different activities to overall profits. And in yet another breadth Feinstein (1995, p. 59) writes that "in general, groups in which account pooling sharply reduces banks' ability to distinguish one member of the group from another will be most affected by account manipulations", italics not in the originals but inserted here for emphasis.

It is instructive to note that in the third example Feinstein is discussing whether a bank should give loan to one of two partners who are considering merging their businesses together. It is also noteworthy that in the first breadth of Feinstein's postulate accounting manipulation is being associated with profits. In the second breadth, accounting manipulation is being associated with accounting statements and profits (profit, found in income statements) whereas accounting statements include cash flow statements, and statements of owner's equity.

Apart from this imprecise interchangeability of terms, the use of the word earnings management itself alone has been frowned at by Bradbury (2007) who observes that

"One of the unfortunate features of the 'earnings management' literature is that the papers move too quickly from the label 'abnormal accruals' to infer 'discretionary accruals' and then to infer 'earnings management'" (Bradbury (2007, p. 4).
While the imprecision persists, however, the present study considers earnings management and/or earnings manipulation as parts of a broader panorama of accounts manipulation (see Figure 1.1 on page 18 in chapter 1) as "both refer to techniques that managers deliberately employ to achieve a desired level of reported earnings" (Rosner 2003, p.367), or some underlying reality, to eschew the word earnings as used by Rosner (2003). She distinguishes material earnings manipulation from earnings management by misstatement magnitudes.

Recently Ball (2009) asserts that "the term earnings management is used to describe managers intervening in the reporting of their own financial performance." Ball (2009, p. 4) goes on to enumerate a range of practices that can be considered as earnings management. These include practices that are legal, violate no accounting rules or principles, and are generally viewed as ethical—such as structuring transactions with regard to their effect on the financial statements (leasing being a prominent example); timing asset sales to book gains in years with lower profits, and to book losses in years with higher profits; practices that are legal, violate no accounting rules or principles, but might violate accepted standards of disclosure—such as giving year-end quantity discounts to major customers, generating sales "pull forwards," but failing to disclose that they inflate current earnings and borrowing against future earnings; negligent or grossly negligent financial reporting—such as unwittingly failing to comply with GAAP; and fraudulent financial reporting—such as knowingly failing to comply with GAAP.

The reader would notice that Ball's (2009) assertion is consistent with the strand of the literature that tries to distinguish or regard earnings management as falling within the purview of GAAP violations. If we should go by the items listed in Table 1.2 on page 19, accounts manipulation goes beyond GAAP violation per se.

We hasten to say that the definitions examined so far are not an exhaustive list of the literature's definitions, many others exist. The imprecision in the use of terms appears set to rest the with work begun by Stolowy and Breton (2004) who, it
appears, are the first to provide a unified conceptual framework of understanding the practice of accounts manipulation.

Hence, prior literature taken together, this study defines accounts manipulation as a situation whereby the management of a firm acting opportunistically or efficiently misleads parties (other than themselves) by misrepresenting or misstating the firm’s situation through income statements, statements of cash flow, balance sheet and other non-financial items. Our definition of accounts manipulation encompasses both within-GAAP and non-GAAP manipulation, and those with efficient or opportunistic connotation. The present study, in line with Tan and Jamal (2006), likes to emphasise from its definition that opportunism can be in the interest of managers alone, of the firm alone, or of both.

2.3.2 Use of the terms accounts and earnings:
(A revisit of epistemological dialectic in section 1.6)

There is a need to motivate the choice of the word “accounts” in the title of this study (as opposed to the word “earnings” that is commonly or predominantly used in prior and contemporary literature). Based on epistemological foundations (see section 1.6 in chapter 1) this study questions the use of earnings management to describe all manner of acts that border on unreal accounting practices even when those practices do not belong to the realm of earnings management. It therefore sends out a caveat that the words earnings management should not be construed in the negative all the time.

It could be a desirable thing to manage earnings, having income smoothing in mind; opinions differ on this: see for example, Tan and Jamal (2006) and Gowthorpe and Amat (2005). The latter justify income smoothing on the grounds that shareholders can benefit by the fact that managers are able to smooth income since this may decrease the apparent volatility of earnings and so increase the value of their shares. According to Gowthorpe and Amat (2005) shareholders’ acquiesce
to this practice makes them to be accessories to manipulation, which nevertheless will be approved by the agency theoretical supposition that such behaviour is inevitable given the conflict inherent in agency relationship.

Let us use two examples to illustrate the point that earnings management through income smoothing may be desirable: (a) a firm that is uncertain of the state of nature for a future period makes a certain amount of earnings this period and decides to manage or spread it prudently in some way over a number of future years can be said to engage in earnings management, but this may be positive or desirable; (b) some firms can decide to smooth earnings for good or bad reasons that are in consonance with the general business climate in which a firm finds itself. These firms may be said to engage in earnings management even when it is in the interest of shareholders.

On ethical grounds Gowthorpe and Amat (2005, pp. 62-63) conclude that manipulations are morally reprehensible arguing that the practice is not fair to users, because it involves an unjust exercise of power, and tend to weaken the authority of accounting regulators. Hence they admonish that “it is helpful to bear in mind the idea of individual responsibility for wrong actions, and the notion of good character when examining the rather amoral arguments employed to excuse accounting manipulative behavior.” Gowthorpe and Amat (2005) then argue that “a defence of creative accounting behaviour can be made which rests upon agency and positive accounting theories.”

The two examples given above (and many more could be cited) show the misfit of dressing everything in the robe of earnings management. For example, in support of our position, it is the view of Beneish (2001, 4) “that academics have no consensus on what is earnings management.” Everything a firm does is not all about the bottom-line. Take for another example; it is difficult to see how a firm that misstates the number of its preference shareholders is managing earnings. This may be an extreme example but it suffices to show the nebulousness of using earnings management all the time. So how do people come to know what they
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know about earnings management? How do people come to the belief that every conceivable financial act that is not what it should be should be termed earnings management? Based on this epistemological dialectic therefore, this study is of the view that researchers in general would benefit if they would consider using the word accounts manipulation or earnings management where it is appropriate.

As we show in Figure 1.1 and Table 1.2 of chapter 1 (see page 18 and 19, respectively), financial statement items other than earnings can be manipulated, e.g., misstatement of the value of properties, plants, and equipment on the balance sheet; statement of cash flows; changes in shareholders' equity, etc. In a nutshell, there are manipulations which do not affect earnings (see, for example, Roychowdhury, 2006).

23.3 Motivations for accounts manipulation

From capital market perspective, Ball (2009) and Efendi et al. (2007) identify some incentives for accounts manipulation. Ball (2009, pp. 285-286) suggests that reasons which can influence managers to commit the act include managers' desire to ensure that the value of their firms' stocks continues to rise (aka Enron). Efendi et al. (2007) focus on the influence of managers' incentive regarding the value of their in-the-money stock option holdings, interest-coverage debt covenants, and new debt or equity capital issues. Efendi et al.'s (2007) results indicate that agency costs increased as substantially overvalued equity caused managers to take actions to support the stock price.

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22 We recognise that there are interactions between one financial statement and the other as shown by the double-headed arrow of Figure 1.1 in chapter 1, page 18. For example, there are linkages between the income statements and the balance sheet: the profit figure reported in the income statements is affected by depreciation provisions on fixed assets, provision for bad and doubtful debts on debtors, cost of goods sold and closing inventories, and investments undertaken to manage earnings (see Tan and Jamal, 2006). Our epistemology has taken cognisance of these scenarios.
Managers' incentives to manipulate accounts can also arise from their attempt to prevent lenders and credit rating agencies from downgrading their firm's debt profile. Other reasons include an attempt to avoid violating debt covenants [e.g., Watts and Zimmerman (1990), DeFond and Jiambalvo (1994), Beneish (2001), Jaggi and Lee (2002)] that may limit dividend payments; and investment in new ventures. Still, other reasons may be to dress the firm in new robes for expected mergers and acquisitions deals so that it can bargain from a pseudo position of strength. In the extreme, it can also be as a result of the desire to steal outright (see Jensen and Meckling, 1976).

All these are endogenous factors that managers have some control over. Although they are important in their own right, the present research neither examines nor controls for these endogenous factors.

The interest of our study lies in the expectation that when these endogenous attempts are unmasked they can make the headlines with repercussions through share prices reactions, as we shall see in the second part of the study where we examine the information content of the news.

Using the lens of Watts (1977), Watts and Zimmerman (1986) and tenets of political cost hypothesis, incentives for accounts manipulation can include political costs consideration in order to reduce tax, or to avoid regulatory interference, or the maximisation of managers' compensation, which is due largely to orientation toward short-termism. Beneish (1999a, pp. 436-440) identifies four incentives for financial statements manipulation. These include insider trading, compensation agreements, the demand for external financing, and debt covenants. According to (Beneish 1999a), "the evidence on insider trading as an incentive to increase income to mislead investors is less pervasive, but [is] more compelling than the evidence on equity issuance as an incentive".
Two other factors can be identified from the literature, and these can be referred to here as a contest between current dominant owners, and potential investors and financiers. These are: 1) minimisation of cost of equity capital when trying to attract external financing (e.g., Dechow et al., (1996, p.2)) and maximisation of current controlling shareholders' share value (e.g., Dye (1988), and Watts and Zimmerman (1978, p. 114)).

Dye (1988, p.196) discusses internal and external demand for earnings manipulation through contractual permission given to managers by current shareholders to engage in earnings manipulation. Dye (1988) reveals that to achieve this aim managers are sometimes given permission to produce two types of performance information; one, private information to enable managers' performance to be assessed by dominant current shareholders in order to negotiate compensation contracts; and the other, public; which is given to prospective investors and other outside stakeholders for the purpose of influencing potential investors opinion about the value of the company. Implicating information asymmetry, Dye (1988, p. 196) through his blocked communication thesis notes that two principal factors that further engender earnings management are the inability of managers to communicate all dimensions of their private information to all categories of shareholders and the inability of current investors to reveal completely all facets of their managers' compensation schedules to prospective investors.

Beaver (1973, p.51) recognises that as a result of the method of depreciation in use firms produce two types of earnings - reported and adjusted earnings - for tax purposes. This is consistent with Watts and Zimmerman's (1986) positive accounting theory which posits that due to contracting and political cost considerations managers produce two sets of earnings for different purposes.

Dechow et al. (1996, p. 10) discuss other alternative motivations for accounts manipulation including issue securities, upwardly trending earnings per share,
earnings-based bonuses, insider trading, etc. According to Bhattacharya, Daouk, and Welker (2003) managers are motivated to manipulate earnings for a number of reasons. This may arise because accounting standards allow substantial flexibility; because accounting standards do not exist to specify accounting principles related to some areas of business activity; and because accounting standards, though rigorous, are weakly enforced.

2.4.1 Environmental influences on accounts manipulation

This section reviews what the literature has to say about the institutional structures, beginning with legal environment.

2.4.1.1 Legal origin

Prior studies (e.g., Burgstahler et al. (2006), Hail and Leuz (2006), Leuz et al. (2003), La Porta et al. (2002, 2000, 1998, 1997), Ball et al. (2000), and Bushman and Piotroski (2006), among others) provide a very rich research evidence that legal origin matters in firms’ scheme of things. Leuz et al. (2003, p. 507) propose and find that earnings management is more pervasive in countries where the legal protection of outside investors is weak. According to the authors, this is because in those countries insiders enjoy greater private control benefits and hence have stronger incentives to obfuscate firm performance. Burgstahler et al. (2006, p. 1001) show evidence that earnings management is more pronounced in countries with weaker legal systems and enforcement. They argue that in countries with large and highly developed equity markets, publicly traded firms engage in even less earnings management.

La Porta et al. (2000, 1998, and 1997) find that investor-protection and corporate governance can differ under different legal systems. Furthermore, La Porta et al.

23 In addition to this, the reader may wish to review Healy and Wahlen (1999) for additional lists of motivations for accounts manipulation.
(2002, 2000, and 1998) find that shareholder rights protection is different according to the legal origin in which a company operates. They categorise legal origin generally as common-law or civil-law origin, or a variant of both\textsuperscript{24}. La Porta et al. (2002) show that firms in countries with stronger outside investor-protection and more effective legal systems enjoy higher share valuation. Furthermore, La Porta et al. (2000, 1998) find that common-law countries afford the best legal protections to shareholders whereas French-law countries have the weakest protections.

La Porta et al. (1997) empirically establish a link between legal environment and financial markets. They predict and find that for 49 countries around the world, the countries with better legal protections have more external finance in the form of both higher value and broader capital markets. They show that legal environment matters for the size and extent of a country’s capital market(s).

Consistent with La Porta et al. (2002, 2000, 1998, and 1997), Hail and Leuz (2006) provide strong support for the conclusion that the overall quality of a country’s legal system is negatively associated with firms’ cost of equity capital.

In a cross-country context where country-level characteristics such as legal origin is hypothesised to matter for firms’ wellbeing, or good corporate governance, the studies of both Bushman and Piotroski (2006) and Ball et al. (2000) are relevant to the present study. We begin with the latter which studies the effect of international institutional factors (including legal origin) on properties of accounting earnings.

Ball et al. (2000) argue that compared to common-law countries, the demand for accounting income under code law is influenced more by the payout preferences of agents for labour, capital and government, and less by the demand for public

\textsuperscript{24} As used by La Porta et al. (1997, p. 1131; 1998, p.1115), common law refers to English law, which evolved through judicial pronouncements. That is, common law is formed by judges through settlement of disputes. Civil law evolved from Roman laws and can be of French-, German-, or Scandinavian-origin. Civil law evolved from legal scholars(hip) and the legislative process.
disclosure. Parts of the hypotheses investigated by Ball et al. (2000) are: (a) that the demand for timely incorporation of economic income in accounting income is lower under the code-law stakeholder model of corporate governance than under the common-law shareholder model (Ball et al. 2000, p. 13); and (b) that because parties contracting with the firm operate at greater arm’s length from managers, information asymmetry in common-law countries is more likely to be resolved by timely public disclosure (Ball et al. 2000, p. 14).

Specifically, they also hypothesise that code-law countries’ accounting incomes are more smoothed and less timely in incorporating current-period changes in market value than common-law countries. They argue that code-law accounting standards give greater discretion to managers in deciding when economic gains and losses are incorporated in accounting income. Furthermore, they observe that managers reduce income volatility by varying the application of accounting standards or by influencing operating, financing and investment decisions (for example, by deferring discretionary expenditures such as R&D in bad earnings years). They expect that managers’ operating, financing and investment decisions can affect accounting income differentially across countries because the use of accounting income in corporate governance varies internationally.

Finally, Ball et al. (2000, p. 15) argue that firm-level politicisation typically leads to a stakeholder governance model, involving agents for major groups contracting with the firm who view current-period accounting income as the pie to be divided among groups, or as dividends to shareholders, or as taxes to governments, or as bonuses to managers and perhaps employees also.

For the purposes of the present study, our reading and understanding of Ball et al. (2000) brings a number of issues to the fore: First, is the importance of legal origin. Second, we infer that the latitude given to managers by different legal systems to make discretionary operating, financing and investment decisions can breed unintended consequences such as accounts manipulation. Finally, the contracting parties’ view of current-period accounting income as the pie to be divided among
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groups may encourage managers to cut big their own part of the pie, which may engender act of accounts manipulation.

Operating from the angle of political economy, Bushman and Piotroski’s (2006) paper explores how reported accounting numbers are shaped by the institutional structure of the country in which firms are domiciled. Their paper examines the impact of country-level institutional variables (legal/judicial system, securities laws, political economy, and tax regime) on accounting conservatism. Specifically, the premise of their analysis is that legal/judicial system, securities laws, political economy, and tax regime create incentives that influence the behaviour of corporate executives, investors, regulators and other market participants.

Consistent with Ball et al. (2000), Bushman and Piotroski (2006, p. 112) assert that a country’s legal/judicial institutions can influence incentives to produce conservative accounting numbers through several channels. They then go further to argue that if stronger legal/judicial regimes lead to a more prominent role for the use of accounting numbers in formal contracts, firms in countries with stronger legal/judicial regimes may face higher “contracting” demand for conservative reporting. They further reason that high quality judicial systems could increase the expected gains from litigation initiated to remedy violations of investors’ rights (Bushman and Piotroski (2006, p. 113)).

Bushman and Piotroski (2006) make three important conjectures regarding the role of legal systems on accounting conservatism. The first is that firms in countries with stronger legal/judicial regimes and high prevalence of private debt contracting will manifest more conservative accounting. The second is that firms in countries with stronger legal/judicial regimes and more diffuse ownership structures will manifest more conservative accounting. Finally, firms in countries with stronger legal regimes and high incidence of litigation will manifest more conservative accounting. (Original not italicised but is added here for emphasis). Consistent with these hypotheses, findings from tests conducted by Bushman and Piotroski (2006) document that the timeliness of accounting earnings is higher in common
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law countries than in code law countries. They also document evidence that the incorporation of good news into earnings is stronger in code law countries.

Thirdly, they document that the asymmetric timeliness of earnings is stronger in common law countries.

Taken the above review into consideration, the present study motivates the use of legal environment as capable of being associated with occurrence or non-occurrence of accounts manipulation.

24.1.2 Corrupt environment

There is a massive literature on corruption (which we cannot explore to the fullest in this study) positing that "corruption has become a prominent issue of concern within international institutions and with firms active in foreign markets" (Pantzalis et al. (2008)). We note that in the past accounting has not contributed significantly to that literature. Indeed, as it has been observed by Belkaoui (2004, p. 74), "one consequence largely ignored in the economic and accounting literature is the impact of corruption on the quality of accounting." He further notes that "the level of accounting quality is a direct result of the level of corruption".

There are various definitions of corruption, one of which is that it is an illegal private gain made by an agent at the expense of the principal, when the agent deals with third parties (e.g., Paldam (2002, p. 217); and Shleifer and Vishny (1993)).

Another definition offered by Jain (2001) defines corruption as where "public officials, bureaucrats, legislators, and politicians use powers delegated to them by the public to further their own economic interests at the expense of the common good." 25 (Original not italicised).

25 It is instructive to note that this study does not investigate corruption as a subject, but the impact of a corrupt (or clean) environment on managers operating in that environment: to wit, whether a corrupt environment can influence managers in engaging (not engaging) in accounts manipulation.
Jain (2001, p.73) opines that there is consensus that corruption refers to acts in which the power of public office is used for personal gain that contravenes the rules of the game. In addition, Jain (2001, pp. 77-79) argues that the availability of discretionary powers in the hands of agents can bring about corruption; hence it is suggested that there should be “a policy of reducing accounting discretion in order to prevent misrepresentation by managers” (Tan and Jamal, 2006). When this is narrowed down to accounting the rules of the game can be accounting standards and generally accepted accounting principles (GAAPs) and other non-regulatory or discretionary accounting choices.

It is the view of the present study that discretionary power comes about both as a result of accounting standards’ allowed and preferred alternative treatments of accounting items as well as non-GAAP choices available to managers. Accounts manipulation thus becomes a possibility when managers are given discretion within existing accounting standards and GAAPs, and when managers can make their discretionary choices in non-GAAP situations.

But an attempt to reduce managerial accounting discretion in order to (presumably) reduce the incidence of accounts manipulation may be counterproductive as it is likely to encourage “smart” managers to device other means to beat the game (see, for example, Roychowdhury (2006) and Tan and Jamal (2006) who identify operational and investment activities as vehicles for manipulation). The latter hypothesise that “a reduction in accounting discretion can induce high foresight managers to choose investments that reduce the variability of operating earnings”; that is, by way of income or earnings smoothing. The results they obtained from experiments administered on companies’ finance officers are consistent with their hypothesis. The authors also find that reducing accounting discretion can achieve the desired objective of mitigating income smoothing with low foresight managers.

Simply, the intent is to determine whether a corrupt environment can infest managerial accounts manipulation behaviour.
These countervailing findings lead Tan and Jamal (2006) to conclude that high foresight managers are more able to smooth earnings than low foresight managers in low accounting discretion environment.

Ordinarily one may ask a global question such as, “Why should accountants be bothered about corruption”? *A priori*, we may not be able to provide a readily satisfactory answer to this question but Pantzalis et al. (2008) have done so by arguing that corruption is not only a key determinant of development and growth at the macroeconomic level, but that at the microeconomic level it may also have an impact on multinational corporation valuation. So, it follows that as accountants are part of the team that valuates firms they need accurate figures to work with. At the meso level, Carnegie and Napier (2010) are concerned about the image problem of accountants as a result of some accountants caught in accounting infractions in commercial organisations. So, because of their battered image accountants should be bothered about corruption.

Accounting practitioners (and some sections of academic accountants) have been mulling over corruption and its multi-faceted consequences. The increasing attention been shown by accounting qualifying bodies and academic researchers are likely to reflect a keen interest in this activism.

In addition to buttressing the importance (and menace!) of corruption, a few of the global accounting qualifying bodies in the UK such as the Association of Certified Chartered Accountants (ACCA) and the Institute of Chartered Accountants in England and Wales (ICEAW) have recently taken a bold public position regarding the issue of corruption. For instance, after a corruption seminar held by the Business Law Committee of the Institute of Chartered Accountants and Transparency International in May 2002 the ICEAW states, *inter alia*, that “chartered accountants must be at the forefront of the fight against domestic and international corruption”.
Among a wide range of issues identified as pivotal at the seminar include the observation and resolve that:

"Tackling corruption will become more of a priority for the profession as the tide of public opinion turns against the view that the problem will always be endemic, and even acceptable, in certain parts of the world.

The scale of the problem is significant at both a corporate and governmental level and creates a major distortion of trade as well as undermining the democratic development of emerging markets."

Speaking in the same vein, Allen Blewitt, a former chief executive of ACCA, says, among other things, that

"...We [ACCA] believe accountants are in a pivotal position to make a difference in this area and we are determined to ensure that our members across the world have the skills, training and the professional encouragement to do so... "


Commentators and some academic accountants have also found it necessary to delve into the potential role accountants can play with regard to mitigating corruption. For example, Everett et al. (2007, p. 515) posit that the issue of corruption is a problem and accounting can aid in its fight. Kimbro (2002, p. 332) observes that "accounting is an information system that communicates financial and economic data essential to the control and prevention of corrupt activities". Kimbro argue further that,

"Accounting serves a dual role: financial statements provide information about transactions and auditing serves as a monitoring mechanism to check on the accuracy of this information and to prevent and discourage financial misappropriation".

In a recent work Pantzalis et al. (2008) investigate how the involvement of U.S. multinational corporations in corrupt countries affects firm value. They hypothesise that the value impact of intangibles should be lower for multinational corporations that primarily operate in corrupt countries than for those that primarily
operate in clean countries. Pantzalis et al. (2008, p. 402) find evidence suggestive that the general impact of intangibles on the value of multinational corporations is positive, but smaller for multinational corporations whose foreign operations networks include many corrupt countries than for multinational corporations that primarily operate in clean countries. They also find that the direct effect of multinationality (i.e. the size of the firm's foreign operations network) on market value is negative for a group of multinational corporations whose foreign operations are primarily in corrupt countries, while the effect is insignificant for multinational corporations operating in clean countries.

Our review of the literature shows that the various definitions of corruption are not directly linked to accounts manipulation. Hence, the present study attempts to create the missing link between corruption and accounts manipulation.

Recall from the various definitions of earnings management in chapter 1 that Schipper (1989) observes that earnings manipulation is perpetuated with the "intention of obtaining some private gain" rather than "merely facilitating the neutral operation of the process". Explicitly or implicitly, Schipper (1989) may not have had the construct of corruption in mind. Being enabled by our review of the literature, we argue that corruption can be factored into Schipper and others' definitions of earnings manipulation.

Meanwhile Kimbro (2002) proposes that:

"Internal and external factors influence the decision of whether to engage in corrupt behaviour. The external factors associated with the agent's rational decision are related to the degree of monitoring, detection and enforcement mechanisms designed to prevent corruption. Institutional monitoring, with moderate rates of growth, economic prosperity, and the consequent development of good institutions, should lead to less necessity, less incentive, and less opportunity to be corrupt".

Placing Kimbro's proposition in context, for the purpose of this study, parts of the external factors he refers to can be construed to mean a corrupt environment, legal
systems, freedom of the press, State ownership of enterprises and the State’s interest in the capital market in efforts at investor-protection; all of which are identified in this study as institutional structures that are likely to influence accounts manipulation. Some of these institutional structures are as well identified in Pantzalis et al. (2008).

Kimbro (2002) observes, among other things, that poor countries have less institutional development and the people live with scarcity, hunger, poor health, and little education and with great basic needs. This makes him to conclude that in poor countries corruption is more a function of lack of economic development than of anything else. He further observes that in poor countries people are driven to corruption by need whereas in rich countries they are driven to corruption by greed.

In fact, one of Kimbro’s hypotheses has it that “the level of wealth will affect the degree of corruption differently in rich and poor countries” (Kimbro 2002, p. 336). He breaks this hypothesis into two by saying that (a) the level of national wealth will not be associated with the degree of corruption in rich countries and (b) the level of national wealth will be associated with the degree of corruption in poor countries. Results reported by Kimbro provide some evidence to support the hypothesis that among rich countries the level of wealth is not associated with corruption.

Having regard to the various definitions of corruption as reviewed above, in this study we operationalise a corrupt (“clean”) environment as one where the level of corruption in a country is highly (lowly) pervasive, relying on some index.

Most studies dwell on corruption in government, national life, public offices, (i.e., at the macro level) whereas other studies dwell on it as it affects individual persons, i.e., at the micro level. The present study investigates the effects of a corrupt/clean environment with the binocular of a meso-level analysis (i.e., at the level of the

27 An authoritative working definition of a corrupt (clean) environment can be found at www.transparency.org and in Pantzalis et al. (2008, p. 391, and Table A1 of their Appendix)
firm or corporation as perpetuated by management or their close allies). The present study closely aligns itself with the literature on corruption in the corporate-world (aka Lee and Ng 2006, and Kimbro 2002).

In their study, Lee and Ng (2006) investigate and find that corruption has significant economic consequence for shareholder value of firms. Their finding suggests that higher levels of corruption are associated with lower corporate values.

The abundant literature on corruption has shown that it has significant effects on the economics of a country (including corporate value and cash flows). However, and on the opposite side of the argument, it is instructive to note that some researchers have gone as far as propagating the notion of efficient corruption, but this notion has quickly been debunked by Aidt (2003, pp. F634-F635). Consistent with Aidt (2003) who debunk the notion of efficient corruption and Kimbro (2002), we conjecture that corruption can be a dysfunctional aspect of organisational economic life as manifested by managers' accounts manipulation behaviour, which can be a function of the level of corruption of the country in which managers operate.

The above discussion, therefore, points to a need and rationale for why accountants should be bothered about corruption and why this study is interested in investigating the relationship between accounts manipulation and a corrupt environment, an attempt that has hitherto not been made. The present study tries to infer whether the level of corruption in a country can help explain why accounts manipulation occurs more in some countries than in others.

2.4.1.3 The role of the press

Save for the research by Miller (2006), to the best of our knowledge, in accounting research there is no prior study that empirically examined the impact of the press on accounts manipulation. And except for a few relatively recent studies in political
economy (e.g., Bushman et al. [2004], Haw et al. [2004], and Dyck et al. (2008)), very little is known about the role of the press or the media in corporate life.

The hitherto scanty study of the role of the press in accounting research in general, and the non-existence of one in accounts manipulation in particular, may be due to such a question as, ‘Why should accountants be bothered about the press?’ Prior studies in political economy may have this concern in mind. A journey into this literature shows some possible reasons why the press is important and (in our opinion) should be of concern to accounting researchers. The press, as the fourth estate of the realm, has entrenched interests in enterprises for the sake of its readership. We can say that to a certain extent, the press serves or strives to protect the public good by promoting “social welfare”, in the parlance of political economy of accounting (Cooper and Sherer, 1984).

Another answer that can be proffered for why accountants may be bothered about the press is that accountants may care about what they do (or do not do) and how they do it (or do not do it) as individuals with reputation to protect, aka the image problem examined by Carnegie and Napier (2010). Consistent with this intuitive and simple answer, Dyck et al. (2008) show that the press can be useful in a number of ways: For example, to rein in managers in the interest of corporate governance. They opine that “the press pressures managers to act not just in shareholders’ interest, but in a publicly acceptable way.” (Dyck et al., 2008).

Miller (2006) examines the press’s role as a monitor or “watchdog” for accounting fraud. The purpose of Miller’s (2006) study is to provide evidence on the role of the press as an information intermediary. Bushman et al. (2004) examine the relationship between the media and quality financial reporting. They find that information dissemination as measured by their media construct (which they use as a proxy for the intensity of information dissemination in a country) is positively correlated with some aspects of the quality of financial reporting.
Haw et al. (2004) posit that private control benefits are limited in situations where there is both an independent press that publicises information about improper behaviour and a large number of educated investors who read the newspaper and sanction improper behaviour. Haw et al. (2004, p. 450) results suggest that there is a significant negative correlation between income management and extra-legal institutions; one of which is the newspaper.

In line with Dyck et al. (2008), Brunetti and Weder (2003) regard press freedom as an external control mechanism on corruption. Brunetti and Weder (2003) further posit that independent journalists have incentives to actively investigate any wrongdoing. Specifically, and in accord with Haw et al. (2004), Brunetti and Weder (2003) hypothesise and find that press freedom negatively significantly affects corruption across 125 countries. They find that in countries where there is high press freedom, corruption declines.

In the political economy literature, Daniel et al. (2002, p. 169) posit that the media likes to report on what is new... and that ... the intense attention the media devotes upon transitory phenomena [...] can induce investors (and economists) to pay too much attention to them.

Going back in time to 1969, Arrow (1969, p.33) recognises the important role of the press in the diffusion of innovation. He compares the mass media side-by-side with personal contacts in the dissemination of innovation. He recognises that the mass media may provide some overall alertness to change and acknowledges that while the mass media play a major role in alerting individuals to the possibility of an innovation, it seems to be personal contact that is most relevant in leading to its adoption.

Klibanoff (1998), Haw et al. (2004), Miller (2006) and Fang and Peress (2009) are among the recent studies in accounting and finance that have investigated the role of the press. Consistent with this literature, it is our opinion that the pulse of the capital
market regarding news of accounts manipulation can be gauged from newspapers, and we argue that investors listen to the pulse.

For our purposes, it will be interesting to see whether the print media or the press can have an effect on accounts manipulation tendencies of managers. Hence the research is an attempt to see whether the press in performing its role can affect the occurrence of accounts manipulation.

In line with the foregoing stream of literature, we expect that managers operating in an environment where the independent press is free to publish uncensored will be more careful to *mind the gaps*!

It is plausible to reason that the press in some countries may not report cases of accounts manipulation because it does not meet the threshold of reporting it in that country or the press does not regard such cases as accounts manipulation. For example, giving and taking bribes may be acceptable in some countries while not acceptable in others. In those countries where it is acceptable the press may not see the need to report such cases as it may be perceived not out-of-the-ordinary.

### 2.4.1.4 State ownership of enterprises

The concept of State ownership of business enterprises is not a new one. However, in an international setting, there are but scanty empirical evidence in accounting research of the impact of government or State ownership of firms on accounts manipulation. Generally in accounting research, most prior studies that exist on State ownership of enterprises are mostly carried out with respect to the Chinese environment.

Of most importance and specific to this study, we have come to the realisation that there is a vacuum in accounting research in that there is no study yet that examines the relation between State ownership of business enterprises and accounts manipulation in an international setting. The present study attempts to fill this
It expects that State ownership of firms can offer explanations for the occurrence or non-occurrence of accounts manipulation.

Approaching this issue from the perspective of political economy, it is argued (see Bushman et al. 2004) that States that directly own enterprises may suppress firm-specific information to hide expropriation activities by politicians and their cronies. They argue that it is also possible that benevolent governments use the State's ownership of enterprises to directly govern and manage firms, obviating the need for public information.

Consistent with the political cost hypothesis (see Watts and Zimmerman, 1978, 1986, 1990), Bushman et al. (2004) observe that politicians may thus seek to restrict the flow of information to prevent public scrutiny of their business dealings with cronies and protect their economic interests by suppressing information flows.

In the emerging literature of political economy, state-owned enterprises is one institutional factor that has been used to examine the extent of State or government involvement in the economy of a country (see Bushee and Piotrioski (2006) and Bushman et al. (2004), among others). They note that it is also possible that publicly traded firms with partial State ownership may be pressured by a self-serving government to optimistically tilt their reporting decisions (Bushman et al. (2004, p. 115).

The above implies that it is conceivable "that government can promulgate weak accounting and disclosure requirements [...] or use influence over the media to retard dissemination of firm-specific information in the economy" (Bushman et al. 2004).

2.4.1.5 State's attempts at investor-protection

In an effort to have a credible and investor-friendly capital market, the state may take steps to ensure that the capital market operates in the overall interest of
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investors, and the economy. This may warrant the promulgation of rules and regulations to guide the operators of the system. But this may be at the expense of firms in some way.

Watts and Zimmerman (1978, 1986 and 1990) discuss the implication of government or State involvement in business firms through their political cost hypothesis, as we see in section 2.2, subsection 2.2.2 of this chapter. They posit that a company’s size (measured by the magnitude of reported profits) can attract the attention of politicians and government so much so that they would attempt to appropriate part of the company’s wealth to themselves. Politicians (and their cronies) and governments (and their agencies) can do this through corporate taxation, fines, levies, political extortions such as politically motivated solicitations for donations or levies which can be imposed on a company’s earnings. Because of this, companies sometimes seek to reduce reported earnings; perhaps through manipulating their accounts; Watts (1977) also comments in a similar fashion.

The size of firms attracts the attention of Jensen and Meckling (1976), who hypothesise that the larger firms become, the larger are the total agency costs because it is likely that the monitoring function is inherently more difficult and expensive in a larger organisation. The preceding shows that there is not a shadow of doubt that the State or its agents intervene in commercial activities. But what is the ability of that intervention to empirically explain the occurrence of accounts manipulation.

The State’s underlying motives for involvement in firms have been examined by Bushman et al. 2004. They posit that under a self-serving government, if firms believe that politicians seek evidence that a firm is profitable in order to expropriate the owners’ wealth, managers would then have incentives to report conservatively. They reason that on the other hand, if benevolent governments intervene when they perceive that firms are inefficient, firms have an incentive to look healthier through the application of less conservative accounting.
Bushman et al. (2004) document evidence suggesting that in common law countries, high State involvement leads firms to speed recognition of good news and slow recognition of bad news relative to firms in countries with less State involvement. In contrast, in civil law countries, high State involvement leads firms to slow recognition of good news and speed recognition of bad news relative to firms in countries with less State involvement. Thus, managers appear to adjust their financial reporting in response to the nature of the State’s involvement.

In light of the above, the present study tries to empirically examine the implications of government involvement in the capital market in an effort to protect equity investors, and how it can affect accounts manipulation.

2.4.2. Consequences of exposed accounts manipulation

This part of the chapter reviews the literature on market reaction to news of accounts manipulation published in newspapers. A number of prior researches have shown that the capital market reacts to accounting news or events (see for example, Ball and Brown (1968), Beaver (1968), Fama et al. (1969), Oppong (1980), Brown and Warner (1980, 1985), Fama (1991), Feroz et al. (1991), Beneish (1999a, b), Balsam et al. (2002), Miller (2006), Karpoff et al. (2008a, b), and Bernile and Jarrell (2009), amongst others).

2.4.2.1 Semi-strong-form of market efficiency

Semi-strong form efficient market hypothesis can be described as one where stock prices react are most likely to immediately to the news that is available in the public domain such that share prices fall on receiving the news.

According to Fama (1970, p. 1576-1577), there are three forms of market efficiency. He originally categorised market efficiency as (a) weak-form market efficiency, (b) semi-strong-form market efficiency, and (c) strong-form market efficiency. A weak-form test attempts to predict how well past returns are able to
predict future returns. A semi-strong-form test tries to determine how quickly security prices reflect publicly available information. A strong-form test attempts to determine whether any investors have private information (e.g., insider-trading information) that is not fully reflected in market prices.

For reasons attributed to expansion of coverage of areas, Fama (1991, pp. 1576-1577) proposes changes to the titles of the categories. He proposes that the weak-form test be christened "tests of return predictability" while the semi-strong-form test be titled "event studies" and the strong-form test be called "tests of private information".  

Prior literature documents mixed evidence on information content of various kinds of news/events such as earnings announcements, stock splits, release of non-financial information, and so on.

Ball and Brown's (1968) seminal work on evaluation of accounting income numbers provides one of the pioneering evidences of the adjustment of stock prices to earnings announcements. Result presented by Ball and Brown (1968) demonstrates that the information contained in annual accounting income numbers is useful in that it is related to stock prices. Ball and Brown (1968) show that of all the information about an individual firm which becomes available during a year, more than one-half is reflected in that year's income number. Results reported in their paper indicate that net income and earnings per share increase after annual report announcements. Ball and Brown (1968) conclude that the market reacts to

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28 The tests conducted in this study rely on semi-strong-form market efficiency because the information used in identifying the countries and companies involved in accounts manipulation are sourced from the newspaper. There is reason to believe that a semi-strong market has metamorphosed from a weak-form market to its present state. Information published in newspapers includes both past and contemporaneous information. So, (implicitly) the use of newspapers has taken care of weak-form efficiency because information contained in them includes both past and currently available news. The tests in this study do not address tests of private information or strong-form market efficiency.
earnings report releases even though most of the information contained in the reported income is anticipated by the market before the annual report is released.

Another of the pioneering papers on informational efficiency of the stock market is Beaver (1968) who documents evidence of a dramatic increase in volume in the week of earnings announcement. For 506 earnings announcements, there is a large peak where the mean volume in the week of earnings report announcement is about 33 per cent higher than non-report period. Beaver (1968, p. 74) findings suggest that investors respond quickly to new pieces of information as reflected in changes in volume which were found to be low eight weeks prior to earnings announcement or report release. Beaver (1968) finding indicates greater volume and price activities in the week of earnings announcement than weeks prior to announcement.

Fama et al. (1969) in their study of adjustment of stock prices to new information (i.e., announcement of stock splits), document evidence that announcement of dividend changes is “fully reflected” in the price of the security by the end of the split month. Their findings suggest that once the information effects of associated dividend changes are properly considered by the market, a split per se has no net effect on common stock returns (Fama et al. (1969, p.17)). Moreover, Fama et al.'s (1969) result indicates that the market's judgment concerning the information implications of a split are fully reflected in the price of a share at least by the end of the split month but most probably almost immediately after the announcement date.

Brown and Warner (1985, 1980) also find that the stock market fully reflects the information contained in news announcements almost immediately after the announcement date. We address this issue through looking at share prices movement of the day of the news against other relatively longer event windows.

Beneish (1999a) documents evidence of a loss in stock price of up to 21% following revelation of financial statements manipulation by managers.
Feroz et al. (1991) find that the market reacts negatively to news of firms subject to the SEC investigation. For a group of firms under SEC investigation for disputed accounting, Feroz et al. (1991, p. 124) document a cumulative abnormal return of \(-6\%\) for event days \([-1, 0]\). Dechow et al. (1996) investigate market reactions to news that some firms are under SEC investigation for various accounting related issues and they also document share price reduction of \(9\\%\), on average.

Miller (2006) examines market reactions to alleged accounting malfeasance to see whether the market views articles in newspapers as providing new information. He investigates market adjusted reactions of day zero and a-three-day event windows. He finds an average one-day market adjusted reaction of \(-6.3\%\) and a-three-day market adjusted reaction of \(-8.20\%\).

Karpoff et al. (2008a, b) find evidence that the market penalises firms when their earnings manipulation is revealed. Karpoff et al. (2008a, b) find evidence of abnormal loss of various percentages (depending on the firm) on one day market return of trigger events that attract the attention of the SEC. Also, results reported in Karpoff et al. (2008a, b) show the monetary cost (e.g., from class-action suits) and non-monetary costs (e.g., cease-and-desist orders issued to firms by the SEC) incurred by firms revealed to have manipulated their earnings.

Benile and Jarrell (2009) investigate stock market reactions to the scandal surrounding stock options backdating in the U.S. as reported in the Wall Street Journal. They show that investors’ typical reaction to firm-specific backdating news is negative and significant, both economically and statistically. Specifically, they report that the first trading day is associated with negative abnormal risk-adjusted returns of around \(7\%\). They attribute this result to the consistency of market efficiency.

Joy et al. (1977) report mixed results in their study of adjustment of stock prices to announcements of unanticipated changes in quarterly earnings. Dichotomising
between favourable and unfavourable announcement, Joy et al. (1977) report small marginal price adjustments subsequent to an unfavourable announcement.

The results reported in (by) this stream of literature lend considerable credence to the view that the stock market is efficient in the sense that stock prices adjust very rapidly to new information.

In contradistinction, at the same time the mixed evidence reported by Joy et al. (1977) study suggests that price adjustments to the information concerning security valuations that are contained in unexpected 'highly favourable' quarterly earnings reports are gradual, rather than instantaneous. Joy et al. (1977) could not adduce exact reasons for the failure of market efficiency in this latter regard.

LeRoy (1989) in a theoretical critique and rebuttal of the efficient market hypothesis through mathematical modelling of variance-bounds and mean reversion finds reasons to reject the efficient market hypothesis. Specifically, LeRoy (1989) adduces reasons for the failure of market efficiency. Some of the reasons include the joint-hypothesis problem, the high volume of trade on organised securities markets that pose a serious problem, the January and holiday effect on traded volumes. Based on these reasons, LeRoy (1989) is led to conclude that,

"However attractive... capital market efficiency is on methodological grounds; it is extraordinarily difficult to formulate nontrivial and falsifiable implications of capital market efficiency that are not in fact falsified" (LeRoy 1989, pp. 1614-15).

Abedini (2009) and El-Temtamy and Chaudhry (2009) investigate market efficiency in the Gulf Co-operation Council countries. In their opinion, the evidence about semi-strong form market efficiency is inconclusive. While a version of their tests rejects the efficient market hypotheses other versions accept it. In particular, part of Abedini (2009) findings rejects efficient market hypotheses, while another part accepts it. Furthermore, the results of Abedini (2009) shows that
THEORIES & RELATED LITERATURES

efficient market hypothesis can be accepted for daily price general index for Dubai whereas the hypothesis may be rejected for Bahrain and Kuwait.

In sum, the foregoing review of this portion of the literature suggests that the documented evidence on the movements or changes in share prices in various capital markets is inconclusive or mixed.

2.5 Summary

Before this chapter is brought to a close, it is instructive to emphasise that there is no claim that the literature review undertaken in the chapter is conclusively exhaustive. However, we have reviewed the "root" literatures that are germane to all aspects of the study.

As well as capturing contemporaneous studies, the review has gone as far back as 1950. This is an indication that the review is able to connect established past works with contemporaneous researches in the areas it has chosen. In this regard, the review attempts to mesh or blend the multidisciplinary strands of the literatures together. In the process it tries to discover whether there are any prior studies that addressed the issues raised in this research.

The review undertaken in this chapter indicates that there are vacuums in the literature that this study can attempt to close. To the best of our knowledge, the various literatures reviewed show that there are no prior empirical studies to date that has examined the effect of the study's institutional factors on accounts manipulation. Therefore, this will be the first study in accounting and finance that will be examining whether, and to what extent, the institutional structures can explain the occurrence of accounts manipulation.

Furthermore, extant research appears not to have taken into account the effect of news placement in a newspaper publication on share prices. The prior literatures
Theories & Related Literatures

(These are very recent) that have applied limited attention theory did so under endogenous conditions where the management of firms was the party that initiated the release of the news to the public. Ours will be one of the few studies in accounting and finance that will be applying the limited attention under a different, novel and exogenous context where parties other than management will be the ones exposing the news in newspapers.

To the best of our knowledge, Klibanoff et al. (1998) appears to be the first research to have operationalise the limited attention theory but we think that their did not go far enough.

Finally, our review indicates that most prior studies have not examined (un)likely association between the size or magnitude of the amount mentioned in the news of accounts manipulation and share prices after news. To the best of our knowledge, Miller (2006) appears to be the only paper as the time our study was going to the printers that has attempted to relate amount mentioned in the news with share prices after the news. This study will be the second attempt in this direction, by so doing it will be adding to the literature.

The next chapter considers the study's research questions in details and formalises the research hypotheses.
Chapter 3
Research questions and hypotheses

3.1 Introduction

This chapter formally presents the research questions, the development of hypotheses, and models of consequences of the act. First, it begins with the research questions and then moves on to their accompanying hypotheses.

3.2 Research questions (RQs)

There are eight specific research questions that this study is posing, and would attempt to answer. For more clarity and consistent with the two parts of the study the research questions have been organised into institutional structures questions (section 3.2.1), and consequences questions (section 3.2.2). Institutional structures questions cover questions one to five while consequences questions cover questions six to eight. In fine details, questions one and eight are an association question even though they are grouped together with the others in the two sections.

3.2.1 Research questions on institutional structures of accounts manipulation

We post the following research questions regarding the institutional structures variables:

*RQ1.* Can legal origins be associated with the occurrence of accounts manipulation?

*RQ2.* Can the level of corruption in a country explain the occurrence of accounts manipulation?

*RQ3.* Can a country's level of press freedom explain the occurrence of accounts manipulation?
Chapter 5: Development of hypotheses

RQ4. Is the extent of the State's ownership of economic activities in a country likely to explain the occurrence of accounts manipulation?

RQ5. Can the State's attempt to protect investor explain the occurrence of accounts manipulation?

Taken together, the above research questions attempt to investigate whether we can explain the likelihood of accounts manipulation occurring in a given environment.

3.2.2 Consequences research questions

The research questions applying to the second strand are as follows:

RQ6. How will stock returns react to news of accounts manipulation?

RQ7. To what extent can the amount mentioned in the newspapers explain abnormal stock returns after the news?

RQ8. Can the section where news of accounts manipulation is inserted in a newspaper be associated with share prices behaviour after the news?

3.3. Development of Hypotheses

This section presents the hypotheses of the research. The first set of hypotheses formally state the relationship between the country-level variables and accounts manipulation. The second set of hypotheses captures the consequences of the act when exposed in daily newspapers.
Chapter 3: Development of hypotheses

3.3.1 Institutional structures hypotheses

3.3.1.1 Legal origin

An argument can be made for the need to investigate whether the occurrence of accounts manipulation by firms can be associated with the legal origin of the country in which firms operate. Leuz et al. (2003) document evidence suggesting that earnings management is more pervasive in countries where the legal protection of outside investors is weak. Burgstahler et al. (2006, p. 1002) also document that earnings management is more pronounced in countries with weaker legal systems and enforcement. La Porta et al. (2008, p. 286) conceptualise legal origin broadly as a style of social control of economic life. These prior works provide documented empirical evidence that legal rules protecting investors vary systematically among legal traditions or origins. This strand of literature argues that different legal origins can present different scenarios for accounts manipulation. However, we will argue that accounts manipulation is equally likely to occur in any country irrespective of the type of legal origin the country may be grouped into. The above discussion leads to the hypothesis (stated in the null form) that:

\[ H_1 \text{ There is no association between the legal origins in which firms operate and the occurrence of accounts manipulation.} \]

3.3.1.2 Corrupt environment

The literature on contingency theory suggests that managerial behaviour is constrained by the environment in which a manager operates. This may lead one to argue that the level of corruption in a country can influence managers in that country to engage or not to engage in accounts manipulation because managers may want to conform to the prevailing order in the environment. This assumes that managers operating in corrupt countries may engage in accounts manipulation while managers operating in clean countries may not engage in it. That is, the higher (lower) the level of corruption in a country the higher (lower) the likelihood of accounts manipulation. This statement may lead to stigmatising or stereotyping managers depending on where they operate.
We argue that managers who have the tendency to engage in accounts manipulation will do so irrespective of whether the environment in which they operate is corrupt or not. This leads to the null hypothesis that:

\[ H_2: \text{Ceteris paribus, the level of corruption is not likely to affect the occurrence of accounts manipulation} \]

### 3.3.1.3 Role of the press

Prior empirical research as well as anecdotal evidence has demonstrated that the press is a vital organ in commercial affairs. For example, Miller (2006), Brunetti and Weder (2003), and Dyck et al. (2008), have all emphasised the important role of the press as disseminator of information to the capital market. Among other things, Miller (2006) provides evidence that the press acts as a watchdog for accounting fraud by reporting cases of accounting malfeasances. Dyck et al.’s (2008) anecdotal evidences show that the media affect companies’ policy toward [...] the amount of corporate resources that are diverted to the sole advantage of controlling shareholders. What Dyck et al.’s (2008) case study evidence suggests is that the press can affect managers’ accounts manipulation behaviour. The overall message from the literature is that press coverage of commerce is important because of the pressure it exerts on management to behave in a socially acceptable manner.

According to this popular view, a free press environment that exposes alleged accounts manipulation without fear or favour is capable of affecting the act; hence it is thought that the extent of press freedom is capable of explaining why accounts manipulation may occur in some economies than in others. When managers are conscious or realise that they are under the constant watch of the media their behaviour may be moderated such that they “mind the gap(ps)”, literally or professionally speaking. Consistent with this positive view of the press, some might expect that the level of press freedom in a country has a vital role to play in
Chapter 3: Development of hypotheses

explaining the occurrence or non-occurrence of accounts manipulation across countries. However, we hypothesise (in the null form) that:

\[ H_3: \text{Ceteris paribus, the level of press freedom is not likely to affect the occurrence of accounts manipulation.} \]

3.3.1.4 State-Ownership of Enterprises

The State's dominance of the economic activities of a country comes next in the hypotheses formulation. In the literature, this comes under various rubrics such as State-ownership of Enterprises, State-Owned Firms, and the like. However called, there is concern that firms that operate in countries where the State dominates the economic activities of a country are likely to experience accounts manipulation probably because of the belief that the State's property is for every citizen, so much so that those citizens who are at the helm may likely help themselves with the spoils of office. For instance, Bushman et al. (2004, p. 223) have argued that States that directly own enterprises may suppress firm-specific information to hide expropriation activities by politicians and their cronies. It is also possible that benevolent governments use their States’ ownership of enterprises to directly govern and manage firms, obviating the need for public information. Bushman et al. (2004) observe that politicians may thus seek to restrict the flow of information to prevent public scrutiny of their business dealings with cronies and protect their economic interests by suppressing information flows.

This implies that it is conceivable that government or any of its organs can promulgate (or countenance) weak accounting and disclosure requirements or use perceived or real influence over the media to retard dissemination of firm-specific information in the economy. This leads to the hypothesis (stated in the null form) that:

\[ H_4: \text{Ceteris paribus, State's ownership of enterprises is not likely to affect the occurrence of accounts manipulation} \]
3.3.1.5 **State's attempts at investor-protection**

This study uses a measure of institutional variables of political economy in examining efforts at investor-protection by the State as a possible explanation for why accounts manipulation occurs in some economies. Thus, the study examines whether accounts manipulation is likely to occur where the State intervenes in the capital market, not by direct or indirect ownership but by regulatory/quasi regulatory interferences. Investor-protection can be a proxy for the State's interest in the capital market. State's intervention can be in form of disclosure requirements and regulation or the creation of other constraining or enabling environment in which firms operate. The default argument can then be made that the State's efforts at investor-protection is not likely to affect accounts manipulation. Hence, it is thus hypothesised (stated in the null form) that:

\[ H_5: \text{Ceteris paribus, the State's attempts at investor-protection is not likely to affect the occurrence of accounts manipulation} \]

3.3.2 **Control variables**

The level of wealth of a country and managers' share of that wealth as measured by managers' economic well-being and other conditions is likely to impact or affect managers' choices or disposition to issues. In addition, it can also be argued that a country's cultural values can encourage or discourage accounts manipulation. Cultural values can determine what the people of a country consider as accounting malfeasance, or whether the press will report one if it does occur. To control for potential endogeneity in the regressions in chapter 5, we will therefore control for a country's level of wealth (as captured by gross national income) and national culture (using two of Hofstede's cultural dimensions). These control variables are discussed in chapters 4 and 5.
Chapter 3

3.3.3 Consequences Hypotheses

Before the consequences hypotheses are stated, we model market reactions in terms of stock returns and share prices.

3.3.3.1 Modelling share prices and stock returns

Exposure in newspapers of a firm's act of accounts manipulation is capable of affecting the firm's stock prices. The semi-strong version of the efficient market hypothesis says that the stock market "fully reflects" all publicly available information set, \( \{0\} \), which is the news contained in exposed accounts manipulation. Newspapers are one source of publicly available information which investors are likely to rely upon. So, we expect that equity investors will price the information content of the news. This expectation leads to modelling changes in share prices or firms' stock returns as a result of information content of the news.

![Figure 3.1: Timeline of events leading up to exposed accounts manipulation](Image)

The sequence of events of publicly exposed accounts manipulation as conceptualised in this study can be shown in the timeline in Figure 3.1.

Now, let us define:

- \( \rho_{st+n} \) as daily share prices of the days \( t+n \) for the \( i^{th} \) firm. \( i = 1, 2, \ldots 98 \) and \( t+n = 0 \) to 6 (i.e., each ex post event window).

- \( \rho_{st-n} \) as share prices of the period \( t-n \) for the \( i^{th} \) firm where \( i = 1, 2, \ldots 98 \) and \( t-n = -6 \) to -1 (i.e., each ex ante event window).
$D_{T_0, t+n}$ as *ex post* daily abnormal stock returns of firms (i.e., day zero to day +6)

$D_{T_0, t-n}$ as *ex ante* daily abnormal stock returns of firms (i.e., day -6 to day -1)

The symbol 0 as information contained in the published news in newspapers. By definition, on day zero daily share prices are observed to be $p_{t=0|0}$ and realised daily abnormal stock returns are $D_{T_00|0}$. That is, on day zero the news of accounts manipulation arrives, which is the information set, $\{0\}$. On days $t-n$ share prices are $p_{t-n}$.

The model investigates mean differences between $p_{t+n|0}$, $p_{t-n}$ and $D_{T_0 t+n|0}$, $D_{T_0 t-n}$.

According to the *semi-strong-form* of the efficient market hypotheses, for the market to "fully reflect" information contained in news of accounts manipulation, $\{0\}$, it is expected that the following conditions will hold:

\[ p_{t+n|0} \neq p_{t-n} \quad \ldots \ldots \quad (1) \]

\[ D_{T_0 t+n|0} \neq D_{T_0 t-n} \quad \ldots \ldots \quad (2) \]

### 3.3.3.2 Abnormal stock returns (main hypothesis)

Because the stock market is considered to be informationally efficient, rational or perfect by incorporating the news into prices, it is expected that for firms exposed in accounts manipulation pre and post event day share prices are not likely to be equal. We hypothesise (in the null form) that:

**$H_6$:** For firms exposed in accounts manipulation, there is no difference between ex post and ex ante abnormal stock returns

This hypothesis is the main hypothesis of the second part of the research.

In contradistinction to perfect rationality, the next two hypotheses rely on some arguments in behavioural finance that "price discovery is a dynamic and complex process, which is accomplished through the interplay between noise traders and information arbitrageurs" (Lee 2001, p. 235), typically informed or sophisticated

3.3.3.3 Relationship between amount mentioned and ex post abnormal returns

As a second-order effect, and following the materiality assumption in accounting (see Woods and Sangster 2008) it is expected that the magnitude of the amount mentioned in the news can have impact on share prices. Thus, it will be interesting to examine whether there is a relationship between amount mentioned in the news and ex post abnormal returns. It will examine to what extent the variation in ex post abnormal stock returns is explained by the amount mentioned in a newspaper. This leads to the hypothesis that:

\[ H_7: \text{The amount mentioned in news of accounts manipulation is not associated with ex post abnormal returns} \]

The size of a company may determine whether the amount mentioned in the news can be taken seriously to the extent that it affects share prices. We therefore control for firm size using alternative proxies of total assets and shareholders' equity. This is addressed in chapters 4 and 6.

3.3.4 Placement effect

Kim and Verrecchia (1991) propose that price reaction to a public announcement is proportional to the importance of the announced information relative to the average posterior beliefs and the surprise contained in the announced information plus noise.

\[ \text{Amount mentioned can be considered material if its magnitude or size can influence investors' reactions to the news. Materiality depends on the size of the item or error judged in the particular circumstances of its misstatement. See Woods and Sangster (2008, p. 112) for a detailed treatment of materiality.} \]
Limited attention theory would suggest that people deliberately select the information they feel matters most to them because of certain constraints on their daily routines: for example, time, energy, benefit-cost considerations, etc. It is suggested that one of the information channels through which investors make investment decisions is by reading newspapers (Miller, (2006)). The seriousness attached to the news as reflected by share prices reaction could be due to the place where news of accounts manipulation is featured in a newspaper publication.

As we pointed out in chapter 2, limited attention theory may appear antithetical to the tenets of semi-strong-form market efficiency (discussed in section 2.3.6). A well-grounded exposition of this antithesis can be found in Lee (2001). The two seem antithetical about whether the placement of a news item in certain sections of a newspaper can affect market reactions. Semi-strong-form market efficiency posits that stock prices quickly reflect all publicly available information; hence it should not matter where news of accounts manipulation is inserted in a newspaper.

But Hirshleifer and Teoh (2003) while relying on the idea of limited attention, predicts that the speed and “completeness” of stock prices reactions are both reduced when information is disclosed in a less conspicuous place, (for example, in a footnote) which may not be spotted by all investors. This is likely to “occur because equilibrium stock prices reflect a weighted average of the beliefs of investors who attend to different signals, with weights that depend on the size and risk tolerance of each investor group” and the fact that “investors with limited attention may fail to make full use of available accounting information” (Hirshleifer et al. 2004, p.300).

Daniel et al. (2002) argue that if investors have limited attention, they may fail to discount for manipulation fully. Thus, as a second-order effect stock prices are

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For a number of reasons, using sections of the electronic edition of a newspaper or the hard copy version to operationalise the limited attention theory may be problematic in view of the fact that the news could have been carried by other real time online electronic sources before the newspapers are read. Please see threats to the thesis in chapter 8 for further comments.
likely to react differentially to news according to the section-type used in conveying the news. This leads to the hypothesis (stated in null form) that:

\[ H_8: \text{ The type of section used in publishing news of accounts manipulation in newspaper is not associated with ex post abnormal stock returns} \]

### 3.4 Summary

This chapter presented the study's research questions and accompanying hypotheses to carry out its investigation. In brief, the research questions that we will be attempting to answer revolve around the following sets: (a) Can the legal origins in which firms operate be associated with occurrence of accounts manipulation? (b) Does corrupt environment, free press, State ownership of enterprises, and the State's attempts at investor-protection affect accounts manipulation? These questions relate to the first part of the study.

Furthermore, we will be attempting to answer questions such as: (c) how will stock returns react to news of accounts manipulation? (d) Can the amount mentioned in the newspaper affect stock returns immediately after the news? (e) What role does the place where the news is inserted in a publication play in share prices behaviour? These questions relate to the second part of the study.

Our ability to provide answers to these questions in chapters 5 and 6 will fill a number of gaps in the literature.

Using Figure 3.1, the chapter showed the three steps involved in exposed accounts manipulation. Finally, via conditions (1) and (2) the chapter built models of consequences as it conceptualises them.

Chapter 4, which follows next, discusses the data collection methods employed. It also describes the research sample as well as other methodological issues relevant to the research or study.
Chapter 4
Methodology and Research Designs

4.1 Introduction

Following on from chapter 3 which addressed the research questions and hypotheses of the study, the present chapter focuses on the methodology and research designs employed in the study. It describes in great detail the methods used in collecting data as well as describing the research sample, and statistical methods used to carry out the analyses.

The chapter is divided into six main parts, namely:

4.2 Methods of identifying sample and sources of data collection
4.3 Sample description
4.4 Sources, description of variables and measurements
4.5 Overview of research methods
4.6 Methods for analysing data
4.7 Justification for using statistical methods

4.2 Methods of identifying sample and sources of data collection

This section describes how, where and when the data for the study were collected. It also describes cross-national distribution of sample firms. To begin with, all data are secondary data which were sourced from the internet. The sample is collected in an unbiased manner as there was no prior knowledge of which countries cases of alleged accounts manipulation would come from, neither was it known which firms would be involved in the act.

The data collection effort began in the first week of June 2008 and ended towards the end of June 2009, which covers approximately 13 months.
In order to identify the countries and firms where accounts manipulation reportedly occurred, detailed online media searches were conducted. **Table 4.1** contains a list of countries (where accounts manipulation was found published in the newspapers, research sample; and where it was not found published, control sample) used in the study.

<table>
<thead>
<tr>
<th>Panel A. Countries where accounts manipulations were reported, n = 36</th>
<th>Panel B. Countries selected as control sample, n = 36</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Australia</td>
<td>19. Netherlands</td>
</tr>
<tr>
<td>2. Bahrain</td>
<td>20. New Zealand</td>
</tr>
<tr>
<td>4. Belgium</td>
<td>22. Norway</td>
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<tr>
<td>5. Canada</td>
<td>23. Philippines</td>
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<tr>
<td>6. China</td>
<td>24. Poland</td>
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<tr>
<td>7. Czech Republic</td>
<td>25. Portugal</td>
</tr>
<tr>
<td>8. France</td>
<td>26 ROC (Taiwan)</td>
</tr>
<tr>
<td>9. Germany</td>
<td>27. Russia</td>
</tr>
<tr>
<td>10. Hong Kong</td>
<td>28. Singapore</td>
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<tr>
<td>11. India</td>
<td>29. South Africa</td>
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<tr>
<td>12. Indonesia</td>
<td>30. South Korea</td>
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<tr>
<td>13. Ireland</td>
<td>31. Sweden</td>
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<tr>
<td>14. Israel</td>
<td>32. Switzerland</td>
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<tr>
<td>15. Italy</td>
<td>33. Ukraine</td>
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<tr>
<td>16. Japan</td>
<td>34. UK</td>
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<tr>
<td>17. Luxembourg</td>
<td>35. UAE</td>
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<tr>
<td>18. Malaysia</td>
<td>36. USA</td>
</tr>
<tr>
<td>1. Argentina</td>
<td>19. Jordan</td>
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<tr>
<td>2. Austria</td>
<td>20. Iran, Islamic</td>
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<tr>
<td>5. Bulgaria</td>
<td>23. Mexico</td>
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<tr>
<td>6. Chile</td>
<td>24. Pakistan</td>
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<tr>
<td>7. Colombia</td>
<td>25. Panama</td>
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<tr>
<td>9. Denmark</td>
<td>27. Romania</td>
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<tr>
<td>10. Ecuador</td>
<td>28. Saudi Arabia</td>
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<td>11. Egypt</td>
<td>29. Slovakia</td>
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<td>12. El Salvador</td>
<td>30. Spain</td>
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<td>14. Ghana</td>
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<td>15. Greece</td>
<td>33. Turkey</td>
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<tr>
<td>16. Finland</td>
<td>34. Uruguay</td>
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<tr>
<td>17. Guatemala</td>
<td>35. Venezuela</td>
</tr>
</tbody>
</table>

In view of the fact that there is no single database containing cases of accounts manipulation all over the world as they occur, the number of firms and countries used in the study is dependent on published cases of the act. This is why the data gathering process involved a massive hand-collection of secondary or archival data.

The search worked with the study’s definition of accounts manipulation as a situation whereby the management of a firm acting opportunistically or efficiently misleads parties (other than themselves) by misrepresenting or misstating the firm’s situation through income statements, statements of cash flow, balance sheet and other non-financial items.

We present below three examples capturing the different component parts of this definition. The relevant parts have been underlined for clarity. Note that all real
names of the actors mentioned in the publications have been disguised in the reproduction; however, the names of the publications are real.

The Financial Times of London, United Kingdom of 11 March 2003 reports that

"The specter of accounting problems returned to haunt "Stickyhands Plc" yesterday, after the plant hire group suspended a senior member of its U.S. financial staff and warned that full-year profits would be well below expectations. The company said it had suspended the man after he had admitted failing to reconcile certain balance sheet accounts for the last financial year and this."

We can see from the above excerpt that both income statements and balance sheet items were schemes used in the manipulation.

Another example of accounts manipulation (this time involving income statements, balance sheet and cash flow statements items) is taken from the Independent of London, UK of 23 January 2005, and it reads:

"US financial regulators have launched an investigation into alleged accounting irregularities in a business controlled by "Emperor". The Securities and Exchange Commission said late on Friday night that it was looking into a series of accounting issues at "WorldBox"...

In particular, the SEC was making inquiries about how WorldBox accounted for deals between itself and "TopElec", the French electronics group, and with "ALG", a rural telecommunications group formerly owned by "Rugged" Corp. Rugged Corp. and WorldBox have been engaged in a legal battle since June last year after Rugged Corp. accused WorldBox of attempting to destroy its business. WorldBox made cash offers to third-party distributors to persuade them to ditch Rugged Corp. In a turnaround, WorldBox agreed to buy the satellite TV assets of Rugged Corp. for $938m (£500m) in August. TopElec agreed last year to buy WorldBox’s set-top box manufacturing unit for $250m. The SEC said it was also looking for more information from TopElec to do with its $1.47bn write-down of its "Jupiter" satellite assets. This related to the withdrawal of WorldBox from a venture to provide high-speed internet via satellite to rural homes in the US...." (Underlines added for emphasis).
Chapter 4

The final example is taken from Financial Times of London of 12 February 2003. The headline reads: "Errors found in "Conglomerate" subsidiary accounts". Excerpts of the story written by Peter Smith go that

"Conglomerate, the food retailer stalking "Trust", has had to correct the accounts of two of its subsidiaries after discovering a number of errors in its original filings to Company House. The mistakes include the overstatement of employee numbers and the level of debtors, and the understatement of property market values and administration costs...." 

One can see from the last excerpt that the schemes used in accounts manipulation involves a non-financial item (employee number), an income statement and balance sheet item (level of debtors), an income statement item (administration costs), and a balance sheet item (property market values).

In addition to these three examples, a comprehensive list of items mentioned in reports of accounts manipulation can be found in Table 1.2 on page 19 of chapter 1 of this thesis.

The search began with random online searches of news of accounts manipulation (or related topics as enumerated below). We use a number of search engines and databases such as Infotrac (Gales databases allow us access to Infotrac's Full Text Newspaper Databases), Onlinenewspapers.com, Dow Jones’s Factiva iWorks™, Google, and Yahoo! Among other news categories, these databases contain information about alleged accounts manipulation, their dates of publication, countries where they were reported and other pertinent information. This was the first stage in identifying the research sample.

The following keywords or their variants were used in the search: earnings management; accounting problem; earnings manipulation; financial statements, or
reports; deceptive accounting; false accounting; fraudulent accounting; misleading accounting; inappropriate accounting; misstated earnings; spurious accounting; inflated earnings, or overstated earnings; cooking the books; manipulated earnings; accounting fraud; accounting investigation; accounting probe; accounting restatement; understated profit, or overstated profits; accounting scandals; accounting deficiencies; creative accounting; inaccurate financial statements; accounting irregularities; accounting errors; among other such related terms.

When a hit comes up during the random search, the story is then traced to the country where it happened and the firm or company involved. This process enabled the firm to be identified by name, and country. However, the Infotrac database has its limitation as it does not carry every of the world’s newspaper. What we do in that case is to continue to hunt for the news through other internet sources such as onlinenewspapers.com until we are able to get a newspaper that carries the complete story at the appropriate time. This is part of the second stage used in identifying the sample.


others too numerous to mention. All the newspapers are written in English language.

On gaining access to a newspaper’s website, a word-search is carried out through its archives section or through an embedded search field. Interestingly, most of the newspaper searches returned a variety of hits. When a hit throws up, it is then read and decided whether it is, indeed, a case of accounts manipulation. When it is decided that it is so the news is then hunted to the original date of publication of the event (see the three newspaper publication examples cited above and Table 1.2 on page 19 of chapter 1 of this thesis, for what was reported in the news alleging accounts manipulation).

There were instances where two or more newspapers published the same event. However, this posed little or no difficulty in identifying exact dates and times because we are able to know the exact dates and times of publications because they were written on top of the newspapers. And the newspapers usually indicated whether the news is an update or not. This helped in collecting the news as at the time it was first published, not on subsequent publications of the same news. And when an event is published by newspapers in more than one country, the first date of publication is reckoned with and the newspaper of the country where it happened is chosen. We did not find multiple publications of the same story in the same issue of a newspaper; if by chance we missed any we did not control for it.

Tracing the news to its original date, company and country of publication is necessary because of the second part of the study which requires that we be as precise or exact as possible in terms capturing share prices information without being diluted or polluted by other factors.

The third and final stage of data collection is this: when a firm that is alleged to have been involved in the act is identified, its annual reports and accounts (or financial statements) are retrieved from its website on the internet, assuming it had one. Where a firm does not have its own website, information about the firm is
sourced from third party websites such as the Stock Exchange where the firm is quoted or listed.

To collect some aspects of the data for the second part of the thesis; together with market index databases, we accessed a number of national stock exchanges online. Although the list is not an exhaustive one, and by no means limited to these, the market index data we use were collected from S&P 500 (for firms listed in the US), S&P TSX Composite (covering Canada-listed firms), DAX (for firms listed in Germany), Bursa Malaysia Stock Exchange Index (for firms listed in Malaysia), BEL-20 Composite Index (for firms listed in Belgium), FTSE 100 or FTSE-AllShare Index (for firms listed in the United Kingdom).

Others indexes include OMX Stockholm 30 (covering firms listed in Sweden), All Ordinaries (for Australia-listed firms), CAC40 Composite Index (covering France-listed firms), Han Seng Composite Index (covering Hong Kong-listed firms), Strait Times (Singapore) Composite Index (covering firms listed on the Singapore Stock Exchange). We also collected data from Jakarta stock exchange composite index (for firms listed in Indonesia), KOSPI Composite index (covering firms listed in South Korea), Nikkie 225 Composite Index (covering Japan-listed firms), Taiwan Composite Index (for firms listed in Taiwan), Shanghai Composite Index (for China-listed firm), BSE Sensex Composite Index (covering firms listed in India).

Market indexes data for the years 2000-2008 were extracted from these stock exchanges. In the absence of an (active) stock exchange from a firm’s home country, we go to the nearest exchange in the region or an alternative exchange where the firm is listed to collect data.

Also, where a going concern entity has no website (or its website could not be located), we resort to DataStream and Amadeus. These two databases are not sufficient as they do not have data of companies from every country of the world, which makes it necessary to supplement them with Yahoo! Finance, Google Finance, AOL money and finance, BusinessWeek, etc. Where a going concern has a website and its historical stock quotes pages are available, we use it instead of the
ones mentioned. However, in doing this, as a reliability check, we cross check between any two or three databases to ensure that share prices information are the same in all the databases. This exercise did not find any discrepancies in the share prices quotes or the market index return of the different databases accessed.

We follow prior researches that have used newspapers to collect data. These include Beneish (1997), Miller (2006), Deschow et al. (1996), and Feroz et al. (1991). In particular, Beneish (1997, see footnote on p. 276) and Miller (2006) use news media searches on the internet. These prior researches use the opportunity provided by the Securities and Exchange Commission’s Accounting and Auditing Enforcement Releases (AAERs) which sometimes reveals names of firms under investigation. For the research conducted in the U.S. that uses this sources to identify their firms they say that SEC’s method lags behind the news with about three to four years (see for example, DeFond and Smith (1991) and Dechow et al. (1996)). The reason for the lag is due to the long process it takes the SEC to initiate action (Dechow et al. (1996, p. 6)).

4.3 Sample description

The study is interested in alleged cases of accounts manipulation by listed firms covering the period January 2000 up to August 2008, inclusive. Table 4.2 shows the yearly distribution of published cases of accounts manipulation for the 9 years covered by the study.

<table>
<thead>
<tr>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>Total</th>
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<tr>
<td>7</td>
<td>10</td>
<td>17</td>
<td>29</td>
<td>26</td>
<td>19</td>
<td>21</td>
<td>24</td>
<td>30</td>
<td>183</td>
</tr>
</tbody>
</table>

The table shows that there are relatively fewer published cases of accounts manipulation in 2000 compared to, say, 2003 or 2004 or up to the third quarter of 2008. The reason for the noticeable increase in published cases of the act in the press can be attributed to the Enron/WorldCom/Parmalat imbroglio that probably
made the press to become more alert in reporting financial issues because the “media like to report on what is new, and to paint what is new as important” (Daniel et al. 2002, p. 69). In fact, it became fashionable for the press to be sniffing for accounting related issues in order to (presumably) report/expose accounting improprieties to their readers. Indeed, Ball (2009, p. 9) speculates that during the scandal period, accounting-related issues were unusually newsworthy, and the press reported even minor issues that previously would not have made the news, adding that this bias was fed by panicking companies that, in a post-Enron ‘witch hunt,’ combed their books for the slightest hint of an accounting issue, which the press duly reported as scandalous.

August 2008 is set as an arbitrary cut-off date because of the financial turmoil and credit crunch experienced in most major market-based economies of the world, which was spearheaded by the world’s two leading arrowheads of free market economy, as the numbers in Table 4.4 below would suggest.

January 2000 is chosen as the start-off date for a number of reasons: One, so as to avoid too much missing data as some companies may not keep their annual reports and accounts for much longer. Although some of the data are still available in DataStream, Amadeus and Bloomberg, they do not cover all countries. Indeed, experience gained in the course of data collection reveals that most of the firms do not have daily historical or on-the-spot stock quotes, and annual reports and accounts for a longer period.

Two, in order not to allow (or to minimise) other extraneous factors unconnected with accounts manipulation interfere with data.

Finally, so that cases of accounts manipulation can still be found in archives of newspapers. The longer the period, the more the probability they are removed from the archives. For example, at the expiration of a certain period The Wall Street Journal transfers its old issues to Factiva.
Moreover, by coincidence, the essay by Ball (2009, p. 1) supports our concentrating on this period because, as he says, "the tsunami of accounting scandals at the beginning of the millennium is well known." (We take particular note that Ball (2009) was not published before the data for the present study were collected).

To be included in the sample, we required that all materials about a firm or country must be in English language or have English language version.

The data search found a total sample of 183 publicly quoted firms from 36 countries around the world where alleged cases of accounts manipulation were reported in newspapers.31

For the analysis in chapter 6, based on criteria listed in Table 4.3, we trim down the 183 cases to 99 firms, which are, in turn, further reduced to 83 firms because of problem of data availability for some companies relating to the amount mentioned in the news and total assets and/or value of shareholders’ equity. The pruning process can be seen in Table 4.3.

<table>
<thead>
<tr>
<th>Table 4.3 Sample selection criteria</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of firms discovered to have manipulated their accounts</td>
<td>183</td>
<td>100</td>
</tr>
<tr>
<td>Number of firms delisted from an exchange during the period</td>
<td>(11)</td>
<td>(6)</td>
</tr>
<tr>
<td>Number of firms merged with or acquired by other firms</td>
<td>(9)</td>
<td>(5)</td>
</tr>
<tr>
<td>Number of firms without websites or whose information or page cannot be found on a stock exchange’s website</td>
<td>(23)</td>
<td>(13)</td>
</tr>
<tr>
<td>Number of firms whose website is not in English (or their English language translation is considered insufficient)</td>
<td>(15)</td>
<td>(8)</td>
</tr>
<tr>
<td>Number of firm qualified to be included in sample</td>
<td>125</td>
<td>68</td>
</tr>
<tr>
<td>Number of firms without stock quotes</td>
<td>(26)</td>
<td>(14)</td>
</tr>
<tr>
<td>Number of firms qualifying for final sample</td>
<td>99</td>
<td>54</td>
</tr>
</tbody>
</table>

31 On the adequacy of sample size, the study satisfies a statistical condition of the central limit theorem, which requires that sample size (N) ≥ 30 can be considered adequate for meaningful statistical analysis. The higher the sample size the higher the power of a statistical test.
### Table 4.4 Distribution of Accounts Manipulation by country and legal origin

<table>
<thead>
<tr>
<th>Country</th>
<th>Legal Origin</th>
<th>English</th>
<th>French</th>
<th>German</th>
<th>Russian</th>
<th>Scandinavia</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fd</td>
<td>Us</td>
<td>Fd</td>
<td>Us</td>
<td>Fd</td>
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<td>2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
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<td></td>
<td></td>
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<tr>
<td>Belgium</td>
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</tr>
<tr>
<td>Canada</td>
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<td>4</td>
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<td>China</td>
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<td></td>
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<td>Czech Republic</td>
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<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>3</td>
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<td>2</td>
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<tr>
<td>Japan</td>
<td></td>
<td></td>
<td></td>
<td>6 4</td>
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<td>Luxembourg</td>
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<td>Malaysia</td>
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<td>Netherlands, the</td>
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<td>2</td>
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<td>New Zealand</td>
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<tr>
<td>Portugal</td>
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</tr>
<tr>
<td>ROC (Taiwan)</td>
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<td>1</td>
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</tr>
<tr>
<td>Russia</td>
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<td>6</td>
<td></td>
<td></td>
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<tr>
<td>Singapore</td>
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<td>3</td>
<td>1</td>
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<tr>
<td>South Africa</td>
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<td>3</td>
<td>2</td>
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<td></td>
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<tr>
<td>South Korea</td>
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<td>2</td>
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<td></td>
</tr>
<tr>
<td>Sweden</td>
<td></td>
<td></td>
<td></td>
<td>6 1</td>
<td></td>
<td></td>
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<tr>
<td>Switzerland</td>
<td></td>
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<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ukraine</td>
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<td>2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td></td>
<td>19</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>USA</td>
<td></td>
<td>49</td>
<td>39</td>
<td>11 21 12 12 1 7 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key:**
- **Fd** = Nr. of firms exposed
- **Us** = Nr. of firms used in the study

Out of the 183 firms, 125 (68%) firms' data are usable. Eleven or (6%) were delisted from stock exchanges, 9 (5%) were either merged or acquired by another company\(^{32}\).

\(^{32}\) We cannot say whether the delisting of some of the firms from the sample introduces survivorship bias, the possibility exists. Attrition is due to a firm being delisted from an exchange, or merged with or acquired by other firms. We do not attempt to control or account for survivorship bias. Generally, reducing the sample size can only have the effect of reducing the explanatory power of the tests.
Twenty three or 13% of the firms had no website of their own or their information could not be found on an exchange and 15 (8%) of the firms had no English Language version of their web pages; or where an English Language web page exists, it is inadequate.

In chapter 5, the chi-square test for legal origin uses the 183 reported cases of accounts manipulation. In the logistic regression of that same chapter, we use the 36 countries where actual cases of accounts manipulation were reported in newspapers together with a control sample drawn from another 36 countries where we did not find cases of accounts manipulation reported in newspapers (see Table 4.1 on page 82).

Table 4.4 shows the distribution of cases of accounts manipulation per country per legal origin. The table shows the number of cases of accounts manipulation that we found for each country (Fd), and the number that was eventually used in the analysis (Us), especially in the second part of the study.

Control sample

The need for a control sample arises because “prior research typically selects a set of firms with an observed accounting irregularity and then obtains another firm without an irregularity that is matched on” (Armstrong et al. 2010, p. 238-239) certain characteristics specified by the researcher. To constitute the country control sample we select countries based on data availability on the independent variables in the logistic regression in chapter 5.

As a starting point for selecting the control sample, we required that all countries must be covered by Hofstede (2001). Except for the control variables of national cultural values, data on the remaining independent variables in the logistic equation in chapter 5 are available for the countries involved in the study. Hofstede' (2001) work on cultural patterns across the world has been used (most widely) by prior researchers. He classifies countries of the world according to five cultural
dimensions. These are power distance, uncertainty avoidance, individualism/collectivism, masculinity/femininity, and long-/short-term orientation. Each of the countries has a score on each of these cultural dimensions.

In building the control sample, first we exclude any country that is not found in Hofstede (2001, pp. 500-502). Next, in selecting the countries that are covered by Hofstede (2001), we select a given country in the control sample having regard to the five continents of the world. We purposively select a representative country from each geographical region on the basis of contiguity or similarity within each continent. We also take the legal origin of the country into consideration.

4.3.1 Covariate Balance between Treatment and Control Samples

We examine the covariate balance between the treatment and control samples. "Covariate balance is achieved if both the treatment and control samples appear similar along their observable dimensions" (Armstrong et al. (2010)).

Table 4.5 conveys the descriptive statistics containing minimum, maximum, mean, standard deviation (in parentheses), differences in means and p-values from the Paired Samples T-Tests. Specifically, Panel A of the table shows descriptive data for the research sample while Panel B does the same for the control sample. Variations in the data of the two samples can be seen by comparing the two panels side-by-side, and variable-by-variable. Panel C shows the Paired Samples Test statistics.

[33 Armstrong et al. (2010, p. 245) remind us of the reasons for assessing covariate balance between control and treatment samples: (a) an adequate degree of covariate balance is necessary to properly account for the confounding effects of the observed control variables used to match the observations. (b) Examining covariate balance is important also because it can highlight potential identification problems.]
## Table 4.5 Comparative data of Research and Control Samples

### Table 4.5 Panel A. Descriptive Statistics (Research Sample)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CorruptEnvi</td>
<td>36</td>
<td>.70</td>
<td>7.90</td>
<td>3.8694</td>
<td>2.30426</td>
</tr>
<tr>
<td>Investor-Protection</td>
<td>36</td>
<td>3.00</td>
<td>9.30</td>
<td>6.0875</td>
<td>1.61361</td>
</tr>
<tr>
<td>State's ownership of enterprises</td>
<td>36</td>
<td>38.56</td>
<td>97.67</td>
<td>68.5725</td>
<td>14.58720</td>
</tr>
<tr>
<td>Gross National Income</td>
<td>36</td>
<td>3.06</td>
<td>4.75</td>
<td>4.2631</td>
<td>.36572</td>
</tr>
<tr>
<td>Power Distance</td>
<td>36</td>
<td>13.00</td>
<td>104.00</td>
<td>57.8056</td>
<td>23.02647</td>
</tr>
<tr>
<td>Uncertainty Avoidance</td>
<td>36</td>
<td>4.51</td>
<td>104.00</td>
<td>59.2640</td>
<td>25.30567</td>
</tr>
</tbody>
</table>

### Table 4.5 Panel B. Descriptive Statistics (Control Sample)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CorruptEnvi</td>
<td>36</td>
<td>.70</td>
<td>8.48</td>
<td>5.7878</td>
<td>1.94250</td>
</tr>
<tr>
<td>PRESSFree</td>
<td>36</td>
<td>10.41</td>
<td>99.14</td>
<td>65.4200</td>
<td>30.61386</td>
</tr>
<tr>
<td>Investor-protection</td>
<td>36</td>
<td>2.70</td>
<td>6.70</td>
<td>5.0396</td>
<td>1.15873</td>
</tr>
<tr>
<td>State's ownership of enterprises</td>
<td>36</td>
<td>4.50</td>
<td>91.74</td>
<td>31.9350</td>
<td>21.37097</td>
</tr>
<tr>
<td>Gross National Income</td>
<td>36</td>
<td>2.89</td>
<td>4.93</td>
<td>3.8935</td>
<td>.42991</td>
</tr>
<tr>
<td>Power Distance</td>
<td>36</td>
<td>11.00</td>
<td>104.00</td>
<td>64.8056</td>
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<tr>
<td>Uncertainty Avoidance</td>
<td>36</td>
<td>13.00</td>
<td>112.00</td>
<td>70.9167</td>
<td>21.40944</td>
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### Table 4.5 Panel C Paired Samples Test

<table>
<thead>
<tr>
<th></th>
<th>Paired Differences *</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
</tr>
<tr>
<td>CPI_T - CPI_C*</td>
<td>-1.9183</td>
<td>3.10362</td>
</tr>
<tr>
<td>PRESSFree_T - PRESSFree_C</td>
<td>15.446</td>
<td>35.70553</td>
</tr>
<tr>
<td>INVSITPro_T - INVSITPro_C</td>
<td>1.1194</td>
<td>2.17805</td>
</tr>
<tr>
<td>SOE_T - SOE_C</td>
<td>36.637</td>
<td>23.52775</td>
</tr>
<tr>
<td>Log_GNI_T - Log_GNI_C</td>
<td>0.3695</td>
<td>.56668</td>
</tr>
<tr>
<td>Hofstede_PD_T - Hofstede_PD_C</td>
<td>-7.0000</td>
<td>29.14496</td>
</tr>
</tbody>
</table>

* The suffix _C, and _T represents control and research samples, respectively.

* Paired differences are computed as the treatment(research) sample values minus control sample values.

CPI = Corruptions perceptions index  PRESSFree = Press freedom  INVSITPro = Investor-protection
SOE = State ownership of enterprises.  GNI = Gross National Income  PD = Power Distance
UA = Uncertainty Avoidance
Looking at Panel C, the absolute difference \(|1.9183|\) between the mean scores of both groups for CPI is statistically significant \((t = -3.709, \rho = 0.001)\).\(^{34}\)

The absolute difference \(|15.4461|\) between the mean scores of both groups for press freedom \((\text{PRESSF}_{\text{ref}})\) is statistically significant \((t = 2.596, \rho = 0.014)\). The absolute difference \(|1.1194|\) between the mean scores of both groups for investor-protection \((\text{INVSTPro})\) is statistically significant \((t = 3.084, \rho = 0.004)\). The absolute difference \(|36.6375|\) between the mean scores of both groups for State’s ownership of enterprises \((\text{SOE})\) is statistically significant \((t = 9.343, \rho = 0.000)\). The absolute difference \(|0.3695|\) between the mean scores of both groups for the level of wealth in a country \((\log \text{GNI})\) is statistically significant \((t = 3.913, \rho = 0.000)\).

The absolute difference \(|7.0000|\) between the mean scores of both groups for the level of inequality in a country \((\text{Hofstede’s PD})\) is statistically not significant \((t = -1.441, \rho = 0.158)\). The absolute difference \(|11.652|\) between the mean scores of both groups for the level of uncertainty avoidance in a country \((\text{Hofstede’s UA})\) is statistically significant with \(t\)-value \(-2.292\), \(\rho = 0.028\).

The statistically significant \(\rho\)-values indicate that there are differences in the covariates of the two groups. The statistical differences may be due to the purposive matching procedure used in selecting or constituting the control sample which was not stringent: we only required that countries be classified according to the two relevant Hofstede’s cultural dimensions used in the study. The statistical differences may not be biased; the non-randomisation procedure may have made the matching to be imperfect. Because of non-randomisation direct comparisons of covariates from the two samples may be misleading.

There are indications that the economic differences between the hypothesised variables of both the treatment and control samples are relatively small, except for SOE. Take each of the two values at the two ends of the continuum, for instance. Minimum CPI values for both the control and treatment groups are the same. The

\(^{34}\) Result of the Wilcoxon Signed Rank Test is included in Appendix 4-1 at the end of thesis. The significant test results are consistent with results in Panel C of Table 4.5
absolute difference (0.58) between the maximum CPI scores of the two groups is economically not significant.

The absolute difference (1.11) between the minimum scores of press freedom between the two groups is also not economically significant; as is the difference (0.04, absolute) in the maximum scores of same variable for the two groups. The difference of $|0.30|$ in investor-protection between of the minimum value of the two groups is also not large.

The differences in the standard deviations are not economically large also, except in the case of press freedom which is due to the large difference between the minimum scores of the two groups.

4.3.2 Exclusions

In order to put the entire sample on the same pedestal, and because of the following reasons, we exclude banks and other financial institutions from the study.

a) Because of the very nature of their operations, legally, financial institutions sometimes shuffle funds from one account to the other – a practice that the non-bank staff or personnel may consider as manipulation.

b) Nature of assets and liabilities. Because of the fact that most assets (aside from properties, plants and equipment), and liabilities of financial institutions are very fluid, even in the short term.

c) Financial institutions are in a world of their own in terms of regulation. Their regulatory environment or regime in different countries follows the Basel Accord. This is different from Companies Acts which are used to regulate firms in various countries around the world.

d) Finally, there are precedents in the literature to back us in ignoring financial firms and banks. Several prior research in accounting such as Jiraporn et al.
(2008), Pantzalis et al. (2008), Roychowdhury (2006), and Lins (2003), to name but a few; exclude finance firms from their study.\(^{35}\)

In spite of not including financial institutions, based on the central limit theorem we have enough sample size for the forthcoming analysis, and for generalisation.

To an extent, the recent embarrassing revelation of backdating of stock options in the U.S. qualifies to be treated as accounts manipulation (see, for example, Bernile and Jarrell, 2009 for a research examining stock market reactions to stock options backdating scandal in the U.S.). We have excluded firms exposed in the practice because they are peculiar to the U.S. This decision enables us to collect and analyse like-for-like data from all the countries involved.

### 4.4 Sources, description of variables and measurements

This section describes the variables of the two parts of this study.

#### 4.4.1 Part I

##### 4.4.1.1. Legal origin

Classificatory measure for legal origin is taken from three sources: La Porta et al. (1998, 2008), Harper and McNulty (2008) and the World Factbook (2009)\(^{36}\).

La Porta et al. (1998, 2008) grouped legal origins into four categories including English origin, French origin, German origin, and Scandinavian origin. Harper and McNulty (2008) borrow and then extend La Porta et al. (1998, 2008) into five by introducing an additional (Russian) legal origin. The World Factbook is a comprehensive source document because it covers all countries around the world;

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\(^{35}\) With the exception of Lins (2003) and Jiraporn et al. (2008), most of these studies do not advance reason(s) for their action.

however it does not group countries into their legal origins. It merely describes the legal system being operated by each country of the world.

Countries where accounts manipulations were published come from every legal origin such as those contemporaneously described and categorised by La Porta et al. (2008) and Harper and Mcnulty (2008).

4.4.1.2 Dependent variable

All the variables in the logistic regression equation in chapter 5 are measured at the country-level. The dependent variable for the logistic regression is likelihood of accounts manipulation occurring. Each of the 36 countries where we found cases of accounts manipulation reported in newspapers (i.e., the research sample) is assigned 1 whereas each of the 36 countries (the control sample) where we did not find the act reported is assigned 0, see Table 4.1 which contain the two groups of countries.

4.4.1.3 Independent/control variables

The hypothesised independent variables are:

4.4.1.3.1. Corrupt environment (CORRUPT_ENV)

One of the independent, hypothesised, variables of the study is corrupt environment. In order to have a measure for this variable we rely on the Corruption Perceptions Index (CPI) of Transparency International (TI), which measures the level of corruption perceptions across the world. TI ranks more than 150 countries by their perceived levels of corruption.

It is thought that these perceptions can enhance an understanding of real levels of corruption around the globe. The index ranges from 1 to 10 on a continuous scale. In its original construction or conception, a country that has a low level of corruption gets high score whereas a country that has a high level of corruption gets
Methodology and Research Designs

low score. That is: low level of corruption, high score; and high level of corruption, low score.

Mimicking previous studies, this study would like to associate a high score with a high level of corruption, hence the need to reverse-score the index.

Consistent with Lee and Ng (2006) and Pantzalis et al. (2008), we re-define the corruption score of country $j$ at year $t$ ($C_{j,t}$). This is done by subtracting each original CPI score from 11, so that, as indicated, a high (low) score of this measure indicates a high (low) level of corruption in country $j$.

The visual mechanic of this reverse-scoring is shown here:

![Original CPI scoring diagram]

Lee and Ng (2006) reverse-score the index to range between 9, for highly corrupt, to 0, for highly clean. This is similar to the way the CPI is implemented by prior studies (see Pantzalis et al. 2008, p. 391). We maintain the original scale of 0 to 10.

For any current year’s assessment of CPI Transparency International combines assessments from the last two years immediately before it. This is to reduce abrupt variations in scoring of the current year that might arise due to random effects. Because countries' corruption perceptions scores change from year to year, in

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Apart from CPI there are other alternative indices that one can use, one of which is the International Countries Risk Guide (ICRG) Index. Lee and Ng (2006) and others use the CPI and they argue that all ratings are subjective. However, they observe that while these ratings are by definition 'subjective', there are compelling reasons to take the patterns they reveal seriously.
obtaining the index used for each country used in the regression, we compute an average CPI score covering the year 2000 (when CPI started) up to 2008, inclusive.

4.4.1.3.2 Press freedom (press\text{free})

The measurement instrument for this variable is taken from Reporters Without Borders, which compiles the world press freedom index. The index reflects the degree of freedom that journalists and news organisations enjoy in each of the 173 countries of the world that the index covers. It examines the efforts made by the authorities to ensure respect for this freedom. It includes every kind of violation directly affecting journalists such as murders, imprisonments, physical attacks and threats. It also looks into matters affecting news media such as censorship, confiscation of newspaper issues already printed, searches and harassment of newspapers houses and journalists\textsuperscript{38}. The index also measures the level of self-censorship in each country and the ability of the media to investigate and criticise.

On a continuous scale, the score for press freedom ranges from 0 to 100. In its original construction and interpretation, a country is scored low if its level of press freedom is high whereas the same country would be scored high if its level of press freedom is low.

This study would like the press freedom index to be scored in such a way that low score means low press freedom while high score indicates high press freedom, so that high score/high press freedom can be interpreted to mean likelihood of reduced accounts manipulation occurring, $H_3$. Hence, in operationalising the index, it is re-defined by reverse-scoring each country $j$ at year $t$ ($C_{j,t}$). To do this, we subtract each original score from 100, an arbitrarily chosen number; the maximum bound of the original score is not more than 100 anyway. But before performing this operation, we first compute the average of available data from 2002\textsuperscript{39} to 2008.

\textsuperscript{38} See “How the Index is compiled” at http://www.rsf.org/article.php3?id_article=29013

\textsuperscript{39} We started from 2002 because Reporters Without Borders started compiling the press freedom index in that year.
(inclusive) in order to even-out any imbalances over the years that the index has been in existence. It is this computed average that is used in the analysis in chapter five.

4.4.1.3.3 State-owned Enterprises (SOEs)

State-owned Enterprises (SOEs) stands as a proxy for government enterprises and investment in an economy. It indicates the extent of the State’s dominance of the economic activities of a country. The scores for each country range from 0 to 10. The instrument to measure State ownership of enterprise is the index compiled by Gwartney (et al.) of the Economic Freedom Network.\textsuperscript{40} We use the government enterprises and investment dataset, which is a subset of the government size index of Economic Freedom Network. The database hosts cross-national data of 141 countries of the world on government enterprises and investment.

Economic Freedom Network uses data on the number, composition, and share of output supplied by State-Owned Enterprises (SOEs) and government investment as a share of total investment. In its original interpretation, a country is said to be dominated by the State where government investment exceed 50% of total investment. In such a case the country is scored zero. The same country would be scored higher if its economy were less dominated by government investment.

This study would like to associate a high score with a high level of government investment, so that high State dominance of the economy would imply likelihood of accounts manipulation occurring more in those economies. For this reason there is a need to reverse-score the original index. Thus, in operationalising the index, this study re-defines it by re-calculating the respective scores for each country $j$ at year $t$ ($C_{jt}$). We mimic the computational mechanics of corrupt environment and press freedom described above. To do this requires subtracting the original scores from 11, an arbitrarily chosen number. Before this exercise, we first compute the average of available data from 2000 to 2006 (inclusive). It is this computed average

\textsuperscript{40} www.freetheworld.com
that we use in the analysis in chapter 5. In 2008 when our data collection for this study was carried out, 2006 data are the latest available from Economic Freedom Network, reported in its 2008 annual report.

**4.4.1.3.4 Investor-protection**

Investor-protection measures the extent of the State’s involvement or interest in the capital market in whatever form or shape: legal, regulatory or otherwise; for a number of reasons. The State may be interested in the capital market to protect shareholders, to ensure the integrity and sound development of the capital market. The measure for investor-protection is taken from Doing Business, which is an arm of the World Bank.\(^{41}\) The database contains the strength of investor-protection index. Doing business measures the strength of minority shareholder protections against directors’ misuse of corporate assets for personal gain. Out of the ten datasets provided by Doing Business, we find the “Protecting Investors” dataset to be most relevant to this study; hence we chose to use it.\(^{42}\)

The index is compiled by taking the average of three indicators of investor-protection. The indicators are transparency of related-party transactions (extent of disclosure index), liability for self-dealing (extent of director liability index) and shareholders’ ability to sue officers and directors for misconduct (case of shareholder suits index). Each dimension has its own scores, which Doing Business averages to get what it calls Strength of Protecting Investors Index. The index ranges from 0 to 10, with higher values indicating more investor-protection. Because of this the index is used as it is without re-calibrating or re-defining it.

\(^{41}\) www.doingbusiness.org provides a database of investor-protection across the world.

\(^{42}\) There exist other alternative (but closely related) measures of investor-protection, which are constructed with different methodologies that address different situations, see Djankov et al. (2008). Djankov et al. (2008, p. 461) say that “this raises an obvious question of what is the ‘best’ measure for researchers to use?”. This is why Doing business uses the average of related-party transactions, liability for self-dealing, and shareholders’ ability to sue officers and directors for misconduct to arrive at strength of investor-protection index.
Doing business started compiling the investor-protection index in 2004, so we computed the average score from 2004-2009 which is used in the regressions in chapter 5.

4.4.1.3.5 Control variables

Ruland et al. (2007) harp on the need to control for country-specific factors in an international study. They reason that “perhaps the most distinctive element of effective design in these studies is the control for institutional, cultural, and structural differences between countries.” Ruland et al. (2007, pp. 101-102) proffers an indicative list of factors that an international study can control for. We note however, that there is a limit to the number of control variables that can be included in a model, one possible limitation being the number of independent variables in the model. In this study we are able to control for national cultural values (via the instrumentality of Hofstede, 2001) and the level of wealth or economic circumstances facing each country involved in the study.

It would have worth the effort if it were possible to control for what the press in various countries consider as accounts manipulation that is qualified for publication. To the best of our knowledge, there is no measure as yet that captures possible country differences in what the press perceives as accounts manipulation, bearing in mind the various aspects of our all-encompassing definition of accounts manipulation. Therefore, the absence of this measure has made it impossible to control for it.

4.4.1.3.5.1 Hofstede’s cultural values

Hofstede (2001, p. 1) defines culture “as a collective programming of the mind; it manifests itself not only in values, but in more superficial ways: in symbols, heroes, and rituals”. Hofstede (2001) uses five constructs to describe the national cultural dimensions of a country. A number of extant studies in accounting (e.g., Doupnik
Effects of Institutional Structures on Accounts Manipulation, and Consequences for Firms Exposed in the Act: An International Study

(2008), Braun and Rodriguez (2008), Ding (2005), Hope (2003), and Gray (1988), among others) have examined the role of culture and most of these studies rely on the work of Hofstede (1980, 2001) or other works using the foundation laid by Hofstede.

Ding et al. (2005) examine the role of culture in explaining why generally accepted accounting practices (GAAP) in countries differ from international accounting standards (IAS). They argue that opposition to IAS is not driven exclusively by contractual motives or claimed technical superiority but also by diversity in cultural factors in a country.

Doupnik (2008) examines the influence of national culture on earnings management across a broad section of countries. His findings suggest that there is a significant link between culture and national differences in earnings management.

Braun and Rodriguez (2008) use Gray’s accounting values to explain earnings management in a sample of 31 countries. Their findings provide some support that earnings management is positively associated with Gray’s accounting values.

Hofstede (1980, 2001) describes national cultures in different countries of the world. As a result of this he came up with five categories of national culture. These are power distance (PD), uncertainty avoidance (UA), individualism and collectivism (I/C), masculinity and femininity (MAS), and long- versus short-term orientation (LTO).

Here, we briefly describe power distance and uncertainty avoidance because of their relevance in explaining why managers may or may not engage in accounts manipulation.

Power Distance (PD) measures the level of inequality in a given country or society. Inequality is the extent to which society or organisational members put different weights on status consistency in the areas of prestige, wealth, and power.

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41 A comprehensive review of this work can be found in Finch (2009)
Also, power distance describes the extent to which the less powerful members of society accept or expect injustice or inequality in relationships. Unequal relationship plays out well in organisational and other settings: For example, the superior-subordinate dyadic relationships in organisations, or father-son, mother-daughter relationship in the family. Hofstede (2001, pp. 500-502) power distance (PD) Index has a score for each country and the score ranges from 1-100; the higher the score the higher people accept or expect inequality in the country.

**Uncertainty Avoidance** (UA) captures concerns for time, the future, uncertainty, and anxiety, etc. It also defines how people deal with rule orientation, employment stability and stress. Hofstede (2001, p.145) posits that uncertainty about the future is a basic fact of human life. Countries are rated on a UA scale of 1-100. For example, a country whose citizens are worried about the future, are stressful, faces unstable situations that cause anxiety will be scored high whereas countries whose citizens exhibit the opposite tendencies will be scored low.

Another of Hofstede’s (2001) important dimension that is relevant to this study is Long-Term Orientation (LTO). It describes the extent to which human beings favour future-oriented virtues such as endurance or perseverance instead of short-termism. LTO is likely to explain the incidence of accounts manipulation by managers. This dimension could have been used in this study, but the available data do not cover all the countries involved in the study.

Based on their relevance to our study, we use two of the dimensions as surrogates for national cultural values to control for the influence of culture in managerial propensity to manipulate accounts.

Another alternative index that we could have used to measure culture is Gray’s accounting value (see Gray 1988); however it is built upon Hofstede (1980) and it does not cover all the countries used in this study. Gray (1988, 8) categorise accounting values as professionalism versus statutory control, uniformity versus flexibility, conservatism versus optimism, and secrecy versus transparency.
Although Gray's classifications may be relevant in explaining the occurrence of accounts manipulation, Gray (1988) covers fewer countries than Hofstede (1980 and now 2001), that is one. Secondly, Gray (1988) accounting values scores are derived by averaging Hofstede's culture measures.

For these reasons, we are persuaded to stick to using Hofstede's (1980, 2001) power distance and uncertainty avoidance measures of cultural values in this study.

And although Hofstede faces a lot of criticisms (one of the most well-known being Baskerville, 2003), it appears that no other measures of culture have been as popular as Hofstede, and "none to date has been accepted by the cross-cultural research community as a clear successor to Hofstede" (Doupnik, 2008, fit 2, p. 322).

From anthropological and sociological point of argument, Baskerville (2003) has criticised the use of Hofstede on the basis that culture is unstable and that assigning numerical values to national cultures may be problematic. He points out that there is a low usage of Hofstede in anthropology and sociology whereas business-related research has made an extensive and increasing use of Hofstede, see Table 1 of Baskerville (2003, p. 4). According to Baskerville (2003, p. 5) "critiques of Hofstede have periodically appeared in accounting, but these have not diminished the attractiveness of his indices." The critiques "alerts the researcher to be wary of indices in cross national studies" (Baskerville, 2003, p. 9).

4.4.1.3.5.2 Level of wealth in a country

Managers' share of the level of wealth of the country in which they operate can be a factor that influences their behaviour. A country's level of wealth is proxied by the Gross National Income of the country. Gross National Income (GNI) is made up of personal consumption expenditures, gross private investment, government
consumption expenditures, net income from assets abroad (net income receipts), and gross exports of goods and services, after deducting gross imports of goods and services, and indirect business taxes. GNI is the same as gross national product (GNP), except that in calculating the latter one does not deduct indirect business taxes.

GNI per capita can be associated with better education, health, infrastructure, communications, and in general, better provision of public goods. It can reasonably be assumed that citizens of rich and poor countries may have different disposition to issues, e.g., tendencies toward accounts manipulation. There is reason to also believe that income level in a country can potentially affect managers’ financial behaviour, hence we equate individual’s economic status in a country with the gross national income per capita of that country.

We control for this in the occurrence of accounts manipulation. Using data query function, we obtain information about countries’ gross national income per capita for years 2000-2008 from the World Development Indicators database of the World Bank (see http://data.worldbank.org/indicator). For this study, we compute an average GNI covering years 2000-2008, inclusive. We could not use the score of one particular year because the rating of a country’s level of wealth changes from year to year, which is why we calculate the average from 2000 to 2008.

According to the World Bank GNI per capita (formerly GNP per capita) is converted to U.S. dollars using the purchasing power parity method, divided by the midyear population. GNI represents the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. In comparison with salary per capita which can also be used to measure economic status of individuals, GNI per capita seems to be a more robust indicator than salary per employee, which is restricted to employees’ salary alone.

This is based on the law of one price all over the world, implying that in the absence of transaction costs, identical goods will have the same price in different markets of the world.
Cross-national studies have used either GDP or GNI as a control variable. For example, Djankov et al. (2008) use GDP as a control variable while La Porta et al. (1998) and Kimbro, among others, use GNP (now GNI) as a control variable. We elect to use GNI because it relates to individual’s level of poverty or wealth in a country. Since people’s level of wealth as measured by economic and financial, education, health, and other circumstances matter in the choices they make, it is persuasive to use gross national income per capita, which is an objective measure, as opposed to, say, GDP or quality of life generally which seems enticing to use but lacking in certain respects. The quality of life index constructed by Economic Intelligence Unit incorporates nine items. Some of the items (e.g. community life, divorce rate, life expectancy, and others) are noisy and irrelevant and inappropriate in measuring accounts manipulation tendencies of an individual.

4.4.2 Part II (consequences)

4.4.2.1 Dependent variable in linear regression analysis

In the linear regression analysis in chapter 6, abnormal returns of day zero is the dependent variable.

4.4.2.2 Independent / control variables in regression analysis

The independent variable is the amount mentioned in the news of accounts manipulation. We control for size using total assets of a firm and value of a firm’s shareholders’ equity, alternately.

4.4.2.2 Placement effect

This is a dummy variable that is used to capture the effect on stock prices of the section where the news of accounts manipulation is featured in a newspaper.

45 See http://www.economist.com/media/pdf/QUALITY_OF_LIFE.pdf for the nine items
publication. Together with amount mentioned in the news, this is another second-order effect measure on market reactions to news of accounts manipulation.

We categorise sections of a newspaper into three: "business, finance, and companies section", for articles appearing in these sections of a newspaper, "news section", for articles appearing in opinion, editorial, special reports, comments and news analysis section, and "others", where the news is not in any of the two sections, or it is unclear which section the news is inserted.\footnote{The sections of online edition of a newspaper are not likely to differ from sections of hard or paper copy. The two versions may differ in how the pages are numbered.} We code the first, second, and third category as 3, 2, and 1, respectively.

4.5 An overview of the research method employed by the study

This section discusses the research method employed by this study. In the process, the section also provides an overview of the other two available methods that any researcher in the social sciences can elect to use.

The discussion of this topic is short as the study is not about research methods. The reason why research method is discussed here is because it will help to illuminate why this study has taken the route that it did. However, it is expected that at the end of the discussion the reader will appreciate the other types of research methods available, and the relative advantages and disadvantages of each. Research methods can take three basic modes: quantitative, qualitative and mixed methods.

4.5.1 Quantitative method

The present study employs the quantitative method. This method falls into what is known as the positivist tradition, which is economics-based. The positivist aspect of the quantitative research method makes predictions, states formal hypotheses and structures problems with mathematical equations such as multivariate
regression equations, paired samples t-test, etc. Finally, the quantitative method tests hypotheses to conclude whether predictions are supported.

The quantitative method uses figures and counts and measurements obtained from present or past records of events to achieve its aim. That means that the method is number-crunching in orientation because it is statistics or mathematics oriented.

In terms of the sources it uses to collect data, it uses a variety of methods, including both primary and secondary or archival sources, involving both personal and impersonal contacts. For example, either by post or in person, or both, it can use a questionnaire as a primary source. The responses from questionnaires are converted into numbers and calibrated accordingly. Secondary or impersonal source involves the researcher sitting by their computer and collecting third party data from the internet, or the researcher using some public or a third party "brick and mortal" library to collect data. The quantitative method can also use surveys as a source of data collection.

Most empirical studies based on the quantitative method, for example, the present one, rely on archival or secondary sources for their data. The data that quantitative researchers use to build econometric models are prepared by a third party or body which may be known (or unknown) to the researcher. And the researcher may or may not be affiliated to that third party.

One advantage of archival data as used by the quantitative researcher is that the researcher has no personal input into it. This ensures that the research(er) is unbiased. However, this is a disadvantage at the same time because the data collected may have been meant for a different purpose. It is most likely that there may have been assumptions or nuances which the original owners of the data may have made that are unknown to the person using it on another or different occasion.

Primary data collection methods, such as the personal administration of questionnaires, are prone to some sort of bias. However, this has an upside because in the process of personal interactions unclear issues are clarified by both the researcher and her respondents.
Moreover, empirical archival method of data collection of this method has the advantage of being less expensive, less time consuming, and involves less physical risk on the part of a researcher.

4.5.2 Qualitative method

The qualitative research method is another method of doing research. This method eschews mathematical or statistical relations in the way it goes about its research, hence the method is usually mostly descriptive, narrative, exploratory, text-based or discursive.

The qualitative method uses a variety of approaches to collect data. Examples of data collection methods used by this research method include focus groups; observations (direct participant or non-participant observations); questionnaires (structured and unstructured, mailed or administered in person); in-depth interviews either by phone or in person; role-plays and simulations. In the case of mailed questionnaires the response rate can be disappointingly low.

Compared to the quantitative method, by nature the qualitative researcher is in a better position to meet face-to-face with respondents because of the methods of data collection, which are likely to involve human interactions. Human interactions and personal contacts has other downsides, for example, they are risky, time consuming and expensive, especially when it involves a very large population.

Another advantage of the qualitative method is that it essentially uses first-hand or primary method of data collection that is tailored to the needs of a research. Having said so, a researcher’s nuances and idiosyncrasies can be built into it, which is a disadvantage at the same time. On the plus side, first-hand data are collected with all freshness and precisely for the purpose of the research.
4.5.3 Mixed method

Rather than being regarded as competing methods, both the qualitative and quantitative research methods can serve as complementing each other, depending on the context. Hence, the third method of research is a hybrid of both the qualitative and quantitative research methods. It combines, and harnesses, the good properties of both. This is why it is called mixed method of research, and some researchers use both methods in one research.

4.6 Methods of analysing data

4.6.1 Chi-square test of association and logistic regression

In chapter 5, legal origin (II₁) is tested using chi-square tests. In one of the two chi-square tests employed for legal origin, we relate the number of accounts manipulation exposed in each legal origin to the number of companies listed in the same legal origin. Data on the number of listed companies in each country of the world are available from World Bank's World Development Indicators⁴⁷.

According to the World Bank, listed domestic companies are the domestically incorporated companies listed on a country's stock exchange at the end of the year.

We extract the number of listed companies in each country for the years 2000-2008. The number of listed companies does not include investment companies, mutual funds, or other collective investment vehicles. For each country, we calculate the average of these years. It is this average that we use in the study (see Table 4.6 next page).

The reason for using the average figure is to even-out the data in case there are any problems affecting any particular year's figure. Where a country does not have data for all the nine years, we take the average of the available years.

⁴⁷ For the data, see http://data.worldbank.org/indicator/cn.mkt.idom.no
Table 4.6 Average Number of Listed Companies by Legal Origin (2000-2008)

<table>
<thead>
<tr>
<th>Country</th>
<th>English</th>
<th>French</th>
<th>German</th>
<th>Russian</th>
<th>Scandinavia</th>
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</thead>
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<td>9. Germany</td>
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<td>10. Hong Kong</td>
<td>974</td>
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<td>11. India</td>
<td>5420</td>
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<td>12. Indonesia</td>
<td>324</td>
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<tr>
<td>13. Ireland</td>
<td>62</td>
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<tr>
<td>14. Israel</td>
<td>604</td>
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<td>15. Italy</td>
<td>282</td>
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<td>16. Japan</td>
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<td>2951</td>
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<td>17. Luxembourg</td>
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<td>45</td>
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<tr>
<td>18. Malaysia</td>
<td>892</td>
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<tr>
<td>19. Netherlands</td>
<td>188</td>
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<td>20. New Zealand</td>
<td>144</td>
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<td>21. Nigeria</td>
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<td>22. Norway</td>
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<td>23. Philippines</td>
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<td>24. Poland</td>
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<td>25. Portugal</td>
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<td>73</td>
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<td></td>
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<tr>
<td>26 ROC (Taiwan)</td>
<td></td>
<td></td>
<td>1509</td>
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<tr>
<td>27. Russia</td>
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<td>235</td>
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<tr>
<td>28. Singapore</td>
<td>457</td>
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<td>29. South Africa</td>
<td>471</td>
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<td>30. South Korea</td>
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<td>1499</td>
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<td>31. Sweden</td>
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<td>271</td>
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<td>32. Switzerland</td>
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<td>268</td>
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<tr>
<td>33. Ukraine</td>
<td></td>
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<td>164</td>
<td></td>
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<tr>
<td>34. United Kingdom</td>
<td>2298</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>35. United Arab Emirates</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>36. United States of America</td>
<td>5873</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>33,632</td>
<td>20877</td>
<td>3448</td>
<td>7964</td>
<td>892</td>
</tr>
<tr>
<td><strong>Proportion</strong></td>
<td>0.621</td>
<td>0.1025</td>
<td>0.237</td>
<td>0.027</td>
<td>0.0134</td>
</tr>
</tbody>
</table>

The remaining seven explanatory variables in chapter 5 are analysed using logistic regression. The hypothesised variables in the logistic regression are corruption perceptions, press freedom, State-owned enterprises, and State's interest in the capital market in order to protect investors; relating to $H_2$, $H_3$, $H_4$, $H_5$, respectively. There are no hypotheses regarding the remaining three independent variables (two
of Hofstede’s (2001) cultural dimensions: power distance and uncertainty avoidance; and log GNI) because they are control variables.

In its generalised formulation the multivariate logistic function can be expressed in the two equivalent forms below.

The logistic curve relates the independent variable, $X$, to the rolling mean of the dependent variable, $\rho(y)$. Tabachnick and Fidell (2007, p. 493) show that the formula for logistic regression is:

$$
\rho(y) = \frac{1}{1 + e^{-(b_1X_1 + b_2X_2 + ... + b_nX_n + b_0)}},
$$

$$
1 + e^{-(b_1X_1 + b_2X_2 + ... + b_nX_n + b_0)}
$$

\[\ldots \{4.1\}\]

Stated equivalently,

$$
\text{Logit}(p) = (b_1X_1 + b_2X_2 + ... + b_nX_n + b_0),
$$

\[\ldots \{4.2\}\]

Where $\rho(y)$ or logit($p$) denotes logistic function, $\rho = 1$ if accounts manipulation takes place and/or reported in country $i$ (i.e., countries where accounts manipulation were published in newspapers, the research/treatment sample), and 0 otherwise (in country $j$, $j$ being countries where accounts manipulation were not reported in newspapers, control sample). $X_1, X_2, ..., X_7$ are the seven explanatory variables keyed into equation (4.3) below.

Plugging in the institutional structure variables in the model, the logistic equation regressing probability of occurrence of accounts manipulation on the explanatory variables is expressed as:

$$
\text{Prob(ACCMan)} = F(\alpha + \beta_1\text{CORRUPT}_\text{ENVI} + \beta_2\text{PRESS}_\text{FREE} + \beta_3\text{SOEs} + \beta_4\text{INVSTPro} + \beta_5\text{log GNI} + \beta_6\text{Hofstede PD} + \beta_7\text{Hofstede UA} + \epsilon),\ldots \{4.3\}
$$

Where:
Effects of Institutional Structures on Accounts Manipulation, and Consequences for Firms Exposed In the Act: An International Study

**CHAPTER 4**

Prob(ACCMan) = 1, probability that accounts manipulation was found to have been reported in newspapers in country $i$, and 0, probability that accounts manipulation was not found or reported to have occurred in country $j$.

$\text{CORRUPT}_{\text{env}}$ = country's level of corruption perceptions

$\text{PRESS}_{\text{FREE}}$ = A country's extent of press freedom

$\text{SOEs}$ = extent of the State's dominance of the economic activities of a country

$\text{INVST}_{\text{Pro}}$ = extent of State's interest in the capital market in order to protect investors

Log GNI is logarithm of gross national income, measured at purchasing power parity

Hofstede's $PD$ measures inequality in societies.

Hofstede's $UA$ measures the extent to which societies try to avoid uncertainties related to the future, job insecurity, etc.

$\alpha$ = constant or intercept

$\beta_1, \beta_2, ..., \beta_7$ are the coefficients of each predictor variable

$\epsilon_i$ is the models unexplained residual

Consistent with the custom in prior studies that examined legal origin (e.g. La Porta et al. 1997, 1998, 2008; Harper and McNulty, 2008; and others) we capture it in this study by using five unrelated categories.

The sources and how the variables are measured are fully explained in section 4.4.

**4.6.2 Paired samples test, Wilcoxon Signed Ranks Tests, Sign Test, linear regression and chi-square test of association**

The second set of hypotheses in chapter 6 is related to $H_6$, $H_7$, and $H_8$. Following event study methodology $H_6$ is analysed using paired samples t-test, Wilcoxon
Signed Ranks Test, and Sign Test. $H_7$ is analysed using linear regression analysis while $H_8$ is analysed using chi-square test of association.

We gauge stock market reactions by using abnormal returns of share prices before and after the event. Both will be tested in the paired samples t-test analysis. The test uses the widely-accepted event study methodology (see Brown and Warner, 1980; and DeFond and Jiambalvo, 1994) to capture information content of exposed accounts manipulation through share prices reaction. Event studies are ways to directly test for market efficiency (e.g., Fama 1970) or information content of news event as a reduction in ex post abnormal stock returns is consistent with semi-strong-form market efficiency. We also follow Faccio et al. (2006), Bartov (1992), and Oppong's (1980) approaches to calculate a thirteen-day (-6, 6) announcement period abnormal returns.

In applying events study methodology for $H_6$, the study examines changes in share prices and stock returns. Event studies are ways to directly test for market efficiency as abnormal stock returns ex post event will be consistent with market efficiency. The event "window" examined by the study ranges from day -6 to day +6 (-6, 6), setting day of event to zero. The choice of this event window is arbitrary. While some researchers elect to use monthly event windows (e.g., Brown and Warner (1980)), others elect to use daily (e.g., Brown and Warner, 1985; and Files et at. 2009), weekly (e.g., Oppong 1980) or yearly (e.g., DeFond and Jiambalvo (1994)) event windows.

There are upsides (downsides) to the choice of short or long event windows. So far, there is no theory in events studies research that specifies or prescribes the choice of event windows. This is why, following prior research (e.g., Balsam et al. [2002]), we arbitrarily or conveniently chose these thirteen-day short windows around the publication day rather than a wider window. A short window will eliminate the problem of clustering and reduce the effect of other extraneous variables that have no relation with accounts manipulation but which may impact on data of a wider window.
Balsam et al. (2002, p. 1001, fi 13) agree that the choice of a very wide window will reduce the statistical power of a test whereas a very short window will fail to capture the stock prices reaction sufficiently, which can lead to insignificant results. It is expected that reasonable and short windows will allow the news of accounts manipulation to be impounded throughout the market, and for the market to quickly assimilate and price the news. It is equally probable that the choice of a very short window may or may not accomplish this objective.

**Definitions**

The following key words would be used in the second part of the study, formulae for the actual calculations are provided later on in the chapter and in chapter 6.

1) *Abnormal return, AR.* Calculated for one single firm, this refers to abnormal returns of any day in the event window, see equation (4.7).

2) *Cumulated abnormal returns, CAR.* This is the summation of the abnormal returns from day ±1 to day ±6 for one single firm, see equation (4.8).

The following matrix may help to explain this better:

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>1</th>
<th>1,1</th>
<th>1,2</th>
<th>1,3</th>
<th>1,4</th>
<th>1,5</th>
<th>1,6</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>o</td>
<td>2</td>
<td>2,1</td>
<td>2,2</td>
<td>2,3</td>
<td>2,4</td>
<td>2,5</td>
<td>2,6</td>
</tr>
<tr>
<td>m</td>
<td>3</td>
<td>3,1</td>
<td>3,2</td>
<td>3,3</td>
<td>3,4</td>
<td>3,5</td>
<td>3,6</td>
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</tr>
<tr>
<td>p</td>
<td>4</td>
<td>4,1</td>
<td>4,2</td>
<td>4,3</td>
<td>4,4</td>
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<td>a</td>
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<tr>
<td>98</td>
<td>98,1</td>
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<td>98,3</td>
<td>98,4</td>
<td>98,5</td>
<td>98,6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Firm 1 CAR
Firm 2 CAR
Firm 3 CAR
Firm 4 CAR
Firm 98 CAR

The entries in the cells represent the abnormal returns of a given company for a particular event day. For example, the abnormal return for company 1 on day 1 is located in cell 1,1. The abnormal returns for company 4 on day five is located in

![117](image)
cell 4.5. Through this we calculate 588 abnormal returns and 98 cumulative abnormal returns, CAR

3) *Average abnormal returns, AAR.* This is one day abnormal returns of *all* firms divided by the sample size $n$; where $n$ are the 98 firms, see equations (4.9) and (4.13).

4) *Cumulative average abnormal returns, CAAR.* This is the summation of the average abnormal returns of all 98 firms from day $\pm 1$ to day $\pm 6$, see equations (4.10) and (4.15).

We shall associate the terms pre (ex ante) and post (ex post) to describe whether the definitions above are before or after the event day.

**Analysis by the use of differences in means, t-test**

It is pertinent to explain in detail how the paired samples t-test is implemented for $H_6$. The exercise involves computing, analysing and comparing the differences between the means of pre- and post-event window data. This is done in order to determine whether there is a statistically significant difference between the means of pre/post event abnormal returns data.

For $H_6$, we test the null statement that the mean of post-event abnormal stock returns are not equal to those of pre-event abnormal stock returns.

As a parametric test, for the paired samples t-test to be valid some conditions or assumptions must be met. We shall examine the assumptions later in this chapter. Suffice it to say that the conditions of paired sample tests are met by the data for this study. Generally, except for the sets of data relating to hypotheses $H_4$ (on legal origin) and $H_5$ (on placement effect), it is expected that data distribution for the rest hypotheses is continuous.
Market model

The market model is the stochastic version of the capital asset pricing model of Sharp (1963) and Lintner (1965). It can be used to isolate abnormal returns. The market model is expressed as:

\[
\hat{R}_{bt} = \alpha + \beta_k M_{bt} + \varepsilon_{bt} \quad \ldots\quad \{4.4a\}
\]

By a rearrangement of terms, this is equivalent to

\[
\varepsilon_{bt} = \hat{R}_{bt} - \alpha - \beta_k M_{bt} \quad \ldots\quad \{4.4b\}
\]

Where

- \( \varepsilon_{bt} \) is the abnormal return for firm \( i \) on day \( t \). \( t = -6, -5, -4, \ldots, +6 \)
- \( \hat{R}_{bt} \) is the realised return for firm \( i \) on day \( t \). \( t = -6, -5, -4, \ldots, +6 \)
- \( M_{bt} \) is the realised market index return of country \( i \) where firm \( i \) is listed on day \( t \).
  
  \( t = -6, -5, -4, \ldots, +6 \)

There have been variants of the market model, which have been used by prior research. Two such variants are the Fuller, Netter and Stegemoller (2002) modified market model and the Brown and Warner's (1980) market adjusted returns method.\(^{48}\)

Both of these variants are essentially the same and they are used to calculate daily abnormal stock returns. The only difference between these two variants is the symbol used in representing daily abnormal returns.

These two variants of the market model calculate daily abnormal stock returns as follows:

\[
AR_{bt} = \hat{R}_{bt} - M_{bt} \quad \ldots\quad \{4.5a\} \quad \text{Fuller, Netter and Stegemoller (2002)}
\]

\[
\varepsilon_{bt} = \hat{R}_{bt} - M_{bt} \quad \ldots\quad \{4.5b\} \quad \text{Brown and Warner (1980)}
\]

This study mimics Fuller, Netter and Stegemoller (2002) and Brown and Warner (1980) by using the modified market model.

From \( \{4.5a\} \) and \( \{4.5b\} \), \( AR_{bt} = \varepsilon_{bt} \).

\(^{48}\) The same variants of the market model can also be found in Vernimmen \textit{et al}. (2009, p. 277) and Ross \textit{et al}. (2002, p. 351)
Typically, abnormal returns, $AR_{tn}$, are assumed normal independent and identically distributed. Expected mean of the event day abnormal returns, $E(AR_{tn}) = 0$.

The modified market or adjusted market model appears to be a simple model to implement because it does not use Ordinary Least Square, OLS, to estimate $\alpha$ and $\beta$; in fact, it does not estimate $\alpha$ and $\beta$ at all. It can be seen from equations {4.4a, b} and {4.5a, b} that parameters $\alpha$ and $\beta$ are the differences between the market model and its modified variants.

In using either {4.5a} or {4.5b}, we use a true return generating process to calculate firms' abnormal returns by subtracting the realised daily return of stock market index of the country where a firm is listed from the firm's daily stock return each day around the event period.

Brown and Warner (1980) show that for short window event studies weighting the market return by a firm's systematic risk does not significantly improve estimation. Because of this they assume $\beta = 1$. According to Brown and Warner (1980, p. 252) "an assumption sufficient for using such a performance measure is that the systematic risk for each sample security is equal to 1".

Because $\beta$ measures the systematic risk of a firm, which we assume in this study is likely to be stable within the short event window of day -6 to day +6, we assume $\beta$ to be unity and constant for all firms. It is taken by the capital asset pricing model that $\alpha + \beta = 1$, or that $\alpha = 1 - \beta$. Because $\beta$ is equal to 1 or unity, it therefore means that $\alpha = 0$, hence as used in this study the modified market model or the market adjusted model is well-specified.

Brown and Warner (1980) come to the conclusion that simple methodologies based on the market model are both well-specified and relatively powerful under a wide

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49 Note that the market model or adjusted market model sets beta to unity for all firms irrespective of size. We note that our sample is likely to consist of firms with higher (or lower) than average systematic risk, beta. Beta can proxy firm size as "empirically there is a negative relationship between beta and firm size" (Brown and Warner, 1980) such that large firms are expected to have lower beta while small firms are expected to have higher beta. This study does not address the size effect of beta.
variety of conditions, and in special cases even simpler methods also perform well. So, even though the modified model we use in this study appears to be simple, for our purposes, it is well-specified, powerful and can perform well. Finally, other extant studies that we referred to above have used the same modified model to good effect.

According to the CRSP, the "return most days is simply the relative or percentage change in price from the end of one day to the end of the next". That is,

Firm’s daily returns, $\hat{R}_{bt} = \left( \frac{P_t - P_{t-n}}{P_{t-n}} \right) = \left( \frac{P_t}{P_{t-n}} - 1 \right)$, \ldots \hspace{1cm} \{4.6a\}

Market daily index returns, $M_{bt} = \left( \frac{\hat{M}_{it} - \hat{M}_{it-n}}{\hat{M}_{it-n}} \right) = \left( \frac{\hat{M}_{it}}{\hat{M}_{it-n}} - 1 \right)$, \ldots \hspace{1cm} \{4.6b\}

Subtracting the last term in \{4.6b\} from the last term in \{4.6a\} gives daily abnormal returns of firm $i$ on day $t$, $(\hat{R}_{bt} - M_{bt})$, or $AR_{bt}$ as

$$(\hat{R}_{bt} - M_{bt}) = AR_{bt} = \left( \frac{P_t}{P_{t-n}} - 1 \right) - \left( \frac{\hat{M}_{it}}{\hat{M}_{it-n}} - 1 \right)$$. \hspace{1cm} \{4.7\}

Please note that abnormal returns are calculated in this chapter as price relative. These will be expressed in percentages in the analysis in chapter 6.

Six-day cumulated abnormal returns (CAR) for each firm is the average of the summed \{4.7\} over six days and then dividing by 6 thus:

$$CAR = \frac{\sum (\hat{R}_{bt} - M_{bt})}{6} = \frac{\sum AR_{bt}}{6} = \frac{\sum \left( \frac{P_t}{P_{t-n}} - 1 \right) - \left( \frac{\hat{M}_{it}}{\hat{M}_{it-n}} - 1 \right)}{6}$$. \hspace{1cm} \{4.8\}

To get average abnormal returns (AAR) for all firms on an event day, $t$, we divide $AR_{it}$ by the number of firms (ninety-eight) thus:

\hspace{1cm} 50 See http://www.library.hbs.edu/helpsheets/wrdscrspstock.html for formulas to calculate stock returns.
CHAPTER 4

\[ \text{AAR}_t = \frac{\sum (\hat{R}_{bt} - M_{bt})}{98} = \frac{\text{AR}_{il}}{98} = \left[ \frac{P_{it} - P_{it-1}}{P_{it-1}} - \frac{\dot{M}_{it} - \dot{M}_{it-1}}{\dot{M}_{it-1}} \right] \]

The daily AARs are cumulated over the window period for computing the cumulative average abnormal returns, CAAR, of all 98 firms. This is shown below:

\[ \text{CAAR} = \sum_{t=1}^{(5,+6)} (\hat{R}_{bt} - M_{bt}) = \sum_{t=1}^{(5,+6)} \text{AAR}_{it} \]  

Equation (4.10) calculates the cumulative average abnormal returns on both sides of the event day; ex post and ex ante cumulative abnormal returns are denoted by \( t + 6 \) and \( t - 6 \), respectively. The average abnormal return calculated through (4.9) is shown in Graph 6.1 in chapter 6, page 161, and is referred to as "day-on-day or "rolling" average abnormal returns in the graph.

A second type of price relative is calculated in this thesis and is explained as follows: Firm \( i \)'s day zero stock price, \( P_{bt,0} \), and day zero market index, \( \dot{M}_{bt,0} \), are used as benchmarks or denominators in calculating realised stock returns while firm \( i \)'s stock price of any day within the -6 to +6 days of the window, \( P_{bt} \), and the market index, \( \dot{M}_{bt} \), within the same period are used as numerators in calculating realised stock returns. That is,

\[ \hat{R}_{bt} = \left( \frac{P_{it} - P_{bt,0}}{P_{bt,0}} \right) = \frac{P_{it}}{P_{bt,0}} - 1 \]  

\[ M_{bt} = \left( \frac{\dot{M}_{it} - \dot{M}_{bt,0}}{\dot{M}_{bt,0}} \right) = \frac{\dot{M}_{it}}{\dot{M}_{bt,0}} - 1 \]

Using the last terms (4.11a) and (4.11b), abnormal returns (all based) on day zero is,

\[ (\hat{R}_{bt} - M_{bt}) = \text{AR}_{bt} = \left( \frac{P_{it}}{P_{bt,0}} - 1 \right) - \left( \frac{\dot{M}_{it}}{\dot{M}_{bt,0}} - 1 \right) \]
Take note that \( \{4.11\} \) and \( \{4.12\} \) will neutralise abnormal returns of day zero to a zero value, as we shall see in Graph 6.2, chapter 6, page 162 and Graph 7.1.2 in chapter seven and/or in the annexed tables to the left of the graphs.

To get average abnormal returns (AAR) for all firms on an event day, \( t \), we divide \( AR_{ij} \) by the number of firms (ninety-eight) thus:

\[
AAR_t = \frac{\sum(\tilde{R}_{bt} - M_{bt})}{98} = \frac{AR_{ij}}{98} = \left[ \frac{P_{it} - P_{it-0}}{P_{it-0}} - \frac{\dot{M}_{it} - \dot{M}_{it-0}}{\dot{M}_{it-0}} \right] / 98 \quad \ldots\{4.13\}
\]

Using share prices and market index returns of day zero as the denominator throughout, the daily AARs are cumulated over the window period for computing the CAR as shown below:

\[
CAR = \sum_{i=-6}^{6}(\tilde{R}_{bt} - M_{bt}) = \sum_{i=-6}^{6}AAR_{it} \quad \ldots\{4.14\}
\]

Equation \( \{4.14\} \) is the mean of five-/six-day cumulative average abnormal returns of all 98 firms.

The average abnormal return of each event day that is calculated by \( \{4.13\} \) is shown in Graph 6.2 on page 162 in chapter six. The reader may wish to look at Graph 6.2 in chapter six for the effect of this. The reader may also wish to compare equation \( \{4.10\} \) with equation \( \{4.14\} \), or compare Graph 6.1 and Graph 6.2, both in the same chapter, chapter six.

We are interested in daily event window following news of accounts manipulation published in newspapers because daily stock returns are capable of ameliorating possible clustering effects associated with monthly or quarterly or weekly or yearly stock returns. Daily stock returns following publication of news of accounts manipulation allow us to make inferences about the information content of the news as newspapers are a medium of publicly available information.
We compute overall mean cumulative abnormal returns of all 98 firms put together as:

$$\text{CAAR} = \frac{\sum_{i=1}^{N} (R_{bi} - M_{bi})}{N} = \frac{\sum_{i=1}^{N} \text{AAR}_{bi}}{N} \ldots \{4.15\}$$

Brown and Warner (1980, fn 5, p. 211) opine that in the absence of problems such as non-normality and non-synchronous trading, all of the methods for measuring abnormal performance are potentially more powerful with daily data. They also point to the fact that daily returns have smaller standard deviations than do monthly (or yearly, or weekly) returns and argue that the power of all the methodologies increases with knowledge about precisely when an event occurs. Hence, the “use of daily data is potentially useful in that it permits the researcher to take advantage of prior information about the specific day of the month on which an event took place.”

**Relationship between ex post abnormal returns and amount**

We try to determine whether the materiality of the amount mentioned in the news can correlate with ex post abnormal returns of each firm. In this regard, we will be regressing ex post abnormal returns on the log of amount mentioned in newspapers and log of total assets, thus:

$$AR_{t+n} = \alpha + \beta_1 \text{Log\_Amount} + \beta_2 \text{Log\_TA} + \epsilon_{t+n} \ldots \{4.16\}$$

Where

- $AR_{t+n} = \text{Ex post daily abnormal returns of the } i^{th} \text{ firm, beginning from day zero}$
- $\text{Log\_Amount} = \text{log of the sum of the amount mentioned in the news publication}^{51}$
- $\text{Log\_TA} = \text{log of total assets of each firm}^{52}$

---

51 Miller (2006, 1032) did not deflate sum of the amount involved but takes the log of it. We mimic him in this study.

52 There is no theory that prescribes what proxy to use for firm size. Some studies are found to use total assets while others use some other measures, such as value of shareholders’ equity or sales. What is important is that somehow one controls for size in one’s study, using some logic and relevance. We could
This explicitly controls for firm size. Total assets data for each firm are taken as at the end of the year in which each firm’s accounts manipulation is alleged to have occurred. As a control variable, total asset is to examine whether the consequences of exposed accounts manipulation echoes more according to the size of the firm caught in manipulation.

In the model specifications in chapter 6, we investigate the extent to which these predictors can explain the variation in abnormal returns (especially that of day zero, being the day of news release).

Chi-square test for placement effect

The chi-square test of independence is a non-parametric statistical technique for testing the association between observed frequencies of two discrete variables. This study uses the cross-tabulation chi-square test to examine the association between the section where news is inserted in newspapers and ex post abnormal stock returns.

The chi-square equation is of the type:

\[ X^2 = \sum \frac{(f_o - F_e)^2}{F_e} \quad \{4.13\} \]

Where

- \( f_o \) represents observed frequencies of changes in share prices and type of section
- \( F_e \) represents expected frequencies of changes in share prices and type of section.

Tabachnick and Fidell (2007) shows that for a contingency table expected frequency, \( F_e \), “for a given cell is obtained by multiplying together the totals for the row (R_i) and column (C_j) in which the cell is located and dividing by the total sample size (N)”.

not scale by sales for two reasons. First, we performed a correlation check and found that there is high positive correlation (0.52) between total assets and sales. Compare this to Roychowdhury (2006, p. 347) who reports a very high positive correlation (0.91) between total assets and sales. Second, sales are an integral part of earnings, which has been found to be mostly used in accounts manipulation (also, see Roychowdhury, 2006).
That is, $F_e = \frac{R_iC_j}{N}$ \ldots (4.14)

The $\chi^2$ test to be conducted tests the null hypothesis of no association ($H_0$) against the alternative hypothesis that there is an association between the section where news is inserted in newspapers and \textit{ex post} abnormal stock returns ($H_1$).

### 4.6.4 Determination of event day

While collecting stock returns data for the analysis in chapter 6, the event day, day zero, of three of the 99 firms in the qualifying sample (see Table 4.3 on page 90) were found to fall on a non-trading day (a public holiday, or a weekend). The three firms are part of the 16 firms without data on amount mentioned in the news which did not feature in the linear equation of section 6.2.2 in chapter 6. We have not controlled for events that fall on a non-trading day. What we did in that case is to regard the last trading day immediately before the publication of the news as the day zero. At first thought, this may appear likely to affect the precision of the event day or day zero used in the study, but since this did not affect the majority of the publications the effect will be inconsequential.

In all activities relating to historical dates and calendar issues, we had an online calendar at our disposal. It is available at http://www.timeanddate.com/calendar.

### 4.7 Justifications for the statistical methods used in analysing data

The following paragraphs provide justifications for the statistical methods used in analysing data of the study. Most of the materials in the paragraphs are adapted from Garson (2009), Tabachnick and Fidell (2007) and Cohen \textit{et al.} (2003).

#### 4.7.1 Reasons for using logistic regression analysis

According to theory, logistic models allow the prediction of a dependent variable on the basis of continuous independent variable(s). Logistic regression also enables
a researcher to determine the percentage variation in the dependent variable that is explained by the independent variables in the equation. Furthermore, it can be used to rank the relative importance of independents, and to assess interaction effects.  

4.7.1.1 Assumptions of logistic regression

The assumptions behind the use of logistic regression include (see Garson 2009):

1. It does not assume that a linear relationship exists between a dependent variable and the independent variable(s). It can handle nonlinear effects even when exponential and polynomial terms are not explicitly added as additional independents because the logit link function on the left-hand side of a logistic regression equation is non-linear. However, it is also possible and permitted to add explicit interaction and power terms as variables on the right-hand-side of the equation, as in OLS regression.

2. It also assumes that a dependent variable need not be normally distributed. However, it does assume its distribution is within the range of the exponential family of distributions, such as normal, Poisson, binomial, gamma. Solutions may be more stable if predictors have a multivariate normal distribution.

3. It assumes that a dependent variable need not be homoscedastic for each level of the independents; that is, there is no homogeneity of variance assumed: variances need not be the same within categories.

4. It assumes that error terms are not normally distributed.

5. It does not require that the independent variables be interval and unbounded

53 (If interested, please see Garson (2009) online at http://faculty.chass.ncsu.edu/garson/PA765/logistic.htm for more elucidation of the uses of logistic regression).
4.7.2 Reasons for using linear regression analysis

Linear regression generally is used when a researcher wishes to test that a straight line relationship can be established between a dependent variable and independent variable(s). Multiple linear regression is employed to account for (predict) the variance in an interval dependent, based on linear combinations of interval, dichotomous, or dummy independent variables. Multiple linear regression analysis is used to determine that the independent variables in an equation explain a proportion of the variance in a dependent variable at a significant level, conventionally at the 0.05 or 0.01 levels.

An equation of the type, \( y = \alpha + b_1x_1 + b_2x_2 + \ldots + b_nx_n + c \) is a multiple linear regression equation whereas an equation of the type, \( y = \alpha + b_1x_1 + c \) is simple linear regression equation. In the equations, the intercept, \( \alpha \), is constant and the error term, \( c \), is the residual. \( b \) is the slope or regression coefficient of the equation and \( x \) is a variable. Each \( b \) represents the amount by which a dependent variable changes when a corresponding independent variable changes by 1 unit. In coefficient tables, the \( b \) coefficients are the beta weights, and the ratio of the beta coefficients is the ratio of the relative predictive power of the independent variables.

The \( R^2 \) statistic, otherwise called coefficient of determination, and correlations between \textit{ex post} abnormal returns and amount is used to determine the percentage of variation in a dependent variable that is explained by the combined independent variables in an equation. At the same time by comparing the relative beta weights of each independent variable, it can establish the relative predictive ability of an independent variable.

4.7.2.1 Assumptions of linear regression

There are four main assumptions of linear regressions, and these include:
1. Linearity. This is an assumption that the underlying relationship between a dependent variable, \( y \), and the independent variable(s), \( x \), follows a straight line.

2. Independence. The error term, \( e \), for one value of \( y \) is assumed to be independent of the error term in any other value of \( y \). Simply put, independence assumption requires that the error term, should be uncorrelated with each of the independents.

3. Constant variance. It is assumed that the variance, \( \sigma^2 \), of the random errors is the same for all values of the independent variables. This means that the points on either side of a straight line should be constant.

4. Normality. This is an assumption that errors have a normal distribution with mean zero and variance \( \sigma^2 \). This means that if repeated measurements of the dependent variables are taken for a particular value of an independent variable then most of them are expected to fall close to the regression line and very few to fall far away from the line.

In addition, other assumptions of linear regression include:

5. It assumes that multicollinearity can be a problem among independent variables in a model. Multicollinearity occurs if independent variables in a model are inter-correlated with each other. The impact of multicollinearity is that it inflates standard errors and makes assessment of the relative importance of the independents unreliable.

6. It assumes that data are unbounded. That is, the regression line produced by OLS can be extrapolated in both directions but is meaningful only within the upper and lower natural bounds of the dependent variable.

4.7.3 Reasons for using chi-square test for placement effect

Tabachnick and Fidell (2007, p. 58) argue that chi-square test of independence is the appropriate method to analyse the relationship between two discrete variables.
Effects of Institutional Structures on Accounts Manipulation, and Consequences for Firms Exposed in the Act: An International Study

CHAPTER 4

Compared to the parametric techniques discussed above, the non-parametric chi-square test has "less stringent assumptions" (Pallant, 2007, p. 211).

### 4.7.3.1 Assumptions of chi-square test

Two most important assumptions of chi-square include:

1. The sample must be randomly drawn
2. Observations must be independent where each case is counted only once, and cannot appear in more than one category or sample

### 4.7.4 Reasons for using paired samples t-test

The paired samples t-test is used in pre/post test studies, especially in events studies where one is interested in what happens between the opposite sides of an event. Standard event study research (e.g., Brown and Warner (1980, 1985), Faccio et al. (2006), Files et al. (2009), DeFond and Jiambalvo (1994), Bartov (1992), Oppong (1980) among others) has shown that the test is used to analyse and compare the differences between the means of ex post cumulative abnormal returns and ex ante cumulative abnormal returns around an event. This is done in order to determine whether there is a statistically significant difference between the two means.

### 4.7.4.1 Assumptions of the paired samples t-test

1. Data must be continuous and measured at the interval or ratio level.

2. Observations must be independently measured. That is to say, for example, that ex ante share prices must not influence ex post share prices.

3. Data must be normally independently identically distributed or, in cases where this is violated, sample size must be \( \geq 30 \).

4. Data must have homogeneity of variance, which is to say that they must come from populations of equal variances.
The data analysis to be undertaken in chapters 5 and 6 involves running a battery of tests using the methods described above.

4.8 Summary

This chapter explicates in detail a number of methodological and research designs issues relating to the study. Some of the issues it addresses include definition of variables and how to measure or operationalise them and methods of data collection. Other issues are description of sample, methods of data analyses as well as the research method employed for the study. It shows why and how the study uses the quantitative research method for its investigations.

In terms of analytical method, it describes the statistical research method employed including chi-square test of association, logistic regression, paired samples t-tests, and linear regression. These are methods that are found to be pervasive in the positivist accounting literature, where the researcher assumes the role of a natural or neutral scientist, working with numbers as she observes them. For reasons explained in the chapter, the choice of the positivist method is consistent with established tradition in the economics-based positive accounting literature (e.g., Watts and Zimmerman 1978, 1986, 1990). As a deductive method, the hypotheses tested allow the study to make inferences, as we see in the ensuing chapters.

Chapter 5 analyzes the data on environmental influences on accounts manipulation while chapter 6 analyzes the consequences data.
Chapter 5

Analysis of institutional structures data and tests of hypotheses

5.1 Introduction

In great details, the preceding chapter addressed various aspects of the methodology and research designs issues employed in the study. The present chapter analyzes the data on the environmental factors that can likely influence accounts manipulation. It carries out tests of the five hypotheses of this strand of the study.

5.2 Analytical statistical software packages used

There are a number of alternative computational statistical software packages available on the market to analyse quantitative data, such as those of the present study. They include E-Views, SAS, SPSS, Stata, and MATLAB to name but a few of the well-known on the market. Each of these statistical software packages has its features or properties. An examination of the statistical methods used by prior research tends to reveal a predominance of the SPSS. Because of its pervasiveness in the positivist literature, and because of familiarity, ease, and efficiency, this study uses the SPSS in analyzing its data.

5.3 Measurement and operationalisation of influences variables

This section explains how the data relating to environmental influences on accounts manipulation are analysed. Logistic regression analysis is used to model the independent variables in this section, except legal origin, $H_1$.

Because of statistical theory requirement (as explained in chapter 4 and the latter part of the present chapter), we use chi-square to analyse legal origin.
Table 5.1 presents the variables investigated in this chapter. The table also summarises the hypotheses relating to each of the independent variables as well as indicating the sources of the instruments used in measuring the variables. The table explains the source(s) of data used in measuring each of the explanatory variables.

Variables relating to $H_1$ to $H_3$ enter the logistic regression equation as they are the hypothesised independent variables in the logistic equation. The control variables are national cultural values classified by Hofstede (2001) and country level of wealth (GNI) which is used to measure managers' economic status or wellbeing.

Table 5.1 Summary of Institutional Structures Hypotheses and Sources of Data

<table>
<thead>
<tr>
<th>Variables</th>
<th>Summary of hypotheses</th>
<th>Sources of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal origin</td>
<td>There is no association between the legal origins in which firms operate and the occurrence of accounts manipulation, ($H_1$)</td>
<td>La Porta et al. (1998, 2008), Harper and McNulty (2008) and The World Factbook (2009)</td>
</tr>
<tr>
<td>(LEGAL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrupt environment</td>
<td><em>Ceteris paribus</em>, the level of corruption is not likely to affect the occurrence of accounts manipulation, ($H_2$)</td>
<td>Corruption Perception Index of Transparency International</td>
</tr>
<tr>
<td>(CORRUPT&lt;sub&gt;env&lt;/sub&gt;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press freedom</td>
<td><em>Ceteris paribus</em>, the level of press freedom is not likely to affect the occurrence of accounts manipulation, ($H_2$)</td>
<td>World Press Freed Index of Reporters Without Borders</td>
</tr>
<tr>
<td>(PRESS&lt;sub&gt;free&lt;/sub&gt;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State-Owned Enterprises (SOEs)</td>
<td><em>Ceteris paribus</em>, State's ownership of enterprises is not likely to affect the occurrence of accounts manipulation, ($H_3$)</td>
<td>Economic Freedom of the World database</td>
</tr>
<tr>
<td>Investor protection</td>
<td><em>Ceteris paribus</em>, the State's attempts at investor-protection is not likely to affect the occurrence of accounts manipulation, ($H_3$)</td>
<td>Strength of Investor protection index of World Banks' Doing business</td>
</tr>
<tr>
<td>(INVST&lt;sub&gt;pro&lt;/sub&gt;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Gross national income</td>
<td>World Bank's World Development Indicators</td>
</tr>
</tbody>
</table>

5.3.1 Legal origin

This is a categorically coded variable. Following the combination of sources used in classifying legal origin as described in detail in chapter 4, and in the above table
it is categorised as English common law origin, French commercial code, German commercial code, Scandinavian code, Russian legal origin (adapted from Harper and McNulty (2008)).

5.3.2 Corrupt environment

Transparency International's Corruption Perceptions Index (CPI) is used to measure corrupt environment. In line with prior studies (e.g., Lee and Ng (2006), Pantzalis et al. (2008)), we re-recalibrate the index to range from 0-10 so that high score implies high level of corruption perceptions of a country. We arrive at the score used for each country in this study by taking the average of 2000-2008 scores. This is to reduce abrupt variations in scoring of the current year that might arise due to random effects. How corrupt environment is measured is fully explained in section 4.4.1.3 of chapter 4.

5.3.3 Press freedom

We measure press freedom using the instrument of Reporters without Borders. On a continuous scale, the score for press freedom ranges from 0 to 100. We re-calibrated the index in such a way that low score means low press freedom while high score indicates high press freedom. Section 4.4.1.3 of chapter 4 fully explains how press freedom is measured.

5.3.4 State-owned Enterprises

State-owned Enterprises (SOEs) indicates the extent of the State’s dominance of the economic activities of a country. The scores for each country range from 0 to 10. We associate a high score with a high level of government investment. Again, how the index is measured is fully explained in section 4.4.1.3 of chapter 4.
5.3.5 Investor-protection

We examine the State's intervention in commerce and industry to protect investors. Investor-protection is measured by the strength of investor-protection index taken from Doing Business, which is an arm of the World Bank.

The index ranges from 0 to 10, with higher values indicating more investor-protection. The index is fully explained in section 4.4.1.3 of chapter 4.

5.3.6 Power Distance

The instrument to measure power distance is taken from Hofstede [2001, pp. 500-502]). The score for each country ranges from a scale of 1-100, the higher the score for a country the higher the inequality in the country. Please refer to the discussion of power distance in section 4.4.1.3.5 of chapter 4.

5.3.7 Uncertainty Avoidance

Uncertainty avoidance captures such concerns for time, the future, uncertainty, and anxiety. It defines how people deal with rule orientation, employment stability and stress. Countries are rated on a UA scale of 1-100. For example, a country whose citizens are worried about the future, are stressful, faces unstable employment situations will be scored high whereas a country whose citizens exhibit the opposite tendencies will be scored low. Section 4.4.1.3.5 of chapter 4 fully discusses uncertainty avoidance as enunciated by Hofstede (2001).

5.3.8 Gross National Income

We believe that managers' economic condition as captured by the wealth of the country in which they operate is likely to mediate their behaviour, hence we control for it in explaining the occurrence of accounts manipulation. We proxy a manager's economic status using countries' gross national income per capita, calculated at
purchasing power parity, GNI. We obtain data of each country’s gross national income per capita for years 2000-2008 from the World Development Indicators database of the World Bank. The GNI figure stated in this study is the average of the data for 2000-2008. Gross national income is fully explained in section 4.4.1.3.5 in chapter 4.

5.4 The analysis

The analysis of data relating to the institutional structures is presented in the following pages, beginning with legal origin.

5.1.1 Analysis of legal origin data

Legal origin identifies the legal system from where the 183 firms exposed in accounts manipulation comes; please refer back to Table 4.4 of the preceding chapter.

<table>
<thead>
<tr>
<th>Legal Origin</th>
<th>Count</th>
<th>%</th>
<th>Number of listed companies</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>114</td>
<td>62.3%</td>
<td>20877</td>
<td>62.10</td>
</tr>
<tr>
<td>French</td>
<td>29</td>
<td>15.8%</td>
<td>3448</td>
<td>10.25</td>
</tr>
<tr>
<td>German</td>
<td>21</td>
<td>11.5%</td>
<td>7964</td>
<td>23.70</td>
</tr>
<tr>
<td>Scandinavian</td>
<td>7</td>
<td>3.8%</td>
<td>892</td>
<td>2.70</td>
</tr>
<tr>
<td>Russian</td>
<td>12</td>
<td>6.6%</td>
<td>451</td>
<td>1.34</td>
</tr>
</tbody>
</table>

It is analysed separately as it is not included in the logistic regression model. We examine the distribution of exposed accounts manipulation in each legal origin. Physical counts of how many firms were reported in the act in each legal origin is presented in Table 5.2 and it shows that majority of the cases of accounts manipulation were reported to have occurred in countries operating the English

54 This is based on the law of one price all over the world, implying that in the absence of transaction costs, identical goods will have the same price in different markets of the world.

common law system. The counts and numbers in this table, respectively, come from the "total row" in Table 4.4 and Table 4.6 of chapter 4. It can be seen that 62.3% of the observed cases of accounts manipulation were reported to have occurred in English common law system. This is followed by French commercial code origin with 15.8% of the reported cases. German commercial code origin comes next with 11.5%. The legal origin with the least observed cases of accounts manipulation is Scandinavia with 3.8% of the total cases. Russian legal origin has 6.6% of the cases.

The high number of published cases of accounts manipulation from English common law countries that our data collection exercise/search uncovered can be attributed to two main factors: one, the relatively freer press environment in English common law countries when compared to the level of press freedom in other legal origins. Two, the high number of companies listed in English common law countries is far higher than the number of companies listed in other legal systems put together (more than 62% of the world’s listed companies, see Table 4.6 in chapter 4, page 113).

5.4.1.1 Chi-Square test of association for legal origin hypothesis, $H_1$

We now run two separate chi-square tests to test the association between accounts manipulation and legal origin. The first test relies on an unbiased assumption (or null hypothesis) that there is no association between legal origins in which firms operate and the occurrence of accounts manipulation, see $H_1$. That means that accounts manipulation is equally likely to occur anywhere in the world irrespective of the legal origin of a country. This assumption requires us to assign equal weight of 0.20 to each of the five legal origins. Thus we multiply 0.20 by 183 to get 36.667 (rounded to 37, for mathematical processing purposes) as the expected frequencies of accounts manipulation from each legal origin.

\[56 \text{ See Table 4.4 of chapter 4 for a distribution of published cases of accounts manipulation according to countries.}\]
Analysis of institutional structures data and tests of hypotheses

Chapter V

Under this assumption, we calculated $X^2$ as:

$$X^2 = \frac{(114-37)^2}{37} + \frac{(29-37)^2}{37} + \frac{(21-37)^2}{37} + \frac{(12-37)^2}{37} + \frac{(7-37)^2}{37}$$

$$X^2 = 160.24 + 1.73 + 6.92 + 16.89 + 24.32 = 210.10$$

Critical values of chi-square distribution (4 df) as in F-tables are 9.49 (for $p$-value of 0.05) and 7.779 (for $p$-values of 0.10).

Since the computed chi-square value is more than the Critical chi-square value, we reject the null hypothesis that the occurrence of accounts manipulation is not associated with a country’s legal origin.

The second test relates number of accounts manipulation reported in each legal origin to the proportion of the number of listed firms in that legal origin. Using 2000-2008 data, we compute average number of listed companies in each legal origin and this is shown in Table 5.3.

| Table 5.3 Actual and Expected Number of Accounts Manipulation in Legal Origins |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| Average # of listed companies (a) | 20877           | 3448            | 7964            | 892             | 451             | 33632            |
| Proportion of total companies (b) | 0.62            | 0.10            | 0.24            | 0.03            | 0.01            | 1                |
| Actual number exposed (c)        | 114             | 29              | 21              | 12              | 7               | 183              |
| Expected number exposed (d)$^2$   | 114             | 18              | 44              | 5               | 2               | 183              |

$^1$ Average of 2000-2008

$^2$ ($c = (b) * 183 = \text{Expected number of accounts manipulation} = \text{proportion of listed companies * total number of accounts manipulation reported}$)

$^\ast$ Rounded to the nearest whole number

$$X^2 = \frac{(114 - 114)^2}{114} + \frac{(29 - 18)^2}{18} + \frac{(21 - 44)^2}{44} + \frac{(12 - 5)^2}{5} + \frac{(7 - 2)^2}{2}$$

$$X^2 = 0 + 6.72 + 12.02 + 9.80 + 12.5 = 41.04$$

$^{57}$ Critical Values of the Chi-Square Distribution can be found at the back pages of any standard statistics text.
Again, the computed $X^2$ value of 41.04 is more than Critical $X^2$ value, so we reject the null hypothesis that the occurrence of accounts manipulation is not associated with a country’s legal origin.

Based on these two chi-square tests, we therefore conclude that there is an association between legal origins in which firms operate and the occurrence of accounts manipulation.

If the number of exposed accounts manipulation in English legal origin is related to the number of companies listed there vis-à-vis the total number of companies listed worldwide, it will be appreciated why our result is inconsistent with Burgstahler et al. (2006, p. 1012) who argue that in countries with large and highly developed equity markets, public firms engage in even less earnings management.

The inconsistency between our result and Burgstahler et al.’s (2006) can be reconciled by considering the almost unfettered press environment in which firms in English legal origin operate. If one were to refer to Table 5.3 one would see that more than 62% of listed companies in the world are based in countries that follow the English legal system, e.g. U.S. and UK. Arguably, these countries have a vibrant press so much so that the press is able to report more cases of accounts manipulations there. So the relatively free press environment in English legal origin which is able to publish most cases of accounts manipulation than the press in other legal origins could have driven the result obtained in this study.

In support of our position, Ball (2009) observes that,

"Common law countries, chief among them the United States, have built large debt and equity markets, and correspondingly large public corporate sectors, by following a model founded on high-quality financial reporting and disclosure. This allows lenders, shareholders, suppliers, and customers to transact at arm's length with corporations, across a public market, without private (insider) access to information about them. Consequently, high-quality financial reporting has long been viewed as a foundation of the U.S. financial system."

"
Ball (2009) adds that

"In contrast, public financial reporting has not played such an important economic role in code law countries, including most of continental Europe. Under the code law model, access to information has been more on a relationship basis, public financial reporting has been lower in quality by observable measures, large corporations have been more likely to be private, and public capital markets have been a comparatively smaller part of the economy." – Ball (2009, p.6)

5.4.2.1 Analysis of accounts manipulation using the predictor variables

The analysis that follows examines the effect of the predictor variables on accounts manipulation. In the logistic regression equation, probability of accounts manipulation is regressed on corrupt environment (\( \text{CORRUPT}_{\text{ENV}} \)), press freedom (\( \text{PRESS}_{\text{FREE}} \)), State-owned enterprises (SOEs), State’s interest in the capital market by way of investor-protection (\( \text{INVSTPro} \)), Hofstede’s PD and UA, and \( \log \text{GNI} \).

In the logistic regression, we assign 1 to each of the 36 countries where accounts manipulation was reported (the treatment sample) and 0 to each of the 36 countries where it was not reported, the control sample. (Please refer back to the latter part of section 4.3 of the last chapter for a detailed discussion of how the 36 countries in the control sample were selected; also refer back to Table 4.1 on page 82, Panel B, of the same chapter for countries included in the control sample). The outcome of the logistic regressions is shown and analysed below. The case processing summary is shown in Table 5.4 while the descriptive statistics are shown in Table 5.5.

<table>
<thead>
<tr>
<th>Table 5.4 Case Processing Summary of Logistic Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unweighted Cases*</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Selected Cases</td>
</tr>
<tr>
<td>Missing Cases</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Unselected Cases</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Table 5.5 presents the descriptive statistics of the full sample. The minimum (maximum) score for CORRUPT ENV is 0.70 (8.50), with a mean score of 4.86 and standard deviation of 2.34. Minimum (maximum) score for the level of press freedom (PRESS \textsubscript{Free}) is 6.23 (99.14), mean score of 71.93 and standard deviation of 28.57.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corruption Perceptions Index</td>
<td>72</td>
<td>.70</td>
<td>8.50</td>
<td>4.8597</td>
<td>2.33972</td>
</tr>
<tr>
<td>Press freedom</td>
<td>72</td>
<td>6.23</td>
<td>99.14</td>
<td>71.9297</td>
<td>28.57094</td>
</tr>
<tr>
<td>Investor-protection</td>
<td>72</td>
<td>2.70</td>
<td>9.30</td>
<td>5.5316</td>
<td>1.50670</td>
</tr>
<tr>
<td>State's ownership of enterprises</td>
<td>72</td>
<td>4.50</td>
<td>97.67</td>
<td>50.5581</td>
<td>25.75033</td>
</tr>
<tr>
<td>GNI</td>
<td>72</td>
<td>2.89</td>
<td>4.93</td>
<td>4.0783</td>
<td>4.3780</td>
</tr>
<tr>
<td>Power Distance</td>
<td>72</td>
<td>11.00</td>
<td>104.00</td>
<td>61.3056</td>
<td>21.97799</td>
</tr>
<tr>
<td>Uncertainty Avoidance</td>
<td>72</td>
<td>8.00</td>
<td>112.00</td>
<td>65.7778</td>
<td>22.92623</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimum (maximum) score for investor-protection (INVSTPro) is 2.70 (9.30), with a mean score of 5.53 and standard deviation of 1.507. Extent of the State's dominance of the economy (SOEs) has a minimum (maximum) score of 4.50 (97.67), mean score of 50.56, and standard deviation of 25.75.

The minimum (maximum) gross national income is $2.89 ($4.93), with an average of $4.08 and standard deviation of 0.44. Hofstede's PD or Power Distance has a minimum (maximum) score of 11 (104), mean score of 61.31 and standard deviation of 21.98. Hofstede's Uncertainty Avoidance has a minimum (maximum) score of 8 (112), mean of 65.78 and standard deviation of 22.93.

5.4.2.1 Bivariate correlations

Table 5.6 presents the Pearson bivariate correlations among the independent variables. The examination of correlations between pairs of the independent variables without controlling for a third variable is a useful starting point.
Table 5.6  

<table>
<thead>
<tr>
<th>Pearson Correlations</th>
<th>Bivariate correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Corrupt perceptions</td>
</tr>
<tr>
<td>Press freedom</td>
<td>-.486**</td>
</tr>
<tr>
<td>Investor-protection</td>
<td>-.379**</td>
</tr>
<tr>
<td>State's ownership of enterprises</td>
<td>-.520**</td>
</tr>
<tr>
<td>(Log) GNI</td>
<td></td>
</tr>
<tr>
<td>Hofstede's Power Distance</td>
<td>.680**</td>
</tr>
<tr>
<td>Hofstede's Uncertainty Avoidance</td>
<td>.295</td>
</tr>
</tbody>
</table>

Absolute values greater (lesser) than .300 are significant at the 0.01 and 0.05 level. These are identified by ** and *, respectively.

The bivariate correlations among the hypothesised variables are low, and as expected; with the exception of the correlation between corruption perceptions and State's ownership of enterprises which is moderately correlated at -.520. A quick remark about the relationship between corruption perceptions and State's ownership of enterprises is in order. The negative sign suggests that high State's ownership of enterprises is associated with low level of corruption perceptions. This is puzzling because it would be expected that the level of corruption perceptions will be high with high State's ownership of enterprises. We call for caution in reaching conclusions about the relationship between these two independent variables in view of the correlation (0.520) that was approaching high levels.

Another puzzling result is the correlation between press freedom and State's ownership of enterprises. The positive correlation suggests that higher the State's ownership of enterprises higher the level of press freedom. We expected a negative correlation because high State's ownership of enterprises would mean that the level of press freedom would be low because the State may own part of the press so that press freedom will be low, all things equal.
5.4.2.1.2 Partial Correlation Analysis

There is a need to consider the partial correlations between any two variables as the influence of a third variable is controlled for. Table 5.7 (Panels A-D) contains four panels of partial correlations.

Panel A controls for power distance and uncertainty avoidance.
Panel B controls for gross national income and power distance.
Panel C controls for gross national income and uncertainty avoidance.
Finally, Panel D, controls for gross national income only. This panel appears to be the less correlated of the panels.

<table>
<thead>
<tr>
<th>Table 5.7 Partial Correlations Coefficients between Independent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A. Partial Correlations controlling for PD and UA</strong></td>
</tr>
<tr>
<td>Control Variables</td>
</tr>
<tr>
<td>Log GNI</td>
</tr>
<tr>
<td>Investor-protection</td>
</tr>
<tr>
<td>State's ownership of enterprises</td>
</tr>
<tr>
<td>Power Distance</td>
</tr>
<tr>
<td>Uncertainty Avoidance</td>
</tr>
</tbody>
</table>

**. Correlation is significant at 0.01 level *. Correlation is significant at 0.05 level

<table>
<thead>
<tr>
<th><strong>Panel B Partial correlations controlling for PD and GNI</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Variables</td>
</tr>
<tr>
<td>Uncertainty Avoidance</td>
</tr>
<tr>
<td>Investor-protection</td>
</tr>
<tr>
<td>State's ownership of enterprises</td>
</tr>
<tr>
<td>Log GNI</td>
</tr>
<tr>
<td>Power Distance</td>
</tr>
</tbody>
</table>

**. Correlation is significant at 0.01 level *. Correlation is significant at 0.05 level
The negative correlation between corruption perceptions and each of the hypothesised variables suggests that as the level of corruption perceptions increases the hypothesised variables associated with it decrease. With the exception of the relationship between corruption perceptions and State’s ownership of enterprises, this result is expected. One would expect high State’s ownership of enterprises to be associated with high level of corruption.

The positive correlation between press freedom and investor-protection suggests that high level of investor-protection can be associated with high level of press freedom.

The positive correlation between press freedom and State’s ownership of enterprises is associated with high level of press freedom. It is hard to see how this
is true in real-life. One would expect that the level of press freedom will decrease with high State's ownership of enterprises.

The control variables have had some mediating effects on the hypothesised variables in the partial correlations by reducing the strength of the correlations. The only exception is the correlation between corruption perceptions and press freedom. In Panel B of the partial correlations, controlling for power distance and gross national income have not had negative effect on the correlation between the two. The correlation between the two variables is -0.486 in the bivariate correlation in Table 5.6 and -0.489 in Panel B of Table 5.7. The difference is very close to zero. Among the partial correlations themselves, controlling for gross national income and uncertainty avoidance have had the greatest mediating effect on the correlation between corruption perceptions and press freedom as the strength of the correlation becomes lower and not statistically significant, see Panel C.

Controlling for power distance and uncertainty avoidance had the greatest negative effect on the correlation between press freedom and State's ownership of enterprises. The correlation dropped to 0.099; please see Panel A of the partial correlations.

Controlling only for gross national income has the greatest effect on the correlation between corruption perceptions and State's ownership of enterprises. The strength of the correlation (0.509) is highest and is statistically significant, see Panel D of Table 5.7.

5.4.2.1.3 Multivariate model tests of hypotheses

5.4.2.1.3.1 Dichotomous logistic regression model
We use a multivariate logistic regression model with a dichotomous dependent variable. Countries where accounts manipulation was reported in newspapers are coded as one and control countries where accounts manipulation was not reported are coded as zero. This is to investigate the effects of the hypothesised, and stylised, institutional structures variables on the likely occurrence of accounts manipulation.
Altogether, we run eight different multiple logistic regressions (with or without all the control variables in a single model). The purpose of running different regression models is to check for robustness. The regression model in equation {4.3} of section 4.4.1 is used for each of the eight models below thus:

\[ \text{Prob}(\text{ACCMan}) = F(\alpha + \beta_1 \text{CORRUPT}_{\text{env}} + \beta_2 \text{PRESSFree} + \beta_3 \text{SOE} + \beta_4 \text{INVSTPro} + \beta_5 \log \text{GNI} + \beta_6 \text{PD} + \beta_7 \text{UA} + \varepsilon) \] \hspace{1cm} \text{... I}

\[ \text{Prob}(\text{ACCMan}) = F(\alpha + \beta_1 \text{CORRUPT}_{\text{env}} + \beta_2 \text{PRESSFree} + \beta_3 \text{SOE} + \beta_4 \text{INVSTPro} + \beta_5 \log \text{GNI} + \varepsilon) \] \hspace{1cm} \text{... II}

\[ \text{Prob}(\text{ACCMan}) = F(\alpha + \beta_1 \text{CORRUPT}_{\text{env}} + \beta_2 \text{PRESSFree} + \beta_3 \text{SOE} + \beta_4 \text{INVSTPro} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede PD} + \varepsilon) \] \hspace{1cm} \text{... III}

\[ \text{Prob}(\text{ACCMan}) = F(\alpha + \beta_1 \text{CORRUPT}_{\text{env}} + \beta_2 \text{PRESSFree} + \beta_3 \text{SOE} + \beta_4 \text{INVSTPro} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede UA} + \varepsilon) \] \hspace{1cm} \text{... IV}

\[ \text{Prob}(\text{ACCMan}) = F(\alpha + \beta_1 \text{CORRUPT}_{\text{env}} + \beta_2 \text{PRESSFree} + \beta_3 \text{SOE} + \beta_4 \text{INVSTPro} + \beta_5 \text{Hofstede PD} + \beta_6 \text{Hofstede UA} + \varepsilon) \] \hspace{1cm} \text{... V}

\[ \text{Prob}(\text{ACCMan}) = F(\alpha + \beta_1 \text{CORRUPT}_{\text{env}} + \beta_2 \text{PRESSFree} + \beta_3 \text{SOE} + \beta_4 \text{INVSTPro} + \beta_5 \text{Hofstede UA} + \varepsilon) \] \hspace{1cm} \text{... VI}

\[ \text{Prob}(\text{ACCMan}) = F(\alpha + \beta_1 \text{CORRUPT}_{\text{env}} + \beta_2 \text{PRESSFree} + \beta_3 \text{SOE} + \beta_4 \text{INVSTPro} + \beta_5 \text{Hofstede PD} + \varepsilon) \] \hspace{1cm} \text{... VII}

\[ \text{Prob}(\text{ACCMan}) = F(\alpha + \beta_1 \text{CORRUPT}_{\text{env}} + \beta_2 \text{PRESSFree} + \beta_3 \text{SOE} + \beta_4 \text{INVSTPro} + \varepsilon) \] \hspace{1cm} \text{... VIII}

Model I is the full or the study’s main model in equation {4.3}. It is regressing probability of accounts manipulation on corrupt environment, press freedom, State ownership of enterprises, investor-protection, gross national income and the two national cultural values. The result is reported exclusively in Table 5.8.

Model VIII excludes all the control variables from the regression.

Model II controls for GNI only

Model III controls for national income and power distance
Model IV controls for gross national income and uncertainty avoidance.
Model V controls for power distance and uncertainty avoidance.
Model VI controls for uncertainty avoidance only.
Model VII controls for uncertainty avoidance only.

Table 5.8a, b presents the result of the regression of the main model only.

Table 5.8a Variables in the Equation

\[ \text{Prob(ACCMaN)} = F(\alpha + \beta_1 \text{CORRUPTENV} + \beta_2 \text{PRESSFree} + \beta_3 \text{SOE} + \beta_4 \text{INVSTPro} + \beta_5 \text{Log GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \epsilon) \]

(Note that this is Model I, main model, in Table 5.9)

<table>
<thead>
<tr>
<th>Variables In the Equation</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1* CORRUPTENV</td>
<td>-.337</td>
<td>.327</td>
<td>1.064</td>
<td>1</td>
<td>.302</td>
<td>.714</td>
</tr>
<tr>
<td>PRESSFree</td>
<td>.000</td>
<td>.014</td>
<td>.001</td>
<td>1</td>
<td>.974</td>
<td>1.000</td>
</tr>
<tr>
<td>INVSTPro</td>
<td>.765</td>
<td>.369</td>
<td>4.292</td>
<td>1</td>
<td>.038</td>
<td>2.150</td>
</tr>
<tr>
<td>SOEs</td>
<td>.089</td>
<td>.024</td>
<td>13.814</td>
<td>1</td>
<td>.000</td>
<td>1.093</td>
</tr>
<tr>
<td>LogGNI</td>
<td>.542</td>
<td>1.350</td>
<td>.161</td>
<td>1</td>
<td>.688</td>
<td>1.719</td>
</tr>
<tr>
<td>Hofstede_PD</td>
<td>.039</td>
<td>.030</td>
<td>1.670</td>
<td>1</td>
<td>.196</td>
<td>1.040</td>
</tr>
<tr>
<td>Hofstede_UA</td>
<td>.007</td>
<td>.022</td>
<td>.111</td>
<td>1</td>
<td>.739</td>
<td>1.007</td>
</tr>
<tr>
<td>Constant</td>
<td>-12.210</td>
<td>6.519</td>
<td>3.508</td>
<td>1</td>
<td>.061</td>
<td>.000</td>
</tr>
</tbody>
</table>

| Statistics extracted from Table 5.8 as well as statistics of the remaining seven regressions are conveyed in Table 5.9. |
Table 5.9 Multiple Logistic Regressions of Accounts Manipulation on Independent Variables

\[
\text{Prob} (\text{ACCMan}) = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \text{Log GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \varepsilon)
\]

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model I Coefficient (p-Value)</th>
<th>Model II Coefficient (p-Value)</th>
<th>Model III Coefficient (p-Value)</th>
<th>Model IV Coefficient (p-Value)</th>
<th>Model V Coefficient (p-Value)</th>
<th>Model VI Coefficient (p-Value)</th>
<th>Model VII Coefficient (p-Value)</th>
<th>Model VIII Coefficient (p-Value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-12.210 (0.061)</td>
<td>-0.979 (0.098)</td>
<td>-12.495 (0.053)</td>
<td>-9.434 (0.115)</td>
<td>-10.112 (0.008)</td>
<td>-7.911 (0.010)</td>
<td>-0.194 (0.005)</td>
<td>-7.170 (0.008)</td>
</tr>
<tr>
<td>CORRUPTENVI</td>
<td>-0.337 (0.302)</td>
<td>-0.038 (0.869)</td>
<td>-0.296 (0.323)</td>
<td>-0.073 (0.765)</td>
<td>-0.394 (0.178)</td>
<td>-0.121 (0.514)</td>
<td>-0.359 (0.197)</td>
<td>-0.103 (0.572)</td>
</tr>
<tr>
<td>PRESSFree</td>
<td>0.000 (0.974)</td>
<td>0.005 (0.998)</td>
<td>0.000 (0.998)</td>
<td>0.005 (0.950)</td>
<td>0.005 (0.681)</td>
<td>0.005 (0.997)</td>
<td>0.005 (0.997)</td>
<td>0.005 (0.697)</td>
</tr>
<tr>
<td>INVSTPro</td>
<td>0.765* (0.038)</td>
<td>0.637 (0.071)</td>
<td>0.744* (0.041)</td>
<td>0.654 (0.064)</td>
<td>0.791* (0.031)</td>
<td>0.673 (0.054)</td>
<td>0.769* (0.036)</td>
<td>0.660 (0.062)</td>
</tr>
<tr>
<td>SOE</td>
<td>0.089* (0.000)</td>
<td>0.085* (0.000)</td>
<td>0.086* (0.000)</td>
<td>0.087* (0.000)</td>
<td>0.091* (0.000)</td>
<td>0.088* (0.000)</td>
<td>0.088* (0.000)</td>
<td>0.086* (0.000)</td>
</tr>
<tr>
<td>Log GNI</td>
<td>0.542 (0.688)</td>
<td>0.599 (0.613)</td>
<td>0.743 (0.539)</td>
<td>0.397 (0.765)</td>
<td>0.038 (0.203)</td>
<td>0.036 (0.208)</td>
<td>N 72 72 72 72 72 72 72 72 72</td>
<td></td>
</tr>
<tr>
<td>Hofstede_PD</td>
<td>0.039 (0.196)</td>
<td>0.038 (0.196)</td>
<td>0.038 (0.196)</td>
<td>0.038 (0.203)</td>
<td>0.038 (0.203)</td>
<td>0.038 (0.203)</td>
<td>0.036 (0.208)</td>
<td>0.036 (0.208)</td>
</tr>
<tr>
<td>Hofstede_UA</td>
<td>0.007 (0.739)</td>
<td>0.038 (0.196)</td>
<td>0.038 (0.196)</td>
<td>0.007 (0.736)</td>
<td>0.011 (0.572)</td>
<td>0.010 (0.600)</td>
<td>0.036 (0.208)</td>
<td>0.036 (0.208)</td>
</tr>
<tr>
<td>Nagelkerke R²</td>
<td>0.672</td>
<td>0.663</td>
<td>0.679</td>
<td>0.664</td>
<td>0.679</td>
<td>0.663</td>
<td>0.676</td>
<td>0.660</td>
</tr>
<tr>
<td>Cox &amp; Snell R²</td>
<td>0.510</td>
<td>0.497</td>
<td>0.509</td>
<td>0.498</td>
<td>0.509</td>
<td>0.497</td>
<td>0.507</td>
<td>0.493</td>
</tr>
<tr>
<td>-2 Log likelihood</td>
<td>48.419</td>
<td>50.349</td>
<td>48.532</td>
<td>48.580</td>
<td>49.689</td>
<td>50.323</td>
<td>48.909</td>
<td>50.606</td>
</tr>
</tbody>
</table>

Model I = \text{Prob} (\text{ACCMan}) = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \text{Log GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \varepsilon)

Model II = \text{Prob} (\text{ACCMan}) = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \text{Log GNI} + \beta_7 \text{Hofstede UA} + \varepsilon)

Model III = \text{Prob} (\text{ACCMan}) = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \text{Log GNI} + \beta_6 \text{Hofstede PD} + \varepsilon)

Model IV = \text{Prob} (\text{ACCMan}) = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \text{Log GNI} + \beta_7 \text{Hofstede UA} + \varepsilon)

Model V = \text{Prob} (\text{ACCMan}) = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \varepsilon)

Model VI = \text{Prob} (\text{ACCMan}) = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_6 \text{Hofstede UA} + \beta_7 \text{Hofstede PD} + \varepsilon)

Model VII = \text{Prob} (\text{ACCMan}) = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_7 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \varepsilon)

Model VIII = \text{Prob} (\text{ACCMan}) = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_7 \text{Hofstede UA} + \beta_7 \text{Hofstede PD} + \varepsilon)
Table 5.9 presents regression coefficients and Sig. $p$-values (in parentheses). Significant coefficients are starred (*) and in bold print in the table.

As can be seen from the table, the coefficients of corrupt environment are low and not statistically significant, so we reject the null hypothesis that, *ceteris paribus*, the level of corruption is not likely to affect the occurrence of accounts manipulation. Rejection of the null hypothesis suggests that the alternative hypothesis may be accepted that the level of corruption is likely to affect the occurrence of the act.

The coefficients of press freedom are low and not statistically significant, so we reject the null hypothesis that the level of press freedom is not likely to affect the occurrence of accounts manipulation. We can then conclude that the level of press freedom is likely to affect the occurrence of accounts manipulation. Our result is consistent with that of prior research in the area: Miller (2006) provides evidence that the press serves its roles well by being a watchdog for accounting fraud. Brunetti and Weder (2003) conclude that a free press is bad news for corruption. Dyck *et al.* (2008) suggest that the media may play a role in pressuring corporate managers and directors to behave in socially acceptable ways. They suggest that the press can shape corporate policy, and hence engender good corporate governance.

This result should be considered in light of the fact that the study reckoned only with reported cases of accounts manipulation in newspapers. Therefore, our result can be attributed to two factors. First, it is possible that due to some probable existence of differences in national cultures the press in some countries may not report cases of accounts manipulation because it does not meet the definition of what the press in those countries considers as accounts manipulation. Due to data constraints, the study is not able to control for this. Second, it is possible that the press in some countries may not have reported cases of accounts manipulation because the press is not free to publish them as such.

Investor-protection is statistically significant or marginally significant in five of the eight models. It is highly statistically positively significant in Models I, III, V, and VII.
with respective Sig. $p$-values of $0.038$, $0.041$, $0.031$, and $0.036$ and marginally statistically positively significant at $0.05$ in Model VI ($p = 0.054$). It is not statistically significant in Models II and IV, and VIII.

The positive statistical significant is indicative that the State’s attempt at investor-protection is likely to affect the occurrence of accounts manipulation, supporting the alternative hypothesis. In fact, the signed results suggest that the State’s attempts at investor-protection may probably lead to the occurrence of accounts manipulation.

The high statistically significant result in the main model (Model I) is an indication that a unit change in the State’s attempts at investor-protection is likely to lead to the occurrence of accounts manipulation by $0.765$, controlling for the intervening influences of the two cultural values and gross national income. The high statistically significant result in Model III is an indication that a unit change in the State’s attempts at investor-protection is likely to lead to the occurrence of accounts manipulation by $0.744$, controlling for the intervening influences of power distance and gross national income.

The high statistically significant result in Model V is an indication that a unit change in the State’s attempts at investor-protection is likely to lead to the occurrence of accounts manipulation by $0.791$, controlling for the intervening influences of the two national cultural values.

The high statistically significant result in Model VII is an indication that a unit change in the State’s attempts at investor-protection is likely to lead to the occurrence of accounts manipulation by $0.769$, controlling for the intervening influence of power distance only. The marginal statistical significance in Model VI is an indication that a unit change in the State’s attempt at investor-protection is likely to lead to the occurrence of accounts manipulation by $0.673$, controlling for the intervening influence of uncertainty avoidance only.
The acceptance of the alternative hypothesis is consistent with the views expressed by Ball (2009, p. 8) that regulation plays a substantial role in fostering a rules-based perspective, which plays an important role in setting the stage for the accounting scandals in the U.S. This finding is also consistent with Bushman and Petrioski [2006] who observe that in a scenario where a "benevolent" government intervenes in poorly performing firms, firms seek to avoid such interference by exploiting reporting discretion to portray an optimistic outlook.

State's dominance of the economy (SEO) is consistently statistically positively significant at conventional levels in all the models. The strength of significance is very low. The statistically significant result in all the models accepts the alternative hypothesis that the State's ownership of enterprises is likely to affect the occurrence of accounts manipulation. The positive signs indicate that the State's ownership of enterprises is likely to lead to the occurrence of accounts manipulation.

Analysing the result of the main research model, the statistically significant result suggests that a unit change in the State's ownership of enterprises is likely to lead to the occurrence of accounts manipulation by 0.089, controlling for the effects of the two national cultural values and individuals' economic status.

In Model II where GNI is controlled for while holding the effect of the two cultural dimensions constant, the significant result suggests that a unit change in the State's ownership of enterprises is likely to lead to the occurrence of accounts manipulation by 0.085.

The significant result in Model III is indicative that a unit change in the State's dominance of the economy is likely to lead to the occurrence of the act by 0.086, holding uncertainty avoidance constant while controlling for economic status (GNI) and inequality in society as captured by power distance.

The significant result in Model IV suggests that a unit change in the State's dominance of the economy is likely to lead to occurrence of accounts manipulation by 0.087, controlling for the effect of gross national income and uncertainty.
avoidance. Controlling for the effects of the two cultural values, Model v suggests that a unit change in State’s dominance of the economy is likely to lead to the occurrence of the act by 0.091.

Controlling for the effect of uncertainty avoidance alone in Model vi, the statistically significant result is an indication that a unit change in State’s dominance of the economic activities of a country is likely to lead to the occurrence of accounts manipulation by 0.088. The significant result in Model vii is suggestive that a unit change in the State’s dominance of the economy is likely to lead to the occurrence of the act by 0.087, controlling for inequality in societies.

Finally, in Model viii where nothing is controlled for, the significant result suggests that a unit change in the State’s dominance of the economy is likely to lead to the occurrence of accounts manipulation by 0.086.

Our finding is consistent with Bushman and Piotroski (2006) who find that in countries characterised by high State involvement in the economy firms speed recognition of good news and slow recognition of bad news in reported earnings relative to firms in countries with less State involvement. Our finding is also consistent with Bushman and Piotroski’s (2006) view that managers of publicly traded firms with partial State ownership are pressured by the State to optimistically tilt their reporting decisions.

In terms of robustness, this result shows resilience for State’s ownership of enterprises which was consistently positively statistically significant across all the models, and to some appreciable extent investor-protection which was positively statistically significant in five of the models.

It is interesting to note that controlling for the combined effects of national cultures and the level of wealth in a country have not affected the high predictive ability of the models. In order to drive this claim home, compare the explained variation, pseudo-$R^2$, in Model viii with any of the explained variations in Models i to vii.
Odds ratios

Odds ratios are associated with logistic regression coefficients (b). "The dependent variable in logistic regressions is the logarithm of the odds ratio, so the coefficients on the explanatory variables indicate the change in the logarithm of the odds ratio" (Efendi et al., 2007, p. 689). The odds of accounts manipulation represent the probability that accounts manipulation occurred divided by the probability that it did not occur. Exp (B) factors lower than 1 will reflect a negative regression coefficient whereas those greater than 1 will reflect positive regression coefficients.

In analysing the odds ratio, our interest focuses on investor-protection (INVSTPro) and State’s owned enterprises (SOEs) of the main research model (Model 1, or Table 5.9) because they are the only hypothesised independent variables found to be positively statistically significant. The test of the full model is exclusively contained in Table 5.8a; we use the table in analysing the odds ratios.

The odds ratios are located in the column labelled Exp (B) of the table and they relate to effect size or magnitude of each variable’s effect on likelihood of occurrence of accounts manipulation. Each entry in that column for the two significant hypothesised independent variables represents the change in odds of accounts being manipulated against not being manipulated.

The odds ratio for investor-protection (INVSTPro) is 2.150 whereas that of State’s ownership of enterprises is 1.091. In terms of effect size, the former has a greater effect on accounts manipulation than the latter.

Pseudo-$R^2$

As can be seen in Table 5.9, the strength of association between the predictor variables and likely occurrence of accounts manipulation is high and almost the same value in all the models. The Nagelkerke $R^2$ is 67.20% for the full research model, and above 66% for the remaining models. The Cox and Snell $R^2$ is 51.00%
in the full research model and above 49% in the remaining models. The high explanatory power of the model suggests that the model has descriptive validity and that the independent variables in the regressions are able to explain a high percentage of the variation in the likely occurrence of accounts manipulation. In addition, there are no noticeable differences in pseudo-$R^2$ of all the models.

**-2Log likelihood (-2LL)**

Consistent with the behaviour of the pseudo-$R^2$, the -2LL is about the same (hovers around 48% and 51%) for all the models in Table 5.9, which goes to show that all the models are well-fitted.

**5.4.2.2 Check for multicollinearity**

Multicollinearity occurs when highly related independent variables measuring the same or similar constructs are included in the same regression equation (see Cohen et al. (2003, p. 420)).

One possible consequence of multicollinearity is that regression coefficients may become unstable and inflated, which may lead to very large standard errors. Cohen et al. (2003, p. 425) posit that “when a researcher is interested solely in the prediction of $Y$ (the dependent variable) or the value of $R^2$, multicollinearity has little effect and no remedial action is needed.”

Because we are interested in explaining the likely occurrence of accounts manipulation based on the independent variables, we have not attempted to remedy for any multicollinearity that may arise; however, we call for caution in reaching conclusions in view of the correlations that were approaching high levels between some of the independent variables, particularly between corruption perceptions index and State’s ownership of enterprises.
5.4.2.3 Residual and outlier analysis

Residual analysis reveals that there are no serious problems of residuals or outliers in all independent variables’ data. We have plotted scatter graphs to show that there are no extreme cases of outliers in the independent variable. This is presented in Scatter graphs 5.1.

Scatter Graphs 5.1

Scatter graphs of independent variables

- Corruption perceptions scores
- Press freedom scores
- Investor protection scores
Chapter 5. Analysis of institutional structures data and tests of hypotheses

- State's ownership of enterprises score
  - Linear (State's ownership of enterprises score)

- Log GNI values (averaged between 2000-2008)
  - Linear (Log GNI values (averaged between 2000-2008))

- Hofstede's PDI scores
  - Linear (Hofstede's PDI scores)

- Hofstede's Uncertainty Avoidance Scores
  - Linear (Hofstede's Uncertainty Avoidance Scores)
5.5 Summary

This chapter has been analysing the data of the institutional structures that can likely affect accounts manipulation. The chapter explained in great detail the sources of variables and how they are measured and operationalised. The chapter used $X^2$ test, logistic regression models to analyse the data. The battery of tests produced interesting results, which are to be presented in the results and findings chapter, chapter 7.

In the meantime, we now turn to chapter 6, which analyzes the consequences data.
Chapter 6

Analysis of consequences data and tests of hypotheses

6.1 Introduction

This chapter explains how the data relating to the second strand of the study is analysed. The chapter addresses three hypotheses, namely $H_6$, $H_7$, and $H_8$. As the analysis progresses in the chapter, these hypotheses are restated.

A variety of econometric methods are employed in this part of the analysis. These include (1) Paired Samples t-test, Wilcoxon Signed Ranks Test and Sign Test to test data of both sides of the event window; (2) linear regression (through which we obtained or extracted R-squares) to test association between amount mentioned in the news and *ex post* abnormal returns, especially that of day zero; and (3) cross-tabulation chi-square test of association to test relationship (or lack thereof) between the section where the news is inserted and *ex post* abnormal returns. In addition, the chapter also uses graphs and charts for explication.

6.2 The analysis

This second part of the study uses firm-level data. It does not use the whole 183 firms exposed in accounts manipulation in testing the three hypotheses. The 183 firms reduce to 99 (reduced to 98), and 83 firms depending on the hypothesis being tested, which has to do with data availability. Below, we show where the different sample sizes are used in testing the three hypotheses:

(1) Based on criteria listed in chapter 4, ninety-nine firms are used for testing $H_6$ and $H_7$. The ninety-nine firms qualify because they have clean data on share prices; however one of them was not used because of being an outlier.
Eighty-three firms are used for testing \( H_7 \), because they have clean data on share prices, amount mentioned in the news, total assets, and value of shareholders' equity.

Table 6.1 summarises the three hypotheses stated for this part of the study. The sources of data used in measuring each variable are refreshed in the table, having first been listed in chapter 4.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Sources of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>For firms exposed in accounts manipulation, there is no difference between ex post and ex ante abnormal stock returns, ( (H_4) )</td>
<td>Datastream, Bloomberg, Yahoo! Finance, Google finance, Amadeus, AOL money and finance, etc</td>
</tr>
<tr>
<td>The amount mentioned in news of accounts manipulation is not associated with ex post abnormal stock returns, ( (H_7) )</td>
<td>Newspapers, Amadeus, Datastream, Bloomberg, Yahoo! Finance, Google finance, AOL money and finance</td>
</tr>
<tr>
<td>The section used in publishing news of accounts manipulation in newspaper is not associated with ex post abnormal returns, ( (H_6) )</td>
<td>Newspaper publications</td>
</tr>
</tbody>
</table>

For a proper flow with the analysis, the following definitions earlier introduced in section 4.6.2 of chapter 4 are restated:

*Abnormal return, \( AR \): This refers to abnormal return of any day in the event window.*

*Cumulative abnormal returns, \( CAR \): This is the summation of all the abnormal returns from day \( \pm 1 \) to day \( \pm 6 \) of one single firm,*

*Average abnormal returns, \( AAR \): This is one day abnormal returns of all 98 firms divided by the sample size (98).*

*Cumulative average abnormal returns of all 98 firms, \( CAAR \): This is the successive summation of the average abnormal returns of the six days from day \( \pm 1 \) to day \( \pm 6 \) of all 98 firms.*
6.2.1 Efficient market hypothesis

According to the semi-strong-form version of the efficient market hypothesis, the market should quickly reflect all publicly available information. Since this study is operationalising this hypothesis (especially with reference to hypothesis 6), we would like to run a test to see whether the hypothesis holds for the information content of exposed accounts manipulation.

Although there is no specific or explicit hypothesis that mentions semi-strong-form efficient market hypothesis, nevertheless the hypothesis underlies the investigation about information content of news of accounts manipulation as published in newspapers which is being formalised. The test below is expected to prove, or disprove, the study’s a priori assumption that the stock market is informationally efficient in the semi-strong form with respect to news of accounts manipulation published in the newspapers.

To run the test, we calculate “day-on-day” or “rolling” average abnormal returns, AAR, for a-twelve-day window: t-5 to t+6. We could not calculate the AAR for day six before the news because to do so would require stock data for day seven before the news, the event window does not cover. This is why we have a-twelve-day day-on-day or rolling AARs.

As per equation (4.9), the average abnormal returns, AAR, is given as,

\[ \text{AAR}_t = \frac{\sum(\hat{R}_{it} - M_{it})}{98} = \frac{AR_{ij}}{98} = \left( \frac{P_{it} - P_{i,t-1}}{P_{i,t-1}} - \frac{\hat{M}_{it} - \hat{M}_{i,t-1}}{\hat{M}_{i,t-1}} \right) / 98 \quad \text{(4.9)} \]

Using the above formulae, we compare AAR of the day the news was published (day zero) against the AAR of any of the days in the event window, left or right. The result of the day-on-day or rolling AAR is presented in Graph 6.1.
For 98 firms put together, the mean of cumulative average abnormal returns before the event day is 
-0.46% = (-1.26 + 0.74 + -0.46 + -0.48 + -0.85) ÷ 5 and the mean of cumulative average abnormal 
returns (excluding day zero average abnormal returns) after the event day for all 98 firms is 
-0.37% = (-2.90 + -0.97 + -0.61 + 1.30 + 0.73 + 0.23) ÷ 6. When day zero is included, mean of cumulative average 
abnormal returns after the event will be 
-1.21% = (-6.25 -2.90 -0.97 -0.61 + 1.30 + 0.73 + 0.23) ÷ 7.

It is possible to produce a static or stationary graph whereby average abnormal returns are obtained by using, exclusively, share prices and market index returns of day zero as the denominator in all calculations. To do this one will have to apply equation {4.13} of chapter 4.

\[
AAR_t = \frac{\sum (R_{it} - E_{it})}{98} = \frac{\sum (P_{it} - P_{i0})}{98} - \frac{\sum \hat{M}_{it} - \hat{M}_{i0}}{98}
\]

Graph 6.2 is used to capture the above function.58

58 Note that Graph 6.2 has been produced from calculations which relate stock returns of day t (numerator) against only stock prices of day zero (numerator) for each event day abnormal returns, the stationary average abnormal returns. Compare this graph with the “day-on-day” average abnormal returns graph shown in 6.1 which is constructed as stock prices of the next day (numerator) against stock prices of the
Graph 6.2

The AARs here are derived from using share prices and market indices of day zero as denominator in all calculation of abnormal returns, hence they are higher than those annexed to Graph 6.1 which are derived from day-on-day calculations of abnormal returns.

Please note that abnormal returns are converted to percentages in the analysis, although the formulae express them as price relatives.

The mean of cumulative average abnormal returns to the left of day zero for all 98 firms is \(9.59\% = \frac{(11.21 + 9.63 + 10.03 + 9.38 + 9.24 + 8.04) - 6}{6}\) and the mean of cumulative average abnormal returns to the right of the event day for all 98 firms is \(-4.66\% = -\frac{(3.81 + 5.06 + 5.60 + 5.91 + 4.20 + 3.38)}{6}\).

In Graph 6.2, the area under and above 0.0, on the \(y\) axis, and day zero, on the \(x\) axis, is shaded for more visual clarity and distinction. It can be seen from the graph that average abnormal returns after the news fall below point 0 (or becomes negative) after day zero. As one can see from the graph, the shaded area of \(ex\ post\) average abnormal returns is below the 0.0 point on the \(y\) axis whereas the shaded area of \(ex\ ante\) average abnormal returns is above the 0.0 point on the same axis.

It is interesting to see the sharp turning point of the AAR between day -1 and 0 in Graph 6.1 and Graph 6.2.
To gauge how the stock market quickly reflects the published news in the newspaper, we are interested in what happens between the one day average abnormal returns of day -1 and day zero (-1,0). It is clear as presented in Graph 6.1 that the stock market is, indeed, semi-strong efficient as reflected in the news of accounts manipulation.

Using concrete values from Graph 6.1 to support the analysis, it can be seen that while the AAR of the day before the news (day t-1) is -0.85 per cent, it tumbled to -6.25 per cent on the event day, day zero, which is the day the news was published in the newspaper. Indeed, none of the AARs before day zero is as low as that of day zero and day 1 after the news (i.e., t+1), which are the days the stock market quickly reflected the publicly available news of accounts manipulation. It can be noticed that AAR begins to rise as from day t+2 and day t+4, only to tumble again on day t+5 and t+6. We are not in a position to explain this anomaly.

Quantity-wise, our result is comparable with Miller (2006) who investigates day zero market reactions following publication of news alleging accounting malfeasance. He finds an average one-day market adjusted significant reaction to be negative (-6.30%). Miller (2006) also finds a three-day stock reaction to be up to -8.20%.

Our result is also consistent with Beneish (1999a) and others who document evidence of a rapid and immediate price adjustment subsequent to unfavourable news about a company. Indeed, Beneish (1999a) finds an average stock price loss of up to 21% following revelation of financial statements manipulation by managers. Our result is also consistent with those of Bernile and Jarrell (2009) who find a statistically significant negative (-7%) abnormal stock returns on the first day of announcement of firm-specific backdating allegations in the press.

In sum, using the average abnormal stock market reactions between day t-1 and day zero, we can conclude that there is information content in news of accounts manipulation published in newspapers, which is consistent with the semi-strong version of the efficient market hypothesis.
The above result should be juxtaposed in the context of on-going discourse regarding acceptability and efficacy of the semi-strong version of the efficient market hypothesis. We prefer to defer discussing this to chapter 7.

### 6.2.1.2 Test of hypothesis $H_6$

We follow Brown and Warner (1980, 1985), DeFond and Jiambalvo (1994), and Files et al. (2009) who use Paired Samples Test, Wilcoxon Signed Ranks Test and the Sign Test in their event studies. Brown and Warner, in particular, use the three methods to check for method sensitivity. Brown and Warner (1980) and Pallant (2007) comment that the Paired Samples Test is a more powerful test than the other two. Nevertheless, the results they obtained from using these three methods are consistent with one another. We now investigate the behaviour of cumulative abnormal returns, CAR, of each of the 98 firms.

Using the modified market or adjusted market model as explicated in section 4.6.2, equations (4.10) or (4.14) of chapter 4, we calculate a six-day (-6 to 0) and (0 to +6) cumulative abnormal return of each of the firms thus:

$$CAR_{ij} = \sum_{t=-6}^{0} AR_{ij} = \sum_{t=-6}^{0} (R_{jt} - M_{jt})$$

That is cumulative abnormal returns before and after day zero for each of the 98 firms.

---

59 Daily abnormal returns, $AR_{at}$ for a firm has been defined in chapter 4. For a re-cast,

$$AR_{at} = \frac{P_{t} - P_{t-1}}{P_{t-1}} - \frac{\bar{M}_{t} - \bar{M}_{t-1}}{\bar{M}_{t-1}}$$

Using previous day's share prices and market index as the denominator in calculating abnormal returns, see (4.7). This is otherwise called "day-on-day/rolling abnormal returns"

$$AR_{at} = \frac{P_{t} - P_{t-1}}{P_{t-1}} - \frac{\bar{M}_{t} - \bar{M}_{t-1}}{\bar{M}_{t-1}}$$

Using share prices and market index returns of the day the news was release as denominator in calculating abnormal returns, see (4.12). This is otherwise called "stationary" or "static" abnormal return. Notice that (4.12) neutralises the abnormal return of day zero to the value 0.
Graphs 6.3 and 6.4 are used to show the behavior of this function. In the graphs, the blue line represents cumulative abnormal returns before the news (annotated as $CAR_{pre}$) while the pink line represents cumulative abnormal returns after the news (annotated as $CAR_{post}$).

Graph 6.3

![Graph of Firm's Day-on-Day CAR](image)

Graph 6.3 is the CAR calculated using share prices and market index returns of the previous day as denominator.

Graph 6.4

![Graph of Firm's Stationary CAR (@ t =0)](image)

Graph 6.4 is CAR calculated based on day zero's share prices and market index returns as denominator for all event days in the event window.
In the graphs, each point represents the cumulative abnormal returns, CAR, over six days, pre and post the news, of each of the 98 firms.

It appears particularly in Graph 6.4 that the *ex ante* CAR line are higher than the *ex post* CAR line. It shows that majority of the points of *ex ante* CAR are above the 0.0 line, on the *y* axis, while majority of the points of *ex post* CAR lie below the 0.0 line, on the same *y* axis.

Because Graph 6.3 is produced from day-on-day share prices movement, the position is less discernable than in Graph 6.4. In fact, most of the points in Graph 6.3 tend to suggest that the CAR_pre line is below the CAR_post line. Furthermore, the differences between the pre- and post-cumulative abnormal returns conveyed in Graph 6.3 are not as pronounced or discernable as they are in Graph 6.4. Graph 6.4 makes it clearer that the fall in *ex post* CAR is higher than the fall in *ex ante* CAR sequel to the news of accounts manipulation published in newspapers.

We go beyond analysing cumulative abnormal returns of share prices behaviour by graphical methods by conducting three different tests for CAR. One of the tests is parametric and the others are two non-parametric tests. The parametric test is the Paired Samples Test while the non-parametric tests are the Wilcoxon Signed Ranks Test and the Sign Test.

The purpose of the tests is to investigate whether there is a significant statistical difference between the mean of pre-event day CAAR/CAR and the mean of post-event day CAAR/CAR. In effect, hypothesis 6, *H*_6, is being tested with the definitions of abnormal stock returns encountered in the preceding analyses.

The analysis for each test is presented below, beginning with the descriptives in Table 6.2. And we begin with the result whereby stock returns of all event days were calculated by using share prices and market index returns of day zero as the
denominator throughout. These are to be found in the first two and last two rows of Table 6.2.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Median</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day t-1 AAR, using day zero prices</td>
<td>98</td>
<td>-5.60</td>
<td>96.60</td>
<td>8.0462</td>
<td>2.52</td>
<td>16.82391</td>
</tr>
<tr>
<td>Day t+1 AAR, using day zero prices</td>
<td>98</td>
<td>-51.39</td>
<td>24.33</td>
<td>-3.8136</td>
<td>-1.77</td>
<td>11.33883</td>
</tr>
<tr>
<td>Day t-1 AAR, based on rolling calculation</td>
<td>98</td>
<td>-35.79</td>
<td>59.43</td>
<td>-0.8461</td>
<td>-0.69</td>
<td>8.84903</td>
</tr>
<tr>
<td>Day t+1 AAR, based on rolling calculation</td>
<td>98</td>
<td>-50.26</td>
<td>22.49</td>
<td>-2.9035</td>
<td>-1.44</td>
<td>9.55937</td>
</tr>
<tr>
<td>Day Zero AAR, based on rolling calculation</td>
<td>98</td>
<td>-68.24</td>
<td>16.62</td>
<td>-6.2486</td>
<td>-1.98</td>
<td>12.85530</td>
</tr>
<tr>
<td>Ex post CAAR, based on rolling calculation</td>
<td>98</td>
<td>-9.31</td>
<td>6.03</td>
<td>-0.3707</td>
<td>-0.12</td>
<td>1.90587</td>
</tr>
<tr>
<td>Ex ante CAAR, based on rolling calculation</td>
<td>98</td>
<td>-21.00</td>
<td>10.87</td>
<td>-1.4256</td>
<td>-0.76</td>
<td>3.43773</td>
</tr>
<tr>
<td>Ex post CAAR, using day zero prices</td>
<td>98</td>
<td>-74.50</td>
<td>24.33</td>
<td>-4.6597</td>
<td>-2.19</td>
<td>13.36039</td>
</tr>
<tr>
<td>Ex ante CAAR, using day zero prices</td>
<td>98</td>
<td>-9.06</td>
<td>96.45</td>
<td>9.5898</td>
<td>3.23</td>
<td>17.52939</td>
</tr>
</tbody>
</table>

The table shows a mean decrease of 8.05% in one-day AAR before the news (t-1). The mean decrease in one-day AAR after the event (t+1) is 3.81%. The cumulative average abnormal return (CAAR) before the news shows a mean increase of 9.59% whereas the mean decrease in CAAR after the news is -4.66%.

The minimum loss and maximum gain in AAR one-day before the news is 5.60% and 96.60%, respectively. The minimum loss and maximum gain in AAR one-day after the news is 51.39% and 24.33%, respectively. The minimum loss and maximum gain in CAAR before the news is 9.06% and 96.45%, respectively. Finally, the minimum loss and maximum gain in CAAR after the news is 74.50% and 24.33%, respectively.

For the data based on rolling or day-on-day calculations, the table shows a mean decrease of 0.85% in one-day AAR before the news (t-1). There is a mean decrease of 2.90% in one-day AAR after the news (t+1). On the day the news was published (day zero) the mean decrease in AAR is 6.25%. The mean decrease in ex post cumulative abnormal returns (CAAR) is 0.37% while the mean decrease in ex ante CAAR is 1.43%. This shows that mean of ex ante CAAR is lower than mean of ex post CAAR, -1.43 < -0.37%.
The minimum loss and maximum gain in AAR the day before the news is 35.79% and 59.43%, respectively. The minimum loss and maximum gain in AAR the day after the news is 50.26% and 22.49%, respectively. The minimum loss and maximum gain in AAR on the day of the news is 68.24% and 16.62%, respectively. The minimum loss and maximum gain in CAAR before the news is 21.00% and 10.87%, respectively. Finally, the minimum loss and maximum gain in CAAR after the news is 9.31% and 6.03%, respectively.

From all indications, it is appears that irrespective of whether AAR/CAAR are calculated on static or dynamic basis, mean ex ante AAR are higher than mean ex post AAR. As for cumulative average abnormal returns, based on static calculation, mean of ex ante (9.59%) CAAR is higher than mean ex post CAAR (-4.66%).

Table 6.3 provides information on Paired Samples test of difference between means and standard deviations, 95% confidence interval, t-value and significance levels for ex ante CAR and ex post CAR.

The paired samples tests relating to stock returns calculated based on day zero’s share prices and market index returns are found in the first and last rows of Table 6.3. It shows that the mean (8.0462) of one-day average abnormal return before the news is greater than the mean (-3.8136) of one-day average abnormal return after
the news, day (-1, +1) by 11.86%. The mean difference is statistically significant; $t = 5.642$, 97df, 2-tailed Sig. $p$-value = 0.000. The mean (9.5898) of cumulative average abnormal returns before the news, *ex ante* CAAR, is greater than the mean (-4.6597) of cumulative average abnormal returns after the news, *ex post* CAAR, by 14.25%. The mean difference is statistically significant; $t = -5.950$, 97df, 2-tailed Sig. $p$-value = 0.000.

Analysing the table based on the result of day-on-day or rolling calculations, the mean (-0.8461) of one-day average abnormal return before the news is greater than mean (-2.9035) of one-day average abnormal return after the news (-1, +1) by 2.06%, however the mean difference is *not* statistically significant, t-value of 1.561, Sig. $p$-value (2-tailed) = 0.122. The non-significant result is not surprising because this is actually a two-day return as there is an intervening day (day zero) in-between the two, which (perhaps) have impacted the result.

Mean (-0.8461) of one-day average abnormal returns, AAR, before the news is higher than mean (-6.2486) of day zero average abnormal returns, AAR, (-1, 0) by 5.40%. The difference between the two means is statistically significant. T-value of the difference between day -1 and day zero is 3.97, Sig. $p$-value (2 tailed) = 0.000. The mean (-2.9035) of one-day AAR after the news is higher than mean (-6.2486) of day zero AAR (+1, 0) by 3.35%. The mean difference between day +1 and day zero is statistically significant at the 5% level, with t-value of 2.108, Sig. $p$-value (2-tailed) = 0.038. The two significant test results reported for days (-1, 0) and (+1, 0) suggest that there is difference between means of *ex post* and *ex ante* abnormal stock returns.

The mean (-0.3707) of cumulative average abnormal returns after the news, *ex post* CAAR, is higher than the mean (-1.4256) of cumulative average abnormal returns after the news, *ex ante* CAAR, by 1.05. The difference between the two means is statistically significant. T-value is 2.67, with Sig. $p$-value (2-tailed) = 0.009.
In sum, absent the aberrant result of days (-1 and +1) calculated on a rolling basis, of which has been explained as probably being impacted upon by the intervening day zero result, the statistically significant differences between means of ex ante and ex post average abnormal returns and ex ante and ex post cumulative average abnormal returns are suggestive that the difference between ex post abnormal returns and ex ante abnormal returns is not equal to zero. This statistical difference may be attributed to news of accounts manipulation as reported in newspapers, which is also consistent with the conclusion that there is information content in news of accounts manipulation.

As a robustness check, we perform Wilcoxon Signed Ranks Test and Sign Test to see whether this result is driven by the Paired Samples t-test method used.

The test results are presented in Table 6.4, Panel A (Wilcoxon Signed Ranks test) and Panel B (Sign test).

<table>
<thead>
<tr>
<th>Table 6.4</th>
<th>Test Statistics c</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A. Wilcoxon Signed Ranks Test</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Day t+1 AAR - Day t-1 AAR (based on day Zero data)</td>
</tr>
<tr>
<td>Z</td>
<td>-6.531 a</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Based on positive ranks.
b. Based on negative ranks.
c. Wilcoxon Signed Ranks Test

| **Panel B. Signed Test** | |
| Day t+1 AAR - Day t-1 AAR (based on day Zero data) | Day t+1 AAR - Day t-1 AAR (based on rolling data) | Day zero AAR - Day t-1 AAR (based on rolling data) | Day Zero AAR - Day t+1 AAR (based on rolling data) | Ex ante CAAR - Ex post CAAR (based on rolling prices) | Ex ante CAAR - Ex post CAAR (based on day Zero data) |
| Z | -6.498 | -5.053 | -1.919 | -5.099 | -1.919 | -6.364 |
| Asymp. Sig. (2-tailed) | .000 | .614 | .055 | .363 | .055 | .000 |

* Sign Test
The results are presented based on the two modes used in calculating abnormal returns. As per calculations based at t=0, Panel A shows that the difference between the medians of AAR of day t+1 and day zero is statistically significant. The z-value is -6.53, with Asymp. Sig. p-value (2-tailed) = 0.000.

As per the rolling calculations, the difference in the medians of AAR of day t+1 and day t-1 is not statistically significant. The difference between the medians of AAR of day zero and that of day t+1 is also not statistically significant. The differences between ex ante and ex post CAAR are statistically significant under both the static and rolling methods. The z-value of difference in CAAR under the static method is -7.01 whereas z-value under the rolling method is -2.55.

The result of the Sign test shown in Panel B of Table 6.4 follows the same patterns observed with respect to the Wilcoxon Signed Ranks test where the median differences in the AAR of day t+1 and day t-1, and AAR of day zero rolling versus day t+1 rolling are not significant. Comparing these two non-parametric tests and that of the paired samples test, which is a parametric test, there is only one instance in the paired samples t-tests where the result is not statistically significant. In the Wilcoxon Signed Ranks test and the Sign test, there are two instances where the statistical tests were not significant.

In sum, robustness is achieved because these two non-parametric tests support the paired samples t-test carried out earlier on. Taken the above analysis together, the overall result is indicative that ex post abnormal returns are different from ex ante abnormal returns following newspaper publication of news of accounts manipulation.

6.2.2 Test of relationship between ex post abnormal returns and amount mentioned. (hypothesis 7, H7)

In order to investigate the relationship between the amounts mentioned in the news of accounts manipulation and ex post abnormal returns, we run eight linear
regressions$^{60}$ (following equation (4.16) in chapter 4) to obtain/extract $R^2$ statistic as well as determine the partial correlations. The linear regressions are of the forms:

$$AR_{t+0} = \alpha + \beta_1 \text{Log}_\text{Amount} + \beta_2 \text{Log}_\text{TA} + \epsilon_i \quad \ldots \quad \text{I}$$

$$AR_{t+1} = \alpha + \beta_1 \text{Log}_\text{Amount} + \beta_2 \text{Log}_\text{TA} + \epsilon_i \quad \ldots \quad \text{II}$$

$$AR_{t+2} = \alpha + \beta_1 \text{Log}_\text{Amount} + \beta_2 \text{Log}_\text{TA} + \epsilon_i \quad \ldots \quad \text{III}$$

$$AR_{t+3} = \alpha + \beta_1 \text{Log}_\text{Amount} + \beta_2 \text{Log}_\text{TA} + \epsilon_i \quad \ldots \quad \text{IV}$$

$$AR_{t+4} = \alpha + \beta_1 \beta_2 \text{Log}_\text{Amount} + \beta_2 \text{Log}_\text{TA} + \epsilon_i \quad \ldots \quad \text{V}$$

$$AR_{t+5} = \alpha + \beta_1 \beta_2 \text{Log}_\text{Amount} + \beta_2 \text{Log}_\text{TA} + \epsilon_i \quad \ldots \quad \text{VI}$$

$$AR_{t+6} = \alpha + \beta_1 \beta_2 \text{Log}_\text{Amount} + \beta_2 \text{Log}_\text{TA} + \epsilon_i \quad \ldots \quad \text{VII}$$

$$\text{CAR} = \alpha + \beta_1 \text{Log}_\text{Amount} + \beta_2 \text{Log}_\text{TA} + \epsilon_i \quad \ldots \quad \text{VIII}$$

Where:

$AR_{t+n} =$ Abnormal returns of a single firm on a given event day

$\text{CAR} =$ Six-day cumulated abnormal returns of a single firm. That is, abnormal returns of a single firm from day $t+1$ to day $t+6$.

$\text{Log}_\text{Amount} =$ logarithm of the total amount mentioned in the news

$\text{Log}_\text{Total assets} =$ logarithm of total assets of the year of reporting of accounts manipulation.

So, each regression is regressing abnormal returns of each of the event days, beginning from day zero, on logarithm of the sum of the amount mentioned in the news and the log of total assets, to control for size. We also run another set of regressions whereby shareholders' equity is used to control for firm size (please see Appendix 6-1) at the end of the thesis. The only thing that changes in the regressions is the dependent variable.

---

$^{60}$ We have assumed a linear relationship between the dependent and independent variables because both sets of data are likely to have similar properties of normality as well as being continuous.
Based on materiality, amount mentioned is likely to be weighed against firm size. For example, different reactions are likely to trail a firm whose total assets (or shareholders' equity) value is, say, $1,000,000 with amount mentioned in the news as $100,000 compared to another firm whose total assets (or shareholders' equity) value is, say, $100,000 with amount mentioned in the news as the same $100,000.

The regression of day zero is of particular interest to us because it is the day of release of news, the day investors are faced with their first decision choices. Regressions after day zero serve to provide comparative information as well as for sensitivity checks.

The number of firms used for the regression is the 83 firms that had clean data used in calculating abnormal returns, amount mentioned, total assets and value of shareholders' equity. Thus, the 16 firms that had no complete data are excluded from the regression.

**Descriptive statistics**

**Table 6.5** presents the descriptive statistics of *ex post* abnormal stock returns, amount, total assets, and shareholders' equity including mean, minimum, maximum, standard deviation and standard error of both the dependent and independent variables.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Error</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day zero AR</td>
<td>83</td>
<td>-68.24</td>
<td>16.62</td>
<td>-6.7102</td>
<td>1.50001</td>
<td>13.66579</td>
</tr>
<tr>
<td>Day t+1 AR</td>
<td>83</td>
<td>-50.26</td>
<td>22.49</td>
<td>-3.0245</td>
<td>1.10760</td>
<td>10.09073</td>
</tr>
<tr>
<td>Day t+3 AR</td>
<td>83</td>
<td>-16.83</td>
<td>37.27</td>
<td>-0.067</td>
<td>0.69253</td>
<td>6.30921</td>
</tr>
<tr>
<td>Day t+4 AR</td>
<td>83</td>
<td>-14.72</td>
<td>51.25</td>
<td>1.3249</td>
<td>0.91575</td>
<td>8.34291</td>
</tr>
<tr>
<td>Day t+5 AR</td>
<td>83</td>
<td>-17.95</td>
<td>37.83</td>
<td>0.5784</td>
<td>0.71168</td>
<td>6.48368</td>
</tr>
<tr>
<td>Day t+6 AR</td>
<td>83</td>
<td>-11.02</td>
<td>27.58</td>
<td>0.4901</td>
<td>0.65212</td>
<td>5.94107</td>
</tr>
<tr>
<td>CAR (t+1 to t+6)</td>
<td>83</td>
<td>-55.85</td>
<td>36.16</td>
<td>-1.6218</td>
<td>1.28740</td>
<td>11.72877</td>
</tr>
<tr>
<td>Log_Amount</td>
<td>83</td>
<td>4.40</td>
<td>11.19</td>
<td>8.4863</td>
<td>0.13631</td>
<td>1.24189</td>
</tr>
<tr>
<td>Log_TA</td>
<td>83</td>
<td>6.26</td>
<td>12.98</td>
<td>9.5576</td>
<td>0.13745</td>
<td>1.25227</td>
</tr>
<tr>
<td>Log_Equity</td>
<td>83</td>
<td>7.23</td>
<td>10.34</td>
<td>8.5659</td>
<td>0.07401</td>
<td>0.67427</td>
</tr>
</tbody>
</table>
Among all the dependent variables the highest abnormal return loss occurred on day zero where the minimum abnormal returns loss was 68.24%; the maximum abnormal return gain was 16.62% on that same day. The mean abnormal return on the same day was a loss of 6.71%. Notice that the mean loss was greater on day zero than on any other day after the news. (Compare the mean reported here with 6.25% on day zero for the 98 firms. This can be seen in Graph 6.1 and the annexed table to the left of the graph). Among all the days after the news, the highest maximum abnormal returns gain (51.25%) occurred on day 4 after the news. On that day the minimum abnormal returns was a loss of 14.72% and the mean abnormal return on the same day was a gain of 1.3248%. The lowest abnormal loss (-11.02%) occurred on day 6 after the news. The maximum abnormal return gain was 27.58% on the same day. The descriptive statistics relating to the remaining ex post abnormal returns and the six-day cumulative abnormal return (CAR) can be found in Table 6.5.

The minimum (maximum) log of amount mentioned in the news was 4.4 (11.19), with mean of 8.49. The minimum (maximum) value of log of total assets is 6.26 (12.98), mean value being 9.56. The minimum (maximum) value of log of shareholders’ equity is 7.23 (10.34), average value being 8.56.

**Levels of relationship between ex post abnormal returns and amount**

We use several methods to analyse the relationship between ex post abnormal returns and the amount mentioned in the news. First we ordered the data in ascending order by amount mentioned and grouped the entire 83 firms into tertiles of Low, High and Medium group. Arbitrarily, we allocated the first 27 firms to the first tertile (“Low group”), the next 27 firms to the middle (“Medium group”) and the last 29 firms to the third tertile (“High group”). The intention is merely to show the descriptive statistics of each group, so we did not truncate the data. The descriptives of the non-truncated but ordered and grouped data is presented in Table 6.6.

As one would expect from Table 6.6, without truncating the data the highest value of the variables is to be found in the High group; naturally so because it contains the
highest number of firms with the highest values. For example, high mean of amount ($9.77), high total assets ($10.94) and high shareholders' equity ($9.304) are associated with high mean (1.86) of day zero abnormal returns.

Table 6.6 Descriptive Statistics of Ordered and Grouped Data  n = 83

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day zero AR, Low</td>
<td>27</td>
<td>-68.24</td>
<td>-5.71</td>
<td>-20.1637</td>
<td>16.66513</td>
</tr>
<tr>
<td>Day zero AR, Medium</td>
<td>27</td>
<td>-5.7</td>
<td>-7</td>
<td>-3.009</td>
<td>1.8591</td>
</tr>
<tr>
<td>Day zero AR, High</td>
<td>29</td>
<td>-.66</td>
<td>16.62</td>
<td>1.8591</td>
<td>3.56293</td>
</tr>
<tr>
<td>Day t+1 AR, Medium</td>
<td>27</td>
<td>-4.30</td>
<td>.34</td>
<td>-1.4837</td>
<td>1.39744</td>
</tr>
<tr>
<td>Day t+1 AR, High</td>
<td>29</td>
<td>.40</td>
<td>22.49</td>
<td>5.0166</td>
<td>5.22860</td>
</tr>
<tr>
<td>Day t+2 AR, Low</td>
<td>27</td>
<td>-63.92</td>
<td>-1.10</td>
<td>-8.3670</td>
<td>13.67591</td>
</tr>
<tr>
<td>Day t+2 AR, Medium</td>
<td>27</td>
<td>-1.05</td>
<td>1.26</td>
<td>.0152</td>
<td>.69914</td>
</tr>
<tr>
<td>Day t+2 AR, High</td>
<td>29</td>
<td>1.40</td>
<td>16.62</td>
<td>4.9876</td>
<td>3.69945</td>
</tr>
<tr>
<td>Day t+3 AR, Low</td>
<td>27</td>
<td>-16.83</td>
<td>-1.95</td>
<td>-5.3911</td>
<td>3.41454</td>
</tr>
<tr>
<td>Day t+3 AR, Medium</td>
<td>27</td>
<td>-1.77</td>
<td>.54</td>
<td>-.1867</td>
<td>.62550</td>
</tr>
<tr>
<td>Day t+3 AR, High</td>
<td>29</td>
<td>.63</td>
<td>37.27</td>
<td>5.1738</td>
<td>7.04285</td>
</tr>
<tr>
<td>Day t+4 AR, Low</td>
<td>27</td>
<td>-14.72</td>
<td>-1.03</td>
<td>-4.3556</td>
<td>3.90419</td>
</tr>
<tr>
<td>Day t+4 AR, Medium</td>
<td>27</td>
<td>-1.02</td>
<td>1.22</td>
<td>.1330</td>
<td>.59045</td>
</tr>
<tr>
<td>Day t+4 AR, High</td>
<td>29</td>
<td>1.25</td>
<td>51.25</td>
<td>7.7234</td>
<td>7.69629</td>
</tr>
<tr>
<td>Day t+5 AR, Low</td>
<td>27</td>
<td>-17.95</td>
<td>-1.08</td>
<td>-4.1389</td>
<td>3.91962</td>
</tr>
<tr>
<td>Day t+5 AR, Medium</td>
<td>27</td>
<td>-.92</td>
<td>.72</td>
<td>-.2256</td>
<td>.41787</td>
</tr>
<tr>
<td>Day t+5 AR, High</td>
<td>29</td>
<td>.72</td>
<td>37.83</td>
<td>5.7190</td>
<td>7.69629</td>
</tr>
<tr>
<td>Day t+6 AR, Low</td>
<td>27</td>
<td>-11.02</td>
<td>-1.02</td>
<td>-4.1867</td>
<td>1.80518</td>
</tr>
<tr>
<td>Day t+6 AR, Medium</td>
<td>27</td>
<td>-1.51</td>
<td>.71</td>
<td>-.4352</td>
<td>.60163</td>
</tr>
<tr>
<td>Day t+6 AR, High</td>
<td>29</td>
<td>.71</td>
<td>27.58</td>
<td>5.7059</td>
<td>7.06495</td>
</tr>
<tr>
<td>CAR, Low</td>
<td>27</td>
<td>-9.31</td>
<td>-.75</td>
<td>-2.1990</td>
<td>1.80414</td>
</tr>
<tr>
<td>CAR, Medium</td>
<td>27</td>
<td>-.71</td>
<td>.38</td>
<td>-.1232</td>
<td>.30873</td>
</tr>
<tr>
<td>CAR, High</td>
<td>29</td>
<td>.44</td>
<td>6.03</td>
<td>1.3884</td>
<td>1.27381</td>
</tr>
<tr>
<td>Log amount, Low</td>
<td>27</td>
<td>4.40</td>
<td>7.88</td>
<td>7.1162</td>
<td>.75866</td>
</tr>
<tr>
<td>Log amount, Medium</td>
<td>27</td>
<td>7.89</td>
<td>9.01</td>
<td>8.4799</td>
<td>.35428</td>
</tr>
<tr>
<td>Log amount, High</td>
<td>29</td>
<td>9.07</td>
<td>11.19</td>
<td>9.7699</td>
<td>.59067</td>
</tr>
<tr>
<td>Log total assets, Low</td>
<td>27</td>
<td>6.26</td>
<td>8.72</td>
<td>8.2753</td>
<td>.48141</td>
</tr>
<tr>
<td>Log total assets, Medium</td>
<td>27</td>
<td>8.74</td>
<td>10.16</td>
<td>9.3564</td>
<td>.44557</td>
</tr>
<tr>
<td>Log total assets, High</td>
<td>29</td>
<td>10.17</td>
<td>12.98</td>
<td>10.9400</td>
<td>.76597</td>
</tr>
<tr>
<td>Log equity, Low</td>
<td>27</td>
<td>7.23</td>
<td>8.18</td>
<td>7.8324</td>
<td>.26851</td>
</tr>
<tr>
<td>Log equity, Medium</td>
<td>27</td>
<td>8.19</td>
<td>8.82</td>
<td>8.5155</td>
<td>.19174</td>
</tr>
<tr>
<td>Log equity, High</td>
<td>29</td>
<td>8.85</td>
<td>10.34</td>
<td>9.2971</td>
<td>.39456</td>
</tr>
</tbody>
</table>

Another way we examine the level of relationship between ex post abnormal returns and amount mentioned is to graph the relationship between the two variables' data by
partitioning both sets of data into tertiles of Low, Medium, and High group after ordering and truncating the firm size to 81. We truncated the 83 firms to 81 in order to have equal number of firm sizes in each group. The data continue to be ordered by amount in ascending manner. **Graphs 6.5a-h** show the relationship between *ex post* abnormal stock returns and amount mentioned. Day zero abnormal returns and cumulative abnormal returns are used as specimen. The red and blue lines represent the amount mentioned and abnormal stock returns, respectively.

**Graph 6.5a** and **Graph 6.5b**, respectively, presents the non-partitioned but truncated and ordered data of day zero abnormal return and CAR, and log amount. It appears from both graphs that abnormal returns and amount mentioned move in the same (positive) direction, although the increase in day zero abnormal returns line appears more rapid and discernable in **Graph 6.5a** where it almost touched the amount line from below.

To see the differences between the groups (if any), we recommend that henceforth the graphs should first be read in vertical columns before comparing them horizontally.

Graphs of truncated, ordered and partitioned data are presented below. Starting the analysis with day zero abnormal returns (represented by the first vertical set of panels), visual inspection of the panel shows that day zero abnormal return and amount appear to move in the same direction. However, the shape, and magnitude (magnitude to be discussed in a moment) of the differences between the group appears different. It can be seen that the “High group” shows a more rapid increase in
the level of day zero abnormal returns; so rapid that it almost touched the amount line from below at around 9 on the y axis.

Specifically, in Graphs 6.5c-g, it appears that day zero abnormal return and amount are recording some positive increases in all groups. However, the positive increase seems to be more rapid and pronounced at the beginning of the Low group (Graph 6.5c) and at the end of the High group (Graph 6.5g) where day zero abnormal return line almost touched the amount line from below.
In Graphs 6.5d-h of the vertical panels to the right, it appears that both CAR and amount mentioned are recording some gradual, positive increase for the groups, although the CAR line never touched the amount line from below in any of the groups.

Please note that we did not control for size in drawing the graphs; we merely wanted to use them to show the relationship between abnormal stock returns and amount mentioned. This notice becomes necessary in view of the results or signs of the test reported in Table 6.10 below where the statistical significance between day zero abnormal returns, CAR and amount are tested.

**Magnitude of changes in levels of data**

The third way we examine the relationship between ex post abnormal returns and amount mentioned is by computing/extracting the mean of each group and then comparing the magnitude of the absolute mean relative changes, between any two combinations of the three groups. The computed absolute relative changes in means are presented in Table 6.7. The means in this table are the same as those in Table 6.6, except that the means in Table 6.7 have been rounded to 2 decimal places.

<table>
<thead>
<tr>
<th>Table 6.7 Means of Ordered and Partitioned Data and Relative Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low, L</strong> (n=27)</td>
</tr>
<tr>
<td>Mean of day zero abnormal returns</td>
</tr>
<tr>
<td>Mean of day t+1 abnormal returns</td>
</tr>
<tr>
<td>Mean of day t+2 abnormal returns</td>
</tr>
<tr>
<td>Mean of day t+3 abnormal returns</td>
</tr>
<tr>
<td>Mean of day t+4 abnormal returns</td>
</tr>
<tr>
<td>Mean of day t+5 abnormal returns</td>
</tr>
<tr>
<td>Mean of day t+6 abnormal returns</td>
</tr>
<tr>
<td>Mean of cumulative abnormal returns</td>
</tr>
<tr>
<td>Mean of log amount</td>
</tr>
<tr>
<td>Mean of log total assets</td>
</tr>
<tr>
<td>Mean of log of shareholders' equity</td>
</tr>
</tbody>
</table>
For each of the event days after the news, CAR, amount, total assets, and value of shareholders’ equity, we examine the group with the highest relative changes among the groups. From the last major column of Table 6.7, it can be seen that the highest absolute relative change (|1.618|) in the mean of abnormal return of day zero occurred in the High-Medium group.

The highest absolute relative change (|4.39|) in the mean of abnormal returns of day one after the news is to be found in the High-Medium group as well. For the abnormal returns of day two up to day six after the news and cumulative abnormal returns contained in the table, it can be seen that the High-Medium group column contains the highest absolute relative changes. So we concluded that the High-Medium group contains the greatest magnitude of changes in abnormal stock returns.

However, the High-Low group contains the highest absolute relative changes in the means of amount mentioned, total assets and shareholders’ equity.

**Paired Samples Test**

We are now in a position to test for the differences between the means of any two groups. In order to perform paired samples test whereby the number of firms in each group are equal, we truncated the data at both ends of the continuum. Thus we removed the lowest and highest values from the data before dividing it into tertiles consisting of 27 firms in each group. We then computed the trimmed means of each of the respective groups: Low, Medium and High. The descriptive statistics resulting from this exercise are presented in Table 6.8.
### Table 6.8 Descriptive Statistics of Ordered and Grouped Data n = 81

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day zero AR, Low</td>
<td>27</td>
<td>-68.24</td>
<td>-5.71</td>
<td>-20.1637</td>
<td>16.66513</td>
</tr>
<tr>
<td>Day zero AR, Medium</td>
<td>27</td>
<td>-5.7</td>
<td>7</td>
<td>1.605</td>
<td>1.9205</td>
</tr>
<tr>
<td>Day zero AR, High</td>
<td>27</td>
<td>-66</td>
<td>6.44</td>
<td>1.605</td>
<td>1.9205</td>
</tr>
<tr>
<td>Day t+1 AR, Medium</td>
<td>27</td>
<td>-4.30</td>
<td>0.34</td>
<td>-1.4837</td>
<td>1.3974</td>
</tr>
<tr>
<td>Day t+1 AR, High</td>
<td>27</td>
<td>0.40</td>
<td>12.21</td>
<td>3.9311</td>
<td>3.33</td>
</tr>
<tr>
<td>Day t+2 AR, Low</td>
<td>27</td>
<td>-63.92</td>
<td>-1.10</td>
<td>-8.3670</td>
<td>13.67591</td>
</tr>
<tr>
<td>Day t+2 AR, Medium</td>
<td>27</td>
<td>-1.05</td>
<td>1.26</td>
<td>-0.0152</td>
<td>0.69914</td>
</tr>
<tr>
<td>Day t+2 AR, High</td>
<td>27</td>
<td>1.40</td>
<td>11.13</td>
<td>4.255</td>
<td>3.69945</td>
</tr>
<tr>
<td>Day t+3 AR, Low</td>
<td>27</td>
<td>-16.83</td>
<td>-1.95</td>
<td>-5.3911</td>
<td>3.41454</td>
</tr>
<tr>
<td>Day t+3 AR, Medium</td>
<td>27</td>
<td>-1.77</td>
<td>0.54</td>
<td>-0.1867</td>
<td>0.62550</td>
</tr>
<tr>
<td>Day t+3 AR, High</td>
<td>27</td>
<td>0.40</td>
<td>3.03</td>
<td>1.13142</td>
<td>0.80494</td>
</tr>
<tr>
<td>Day t+4 AR, Low</td>
<td>27</td>
<td>-9.31</td>
<td>-0.75</td>
<td>-2.1990</td>
<td>1.80414</td>
</tr>
<tr>
<td>Day t+4 AR, Medium</td>
<td>27</td>
<td>-7.1</td>
<td>0.38</td>
<td>-1.232</td>
<td>0.30873</td>
</tr>
<tr>
<td>Day t+4 AR, High</td>
<td>27</td>
<td>0.44</td>
<td>1.13142</td>
<td>0.80494</td>
<td></td>
</tr>
<tr>
<td>Day t+5 AR, Low</td>
<td>27</td>
<td>4.40</td>
<td>7.88</td>
<td>9.6215</td>
<td>5.7933</td>
</tr>
<tr>
<td>Day t+5 AR, Medium</td>
<td>27</td>
<td>7.89</td>
<td>9.01</td>
<td>8.4799</td>
<td>3.5428</td>
</tr>
<tr>
<td>Day t+5 AR, High</td>
<td>27</td>
<td>9.1285</td>
<td>11.19</td>
<td>9.8215</td>
<td>5.7933</td>
</tr>
<tr>
<td>Day t+6 AR, Low</td>
<td>27</td>
<td>6.26</td>
<td>8.72</td>
<td>8.2753</td>
<td>4.8141</td>
</tr>
<tr>
<td>Day t+6 AR, Medium</td>
<td>27</td>
<td>8.74</td>
<td>10.16</td>
<td>9.3564</td>
<td>4.45557</td>
</tr>
<tr>
<td>Day t+6 AR, High</td>
<td>27</td>
<td>10.18</td>
<td>12.98</td>
<td>10.9969</td>
<td>0.76360</td>
</tr>
<tr>
<td>Log amount, Low</td>
<td>27</td>
<td>7.23</td>
<td>8.82</td>
<td>8.5155</td>
<td>0.19174</td>
</tr>
<tr>
<td>Log amount, Medium</td>
<td>27</td>
<td>8.88</td>
<td>10.34</td>
<td>9.3300</td>
<td>0.38894</td>
</tr>
<tr>
<td>Log amount, High</td>
<td>27</td>
<td>10.80</td>
<td>12.21</td>
<td>11.13</td>
<td>4.255</td>
</tr>
<tr>
<td>Log total assets, Low</td>
<td>27</td>
<td>7.23</td>
<td>8.82</td>
<td>8.5155</td>
<td>0.19174</td>
</tr>
<tr>
<td>Log total assets, Medium</td>
<td>27</td>
<td>8.88</td>
<td>10.34</td>
<td>9.3300</td>
<td>0.38894</td>
</tr>
<tr>
<td>Log total assets, High</td>
<td>27</td>
<td>10.80</td>
<td>12.21</td>
<td>11.13</td>
<td>4.255</td>
</tr>
<tr>
<td>Log equity, Low</td>
<td>27</td>
<td>6.26</td>
<td>8.72</td>
<td>8.2753</td>
<td>4.8141</td>
</tr>
<tr>
<td>Log equity, Medium</td>
<td>27</td>
<td>8.74</td>
<td>10.16</td>
<td>9.3564</td>
<td>4.45557</td>
</tr>
<tr>
<td>Log equity, High</td>
<td>27</td>
<td>10.18</td>
<td>12.98</td>
<td>10.9969</td>
<td>0.76360</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>27</td>
<td>9.1285</td>
<td>11.19</td>
<td>9.8215</td>
<td>5.7933</td>
</tr>
</tbody>
</table>

The result of the paired samples t-test is presented in Table 6.9.
Table 6.9 shows that the differences between the magnitudes in the means of the paired groups are statistically significant at conventional levels for all variables. This suggests that the means of the different groups are not equal to one another. We can
conclude that the statistically significant differences observed in the magnitudes of the means of the groups are not due to chance but because of the "scientific" procedure used in dividing the data into tertiles.

**Bivariate and Partial Correlation analysis**

Table 6.10 contains both bivariate and partial correlations, and ρ-values (ρ-values in parentheses and italicised) between ex post abnormal returns, and log amount; and between cumulative abnormal returns and log amount for each of days t+1 up to t+6, and that of cumulative abnormal returns, CAR. The first column of the table contains the bivariate correlations between ex post abnormal returns, and log amount. The second and third columns contain the partial correlations of the variables, each controlling for total assets and shareholders’ equities, respectively.

It appears that all the correlations (bivariate and partial) are low, and none of them is statistically significant.

<table>
<thead>
<tr>
<th></th>
<th>Bivariate Correlations</th>
<th>Partial Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount (N=83)</td>
<td>Amount, controlling for total assets (df=80)</td>
</tr>
<tr>
<td>Day Zero abnormal returns</td>
<td>0.133 (0.237)</td>
<td>0.065 (0.561)</td>
</tr>
<tr>
<td>Day t+1 abnormal returns</td>
<td>-0.004 (0.968)</td>
<td>-0.041 (0.713)</td>
</tr>
<tr>
<td>Day t+2 abnormal returns</td>
<td>-0.113 (0.307)</td>
<td>-0.178 (0.110)</td>
</tr>
<tr>
<td>Day t+3 abnormal returns</td>
<td>0.002 (0.989)</td>
<td>-0.065 (0.561)</td>
</tr>
<tr>
<td>Day t+4 abnormal returns</td>
<td>0.014 (0.900)</td>
<td>0.087 (0.436)</td>
</tr>
<tr>
<td>Day t+5 abnormal returns</td>
<td>0.042 (0.705)</td>
<td>0.044 (0.692)</td>
</tr>
<tr>
<td>Day t+6 abnormal returns</td>
<td>-0.023 (0.834)</td>
<td>0.065 (0.564)</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.068 (0.540)</td>
<td>-0.099 (0.375)</td>
</tr>
</tbody>
</table>

Specifically, highlighting the correlations of day zero which is our main interest, it appears that there are low positive statistically non-significant correlations. The
bivariate correlation is 0.133. The partial correlation is 0.065 and 0.133, controlling for the effect of total assets and shareholders' equity, respectively. In addition, there is a low negative statistically non-significant correlation (-0.099, -0.075) between CAR and amount, controlling for total assets and shareholders' equity, respectively. The bivariate correlation for CAR is -0.068, which is also not statistically significant.

The remaining respective bivariate and partial correlations for day t+1 up to day t+6 are included in Table 6.10 for sensitivity check. For these remaining days, consistent with the results obtained for day zero correlations the highest absolute correlation among the low bivariate correlation is 0.113. The highest absolute partial correlation is 0.178. They are not statistically significant. These can be found on day t+2.

The statistically non-significant correlations are suggestive that ex post (especially, day zero) abnormal returns are independent of the amount mentioned in the news. In other words, the magnitude of amount mentioned in the news of accounts manipulation is not associated with ex post abnormal stock returns61.

Variation in ex post abnormal returns explained by amount, $R^2$

To what extent (if any) can amount mentioned in the news explain the variation in ex post abnormal returns? To answer this question we examine the computed $R^2$ statistic obtained from the linear regression. $R^2$ has been described as a measure of association between a dependent variable and an optimally weighted combination of two or more independent variables (see Cohen et al. 2003, p. 69). In other words, "...it is the proportion of variation in the dependent variable that is predicted from the best linear combinations of the independent variables" (Tabachnick and Fidell (2007, p. 130)).

61 Unfortunately, we encountered some difficulty in determining and summing the amount mentioned in the news. We expect that this may likely introduce some noise, but not bias the result.
Table 6.11 presents extracted $R^2$ statistic from the linear regressions, controlling for firm size. Consistent with the partial correlations reported above, it can be seen that amount mentioned in the news explains very small proportion of the variation in abnormal returns after the news, after controlling for the two proxies of size – total assets and shareholders’ equity.

<table>
<thead>
<tr>
<th>Ex post Abnormal Returns</th>
<th>$R^2$, controlling for total assets</th>
<th>$R^2$, controlling for shareholders’ equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day Zero abnormal returns</td>
<td>0.024</td>
<td>0.019</td>
</tr>
<tr>
<td>Day t + 1 abnormal returns</td>
<td>0.007</td>
<td>0.005</td>
</tr>
<tr>
<td>Day t + 2 abnormal returns</td>
<td>0.035</td>
<td>0.014</td>
</tr>
<tr>
<td>Day t + 3 abnormal returns</td>
<td>0.014</td>
<td>0.003</td>
</tr>
<tr>
<td>Day t + 4 abnormal returns</td>
<td>0.019</td>
<td>0.003</td>
</tr>
<tr>
<td>Day t + 5 abnormal returns</td>
<td>0.002</td>
<td>0.006</td>
</tr>
<tr>
<td>Day t + 6 abnormal returns</td>
<td>0.023</td>
<td>0.003</td>
</tr>
<tr>
<td>Cumulative abnormal returns</td>
<td>0.011</td>
<td>0.006</td>
</tr>
</tbody>
</table>

Even for day zero, which is of particular interest, amount mentioned in the news is only able to explain (at the highest) 1.90%/2.40% of the variation, depending on what is used to control for firm size.

Put together, the low and non-statistically significant correlations suggest that there is no statistically significant association between investors’ reactions and amount mentioned in the news after controlling for the size of firms. The overall low R-square results also confirm this assertion.

In conclusion, therefore, the low correlations and low explanatory powers suggests that there is almost a non-existent second-order effect between amount mentioned in newspapers and investors’ reactions to news of accounts manipulation. Therefore, we cannot reject the null hypothesis that the amount mentioned in news of accounts manipulation is not associated with ex post abnormal stock returns.
6.2.4. Test of hypothesis 8, H8

In this section, we examine the association (or lack thereof) between ex post abnormal returns (especially that of day zero) and the section where the news is inserted in newspapers. The hypothesis is tested by two methods. The first method uses cross-tabulation chi-square test\(^62\) whereby the computed mean of each type of section is tabulated against the number of times each type of section is used in publishing the news. This is shown in Table 6.12.

<table>
<thead>
<tr>
<th>Section type</th>
<th>Frequencies</th>
<th>Mean abnormal returns of day zero</th>
</tr>
</thead>
<tbody>
<tr>
<td>BFC section = 3</td>
<td>62</td>
<td>-8.566</td>
</tr>
<tr>
<td>News section = 2</td>
<td>22</td>
<td>-3.959</td>
</tr>
<tr>
<td>Others sections = 1</td>
<td>14</td>
<td>-16.794</td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td></td>
</tr>
</tbody>
</table>

Based on average or mean values, it is interesting to see that the greatest investor-reaction was felt when the news was published in “other sections” of the newspaper. One would have thought that since the “business, finance, and companies sections” were used to publish the news the most, the greatest investor-reaction would have come from those sections. However, since this is a measure of averages, it is within the realm of possibilities to speculate that the extreme reactions of a few investors who read the “other sections” of the newspaper may have given the impression that the greatest fall in abnormal returns is from those who read that section.

The result of the chi-square test is reported in Table 6.13. Pearson chi-square value is 6.00 (4df), Asymp. Sig. \(p\)-value (2-tailed) = 0.199, which is not significant. The Likelihood ratio value is 6.59 (4df), Asymp. Sig. \(p\)-value (2-tailed) = 0.159. By this test result, we are unable to reject the null hypothesis that the type of section used in publishing news of accounts manipulation in newspaper is not associated with ex post abnormal stock returns.

\(^{62}\) We separate the abnormal returns of the 98 firms into three groups according to the type of section used in publishing the news of accounts manipulation.
Table 6.13

<table>
<thead>
<tr>
<th></th>
<th>Chi-Square Tests</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>6.000(a)</td>
<td>.199</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>6.592</td>
<td>.159</td>
</tr>
<tr>
<td>Linear-by-Linear Assoc.</td>
<td>.430</td>
<td>.512</td>
</tr>
</tbody>
</table>

9 cells (100.0%) have expected count less than 5. The minimum expected count is .33.

As a robustness check, following Files et al. (2009), we carried out a linear regression of section-type on section index to further test the null hypothesis. To be able to do this, we need “coefficients” of the three sections. We constructed and used a “weighted index of section-type” as surrogate for the coefficients. The weighted index of section-type is constructed whereby the product of each section-type and its frequency is divided by the total of the products.

Table 6.14 presents this information.

Table 6.14. News Placement Section Types and Section-type Weighted Index

<table>
<thead>
<tr>
<th>Section type</th>
<th>Frequencies</th>
<th>Product</th>
<th>Weighted Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business, Finance, &amp; Companies</td>
<td>62</td>
<td>186</td>
<td>0.762295</td>
</tr>
<tr>
<td>News section</td>
<td>22</td>
<td>44</td>
<td>0.180328</td>
</tr>
<tr>
<td>Others section</td>
<td>14</td>
<td>14</td>
<td>0.057377</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>244</td>
<td>1</td>
</tr>
</tbody>
</table>

Next, we now use the weighted index of section-types to run a linear regression. The means of each section-type abnormal returns associated with each type of section is regressed on the associated section-type’s weighted index thus:

\[ \text{Ex Post } ARSEC_\gamma = \alpha + \text{Section}_\text{Index} + \varepsilon \]

Where:

\( \text{Ex Post } ARSEC_\gamma \) = Mean of each section type of \( ex \ post \) abnormal returns.

\( \text{Section}_\text{Index} \): 0.76 = Business, finance and companies’ sections; 0.18 = News Sections; and 0.06 = Other sections

The descriptive of section-types are presented in Table 6.15.
The results of the linear regression runs are presented in Table 6.16.

Section_Index is associated with each type of newspaper section: Business, Finance, and Companies section; News section; and Other sections.

Section_Index of day zero up to day t+5 are not statistically significant, whereas (interestingly) it is statistically significant for day t+6 and CAR. Using day zero as
point of reference, the test result is also unable to reject the null hypothesis that the type of section used in publishing news of accounts manipulation in newspaper is not associated with \textit{ex post} abnormal stock returns.

The inability to reject the null hypothesis from both tests is an indication that the section used in publishing news of the act has no second-order effect on investors' reactions.

\textbf{6.3 Summary}

This chapter has been analysing the data of the consequences of exposed accounts manipulation.

One of the investigations we carried out is whether mean (median) of \textit{ex post} abnormal returns are equal to mean (median) of \textit{ex ante} abnormal returns for firms exposed in accounts manipulation. The test results suggest that there are statistically significant differences between means of \textit{ex ante} and \textit{ex post} average abnormal returns and means of \textit{ex ante} and \textit{ex post} cumulative average abnormal returns. The differences are not equal to zero. The differences may be attributed to news of accounts manipulation as reported in newspapers, which is consistent with the conclusion that there is information content in news of accounts manipulation.

Another investigation we carried out is whether amount mentioned in the news of accounts manipulation is correlated with \textit{ex post} abnormal returns of day zero. Both bivariate and partial correlation results show that there is low positive statistically non-significant correlation between \textit{ex post} abnormal returns and amount. The partial correlations controlled for the effect of size via total assets and shareholders' equity, alternately. In other words, the amount mentioned in news of accounts manipulation is \textit{not} associated with \textit{ex post} abnormal stock returns. The result also shows that amount mentioned in the news explains very small proportion of the variation in abnormal returns after the news, after controlling for size. The low correlations and low explanatory powers suggest that there is almost a non-existent second-order effect
between amount mentioned in newspapers and investors' reactions to news of accounts manipulation.

We tried to compare the differences in magnitude in means of the three groups of data. We found that the High-Medium group contains the greatest absolute relative changes in abnormal stock returns while the High-Low group contains the highest absolute relative changes in the mean of amount, total assets and shareholders' equity.

Finally, test result suggests that we do not reject the null hypothesis that the section used in publishing news of accounts manipulation in newspaper is not associated with \textit{ex post} abnormal stock returns. This means, therefore, that investors' reactions to the news of accounts manipulation are not likely to depend on the section used in publishing news.

The tests reported in this chapter and those of chapter 5, are now presented in chapter 7, which follows next.
Chapter 7

Results and findings

7.1 Introduction

Together, the preceding two chapters analysed the data of the study. Interesting results emerged from the analysis, many of them not surprising. The present chapter synthesises and presents the results of the analysis and discusses the findings of the entire study.

The findings reported in this chapter have been partitioned into two parts. The first part presents the findings on the institutional influences on accounts manipulation while the second part presents the findings on the consequences for firms exposed in the act. As the findings are discussed, they are interlaced with the foundational theories upon which the study is premised.

7.2 Findings relating to Part I

The findings presented for Part I are reported in the order in which they were analysed in chapter 5. Accordingly, we begin with legal origin, which is addressed by the first hypothesis, \((H_1)\).

7.2.1 Test of hypothesis one \((H_1)\) on legal origin

The first of the two chi-square tests relies on the unbiased assumption that accounts manipulation is equally likely to occur anywhere in the world irrespective of the legal origin of a country in which firms operate; in other words there is no association between legal origin and the occurrence of accounts manipulation. We test this null hypothesis against the alternative hypothesis that the occurrence of accounts manipulation is likely to be associated with legal origins.

63 These are stated at the beginning of chapter 2.
The computed chi-square value of 210.10 (4df) is more than the Critical chi-square values of (4 df) 9.49 (for \( \rho \)-value of 0.05, 2-tailed) and 7.779 (for \( \rho \)-values of 0.10, 2-tailed). Since this result rejects the null hypothesis, we therefore conclude that legal origins are associated with the occurrence of accounts manipulation.

In the second test, we relate the number of accounts manipulation uncovered in each legal origin to the number of listed firms in that legal origin against the total number of listed companies in all five legal origins of the world. One would expect that the more the proportion of listed firms in a legal origin, the more there will be cases of accounts manipulation, *ceteris paribus*.

The computed chi-square value of 41.04 (4df) is more than the Critical chi-square values of 9.49 (4 df) (for \( \rho \)-value of 0.05, 2-tailed) and 7.779 (for \( \rho \)-values of 0.10, 2-tailed), which again rejects the null hypothesis that there is no association between the occurrence of accounts manipulation and legal origins.

If the number of exposed accounts manipulation in English legal origin is related to the number of companies listed there *vis-à-vis* the total number of companies listed worldwide, it will be appreciated why our result is inconsistent with Burgstahler *et al.* (2006, p. 1012) who argue that in countries with large and highly developed equity markets, public firms engage in even less earnings management.

The inconsistency between our result and Burgstahler *et al.*'s (2006) can be reconciled by considering the almost unfettered press environment in which firms in English legal origin operate. If one were to refer to Table 5.3 one would see that more than 62% of listed companies in the world are based in countries that follow the English legal system, e.g. U.S. and UK. Arguably, these countries have a vibrant press so much so that the press is able to report more cases of accounts manipulations there. So the relatively free press environment in English legal origin which is able to publish most cases of accounts manipulation than the press in other legal origins could have driven the result obtained in this study.
7.2.2 Findings on multivariate test of influences hypotheses

The findings on multivariate tests carried out on the institutional structures variables or hypotheses are presented in the following pages.

Table 7.1.1 is a mirror image of Table 5.9 on page 148. It presents values of logistic regression coefficients and Sig. p-values (in parentheses). Significant coefficients are starred (*) and in bold print in the table. The findings are reported on each hypothesis. Note from the outset that the Sig. p-values associated with the three control variables are not significant across all the models.

**CORRUPT** (Corrupt environment)

The coefficient of corruption perceptions index is not statistically significant across all the models; so we reject the null hypothesis that, *ceteris paribus*, the level of corruption in a country is not likely to affect the occurrence of accounts manipulation.

**PRESS** (Press freedom)

The coefficients of press freedom are low and not statistically significant in all the models. So, we reject the null hypothesis that a free press is not likely to affect the occurrence of accounts manipulation. Our result is consistent with that of prior research in the area: Miller (2006) provides evidence that the press serves its roles well by being a watchdog for accounting fraud. Brunetti and Weder (2003) conclude that a free press is bad news for corruption. Dyck *et al.* (2008) suggest that the media may play a role in pressuring corporate managers and directors to behave in socially acceptable ways. This finding is also consistent with the argument advanced few moments ago (see the discussion on test of legal origin above) that the relatively free press environment in English legal origin which is able to publish most cases of accounts manipulation than the press in other legal origins.
### Table 7.1.1 Multiple Logistic Regressions of Accounts Manipulation on Independent Variables

\[
\text{Prob(ACCitan)} = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \epsilon)
\]

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model I Coefficient</th>
<th>Model II Coefficient</th>
<th>Model III Coefficient</th>
<th>Model IV Coefficient</th>
<th>Model V Coefficient</th>
<th>Model VI Coefficient</th>
<th>Model VII Coefficient</th>
<th>Model VIII Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(p-Value)</td>
<td>(p-Value)</td>
<td>(p-Value)</td>
<td>(p-Value)</td>
<td>(p-Value)</td>
<td>(p-Value)</td>
<td>(p-Value)</td>
<td>(p-Value)</td>
</tr>
<tr>
<td>Intercept</td>
<td>-12.210 (0.061)</td>
<td>-12.495 (0.053)</td>
<td>-10.112* (0.008)</td>
<td>-7.911* (0.005)</td>
<td>-9.144* (0.005)</td>
<td>-7.707* (0.008)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORRUPTENVI</td>
<td>-0.337 (0.302)</td>
<td>-0.296 (0.323)</td>
<td>-0.394 (0.178)</td>
<td>-0.121 (0.514)</td>
<td>-0.359 (0.197)</td>
<td>-0.103 (0.372)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRESSFree</td>
<td>0.000 (0.974)</td>
<td>0.000 (0.998)</td>
<td>0.000 (0.950)</td>
<td>0.000 (0.681)</td>
<td>0.000 (0.977)</td>
<td>0.000 (0.697)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INVSTPro</td>
<td>0.765* (0.038)</td>
<td>0.744* (0.041)</td>
<td>0.791* (0.031)</td>
<td>0.673 (0.054)</td>
<td>0.769* (0.036)</td>
<td>0.660 (0.062)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOE</td>
<td>0.089* (0.000)</td>
<td>0.086* (0.000)</td>
<td>0.091* (0.000)</td>
<td>0.088* (0.000)</td>
<td>0.087* (0.000)</td>
<td>0.086* (0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log GNI</td>
<td>0.542 (0.688)</td>
<td>0.599 (0.613)</td>
<td>0.743 (0.539)</td>
<td>0.397 (0.765)</td>
<td>0.036 (0.208)</td>
<td>0.036 (0.208)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hofstede_PDP</td>
<td>0.039 (0.196)</td>
<td>0.038 (0.196)</td>
<td>0.038 (0.203)</td>
<td>0.036 (0.208)</td>
<td>0.038 (0.203)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hofstede_UA</td>
<td>0.007 (0.739)</td>
<td>0.007 (0.736)</td>
<td>0.011 (0.572)</td>
<td>0.010 (0.600)</td>
<td>0.011 (0.572)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerke R²</td>
<td>0.672 0.663 0.679 0.664 0.679 0.663 0.676</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cox &amp; Snell R²</td>
<td>0.510 0.497 0.509 0.498 0.509 0.497 0.507</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 Log likelihood</td>
<td>48.419 50.349 48.532 48.580 49.689 50.323 48.909</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Model I** = \( \text{Prob(ACCitan)} = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \epsilon) \)

**Model II** = \( \text{Prob(ACCitan)} = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \epsilon) \)

**Model III** = \( \text{Prob(ACCitan)} = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \epsilon) \)

**Model IV** = \( \text{Prob(ACCitan)} = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \epsilon) \)

**Model V** = \( \text{Prob(ACCitan)} = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \epsilon) \)

**Model VI** = \( \text{Prob(ACCitan)} = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \epsilon) \)

**Model VII** = \( \text{Prob(ACCitan)} = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \epsilon) \)

**Model VIII** = \( \text{Prob(ACCitan)} = F(a + \beta_1 \text{CORRUPT} + \beta_2 \text{PRESSFree} + \beta_3 \text{INVSTPro} + \beta_4 \text{SOE} + \beta_5 \log \text{GNI} + \beta_6 \text{Hofstede PD} + \beta_7 \text{Hofstede UA} + \epsilon) \)
The consistency between the results reported here together with those in the cited prior literatures' findings and the argument advanced during the discussion of legal origin can be attributed to two factors. First, it is possible that the press in some countries may not report cases of accounts manipulation because it does not meet the definition of what the press considers as accounts manipulation, in which case it will not be reported. We could not control for this due to absence of measurement instruments that track differences in press's perception of accounts manipulation in different countries.

Second, the study considers reported cases of accounts manipulation in newspapers. It is possible that the press in some countries may not have reported cases of accounts manipulation not because it is not free to do so but simply because there are other higher priorities to report on or about, such as the major news events that occurred throughout the world during this period (2000-2008).

**INVSTPro (State's attempt at investor-protection)**

Investor-protection is statistically significant or marginally significant in five of the eight models. It is highly statistically positively significant in Models I, III, V, and VII with respective Sig. \( p \)-values of 0.038, 0.041, 0.031, and 0.036 and marginally statistically positively significant at 0.05 in Model VI \( (p = 0.054) \). It is not significant in Models II and IV, and VIII.

The positive statistical significant is indicative that the State's attempt at investor-protection is likely to affect the occurrence of accounts manipulation, supporting the alternative hypothesis. The signed results suggest that the State's attempts at investor-protection may probably encourage the occurrence of accounts manipulation.

The high statistically significant result in Model I is an indication that a unit change in the State's attempts at investor-protection is likely to lead to the occurrence of accounts manipulation by 0.765, controlling for the intervening influences of the two cultural values and gross national income. The high statistically significant
result for Model III is an indication that a unit change in the State’s attempts at investor-protection is likely to lead to the occurrence of accounts manipulation by 0.744, controlling for the intervening influences of power distance and gross national income.

The high statistically significant result in Model V is an indication that a unit change in the State’s attempts at investor-protection is likely to lead to the occurrence of accounts manipulation by 0.791, controlling for the intervening influences of the two national cultural values. The high statistically significant result in Model VII is an indication that a unit change in the State’s attempts at investor-protection is likely to lead to the occurrence of accounts manipulation by 0.769, controlling for the intervening influence of power distance only. The marginal statistical significance in Model VI is an indication that a unit change in the State’s attempt at investor-protection is likely to lead to the occurrence of accounts manipulation by 0.673, controlling for the intervening influence of uncertainty avoidance only.

The remaining models (Models II, IV and VIII) for INVSTPro would be statistically significant if one were to be lenient by considering 0.10 or 10% level of statistical significance.

The evidence presented here that the State’s attempt at investor-protection is likely to affect the occurrence of accounts manipulation may be due to the conjecture that firms may find more innovative ways to beat the game in the face of legislation or regulation. The tendency exists that managers who are under increased regulation or legislation will explore loop-holes or clever ways that enable them to cut corners, hence in the process engage in accounts manipulation.

This view is consistent with the one expressed by Ball (2009, p. 8) that regulation plays a substantial role in fostering a rules-based perspective, which plays an important role in setting the stage for the accounting scandals in the U.S. This finding is also consistent with Bushman and Petrioski [2006] who observe that in a
scenario where a "benevolent" government intervenes in poorly performing firms, firms seek to avoid such interference by exploiting reporting discretion to portray an optimistic outlook.

**SOE (State's ownership of enterprises)**

We find support for the alternative hypothesis that accounts manipulation is likely to occur in economies dominated by the State. For the full model in the first column of Table 7.1.1, or Table 5.8a standing alone on page 147, the significant result suggests that a unit change in the State's dominance of the economic activities of a country is likely to lead to the occurrence of accounts manipulation by 0.089, controlling for the effects of the two national cultural values and individuals' economic status.

In Model II where GNI is controlled for while holding the effect of the two cultural dimensions constant, the significant result suggests that a unit change in the State's ownership of enterprises is likely to lead to the occurrence of accounts manipulation by 0.085.

The significant result in Model III is indicative that a unit change in the State's dominance of the economy is likely to leads to the occurrence of the act by 0.086, holding uncertainty avoidance constant while controlling for managers' economic status (GNI) and inequality in society as captured by power distance. The significant result in Model IV suggests that a unit change in the State's dominance of an economy is likely to lead to the occurrence of accounts manipulation by 0.087, controlling for the effect of gross national income and uncertainty avoidance. Controlling for the effects of the two cultural values, Model V suggests that a unit change in State's dominance of the economy is likely to lead to the occurrence of the act by 0.091.

Controlling for the effect of uncertainty avoidance alone in Model VI, the statistically significant result is an indication that a unit change in State's
dominance of the economic activities of a country is likely to lead to the occurrence of accounts manipulation by 0.088. The significant result in Model VII is suggestive that a unit change in the State’s dominance of the economy is likely to lead to the occurrence of the act by 0.087, controlling for inequality in societies.

Finally, in Model VIII where nothing is controlled for, the significant result suggests that a unit change in the State’s dominance of the economy is likely to lead to the occurrence of accounts manipulation by 0.086.

Our finding is consistent with Bushman and Piotroski (2006) who find that in countries characterised by high State involvement in the economy firms speed recognition of good news and slow recognition of bad news about reported earnings relative to firms in countries with less State involvement. Our finding is also consistent with Bushman and Piotroski’s (2006) view that managers of publicly traded firms with partial State ownership are pressured by the State to optimistically tilt their reporting decisions.

It is interesting to note that controlling for the combined effects of national cultures and the level of wealth in a country did not affect the high predictive ability of the models. In order to drive this claim home, compare the $R^2$ in Model VIII with any of the $R^2$ in Models I to VII.

The high explanatory power of the models suggest that the model has descriptive validity and that the variables in the regressions are able to explain more than 66% of the variation in the likely occurrence of accounts manipulation.

Consistent with the behaviour of the pseudo-$R^2$, the -2LL is about the same (hovers around 48% and 51%) for all the models in Table 7.1.1, which goes to show that all the models are well-fitted.
7.3 Findings relating to the consequences – Part II

In this section, we report three main findings relating to Part II of the study.

7.3.1.1 Semi-strong-form efficiency of stock markets

To gauge how the stock market quickly reflects published news in the newspapers, we took particular interest in the abnormal returns of the day the news was released in the newspapers (that is the abnormal returns of day zero) comparing it with abnormal returns of day one before and after the news, days (-1, 1), and other event days in the event window as well.

To continue connecting with the reader, Graph 6.1 on page 161 in chapter 6 is duplicated here as Graph 7.1.1 below. It is to show how the stock market is informationally efficient in the semi-strong-form.

From the graph, we find that while the average abnormal return of the day before the news (day t = -1) is -0.85 per cent, it tumbled to -6.25 per cent on day zero, which is the day the news was published in the newspapers.

It suggests that average abnormal return is at its lowest decline ever on day zero, the day the news was published in newspapers. Indeed, none of the average abnormal returns before day zero is as low as that of day zero and the day after, day
t+1. The two days (0, +1) are the days the stock markets quickly reflected the publicly available news.

We find that average abnormal returns began to rally as from day t+1, which had a negative average abnormal stock return of 2.90%; but not up to the levels of those on the left side of day zero, days t-1 to t -6. The rise in average abnormal return peaked at 1.30% on day four after the news and then began another round of descent from day t+5. It tumbled to 0.23% on day t+6. We cannot explain the apparent anomaly in average abnormal returns of the day t+4.

But the rise in AAR from day t+1 onwards could be an indication that as the days on the right side of day zero go by the news began to fizzle out such that its negative impact on average abnormal returns began to peter out.

From Graph 7.1.1 or from the data table annexed to the right of it, the cumulative average abnormal return (CAAR) from the day the news was released on day zero is -8.47% and -2.22% when day zero is not included. The mean decrease in mean cumulative average abnormal return after the event is 1.21% = 8.47% ÷ 7, by including day zero or 0.37% = 2.22% ÷ 6, by not including day zero. The cumulative average abnormal return before day zero is -2.31%. The mean decrease in cumulative average abnormal return before the event is 0.385% = 2.31% ÷ 6.

The results obtained in this part of the thesis is consistent with those obtained in a number of extant studies such as Karpoff et al. (2008a, b), Beneish (1999a), Dechow et al. (1996), and Feroz et al. (1991) who find evidence of a fall in cumulative abnormal stock returns of firms under SEC investigation after the news broke out.

Quantity-wise, the result is also consistent with those of Bernile and Jarrell (2009) who find a statistically significant negative (-7%) abnormal stock returns on the first day of announcement of firm-specific backdating allegations in the press. The result is also in accord with Miller (2006) who finds day zero (and a three-day)
stock reaction to be up to -6.30% and (-8.20%), respectively. It is also consistent with Beneish (1999a) who documents evidence of a rapid and immediate price adjustment subsequent to unfavourable news about a company. Beneish (1999a) documents evidence of a loss in stock price of up to 21% following revelation of financial statements manipulation by managers.

The picture becomes clearer and more revealing when one looks at the graph constructed by calculations from using share prices and market index returns of day zero as denominator. This is presented in Graph 7.1.2 below, replicating Graph 6.2 on page 162.

**Graph 7.1.2**

<table>
<thead>
<tr>
<th>Days relative to exposure day, day 0</th>
<th>Average Abnormal Returns (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-6</td>
<td>11.21</td>
</tr>
<tr>
<td>-5</td>
<td>9.63</td>
</tr>
<tr>
<td>-4</td>
<td>10.03</td>
</tr>
<tr>
<td>-3</td>
<td>9.38</td>
</tr>
<tr>
<td>-2</td>
<td>9.24</td>
</tr>
<tr>
<td>-1</td>
<td>8.04</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>-3.81</td>
</tr>
<tr>
<td>2</td>
<td>-5.06</td>
</tr>
<tr>
<td>3</td>
<td>-5.60</td>
</tr>
<tr>
<td>4</td>
<td>-5.91</td>
</tr>
<tr>
<td>5</td>
<td>-4.20</td>
</tr>
<tr>
<td>6</td>
<td>-3.38</td>
</tr>
</tbody>
</table>

*The AARs here are derived from using share prices and market indices of day zero as denominator in all calculation of abnormal returns, hence they are higher than those annexed to Graph 7.1.1 which are derived from day-on-day calculations of abnormal returns.

It can be seen from the graph that average abnormal returns after the news fell below point 0 (or became negative) after day zero. As one can see from the graph, the shaded area of *ex post* average abnormal returns is below the 0 point on the y axis whereas the shaded area of average abnormal returns before the news is above the 0 point on the same y axis. For the first time ever, average abnormal return became negative (and remained so throughout the remaining event days) after day zero. The mean of cumulative average abnormal returns to the left of day zero for all 98 firms is 9.59% = (11.21 + 9.63 + 10.03 + 9.38 + 9.24 + 8.04) / 6 and the
mean of cumulative average abnormal returns to the right of the event day for all 98 firms is \(-4.66\% = -(3.81 + 5.06 + 5.60 + 5.91 + 4.20 + 3.38) / 6\). Notice that this method neutralises day zero average abnormal returns to the value 0.

The finding regarding information content of news of accounts manipulation should be considered in the context of an on-going discourse regarding the efficacy of the semi-strong form efficient market hypothesis. It is pertinent to mention that prior research evidences are far from being unanimous regarding the information efficiency of the stock market, including the semi-strong form efficiency. (Please see the literatures reviewed in chapter 2 in this respect). Some of the literatures present mixed research evidences about the validity of the semi-strong form efficient markets hypothesis.

Quoted recently in a Times of London column, Fama, “the father” of efficient markets hypothesis (as the column would refer to him), publicly lamented that “...nobody wants to believe that markets are efficient...” \(^{64}\) He was quoted in that column to have said that:

"Different views account for the chasm between popular opinion about the non-efficiency of financial markets and the status of the theory among financial economics. There is no conclusive evidence that asset prices reflect true underlying reality." — culled from The Times of London issue of May 5 2009.

Having kept abreast of the irregularity of research evidences and the controversy surrounding the efficient market hypothesis, based on our own research findings in this thesis, we cannot but take a position by reaching the conclusion that the stock market is informationally efficient in the semi-strong form.

Our position is predicated on the fact that the information about accounts manipulation used in this study was published in newspapers in 36 countries around

\(^{64}\) The Times of London, May 5 2009, page 46
the world, and we have strong reasons to believe that newspapers are a source of public information available to investors\textsuperscript{65}.

7.3.1.2 Finding relating to abnormal stock returns

Table 7.2.1 containing the descriptive statistics is a duplicate of Table 6.2 in chapter 6. Table 7.2.2 mirrors Table 6.3 of the same chapter 6 and it contains the result of the Paired Samples test of difference between means of \textit{ex ante}/\textit{ex post} abnormal returns data.

<table>
<thead>
<tr>
<th>Table 7.2.1 Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Day t-1 AAR, using day zero prices</td>
</tr>
<tr>
<td>Day t+1 AAR, using day zero prices</td>
</tr>
<tr>
<td>Day t-1 AAR, based on rolling calculation</td>
</tr>
<tr>
<td>Day t+1 AAR, based on rolling calculation</td>
</tr>
<tr>
<td>Day Zero AAR, based on rolling calculation</td>
</tr>
<tr>
<td>Ex post CAAR, based on rolling calculation</td>
</tr>
<tr>
<td>Ex ante CAAR, based on rolling calculation</td>
</tr>
<tr>
<td>Ex post CAAR, using day zero prices</td>
</tr>
<tr>
<td>Ex ante CAAR, using day zero prices</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
</tr>
</tbody>
</table>

\textsuperscript{65} An anonymous commentator thinks that if stock markets are informationally efficient they should already have anticipated or priced the bad news in stock prices and not be surprised by it. We reply that there probably is a merit in this argument if one were considering test for private information, which is the strong-form efficient markets hypothesis. Indeed, for all practical purposes, it may be possible that any private information at the disposal of any one market participant is available to every other market participant who may not be aware that others are in possession of the same information. This is the premise upon which the strong-form efficient markets hypothesis or test for private information is anchored, which the present research does not operate on. At the risk of repeating ourselves, the present study is not concerned with test for private information or strong-form market efficiency.
We begin reporting the tables with the result whereby stock returns of all event days were calculated by using share prices and market index returns of day zero as the denominator throughout. The descriptives to this are found in the first two and last two rows of Table 7.2.1. The paired samples tests relating to stock returns being calculated based on day zero’s share prices and market index returns are found in the first and last rows of Table 7.2.2. The mean (8.0462) of one-day average abnormal return before the news is greater than the mean (-3.8136) of one-day average abnormal return after the news, day (-1, +1) by 11.86%. The mean difference is statistically significant; t = 5.642, 97df, 2-tailed Sig. p-value = 0.000. The mean (9.5898) of cumulative average abnormal returns before the news, ex ante CAAR, is greater than the mean (-4.6597) of cumulative average abnormal returns after the news, ex post CAAR, by 14.25%. The mean difference is statistically significant; t = -5.950, 97df, 2-tailed Sig. p-value = 0.000.

Analysing the table based on the result of “day-on-day” or “rolling” calculations, the mean (-0.8461) of one-day average abnormal return before the news is greater than mean (-2.9035) of one-day average abnormal return after the news (-1, +1) by 2.06%, however the mean difference is not statistically significant, t-value of 1.561, Sig. p-value (2-tailed) = 0.122. The non-significant result is not surprising because this is actually a two-day return as there is an intervening day (day zero) in-between the two, which (perhaps) have impacted the result.
The mean (-0.8461) of one-day average abnormal returns, AAR, before the news is higher than the mean (-6.2486) of day zero average abnormal returns, AAR, (-1, 0) by 5.40%. The difference between the two means is statistically significant. T-value of the difference between day -1 and day zero is 3.97, Sig. p-value (2 tailed) = 0.000. The mean (-2.9035) of one-day AAR after the news is higher than the mean (-6.2486) of day zero AAR (+1, 0) by 3.35%. The mean difference between day +1 and day zero is statistically significant at the 5% level, with t-value of 2.108, Sig. p-value (2-tailed) = 0.038. The two significant test results reported for days (-1, 0) and (+1, 0) suggest that the difference between mean of average abnormal returns of day zero and the day before and after it are not equal zero.

The mean (-0.3707) of cumulative average abnormal returns after the news, ex post CAAR, is higher than the mean (-1.4256) of cumulative average abnormal returns after the news, ex ante CAAR, by 1.05. The difference between the two means is statistically significant. T-value is 2.67, with Sig. p-value (2-tailed) = 0.009.

Absent the aberrant result of days (-1 and +1) calculated on a rolling basis, of which has been explained as being likely impacted upon by the intervening day zero result, the statistically significant differences between means of ex ante and ex post average abnormal returns and ex ante and ex post cumulative average abnormal returns are suggestive that there are differences between means of ex post and ex ante abnormal stock returns. The statistical differences may be attributed to news of accounts manipulation as reported in newspapers, which is also consistent with the conclusion that there is information content in news of accounts manipulation.

The statistically significant test result is not affected by the methods used in the tests, except for the Sign Test which is statistically significant at the 0.05 level.
7.3.2 **Relationship between abnormal returns and amount in the news**

We run two related parametric tests to investigate the association (or lack thereof) between the amounts mentioned in the news of accounts manipulation and *ex post* abnormal returns. We first examine the bivariate and partial correlations between *ex post* abnormal returns and amount mentioned in the news, controlling for size (using total assets and shareholders' equity alternately) in the partial correlations. The second test examines the extent to which amount mentioned in the news is able or unable to influence investors' decisions or reactions to the news through abnormal returns, an effort informed by the materiality concept in accounting.

We find that the correlations between amounts mentioned and *ex post* abnormal returns of all event days are very low and statistically not significant, for both the bivariate correlations and partial correlations. The partial correlations controlled for the effect of size via total assets and shareholders' equities, see Table 6.10 in chapter 6, page 182. The statistically non-significant correlations are suggestive that *ex post* abnormal returns are independent of the amount mentioned in the news. In other words, the magnitude of the amounts mentioned in news of accounts manipulation is not associated with *ex post* abnormal stock returns.

We go further in the investigation of the extent to which amount mentioned in the news explains the variation in *ex post* abnormal returns. Consistent with the low correlations, results indicate that amount mentioned in the news has a very low (in most cases, close to zero) explanatory power, see Tables 6.10 and 6.11 in chapter 6. Surprisingly, this applies to even day zero whose fall in abnormal returns was most dramatic, as captured pictorially succinctly by Graphs 7.1.1 and 7.2.2 above.

At the highest, amount mentioned in the news is able to explain only about 3.5% and 1.9% of the variation in *ex post* abnormal stock returns, controlling for the effect of total assets and shareholders' equity, respectively. Even for day zero, which is of particular interest, amount mentioned in the news is only able to explain 1.9%/2.4% of the variation in abnormal returns, depending on what is used to
control for firm size. The other low explanatory powers of amount mentioned in relation to *ex post* abnormal returns can be seen in Table 6.11, chapter 6, page 184.

Put together, the two results suggest that we cannot reject the null hypothesis that there is no association between investors' reactions and amount mentioned in the news of accounts manipulation after controlling for (and not controlling for) the size of firms. In other words, the results suggest that amount mentioned in the news of accounts manipulation has no significant second-order effect on *ex post* abnormal stock returns.

### 7.3.3 Relationship between *ex post* abnormal returns and the section where news of accounts manipulation is inserted

We examined the association between *ex post* abnormal returns and the section where the news is inserted in newspapers. Using two different approaches, we tested the null hypothesis that the type of section used in publishing news of accounts manipulation is *not* associated with *ex post* abnormal stock returns.

The result of the chi-square test is reported in Table 6.13 in chapter 6, page 186. Pearson chi-square value is 6.00 (4df), Asymp. Sig. *p*-value (2-tailed) = 0.199, which is *not* significant. Also, except for day t+6 and CAR, all the results of the linear regression run reported in Table 6.16 in chapter 6, page 186, indicate a non-statistically significant relationship between *ex post* abnormal returns and the type of section used in conveying news of accounts manipulation.

Based on day zero which is the main research interest, this results suggest that the type of section used in publishing news of accounts manipulation in newspaper is not likely to be associated with *ex post* abnormal stock returns. So, the type of section used in publishing the news has no second-order effect on investors' reactions.
This is inconsistent with prior research findings based on limited attention theory. For example, Klibanoff et al. (1998) find negative price reaction to major news event published on the front page of The New York Times. The lack of statistical significance of our result may be a pointer to the apparent negative effect which other competing sources of news which are based on advances in information and telecommunications technology may be having on newspapers for investment decisions nowadays, especially with respect to sophisticated or informed investors. In spite of this, we believe that newspapers may remain important for investors in general; a belief that is re-enforced by the anecdotal and research evidences on page 9 of chapter 1. Moreover, in our opinion, the newspaper is still likely to provide more detailed or in-depth analysis than instantaneous or electronic news media. We will address this issue further in chapter 8 when we discuss threats to certain aspects of the thesis, section 8.6.1.

7.4 How (and where) the theories were operationalised in the study

In the next few remaining paragraphs of this chapter, we discuss how (and where) we operationalised the theories mentioned in this study. We also identify the specific hypotheses that are used in applying the theories. It is instructive to reiterate that it has not been intended from the outset that any one theory should be overly emphasised against the others. As they were conceived, none of the theories is meant to override the others; so any misinterpretation of weight or importance or prominence which may have been ascribed to any one particular theory at the expense of the others is hereby corrected.

In this development, due recognition is accorded to issues that are likely to threaten the validity of certain aspects of this study in relation to the theories applied in the study. Some of these concerns or threats have already been mentioned elsewhere in earlier parts of the study, especially in the footnotes, but we will try to reiterate and articulate them more formally in the concluding chapter, chapter 8, when we discuss the limitations of the study in general.
7.4.1 Contingency theory

The tests for all hypotheses in the first part of the thesis draw upon the contingency or situational theory. The theory suggests that managerial behaviour is constrained or contingent upon internal and external factors in the environment in which a manager operates.

David et al. (2010, p. 257) write that "an optimal fit may require different organisational characteristics to suit different external conditions." Mockler (1971) posits that "in doing any job, the manager's first step is to identify the major characteristics of the situation confronting him." It is with this in mind that Gardin and Greve (2004, 307) say that "fit is the result of a natural selection process that ensures that only the best-performing organisations survive to be observed at any point of time"; compare this with Alchian (1950) who argues that survivors may appear to be those having adapted themselves to the environment.

Jermias and Gani (2004) also find that contingent fit has a significant positive relationship with business unit effectiveness regardless of the strategic choice, which is consistent with the proposition from contingency theory that no systems are universally appropriate to all organisations and to all circumstances.

This finding reported in this thesis does not imply any thing about the validity or otherwise of the contingency theory.

7.4.2 Political economy

The tests of the impact of legal origin ($H_1$), corrupt environment ($H_2$), the role of the press ($H_3$), the State's ownership of enterprises ($H_4$), and investor-protection ($H_5$) draw upon political economy theory of accounting. Among others, Bushman and Piotroski (2006) use the theory to explore how reported accounting numbers are shaped by the institutional structure of the country in which firms are domiciled. Specifically, the premise of their analysis is that legal/judicial system,
securities laws, and tax regime create incentives that influence the behaviour of corporate executives, investors, regulators and other capital market participants. Also, Haw et al. (2004) use the theory to arrive at the conclusion that private control benefits are limited in situations where there is both an independent press that publicises information about improper behaviour and a large number of educated investors who read the newspaper and sanction improper behaviour.

7.4.3 Political cost hypothesis

The test of the State’s involvement in capital markets through regulations and legislations aimed at investor-protection is drawing upon political cost hypothesis of positive accounting theory. The theory uses firm size as a surrogate for political attention and suggests that large firms, especially, are more likely than small ones to use accounting choices to reduce reported earnings because when reported earnings are very high the interest of the State, its operatives and agencies and politicians are likely to be attracted to the firm so much so that these parties would want to “redistribute” or appropriate part of the high earnings to themselves by way of taxes, levies and politically-motivated solicitations.

7.4.4 Semi-strong efficient market hypothesis

Hypothesis 6 draws upon the semi-strong-form version of the efficient market hypothesis. This theory tests the information content of news generally, and it says that the stock market fully reflects all publicly available information. We applied the theory to see how news that is published in newspapers impounds stock prices.

The tests conducted in the study confirm that the means of ex post abnormal stock returns are different from those of ex ante abnormal stock returns, one likely reason being attributed to the information contained in the news.
7.4.5 Materiality

The relationship between ex post abnormal stock returns and the magnitude or size of the amount mentioned in newspapers (H2) does not rely on any formal theory. However, the investigation is informed by one of the objectives or elements of financial statements, which is the materiality concept or assumption. The International Accounting Standards Board (IASB) Framework says, in part, that "... materiality is a screen or filter used to determine whether information is sufficiently significant to influence the decisions of users in the context of the entity...” The IASB Framework goes on to note that materiality provides a threshold or cut-off point for taking decisions. The amount mentioned in news of accounts manipulation is "material" if the size influences the decisions of investors in pricing the securities of firms exposed in the act of accounts manipulation.

Miller (2006, p. 1004) argues that frauds that involve a large dollar magnitude may be deemed as more newsworthy which is likely to increase the benefits of being published in an article. The present study mimics Miller (2006) by empirically investigating whether ex post abnormal stock returns, especially of the day the news is released, are correlated with the magnitude of the amount mentioned in newspapers.

7.4.6 Limited attention theory

The test regarding the association between ex post abnormal stock returns and the section where news is inserted in newspapers, H4, attempts to exploit the properties of limited attention theory (aka Klibanoff et al (1998), Daniel et al. (2002), Hirshleifer and Teoh (2003), and Peng et al. (2007), among others). As it is used in this study, we investigated whether the type of section used in publishing news of accounts manipulation in newspapers is one element that helps the "completeness” of stock prices reactions to the news. We tested the hypothesis that ex post abnormal stock returns are not associated with the type of section used...
in publishing the news in newspapers. The hypothesis was not rejected, leading to the conclusion that the type of section where the news is inserted in newspapers does not have a second-order effect on investors' reactions.

Short discussion

At first sight, limited attention may seem to relate more to individual decision making which may make it appear less convincing as an explanation of how share prices are formed as the outcome of thousands of individual decisions. Well, from behavioural finance perspectives, Lee (2001, p. 235) has argued that "price discovery is a dynamic and complex process, which is accomplished through the interplay between noise traders and information arbitrageurs".

In addition, based on conceptual grounds some people might be concerned that even though a single investor's attention is likely to be limited, doesn't the market aggregate all the noisy information used by individuals and reflect all available information, especially given that there are professional, informed investors, or institutional investors on the market? There are mixed opinions on this, divided along the lines of the early economists' (typified by Adam Smith, Irving Fisher and John Maynard Keynes) and the behavioural finance aficionados typified by Lee, Haw et al., and Hirshleifer, among others. Lee (2001), Haw et al. (2004), Hirshleifer (2001), Hirshleifer and Teoh (2003), among others argue from behavioural finance perspective that imperfect rationality affects investment decisions and market outcomes. This is against the mainstream finance and early economists' argument that perfect rationality and information efficiency prevails in the capital market (e.g., Fama, 1991).

Prior literature in behavioural finance and accounting (see, for example, Shleifer and Vishny (1997), Hirshleifer (2001), Lee (2001), Daniel (2002), and Hirshleifer and (Teoh, 2003); among others) concur with the simple intuition that arbitrageurs' and sophisticated investors' (including institutional investors) ability to bear against
mispricing is limited, and that larger noise trader shocks lead to less efficient pricing.

From behavioural finance school, there are probable explanations why naïve investors’ reactions are likely to affect stock prices. The explanations come from awareness based on market incompleteness and fundamental risk which places limit to arbitrage by informed or sophisticated investors. Some of the explanations also include transactions costs, sentiment risk, financial constraints, agency, or anything else that deters rational investors from taking large positions (see for example Shleifer and Vishny, 1997; Klibanoff et al., 1998; and Lee, 2001). Any such limits to arbitrage would allow irrational investors to affect prices, so that “investor naïveté can influence stock prices” (Hirshleifer and Teoh 2003, p. 375).66

7.5 Summary

This chapter is a synthesis of chapters 5 and 6. It has been presenting the findings of the tests performed in those two chapters. Still treating issues in accordance with the two-part trajectory of the study, it presented the findings according to the hypotheses of the study. While making its presentation, it aligns the findings to extant research findings and the many foundational theories upon which the research is berthed.

Finally, from a global perspective it engages in some very important discussions on issues that revolve around the study as a whole.

The next chapter, chapter 8, draws the curtain on the entire study by making conclusions, highlighting the contributions of the study to the literature, looking at policy implications and suggesting possible areas for further future research.

66 In the spirit of Hirshleifer and Teoh (2003), this study has made the simplifying assumption that investors are ex ante identical.
Chapter 8
Conclusions, policy implications and
suggestions for further studies

8.1 Summary

Up until this point, this study has been undertaking empirical investigations of the incidence of accounts manipulation. Following the study's trajectory, the investigations have been conducted in two related respects, which are dichotomised as (a) effects of institutional structures on accounts manipulation and (b) consequences for firms exposed in the act.

The present chapter wraps up the entire research process begun in chapter 1. One after the other, this concluding chapter is revisiting each of the past seven chapters, reviewing and summarily presenting what each of them has to offer. This is accomplished in section 8.2. Section 8.3 summarises the study's findings. The chapter also points to areas in which we believe the study has made important contributions to the literature (section 8.4). In section 8.5 we present the policy implications of the study. Section 8.6 looks at the limitations of the study as well as threats to the validity of certain theories used in the study. Finally, section 8.7 offers suggestions as to likely areas for further future researches.

8.2 Review of preceding chapters

The introductory chapter, chapter 1, set the ball rolling by contextualising the area of study. It identified accounts manipulation as the topic of study, defining the term in the process. In that chapter, we explained why we chose the terms accounts manipulation as part of the title of the thesis.

Another major issue addressed by chapter 1 is whether the newspaper is still relevant in today's capital markets. We addressed this issue in minutiae details, and provided
research and anecdotal evidences that point to the relevance and possible use of the newspaper by every category of investors in their decision calculus, even in this twenty-first century modern age of technological advancements.

With data compiled and published by renowned world organisations such as the United Nations and International Telecommunications Union, we were able also to show evidences to the effect that newspapers are still widely used in this century, although this is being challenged by emergent electronic sources. We hope the evidences and data are convincing.

Chapter 2 reviewed the literature, and this was done in the following order: Section 2.2 reviewed the literature regarding the theories that were drawn upon to conduct the study. Section 2.3 reviewed related literatures on earnings management or accounts manipulation, as we use the term in this study.

Chapter 3 formally presented the research questions and accompanying hypotheses for the study. There were research questions and hypotheses relating to the environment-wide influences on accounts manipulation as well as research questions and hypotheses relating to the consequences of the act being exposed in the newspaper. Respectively, section 3.2 and 3.3 handled these issues.

Chapter 4 dealt with methodological and research designs issues. In the main, it addressed several issues ranging from data collection to method of data analysis. In specific terms, section 4.2 explained the methods of identifying the research sample and sources of data. Section 4.3 of chapter 4 also described the study's sample.

The chapter also provided minutiae descriptions of variables of the study, section 4.4. Furthermore, the chapter listed sources of the instruments used in measuring variables of the study, including types and sources of data bases. Finally, section 4.6 explicated the methods of data analyses that were employed in chapters 5 and 6, and provided justifications for their use (section 4.7). Overall, chapter 4 is a step-by-step guide to the research designs and methodology.
Chapters 5 and 6 concentrated on analysing the data for the study. While chapter 5 concentrated on analysing the institutional structures' data, chapter 6 occupied itself with analysing the consequences data. As a prelude to the analysis proper, among other things, the chapters explained how the data on the two strands of the research are analysed.

Chapter 7 synthesised and reported the findings of the analyses carried out in the two chapters before it.

In the meantime, we present Table 8.1 to show in one place the institutional structures and consequences hypotheses as well as their sources of data. Accordingly, the table is separated into two panels: Panel A for environment-wide issues and Panel B for consequences issues.

| Table 8.1 Panel A. Summary of Influences, Hypotheses and Source(s) of Data |
|-----------------------------|---------------------------------|-----------------------------|
| **Variables**               | **Summary of hypotheses**       | **Sources of data**         |
| Legal Origin                | There is no association between the legal origins in which firms operate and the occurrence of accounts manipulation, *(II)_1* | La Porta et al. (1998, 2008), Harper and McNulty (2008) and the World Factbook, 2009 |
| Corrupt environment         | Ceteris paribus, the level of corruption is not likely to affect the occurrence of accounts manipulation, *(II)_2* | Corruption Perception Index of Transparency International |
| (CORRUPTENV)                |                                 |                             |
| Press freedom               | Ceteris paribus, the level of press freedom is not likely to affect the occurrence of accounts manipulation, *(II)_3* | World Press Freedom Index of Reporters Without Borders |
| (PRESS_FREE)                |                                 |                             |
| State-Ownership Enterprises | Ceteris paribus, State’s ownership of enterprises is not likely to affect the occurrence of accounts manipulation, *(II)_4* | Economic Freedom of the World database |
| (SOEs)                      |                                 |                             |
| Investor protection         | Ceteris paribus, the State’s attempts at investor-protection is not likely to affect the occurrence of accounts manipulation, *(II)_5* | Strength of Investor Protection index of World Banks’ Doing business |
| (INVSTPRO)                  |                                 |                             |
|                            | 1.1 Power Distance and          |                             |
|                            | 1.2 Uncertainty Avoidance       |                             |
|                            | 2. Gross national income        | World Bank’s World Development Indicators |
Table 8.1 Panel B  Summary of Consequences Hypotheses, and Source(s) of Data

| For firms exposed in accounts manipulation, there is no difference between ex post and ex ante abnormal stock returns, ($H_0$) | Datastream, Bloomberg, Yahoo!Finance, Google finance, Amadeus, AOL money and finance, etc |
| The amount mentioned in news of accounts manipulation is not associated with ex post abnormal returns, ($H_2$) | Newspapers, Amadeus, Datastream, Bloomberg, Yahoo! Finance, Google finance, AOL money and finance |
| The section used in publishing news of accounts manipulation in newspaper is not associated with ex post abnormal stock returns, ($H_0$) | Newspaper publications |

**8.3 Summary of findings**

Results from of the findings will now be summarised, beginning with legal origin.

The two chi-square tests of legal origin reject the null hypothesis that there is no association between the legal origins in which firms operate and the occurrence of accounts manipulation. This leads to accepting the alternative hypothesis and concluding that legal origins in which firms operate are likely to be associated with the occurrence of accounts manipulation. This conclusion can be tempered by the view that most of the accounts manipulations were reported in common law countries, which arguably, have a vibrant press that is perhaps able to report cases of accounts manipulations more than the press in other legal origins. This could have driven the result obtained in this study. We will refer to this later in the next few paragraphs.

We tested the null hypothesis that the level of corruption is not likely to affect the occurrence of accounts manipulation. The documented evidence is inconsistent with this hypothesis, so it is rejected. Rejection of the null hypothesis suggests that the level of corruption is likely to affect the occurrence of accounts manipulation, the alternative hypothesis. So, it is, perhaps, possible that the occurrence of accounts manipulation can be associated with a country's level of corruption.
We tested the null hypothesis that a free press is not likely to affect the occurrence of accounts manipulation. The test result is not statistically significant, so we reject the null hypothesis that a free press is not likely to affect the occurrence of accounts manipulation. We can therefore conclude that a free press is likely to affect the occurrence of accounts manipulation.

The null hypothesis that the State’s attempt at investor-protection is not likely to affect the occurrence of accounts manipulation was tested. At the 0.05 level, investor-protection is statistically significant or marginally significant in five of the eight models. It is highly statistically positively significant in Models I, III, V, and VII with respective Sig. $p$-values of 0.038, 0.041, 0.031, and 0.036 and marginally statistically positively significant at 0.05 in Model VI ($p = 0.054$). Using the result of the main research model, Model I, the positive statistical significant is indicative that the State’s attempt at investor-protection is equally highly likely to affect the occurrence of accounts manipulation, supporting the alternative hypothesis.

Note that if we reduce $\alpha$ level to 0.10, investor-protection would be statistically significant in all the models.

Furthermore, the signed results in all the models where investor-protection is positively statistically significant suggest that the State’s attempts at investor-protection may probably lead to the occurrence of accounts manipulation.

Legislations and/or regulations are supposed to provide a level playing field for firms and other participants in the capital market hence one would have expected attempts to protect investors will mitigate the occurrence of accounts manipulation. The result obtained here is against this expectation. One possible explanation we can proffer for this result is by conjecturing that when faced with increased regulation or legislation, firms perhaps seek out innovative ways to circumvent the rules. So, there is a possibility that managers who are under increased regulation or legislation can explore loop-holes or look for new clever ways that enable them to circumvent the rules, hence in the process engage in accounts manipulation.
We find support under all the eight regression models for the alternative hypothesis that State's ownership of enterprises is likely to affect the occurrence of accounts manipulation. The tests in all the models show a statistically significant result, albeit with very low or close to zero level of significance.

As to the predictive ability of the institutional structure variables and accounts manipulation, the Nagelkerke (Cox & Snell) R-squared statistic is used to provide documented evidences that suggest that the level of corruption, press freedom, State's dominance of the economy, and the State's attempts at investor-protection are together able to explain more than 66% (51%) of the variation in the likely occurrence of accounts manipulation. The deletion and/or iteration of the control variables from the main model did not affect the explanatory powers of the models as -2 Log Likelihood hovers around 48 and 51, which is a very small change.

In the second set of tests carried out in chapter 6, we documented evidence suggesting that the stock market is informationally efficient in the semi-strong form by reacting to newspaper publication of news of accounts manipulation. To this effect, we showed that average abnormal returns were at their lowest ebb the day the news of accounts manipulation was published in daily newspapers in 36 countries around the world. In addition, the paired samples t-tests carried out indicate that there are statistically significant differences between means of ex ante and ex post abnormal stock returns, which may be attributed to the information content of news of accounts manipulation, 0.

Our finding showed that amount mentioned in the news of accounts manipulation is not statistically significantly associated with ex post abnormal stock returns. This was after controlling for the effect of firm size, in all the models. The same result obtained when we did not control for size at all. All the models have low explanatory power as the amount mentioned in the news is able to explain, after controlling for firm size through total assets, between 0.20% (minimum, as per day
t +5) and 3.50% (maximum, as per day t +2) of the variations in ex post abnormal returns, see first column of Table 6.11 on page 183. Considering day zero abnormal returns, the amount mentioned in the news is able to explain between 1.90% and 2.40% of the variation; see the first row of Table 6.11 of the same page.

We tested the null hypothesis that the type of section used in publishing news of accounts manipulation is not associated with ex post abnormal stock returns. The two tests carried out using both the chi-square test and linear regressions are consistent in not rejecting the null hypothesis. The inability to reject the null suggests that the type of section used in publishing news of accounts manipulation is not likely to have a second-order effect on investors’ reactions. This may be due to the fact that investors are using other alternative sources of news (e.g., newswires, radios, television and other instantaneous sources) to make their moves.

**8.4 Contributions of the study to the literature**

In terms of contributions, this research makes some significant number of contributions to the literature. First, to the best of our knowledge, this study is the first in the annals of accounting and finance research to investigate the effect of corrupt environment, role of the press, State’s ownership of enterprises and State’s attempts at investor-protection on the occurrence of accounts manipulation in one study. The documented evidences show that these variables explain more than 66% (Nagelkerke) or 51% (Cox and Snell) of the variation in the likely occurrence of accounts manipulation, after controlling for the effects of inequality and uncertainty avoidance in national cultures as well as managers’ economic status via countries’ level of wealth or gross national income.

Second, this study contributes to the literature by showing that State’s dominance of the economic activities of a country is likely to lead to the occurrence of accounts manipulation.
Third, we contribute to the literature by showing that the State's attempts at investor-protection is highly likely to lead to the likelihood of accounts manipulation occurring.

Fourth, we contribute to the literature by showing that for firms exposed accounts manipulation, *ex post* abnormal returns are different from *ex ante* abnormal returns, and that the information contained in news of accounts manipulation impounds stock prices negatively.

Fifth, the study contributes to the literature on limited attention by showing that investors' reactions to the news of accounts manipulation may not be associated with the type of section used in publishing the news in daily newspapers. This contribution is unique in that we show this through exogenous placement of news in different sections of a newspaper. The only study that has attempted to implement the theory with a newspaper is Klibanoff *et al.* (1998). Their study was very narrow because they investigated share prices reaction by looking at the effect of news inserted on only the front page of only one daily newspaper (The New York Times) in only one country, the U.S.

As well as exogenously implementing limited attention theory, our study looked at three sections of numerous newspapers from 36 countries around the world (some of the newspaper titles are listed on page 85 of this thesis). This may explain why our result differs from Klibanoff *et al.* (1998). Furthermore, we contribute to the literature by showing that there is no statistically significant association between investors' reactions and amount mentioned in the news, after controlling for the size of firms.

Finally, we contribute to the literature from theoretical and epistemological standpoint. In specific terms, the study contributes to the literature by proposing a
conceptual framework for understanding accounts manipulation\(^67\) after offering a more embracing name than earnings management from what earnings management is hitherto narrowly construed to mean.

### 8.5 Policy implications of the study

The result of this study has implications regarding the extent to which the capital market can be regulated. At the moment, the IOSCO is collaborating with a number of countries to ensure that there are high standards and a strong, fair, efficient and robust capital markets that will protect investors across the globe\(^68\). Underlying this collaboration is the need for greater (perhaps, enhanced) regulation and monitoring of, and legislation for, the capital market. This will entail that the IOSCO and its member-countries actively intervene in capital markets. The lesson to be learnt here is that there is a limit to which these measures can go. It is a good thing to “fight against cross border securities market misconduct” ([https://www.iosco.org](http://www.iosco.org))\(^69\) but if applied wrongly, interventions can lead capital market participants to invent innovative ways to beat the rules, advertently or inadvertently, thereby engaging in practices that can harm investors.

Furthermore, even though it has been said that standards alone have not been sufficient or effective in curtailing accounts manipulation, the IOSCO can collaborate more with International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) in the accounting standard setting process to see how to strike a balance between rules-based and principles-based accounting standards.

\(^{67}\) We note that this is not one of the original aims of the study, but this contribution should not be overlooked in view of the fact that one needs to understand the theoretical/epistemological foundation of what one is doing.

\(^{68}\) See [http://www.thisdayonline.com/nview.php?id=174358](http://www.thisdayonline.com/nview.php?id=174358) for one example of this collaboration.

8.6 Limitations of the study

As expected of any study, it is realistic to state that there are limitations which the study encountered. We enumerate some of them in this section.

First, the requirement that all materials used for the study must be in English language may be a limitation. Without doubt, this may have affected the depth and breadth of data collection for events that are not written in English (or do not have English language translation). Also, this requirement may have undoubtedly reduced the sample size of the study.

Second, we could not collect all our data from one source. Particular mention must be made of the variety of databases that we used to collect share prices. The reason for this combination is that no one data base was found sufficient for our purpose due to the international nature of the study, with companies and countries coming from the developed and developing markets. For example, neither DataStream nor Amadeus nor any other database standing alone could provide information about all companies involved in the study. DataStream hosts data of firms incorporated mostly in the U.S. and other advanced economies whereas Amadeus holds data on Europe-based firms.

Third, we would have wished that we also had the hard copies of newspapers that published cases of accounts manipulation, at least to feel the texture the way investors do. This was not possible because most of the newspaper editions are out of print, and/or removed from the archives because of their old, old age. We requested for past hardcopies of newspapers from newspaper houses but were told that they were unavailable or out of stock. Those who had the old copies had them in electronic or microfilm format. (The interested reader may wish to see Appendix 8-1 for a couple of replies to our request from newspaper houses). However, since we were able to access the newspapers on the internet, our work was not hindered though some people might want to pick an issue with this. To those people, our defence is that other researchers have used the same method, and their references are provided throughout the thesis.
Our study suffers from the inability to capture cultural differences in what newsmen regard as accounts manipulation for it to be reported as such. To the best of our knowledge, there is as yet no such available benchmark that captures all aspects of our all-embracing definition of accounts manipulation. Relatedly, we could not develop a measure of the extent of exposed account manipulation in various countries; all we did was to assign a code to countries where the act occurred.

8.6.1 Threats to some aspects of the study

This study is based entirely on newspaper reports of accounts manipulation. In this day and age of revolution in information and (tele)communications technology, one might question whether the newspaper still has relevance in investors’ decision making process. We argue that both individual and institutional investors and electronic channels, such as television channels, still largely use the newspaper as source of their news. For example, in England both Sky News and BBC and other television stations preview next mornings’ newspapers beginning from 1945hrs of the evening before they hit the newsstand or uploaded on the internet. The newspaper is accessible to all and sundry unlike the other more sophisticated sources which, because of economic considerations, may be mainly accessible to institutional investors. Moreover, this threat is assuaged in the light of anecdotal and research evidence (as we saw on page 9 in chapter 1 of the thesis), which reassures that the newspapers are ever-relevant in influencing investors’ reaction.

For a number of reasons, using the newspaper to operationalise the limited attention theory may be problematic. First, where more than one newspaper published the same news in different section types, it is unclear which newspaper or section type was relied upon by investors.

Second, we speak as if all investors are naive whereas there are sophisticated investors who can “see through” the news irrespective of which section it is
inserted. Some, like Lambert (2003) believes that idiosyncratic errors made by the unsophisticated, naïve or individual investor should wash out in aggregate because of the law of large numbers, and because of the actions of sophisticated or informed investors who have the ability to see through the news no matter which section it is in.\textsuperscript{70}

To our rescue, however, this threat is assuaged by the unanimous opinion in behavioural finance that arbitrageurs' and sophisticated investors' (including institutional investors) ability to bear against mispricing is limited because of market incompleteness, fundamental risk, transaction costs, sentiment risk, and anything else that places limits to arbitrage by informed or sophisticated or rational investors.

Finally, some might say that the news could have been carried by other real time online electronic sources before the newspapers get to the newsstand. They might also say that newspapers could be a very useful source of information for the individual investor, but much less so for the sophisticated investor who, in addition to the newspaper, has the wherewithal to probably acquire other sources of information.

We recognise that these problems may have introduced some noise (but not bias) in the test of limited attention theory used in the second part of the study, and they are likely to reduce the power of the test. However, this threat is likely to evaporate when one realises that even reliable and cutting-edge electronic medium such as the well-known Dow Jones News Corporation “publishes an investor sentiment index based on textual analysis of 15 U.S. newspapers”. Investment banks also rely on media coverage of issues.

\textsuperscript{70} We have not examined the role of sophisticated investors in this study, and in the spirit of Hirshleifer and Teoh (2003, pp. 374-378) this study has made the simplifying assumption that all investors are \textit{ex ante} identical.
8.7 Suggestions for further future research

This study has accomplished what it set out to do; however, there will always remain areas to be further researched: one cannot foreclose other future researchers that have the potentials to advance knowledge.

Based on experiences garnered from the study, we would like to suggest the following areas for future research. First, in this study we offered some probable reasons why accounts manipulation may occur more in one legal origin than the other. This result may be attributed to the existence of a possible joint effect between corruption perceptions and the level of reportorial freedom in the five legal regimes. We did not investigate this possible joint effect; hence, for those who are interested, we would like to recommend it as a future area of research.

Second, this study called for caution in reaching conclusions regarding the direction of the relationship between State’s ownership of enterprises and corruption perceptions, on the one hand; and State’s ownership of enterprises and the level of press freedom, on the other. These may warrant further future investigation.

Third, it can also be interesting to know which specific mode(s) among the State’s intervention mechanisms is (are) likely to encourage the occurrence of accounts manipulation.
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Appendices

Appendix 4-1  Test Statistics\(^{(a)}\) -- Wilcoxon Signed Ranks Test Result

<table>
<thead>
<tr>
<th></th>
<th>Z Value</th>
<th>Asymp. Sig. (2-tailed)</th>
<th>(Z^{*}) Value</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corruptions Perceptions Index, CG - Perceptions Index, TG</td>
<td>-3.072(a)</td>
<td>.002</td>
<td>-2.467(b)</td>
<td>.014</td>
</tr>
<tr>
<td>Press freedom, CG - Press freedom, TG</td>
<td>-4.965(b)</td>
<td>.001</td>
<td>3.189(b)</td>
<td>.003</td>
</tr>
<tr>
<td>Investor-protection, CG - Investor-protection, TG</td>
<td>-2.932(b)</td>
<td>.003</td>
<td>-1.548(a)</td>
<td>.122</td>
</tr>
<tr>
<td>State ownership of enterprises - State ownership of enterprises, TG</td>
<td>-2.171(a)</td>
<td>.030</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GNI per capital, PPP - GNI per capital, PPP, TG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hofstede's Power Distance, CG - Hofstede's Power Distance, TG</td>
<td>-1.548(a)</td>
<td>3.189(b)</td>
<td>.122</td>
<td>.030</td>
</tr>
<tr>
<td>Hofstede's Uncertainty Avoidance, CG - Hofstede's Uncertainty Avoidance, TG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{(a)}\) Based on negative ranks.
\(^{(b)}\) Based on positive ranks.
\(^{(c)}\) Wilcoxon Signed Ranks Test

Appendix 6-1

The linear regressions using shareholders equity as control for size:

\[
AR_{t-0} = \alpha + \beta_1 \text{Log}_t \text{Amount} + \beta_2 \text{Log}_t \text{Equity} + \epsilon_t \quad \ldots \quad I \\
AR_{t+1} = \alpha + \beta_1 \text{Log}_t \text{Amount} + \beta_2 \text{Log}_t \text{Equity} + \epsilon_t \quad \ldots \quad II \\
AR_{t+2} = \alpha + \beta_1 \text{Log}_t \text{Amount} + \beta_2 \text{Log}_t \text{Equity} + \epsilon_t \quad \ldots \quad III \\
AR_{t+3} = \alpha + \beta_1 \text{Log}_t \text{Amount} + \beta_2 \text{Log}_t \text{Equity} + \epsilon_t \quad \ldots \quad IV \\
AR_{t+4} = \alpha + \beta_1 \text{Log}_t \text{Amount} + \beta_2 \text{Log}_t \text{Equity} + \epsilon_t \quad \ldots \quad V \\
AR_{t+5} = \alpha + \beta_1 \text{Log}_t \text{Amount} + \beta_2 \text{Log}_t \text{Equity} + \epsilon_t \quad \ldots \quad VI \\
AR_{t+6} = \alpha + \beta_1 \text{Log}_t \text{Amount} + \beta_2 \text{Log}_t \text{Equity} + \epsilon_t \quad \ldots \quad VII \\
CAR = \alpha + \beta_1 \text{Log}_t \text{Amount} + \beta_2 \text{Log}_t \text{Equity} + \epsilon_t \quad \ldots \quad VIII \\
\]

Where

AR = Abnormal returns of a single firm on a given event day
CAR = Six-day cumulated abnormal returns of a single firm. That is, abnormal returns of a single firm from day \(t+1\) to day \(t+6\).
Log_Amount = logarithm of the total amount mentioned in the news
Log_Equity = logarithm of shareholders of the year of reporting of accounts manipulation.
Appendix 8-1:

Selected letters from newspaper houses based upon requests for printed copies of past newspapers

(1)
From: RBouygues@iht.com [RBouygues@iht.com]
Sent: Wed 15/10/2008 11:30
To: Asien EN Mr (PG/R - SoM)
Cc:
Subject: your request for back issues
Attachments:

Hello,

Thomas Kan of the IHT subscriptions service has forwarded your email to us. I am sorry to inform you that we no longer have hard copies of the edition of February 9, 2006. If you tell me what article or page you are looking for, I could send you a .pdf of the page you need.

I do have a copy of June 23, 2008 which I will mail to you today.

Sincerely,

Rebecca Bouygues
Deputy Head of Information Services
International Herald Tribune
6 bis rue des Graviers
92521 Neuilly Cedex
France
33.1.41.43.94.18
www.iht.com

(2)
From: Reader Helpline (QLD) [readerhelp@qnp.newsltd.com.au]
Sent: Thu 09/10/2008 00:35
To: Asien EN Mr (PG/R - SoM)
Cc:
Subject: FW: Past issues of your newspaper
Attachments:

Dear Etumudon,

We keep back copies of newspapers for approximately twelve months after publication, and we can post them to you. If you let us know which newspapers you require, we can give you a quote, as it is based on weight and postage.

For older stories, we can post you a copy of the page for $10.00 per page. We can also email you PDFs of pages dated after June 2001, for $20 per page.

Payment is by MasterCard or Visa.

Regards,

Reader Helpline

Queensland Newspapers
41 Campbell Street, Bowen Hills, QLD 4006
Thank you for your email.

We currently have copies of The Globe and Mail from August 1, 2008 - present date.

The cost per paper is $12.00, including shipping. Please let me know which copies you are looking for and I will make the necessary arrangements.

Kind regards,

JESSICA BLACK | Back Copies
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(416.585.5273) | 7: 416-585-5575
EFFECTS OF INSTITUTIONAL STRUCTURES ON ACCOUNTS MANIPULATION, AND CONSEQUENCES FOR FIRMS EXPOSED IN THE ACT: AN INTERNATIONAL STUDY

BY

Etumudon Ndidi Asien

A thesis submitted in fulfilment of the requirements for the award of the degree of Doctor of Philosophy, PhD

2010