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**UK INVESTMENT ANALYST REACTION TO
WINDOW DRESSING OF FINANCIAL
STATEMENTS: A LABORATORY EXPERIMENT**

by

GAETAN BRETON

**A THESIS SUBMITTED FOR
THE DEGREE OF
DOCTOR OF PHILOSOPHY**

CITY UNIVERSITY BUSINESS SCHOOL

May 1993

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ACKNOWLEDGEMENTS

I would like to express my gratitude to Professor R.J. Taffler for his unstinted help and advice, for his backing and his patience with my English.

I would also like to thank Dr. Lynda White of Imperial College, London for her very appreciated help in experimental design in chapter 5.

I am also indebted to the University of London Computer Centre for the use of its scanner and to Claire Stewart who helped me in using it.

I must thank the "Centre D'ATO" and Professor Jules Duchastel who gave me access to his content analysis computer program S.A.T.O. and also Luc Dupuy and François Daoust for their help while I was learning how to use it.

I wish also to express my appreciation to various Accounting Division workshops of the City University, participants at the 1991 British Accounting Association and the 1992 European Accounting Association Conferences for their helpful comments on different sections of this thesis.

I also want to thank my colleague Guy Cucumel for his statistical advices and Leo Vanasse for his linguistics help.

Finally, I would like to underline the funding I had first from the Université du Québec à Trois-Rivières and subsequently from the Université du Québec à Montréal.

DECLARATION

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ABSTRACT

This thesis is primarily concerned with the reaction of UK investment analysts when confronted with window dressed financial statements and its implications for stockmarket information processing and efficiency.

Three associated empirical examinations are undertaken.

1) A detailed investigation of the prevalence of window dressing in UK company accounts and the nature of such exercises is conducted using a random sample of 100 sets of accounts for large UK corporates. A substantial degree of window dressing is identified. The analysis is developed further to explore the relationship between extent of window dressing and financial position of the firm although the results are ambiguous.

2) To explore the importance of accounting information generally to the investment analysis community, relative to alternative sources, and the manner in which it is used to drive investment recommendations a detailed content analysis of a large sample of stockbroker circulars is conducted.

The results suggest the importance of accounting information for market participants may be conventionally overstated. Nonetheless the statistical findings, although significant, are not very strong which may partially reflect the heterogeneity found in the methods used by different stockbroking firms in appraising shares. Further work is required.

3) The main part of the thesis reports on a laboratory experiment with 63 experienced stockbroking analysts drawn from five of the top City houses. The analysts were required to process company accounts and adjust for window dressed items. We were forced to conclude that, at least at the time, the research took place in early 1990, investment analysts were neither very concerned by nor able or inclined to correct for creative accounting. These findings are discussed in detail and implications for different market theories drawn.

The theories conclude that there may well be valid concerns about the conventional role attributed to investment analysts as information intermediaries in maintaining market efficiency, particularly in the processing of and disseminating complex accounting information.

CHAPTER 1

INTRODUCTION

Since the early research into the effects of financial accounting information on the securities market by Ball and Brown (1968) and by Beaver (1968), ideas on this subject have evolved considerably. However, research into the impact of accounting information on stockmarket pricing requires first an underlying set of theories describing the relationship between different classes of participant, how information circulates and how equilibrium prices are reached.

Various theories have been postulated in the finance and financial accounting literature. The most important for our purposes is the Efficient Market Hypothesis (EMH) formulated by Fama (1970). Since the end of the sixties, this hypothesis

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has become unavoidable in any study into way in which accounting information is used by the market.

The EMH is normally presented in three different versions: the weak form, where no excess return can be earned through the study of past prices, the semi-strong form where no excess return can be earned by the analysis of publicly released information and, finally, the strong form which posits that all information is immediately impounded in security prices and that, therefore, no excess return is to be earned in any way even with inside information (Fama, 1977; Foster, 1986).

If universally accepted, this theory would have a major influence on the production of accounting information. In such a case published financial statements become of secondary importance since all the information they contain is already impounded in the market price of securities at the moment they are released. Therefore, on this basis, information published in financial statements can have, at best, only a confirmatory role (Hines, 1982), and, at worst, no role at all.

On the other hand, there is a continuing debate about the need for accounting standards and the process of standard

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setting, and the biased presentation of accounting numbers, albeit still in accordance with promulgated standards, that is often termed creative accounting or window dressing (Griffiths, 1986; Jameson, 1988). If accounting standards are relevant and window dressing really matters to the market, accounting numbers and the way they are produced are in fact very important and the so called 'mechanistic hypothesis' (Watts and Zimmerman, 1986) may be the correct description of market behaviour.

Whichever theory proves to be the better description of stockmarket behaviour, there are many market participants who believe in the mechanistic hypothesis: company managers (Hines, 1982) who manipulate accounting information, accountants who discuss the accounting standards, and financial journalists who claim to be scandalized by the window dressing of financial statements. All believe that market participants have a functional fixation on profit and possibly other accounting figures (e.g., gearing) and consequently that any manipulation of these figures can mislead investors. In such a case, the standard setting activity becomes crucial.

Rapid circulation of information underlies the efficient market hypothesis, but a correct interpretation of this

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information is an equally important condition (Fama, 1977). Certain commentators, however, believe that the efficient market hypothesis cannot be applied literally. The correct and accurate interpretation of financial accounting information requires a certain level of accounting knowledge. It is possible, however, that this information is not equally spread among all market participants (Lee and Tweedie, 1977, 1981). If such is the case, even in its semi-strong form, the applicability of the EMH would be seriously limited, and the question of information manipulation would arise again.

Thus, the present thesis focuses on window dressing of UK company financial statements and how such window dressing may influence security market pricing through its potential impact on market participant behaviour.

If window dressing exists, it is first because managers believe it can influence the users of firms' financial statements. Managers will wish to project an image of their company which conforms with their view of what the market should be expecting and would find acceptable. Window dressing is designed to improve the company's image (Belkaoui, 1989) and, consequently, there are, at least, two situations where window dressing may be expected. The first is where a company experiences a deterioration in its profit

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performance or key ratios (e.g., gearing) and tries to improve its image by manipulating the relevant accounting numbers. The second situation, widely commented on in the literature, occurs when a firm experiences a sudden and disorderly growth and wishes to make itself look more stable. This is the smoothing hypothesis as developed and tested by some researchers e.g., Copeland and Licastro (1968) and denounced by journalists as the main objective of most window dressing attempts (Griffiths, 1986).

A distressed company will window dress its numbers to increase profits and reduce gearing (Belkaoui, 1989), while a company growing too fast will reduce its profit, for example by making various provisions. Consequently, the direction of the modification in the profit number may indicate which type of company we are dealing with. We may thus be able to hypothesise a relationship between positive window dressing and weak and/or deteriorating financial health. In this context, the issue of how window dressed financial information reaches the market and might possibly mislead participants is of fundamental research interest.

As investment analysts play the key role in transmitting market sensitive financial information about firms to the market and in interpreting this information for those who may

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have difficulty in doing it themselves, (Lee and Tweedie, 1977, 1981), we focus our attention in this thesis on the intermediating role of financial analysts in the stockmarket.

If, theoretically, investment analysts play an important role in decoding and disseminating financial information among stockmarket participants, their ability and propensity to fulfil this task adequately are far from proven. On the one hand, financial analysts may be limited in their ability to interpret correctly such financial information perhaps through lack of training in the use of accounting numbers. Alternatively, they may be more involved in predicting security prices and selling shares than trying accurately to predict the 'true' profit number.

The potential response of stockbroking analysts when confronted with window dressed financial statements is thus of particular relevance to a study of their intermediating role.

However, as a preliminary issue, we need to know if companies' financial statements are important in the day to day work of financial analysts. As a more appropriate alternative to asking them directly their opinions on this, the reports they produce for their own clients, stockbroker

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circulars, may be analyzed scientifically for evidence of the actual relevance in practice. Such content analysis may also tell us what is important to financial analysts in differentiating between a company rated a buy, a hold or a sell recommendation.

Chapter two discusses accounting information as a kind of message in the communication process. A definition of the concept of window dressing is then proposed allowing the concept to be incorporated operationally in competing theories about market behaviour. The different incentives for window dressing financial statements will then be explored in some detail.

Chapter three applies our definition of window dressing to the analysis of 100 sets of financial statements. The observed level of window dressing is then compared with the financial situation of the firm as expressed by the Z-score measure of financial health (Altman, 1968).

Chapter four describes the results of an extensive content analysis of stockbrokers' circulars. After discussing the principles of content analysis (Krippendorf, 1980; Bardin, 1977), the chapter applies these to a large sample of circulars, to identify the key information sources driving

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the brokers' recommendations and their relative importance, and to explore the relationship between content and recommendation. The goal is a discriminant function making possible the classification of other circulars on the basis of their content.

Chapter five discusses the results of direct experiments with stockbroking analysts exploring their response to window dressed financial statements. Analyst behaviour in this task is analyzed and commented upon and implications relevant to the role of financial information intermediaries are drawn.

Finally, in chapter six, Summary and Conclusions, the three main components of this research are summarised and the implications the results may have for our understanding of stockmarket functioning and the behaviour of participants and for the orientation of further research are reviewed.

CHAPTER 2

ACCOUNTING INFORMATION AND MARKET PARTICIPANTS

2.1 THE NATURE OF ACCOUNTING INFORMATION

Accounting information is a subset of all possible information circulating in the stockmarket about a company. However, it is difficult to evaluate the importance of this category of information to market participants relative to other types of information.

It has become fashionable within the financial world to pretend that published financial statements are useless because of their lack of timeliness and the belief that the information they contain is already impounded in the share

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price. However, as we shall see later, accounting information is widely used, as well as relevant to security market pricing.

The communication of accounting information is subject to the same rules as other kinds of communication; so, to study how financial accounting information is communicated to the market and to recognize the biases likely to occur during the process, it is useful to examine the communication process itself.

2.1.1. Accounting Information and the Communication Process.

The communication process is complex in nature, with many different components at many different levels. The physical elements of the process are usually described in a communication theory text, for instance McGuire (1973), as:

**SOURCE> MESSAGE> RECEIVER
CHANNEL**

Thus, a source is trying to send a message to a receiver, and for this purpose, uses a channel.

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This simple schema requires development to describe the complexity of the communication process. Jacobson (1963) adds additional functions to this basic model:

EMOTIVE: when the source expresses his feelings

CONATIVE: when the communication process is directed toward the receiver (e.g., giving a direct order)

REFERENTIAL: when the communication, or a part of the communication process, is entirely devoted to the transmission of information. In a thesis, for example, the referential function will be largely dominant.

POETIC: when the form is more important than the content (e.g., poetry).

PHATIC: this function refers to the part of the communication devoted to the maintenance of the contact. It is particularly audible during a telephone call when the listener will say "ya" or "hum" to indicate that he is still there.

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METALINGUISTIC: this is the part of the communication which is about the communication itself. For example, the translation or explanation of a term, etc...

Any communication will involve more than one of these different functions; however, depending on the nature of the communication, e.g., academic paper, short story, etc., the emphasis may reside in one or in a few of these functions. This is always a matter of proportion. If we say that a scientific communication is more referential than a poem, it is a question of degree. In the same way, a poem will use more or less the poetic function as form or content are viewed as more important.

If the addition of such functions brings verisimilitude to the model, they are not enough to make it complete. There are many other factors related to the three main components of the model. In fact, the list could be almost endless. Some examples of other factors (e.g., McGuire, 1973) may be:

- SOURCE:**
- personal mental universe
 - personal cultural universe
 - level of language
 - perception of self

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- perception the source has of the receiver
- etc.

CHANNEL (vehicle, medium)

- type: verbal or written
- noise
- etc.

- MESSAGE:
- intrinsic complexity
 - coding
 - etc.

- RECEIVER:
- personal mental universe
 - personal cultural universe
 - level of language mastered
 - perception of self
 - perception of the source
 - etc.

Therefore, a message is never a straightforward object sent by a source and taken, as is, by a receiver. The distortion commences with the source who consciously or unconsciously changes the raw message sent. It continues through the channel which, by nature of the medium and the format of the communication, adds noise to and modifies the message. It

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ends with the receiver who, in the light of his or her decoding abilities, personal history, and environment in which he or she is operating, decodes, interprets and understands the message.

Professionals in the use of the communication process have devised ways of influencing and of conditioning more than of informing. For example advertisers have developed such skills. Dyer (1982) recognizes that words have associated feelings and that the choice of a word is meaningful.

"When we choose a word we do more than name an object, person or situation, we also convey feelings about what we are describing. What you feel or your attitude towards what you describe is an important part of meaning." (Dyer, 1982, p. 140)

Accounting communication cannot avoid this general pattern and thus the laws of communication in general apply equally in the accounting arena.

However, accounting communications are not only referential. Gibbins (1976) concluded that the empirical evidence he gathered supported the hypothesis that accounting reports have some of the characteristics of persuasive messages: accounting reports do not only have the purpose of informing readers, but also to persuade them to act (probably to buy

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shares in the company or at least not to sell those they already have).

Consequently, we believe that the annual report and accounts can be studied as a communication instrument.

2.1.2. Accounting Communication and the Annual Report

Accounting information, for external use, is generally contained in the annual report. This does not mean that much of this information is not known before the release of the annual report. Accounting information is disseminated through many channels: directly from finance directors to analysts and stockbrokers, by the publication of preliminary announcements and by any other public information released by companies. However, the only complete set of accounting information provided by the firm, complete both in that there will be no other more complete version and that it will be physically possible to keep it for future reference, is the annual report. Beveridge (1963) is typical in believing that the annual report is the most important document representing the company to its financial public.

As compared to some years ago when the annual report contained only a short narrative section and some limited

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financial statements, the situation has greatly evolved. While the accounting information presented has become more complex and voluminous, sections have been added or have gained in size. Newman (1984) noted this important transformation:

"The increased complexity of the accounting information has been accompanied by the growth of a new section: 'Notes to the accounts' from a typical two pages in 1967 to at least twelve pages in 1982. The directors' report has likewise been expanded since 1967 to reach commonly twelve pages. At the same time there has been a trend since the early 1960s to reduce the content, scope and length of the chairman's statement parallel to an increase in 'Review of operations' sections. (Newman, 1984, p.6)

This increased complexity of the straight accounting section has led the report preparers to develop another section, easy to grasp, destined for the unskilled reader. Through time, this 'Review of operations' has become more carefully structured and more colourful.

The original stewardship and financial reporting to shareholders purposes of the annual financial statements have also been modified. The annual report, which contains such accounts, has many different uses and many different users. Reilly (1987) found many other uses for the annual report, e.g., for "upgrading internal morale, for marketing products

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and for establishing name identification." In fact, companies use their annual reports and accounts as a marketing tool for their products to their clients and even to their own shareholders. A shareholder of a company being part of a large conglomerate may not be aware of all the products he has indirectly invested in. Readers other than shareholders are also added as targets. Randall (1972) reported that the number of copies of the annual report printed by a company is far greater than the number of its shareholders, implying that the traditional 'reporting to shareholders' use may altogether have being replaced by other purposes.

"The annual report has become a multi-purpose document. It is used to influence the investment community, as an acquisition tool, as a community relations aid, as a sales medium to persuade stockholders to buy company products, and as a public relations door-opener when dealing with foreign businessmen and governments. Moreover, corporate recruiters almost invariably give copies of the latest annual report to students interested in the company. To fulfill all these purposes, companies as a general rule print two or three times as many annual reports as there are stockholders." (Randall, 1972, p.62)

These changes in the form, content and purpose of the annual report and accounts are not formally acknowledged by companies and, officially, the report is still the medium through which management accounts to shareholders for what has been done with their investment.

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Therefore, if the annual report and accounts is being used for persuasive purposes in addition to its original goal it is even more likely to be manipulated and subject to window dressing.

2.2. WINDOW DRESSING OF FINANCIAL STATEMENTS

The previous section suggested that managers will tend to use the annual report as a tool to influence investors rather than just to inform them in a straightforward manner.

This persuasive influence may be carried on through window dressing of the accounts as well as through filling the report with glossy pictures and triumphant texts.

For our purposes here, the term window dressing does not encompass anything illegal. Window dressed accounts still comply with the letter of the law and accounting standards, although they may not necessarily present fairly the financial situation of the company.

Consequently, we must establish a distinction between window dressing and fraud. This is not such an easy thing to do.

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Belkaoui (1989) quotes the Michigan Law Review defining fraud in these terms:

"Fraud is a generic term, and embraces all the multifarious means which human ingenuity can devise, which are resorted to by one individual to get advantage over another by false representations. No definite and invariable rule can be laid down as a general proposition in defining fraud, as it includes surprise, trick, cunning and unfair ways by which another is cheated. The only boundaries defining it are those that limit human knavery." (Belkaoui, 1989, p.61)

The difference between an accounting fraud in the form of forging invoices and a farfetched interpretation of an accounting standard is clear. However, such abuse of SSAPs, even kept within the limits of a literal or legalistic interpretation of the standards, is prone to lead to an untrue and unfair view of the financial situation of the firm. Moreover, a judge may decide that compliance with GAAP is not in itself a sufficient guarantee of a true and fair presentation of the financial situation of the company (Briloff, 1976, p. 15.). In such cases even the application of a standard correct to the letter may be inappropriate and therefore constitute a fraudulent presentation in the sense of Belkaoui. FRED4 recognises this possibility when proposing to reflect the substance of transactions instead of their form. This implies that the accounting and legal analysis of a transaction could be in conflict. However, the law requires

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the accounting treatment to depart from accounting standards when the 'the true and fair view' cannot be reached otherwise (Gibbons and Freedman, 1991).

In the same spirit, the EC Council, in its Fourth Directive requires the obligation to give a true and fair view to be of overriding importance (Davies, Paterson and Wilson, 1992, p.3). However, any departure from generally accepted accounting principles in order to produce a true and fair view must be justified.

For Belkaoui (1989) such behaviour is typical of companies facing "economic crisis as well as by those motivated by a misguided opportunism."

Many commentators have written about window dressing or creative accounting in the UK, but even here it is difficult to find a useful definition of it. In Griffiths (1986) we find that all financial statements are manipulated, that accounting has become propaganda and that facts are neglected in financial statements:

"Such phrases as 'cooking the books', 'fiddling the accounts' and 'corporate con trick' may raise eyebrows where they cause people to infer that there is something illegal about this pastime. In fact this deception is all in perfectly good taste. It is

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totally legitimate. It is creative accounting."
(Griffiths, 1986, p. 1).

However, the author gives no indication on where to draw the line between what is correct and what is not.

Smith (1992) describes a large number of window dressing schemes in detail and analyses the accounts of over 200 large UK companies to measure their prevalence, but he never attempts definition of creative accounting.

Jameson (1988) tries more fairly to define creative accounting. For him, it is a bad use of the legitimate flexibility accounting standards must possess to cope with the great diversity of situations that have to be accounted for. It is a "cynical manipulation" arising from the fact that accounting may allow "legitimate differences in accounting measurement and interpretation." Finally he defines creative accounting as follows:

"Creative accounting is not against the law. It operates within the letter both of the law and of accounting standards but it is quite clearly against the spirit of both. It should also be remembered that creative accounting is not necessarily practised only by dishonest and corrupt accountants and crooked company directors. This is one of the aspects that makes it difficult to deal with. It is essentially a process of using the rules, the flexibility provided by them and the omissions within them, to make financial statements look somewhat different from

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what was intended by the rule. It consists of rule-bending and loophole-seeking. (Jameson, 1988, p. 20).

Window dressing is generally viewed as having as its principal purpose to mislead users of accounts. However, for our purposes we require a more operational definition. Morris (1988) lists the items in financial statements potentially distorted by such practices but fails to indicate precisely to which extend each element of the accounts can be window dressed and how. Morris and Breakwell (1975) were equally more inclined to describe the impact window dressing of financial statements may have on the assessment of investment opportunities than to study the methods of window dressing and the extent to which they are used. Other researchers have been concerned by the problem of income smoothing which is ordinarily defined in terms of a reduction of the variability of profits.

Therefore, if we wish to identify *a priori* window dressing in a set of financial statements, we only have the concept of true and fair view to work with. Lee (1982) provides some very general and non-exceptionable guidelines for the choice of accounting policies having the best chance of producing a true and fair view:

- 1- they must be legally prescribed

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- 2- they must be believed to be appropriate in the particular industry and applicable in the company in question
- 3- they must be used consistently from one financial year to the next
- 4- they must not conflict nor be incompatible with prescribed or accepted concepts (going concern, matching, revenue realisation, etc.).

Hopkins (1984) senses the impossibility that a single method will lead to a single view that will be true and fair. He believes that "truth and fairness are subjective." For Hopkins (1984), in the UK, the compliance with standards does not guarantee that the presentation will be true and fair. The fact that financial statements are audited is a poor guarantee of truth and fairness. In the US, Briloff (1976) reports a judgment saying that fairness is separated from the application of GAAP and must be tested for separately by the auditor.

"In a word, "present fairly" was a concept separate from "generally accepted accounting principles" and the latter did not necessarily result in the former."
(Briloff, 1976, p. 11)

Briloff also reports other cases where the fairness of the presentation is dissociated from the strict compliance with

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GAAP. For example, Judge McMahon declared in a judgment in 1974:

"Compliance with generally accepted accounting principles is not necessarily sufficient for an accountant to discharge his public obligation. Fair presentation is the touchstone for determining the adequacy of disclosure and financial statements. While adherence to generally accepted accounting principles is a tool to help achieve that end, it is not necessarily a guarantee of fairness." (Briloff, 1976, p. 12).

This situation seems to be evolving along the same lines in the UK. Previously, if compliance with the Companies Act was not enough to give a true and fair view, additional information was to be given in the accounts or in the notes to the accounts. No conflict between the true and fair view and the law was considered important enough to override the legal requirements. However, the position has now changed since the CA 1981. If compliance with the Companies Act is inconsistent with a true and fair view then the accounts must depart from the strict legal requirements in order to present such a true and fair view. In 1983 Hoffman and Arden gave counsel's opinion for the ASC stating that compliance with accepted accounting principles would be a *prima facie* evidence that the accounts are true and fair (Davies, Peterson and Wilson, 1992). Radcliffe (1990) studied court decisions on cases involving the choice of accounting

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treatments. He concluded that no accounting principle had acquired the status of a binding legal precedent in determining the true and fair view. The only possible conclusion at this point would be that the situation is still evolving and no definitive conclusions can be drawn for the time being. We may in any case view much of this hypothetical argumentation as largely of theoretical interest only.

The Argyll consolidated accounts constitute an example of the reverse situation: the Department of Trade, adopting a strictly legalistic (form over substance) argument, required the group to demerge a subsidiary acquired after the balance sheet date because the presentation of the financial situation was not legal, even if the auditor's report pointed to the breach and still concluded that the accounts were true and fair (Ashton, 1986). In this case, fairness was not enough and the financial statements had still to comply with GAAP. The problem is that this compliance was judged by the auditor as likely to lead to unfairness of presentation.

The true and fair doctrine is therefore an integral part of the relationship between the directors and the auditor. It is a tool, even if a poor one, to help the auditor in recommending accounting treatments placing economic substance over legal form (Parker and Nobes, 1991).

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Flint (1982) argues that the true and fair view is a concept existing through consensus between parties. Despite the fact that no precise and complete definition has been provided by the legislators the concept has existed in law for many years and preparers and users of financial statements seem to know what must be done to comply with it. Consequently it can be viewed as something akin to a religious dogma that people understand and believe but are unable to explain.

Therefore, we must agree with Rutherford (1985) that the true and fair view doctrine "lacks a settled and widely accepted explication and is unlikely to achieve one in the near future."

Even very inconsistently characterized, the true and fair view is the only guideline we have to define window dressing or creative accounting. Earlier on, we derived our own definition of window dressing which can be restated in substance as: window dressing occurs when an interpretation and use of an accounting standard, although complying to the letter of this standard, is likely to produce a view of the financial situation which is unfair and/or false. In the next chapter, before searching for window dressed items in financial statements, we will derive from this general

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definition some guidelines applying to specific items in the accounts.

Having produced an operational definition of window dressing, we must now ask ourselves: does window dressing actually matter? The efficient market hypothesis, for one, argues that window dressing should have no impact on the market price of shares. However, there is another view of the stockmarket in which window dressing may play an important role. The next sections debate the relative importance of window dressing of financial statements according to different market behaviour hypotheses.

2.2.1 Window Dressing and the Efficient Market Hypothesis

In essence window dressing constitutes a biased choice and interpretation of accounting principles and methods in a particular situation. Therefore if we wish to analyze the relationship between the phenomenon of window dressing and the efficient market hypothesis, we have to do this through consideration of the influence that accounting methods and procedures might have on the efficiency of the market.

The semi-strong form of the hypothesis is of most relevance here. Fama (1970) stated that the efficiency of the stock

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market depends on the fact that prices fully reflect the available information. Each form of the hypothesis will then be defined in regard to a particular set of information. For the semi-strong form (Foster, 1986) "The information set is publicly available information."

The hypothesis makes the distinction between what is considered information and what is not. Basically, information may be defined as data that produces a change in the expectations of subjects about the outcome of an event. For our purposes, the relevant outcome is the future market price of a security, the information is the data contained in a set of accounts, and the subjects are market participants: investors, analysts, stockbrokers, etc.

The expectations of market participants seem to be based on an evaluation of the future cashflows of the firm (Abdel-Khalik and Keller, 1979). Therefore, any accounting information which is not relevant for the estimation of future cashflows should not impact on the market price of securities and consequently should not be considered as information at all.

Profit has an ambiguous role in such a system. On the one hand, because it incorporates adjustments having no effect on

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the cashflow, the profit figure will contain little information. However, since cashflow may not be directly observable, profit is often used as a proxy. Consequently profit, as a measure of cashflow, will likely be targeted for window dressing purposes.

Beaver (1968) and May (1971) provide evidence demonstrating that security prices respond quickly to announcements of annual and quarterly earnings. But such earnings figures, even if released in advance, are accounting numbers which do not automatically indicate the level of cashflows.

On the other hand, a major part of the share price movement, at least for the bigger companies, seems to occur even before the preliminary announcement (Ball and Brown, 1968). This finding emphasises the importance of alternative methods of communicating accounting information and also the possibility that other factors may be influencing security prices more than the earnings figures themselves.

These early researches were based on assumptions that may have been useful to work with but are obviously not realistic. Such assumptions as the free and costless circulation of information along with the absence of transaction costs and of income tax are difficult to sustain

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and must be addressed if we want to reach a more realistic model of market behaviour.

In addition, the impact of both different accounting procedures and changes in accounting standards on market pricing has been quite extensively explored. According to theory, since cashflow is the only important element for the market and as accounting method choice normally has no effect on cashflows, accounting procedures should have no impact on the market.

Baskin (1972) tested the proposition that a change in accounting policies could have an impact on market prices. Such a test is problematic because many changes are only usually known when the annual report is released. Assuming investors can understand the impact of such a change on the company's reported numbers, Baskin found no significant effect which led him to the conclusion that investors are not misled by accounting manipulations. This finding however may also lead to other conclusions as lack of market reaction can be due to many reasons. Baskin started with the efficient market hypothesis as a framework and finished with it. But if we start with the 'mechanistic hypothesis' (Foster, 1986), such results could equally be interpreted as indicating that as investors may not read financial statements carefully,

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they may be unable to observe the consequences of accounting manipulations on profit figures.

Harrison (1977) tested for market reaction to discretionary and non-discretionary accounting changes. He used two matched groups of firms. He found that the market seemed to react negatively to discretionary changes, but only very slightly. The sign of these results, interestingly enough, appeared to be independent of whether profits were increased or decreased by the changes. However, we should note that such results may be swamped by a possible very high positive abnormal return at the preliminary announcement stage.

Kaplan and Roll (1972) explored the impact of two different accounting decisions on market price viz:- the methods employed both to account for investment credit and for the related depreciation change. They found minimal long term effect.

Kaplan and Roll's (1972) data was re-analysed by Cassidy (1976) who processed it in a different manner thereby eliminating the problems encountered by the former authors. He found that no effect was produced by the change in depreciation method and concluded that his findings were

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consistent with the efficient market hypothesis. Obviously these tests used the capital asset pricing model paradigm.

Duncan and Moores (1988) tried to assess the relevance of CCA (current cost accounting) information. They found that their subjects using CCA information made fewer decision errors than those using only historical cost information. Taken at face value, their results may suggest CCA supplementation has an effect on the market as it modifies investment decisions. Investors can apparently decode such information.

However, we should note that their conclusions may not be totally generalizable as they used students as surrogates for investors. Such final year undergraduate accounting students possess some accounting knowledge far superior to that of the average investor (see Lee and Tweedie, 1977 and 1981). Also since these results go against the findings of a large number of other researchers, we are suspicious about their research methodology.

Firth (1981) compared the effect on the market of the principal standardized forms of information released by companies:

- 1- preliminary announcements (PA)
- 2- annual report and accounts (ARA)

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3- annual general meeting (AGM)

4- interim results (IR)

All these events seemed to have an impact, even if of different amplitude, on the market except for the annual general meeting:

"The volume of shares traded and the number of deals transacted for weeks PA, ARA, and IR were found to be significantly greater than for the average of the remaining 48 weeks. As in the abnormal returns analyses, the AGM week was not associated with any exceptional behaviour." (Firth, 1981, p.526)

Firth's study used a classical design. He calculated a normal return based on 48 non-event weeks; he then compared the returns per weeks where particular information was released to this benchmark and explored for differences. Incidentally, a week event study is less precise than a day to day one since other information releases may occur during the week and have an influence on return variability.

On the other hand, Foster, Jenkins and Vickerey (1986) found "no unusual price variability" at the release of the annual report to shareholders.

Their findings are inconsistent with those of Firth. However, the latter's study leaves some questions unanswered.

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One of the principal questions raised by the Foster *et al* study concerns the specific week in which they found the largest abnormal returns. This week is situated 17 weeks before the release of the annual report and thus cannot normally include the preliminary announcement. Therefore, what is the event occurring during this week? They do not comment on this finding even if it is the most important element of their study.

Rippington and Taffler (1993) reexamined the same four events as Firth (PA, ARA, AGM, IR), but using daily data. He used three pricing models: the market adjusted return model (naive model), the market model and the capital asset pricing model.

Rippington and Taffler found only a negligible degree of market reaction in aggregate around the annual report release and the annual general meeting suggesting that the information released then had been anticipated by the market.

In the case of the annual report, as it is a complex and multi-faceted document, they were reluctant to generalize their results based on the aggregated reaction alone acknowledging the fact that some companies may disclose in their annual report some price sensitive information while others do not. In fact, a more detailed (by section) analysis

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of the annual report and accounts effect produced evidence of the presence of incremental information reaching the market via the annual report release in certain firm cases.

Generally, the statement of Anderson and Meyers (1975) that the market reacts to information that is "conceptually irrelevant, incorrect or misleading," which seemed so iconoclast in 1975, may appear more easily acceptable today.

Market efficiency is not the only hypothesis describing market behaviour. There is another competing hypothesis that Watts and Zimmerman (1986) and Foster (1986) term the 'mechanistic hypothesis' and that Archibald (1972), among others, call the 'naive investors hypothesis.'

2.2.2. Window Dressing And The Mechanistic Hypothesis

According to the naive investor hypothesis, investors and market participants demonstrate a functional fixation on the profit figure. The manifestation of the profit figure which is particularly focused upon is the earnings per share figure, calculated from the profit after tax but before extraordinary items. This functional fixation may, to a great part, reflect the problem many market participants experience in decoding financial information. If this is true, there is

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the potential for such market participants to be misled by window dressed accounting numbers.

The new Financial Reporting Standard 3, Reporting Financial Performance directly attacks this issue. Users who are functionally fixated rely on aggregated numbers. FRS3 seeks to eliminate this blind dependency.

"It will no longer be credible for those analysing financial statements to alight on some aggregate number presented in the accounts and without due consideration of its components, deem that to be the sole indicator of a company's performance. Unusual items must be assessed, the effect of acquisitions and disposals must be evaluated, and the changes in the value of a company's assets must be considered, before its underlying performance can be understood.

The Board believes that FRS3 will lead to more sophistication in the assessment of a company's performance and will bring benefits all round." (FRS3 Press Notice of the ASB, 1992)

Hand (1990) defines the functional fixation hypothesis as follows:

"It implies that investors do not properly unscramble the information contained in a firm's financial statements and, therefore, arrive at biased assessments of the probability distribution of its future cash flows. It predicts that the relation between a firm's accounting earnings and its stock price is a purely mechanical one and that investors can be systematically misled by firms' accounting methods and choices." (Hand, 1990, p. 741)

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Hand presents the mechanistic hypothesis (assessment of future cashflows based on profit figures) and the functional fixation hypothesis (literal interpretation of income numbers) as two different forms of investors behaviour. We see them rather as two different aspects of the same process 1) focusing on the profit figure, and 2) taking this profit figure at face value.

Hand defines sophisticated investors as "mutual fund managers and other institutional stockholders." Following Lee and Tweedie's research (1981), it may be difficult to view such groups of investors as necessarily being really sophisticated.

Hand tested the extent to which investors can be viewed as unsophisticated by using a methodology involving the reannouncement of the accounting gain arising from a debt-equity swap. He concluded, on the basis of his results, that "the extended functional fixation hypothesis has some empirical support." However, his test was of limited scope and the author was even surprised with his own conclusions.

Trinic (1990) criticized Hand for having omitted transaction costs. Such costs will impact on the conclusion of any such study; however, most of the empirical evidence supporting the

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efficient market hypothesis has ignored consideration of transaction costs.

Another anomaly was documented by Harris and Ohlsen (1987 and 1990). In their 1987 paper, they wanted to demonstrate that investors in the oil and gas industry have a functional fixation on the book value of companies since the book value was the best explanatory variable for market price. This is surprising when we consider that historic cost accounting is applied in this domain.

Their 1990 paper, although pointing to investors failing to interpret and use financial information appropriately does not conclude that functional fixation applies to the use of book value measures of oil and gas firms.

"In fact, the results suggest that the market does not pay adequate attention to the available measures derived from the annual report, including book value of oil and gas properties." (Harris and Ohlsen, 1990, p.766)

Trinic (1990) also criticized the Harris and Ohlson study on the basis that the period they covered (1979-1984) was obviously one of great price increases and that, had they taken the 1984-1988 period, they would have experienced negative returns from their trading rules.

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Camerer, Loewenstein and Weber (1989) conducted an experiment to evaluate the degree of bias contained in equilibrium market prices. They concluded that there were different sets of information in the market at the same time, and that the market price reflected a hypothetical set of information situated somewhere between the no bias and the total bias situations. They concluded that the market situation reduces such biases although it does not eliminate them completely.

Therefore, there is no definitive conclusion yet on the question of investor functional fixity on any particular accounting number. We need to wait for more evidence to be able to reach even some preliminary conclusions about the real behaviour of security market participants in this context.

The belief that creative accounting can mislead investors and distort market pricing is consistent with the mechanistic hypothesis rather than the efficient market hypothesis.

In the UK, the mechanistic hypothesis was indirectly investigated by Lee and Tweedie (1977, and 1981), who studied the ability of ordinary and institutional investors to interpret accounting information. They found that the limited ability of both groups of market participants to properly

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decode accounting information opened the possibility of manipulating such information in order to produce an effect on security prices.

A sub-version of this way of thinking would be the myopic hypothesis (Foster, 1986, p. 443) which suggests that the market takes a short term view on profits. Such a short term perspective will give preparers of financial statements an incentive to present attractive short term profit figures without being concerned about their long term trend. Casual empiricism would appear to support the shortsightedness in market participants behaviour based on the normally short time horizon covered by analysts' forecasts and the decrease in forecast accuracy as the period covered is extended.

In consequence, investors may lack accurate information on company performance in the long term and therefore, will tend to focus on short term investment strategies.

This situation opens the way for short term window dressing by companies in order to bolster the price of their shares.

Whatever theory of market behaviour we subscribe to, we have to acknowledge the fact that, successful or not, window dressing exists.

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2.3. THE STOCKMARKET AND COMPANY MANAGEMENT

Attempts to mislead the market via window dressing certainly exist, and one reason is that at least some parties believe they are able to influence market prices appropriately.

A UK survey by 3i (1990) shows that the majority of the responding firms' finance directors (81%) believe they can influence the share price of their companies.

Respondents were from a sample of 681 companies selected from the top 750 UK quoted manufacturing and non-manufacturing companies.

Table 1 lists the ways proposed by finance directors of sample companies as prone to influence the market value of their firms.

Table 1

Ways of Influencing Share Valuation

	No effect %	Some effect %	Strong effect %
Acquisitions	1.9	49.3	47.8
Talking to investment analysts	5.8	52.2	42.0
Disposals	5.8	57.5	34.8
Financial restructuring	8.2	67.6	18.8
Dividend policy	10.1	48.8	40.1
Buying-in shares	17.9	69.6	10.1
Advertising and other PR activities	26.6	62.3	10.6

We see that personal relations with financial analysts are seen as an important way of influencing security prices. We can also deduce from this that investment analysts are perceived by company finance directors as having an influence in the security pricing process.

In addition, 91% of finance directors also believed the investment community (The City) to be "too focussed on short-term earnings and share price performance."

Other studies also show that managers do not believe in the efficient market hypothesis and that they see profit numbers as very important information in the pricing process.

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Mayer-Sommer (1979) investigated the understanding and acceptance of the efficient market hypothesis by different sets of market participants: finance controllers, CPAs, academics from the AAA and members of the Institute of Chartered Financial Analysts.

This investigation, conducted by way of questionnaire, produced some disturbing results with 66% of the controllers and Big Eight partners not understanding the efficient market hypothesis. Academicians followed with a 50% level of lack of understanding while financial analysts stand at 35%.

Acceptance or rejection of a hypothesis by someone who does not understand is of no value. From those who understood the hypothesis, Mayer-Sommer separated those who accepted it from those who rejected it. Of the financial analysts covered, 65% understood the hypothesis and 45% (of those 65%) accepted it. Of the controllers and firm accounting partners, about 33% understood it, but only 10% (of these 33%) accepted it.

The conclusion is obvious. Directors who do understand the hypothesis do not believe in it and therefore may be more prone to believe in the functional fixation hypothesis and try to window dress their financial statements in order to modify the perception of their firm's profitability.

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From Hines' research (1982), it seems that not only directors but shareholders also may believe in the possibility of generating abnormal returns from annual report and accounts information.

Hines concluded that if the annual report and accounts do not contain information that leads to action by investors, it does not necessarily mean that this information is not pertinent if correctly analyzed and used in due time. Hines proposes a multi-phase model of the market with different categories of information being used differently depending on the phase. This conclusion is based on the heterogeneity of investors "with respect to their investment objectives, expectations, abilities, evaluative methods and horizons."

2.3.1 Reasons for Window Dressing Financial Statements

Some observers and commentators on the security market believe that investors prefer companies which exhibit a steady growth pattern in their profits rather than a company with greater variability in earnings streams although more profitable on average.

Therefore, smoothing the profit figure, mainly the earnings per share, is potentially a very good reason for using

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creative accounting devices and manipulating accounting information.

Many researchers have explored the smoothing hypothesis. Dopuch and Drake (1966) found no evidence of any smoothing behaviour in their study of the gains and losses on sale of securities but they reported different results in the case of dividends deriving from investment in non-subsidiary companies. However, the authors postulated no model allowing comparison of actual reported profits with the expected "true" figures.

One method to arrive at an expected level of profitability is to follow the Martingale pattern. This posits that, in our case, last year's profit best predicts the current year (e.g., Copeland, 1968; Copeland and Licastro, 1968). Copeland and Licastro (1968) focused specifically on the effect of dividend income as a smoothing device, and were unable to provide evidence of any successful smoothing behaviour, contrary to Dopuch and Drake.

However there are a number of studies in the literature exploring smoothing behaviour in different areas which suggest such activities do take place. Dasher and Malcolm (1970), for example, provide of the existence of smoothing

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behaviour associated with pension costs, extraordinary items and dividend income. The same year, White (1970) found that companies with high earnings variability and declining profit trends have a tendency to use available accounting choices to smooth their results. However, White had the methodological problem of having to determine the optimal (*i.e.* most desirable) method to fairly present the accounting numbers in question in the first place before being able to compare this best choice with the actual treatment adopted by the companies in his sample. Such a methodology may have value but may be open to bias.

Similarly, Barefield and Cominsky (1972), Biedleman (1973), Ronen and Sadan (1975) and Barnea, Ronen and Sadan (1976) all conclude smoothing exists with many different accounting instruments. In contrast with Copeland and Licastro (1968), a number of these studies adopted a sub-Martingale prediction model, *i.e.* Martingale with a trend.

However, income smmoothing studies are in conflict with others directly focused on profit behaviour *per se* which conclude that the profit number generally follows some kind of sub-Martingale or Martingale (random walk) pattern, *e.g.*, there is no significant autocorrelation between different measures of profitability on a multi-period basis (Foster, 1986, pp.

239-240). Such research leads us to the conclusion that profit cannot be predicted from one year to another. However, if next year's profit is unpredictable or if the best guess is current year profit, how can there be a significant number of companies successfully smoothing their profit figures? This paradox is generally not considered.

When Eckel (1981) "revisited" the income smoothing hypothesis, he concluded that there was no evidence of successful artificial (or classificatory) smoothing. However, he used a novel methodology assuming reasonably that sales cannot be smoothed artificially, for this is fraud, not window dressing. Eckel compared the variances of sales and profit over 20 years exploring for consistent differences and therefore the existence of some artificial smoothing of the profit number. See also Imhoff (1978) who found similar results using a related methodology.

Albrecht and Richardson (1990) point out, however, that Eckel limited his study to four industries only, and that Imhoff restricted his sample to companies with high sales variability, correlated, one must assume, with a high degree of economic uncertainty. Therefore, they argue that both sets of null results may have been obtained by chance.

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Ma (1988) found strong evidence that banks use loan provisions to smooth profits and similarly Brayshaw and Eldin (1989) suggest that some UK companies use their foreign exchange difference account to smooth profits.

Albrecht and Richardson (1990) employ the distinction between 'core' and 'peripheric' industries. Core industries comprise companies in "hard" sectors *i.e.* heavy industry, highly specialised, mechanised, computerised and unionised, producing long term assets and having high profit margins. Peripheric companies are concentrated in "soft" sectors, or light industry, *e.g.*, food and textiles, all labor intensive, lowly unionised and having low margins.

Albrecht and Richardson argue that companies in the peripheric industries might be more inclined to smooth their sales and their profits. This is effectively the conclusion reached by Belkaoui and Picur (1984).

Albrecht and Richardson used the Eckel comparison of variability of sales and profit as their working method, avoiding problems of defining expected income. They noted the existence of smoothing behaviour in their sample. During the period 1974-1980, they classified 26% of companies in aggregate as smoothers while during the more economically

difficult period of 1980-1985, they identified 40% of companies as smoothers. However, they found no difference in smoothing behaviour that could be linked to the type (core or peripheric) of industry.

In summary we may conclude that on a meta-analysis basis there would appear to be some evidence of smoothing by firms. However we may note the paradox that a significant degree of smoothing of the profit figure is inconsistent with the finding that profit follows a Martingale process.

2.3.2 Other Possibilities

If smoothing is an important reason for window dressing it may not be the most important one. The "myopic hypothesis" seems not to be reserved for investors but may equally relate to managers. In fact, if stockbrokers and analysts encourage investors to make frequent transactions in accordance with a short term view of the market, the remuneration structure for directors and senior managers may equally encourage them to present a good picture for the current year, postponing reporting problems to some future year. In addition typically bonus and indexed remuneration systems may encourage managers to report all problems in one single year, taking all potential losses and even provisions in the same year,

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allowing inflated profits to be reported with consequent bonus payments for several years ahead.

Following the "big bath" accounting theory (Walsh, Craig and Clarke, 1991), companies may tend to assemble all the clouds in one big storm (one year) to clear the sky for many years to come.

Window dressing is particularly useful in such circumstances. It can be used to increase the profit by capitalising bad quality assets such as development expenses for a period of years (or interests, Smith, 1992) and then it can be used again to reduce the profit further more in the clearing year (the year of the big bath), to create all kind of provisions which will be used to regularise future profits.

In the first part of this chapter, we established that window dressing may exist and is believed to impact on investment analysis.

In the following section we explore which participants in the capital market may be affected by such informations manipulations and to what effect.

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2.4 MARKET PARTICIPANTS

Texts on finance and accounting tend to consider the stockmarket as being a single entity. We often hear statements such as: the market has integrated this information, the market knows that..., etc.. But we can legitimately raise doubts about the uniqueness and homogeneity of the stockmarket.

In fact, we find many participants in the securities market:

- large private investors
- small private investors
- institutional investors
- stockbrokers
- companies (issuers of shares)
- financial analysts
- financial journalists
- etc.

It is unlikely that all these different groups of participants will exhibit the same knowledge, the same appetite for information and the same ability to interpret it. Consequently, it is relevant to draw distinctions among these categories of participants.

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2.4.1 Shareholders and the Annual Report and Accounts

Private shareholders are often called ordinary shareholders in distinction to institutional shareholders. Their importance in the equity of UK companies continues to decline despite privatisation. They are more and more replaced by institutional shareholders. Table 2 taken from *The Stock Exchange Quarterly* of April-June 1992 highlights this trend.

Table 2

**Proportion of Equity Belonging
to Private and Institutional Shareholders**

Year	Private Shareholders	Institutional Shareholders
63	54%	15%
69	47	20
75	37	33
81	28	45
89	18	41

This situation is due partly to the importance of pension funds which are now true economic forces in their own right.

Private shareholders, despite their decline in importance, are a prime consideration in the development of the narrative section of the annual report even if this 'solicitude' is not necessarily attributable to totally honest motives.

The growth of the narrative section may be seen as a palliative for the difficulties experienced by many

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shareholders confronted with increasingly complex financial statements. Effectively, market participants do not all possess the same ability to interpret financial accounting information, even if a correct interpretation of financial information is a necessary condition for markets to be efficient (Fama, 1977).

The lack of interpretative ability of private shareholders confronted with this increase in complexity, leads to a parallel disinterest in the annual report and accounts. Parker (1981) quotes a survey made by Georgeson and Co., a US firm specializing in investors relations. It appears that stockholders do not read the annual report and accounts in any depth.

- 26% surveyed gave the report from six to fifteen minutes of reading time
- 40% surveyed devoted five minutes or less to the reading of the report
- 15% surveyed did not read the report at all

In five minutes or less shareholders barely have time to look at the pictures. Between five and fifteen minutes, they may have had enough time to read superficially the chairman's report and to look at the profit figure, but that is all.

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Thus, at least 81% of all shareholders in this study did not appear seriously to review the annual report and accounts.

The readership of the annual report and accounts among shareholders seems very low. While Lee and Tweedie (1977) reported some already disappointing rates, Abbas (1977) presented far lower ones, as shown in Table 3.

Table 3

Annual Report Reading Habits

	Lee & Tweedie %	Abbas %
Thorough	41	5
Brief	54	53
Not at all	5	42

The differences are possibly a matter of definition; however, all researchers seem to imply low readership for the annual report and accounts among private shareholders.

Facing such a reaction, preparers of annual reports and accounts have two possibilities: 1) try to attract the attention of Parker's 81% of shareholders who do not read or read very superficially by a transformation of the report's presentation and content (as the form and content of accounts is mandated from the regulatory bodies, opportunities to increase shareholder attention need to be concentrated on the

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narrative parts) and 2) address the report to other market participants, namely financial analysts and stockbrokers. In practice, both solutions have been tried. As the typical stockholder is a highlights reader (Foy, 1973) and that the annual report "has to compete with magazines and newspapers," some changes have been introduced.

Efforts to attract ordinary shareholders' attention have been reflected in the introduction into the report of colours, photographs, drawings, easy-to-read texts, short subjects and big titles as in magazines and newspapers. Some companies have even prepared reports which were exactly on the magazine model: Peugeot 1985 and Burton in 1986 and 1987 are good examples of this tendency.

But, it would be wrong to say that the message is still the same in this new presentation. It is impossible to simplify, cut, remodel a message, change the focal point and still leave the content intact. Therefore, from a short somewhat straightforward message addressed by the directors to the shareholders, the narrative part of the annual report is now filled with irrelevant photographs and triumphant speeches on the development of the company.

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While the narrative section is being manipulated in such a way, the financial statements become more and more difficult to decipher. The addition of notes and the increased complexity of accounting standards are also a reflection of the increasing complexity of business activities. Too often now, accounts are considered to be readable by specialists only (Parker, 1981):

"Neilson and Lind have suggested four possible reasons why corporations do not try to reach the average investor:

1- the annual report is little more than a set of financial statements embroidered with a text and pictures for window-dressing;

2- small investors are less sophisticated than the professional investor and therefore demand less in terms of information;

3- the annual report is seen as primarily an investor relations vehicle designed to appease security analysts and

4- a basic technical format has been established for annual reports in general and corporations are more concerned with meeting technical standards than with the ability of the annual report to communicate effectively to its intended audience." (Parker, 1981, p. 37.)

However, we must be careful when interpreting such statements. Readability is normally evaluated by the reading ability of the least skilled or lowest common denominator. As an example, Jones (1988) uses the following kind of readability scale:

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<u>READING EASE SCORE*</u>	<u>TYPICAL KIND OF MAGAZINE</u>
0 - 30	scientific
30 - 50	academic
50 - 60	quality
60 - 70	digests
70 - 80	slick fiction
80 - 90	pulp fiction
90 - 100	comics

* Jones index is adapted from the Flesch index.

We see that there is a relationship between the kind of subject and the facility to be read. It is probably impossible to express complex subjects in an easy-to-read form. We must therefore be careful about criticisms of the readability of financial statements. Not everything can be expressed in the comic form even if there are some attempts to express financial statements in a proximate manner with "cartoon faces" or "pictus" (Smith and Taffler, 1984).

Jones (1988) also suggests that the readability of the annual report has declined steadily since 1952. However, his conclusions are based only on a single company case study. But what is still important is that he concluded that complexity was not related to the financial situation of the company as might have been expected. Therefore, we may have reason to believe that complexity increases to express an increasingly complex economic reality.

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However, we believe that the proposition that annual reports and accounts are more difficult to read now may be accepted mainly in the case of the financial statements. Consequently, if the interpretation of accounting information has always been a problem, over the years this situation must have deteriorated rather than ameliorated.

2.4.2. Ability of Shareholders to Interpret Accounting Information.

Lee and Tweedie (1977) found a gap between what private investors believe they understand in financial statements and what their answers show about their level of understanding:

"While over two-thirds (68%) of respondents stated that they understood accounting information, tests on various aspects of the reporting process revealed that actual knowledge was well below the respondents' perception of their comprehension. Indeed, under half of the shareholders knew (i) the usual method of valuing plant and machinery in the financial statements (47.9%); (ii) where responsibility for financial statements lay (41.2%); and (iii) the approximate nature of accounting incomes and values (40.2%). In only one of the four test of comprehension of the reporting process (that concerning the present objectives of annual financial statements) did a majority (59.3%) of the respondents show that they understood present practice." (Lee and Tweedie, 1977, p. 9)

The understanding of financial statements is relatively low among private shareholders. In fact Lee and Tweedie conclude

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that the chairman's statement is the only part of the annual report that can be said to be understood by private shareholders generally.

Institutional shareholders may be barely better than ordinary shareholders at interpreting accounting information. And, like ordinary shareholders, they, too, believe they understand the financial information much better than they do in reality. Lee and Tweedie (1981) produced the results provided in Table 4 for their sample of institutional shareholders.

Table 4

**Actual Understanding of Terminology Used Widely
in Reported Financial Statements**

Level of understanding	Profit %	Depre- ciation %	Equity capital %	Current assets %	Reserves %	Accrued charges %
Reasonable	15	23	29	56	50	45
Vague	47	70	60	33	12	03
Poor or none	38	7	11	11	38	52
	100	100	100	100	100	100

If we calculate a mean for each level of understanding across all the items tested, we obtain:

Reasonable	36.3%
Vague	37.5%
Poor or none	26.2%

In an efficient market perspective, the profit figure is often used as a proxy to estimate cashflows. In any other market theory, the profit figure is very important in

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assessing an investment opportunity. However, we see that only 15% of institutional investors have a reasonable understanding of the reality covered by the term profit. We also can note that balance sheet elements are far better understood than profit and loss accounts ones. In fact, Lee and Tweedie did make that kind of comparison:

Table 5

Actual Understanding of the Nature of Individual Parts of the Annual Financial Report

	Level of Chairman's underst. report	Director's report	Profit & loss & account	Balance sheet	Auditor's report	Funds state ment
	%	%	%	%	%	%
Reasonable	85	29	57	74	65	23
Vague	11	31	28	15	18	13
Poor or none	4	40	15	11	17	64
	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>

The chairman's report is the most widely understood part of the annual report and accounts. As we have seen above, the balance sheet is better understood than the profit and loss account and the funds statement which provides information on the cashflows is understood poorly or not at all by 64% of the respondents.

Obviously, a study like this one is prone to be criticized at many levels. We may, for example, express surprise at the balance sheet, apparently being better understood than the profit and loss account. Briston (1977) based his criticism

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mainly on the way Lee and Tweedie had defined a 'sufficient' understanding or a 'thorough' reader. In their response, Lee and Tweedie (1978) tried some of the alterations suggested by Briston and concluded:

"Despite the changes in definition suggested by Professor Briston, our measurement of shareholder understanding has been shown to be sufficiently robust to withstand alteration; the overall conclusions emanating from the study are identical no matter whether Professor Briston's definitions or our own are used." (Lee and Tweedie, 1978, p.298)

Whether we take Lee and Tweedie's results at face value, or even adjust them for Briston's methodological considerations the conclusion remains that private and institutional shareholders are not very good at decoding financial accounting information.

Lee and Tweedie's conclusions could imply some serious limitations to the efficiency of the stockmarket since, as pointed earlier, fast circulation and correct interpretation of the information are necessary conditions of market efficiency.

However, there are other market participants whose role is interpretative and through their actions can serve to render the market efficient. Participants such as financial

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journalists, and perhaps, more relevantly, investment analysts and in particular stockbroking analysts, may be the key information intermediaries.

2.5. THE ROLE OF INVESTMENT ANALYSTS

Investment analysts working for stockbroking firms occupy a privileged position in the stockmarket. They receive information directly from companies and from several other sources. On the other hand, they are in direct contact with investors, particularly large institutional investors. The analyst plays an essential role in the circulation of information and allocation of funds in the capital market:

"The financial analyst plays a key role in this capital allocation process. As a security analyst he studies and selects industries and companies interacting with the economist who provides the general economic framework. As a portfolio manager he integrates the work of the economist on the outlook for business and the financial markets with the securities recommendations of the analyst to make portfolio selections. These roles are independent and each contributes a necessary element to the investment decision. (Norby, 1975, p. 5).

For Cohen *et al.* (1987) investment analysts constitute the means whereby the stockmarket can be said to be efficient:

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"It is the thousands of trained security analysts who are the eyes and ears of the efficient market. It is the industrious, probing investment analyst who ensures that relevant information and even rumour and hypothesis are quickly reflected in the current price, and who by their collective weight and chain reaction to prospective trends helps to determine the future price." (Cohen, 1987, p. 135)

Market efficiency depends on the activities of investment analysts. As such we focus on security analysts in this research and their capacity to obtain, interpret and disseminate information.

There has been an apparent increasing tendency in the bull markets prevailing until recently for analysts to rely on company handouts and discussion with key officers rather than detailed analysis of financial statements. Finance directors are aware of the dependency of analysts on them. The 3i's survey quoted earlier, (Table 1), suggests that finance directors believe they can influence the market valuation of the company they work for.

The way investment analysts process what accounting information they do use is equally important here. They may seem to take it at face value. They no more (if they ever did) interpret such received information, they appear to just help it to circulate from one point to another. However, their filter role is essential for market efficiency. Thus,

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it is important to understand their working methods and procedures.

2.6. THE WORK OF INVESTMENT ANALYSTS

The number of methods of analysis available to investment analysts is theoretically limited in number: fundamental analysis, technical analysis, economic modeling and intuitive analysis, etc... (Arnold and Moizer, 1984, Firth, 1977). However, in practice, any combination of such approaches may be used.

The most frequently used method may be fundamental analysis.

Arnold and Moizer (1984) found that:

"The principal share appraisal technique used by all interviewees was fundamental analysis. None of those interviewed mentioned that they used technical analysis, in the sense that they examined charts (i.e. graphs of share price against time) in order to spot various patterns or to identify particular resistance levels. However, the respondents did reveal that they compared graphs of market price, price-earnings ratio and dividend yield for the company being appraised with the corresponding plots for the Financial Times All Share Index, thus indicating that they were perhaps using some of the principles of technical analysis." (Arnold and Moizer, 1984, p. 197.)

This method of analysis seems to revolve around the notion of a 'real' price/earnings ratio calculation and its comparison

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with the actual ratio to identify companies that are under- or over-valued and therefore that can be recommended for buying or selling to clients.

However, as pointed out by Arnold and Moizer, the evaluation of a future P/E ratio is a very subjective operation. Arnold and Moizer (1984) were unable to find significant similarities among analysts and concluded that no one seemed to use a formal model to estimate this ratio.

Cohen *et al.* (1987) used the questionnaire survey method to investigate the preference of analysts for the methods they used. They found the same spectrum of methods employed as Arnold and Moizer ranging from the sophisticated integrated economic models to simple rules of thumb to guess the next year's earnings per share or price/earnings ratio. However, 75% of their respondents concentrated on three variations of the same basic method:

- 1) building an estimate of future earnings
- 2) the simpler current multiplier - actual vs. normal
- 3) multiplier and growth comparisons between the stock assessed and its group or industry.

The methods which use present value formulae were ignored by analysts. Cohen *et al.* concluded that there is a "wide gulf"

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between theory and practice in the domain of financial analysis.

Arnold and Moizer also noticed the dependency of analysts on companies' managers. Investment analysts such as Johnson (1966) believe that management is of prime importance, probably the most important variable in security evaluation. For him, it is the management that will make the success or the failure of a firm.

No doubt this is a serious argument, however, the assessment of the quality of management is based on few tangible elements and, in fact, resides more in the domain of feelings and impressions than anything else. Therefore, serious biases of judgement may arise. The same Johnson (1966) for example relates:

"Thus before I had even entered the company's offices, I had received a favorable impression of management. The president had alerted his security officer at the gate to expect and to admit me. By the time I had driven from the gate to the parking lot and had entered the administrative building, the gate security officer had telephone the receptionist advising her of my arrival so that when I entered the front door the receptionist greeted me by name, took my hat and coat and immediately escorted me to the president's office. (...). Perhaps consideration of such seemingly trivial things may appear without justification but an analyst's ultimate evaluation of a company - and its management - are predicated upon impressions received while visiting the company." (Johnson, 1966, p. 511.)

Not only do analysts believe that management is an important variable for investment evaluation purposes but they critically depend on them for information. Inevitably there is the tendency to take management's interpretation at the same time as the information itself. This consultation of management method may sometimes even replace all other evaluation procedures. Arnold and Moizer, for example report about one of their stockbroking firms interviewed:

"The two partners interviewed indicated that their firm had established the trust of managements in a number of companies and so they could gauge the standing and future prospects of a company from these sources without having to go through the time-consuming process of detailed analysis. Indeed, the earnings forecasts used were often the results of the discussions between the brokers and company management and they tended to follow the company's own predictions." (Arnold and Moizer, 1984, p. 198.)

This absence of objective criteria for evaluating quality of management and consequently the future of companies leads to a situation where plant visits and business lunches become the most preferred methods of analysis. Such methods, as pointed out by Taffler (1984) can lead to analysts revising their forecasts in the 'good' direction.

Analysts may also possibly use technical analysis. This consists broadly of extrapolating the future behaviour of

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stock prices from an analysis of past prices only. The fundamental assumption is that recurrent patterns in stock price behaviour exist and can be used to predict future prices (in violation of weak form market efficiency).

Gniewosz (1990), in his Australian study into the way financial analysts work, followed his subjects for a long period observing what they were doing during their working time. He concluded that his analysts did not statistically extrapolate the time-series of past share price movements, implying that they did not use technical analysis very extensively.

He also concluded that evaluation of the future prospects of a firm was related to future expectations about the performance of the economy in general, about the industry forecasts at a more disaggregated level and only in third place with company specific factors. Analysts, he observed, seem also to believe in a kind of global psychological state of the market which leads to equivalent items of news being interpreted in different ways depending on the particular market state prevailing. Examples of such states of mind are illustrated by analysts believing they are in a bull market or a bear market.

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Day (1986), using a protocol analysis, limited her study to the use of financial statements by investment analysts. Because of the nature of the methodology and associated limited number of subjects (15) as with Gniewosz, care must be taken in generalising from their conclusions. It is interesting to note that her analysts asked for a more informative chairman's report. This may suggest a desire for company management to interpret its financial statements directly for them, as such interpretation is the basic content of the chairman's statement.

Biggs (1984) also conducted a protocol analysis of the information processing of financial analysts. Inevitably his sample is also relatively small (11 subjects). However, he found 7 out of his 11 analysts made their investments evaluation entirely using historical data. Only 4 out of the 11 tried to evaluate the future value of the earnings indicators they had chosen. The historical data which were most popular were financial ratios. Biggs found a relative uniformity in the data processing behaviour of the analysts, focusing mainly on the same elements and calculating essentially the same ratios.

Norby and Stone (1972) suggest the factors influencing the market value of an enterprise are its financial statement

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content, the level of interest rates, the supply of investment funds, the perceived ability of the management, the particular industry in which the firm is located and its prospects for the future. Among these factors Norby and Stone rank accounting information in first place. The importance of accounting information to stockmarket analysts is a key issue in our research here. We have seen that many researchers and commentators believe some form of accounting number manipulation exists. We have also seen that investment analysts play a central role in making financial and particularly accounting information circulate. The next important issue is whether accounting information has any importance for investment analysts. If accounting information is irrelevant the question of window dressing becomes very secondary.

2.7. SOURCES OF INFORMATION

Investment analysts are arguably the most important processors of financial information for stockmarket purposes. Their potential sources of information are numerous. Often, financial statements are considered as latecomers among them. Personal contacts and the preliminary announcements anticipate the accounting information released in the published accounts.

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Many researchers have addressed the question of the relative importance of financial statements among the different sources of information available for analysts. Foster (1986) ordered the results of Chang, Most and Brain (1983). Other research focusing on the same question includes Arnold and Moizer (1984) (AM), and Lee and Tweedie (1977) (LT). We also asked the same question to our 63 participating stockbroker analysts. Table 6 provides the ranking of information sources made by analysts and reported by these different studies.

Table 6

Sources of Information
Comparative Ranking

	ALL	AM	LT	CMB		
	UK	UK	UK	US	UK	NZ
Direct company contacts and visits	1	3	3	3	1	3
Preliminary announcements and annual accounting statements	2	1	1	1	2	1
Interim statements	3	2	2	4	4	2
Previous work and market data already collected	4	-	-	-	-	-
Annual report content other than financial statements	5	4	5	-	-	-
Trade journals and newspapers	6	5	4	8	5	7
Statistical/macroeconomics forecasts	7	6	6	-	-	-
Subsidiaries' accounts	8	-	-	-	-	-
Companies' PR/press reports	9	-	-	6	6	4
Charts services	10	-	-	5	8	8
Other broker's circulars	11	7	-	-	-	-

All = all subjects in our sample (Stockbroker analysts)

AM = Arnold and Moizer (1984) (Stockbroker and bank analysts)

LT = Lee and Tweedie (1981) (Insurance, pension funds, bank, investment and unit trusts and stockbroker analysts)

CMB = Chang, Most and Brain (1983), (NZ = New Zealand)

Chang, Most and Brain rank the annual reports (financial statements and narrative sections like the chairman's report), in first place in the US and in the second place in the UK. In our study, we drew a distinction in our questionnaire between the accounts and narrative. Our results

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seem to indicate that financial statements are far more important as an information source than the rest of the annual report. However, the chairman's statement comes first both for ordinary and institutional investors in Lee and Tweedie, (1977 and 1981) suggesting these user groups focus on different information sources to financial analysts.

Table 6 serves to emphasise the primary importance of financial accounting information to the work of investment analysts. However, when asked to explain how they use annual accounting reports, analysts are in conflict. Day (1986), for example, reports that her respondents found no price sensitive information in financial statements, using the accounts as a reference document. We often hear about the confirmatory role of financial statements. It is difficult to believe that such a limited role will produce such a high ranking in terms of importance.

On this question, Zeghal (1984) proposes that financial accounting information may have two roles: anticipatory and confirmatory. Interim reports, as they are more timely and feed into the ultimate annual statements may be used to build and correct investor expectations about annual earnings. The annual report then serves to confirm such expectations.

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Chambers and Penman (1984) found that the absence of a significant relationship between reporting lags and the variability of stock returns may be indicative of the existence in the accounts of some specific information not provided by other sources.

Ou and Penman (1989) find that "accounting earnings and some of its components capture information that is contained in stock prices." In addition they find that other information contained in financial statements to be somewhat successful in predicting future stock returns. They argue their results thus attest directly to the usefulness of financial statements for investment purposes.

Any book on investment or portfolio management will include a chapter on financial statement analysis (e.g. Higgins, 1984, or Johnson, 1971). Financial statement analysis is supposed to be "the most obvious source of information about a company" following Cohen, Zinbarg and Zeikel (1987, p. 94), and such financial statements are "the source data for the most basic investment calculations" Christy and Clendenin (1982, p. 357).

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2.8 SUMMARY

The two principal competing hypothesis relating to capital market we have consider in this chapter weight differently accounting information. The EMH sees financial statements as a source of information among others while the 'mechanistic' hypothesis places a greater emphasis on it.

However, the question as to whether accounting information is used or not by investors is not yet answered. However, in light of the preceding discussion, there is a strong presumption that it is. Therefore the quality of this information, in term of precision and completeness, must be of some importance.

This is this quality of the accounting information, highly doubted lately by many commentators (Griffiths, 1986, Jameson, 1987, Smith, 1992) that, in practice, we will investigate in the next chapter in order to determine the amplitude of the problem before looking, in later chapters, at its potential effect on market participants.

CHAPTER 3

WINDOW DRESSING IN UK FINANCIAL STATEMENTS AND THE FINANCIAL SITUATION OF THE FIRM

This thesis seeks to test the effect that window dressing of financial statements may have on the way investment analysts assess companies' earning power and financial health. However, any such investigation is predicated on the existence of window dressing and how serious the problem is.

In the last chapter we discussed, in general terms, why financial statements might be window dressed and the contexts in which such manipulations are likely to happen. In this chapter we explore the degree of window dressing present in UK company accounts. After exploring the relationship between the concept of true and fair view and window dressing, we

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analyse 100 sets of financial statements drawn from 50 UK listed companies for window dressed schemes present.

As we saw in Chapter two, in stockmarket terms the goal of window dressing is to enhance the image of the firm among investors. Therefore, we might expect the degree of window dressing to increase as the financial situation of the firm deteriorates. (Other reasons, which we do not explore further here may be such things as anticipated rights issues, takeovers, etc...)

To establish a correlation between window dressing and the financial situation of the firm, it is necessary first to quantify both elements in a way that permits comparison.

In the first section of this chapter we consider the relationship of the true and fair view with creative accounting and this is followed by a review of possible areas in a firm's accounts amenable to window dressing. Section 3.3 describes in detail how the 100 sets of accounts are to be scrutinized for accounting creativity. The next section describes our firm sampling procedure, hypotheses and measure of financial health. Section 3.5 presents our results and these are discussed in section 3.6. A summary section completes the chapter.

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3.1 THE LIMITS OF WINDOW DRESSING: THE TRUE AND FAIR VIEW AND THE AUDITOR

The concept of the true and fair view is integral to any consideration of window dressing. This is because financial statements might lead to a biased view of the firm, despite being drawn up in accordance with GAAP (generally accepted accounting principles) and accounting standards, due to the possibilities open to management to select accounting policies.

The true and fair view concept is both an asset and a liability at the same time. It is an asset in the sense that it allows accounting standards to be more general and consequently to be applicable to a wider range of situations. It is problematic in that these more general standards can then be used to allow an unfair view of the financial situation of the firm.

The question of determining if the set of standards and procedures used in a particular set of financial statements is likely to provide a true and fair view is normally answered by the auditor who is supposed to apply his judgment to this situation. Consequently, if the auditor does his job correctly, the degree of generality of accounting standards

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should cause no problems and a true and fair view will result.

As the "guardian" of the true and fair view, if the auditor is not a rampart against window dressing, it may be due to a failure in his work.

Auditors are potentially involved in many conflicts of interest. They are appointed by management (even if it is on behalf of the shareholders) and their remuneration is fixed by the board they have, in effect, to judge. In addition, management remuneration may also depend to a certain extent on the auditor's report. As argued by Watts and Zimmerman (1979), among others, part of the directors' remuneration figure may depend upon the firm's reported profits, which are a function, to an extent, of the accounting procedures selected. The auditor attests to the fairness of these.

Auditors are consequently under pressure from their clients who are not easy to identify in agency terms:

"Thus, there is pressure to please directors (often mistakenly referred to as clients, whereas it is the shareholder who elect the auditors) in order to avoid losing audits. If the auditor is to resist (...) a specific rule book may provide a better prop than a vague injunction to provide a true and fair view."
(Watts and Zimmerman, 1979)

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The accounting profession is in an invidious position. Professional accountants as a group make standards, apply these as financial directors, audit the financial statements as auditors of firms and are responsible for the application of sanctions against their peers if there is a complaint. If this situation does not provide potential for conflict of interest, then what does?

Briloff (1976), in the USA, shows how the auditor may go along with the application of unacceptable accounting procedures so the real situation of the firm is not apparent. Citron and Taffler (1992) in the UK and Kennedy and Shaw (1990) in Canada have demonstrated the failure of auditors to qualify the audit report for going concern purposes when necessary.

On the other hand, the auditor's work is not easy. He is required to comply with a notion that is vague and ill-defined and often has limited power in practice. Published financial statements are the responsibility of management, auditors have only their report in which to express, in a predetermined form, their opinion on these accounts.

The "expectation gap" in general may not be attributable only to a perception of failure by the auditor to act

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independently but also to the weakness of the accounting standards the application of which he has to verify.

But, whatever the cause, the result is the same: window dressing of financial statements is possible despite these being fully audited and accompanied by a clean audit report. The fact that a set of financial statements is audited with no adverse comment does not necessarily mean that they may not mislead.

3.2 DETERMINING OUR WINDOW DRESSING SCHEMES

UK accounting standards are generally relatively easy to apply. They are often presented in such a way that many opportunities are offered to those who decide not to comply with the spirit of the SSAP's. Such freedom is the essence of flexibility but also of window dressing which becomes a matter of opinion and as such judgment. Considerable care needs to be taken in arriving at operational definitions of window dressing.

The first stage in determining the extent of window dressing schemes in UK published accounts is to generate a list of such potential schemes. Our starting point was a detailed review of texts on window dressing and creative accounting

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(books and articles). Next an analysis of an arbitrary pre-sample of company accounts was undertaken to relate the potential abuse of standards as reported by financial journalists and other observers to the actual accounting treatments used. Finally a number of accountancy firm technical partners were interviewed on the relative importance of the 19 different schemes identified and the extent to which they could be transparent to skilled financial analysts.

Structured interviews were conducted with the principal technical partners of five of the Big Eight UK accounting firms. These interviews took place at the end of 1988 and each lasted for around one hour. Table 7 provides the list of areas focused on during these interviews.

Table 7

**Themes of the Interviews with Technical Partners
of UK Big Eight Firms**

- window dressing of financial statements in general
- 1- deferred taxation
- 2- pension schemes
- 3- extraordinary items
- 4- tangible fixed assets and current assets accounting
- 5- merger and acquisition accounting
- 6- accounting for intangible assets
- 7- capital and reserves
- 8- foreign currency
- 9- off balance sheet financing
- other related subjects they want to talk about

Several different issues were raised in connection with each of these topics and alternative accounting treatments discussed. The structured questionnaire employed is presented in Appendix 1 together with the technical partners' summarised responses to the issues raised. Obviously we cannot say that these are necessarily representative opinions of the accounting profession or even of technical partners in general as our interviewees were only five in number and not chosen at random. However as they represent five out of

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the then Big Eight firms, their opinions are important and we are grateful for their contribution to this research.

Based on the technical partners' responses we had no evidence of any unanimity on the particular accounting issues discussed here. When there was agreement on a particular accounting treatment this was on a specific issue only and was far from being general. However their responses to questions relating to the importance and prevalence of window dressing were relevant and we are able to obtain an overview, perhaps, of the range of opinion among advanced practitioners. Table 8 tabulates their responses on a 5 points ordinal scale.

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Table 8

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1- Problem of w.d.	not an issue	not serious	moderate	serious	very serious
ANSWERS			2	2	1
2- Quality of analysts	very good	good	fair	bad	very bad
ANSWERS	1	2		1	1
3- Investment analysts can be misled	never	rarely	sometimes	often	almost always
ANSWERS		1	2	1	1
4- The market can be misled always	never	rarely	sometimes	often	almost always
ANSWER	2	1	1	1	

The wide diversity of views demonstrated, will be noted. Our small sample of technical partners appeared only consistent in viewing window dressing as a problem. Their views on the quality of investment analysts were mixed (Q2). There was some indication they believed (Q3) that analysts were more easy to fool than the market as a whole (Q4) which may be considered paradoxical when related to the discussion on the role of investment analysts in increasing market efficiency in Chapter two.

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In addition there was disagreement on the issue of the benefits of generally applicable standards relative to more tightly defined standards as with the more restrictive rules in the United States or to a lesser extent, in Canada.

Certain of the respondents argued that the laxity of the current rules permits controversial practices and therefore, at the very least, more filters need to be installed to eliminate or at least reduce such undesirable uses of accounting possibilities.

All respondents provided examples to the interviewer where the strict application of a SSAP lead to a false and unfair view. However in one or two cases these atypical examples were then generalised and implicitly used to justify other less obvious and straightforward accounting choices.

General agreement existed on the seriousness of window-dressing in principle and on the general limits of the true and fair view concept when applied to particular cases, however our respondents were not united when possible methods to stop window dressing were explored. This only serves to emphasize the complexities of the issues invoked.

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3.3 AN OPERATIONAL DEFINITION OF THE RETAINED WINDOW DRESSING AREAS

Our study is entirely based on accounting standards as they were at the end of 1987 and the beginning of 1988. Since that time, standards have evolved due, *inter alia*, to such factors as 1) the end of the bull market and the present economic depression, which leads investors to focus more on the financial position of the firm, its accounting numbers and how they are produced, and 2) a concern among accountants themselves that the flexibility of accounting rules had led to serious abuses and controversial practices in a number of high profile companies.

This section lists the elements of the financial statements to be analysed in the accounts sampled, how they are generally treated in the UK and what we define to be acceptable and unacceptable practices for analysis purposes.

1- Deferred Taxation

British companies use the liability "method" which is required by accounting standards. This means that an adjustment is made to the deferred taxation provision each year to give the best assessment of the future liability as at the balance sheet date.

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Therefore, not all timing differences will be provisioned, as in the US for instance. Firms following the "positive" approach will provision only for those differences that are considered as having a reasonable probability of becoming a direct liability in the foreseeable future. However, many companies choose to take a "negative" approach which consists in not provisioning for timing differences which are not likely to crystallize within a reasonable time horizon. Differences between the two methods arise in uncertain cases which are not provisioned in the former method but which are provisioned in the latter one.

Tonkin and Skerrat (1987), in their survey of UK accounting practices, found both methods of provisioning. Their findings are presented in Table 9 which is taken from their book.

Table 9

Deferred Taxation Accounting Policies in 1987

	Large listed		Medium listed	
Number of companies	150	(150)	150	(150)
	%	%	%	%
Accounting policy states that provision made for timing differences:				
only to the extent that it is probable that they will crystallize	66	(49)	62	(45)
except to the extent that it is probable that they will not crystallize in full	29	(41)	32	(51)
	4	(9)	5	(3)
	99	(99)	99	(99)
No policy disclosed	1	(1)	-	(1)
No deferred tax disclosed	-	(-)	1	(1)
	100	(100)	100	(100)

Note: comparative figures from 1986 are shown in parentheses

There is no real difference between their large and medium size listed companies, however, there is a move between 1986 and 1987 towards the positive method.

Although revaluation of tangible fixed assets, which is common in the UK, could, in theory, lead to a timing difference, in practice this liability will not crystallise while the business continues as a going concern. Therefore, most companies elect not to provision for this event. In this study, to remain as conservative as possible, we will not consider revaluation of tangible fixed assets as an issue. In the UK, there are two main kinds of reversible differences,

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amortisation vs. capital allowance and accounting vs. fiscal provisions. For analysis purposes we take an arbitrary lower limit of balance sheet provision for deferred taxation of 25% of total reversible differences, below which firm estimates are likely to be highly questionable.

A 25% minimal provision on timing differences might lead to a great deal of protestations from practitioners. However, a 100% provision is mandatory in many countries and such a minimum rate of 25% is quite conservative. We do not consider the possibility of totally eliminating deferred taxation, as many practitioners have often proposed, as it is not currently possible under GAAP. Consequently, we restate every provision on timing differences below 25% at the 25% level.

2- Pension Contributions

The fundamental goal of the standard settlers in this matter is as stated by Johnson and Patient (1985):

"The ASC continues to believe that the objective in accounting for pension costs should be to charge the costs of pensions against profits on a systematic basis over the service lives of employees of the scheme" (Johnson and Patient, 1985, p. 269).

If a surplus is discovered in a fund, it can be used by the company. Frequently, at least a part of this surplus will be

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used for a contribution holiday. The surpluses are really accidental and, if there are many companies with such surpluses at the moment, this is attributable to exceptionally high investment returns in the recent past, now being reversed. Therefore, this situation is extraordinary and must be considered in this way. The situation of comparability with previous years must also be taken into account. In our analysis we treat a pension contribution holiday as an extraordinary item and adjust for its effect on earnings per share.

3- Extraordinary Items

The first problem relates to the difference between an extraordinary and an exceptional item. Exceptional items are included in the profit before tax and consequently in the calculation of earnings per share while extraordinary items are excluded from such calculations, (SSAP 6). (But note the recent FRS3 standard does away with such considerations.)

Following Johnson and Patient (1985), exceptional items are supposed to:

"(b) Fall within the company's ordinary activities, but are exceptional by virtue of their size and their incidence. Examples of such items are abnormal provisions for losses on long-term contracts, and significant adjustments of prior-year taxation provisions." (p. 229).

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Criteria are normality of item plus abnormality of size.

In the case of extraordinary items, we have three basic principles:

- 1- the amount must be material,
- 2- the situation is expected not to be recurrent either frequently or regularly,
- 3- and must be outside the ordinary activities of the company.

These principles are not that difficult to follow. However, the examples that are provided in SSAP 6 may lead to confusion and open the door to window dressing if they are treated as principles and not only as examples.

"(a) The discontinuance of a significant business segment, either through termination or disposal;
(b) the sale of an investment that was not acquired with the intention of resale, such as investments in a subsidiary and associated companies;
(c) profits or losses on the disposal of fixed assets;
(d) provision made for the permanent diminution in value of a fixed asset because of extraordinary events during the period;
(e) the expropriation of assets;
(f) a change in the basis of taxation, or a significant change in Government fiscal policy."
(SSAP 6)

The first element is among the most ambiguous of all. Obviously, for a company, the closure of a significant

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business segment is something which happens rarely and which is extraordinary. This is different to the normal activities of such a firm with many small subsidiaries which may be added to, disposed of or closed on a regular basis. We must agree with Johnson and Patient when they state that "items that are extraordinary in one company will not necessarily be extraordinary in another" (1985, p. 231).

For instance, what is the closure of a significant segment of business in the case of Guinness which had in 1987 over 300 subsidiaries. The sale of some of these subsidiaries cannot necessarily be equated in any sense to the closure of a significant segment of business.

Tonkin and Skerrat (1987) give a list of the extraordinary items they found in their survey of accounting practices. Table 10 is taken from their book.

Table 10

**Extraordinary items, Differing interpretations
of definitions in 1987**

	Exceptional		Extraordinary		Total	
Number of items	215	(314)	384	(610)	1208	(1418)
Number of companies	300	(300)	300	(300)	300	(300)
Average items per company	1	(2)	2	(3)	3	(5)
	%	(%)	%	(%)	n	n
Foreign currency differences	11	(12)	3	(19)	255	(260)
Goodwill & intangibles	4	(6)	2	(26)	185	(141)
Discontinuance, reorganisation and redundancy	24	(22)	73	(76)	195	(258)
Profits and losses on sales of fixed assets, investments businesses or subsidiaries	11	(32)	59	(66)	220	(332)
Revaluation of tangible fixed assets	2	(1)	16	(6)	102	(155)
Provisions for losses on non-fixed assets & long-term contracts	37	(8)	53	(83)	43	(12)
Redemption of loan stocks	33	(-)	50	(68)	6	(19)
Employee incentive schemes	90	(95)	5	(5)	20	(22)
Research & development	100	(90)	-	(10)	24	(20)
Insurance and legal liabilities	20	(36)	80	(64)	10	(11)
Taxation	-	(21)	63	(74)	19	(19)
Prior year items: -change of accounting policy	-	(4)	-	(4)	28	(25)
-other	20	(6)	20	(24)	5	(17)
Other	45	(26)	38	(51)	88	(92)
	18	(22)	32	(43)	1208	(1408)

(The numbers into parenthesis are for 1986)

This list, made from 300 companies, corroborates our findings about the content of extraordinary items in the financial statements of UK companies. We also can see that extraordinary items are nearly twice as numerous as exceptional items: in 1986, extraordinary items represented

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1.94 times the proportion of exceptional items and in 1987 it was 1.79 times. Therefore, we can imagine that the natural tendency of a firm's management when facing an item of an unusual amplitude is to argue it is extraordinary in nature even when, in truth, exceptional, particularly if it is a debit item.

Table 10 also shows how the same items are presented both as exceptional and extraordinary as might be expected considering different situations pertaining. This situation follows the vagueness of SSAP 6 on this question. Therefore the extraordinary items' section of the profit and loss account provides a field day for those who want to window dress their financial statements. This realisation would appear to be the motive for FRS3 which limits considerably the potential abuse of the extraordinary item category (see chapter 2).

Following the above observations and a detailed analysis of our pre-sample firms, a list of acceptable and not acceptable extraordinary items was drawn up for subsequent analysis.

The following are considered valid extraordinary items:

- 1- the discontinuance of a significant business segment
- 2- the expropriation of some assets

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- 3- a change in the basis of taxation
- 4- a provision for the diminution of value of land
- 5- normally, the cost of a failed takeover
- 6- remittances from foreign subsidiaries retained by the local government.

However, the following items, all treated as extraordinary in at least one set of sample accounts, are not considered as valid extraordinary items:

- 1- sale of investment in subsidiaries or associated companies when not a significant segment of activity
- 2- provision for diminution in value of a non-current asset, except land
- 3- closure costs (except if related to the discontinuance of a significant business segment)
- 4- provision for losses on disposal of assets
- 5- anticipated loss on disposal of certain operations
- 6- restructuring costs in general (same restriction as 1)
- 7- rationalisation costs (same restriction as 1)
- 8- costs incurred by subsidiaries on their acquisition by the company
- 9- profit or loss on sale of investment properties or any fixed assets
- 10- restructuring of subsidiary companies

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- 11- goodwill written-down
- 12- provision for diminution in value of investments
- 13- pre-production expenditures
- 14- foreign currency deficit arising on consolidation
- 15- compensation for loss of office
- 16- discontinuance of commercial activity when not a significant business segment
- 17- loan stock issue costs.

This list is obviously not complete but reflects the kinds of extraordinary items that can be found in UK company's accounts. Correctly treated, in our view, items were found very rarely in the sample firms while unacceptable items appeared in many sets of financial statements and often for many years in a row.

4- Tangible Fixed Assets Accounting

Depreciation is a very important issue. The issue must be considered in two steps: first the principle itself must be discussed, then the appropriate rate and method must be considered.

In a going concern, looking at the depreciation number is of key importance. Tangible fixed assets are not bought to be

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sold and will lose their value in the process of production. Therefore, except for very special cases, assets must be depreciated.

However, it happens that companies do not always amortize their tangible fixed assets. Our pre-sample suggested that the main area for concern resides in the depreciation of freehold buildings and long leasehold property. Depreciation of plant and machinery was less of an issue. Tonkin and Skerrat (1987) provide a list of reasons firms give for non-depreciation of buildings and long leasehold property. Table 11 is taken from their book.

Table 11

Fixed Assets: Reasons Given for not Depreciating Freehold Buildings or Long Leasehold Property in 1987

	Large listed		Medium listed		Total	
Number of companies	150	(150)	150	(150)	300	(300)
	%	%	%	%	%	%
Reasons given for not depreciating:						
Depreciation not material	1	(2)	2	(-)	1	(1)
Frequent revaluations	2	(-)	1	(-)	1	(-)
MV exceeds NBV	9	(1)	2	(-)	5	(-)
High maintenance standards	4	(4)	10	(7)	7	(5)
No reason given	1	(3)	4	(5)	3	(4)
	<u>17</u>	<u>(10)</u>	<u>19</u>	<u>(12)</u>	<u>17</u>	<u>(10)</u>

(Note: comparative figures from the 1986's survey are shown in parenthesis.)

Similar reasons were given by companies in our sample of 100 accounts.

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The question of the appropriate depreciation rate is more difficult. One can argue for days on what is the best rate to reflect underlying economic reality. In many cases, the conventional 2% rate extends the depreciation over too long a period in the current rapidly changing environment.

For our purposes, we correct for non-depreciation on the basis of a 2% rate and adopt the usual straight line method.

However, the problem of split depreciation has been settled in SSAP12 (revised). Johnson and Patient (1985) quote ED37, the precursor of SSAP12 (revised) that:

"The accounting treatment in the profit and loss account should be consistent with that used in the balance sheet. Hence, the depreciation charge in the profit and loss account for the period should be based on the carrying amount of the asset in the balance sheet, whether historical cost or revalued amount. The whole of the depreciation charge should be reflected in the profit and loss account. No part of the depreciation charge should be set directly against reserves." (Johnson and Patient, 1985, p.67)

It seems clear that split depreciation, even if not formally named, is forbidden. The expression "whether historical cost or revalued amount" is clear. Consequently, we have made corrections for any split depreciation found in our sample.

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Methods for accounting for disposals are not uniformly presented in financial statements. Often the required detail on gain or loss is not provided. However, when presented, the figure is usually correct. Therefore, there are no real corrections to make from an accounting point of view, the key issue is one of disclosure. However, anyone seeking to assess the profitability of a firm must be aware of the possibility that the firm may sell a large quantity of assets near the end of the year to maintain its profit level.

5- Goodwill and Acquisition Accounting

At the time of our analysis, to avoid the intentions of SSAP22, a company was able to structure an acquisition so as to take advantage of SSAP23 and account for it as a merger, thereby avoiding the need to recognise goodwill (ED47 and ED48 were subsequently issued by the ASC in an attempt to overcome such creative accounting). The acquirer is both able to register assets at their market value using acquisition accounting and reduce its equity by writing off share premium against goodwill through merger relief.

However, the acquiror, if seeking to revamp its profit number, will generally wish to include the profits of the acquiree for the full year not just since the date of

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acquisition. Only merger accounting rules allow this. Therefore, even if acquisition accounting "improves" the balance sheet, the merger accounting is more flattering for the profit and loss account. Therefore, some companies will be interested in presenting an acquisition as a merger which necessitates payment in shares instead of money. One method to do so is the vendor placing where there is a distribution of shares of the new entity to the shareholders of the merged company, but there is also a third party (a bank normally) which promises to buy the new shares issued to the shareholders of the acquired company at a price previously fixed. A vendor placing arrangement is an acquisition in substance but takes the form of a merger.

Therefore, for analysis purposes, we

- 1- make sure, if goodwill is capitalised, that the amortization value is appropriate (no rule) and taken into account in the calculation of the profit before tax figure.
- 2- make sure that no goodwill is written off against the revaluation reserve.
- 3- make sure that no goodwill is written off against the share premium account except when generated by the same acquisition

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4- make sure that any goodwill, once capitalised, will not be written off against reserves,

5- make sure that there is no merger accounting based on a vendor placing or any scheme of that category.

6- Intangible Assets

The existence of intangible assets in UK financial statements is relatively rare. Normally such items are passed through the profit and loss account in the year in which they are incurred. This situation applies to purchased goodwill, rights, licences. However, brands are increasingly being capitalised and not depreciated.

In this case, we must be sure that any amortisation or subsequent write off is done through the profit and loss account in the calculation of the profit before tax and that any of these goodwill items are amortized as none can have an infinite life (ED52).

7- Capital and Reserves

In the case of the share premium account we:

1- make sure that the share premium account is not used for any other purpose save merger relief.

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- 2- make sure that the cost of issuing preferred shares or debt is not deducted from the share premium account.

In the case of the revaluation reserve, which is prone to manipulation, we will consider as acceptable:

- 1- diminution due to exchange differences (on tangible fixed assets previously revalued)
- 2- diminution due to the sale of tangible fixed assets previously revalued
- 3- any increase due to a new revaluation surplus

However, we will consider unacceptable:

- 1- any split depreciation scheme
- 2- any decrease due to write off of goodwill
- 3- any other movement in this reserve.

8- Accounting for Foreign Currency

The appropriate treatment of foreign currency transactions and translations in financial statements can be very difficult to agree on. The only apparent trigger for special analyst attention will be a change of accounting method which usually leads to increased profit. Such changes, if they are

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not too frequent, are totally "legal", but a financial analyst must not be fooled by their side effects.

Table 12 reports the results of Tonkin and Skerrat (1987) on the methods used by UK companies for profit and loss account foreign currency translation.

Table 12

Foreign Currencies: Translation Methods
Used for Profit and Loss Items in 1987

	Large listed		Medium listed	
Number of companies	100	(100)	100	(100)
	%	%	%	%
Method used:				
closing rate	40	(49)	30	(49)
average rate	48	(36)	40	(31)
policy not disclosed	9	(13)	15	(8)
	97	(98)	85	(87)
No evidence of foreign operations	3	(2)	15	(13)
	<u>100</u>	<u>(100)</u>	<u>100</u>	<u>(100)</u>

Note: comparative figures from the 1986 survey are shown in parentheses.

We generally note a move towards use of the average rate method between 1986 and 1987 which, interestingly enough, is towards the method which in our view is more likely to produce a true and fair view.

It may happen that some companies decide to adopt the most favourable method in any year. In this case they would translate using the more desirable method first, then they

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make the calculation using their habitual method and finally write off the negative difference directly against reserves. Such treatment is not acceptable. A firm must be consistent in its choice of methods which must be justified by some intrinsic advantage of the accounting treatment itself and not by the book profits it can generate.

In our analysis if such foreign currency translation is accounted for on this split basis, the amount taken to reserves is charged directly against profit.

9- Off-Balance Sheet Financing

There are many methods of off-balance sheet financing. One of these is to exclude a subsidiary from the consolidated financial statements. The most common reason given for such a choice is the dissimilitude in activities. Normally, the company is industrial or retail and the subsidiary is in the financial sector. But, most of the time, the subsidiary finances the firm's sales. Consequently the assets of the subsidiary are the accounts receivable of the company and the liabilities relate to the financing schemes for these accounts. Such subsidiaries are an integral part of the firm's business and as FRS2 now requires should be fully

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consolidated. To assess the real gearing ratio of a group, we reconsolidate such subsidiaries in our analysis.

Another scheme, far more difficult to detect, is the non-subsidiary subsidiary. If a company owns only 50% of the voting shares of another and does not control the composition of the board (ED 49, FRED 4), which is easy to manage (Smith, 1992), the latter may be accounted for not as a subsidiary but as a related company with consequently no obligation to consolidate. A well known example is Burton's 1988 accounts, harshly criticized for using such a scheme at the time, when all the relevant information was disclosed in a note to the financial statements. Without this note, the criticism may not have arisen because the situation would probably have remained hidden. When our analysis took place many such schemes probably existed. It is certainly a good way to help improve the gearing ratio, which is such an important measure for UK analysts.

Another method to influence the gearing ratio is the non-capitalisation of finance leases. In such cases the difference can be material and change the gearing ratio substantially. Finance leases must therefore be capitalised. However, the effect on the profit and loss account of the non-capitalisation may be immaterial as the depreciation

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charge added to the interest charge may equalise the rent paid. (SSAP 21 was only compulsory for accounting periods commencing June 1987).

The above are probably the most important identifiable (sometimes) schemes but there are also others of lesser importance. Some of these involve stocks. A company can sell its stock to a bank with a promise to repurchase it at a given date at a price which includes the interest on the original purchase price paid by the bank over the period. When a company must conserve such stock for a long period (e.g., ageing of whiskey) the firm may wish to hide the financing costs during the period. Where such situations are discovered during our analysis, we correct the accounts to include the stocks and their financing costs in the financial statements.

Finally, contingent liabilities are not always so contingent. In cases where it is possible to determine the minimum level of contingent liabilities that will crystallise, we add the amount in question to the liabilities total and consequently the gearing ratio is modified.

In the analysis of our sample of accounts, we restrict our attention exclusively to the above issues.

3.4 SAMPLING AND ANALYSIS PROCEDURES

To determine the level of window dressing in UK company accounts, we had to test the preceding definitions against actual accounts. This step requires first the establishment of an appropriate sample.

3.4.1 Sampling Procedure

Our focus is explicitly on the accounts of fully listed UK industrial and distribution companies. Our sample of firms was drawn from the *Times 1000* for 1987-88 and companies were omitted from further consideration using the following screen:

- 1- companies currently non-alive
- 2- companies not UK based
- 3- subsidiaries, to allow focusing on consolidated or group wide statements
- 4- public utilities, as they constitute a special sector of activity
- 6- oil and gas companies, because of their specialist accounting treatment
- 8- companies specialising in financial services

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A decision on the appropriate size of a sample is always a delicate matter. Our purpose here was not just to abstract some numbers from the financial statements selected but to analyse these in great detail. Thus, we had to keep the sample within manageable limits of size for analysis purposes. However, the number of financial statements examined had to be sufficiently large to allow statistical analysis. A sample was drawn of one hundred sets of financial statements from fifty different companies covering, in each case, two consecutive accounting periods, including the latest published when analysis commenced. This sample size appeared to be a reasonable compromise fulfilling both exigencies.

After eliminating all unwanted companies, every fifth firm was selected up to 50 in number on the basis of descending turnover.

A detailed list of the sample firms is provided in Appendix 2.

3.4.2 Analysis Procedure

Window dressing, as we have defined it, excludes direct fraud. Most of the time, it is a question of the choice of inappropriate but advantageous accounting procedures.

In this chapter we seek to assess the degree of window dressing present in UK company accounts and to relate this statistically to the financial situation of the firm. To do this we synthesise a single index of window dressing and measure financial wealth by Altman's Z-score (1968) adapted for the UK situation.

Our prior expectations are that we will discover 1) there is a material level of window dressing present in our sample of company accounts and 2) the level of window dressing present will be inversely related to the firm's financial position as expressed by the Z-score.

Section 3.3 above lists the window dressing areas we analyse explicitly. The company accounts in our sample were analysed in a consistent, systematic and structured way.

A pilot investigation of a separate sample of fifteen sets of financial statements was used to test the investigative

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approach, refine the list of areas to be considered and identify the most important issues.

The final version of this list was applied as consistently as possible to the hundred sets of financial statements in the main sample.

The analysis of each set of accounts was carefully tabulated with the detail of the corrections made for every relevant accounting item within each area of concern recorded.

All the analyses were conducted by the same analyst. Inevitably, processing ability would be expected to improve with experience leading to potential problems in terms of disparity in results between firms. We tried to reduce this tendency by starting with company number fifty, which was very much smaller than number one, so that as experience increased, the companies' financial statements became more complex. A good illustration of this is that, among the last five companies analysed in our sample, we find the highly complicated and controversial cases of Guinness and Thorn-EMI.

This analytical procedure results in differences between our definition of the presentation of what is a true and fair

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view of the financial situation of the analysed firms and what was actually presented in their financial statements. This difference is exactly what we will term window dressing in the remaining part of this chapter.

3.4.3 Key Accounting Numbers for Window Dressing Attempts

Some accounting numbers are referred to more often than others by market participants. If we consider the forecasts that are published by stockbroking firms, earnings per share is always given. Also, stockbroking analysts, as we will see in chapter 5, are very interested in the number of shares and the dilution factor. This is inevitable given the nature of their business in buying and selling shares. However, this reductionist focus may lead to an overemphasis on the earnings per share number in financial statements with consequent attempts by firms generally to manipulate this. Consequently, we will take earnings per share as the principal target of window dressing in the profit and loss account.

We derive a window dressing index for the profit and loss account by recalculating the earnings per share figure (or the profit after tax before extraordinary items) following the guidelines enumerated earlier in the chapter and compare

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this to its presented equivalent. The percentage difference is used as a measure of the degree of window dressing in the profit and loss account (see below).

In the balance sheet, the most commonly referred to measure by UK investment analysts and financial journalists is the gearing ratio. Many potential manipulations of different balance sheet numbers can impact on the gearing ratio.

We employ the gearing ratio as the key measure targeted for window dressing activity in the balance sheet. The gearing ratio is recalculated in accordance with our guidelines above, and the percentage difference compared with the presented gearing ratio is termed the balance sheet window dressing index.

Our two window dressing indices are separately correlated with the Z-Score, to establish if there is a systematic relationship between the level of firm window dressing and the financial situation of the firm. We also combine both indices to obtain an overall index of window dressing and see if it can be correlated in aggregate with the Z-score.

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3.4.4 The Measure of the Financial Situation of the Firm

As one of the purposes of our analysis is to compare the level of window dressing found in a set of financial statements with the financial situation of the firm, we must first determine a means for evaluating this.

We employ a UK version of Altman's Z-Score. This measure is developed from ratio analysis and multiple discriminant analysis.

We use two UK-based Z-Score equations, each of four ratios and with very high predictive power (e.g., Taffler, 1983 and 1984). Two models are required, one for the analysis of industrial companies and the other for distribution firms. This is because there are differences in financial characteristics between companies in the two broad sectors.

For our purpose, the Z-Score is taken as a continuum (from over 10 to below -4) indicating the financial strength of a firm. If the Z-score is negative the firm is at risk of financial distress. The industrial quoted model contains the four ratios enumerated in Table 13.

Table 13

Ratios of the Quoted Industrial Model

Measure	Ratio	Weighting(%)*
Profitability	$\frac{\text{Profit before taxation}}{\text{Current liabilities}}$	53.0
Working Capital	$\frac{\text{Current assets}}{\text{Total liabilities}}$	13.0
Financial risk	$\frac{\text{Current liabilities}}{\text{Total assets}}$	18.0
Short term liquidity	No credit interval	16.0

The no credit interval is defined as:

$$\frac{\text{Current assets excluding stock less current liabilities}}{\text{daily operating expenses}}$$

* Mosteller-Wallace percentage contributions to the power of the model.

The quoted distribution model also contains four ratios which are detailed in Table 14.

Table 14

Ratios of the Quoted Distribution Model

Measure	Ratio	Weighting(%)*
Cash flow	$\frac{\text{Cash flow}}{\text{Total liabilities}}$	34.0
Working capital	$\frac{\text{Debt}}{\text{Quick assets}}$	10.4
Financial risk	$\frac{\text{Current liabilities}}{\text{Total assets}}$	44.2
Short term liquidity	No credit interval	11.4

*Mosteller-Wallace percentage contributions to the power of the model.

3.5 ANALYSIS AND RESULTS

Before investigating the general relationship between window dressing and the financial situation of the firm, we discuss our findings regarding the overall level of window dressing in UK company's accounts.

3.5.1 The Level of Window Dressing

Window dressing is supposed to be non-visible, by definition. Thus, it would be expected that in certain cases, and depending on the nature of the schemes considered (Craig and Walsh, 1989), such creative accounting will remain undiscovered even by the best analyst.

Therefore, the rate of occurrence of window dressing schemes picked up in our sample is not necessarily an indication of their absolute frequency in the population, but a mixed indication of their frequency mitigated by their degree of visibility. As an example, a misclassified extraordinary item is easy to discover given a good definition of what can be extraordinary while, at the other extreme, off-balance sheet financing schemes are very hard to find precisely because they are kept off-balance sheet.

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Taking into account these limitations, Table 15 presents the percentage each window dressing scheme represents in our sample based on the 100 sets of financial statements analysed. However, we may note that there is often a dependency between both years analysed for the same company. A company will not organise a non-subsidiary subsidiary scheme only for one year. Table 15 presents the results for the 19 distinct schemes analysed in the first stage of our analysis, grouped according to the 9 areas described above. One column refers the scheme to the area as enumerated in Table 7. Comparison with coverage in Tweedie and Whittington (1990) and Smith (1992) is also provided. These 19 schemes were rearranged, merged or deleted for further analysis purposes (see chapter 5) depending on their frequency, their materiality and the possibility of replicating the scheme for testing purposes.

Table 15

Percentage of Companies with Window Dressed Items
in their Accounts by Type

	%	Area	TW	Sm
1. Extraordinary items	69%	3		x
2. Deferred taxation	31%	1		
3. Non-depreciation of tangible fixed assets	20%	4		
4. Finance lease non capitalised	17%	9		x
5. Large and unexplained increases in stocks or provisions to increase profits	15%	4		
6. Non-consolidated subsidiaries	8%	9	x	x
7. Change in the exchange translation method	8%	8		
8. Creating profit via assets disposal	8%	4		x
9. Off-balance sheet financing in general	17%	9		
10. Cost of debts charged directly to the equity	7%	7		
11. Sale and leaseback of assets with large profit	5%	4		x
12. Non-depreciation of intangible assets	4%	6		
13. Non-subsidiary subsidiaries	2%	9	x	x
14. Misclassified contingent liabilities	2%	9	x	x
15. Split depreciation	2%	4		
16. Misclassified pension contribution holidays	2%	2		x
17. False merger	1%	5	x	
18. Debts presented as equity	1%	7		
19. Hidden interests on off-balance sheet debts	0%	7	x	

TW: an x in this column indicates that the scheme was treated by Tweedie and Whittington (1990).

Sm: an x in this column indicates that the scheme was treated by Smith (1992).

It is clear that many of these items are associated (8 and 11, for example) and that others would be hardly visible (19 for example).

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Although in only 9% of the sample accounts could no window dressed items be picked up it is not easy to use such results to comment on the importance of the presence of window dressing in UK financial statements more generally.

However, we can see that those schemes we might expect to be easily detectable are heavily represented while, going down the list, the more difficult to recognise schemes are far more sparse. Consequently, we might expect that the relationship of our results with reality decreases as our percentages decrease.

Therefore, we can at least conclude from our analysis that a large proportion of financial statements contains at least one window dressed item, as defined here, and that our results are most likely an underestimation of the true position.

3.5.2 Window Dressing and the Financial Situation of the Firm

There is more than one way to compare the level of window dressing in a set of financial statements with the financial situation of the firm.

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We have argued above that creative accounting is largely designed to flatter the EPS and gearing measures which we use to proxy for profit and loss account and balance sheet effects.

We use three measures as our window dressing indices, the first representing the relative degree of window dressing in the P&L account, viz:- the percentage change in EPS, the second the equivalent for the balance sheet, viz:- the percentage change in the gearing ratio and the third a composite of the two.

The exact definitions of the measures are as follows:

$$1) \quad WD1 = (PEPS - CEPS) / CEPS$$

Where: WD1 = window dressing in the profit and loss account

PEPS = EPS as presented

CEPS = EPS as corrected for window dressing

$$2) \quad WD2 = (PG - CG) / CG$$

Where: WD2 = window dressing in the balance sheet

PG = gearing ratio as presented

CG = gearing ratio corrected for window dressing

and $3) \quad WD = WD1 + WD2$ representing an overall index of window dressing.

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All three measures are regressed against Z-Score to evaluate the influence of window dressing on the financial situation of the firm.

We use the Z-score for the year under scrutiny and also for the previous year, as a true *ex ante* measure of financial risk.

3.5.2.1 Manipulated Earnings per Share and the Financial Situation of the Firm

Table 16 provides summary statistics for the results of the regression of Z-Score, at the date of the balance sheet and at the beginning of the period, on WD1.

Table 16

**The Change in the Earnings per Share
and the Z-Score**

	n	r	Sig.
Z-score at balance sheet date	100	-.08	.4193
Z-score at the beginning of the period	100	-.10	.3284

We have no evidence that the Z-Score measure of financial health is significantly related to the change in the earnings per share figure due to window dressing activity. No attempts

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at elimination of outliers or other modifications of the variables improved these results.

Therefore, our prior expectation that such a relationship would exist is not sustained by our empirical results either on an *ex ante* or an *ex post* basis.

3.5.2.2 Manipulated Gearing Ratio and the Financial Situation of the Firm

This section compares the change in the gearing ratio with the financial position of the firm. Table 17 shows the results of the two regressions of Z-score, at the balance sheet date and at the beginning of the period, on change in gearing ratio due to window dressing, WD2.

Table 17

The Change in the Gearing Ratio and the Z-Score

	n	r	Sig.
Z-score at balance sheet date	100	.25	.0119
Z-score at the beginning of the period	100	.22	.0271

The relationship is significant and positive in both cases. The sign of the correlation coefficient is, however, positive

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implying that the greater the extent of balance sheet window dressing the better the resulting Z-score. Such an improvement in the final Z-score is supposed to be the goal of such window dressing activity.

However, the significant positive coefficient we have at the beginning of the period may suggest that companies having a good Z-score are those who use more window dressing for the gearing ratio. An explanation would be that window dressing is a long term solution and that the firms in question have already used it in previous years to keep their Z-score high. An analysis covering a large number of years would be necessary to reach further conclusion on these questions. This analysis would be consistent with long term strategies of presentation like those that are implicitly suggested by the "big bath" accounting theory. Alternatively financially weak companies may be subject to more detailed monitoring both by their auditors and the City and may have a reduced ability to window dress.

However, we may conclude that there is a significant relationship between the window dressing of the gearing ratio and the financial situation of the firm.

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Watts (1977) suggested that in the US, the presence of debt covenants can influence the choice of accounting methods toward those producing a higher income. Dhaliwal (1980) made the point that these debt covenants allied with a high gearing will produce such choices of accounting methods. In Canada, Labelle (1990) found that firms close to covenant constraint limits have a tendency to make income-increasing accounting changes. We can believe that the same phenomenon exists in UK.

To test for this we correlate the reported gearing ratio with the profit and loss account window dressing WD1. However, the correlation coefficient of .06 is not significant at a level of $\alpha = .05$.

3.5.2.3 Total Window Dressing and the Financial Situation of the Firm

If the window dressing found in the profit and loss account cannot be correlated significantly with the Z-Score, it is possible that the combined effect with the window dressing in the balance sheet will produce better results. However, the multiple regression $Z = f(\text{WD1}, \text{WD2})$ added nothing to the simple relationship between Z and WD2. To take an alternative approach we add both measures to produce the overall index WD3 as described earlier and conduct simple regressions

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between Z and WD3. Table 18 shows the results of the regressions of the overall index of window dressing on the Z-Score both at the balance sheet date and at the beginning of the period.

Table 18

Overall Index of Window Dressing and the Financial Situation of the Firm

	n	r	Sig.
Z-score at balance sheet date	100	-.08	.4160
Z-score at the end of the period	100	-.10	.3259

The regressions are not significant. Consequently, our hypothesis that the overall level of window dressing as defined here and the financial situation of the firm as expressed by the Z-Score may be correlated is not sustained by our results. Nonetheless, there is a positive relationship between firm financial health and the degree of window dressing affecting the gearing ratio.

3.6 DISCUSSION OF FINDINGS

This chapter is in two parts. In the first we explore the existence and to a certain extent the degree of window dressing in a large random sample of UK company accounts. The main purposes are to confirm empirically that window dressing

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is an important issue and then to identify crucial schemes to work with in later parts of this thesis.

With regard to the definition of window dressing used, we find evidence of the prevalence of many different window dressing schemes with significant impact on key accounting numbers and ratios. These findings are independent of the hypothesis that such window dressing may be related to the financial situation of the firm.

However, we did not find any significant relationship between the level of overall window dressing and the financial situation of the firm. Nonetheless, there was a strong statistical relationship between Z-Score and the impact of window dressing schemes on the gearing ratio.

Some observations may be made at this point. The absence of a significant relationship both for profit and loss account window dressing manipulations and the overall window dressing index compared with the balance sheet may be due to the scope of such manipulations which are often greater in the balance sheet even if more difficult to detect. Another disturbing result is the unexpected positive relationship between Z-score and the balance sheet window dressing index discussed above.

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We can suggest several reasons for the absence of an overall relationship. First it is possible that such a relationship does not exist. However, if what we have termed window dressing is viewed in the same way by most people, such an explanation cannot be possible because another goal for window dressing will have to be found and we can see no other than trying to improve the appearance of the financial situation of the firm.

Consequently, the absence of a relationship in this context may reside in the definition of window dressing itself. If what we consider as being window dressed numbers are not viewed as such by the firm, their use will not be indicative of any systematic attempt to manipulate accounting information in an organised and premeditated way. In such a case what we consider to be window dressing may not be correlated strictly with the financial situation of the firm as expressed by its Z-Score.

Another possibility, perhaps more likely, is that the absence of window dressing as defined by us, would have produced a deterioration of the Z-Score. Therefore, the use of such accounting procedures may have the goal of conserving the level of Z-Score, not improving it. To test such an hypothesis, it would have been necessary to calculate the Z-

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Score with the corrected financial statements, then to compare these results with the Z-Scores calculated on the presented financial statements. Such complex Z-Score calculations would go far beyond the limits and objectives of this thesis, even if it may have been the only way to reach an appropriate answer.

A third possibility may be that the situation of the firm is not really expressed by the Z-Score. Therefore, when managers use window dressing they modify financial statements elements which have no significant impact on the Z-Score. However, this possibility is weak as we have considered window dressed elements having an impact on the earnings per share and on the gearing ratio and profitability and balance sheet equilibrium are very important elements in the Z-Score definition. Note however that the conventional gearing ratio appears nowhere in either model and was not found to be significant discriminant variable when the models were developed (Taffler, 1984).

It is more probable that even if the Z-score is a good measure of the financial health of a firm *per se*, it is a poor proxy for how managers perceive the financial situation to be. Therefore, window dressing may be organised to change the image of the firm not to improve the Z-score.

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It is also possible, and even probable, that all the creative accounting present in our sample of accounts was not discovered despite our in depth analysis (see Craig and Walsh, 1989). Therefore, our window dressing indices are lower than what they would have been if all the window dressing schemes had been accounted for. Such undervaluation may also potentially explain for the weak relationship we found between window dressing and Z-Score.

3.7 SUMMARY

We have discovered that window dressing is prevalent in UK company accounts and a phenomenon potentially able to mislead investors, providing that accounting numbers are of importance in their investment decision or used by investment analysts, for instance.

In the next chapter, as we are ultimately interested in testing how investment analysts deal with window dressed financial statements, we seek to evaluate the extent to which such accounting information as the earnings per share and gearing figures, is important for investment analysts in their day to day activity. This evaluation will be done through a content analysis of stockbrokers' circulars.

CHAPTER 4

THE USES OF ACCOUNTING INFORMATION BY FINANCIAL ANALYSTS: A CONTENT ANALYSIS

This thesis seeks to explore whether accounting manipulations impact on the stockmarket by observing the reactions of investment analysts.

The preceding chapter established the presence of creative accounting in company financial statements. However, before exploring the extent to which financial analysts manage to see through such window dressing of financial statements we have to establish the importance of published accounting data generally for financial analysts when assessing investment opportunities.

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Despite several research studies to date, the relative importance of accounting information for investment analysts' decisions is still unclear.

Every ranking of analyst information sources (e.g., Arnold and Moizer, 1984; Lee and Tweedie, 1977; Chang, Most and Brain, 1983) confirms the importance of accounting information for investment analysts. However, other researchers, using questionnaire or direct observation (e.g., Day, 1986; Gniewosz, 1990), produce conflicting results which suggest that the annual report and accounts may be useful only for corroborative purposes and contains no price sensitive information.

To overcome the problems inherent in such methodological approaches as those of Day and Gniewosz, we focus here on stockbroker circulars, which are the products of the investment analysts' work. Because these documents make formal recommendations to investors e.g. to buy, to hold or to sell, and present the underlying reasoning supporting their recommendations, they should reflect the essential factors used by investment analysts to discriminate between investments of different quality. We adopt a content analysis approach to textual analysis as the most appropriate methodology to identify both the relative importance of

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different information sources and the reasoning underlying analyst judgements.

The first section of this chapter gives an overview of the method of content analysis and how it will be applied to meet our specific needs. The following section reports on the analysis of two pre-samples of data, used to formulate our underlying models. In the next sections the data and statistical methods are described and hypotheses laid out. The fifth section reports the results of the main analysis and is followed by the findings. The chapter finishes with some conclusions.

4.1 CONTENT ANALYSIS

Whereas traditional linguistics is limited to the study of sentences or elements appearing within the limits of the sentence, content analysis can be viewed as a form of textual linguistics. Any structure larger than the sentence, a paragraph or the whole text for example, is, from the linguistic point of view, only a concatenation of sentences. This traditional view implies that a detailed analysis of each sentence in a text will uncover the essential structures or meaning of this text. Other schools see a text as more than a series of sentences and as a complete structure in

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itself that can and must be studied as a whole. A new linguistic approach to the study of texts is thus needed.

Content analysis is based on the idea that communication is a complex activity and that messages are not simple but compound, their understanding being influenced by all of the source, receiver, vehicle and social environment in which they occur.

Gibbins (1976) classifies these components into five essential categories:

- 1- Source: influences the communication process by its credibility, attractiveness, power, etc...
- 2- Message: this is not straightforward but its style, organisation, etc... influences the way it is perceived,
- 3- Channel: this is sometimes called the "medium" and influences the communication process through its own characteristics such as the degree of noise added to the message, the prestige it is perceived to carry (an article in an academic journal compared with one in a professional magazine),
- 4- Receiver: is influenced by personality variables, degree of understanding of the question, perception of the source characteristics, etc... (the ability

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of institutional investors to interpret accounting information contained in company accounts, for example),

- 5- Destination: (situation), this encompasses the environmental and social factors in the communication process and relates to the social state of mind and the "weltschauung" of the group to which the receiver belongs.

Thus, the source is probably as important to the overall content of a message as the individual words themselves. In communication theory in general, and more specifically, in financial information (e.g. Bailey, 1981: Smith, 1972), the source's credibility is a major component in the communication process.

Consequently, an exhaustive analysis of a communication process will require an investigation at many different levels. The source's influence on the perception of message by a receiver is not only recognised by scientists but is also part of the conscious or unconscious understanding of the source by itself. Therefore, we can expect that the source will seek to influence the text (or speech) in order to make it more easily or more strongly received. Such

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effects are, to a great extent, described by rhetoric and widely used, *inter alia*, in the advertising industry.

We can partition the communication process into two parts: 1) denotation or what is basically said in the message (if it can be isolated) and 2) connotation or all that is conveyed through the message.

This fundamental distinction is representative of the idea that meaning is an aggregated construct which consists of two parts viz:- a strong nucleus representing the essence of what a term means or denotes (the unavoidable part) and all that the term suggests, or connotes, according to the context of the communication, the receiver's characteristics, etc.

Parry (1967) describes the function of a word (sign) as denotation while connotation is related to the attributes of the word. The distinction is also made, though more simply, by Vestergaard and Schroder (1985) who use the labels of meaning and of content. For them, meaning is the complete sense of a word given by the context, the structure, the rhetoric, etc..., while content refers to a word in its limited sense.

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4.1.1 Manifest Content Analysis

There are two basic types of content analysis. The first concerns itself with the discovery of the "non-said" in a text, the underlying system of ideas which tends to influence more than inform. This is where modern content analysis started, by analysing the underlying ideology of newspapers (Simpson, 1934) and propoganda during the war.

This perspective places the essential meaning outside of the text:

"Clearly, the way in which a particular man uses a word may not tell very much about the word. But it can tell a lot about the man." (Carney, 1972, p. 87)

Often this approach is not defined as a description of the manifest content (denotation) of the communication but, as a discipline where, more than the content *per se*, the larger process and affects of communication (connotation) are of interest to the analyst.

The other kind of content analysis focuses more precisely on what Berelson (1952) terms the manifest content. This relates more to the argument rather than the qualities of the source, context and receiver. This method is more convenient for

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certain type of language or expression, notably for technical language. The emphasis here is on the analysis of denotation.

4.1.2 Accounting Language

There is a fundamental difference between a technical and a natural language. Highly specialised languages, like computer ones, have only denotative and limited meaning. In a computer language, a word can have only one meaning and such a word employed in a wrong context will be rejected by the machine. Therefore, no approximation is possible. To construct such a language, even if it uses words borrowed from natural language (e.g. English) all possible meanings are reduced down to just one e.g. commands COPY or DELETE in the DOS language have only one use. The same words used in a natural language will be more or less tolerant to different meanings.

Accounting language may be defined as a semi-technical one. Even though a word is not exclusively limited to a single meaning, as in a completely technical language, in accounting communication the meaning of a word is still more limited than in a natural language. For example, we normally understand the general term "profit", but without being

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specific, we can use it to mean profit before tax, operating profit, net profit. In a computer environment, the word profit has to have only one identified meaning. In social intercourse the word profit would have a far more general meaning.

The more the proliferation of meanings is controlled in a language, the less the use of this language will express the source's characteristics: the words used are purely functional and they possess no non-functional attributes.

Financial analysts use a specialised semi-technical language. Therefore we focus, in our analysis, on the logic and nature of their arguments and what is said explicitly.

4.1.3 Texts and Methods

A scientific procedure must be replicatable in the same experimental conditions and always lead to the same results. This reproducibility of results is the characteristic that best defines the scientific method. In content analysis, this is ensured by repeated codification of text (Krippendorf 1980) with all differences being investigated. When working with a computer, uniformity of coding by pre-defined categories is ensured.

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However, such codification (unitization) requires first the development of an underlying analytical structure that will depend on the questions the researcher wishes to ask of the text. Different questions will imply different frameworks of analysis and, consequently, different ways to define the units of analysis in the text. No general procedure can be applied to all texts.

Each content analysis exercise must first define its parameters. These "rules" will express how the data collected from the text will relate to the goal of the analysis. This target notionally constitutes the dependent variable; the data being organised will become the independent variables. The need for such organisation stems from the fact that the basic goal of any content analysis is to make inferences (Krippendorf, 1980; Carney 1972).

In practice content analysis is composed of a hierarchy of units. First, the sampling unit must be defined (Krippendorf 1980). The sampling unit is composed of recording units which become the basic units for the analysis.

Krippendorf (1980, pp. 60-61) suggests five recording unit categories:

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"Despite their functional differences, most content analyses use one or more of five different ways of delineating and identifying these units:

- .physical units
- .syntactical units
- .referential units
- .propositional units (and kernels)
- .thematic units."

Physical units are the most easily recognizable among those mentioned by Krippendorf: a book, a report, a letter. Syntactical units are defined by the grammar. In this category the word is the simplest and smallest recording unit.

Referential units are defined according to referents. The analysis classifies together items relating to the same object: England, Mrs Thatcher's country (ignoring connotative association), etc.. Creating propositional units is a way of restructuring sentences into a simple standardized form. Thematic units, finally, are identified by their relationship with pre-determined ideas. They are, however, difficult to use although often very useful.

"Thematic units require a deep understanding of the source language with all of its shades and nuances of meaning and content. While it is often easy for ordinary readers to recognize themes, it is generally difficult to identify them reliably. Although the purpose of the research is important in judging which kind of units are most meaningful, for many content analyses thematic units are probably the most preferable." (Krippendorf, 1980, p.63).

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Bardin (1977) suggests a number of different content analysis methods including evaluative analysis. This evaluative assertion hypothesis was investigated notably in Osgood, Saporta and Nunnally (1956) and Osgood (1959).

Measurement of attitude is conducted on two axes: direction and intensity. Direction measures the attitude toward an object or a situation; it may be represented by a scale going from totally unfavorable to totally favorable with a certain number of intermediary positions. Intensity measures the strength of this attitude towards the object: from totally negative to totally positive.

Evaluative analysis differs from thematic analysis in terms of its goal: while thematic analysis focuses on the presence of themes, measurement of attitude focuses on the evaluative content of themes.

We are only interested here in denotation, *i.e.*, the different logical arguments leading to the buy/sell/hold recommendations on stocks made by stockbroking analysts. The sampling unit is the stockbroking circular. We are not interested in the source *per se* (the analysts who write the

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circulars) even if we are interested in differences between the collective sources, different stockbroking firms.

For this reason, methods of content analysis which are mainly psychoanalytic or which focus mainly on the source of the communication will be discarded (Bardin, 1977).

We are interested in the manifest content not in the hidden one; thus a thematic analysis is appropriate. Our approach to content analysis is first to classify the elements of the circulars' content, measure their importance in terms of their frequency of occurrence in the text and, then, investigate the statistical relationship between such frequencies and the different analyst recommendations made.

4.1.4 Theme and Rheme

The theme is usually the subject of a sentence, and what is said about the theme can be termed the rheme (Vestergaard and Schroder, 1985). In the sentence: "Accounting is an art and a science", the theme is "accounting", which is also the subject of the verb, and the rheme, what is said about the theme, is "is an art and a science".

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Therefore, the theme will usually be a noun placed at the beginning of the sentence, before the verb. Any other sentence structure is viewed as changing the focal point in the sentence and consequently, as 'marked' (Halliday, 1985). Duchastel, Paquin and Beauchemin (1989) found 83.3% of sentences, in their sample, unmarked. If the texts they studied are representative for our purposes it may be that recognition of the theme of a sentence by its syntactical position is possible. By corollary, that a theme is marked, may be an indication of the importance given to this particular theme by the source. Such quasi-constant syntactical patterns lend themselves to computerised analysis of thematic structure.

In essence, the noun carries the thematic content of the text while the verb and adjective carry the rhematic one. In our analysis, when profit is the theme, there may be many rhemes: profit can be equal, better or worse than what it was in the past and it can be expected to be of one of these three categories in the future. That is why it may be possible, in the kind of texts we are interested in, to reduce all the possible rhemes into three categories: positive, negative and neutral.

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Two alternative approaches to content analysis are adopted here, one with evaluative categorization of the rhemes and one focusing only on themes with, as an addition, a thematisation of two rhemes: positive and negative.

4.2 CONTENT ANALYSIS OF CIRCULARS: PRE-SAMPLE ANALYSIS

Pre-samples are used in content analysis to develop the set of categories to be used in the analysis of the main sample of texts (Bardin 1977, Krippendorff 1980). Such samples must come from the same population, but can be limited in size.

Two separate pre-samples were used to explore two different content analysis strategies. The first pre-sample consisted of 12 summary sections of stockbroker circulars from three randomly selected stockbroking houses, with either clear "buy" or "hold" recommendations. The second consisted of 12 sets of complete circulars from the same stockbroking houses providing us with the sample of circulars employed in the main analysis.

4.2.1 Pre-sample 1: Manual Analysis of Recommendation Sections

All stockbroker circulars are similar in format with the first page providing a summary of the full document and

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encapsulating the arguments underpinning the recommendation. Consequently, it was pertinent to focus on this section of the circular in the initial stage of our analysis.

The first pre-sample was used for exploratory purposes and was selected without any sophisticated sampling procedure. The criterion for selection was to use circulars, available at the British Science Library, originating from three brokers: Alexander, Laing and Cruickshank (ALC), Sheppards (Sh) and Barclays de Zoete and Wedd (BZW). Thirty one were found; none had an explicit sell recommendation. Only 12 had straightforward recommendations, 6 'buy' and 6 'hold'. We worked with these twelve circulars.

The 12 companies with circulars retained for analysis are listed in Table 19 with recommendations

Table 19

Firms in the First Pre-Sample

Name	Recommendation	Stockbroking Firm
1- G.E.C.	hold	ALC
2- Foseco Minsep	hold	ALC
3- Avana	hold	BZW
4- Sainsbury	hold	BZW
5- W.M. Low	hold	BZW
6- Matthew Hall	hold	ALC
7- Sainsbury	buy	BZW
8- Hillsgdown Hldg.	buy	Sh
9- Hillsgdown Hldg.	buy	BZW
10- Plessey	buy	Sh
11- Plessey	buy	ALC
12- G.E.C.	buy	Sh

The method of analysis adopted followed Krippendorff (1980) and consisted of the following steps:

- 1- cutting of the text into recording units containing only one theme and its corresponding rheme
- 2- extraction of themes
- 3- weighting of themes appearing in the text in terms of their importance in the complete sentence (Smith, 1990)
- 4- assessing the relationship between the themes and the recommendations.

The first phase of this analysis consisted of cutting the texts into thematic units containing only one theme. Every word in the text is included within a unit, nothing is left out.

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Then, following Smith (1990), each unit was attributed a weight depending upon the number of themes contained in the originating sentence.

In this type of analysis, the sentence is viewed as the basic constituent of the discourse. So, if there is only one theme in a sentence, this theme is attributed a weight of 1; if there are two themes, their value will be .5 each, and so on. This weighting system is congruent with normative grammar which prescribes that only one idea be carried in a sentence. If the idea being conveyed in a sentence is simple, the sentence will have only one theme; if the idea is complex, the sentence will contain many related themes (propositions). The average sentence contained 2.12 themes.

Five thematic categories were sufficient to classify all the units created by this procedure. These thematic categories were:

- GROWTH
- MANAGEMENT AND STRATEGY
- FINANCIAL PERFORMANCE
- PROSPECTS AND CONTRACTS
- TRADING CONDITIONS

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If, for analysts, such general headings are essential considerations in their judgemental process of companies, we would expect to find these themes in every circular, whatever its recommendation. But, in order to describe the content in a more precise manner, we need then to add some qualities to these categories. In an evaluative context, three broad 'qualities' can be associated with a theme: positive, neutral or negative. For example, for the theme FINANCIAL PERFORMANCE we could assign qualities.

<u>QUALITY</u>	<u>RECORDING UNIT (examples)</u>
Positive	"Profits rose this year"
Neutral	"The profit figure was released yesterday"
Negative	"Profit was down by 20%"

We are in an evaluative situation with stockbroking analysts seeking to determine the value of a possible investment. In such a situation we would expect that the qualities associated with the theme (financial performance) will differ depending on the situation of the company, and that expected financial performance will have a direct relationship with each recommendation: positive-buy, neutral-hold and negative-sell. An examination of these frequencies broken down by quality and recommendation suggested that such an approach to analysis on an extended sample might prove fruitful.

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4.2.2 Pre-sample 2: Computerised Analysis of Complete Circulars

Our second pre-sample analysis had three purposes (1) to test out the feasibility of working with complete circulars; (2) to explore the use of a computerised content analysis approach and (3) to try out alternative methods of thematic analysis. The analysis was conducted using a computer program called S.A.T.O.. Stockbroking circulars analysed were selected on an *ad hoc* basis from four of the five stockbroking firms providing the main data sample. Each firm provided us with three circulars, a long, a medium length and a short one. Table 20 lists the firms covered by the circulars analyzed with the recommendation, the size, the length and the number of words.

Table 20

Firms in the Second Pre-Sample

Name	Recommen- dation	Size	Length	Number of Words	Date	Ref*
1- Christies Intl.	hold	L	16p.	5,288	12-89	C5
2- MB Group	hold	M	12p.	1,634	11-89	C6
3- Amersham	sell	S	4p.	1,352	11-89	C10
4- Argyll	buy	L	17p.	7,234	01-90	C1
5- Ferranti	hold	M	10p.	3,287	01-90	C7
6- Godfrey Davis	buy	S	4p.	1,573	02-90	C2
7- GEC Plc	buy	S	4p.	1,290	01-90	C3
8- Next	sell	M	6p.	2,651	10-89	C11
9- ICI	sell	S	4p.	1,872	11-89	C12
10- Unilever	buy	S	4p.	1,260	02-90	C9
11- Marley	buy	S	3p.	1,744	08-88	C8
12- BBA Group	buy	M	6p.	1,681	05-89	C4

Ref* Reference to circulars in Table 21.

It was impossible in practice to find a long circular produced by each firm. We may also notice that the difference between a medium length and a short circular, which is obvious in term of number of pages, is very much less in terms of the number of words because of the space occupied by additional tables, graphics and layout considerations.

4.2.2.1 The S.A.T.O. Programme

S.A.T.O. ("Systeme d'analyse de textes par ordinateur" or System for Analysing Texts by Computer) is a computer program specially written for content analysis purposes (Daoust, Dupuy and Paquin, 1989).

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There are 6 basic routines in SATO. Daoust, Dupuy and Paquin (1989) describe these as follows:

"Lexicon generation, compiling each occurrence of each form in the text or parts therein.

Concordance listings, i.e. the listing of textual segments in which appear one or several words.

Word counting, i.e. the tally of words in a sequence of textual segments: sentences, paragraphs, etc.

Automated analyzers applied to the text in order to generate several interpretations of said text:

LISIBILITE supplies various indexes of reading fluency/difficulty of the text;

PARTICIPATION allows the user to evaluate the importance a given class of words in a body of sub-texts.

DISTANCE gives a measure of lexical contrasts between various texts. This algorithm can also help in locating words or class of words that contribute most to distinguishing these texts

DECRIRE can ascertain the distribution of a property on the text or lexicon.

Finally, the user can create his own analyzers by combining the latter primitive tools. The analytical sketch produced could then take the form of a procedure summoned by the EXECUTER command.

Categorization commands can assign values, (...), to the words or forms of the text:

PROPRIETE allows the user to define a new property, delete or modify an existing one. SATO is equipped with a legacy mechanism: a new property can inherit values from the mother property; a lexical property can be "projected" onto the text; the textual (symbolic) property can be "abstracted" at the lexical level;

VALEUR assigns a value to one or several words or forms;

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DICTIONNAIRE allows the user to consult a thesaurus already on file:
CONCORDANCE can also assign values to words in a given context of phrases or co-occurrences.

Last, there is a full-screen categorizer that can easily annotate any word or lexical form." (Daoust, Dupuy, Paquin, 1989)

These are the facilities provided by the program used in the course of our analysis.

4.2.2.2 Analysis Procedure

In this phase, we sought to develop some simple strategies to analyse such texts by computer.

Sentences, or part of sentences (recording units), are separated into two elements: a theme and a rheme. The theme in the unit is normally carried by the noun placed in the subject position (before the verb and the object). Consequently, a general theme, in a text, will be manifest by a series of nouns, a paradigm in the etymological sense of the term. For each general theme, the nouns are listed. For example, the theme: PROFITABILITY might be represented by: PROFIT, PROFITABILITY, OPERATING MARGIN, etc.

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By itself, and most of the time, a noun does not carry any positive or negative denotation; however, it can carry positive or negative connotations depending on the context. Therefore, if we only use words representing themes, it will not be possible to say if, in the above example, profitability is negative or positive.

But, it may be possible that reference, *per se*, to specific themes, regardless of their positive or negative aspect, might be enough to discriminate between the different recommendations.

However, to ensure that potentially important positive or negative ideas are not lost, we add to the analysis two specific themes: "positive" and "negative", to convey such ideas. Since positivity and negativity are part of the rhemes, the words representing these themes will obviously be verbs and adjectives.

Words like 'collapsed' in a financial context, will always be associated with profits, margins or share prices, but never with costs. Therefore, we classify this word within the negative theme.

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A priori we would expect that a circular carrying a sell recommendation would be differentiated, *inter alia*, by a greater number of overall negative mentions.

Using such an approach, it is possible to use the computer program directly to analyze word frequencies without, in most cases, the need to look at the word in its context to identify its meaning. If this approach proves to be operational, we would have a relatively simple computerised model for analysing circulars without the need for detailed textual analysis by the researcher.

4.2.2.3 Thematisation Process

All words in the text were listed by SATO. From this listing, the researcher selected and appropriately grouped together into common themes every word, as broadly determined, relating to business or finance. Words related in general with the ideas of positivity and negativity were also included under these labels.

This manual procedure generated a series of themes:

- T1: COMPANY DESCRIPTION: group, company, division
- T2: FINANCE: equity, gearing, share, capital
- T3: REPORT: pre-tax, accounting, assets, charge
- T4: PROFIT: margin, benefit, contribution, return
- T5: GROWTH: development, expand, investment

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T6: MARKET: clients, customers, sales, demand
T7: FUTURE: forecast, new, expectations
T8: MANAGEMENT: productivity, competitive, restructuring
T9: POSITIVE: improvement, raised, health, strong
T10:NEGATIVE: lower, discount, difficult

In this way, we are able to index the words in each text with the label corresponding to the theme they represent.

The next stage is to calculate for each circular the theme participation rates to constitute the dependent variables in our analysis. Each variable (the ten themes) is derived as the number of mentions of the theme divided by the total number of words in the circular.

Table 21 gives the thematic frequency rates for each circular separately, derived using the PARTICIPATION routine of SATO.

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Table 21

Rates of Participation of Themes
in Stockbroker's Circulars by Recommendation

		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
Buy	C1	.007	.010	.005	.002	.003	.013	.011	.021	.002	.008
	C2	.030	.016	.001	.004	.001	.006	.015	.028	.004	.007
	C3	.019	.007	.005	.009	.002	.022	.007	.017	.007	.008
	C4	.018	.020	.001	.007	.001	.013	.017	.010	.006	.008
	Average	.019	.013	.003	.006	.002	.014	.013	.019	.005	.008
Hold	C5	.023	.021	.005	.009	.005	.028	.007	.018	.008	.005
	C6	.009	.008	.010	.015	.001	.045	.030	.021	.003	.006
	C7	.017	.014	.003	.005	.001	.029	.012	.021	.004	.003
	C8	.005	.010	.003	.002	.003	.014	.015	.019	.003	.006
	C9	.014	.009	.009	.002	.002	.026	.013	.021	.005	.009
Average	.014	.012	.006	.007	.002	.028	.015	.020	.005	.006	
Sell	C10	.009	.005	.002	.005	.006	.022	.005	.018	.006	.010
	C11	.009	.003	.002	.002	.012	.034	.010	.016	.014	.006
	C12	.013	.012	.004	.004	.005	.040	.013	.025	.008	.003
	Average	.010	.007	.003	.004	.008	.032	.009	.020	.009	.006

Despite the limited number of observations, we applied one-way ANOVA to test for differences in average theme participation rates across the recommendations. Table 22 provides the resulting F statistic and the level of significance for all the 10 themes. The null hypothesis in each case is that there is no difference between the recommendations.

Table 22

**Results of Analysis of Variance of
Theme Participation Rate by Recommendation**

Theme	F	Significant at $\alpha = .05$
T1:Company description	1.15	.36
T2:Finance	1.48	.28
T3:Report	2.08	.18
T4:Profit	0.47	.64
T5:Growth	7.43	.01
T6:Market	4.17	.05
T7:Future	0.80	.48
T8:Management	0.05	.96
T9:Positive	3.31	.08
T10:Negative	0.89	.45

Two themes: GROWTH and MARKET, appear to have different frequencies across the three different recommendations. These two themes are associated with the future prospects of the firm (GROWTH) and the present trading environment (MARKET), two elements often referred to as important by investment analysts on a conversational basis. These results suggest that some of the themes we have isolated may be useful as variables in a model discriminating between the content of circulars carrying different recommendations.

4.3 HYPOTHESES, DATA AND STATISTICAL METHODOLOGY

Given the results of our pre-sample analyses, we were then able to conduct the main analysis.

4.3.1 Hypotheses

A casual examination of stockbrokers circulars reveals that the same sentences are taken from earlier circulars even if the recommendations differ. Because of this we are forced to question whether logical analysis drives the recommendation or if analysts come to a recommendation intuitively and then write the text to accompany this. We would expect that if markets are efficient, analysts must use different reasoning and thought processes to arrive at their investment recommendations. To identify the principal information items used by analysts when evaluating a company, we test whether these differ across different recommendations.

Our first hypothesis is:

H1: INFORMATION ITEMS APPEARING WITH HIGH FREQUENCY IN STOCKBROKERS' CIRCULARS DIFFER ACROSS DIFFERENT RECOMMENDATIONS

Having explored the underlying structure of analyst reasoning in this manner, we want to know if accounting information plays an important part. Consequently, our second hypothesis is:

H2: ACCOUNTING INFORMATION PLAYS AN IMPORTANT ROLE IN INVESTMENT ANALYST DECISIONS

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Both previous hypotheses are based on the assumption that different stockbroking firms' circulars will use common approaches in coming to a particular recommendation. We finally test this assumption explicitly and assess the possibility that firms use information in different ways and build their conclusions around different information items.

The third hypothesis is thus:

H3: STOCKBROKING FIRMS DO NOT PLACE EMPHASIS ON THE SAME INFORMATION ITEMS IN COMING TO THE SAME RECOMMENDATIONS

4.3.2 Sampling Procedure

The main sample was drawn from the circulars of five London stockbroking firms with a clustered random sample of circulars selected within each firm.

The firms, were selected on the basis of 1) their being located in the City of London 2) their size and 3) their willingness to participate in our study. The six largest London stockbroking firms were contacted and five participated in this study by letting us sample their circulars. These firms are the same ones as those where we conducted the experiment reported in Chapter five.

Circulars were sampled according to the following criteria:

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(1) straightforward 'buy', 'hold' or 'sell' recommendation, or, in a few cases, a more complex recommendation equivalent, according to the head of research of the respective stockbroking house, to one of the three basic recommendations. For example a 'buy below a certain price' may be a disguised 'sell' recommendation.

(2) A minimum of five circulars for each of the three recommendations from each participating house. This was for meaningful statistical analysis purposes and circulars were selected randomly, independently of firm or circular size.

(3) Industrial or distribution firms, not financials, to ensure a degree of comparability.

Circulars meeting these three criteria were sampled from the summary lists of recommendations on firms followed published monthly by each stockbroking house. The books used were dated between December 1989 and February 1990, except for one house which was restructuring its research department at that time and where we had to wait until June 1990.

Recommendations are not distributed equally across categories. In fact if we consider only the clearly defined recommendation categories across the 5 books (an average of

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430 companies per book) the frequencies of each recommendation are:

BUY	29%
HOLD	60%
SELL	11%

The circulars selected were of all lengths, from two pages, in which two houses are now specialising, to 20 pages, produced sometimes when a full and detailed report is necessary to account for all important events impacting on a particular firm in a particular period.

The 105 circulars are distributed by firm as follows:

1- James Capel	19
2- Kleinworth Benson Securities	22
3- S.G. Warburg Securities	22
4- Barclays de Zoete Wedd	21
5- County NatWest	21

The following distribution of the recommendations, for the 105 circulars in our final sample, are as follows:

BUY	38	(36.2%)
HOLD	37	(35.2%)
SELL	30	(28.6%)

4.3.3 Data Input

The circulars were entered into the computer by an Optical Character Recognition system (OCR). Tables were removed before presenting the texts to the machine. Although strictly speaking tables are part of a text and contain lexical elements, they are usually only provided to support the underlying arguments in the text. Thus including them in the analysis, apart from requiring a separate and parallel treatment, may well reduce the efficiency of the content analysis by introducing tautology and noise.

Having been scanned by computer, the texts were revised manually and the reading errors duly corrected.

4.3.4 Model Variables

The results of our pre-sample analysis suggested two different models for the analysis of our main sample.

The first model was established manually and categorised themes on a tripartite basis: positive, neutral and negative. Such an evaluative analysis has the advantage of considering themes in context.

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To automate this analysis, we took advantage of the linking possibilities offered by the content analysis program. SATO considers hyphenated words as a single word; so, by adding hyphens between the theme and the words surrounding it, we are able to create expressions containing both the theme and the part of the rheme relevant to its categorisation. This procedure generated our first series of variables (Model 1) as listed in Table 23.

Table 23

**Potential Discriminant Variables
in Model 1**

V ₁	: profitability positive
V ₂	: profitability neutral
V ₃	: profitability negative
V ₄	: financial position positive
V ₅	: financial position neutral
V ₆	: financial position negative
V ₇	: trading conditions positive
V ₈	: trading conditions neutral
V ₉	: trading conditions negative
V ₁₀	: growth positive
V ₁₁	: growth neutral
V ₁₂	: growth negative
V ₁₃	: management and strategy positive
V ₁₄	: management and strategy neutral
V ₁₅	: management and strategy negative

The list of variables in Table 23 differs, to some extent, to the themes in pre-sample 1 and reflects the better categorisation possible using the fuller set of circulars, sell recommendations and a larger number of cases. The pre-sample 1 categories 'Growth' and 'Prospects and contracts' are merged under the single label GROWTH, as both categories

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are weakly represented by themselves, and we have split 'Financial performance' into two separate components, PROFITABILITY and FINANCIAL POSITION, the latter representing financial risk.

The second model was already computerized but needed some adjustments. SATO allow the indexation of the words from one text to be saved in a dictionary and then applied to a second text.

Our second pre-sample was used to build such a dictionary. But this dictionary was not fully adequate to cover every relevant word in the 105 circulars forming the main sample.

Consequently we had to index, using the same grouping categories already defined with the second pre-sample, all words not covered by the existing dictionary. This procedure provides the second series of variables (Model 2) which is listed in Table 24.

Table 24

**Potential Discriminant Variables
in Model 2**

V ₁	: company description
V ₂	: report
V ₃	: positive
V ₄	: growth
V ₅	: market and products
V ₆	: finance
V ₇	: future and prospects
V ₈	: profitability
V ₉	: management and strategy
V ₁₀	: negative

For both models, as with the pre-samples, the independent variables are given by the ratio of respective theme mentions to total text word count, to overcome problems of different circular lengths. In addition an extra discriminant variable was added in both models to reflect firm size, given by company turnover, an important criterion (e.g. Tonkin and Skerrat, 1987).

4.4 DISCRIMINANT ANALYSIS

Multi-group discriminant analysis is the appropriate statistical tool for our purposes since, as opposed to cluster analysis, we are not seeking to classify or group cases from scratch, but to identify the key variables driving a specific classification, i.e. explicating the analyst's intuitive recommendation model.

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Discriminant analysis is basically a parametric statistical method to study differences between groups (Klecka, 1980) using several variables simultaneously. However, like any parametric statistical technique, discriminant analysis has a number of basic assumptions that need to be satisfied (Klecka, 1980):

- 1) Groups must be mutually exclusive. This is the reason why we have chosen well specified recommendations instead of using the complete spectrum with the hold-by type of confounding advices.
- 2) Predictor variables must be multivariate normal (Tatsuoka, 1970) which means (Tabachnik and Fidell, 1983, p. 300).

"(...) the predictor variable scores are independently and randomly sampled from a population's scores and that the sampling distribution of any linear combination of predictor variables is normally distributed."

- 3) Covariance matrices must be equal. If not, the model will have a propensity to classify outliers in the most widespread category (Tabachnik and Fidell, 1983).

Predictor variables, by virtue of their formulation, will be truncated at 0 and may be skewed to the right, impacting adversely on their univariate normality. This problem of

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skewed variables has been recognised by several other finance researchers (e.g. Eisenbeis, 1977).

Eisenbeis (1977, p. 875) remarks that non-compliance with the normality assumption is not rare:

"In practice, deviations from the normality assumption, at least in economics and finance, appear more likely to be the rule rather than the exception. (...). In the applied literature, the problem of testing for the appropriateness of the distributional assumption has been largely ignored."

To treat this problem all predictor variables were transformed leading to inability to reject the assumption of normality in the second model using the Kolmogorov-Smirnov test for all variables.

Because of a large percentage of 0 values in the first model, no transformation would achieve univariate normality, a necessary but not sufficient condition for multivariate normality. However, the important issue in discriminant analysis is the presence of outliers and despite the normality problems an analysis of the distributions of the transformed variables indicated outlying observations were no longer a problem. For Tabachnik and Fidell (1983) "A sample size that would produce 20 df (...) ensures robustness." In

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addition the discriminant analysis technique is robust to departures in many cases from the underlying statistical assumptions.

"Several authors (...) have shown that discriminant analysis is a rather robust technique which can tolerate some deviation from these assumptions. In addition, not all of the aspects of discriminant analysis require these assumptions" (Klecka, 1980, p. 61).

Equality of covariance matrices is usually tested for using the Bartlett-Box M test (Norusis, 1985), however it is very sensitive to departures from multivariate normality. In addition as Taffler and Abassi (1984) conclude, the quadratic discriminant analysis model rarely performs better than the linear model when used on data other than that from which the function is derived. For Norusis (1985), the quadratic discriminant model must be applied only on very large samples. Despite some problems in complying with the underlying assumptions of the model, we have no reason to adopt a quadratic discriminant approach, *inter alia*, given our low degrees of freedom.

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4.5 EMPIRICAL RESULTS

4.5.1 Discrimination Between Recommendations

To assess the classificatory ability of a discriminant function the rate of chance classification is required.

This rate depends on the proportion of each group in the population from which the sample is taken. From the books of recommendations which provided our samples, and which contained each several hundred recommendations on companies, the prior probabilities of each recommendation are given by:

BUY	29%
HOLD	48%
SELL	23%

Following the method of Morrison (1969), the probability of a correct classification at random is $.37 ((.29)^2 + (.48)^2 + (.23)^2)$. This provides the appropriate benchmark against which to compare the discrimination rates obtained from the application of our two models.

Our goal in this analysis is to seek to understand certain characteristics of the underlying model used by analysts when they make company recommendations. Two sets of predictor

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variables are used and two different models run, the first based on a thematico-evaluative analysis approach and the second theme based only.

4.5.1.1 First Model - Thematico-evaluative Analysis

Adopting a stepwise discriminant approach generates a single significant function according to Wilk lambda. As such only this one function is retained for analysis.

Sixteen variables were submitted to the SAS package (version 6.03). These were V_1 to V_{15} in Table 23 plus $\ln(\text{turnover})$, V_{16} , as a proxy for firm size. Three were retained by the final function. They are characterized as presented in Table 25.

Table 25

Variables Included in Model 1

Order*	Variables	Coef.**	F	Sign.
1	V_9 Trading conditions negative	-0.678	5.566	0.005
2	V_{13} Management and strategy positive	0.666	7.004	0.001
3	V_2 Profitability neutral	0.108	3.340	0.039

* In order of selection by the stepwise procedure

** Total canonical structure representing the strenght of the relationship between the variable and the function (Klecka, 1980, p. 31)

The linear discriminant function is:

$$D = -6.364 + 16.36 V_9 - 81.39 V_{13} + 93.60 V_2 \quad \text{Significant at } \alpha = 0.001$$

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The pooled within-groups correlation matrix, provided in Appendix 4 shows the three component model variables essentially to be uncorrelated.

As we can see from Table 25, two variables have about the same importance in the function and are far more important than the third one. The variables are trading conditions negative, having a negative sign, and management and strategy, with a positive sign. The better the trading conditions and the stronger the company's management the greater are the chances of a buy recommendation.

The importance given to a good management team to counterbalance adverse market situations seems to confirm the belief of Johnson (1971), a renowned financial analyst, that the quality of management is the most important factor in assessing an investment in a particular company's shares.

The data were submitted to the cross-validation procedure elaborated by Lachenbruch and Mickey (1968). This validation technique produces a correct classification rate of 47.6% weighted by group membership: $((13/26 \times 38/105) + (24/63 \times 37/105) + (9/16 \times 30/105))$. Table 26 provides the classification of cases for each group on this basis.

Table 26

**Classification Results:
Lachenbruch Hold-Out test
Model 1**

Actual Groups	No. of Cases	Predicted Group Membership		
		Buy	Hold	Sell
Buy	38	13 34.2%	22 57.9%	3 7.9%
Hold	37	9 24.3%	24 64.9%	4 10.8%
Sell	30	4 13.3%	17 56.7%	9 30.0%

Total misclassified cases: 59/105.

The best defined group is number two (hold) and it is also the group receiving almost all of the misclassified cases from the other two groups. This may be expected, not only because it is the middle group, but also because it has the highest prior probability, which will tend to make the program classify the more litigious cases into this group. Also we may note that group two is unspecified: a hold recommendation is less demanding than a buy or sell and implies no direct action. The misclassification pattern cannot be attributed to differences in dispersion matrices as the Bartlett-Box M test does not permit the rejection of the null hypothesis of equality of these matrices.

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The probability of correct classification (47.6%) is significantly higher than by chance (37%) using the binominal test of Morrison (1969).

$$t_{\text{calc}} = \frac{p - \pi}{\sqrt{\frac{\pi(1-\pi)}{n}}}$$

Where: $p = .476$, $\pi = .37$ and $n = 105$. $t_{\text{calc}} = 2.24$, significant at $\alpha = 0.05$, two-tail test. The model would appear to have some classificatory ability on a statistical basis.

4.5.1.2 Second Model - Thematic Analysis

In this second model again only one function is significant at the .05 level ($\alpha = 0.02$). The variables submitted to the stepwise procedure are V_1 to V_{10} in Table 24 plus $\ln(\text{turnover})$, V_{11} , as a proxy for firm size. The two variables retained in the model are given in Table 27.

Table 27

Variables Included in Model 2

Order*	Variables	Coef.**	F	Sign.
1	V_{10} Negative	-0.914	6.835	0.001
2	V_4 Growth	0.492	1.987	0.142

* In order of selection by the stepwise procedure

** Total canonical structure

The function is given by:

$$D = 7.15 + 13.13 V_{10} + 29.49 V_4 \quad \text{Significant at } \alpha = 0.001$$

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The pooled within-groups correlation matrix provided in Appendix 4 shows variables V_{10} and V_4 to be uncorrelated.

The number of negative mentions in a circular is important in leading to a sell recommendation, conversely, although with weaker impact, mention of growth shifts the recommendation in the other direction.

The Lachenbruch hold-out procedure when weighted by group membership produces a rate of correct classification of 49.5%: $((5/7 \times 38/105) + (29/83 \times 37/105) + (6/15 \times 30/105))$.

Table 28, however, shows the total number of misclassified cases in fact higher than with the previous model.

Table 28

Classification Results:
Lachenbruch Hold-Out Test
Model 2

Actual group	No. of Cases	Predicted Buy	Group Membership Hold	Membership Sell
BUY	38	5 13.2%	30 79.0%	3 7.9%
HOLD	37	2 5.4%	29 78.4%	6 16.2%
SELL	30	0 0.0%	24 80.0%	6 20.0%

Total misclassified cases: 65/105.

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As with the previous model, for groups 1 and 3, more cases were classified in group 2 than in their original groups. Consequently, this model can hardly be considered as providing a very adequate level of discrimination despite the fact that the probability of correct classification (49.5%) is apparently significantly higher than by chance (37%) using the binominal test of Morrison (1969).

$$t_{calc} = \frac{p - \pi}{\sqrt{\frac{\pi(1-\pi)}{n}}}$$

Where: $p = .495$, $\pi = .34$ and $n = 105$. $t_{calc} = 3.43$, significant at $\alpha = 0.05$, two-tail test. Our results question the validity of this statistical test.

Both models seem to imply that the number of negative references is the crucial factor in distinguishing between different recommendations. In the second model, it was negativity by itself and in the first model, negativity associated mainly with trading conditions. This is consistent behaviorally with analysts starting with a positive bias towards a company and a predisposition towards a hold or even a buy recommendation and then, if negative factors are important, the recommendation becomes a sell. This position is reinforced if we consider that sell recommendations are very much less frequent than both other categories implying

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that analysts hesitate for longer before giving such a recommendation.

The model built using themes without qualification, model 2, performs less well than the model with qualifications added to themes. Such qualifications are seemingly better able to convey the richness of the data and considerations of the authors of the circulars.

We may conclude that thematico-evaluative analysis, with themes placed in context, is a more valid approach to content analysis for our purposes here.

4.5.2 Discrimination Between Stockbroking Firms

In our final stage of analysis, we explore whether there is a significant difference in (stockbroker) house style. We are interested in whether there is a firm specific approach to analysis that it might be possible to isolate, separate from the recommendation effect. Such an independent evaluation is possible because the proportion of circulars in each category of recommendation is essentially the same for each stockbroking firm; consequently, the differences in the recommendations may not bias materially the results of this analysis.

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The same variables and model formulation are used as in the preceding analysis.

4.5.2.1 First Model - Thematico-Evaluative Analysis

When discriminating between firms, we assume that a circular has the same probability of coming from any stockbroking firm. Therefore, for our purposes, prior probabilities will be equal for the 5 firms even if we do not have, in our sample, exactly the same number of circulars provided by each. Consequently the probability of a correct classification by chance will be $.20 [5(.20)^2]$.

Applying stepwise discriminant analysis again the thematico-evaluative model gives a rate of correct classification of 67.6%. Three significant ($\alpha \leq 0.01$) discriminant functions are retained compared with a theoretical maximum of four. Table 29 provides the characteristics of the variables retained in the model (significant at $\alpha = .01$).

Table 29

Variables Included in Model 1

Order*	Variables	F	Sign.	Coefficients**		
				F1	F2	F3
1	V ₂ Profitability neutral	15.923	0.0001	0.83	-0.17	-0.25
2	V ₉ Trading conditions negative	8.386	0.0001	0.49	0.52	0.21
3	V ₁₅ Management and strategy negative	6.045	0.0002	0.17	-0.36	0.59
4	V ₁₂ Growth negative	4.042	0.0045	0.08	-0.32	0.45
5	V ₁₁ Growth neutral	3.743	0.0071	-0.12	0.35	0.39

* In order of selection by the stepwise procedure

** Total canonical structure coefficients

The three significant functions are given by order of importance with their level of significance:

$$D1 = -24.36 + 84.28 V_2 + 59.36 V_9 + 56.41 V_{15} + 6.73 V_{12} - 29.71 V_{11}$$

Significant at $\alpha = 0.001$

$$D2 = -20.10 - 19.85 V_2 + 72.45 V_9 - 98.38 V_{15} - 47.33 V_{12} + 37.61 V_{11}$$

Significant at $\alpha = 0.001$

$$D3 = -12.84 - 20.16 V_2 + 6.32 V_9 + 131.95 V_{15} + 65.93 V_{12} + 48.18 V_{11}$$

Significant at $\alpha = 0.001$

The pooled within-groups correlation matrix provided in Appendix 4 shows the variables to be uncorrelated.

The data were again submitted to the Lachenbruch procedure. This validation technique produces a correct classification rate of 59.6% weighted by group membership: $((9/17 \times 19/105) +$

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$(13/24 \times 22/105) + (16/20 \times 22/105) + (11/20 \times 21/105) + (13/24 \times 21/105)$). Table 30 provides the classification of cases for each group on this basis.

Table 30

**Classification Results:
Lachenbruch Hold-Out Test**

Actual Group	No. of Cases	Predicted Membership				
		F1	F2	F3	F4	F5
Firm 1	19	9 47.4%	2 10.5%	1 5.26%	2 10.5%	5 26.3%
Firm 2	22	2 9.1%	13 59.1%	2 9.1%	3 13.7%	2 9.1%
Firm 3	22	2 9.1%	1 4.6%	16 72.7%	0 0.0%	3 13.6%
Firm 4	21	3 14.3%	5 23.8%	1 4.8%	11 52.4%	1 4.8%
Firm 5	21	1 4.8%	3 14.3%	0 0.0%	4 19.1%	13 61.9%

Total misclassified cases 43/105

Firms 2, 3 and 5 have similar proportions of correctly classified cases. Firms 1 and 4 are less well separated with correct classification rates of 47.4% and 52.4%.

The Lachenbruch hold-out test gives a rate of correct classification of 59.6%, which is better than the by chance rate of 20% using the binominal test of Morrison (1969).

$$t_{\text{calc}} = \frac{p - \pi}{\sqrt{\frac{\pi(1-\pi)}{n}}}$$

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Where: $p = .596$, $\pi = .201$ and $n = 105$. $t_{\text{calc}} = 10.13$, significant at $\alpha = 0.01$, two-tail test. On this basis, the model appear to have a relatively good classificatory ability.

In this section, we seek to distinguish between the analytical methodologies of the different stockbroking firms. If these differ then different information items will appear with different frequencies in the circulars of different firms. Table 31 provides the firm means across the first three variables in Table 29 separately most significant in the three respective functions according to their canonical structure coefficients.

Table 31

Firms Means Across Significant Variables

	V_2	V_9	V_{15}
F1	482.01	380.28	464.14
F2	384.05	387.29	164.47
F3	252.07	320.09	107.80
F4	387.56	537.05	227.03
F5	500.48	512.65	106.12

The first variable 'profitability neutral' indicates profit is referred to, but such mention is not accompanied by positive or negative connotations. If we consider the

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position of the firms on this variable, we see that Firm 3 very rarely mentions profitability in a neutral manner while at the other extreme, Firm 5 does this frequently. Firm 4 and Firm 2 have similar means on this dimension. It may be a matter of house style to focus on profit even when it is neutral (*i.e.*, it is neither better nor worse than expected etc...). However, this focus is an important difference between firms.

Firm 3 does not appear to emphasise the second variable 'trading conditions negative', while Firm 4 finds this very important. Firms 1 and 2 view this factor in much the same way.

Finally, Firm 1 is alone in placing a great emphasis on the variable 'management and strategy negative'.

We conclude that different information items are significantly differently weighted by stockbroking firms when assessing investment opportunities.

The first and the second information items (variables) weighted differently by stockbroking firms are among the three variables figuring in our model discriminating between recommendations. Therefore, the rate of discrimination

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obtained for recommendations, which is not very high, may be partially explained by the potential heterogeneity of the stockbroking houses in the information items they consider important. A further analysis should focus on potential interaction effects.

4.5.2.2 Second Model - Thematic Analysis

In this case, the model generates a rate of correct classification of 52.4%. Two functions are significant (at $\alpha = 0.05$). Table 32 lists the four variables retained in the model (at $\alpha = 0.05$) with some of their characteristics.

Table 32

Variables Included in Model 2

Order*	Variables	F	Sign.	Coefficients**	
				F1	F2
1	V ₈ Profitability	8.40	0.0001	0.70	-0.28
2	V ₁₀ Negative	4.39	0.0026	0.65	0.06
3	V ₁ Company description	3.23	0.0155	-0.26	0.34
4	V ₉ Management and strategy	2.73	0.0333	0.08	0.52

* In order of selection by the stepwise procedure

** Total canonical structure coefficients

The significant functions can be written as follows:

$$D1 = -86.14 + 22.99 V_8 + 17.87 V_{10} - 10.39 V_1 + 9.56 V_9$$

Significant at $\alpha = 0.001$

$$D2 = -63.13 - 12.69 V_8 + 3.93 V_{10} + 10.13 V_1 + 17.04 V_9$$

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Significant at $\alpha = 0.003$

The pooled within-groups correlation matrix provided in Appendix 4 shows the variables to be uncorrelated.

Table 33 presents the Lachenbruch hold-out test classification results. The correct classification rate is 36.7% weighted by group membership: $((9/20 \times 19/105) + (13/27 \times 22/105) + (7/20 \times 22/105) + (3/16 \times 21/105) + (8/22 \times 21/105))$.

Table 33

**Classification Results:
Lachenbruch Hold-Out Test**

Actual Group	No of Cases	Predicted Membership				
		F1	F2	F3	F4	F5
Firm 1	19	9 47.4%	1 5.3%	3 15.8%	3 15.8%	3 15.8%
Firm 2	22	2 9.1%	13 59.1%	5 22.7%	2 9.1%	0 0.0%
Firm 3	22	1 4.6%	7 31.8%	7 31.8%	4 18.2%	3 13.6%
Firm 4	21	3 14.4%	5 23.8%	2 9.5%	3 14.3%	8 38.1%
Firm 5	21	5 23.8%	1 4.8%	3 14.3%	4 19.1%	8 38.1%

Total misclassified cases 65/105

Firm 4 is very much misclassified by the model having more cases placed in both groups 2 and 5 than in its own group.

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Nonetheless the Lachenbruch rate of correct classification of 36.7% is far better than the by chance rate of 20% using the binominal test of Morrison (1969).

$$t_{\text{calc}} = \frac{p - \pi}{\sqrt{\frac{\pi(1-\pi)}{n}}}$$

Where: $p = .367$, $\pi = .206$ and $n = 105$. $t_{\text{calc}} = 4.26$, significant at $\alpha = 0.01$, two-tail test. On this basis, the model appear to have a relatively good classificatory ability. Despite this apparent ability, based on the fact that the chance classification rate is very low, this model performs less well than the preceding one suggesting again that a model with qualified themes is more apt to reflect the richness of the data

Table 34 provides the stockbroker house variables across the three measures with reasonable loading on factors 1 and 2.

Table 34

Firms Means Across Significant Variables

	V₈	V₁₀
F1	193.09	79.40
F2	142.50	39.51
F3	165.35	35.35
F4	184.26	60.62
F5	205.95	68.17

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The variables 'profitability' and 'negative' have almost the same canonical structure coefficient values in the first function. As both signs are positive, they increase in the same direction. Firm 1 and Firm 5 place a great emphasis on the concepts of both profitability and negativity, while Firm 2 finds both these areas least relevant to its analysis. Firm

The second function is best described by the variable 'management'. Firm 1 focuses more heavily on company management, while Firms 2 and 3 seem to find such factors least important. Firm 4 is in the middle for both variables. Consequently, we may expect the correct classification rate for this stockbroking house to be lower than for the other houses. This is confirmed by Table 33.

4.6 DISCUSSION OF FINDINGS

The theme based (second) model is neither able to discriminate well between the different firm recommendations nor stockbroking firms. As its variables are constructed without the double articulation of theme and rheme that characterize the variables of the thematico-evaluative (first) model, we believe that themes with qualifications are better for describing the content of stockbroker circulars.

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The fact that the stockbroking firms are heterogeneous and well differentiated may explain the moderate discrimination rates obtained between recommendations. To discriminate better between recommendations may necessitate a certain level of homogeneity across different firms, but such homogeneity appears to be lacking for the firms in our sample.

Hypothesis one states that there is a difference in the arguments driving different recommendations (*i.e.*, buy/hold/sell).

Our results provide only weak support for this hypothesis. Our first model does however provide statistically significant results and therefore suggests the possibility of differences in underlying factors existing. However, our results are not conclusive on this and will necessitate further investigation.

A continuation of this study would try to discriminate between recommendations within firms as we have indications that differences in the underlying analytical approaches between firms leading to different recommendations may exist. Such a study would necessitate a far greater number of circulars from each firm. Alternatively we may formally test

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for interaction effects using an appropriate multivariate methodology.

Hypothesis two states that there is a difference in the analytical approaches used across firms regardless of the recommendations appearing in the circulars.

This hypothesis is supported by our findings. The rates of correct classification, obtained from both models, in particular the first, confirm that there is a difference in the items focused upon by different firms when assessing investment opportunities.

Emphasis on profit is the main element that differentiates between our stockbroking firms. Some firms appear to be focusing more heavily on the notion of profitability, while others remain more balanced, considering other elements, such as quality of management and strategies. This latter argument is also the most important one in differentiating between the recommendations.

Negativity appears to be very important in both models for distinguishing between firms. This corroborates the previous findings that negativity may be more important than positivity for investment analysis.

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Surprisingly, the financial structure and position of the firm does not seem to impact on recommendations made and such variables enter none of the discriminant functions developed. In fact there was no mention whatsoever of the word gearing in any of the texts of the 105 circulars!

Another consequence of our findings may be lack of support for a specific authorship effect. The fact that there is a relatively strong firm effect implies that analysts in the same firm write along common lines and share a common style. In fact casual empiricism suggests that the same sentences are taken directly from one circular to another within the same firm thus increasing the degree of homogeneity of firm house style. Even if the circulars from the different firms share a common structure (e.g., recommendation, summary, tables, results by sectors, prospects, etc...) to a degree, each firm has clear personalised characteristics. This may not be surprising considering that when an analyst starts to write a new circular he already has the previous ones on the company, the firm's standard framework and the training and experience he has received in his particular firm.

We must, however, underline some caveats to the research of this chapter. The definition of the variables, in both models, is open to amelioration by a better system for

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grouping the terms contained in the circulars. However, one must remember that the more refined the classification groupings (themes) are, the more groups there will be. If we multiply the groups, we reduce the number of occurrences in each group and therefore diminish their discriminating potential.

A more homogeneous sample in terms of industry groups or in terms of company sizes may have produced a better characterisation of the reasoning underlying the different recommendations. However, in practice, such a sample would be very difficult to obtain because of the many factors that would have been to be controlled for simultaneously: the recommendations, the presence of a circular on such or such company for a given period, industry grouping and company size, etc.

Our goal in this chapter was to evaluate the use of financial and mainly accounting information by stockbroker analysts. This use of accounting information is not equal across firms as the main criterion separating them is profitability. This implies that profitability is referred to more often by some firms than by others. This information item is provided by the accounting system, therefore we may conclude that some

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accounting numbers are of prime importance for firms when evaluating investment opportunities.

On the other hand it would appear that other accounting measures including balance sheet based ones do not play a significant role in the circulars we have examined. Also, we may notice, that consideration of cashflow, derived from financial statements or otherwise, is almost absent from our sample of circulars contrary to what would have been expected according to the efficient market hypothesis.

4.7 CONCLUSION

This chapter provides empirical evidence on the existence of distinct but relatively weak differences in the reasoning determining different recommendations in stockbrokers' circulars. However, there is also some indication that these differences may be greater than what we have observed as they may be obscured to a certain extent by differences between stockbroking firm styles.

Each stockbroking firm exhibited significant differences in the elements it focused upon when assessing investment opportunities and this was independent of the recommendation made. Such a thing as "firm style" would seem to exist.

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The prime objective of this chapter was to explore the relative degrees of importance of different information items for investment analysts when assessing investment opportunities. Such information encompasses accounting-based measures such as profit and financial risk.

Our results suggest in fact that certain accounting information, in particular profitability, may have utility for investment analysis but there are other more important non-accounts based factors in differentiating between recommendations.

Our findings, not surprisingly, demonstrate that profit is an important element (even if not the only one) focused upon by financial analysts. Our methodological approach may be developed further to provide additional insight into the financial analysis process and in particular to amplify what accounting information is actually used.

This importance given to the profit number also relates to the the controversy between the efficient market hypothesis and the functional fixation hypothesis. According to the efficient market hypothesis we would have expected financial analysts to focus on cashflows not on profits, however, no

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cashflow variables were derived due to lack of any mention in any of the circulars.

CHAPTER 5

INVESTMENT ANALYSTS' REACTION TO WINDOW DRESSING OF FINANCIAL STATEMENTS

Chapter three provides evidence on the presence of window dressing in UK company financial statements. Such window dressing is principally designed to influence two key accounting measures: earnings per share and gearing.

In chapter four, we sought to establish whether accounting information, in practice, influences the way investment analysts assess investment opportunities. The results of the chapter suggested that, despite the importance of other factors, the profit figure is among the most important factors in differentiating between recommendations. However, There was another relevant finding. This is that stockbroking

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firms are not homogeneous in the information items they consider most important in coming to a conclusion on company prospects.

In this chapter, we seek to evaluate directly the impact of window dressing on stockbroking analysts through examining the way they treat window dressed accounting information as part of their normal activities.

The first section reviews the literature relating to the importance of accounting information for investment analysts. The second states our hypotheses while the third section reports on our pilot study. Section four describes the experimental design for the full study, including the sampling design, a description of the task set and the statistical methodology. The fifth reports the results of the main experiment and the final section discuss these results.

5.1 INVESTMENT ANALYSTS AND ACCOUNTING INFORMATION

As mentioned in chapter two, the way investment analysts process accounting information is far from obvious. Books on financial analysis often pretend that analysts perform some transformation of accounting data to suit their particular needs (e.g., Cohen, Zinbarg and Zeikel, 1987). However, the

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conclusions from our discussions with stockbroking analysts are directly at variance with this normative model.

Such apparent contradictions may be due to the fact that investment analysis is not a theoretically well established profession. There are many conflicting views about how investment analysis can be conducted. The conflict is not only between fundamental and technical analysis, but also between different conceptions of fundamental analysis and, at the extreme, whether such an analysis is needed at all (Arnold and Moizer, 1984).

In such circumstances, therefore, the use of a questionnaire seems inappropriate. If the use of a questionnaire may, in theory, reinforce the external validity of results (Abdel-Khalik and Ajinkya, 1979), we believe it may also be prone to generate answers that are more closely related with what the respondents would like the situation to be than with what the situation is. We believe that the negative effect on the internal validity of the use of a questionnaire is far greater than any advantage from enhancing the perceived external validity. Consequently, we have opted for an experimental design.

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The experiment is designed to test the reaction of investment analysts to window dressing of financial statements assuming, after the debate referred to in chapter two and the analysis reported in chapter four, that accounting information may have some relevance to investment analysis. The discussion, in chapter two was about the reactions of market participants. If the behaviour of market participants is more in concordance with the functional fixation hypothesis, then the role of financial analysts becomes very important in disseminating and interpreting financial information.

If investment analysts are efficient at interpreting, decoding and explaining financial information, then, one condition for market efficiency is met even if other market participants do not have the skill to interpret adequately this financial information (Lee and Tweedie, 1977 and 1981).

If the market is informationally efficient, accounting data manipulation will have no impact on investors. However, we have also pointed out that efficiency is never perfect and that analysts do play a role in enhancing market efficiency. Such a concept is not to be viewed naively and there will always be a "role for the expert to conduct research" (Pope, Morris and Peel, 1990).

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Consequently, in the EMH environment, investment analysts will not necessarily be expected to correct for window dressing if the window dressed items have no impact on expected future cashflows. On the other hand, according to the naive investor or mechanistic hypothesis (Foster, 1986), investment analysts are supposed to be experts in decoding financial information and, as accounting numbers are supposed to have an effect on share prices, they will be expected to correct adequately for window dressing.

5.2 HYPOTHESES TO BE TESTED

This experiment is in the tradition of Lee and Tweedie (1981) into the ability of market participants to interpret financial accounting information. But, we do not focus on analysts' ability to interpret financial statement information, *per se*, as we assume that experienced stockbroking analysts can read financial statements if they wish to. The question we are concerned with is what do investment analysts do when these financial statements they are analysing are window dressed? It is not their ability but their willingness to correct that is questioned more precisely here.

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The first hypothesis relates to the ability of financial analysts to take into account window dressing in the accounts of companies they are evaluating.

HYPOTHESIS 1: FINANCIAL ANALYSTS WILL CORRECT ADEQUATELY FOR WINDOW DRESSING IN FINANCIAL STATEMENTS

Two secondary hypotheses are also tested.

The second hypothesis relates to the difference in correction rates for different window dressed items as we may expect analysts to be better in detecting certain schemes or combination of schemes. This hypothesis relies on the assumption that there is a relationship between the window dressing detected and the corrections made by participating analysts.

HYPOTHESIS 2: DIFFERENT WINDOW DRESSED ITEMS WILL NOT BE DISCOVERED WITH THE SAME RELATIVE FREQUENCY BY INVESTMENT ANALYSTS

It would be expected that more complex schemes are less readily identified and corrected for.

The third hypothesis relates to possible explanatory relationship between analysts' characteristics and their correction of window dressed accounting numbers.

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Window dressing recognition may be a matter of practice. Therefore, we would expect more experienced analysts to be more skilled in this very practical activity. We also would expect those having less confidence in financial statement information or viewing window dressing as a more serious problem to be more likely to pick up window dressing schemes.

HYPOTHESIS 3: THERE WILL BE A POSITIVE RELATIONSHIP BETWEEN CERTAIN ANALYSTS' CHARACTERISTICS AND THEIR PROPENSITY TO CORRECT

5.3 PILOT STUDY

In summary the experimental task consists of asking subjects to calculate a set of key ratios incorporating adjustments to the accounting numbers provided on the face of the accounts of the two companies in an appropriate manner.

If the participants adjust their calculations to take account of the window dressed schemes then we have evidence supportive of our first hypothesis.

A preliminary study was conducted to help refine our experimental materials and the nature of the research task. This was not conducted in the same way as the main experiment. To increase the level of feedback we used a

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protocol analysis procedure asking the subjects constantly to verbalize their analytical processes and registering all their comments (Bouwman et al., 1987).

The use of a protocol analysis procedure may have affected the results of the pilot as discussed in many papers (e.g., Anderson, 1985; Biehal and Chakravarti, 1989). This may be in terms of slowing down the analytical process (Dansereau and Gregg, 1966), distracting the participating analysts (Russo, Johnson and Stephens, 1987), making such subjects much more cautious about their procedures and perhaps to change their nature to make them appear more rational (Smead, Wilcox and Wilkes, 1981).

Our protocol analysis sample is limited, consisting of only three analysts working for a major investment fund. They differed in age, background and level of experience: the first one being new in the firm, the second one having a couple of years of experience and the third one having about ten years experience as an investment analyst.

The subjects were requested by their director to participate in this experiment and were interested in projecting a favourable image of their abilities as investment analysts.

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Only one correction for window dressing was mentioned by the three analysts.

Their principal focus of interest was clearly related to the structure of equity. None ever mentioned the possibility of conducting a cashflow analysis or any kind of evaluation of future cashflows.

Based on our experience with the pilot study the same potential window dressing schemes were retained for the main analysis, *inter alia*, as only one correction was made, not permitting any choice among the schemes. However, we reduced from 6 to 4 the maximum number of window dressed items to be included in any one set of financial statements.

Because of the time constraint associated with the experiment (around one hour) we decided to reduce the number of ratios to be calculated from the original 9 to 7.

Finally, the very low (almost zero) number of correction in the pilot led us to doubt whether there might be large number of corrections made in the main experiment. Such an absence of corrections may be difficult to interpret potentially being attributed to a failure in the design of the experimental materials and/or a true absence of correcting

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behavior by the subjects. Therefore, we decided to separate our main task subjects into two groups in each firm: an experimental group, working under the same conditions and with the same instruction set as the subjects in the pilot study and a control group. Such participants would be told specifically in their instruction set to be aware of the existence of window dressing schemes in the case study financial statements.

Such modifications to the original procedures were designed to improve the relevance of the task and ease the interpretation of the results.

5.4 THE EXPERIMENTAL MATERIALS

The experimental material consists of (1) a case study containing two sets of accounts (2) a set of instructions (3) answer sheets with an example of a completed question for illustrative purposes, and (4) personal questionnaire to be filled in only at the end of the main task and given out to the participants only when their case study material was returned duly completed. A full set of the experimental materials is provided in Appendix 5.

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The two sets of accounts are drawn from the sample of financial statements analysed in chapter three and are selected as being materially clean of the window dressing schemes we wish to test. The case study materials include the directors' report, full accounts including all footnotes and the auditors' report, as presented in Appendix 5.

Footnotes are provided as we believe that accounting statements are almost unusable without such notes contrary to Biggs (1984). Biggs believed that adding footnotes would increase unduly the quantity of data to be processed by his subjects rendering his experiment unworkable and justified his decision on the basis that only one of his analysts complained about lack of information. On the other hand, Bouwman *et al.* (1987) believe that professional analysts are able to process a great quantity of information within a limited period of time. They used complete sets of financial statements plus other information for a task that lasted between 20 and 75 minutes.

The first set of accounts is that for Dawson International and the second is for John Laing. The accounts of John Laing are not adjusted and serve as a control. The accounts of Dawson International, however, are modified in different ways

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to incorporate different combinations of window dressing schemes.

5.5 EXPERIMENTAL DESIGN

5.5.1 Window Dressing Schemes Tested

In order to test the ability of financial analysts to recognise and deal with "window dressing", we need first to establish a list of potential schemes to be tested.

In chapter three we reviewed the literature to identify potential window dressing schemes already discussed by different authors in UK books or magazines and newspapers. Examples of such schemes were searched for in a sample of 100 sets of financial statements belonging to 50 UK companies to establish their relative frequency and importance.

Following this analysis, we retained a subset of the more common and tractable schemes to incorporate in our experimental materials. Table 35 gives a list of these window dressing possibilities.

Table 35

Window Dressing Schemes Tested

- 1- Deferred taxation
- 2- Pension plan contributions
- 3- Extraordinary items
- 4- Sales of assets
- 5- False merger
- 6- Non-subsidiary subsidiaries
- 7- Finance leases not capitalised
- 8- Hidden interests
- 9- Non-consolidated subsidiaries

(5 of our 9 window dressed items tested (1,4,5,6 and 7) are also treated by Terry Smith in Accounting for Growth, 1992).

Deferred taxation

The Dawson International based set of financial statements is window dressed according to the experimental design to show a very low provision for deferred taxation accompanied by very large potential liabilities constituted by reversible differences. Some illustrations of this situation were found in the accounts of W.H. Smith, William Baird, Wm Low and Dobson Park among other firms.

Pension plan contributions

Appropriating a pension funds surplus is truly an extraordinary event as it seldom happens in a company's life. Therefore, if a surplus materialises as a contribution holiday, its effect ought to be presented as an extraordinary item so that earnings per share will reflect normalised profits. One such example can be found in Dobson Park Accounts.

Extraordinary items

Our review of the accounts of 50 large UK companies identified large numbers of different items which are treated as extraordinary but which should be included in the calculation of the profit before tax figure, and conversely a smaller set of items which are taken in trading profit but are really extraordinary in nature. The window dressed set of accounts contained 9 different examples of such items all which were treated as extraordinary:

- goodwill written off,
- US subsidiary pre-production expenditures written off,
- foreign currency deficit arising on consolidation,
- reorganisation and rationalisation
- anticipated loss on disposal of certain US operations
- loss on cessation of certain activities

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- loss on early redemption of quoted loan stock
- cost of proposed acquisition (failed bid) net of the gains on disposal of shares in the target company

The 9 items in total represent a highly material amount relative to the stated profit before tax figure in the case study. However, it should be pointed out that clearly not all of these items are likely to be equally important in practice or clear-cut as regards interpretation. The company accounts from which the items used were selected included Argyll Group, Y.J. Lovell, Hepworth Holdings, Gestetner Holdings, Fine Art Developments, Portal Holdings and Dobson Park.

Sales of assets

On its own, the disposal of assets cannot be classed as window dressing, but when the accounting effect of the transaction is to create a book profit of such magnitude that a net loss becomes a net profit, or the net profit is doubled, analysts need to make an adjustment to reflect the underlying profitability or normalised profit of the firm. Among the companies using sales of assets or sale and leaseback to create book profits we can find Fine Art Developments and Wm Low.

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False merger

According to SSAP23, a vendor placing can be accounted for as a merger. However, this treatment does not reflect the substance of the transaction. The purpose of such a scheme is essentially to appropriate the profit of the acquired company from the beginning of the preceding financial year while acquisition accounting allows consolidation of the profit of the acquired firm earned only after the acquisition date.

Non-subsidiary subsidiaries

Even if many such arrangements in the real world are not disclosed in a company's financial statements, we added a footnote to the accounts of our case study example, describing how an exactly 50% owned related company accounts for a major portion of the borrowing of the group. In fact, when such sums are included in the gearing calculation, the apparent relationship between debt and equity collapses. This example was taken from Burton's accounts which, at least, disclosed what many other firms keep hidden. (The Companies' Act 1989 effectively prohibits such activities).

Finance leases not capitalised

In our example of such a practice, a substantial amount of assets acquired under finance leases was not included among the tangible assets on the face of the balance sheet, with

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the matching corresponding liabilities also ignored. This leads to the gearing ratio appearing lower than it is in reality. Our example was built around Thorn EMI's accounts. (SSAP21 now prevents the non-capitalisation of finance leases, although the main impact appears to have been on a restructuring of such contracts so they can be accounted for as operating leases.)

Hidden interest

In this more subtle case, the problem revolves around a convertible bond issued at a low coupon rate (less than half the market rate), but convertible at such a price that an equivalent capital profit accrues to bond holders. As a result, the annual interest charge is paid for by the company receiving a lower sum than the market price at the conversion date. This latter will have the effect of reducing the company's capital base on conversion, counterbalanced by the increased profits earned during the life of the bond. In this way, the company can reduce its interest charges during the life of the bond thereby inflating its profit before tax figure. Hillsgate Holdings provided the basis for the example we used.

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Non consolidated subsidiaries

It is common practice for large groups to set up a separate subsidiary to finance their credit sales. At the end of the year, because of a so-called dissimilarity in activities, such subsidiaries are not consolidated with consequential positive impact on gearing.

In our case study, we set up such a subsidiary with very substantial liabilities, impacting materially on the gearing ratio. This situation is disclosed in a note to the accounts, which is required practice. Our example was modelled on such schemes as those shown in the accounts of BAT Industries, Thorn EMI, Bunzl and Pearson among others in our sample.

5.6 THE MAIN EXPERIMENTAL TASK

The main experimental task consists of calculating 7 standard ratios for each of the two companies included in the case study using numbers taken from the accounts to produce the most relevant results for the analysts. Table 36 lists the ratios used.

Table 36

Ratios Calculated by Stockbroking Analysts

- 1- Sales margin (operating profit)
- 2- Return on equity
- 3- Return on total assets
- 4- Price/earnings ratio
- 5- Gearing
- 6- Liquidity ratio (acid test)
- 7- Book value of net assets per share

Of these seven ratios, four are more oriented towards profitability and three towards the balance sheet. Possibilities to adjust for manipulations of both profit figures and balance sheet numbers appear many times.

Ratios, at least theoretically, are widely used in financial analysis. Many books in finance refer to this method as an important one.

Johnson (1971) notes that analysts tend to concentrate on ratios analysis and that "financial analysis depends to a great extent on the use of ratios".

Lassy (1979) believes that ratio analysis is a "powerful" tool for financial analysts and managers while Finnerty

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(1986) indicates that financial analysts "find it helpful" to calculate ratios.

Higgins (1984) concludes that ratio analysis is "widely used" by managers, creditors and investors. Lustzig and Schwab (1983) also believe that despite of the lack of theoretical foundations, ratio calculation may be the most widely applied technique for analysing financial statements (Holmes and Sugden, 1990; Rees, 1990).

Finally, Foster (1986) presents ratio analysis among the two most frequently used cross-sectional techniques for financial statements analysis.

When analysts analyze financial statements, ratio analysis appears to be the most generally used analytical technique (Cohen *et al.*, (1987); Rees, (1990); Bouwman *et al.*, (1987). Therefore, this is the one we use for our purposes here.

Theoretically, analysts may be aware of potential accounting number manipulation by firms. Paish and Briston (1982) note that the measurement of return on capital has become confused because of the many existing ways of calculating profit. They stress particularly the calculation of the provision for

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deferred taxation which allows all possibilities from nothing to a 100% provision.

Norby and Stone (1972) believe that financial analysts are not only aware of potential manipulations, but that they correct their figures to take this into account.

"In the order to gain an understanding of the company, he generally adjusts reported earnings to reflect actual earnings from ordinary operations on a consistent basis." (Norby and Stone, 1972, p. 45.)

They also believe that market prices in the long run tend to reflect more the normalized than stated earnings.

Therefore, if Norby and Stone are right and nothing has changed, and US analysts are not materially different from UK ones, we can expect that our participating analysts will make some adjustments to accounting numbers in calculating the proposed ratios as stated in our first hypothesis.

The set of instructions for participants used in the preliminary study was the same for each of the three analysts. These instructions explained our research objectives as being the improvement of accounting information provided to the financial community. We instructed the participants to calculate the financial ratios for each

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company, making any adjustments they thought appropriate to the accounting numbers provided in the financial statements to suit their needs best. By examining the subjects' answers, we expected to discover the relative importance of different information items to them and how the accounts might be modified to suit their needs better.

However, given the results of the preliminary study indicated above and following discussions with the directors of research of the participating stockbroking firms, the possibility that analysts might make few corrections for window dressing emerged. Therefore, given the relatively large size of our respondent sample, we decided to split our subjects into two groups in each firm, an experimental group and a control group.

The experimental group would be given the set of instructions as described above. The control group members, however, were specifically told in their set of instructions that we were looking for window dressing schemes and that we expected them to make corrections for those window dressed accounting figures in calculating the ratios.

The assignment of the subjects into the two groups in each firm was totally random. We distributed alternatively one

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experimental case and one control case. We did this both because participants may tend to sit together when they are similar in age and experience and to avoid the pooling of analysts with similar characteristics into the same group.

5.7 WINDOW DRESSED ITEM EXPERIMENTAL DESIGN

Dr. Lynda White, Lecturer in Statistics at Imperial College London and an expert in experimental design assisted with designing an appropriate statistical model to meet our research objectives and the author is indebted to her for her contributions.

The 9 potential window dressing schemes of Table 35 are combined in different ways in the case study financial statements. Based on experience with the pilot study the number of schemes appearing in any set of financial statements is limited to 4 save that one case in every sixth contained only two manipulated elements. This was done in order to take into consideration the fact that real world financial statements do not contain the same number of window dressed items and we wanted to see if in reducing the number of manipulations, the correction rate would differ. Thirty different sets of window dressed accounts are generated.

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Table 37 shows the particular arrangement of window dressing schemes contained in each of these 30 cases.

As we had, in total, 63 investment analysts from 5 stockbroking houses (see below), the same cases were used more than once. Six different cases were used in each of the 5 participating firms and were repeated for all subjects in excess of the first 6. In table 37 each subject is therefore identified by the number of the firm he/she comes from, 1 to 5, then by the number of the case study he/she receives. (Example: 1.1 to 1.6 and 1.13 to 1.15 are in the experimental group while 1.7 to 1.12 and 1.16 are in the control group).

Table 37

**Distribution of the Window Dressing Schemes
Among the 36 Cases**

Cases				Window dressed items*
Ex.**	Ct.***	Ex.	Ct.	
1.1	1.7	1.13	1.16	1, 2, 3, 9
1.2	1.8	1.14		1, 4, 5, 8
1.3	1.9	1.15		1, 3, 6, 7
1.4	1.10			2, 3, 5, 6
1.5	1.11			2, 4, 5, 7
1.6	1.12			8, 9
2.1	2.7			1, 5, 6, 9
2.2	2.8			1, 3, 5, 8
2.3	2.9			1, 7, 8, 9
2.4	2.10			2, 6
2.5	2.11			2, 4, 7, 8
2.6				3, 4, 7, 9
3.1	3.7			1, 2, 6, 7
3.2	3.8			1, 4, 5, 9
3.3	3.9			2, 3
3.4	3.10			2, 3, 4, 9
3.5	3.11			4, 6, 7, 8
3.6	3.12			3, 5, 8, 9
4.1	4.7	4.13		1, 9
4.2	4.8	4.14		1, 3, 4, 6
4.3	4.9	4.15		2, 4, 5, 8
4.4	4.10			2, 6, 7, 8
4.5	4.11			3, 5, 7, 9
4.6	4.12			4, 5, 6, 8
5.1	5.7			1, 4, 6, 8
5.2	5.8			1, 3, 5, 7
5.3	5.9			2, 3, 8, 9
5.4	5.10			2, 4, 7, 9
5.5				4, 5, 6, 7

* The numbers refer to the schemes 1 to 9 in Table 35.

** Experimental group

*** Control group

This organisation is chosen for many reasons. First, if we had used only a limited number of configurations, it would

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have been impossible to conclude anything about the relative ease of discovery of different types of schemes, our hypothesis 2. The fact that a scheme may be more easy to discover and correct for we speculated might diminish the confidence that an analyst might have in the particular set of financial statements and make him search more deeply for other problems and thus discover more hidden schemes.

5.7.1 The Participating Analysts.

Previous studies using nationwide methods of recruiting respondents have often met with mixed results (Arnold and Moizer, 1984). Whereas, selecting a sample from the UK repertoire of financial analysts may be appropriate for a mailed study designed around the answers to a questionnaire, for what is essentially a laboratory experiment such as ours, many restrictions make this method impracticable.

The first restriction is that a researcher must be present at every session. It becomes difficult to organise sessions everywhere in the country. A more important factor is the necessity of organising group sessions in order to have the experimental group and the control group subject to the same environmental and control conditions.

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Also, we need analysts specialising in industrial or distribution UK based companies, not in banks or other financial institutions, and reasonably experienced, with a minimum of 2 years as analysts. There are few stockbroking firms in the country able to assemble on the same day in the same room a minimum of twelve analysts satisfying all these conditions and these firms are mainly situated within the limits of the Square Mile.

These considerations led to a clustered sample approach. We identified the six biggest stockbroking firms in the City, as they form a group which is demarcated from the remaining ones. Five of them kindly agreed to participate in our study with, in principle, a minimum of twelve analysts each, although in the end two of them were not able to come up with the numbers requested. Table 38 shows the number of participating analysts provided by each firm.

Table 38

Number of Analysts From Each Firm

F1	James Capel	16
F2	Kleinworth Benson Sec.	11
F3	S.G. Warburg Sec.	12
F4	Barclays De Zoete Wedd	15
F5	County NatWest	9

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The debriefing questionnaire reproduced in Appendix 5 contained a series of questions on the personal characteristics of the participating analysts. Table 39 compares the analysts from different firms on these characteristics.

Table 39

Personal Characteristics of Participating Analysts

n	Age		Experience		Number of companies followed	
	Mean	St.Dev.	Mean	St.Dev.	Mean	St.Dev.
All (63)	31.6	6.7	5.3	4.2	19.1	4.8
F1 (16)	34.8	7.5	6.0	5.6	16.8	5.6
F2 (11)	30.5	6.8	4.7	3.1	18.0	9.6
F3 (12)	32.6	7.9	6.8	5.5	19.7	11.0
F4 (15)	29.5	4.1	4.5	2.2	22.2	2.3
F5 (9)	29.2	6.0	4.2	3.2	18.2	10.3

Firstly, we wanted to be sure that analysts from all firms could be validly pooled and treated as part of the same sample; i.e. that the mean values of their personal characteristics do not differ significantly across firms. In no case do pairwise t-tests permit rejecting the null hypothesis of equality of means (at $\alpha = .05$).

To be able to derive significant conclusions, it is important that the subjects assigned to the experimental and control

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groups do not, on average, differ across personal characteristics. Table 40 provides the relevant means and standard deviations.

Table 40
Personal Characteristics of the Experimental and the Control Group

	Experimental (n=35)		Control (n=28)	
	Mean %	St.Dev. %	Mean %	St.Dev. %
Age	30.6	5.4	32.7	8.1
Experience (years)	5.4	4.9	5.3	3.3
No. of companies followed	19.7	11.6	18.3	7.0

In no case could the null hypothesis of difference in mean characteristics be rejected using the t-test (at $\alpha = 0.05$) and therefore, we consider our experimental and control groups as comparable in terms of subject characteristics.

5.7.2 The Scoring System

The manner in which the ratios are calculated provides the basis for our experiment. Each ratio contains more than one opportunity for correction. The exact number of such opportunities depends on the particular window dressed elements each set of window dressed accounts contain and is thus not equal across ratios. In addition subjects receiving

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a case study containing only two window dressed elements *cateris paribus* have fewer correction opportunities. Therefore we decided to weight ratios for each set of statements for each subject equally and then to attribute scores on the basis of total number of potential corrections. For example if there are 4 potential corrections in a ratio, each is assigned a score of .25 and if there are 2 corrections each is scored .50.

An additional advantage of this approach is that it may be easier to correct second and third elements in a ratio after the need to correct first element is recognised. In addition, such aspects are often related and therefore may be corrected in series.

For the above reasons we believe that the scoring system adopted will be able to measure better the correcting performance of our subjects than simply adding together the number of their corrections.

Looking in more detail at the potential for correction across the 7 ratios provides the following:

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1- Sales margin

In this case, the operating profit is the sensitive item. Pension contribution adjustments, extraordinary item reclassification, the profit created by asset disposal and the effect of merger on the profit number need to be corrected for.

2- Return on equity

The definition of the term "return" may differ here from one analyst to another. There are two possibilities: retained profit before extraordinary items and net profit (after extraordinary items). Considering the former definition potential corrections would relate to deferred taxation, pension contributions, extraordinary items, profit from sales of assets, merger and hidden interest. The equity figure remains the same except that, in the extreme, the effect of all the corrections on the net profit may be deducted from (or added to) the profit and loss reserve. The net profit figure considerations are the same save for extraordinary items.

3- Return on total assets

The numerator, in this case, may be taken before tax. Therefore, the applicable corrections to the return term will be the same as in the preceding case except for deferred

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taxation. Total assets will be modified by leased assets or by the assets of the non-consolidated subsidiary or of the non-subsidiary subsidiary.

4- Price/earnings ratio

There is nothing to change in the price, of course. Earnings per share are calculated from the profit after tax before extraordinary items which is the definition of return we have use for the second ratio. Therefore all the modifications applicable to the denominator are the same as for the numerator in the second ratio.

5- Gearing

Gearing relates to measures of total or long term debt to equity. The numerator is the term needing to be corrected in the case of a non-consolidated subsidiary, a non-subsidiary subsidiary or for the non-capitalisation of leased assets.

6- Liquidity ratio

The liquidity ratio involves only a few items in the financial statements. We will not expect any modification of the assets used. However, some of the liabilities may be affected by consolidation of the non-consolidated subsidiary or by the liabilities belonging to the non-subsidiary subsidiary.

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7- Book value of net assets per share

It will include all the modifications undertaken on the assets in the ratio three's denominator and in the liabilities in ratio five's numerator. However, the number of shares is taken straightforward or diluted and is not affected by any of the window dressed items.

5.8 EMPIRICAL RESULTS

5.8.1 Ratio Definition

Although our experimental method tested the ability of our financial analysts to conduct meaningful financial ratio analysis, for reporting to the directors of research in the 5 participating firms, for their own purposes, this question was not important for our purposes save as a hygiene factor in our study. A wide spectrum of definitions was accepted as valid as long as they related in some way to definitions proposed by the literature and were logically consistent. Table 41 shows the rate of success of participating analysts in defining ratios.

Table 41

Description	Percentage of Correct Ratio Definition Rate of Success %
Price/earnings ratio	99
Sales margin	94
Gearing ratio	89
Return on equity	79
Book value of net assets per share	70
Return on total assets	66
Liquidity ratio (acid test)	<u>60</u>
Average:	<u>81</u>

The overall success rate suggests a fair degree of skill and ability in this task. However, the range in performance is wide, from 99% for the key price earnings ratio, down to only 60% for the liquidity ratio.

These results also demonstrate clearly that analysts are generally better at handling profit based ratios than balance sheet based measures and therefore indicate which items they consider more important. Many of them admitted, in their answer, not even to know any definition for a liquidity ratio which implies that the liquidity situation may not be very important for them when assessing the potential of a company at the time the research was conducted.

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Also, the gearing ratio was strangely calculated. Analysts took only the long term debt as numerator but they subtracted the cash from this amount even if there were many short term liabilities including borrowing, far more than the available cash. We consider this calculation as illogical, but as we were told by the directors of research that this was the way the ratio is sometimes calculated in stockbroking firms, we did accept this method as correct. However, from our point of view, it is an indication that ratio analysis may be a little bit too mechanically done in the day to day work of stockbroking analysts.

5.8.2 Corrections for Window Dressing

The first hypothesis we wanted to test was about the propensity to correct for window dressing exhibited by investment analysts. Table 42 gives the rate of correction for the entire sample broken down by firm and for the experimental and the control groups

Table 42

Rates of Correction

	n	Mean(%)	St.Dev.(%)
Total sample	63	2.6	5.9
Experimental group	35	2.2	5.8
Control group	28	3.1	6.2

(The hypothesis of the equality of the means between experimental and control groups cannot be rejected at $\alpha \leq .05$)

Neither of the rates of correction is significant at the .05 level which suggests that the observed rate of correction cannot be distinguished from no corrections at all.

The actual correction rates for the two groups separately are too low to be interpreted meaningfully. As such, they must be taken together to indicate that the participating analysts effectively did not correct for window dressed items in the research instrument.

If we consider the corrections independently of the ratios (more than one correction is possible in one ratio calculation) 26 corrections were made by a total of 11 analysts.

Such low correction rates render useless the somewhat sophisticated experimental design established to test

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differences between schemes. Therefore, the only evidence we can bring to the second hypothesis is that the different combinations seem to have no effect on the rates of recognition as all combinations seem to produce the same low results.

Another conclusion is that, in general, the experimental and the control groups exhibit the same behaviour. Therefore, specifying that we were looking for window dressed elements in the financial statements had no effect on the participating analysts' propensity to correct. In fact, from the 11 subjects having made at least one correction, 5 were from the experimental group and 6 from the control group which implies that there is no significant difference in the correcting behaviour of both groups.

5.8.3 Correctors and Non-Correctors

If we group all subjects together and compare the characteristics of those 11 who had made at least one correction to those who did nothing, the average correction rate for correctors at 15% (s.d. 4.6%) then differs significantly to 0 at $\alpha = .01$.

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Since there is no relationship to group we must look at the personal characteristics of participating analysts for an explanation. Table 43 compares the personal characteristics of correctors and non-correctors.

Table 43

**Personal Characteristics of Correctors
and Non-Correctors**

	Correctors (n = 11)		Non-Correctors (n = 52)	
	Mean	St.Dev.	Mean	St.Dev.
Age	33	7.6	31	6.6
Experience (years)	10.1	7.5	4.4	2.5
No. of companies followed	20.7	10.2	18.7	9.7

The only significant difference between both groups is the number of years of experience (at $\alpha \leq .05$) with mean of 10.1 years for correctors and only 4.4 years for non-correctors.

We would have expected that a difference in terms of number of years of experience would be accompanied by a difference in the age. It is not the case, which suggests that analysts do not all start at a similar age and come into investment analysis via different routes. This is in fact supported by the debriefing questionnaire responses with educational background ranging from no degree to a Ph.D. (two cases). There were two qualified accountants in our sample. If

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correcting is an example of the desirable behaviour from investment analysts, our results may suggest that financial analysis is not learnt at school but in practice and that experience is the crucial factor to judge the quality of an analyst.

5.8.4 Window Dressing Recognition

The debriefing questionnaire contained two questions taking into account the possibility that a low rate of correction may not be due to a weakness in the ability of financial analysts to recognize window dressed elements but to other factors.

These questions were: have you noticed any window dressed item in the two sets of accounts? and, did it change something in the way you have calculated the ratios?

An interesting, even if surprising, result related to the relationship between answers to the questions concerning window dressing recognition and the corrections analysts believe they have made. Table 44 summarises the answers to both questions for all participating analysts and with a breakdown for experimental and control groups.

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Table 44

Window Dressing Noticed and Perceived Corrections Made
(% of analysts answering "yes")

	n	Noticed (%)	Perceived Corrections Made (%)
Overall sample	63	67	61
Experimental group	35	68	61
Control group	28	65	60

(The hypothesis of the equality of the means for the experimental and the control groups cannot be rejected at $\alpha \leq .05$ for both questions).

Two-thirds of the subjects stated that they have seen window dressed items in their case study material and, more surprising, 61 percent believe such recognition changed the way they have calculated their ratios.

If we consider the same questions answered by correctors and non-correctors, we obtain the results showed in Table 45.

Table 45

Window Dressing Noticed and Perceived Corrections
Made by Correctors and Non-correctors

	n	Noticed %	Perceived Corrections Made %
Overall sample	63	67	61
Correctors	11	100	91
Non-correctors	52	56	46

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All correctors admit having seen window dressed elements and 91% (10 out of 11) of them admit having made corrections. The difference between correctors and non-correctors for these two questions is significant ($\alpha \leq .05$).

We can easily believe that more window dressed items were recognised than those for which corrections were made. This is corroborated by examples given by participants in the margin to their answers to this question. Table 46 lists the items mentioned in the answer making the distinction between those which were corrected and those which were not.

Table 46

List of Window Dressed Items Given by Respondents

	Mentioned in the answers	Corrections made	No Corrections made
Extraordinary items	3	1	2
Profits on sales of assets	4	3	1
Merger	2	0	2
Leased assets	3	0	3
Non consolidated subsidiary	<u>3</u>	<u>1</u>	<u>2</u>
	15	5	10

From table 46 we see that an additional 10 schemes were correctly identified but not corrected for, by a total of 8

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participants, 3 who were in the correction group and 5 who had made no formal corrections. However, we are not able to use such margin entries to generalise about the degree of recognition but non-correction because of the voluntary disclosure basis. Nonetheless, taking into account the high percentage of perceived corrections compared with actual corrections, we are forced to doubt that 67% of participants had really observed the presence of window dressed items in their case study material.

A possible explanation for the belief of 61% of the subjects that they had corrected for window dressing while only 17.5% (11/63) of the sample actually had, may reside in the definition of what is window dressing. Do analysts really understand what it means?

Participating analysts may have made corrections relating to other elements which were not tested and, in our opinion, not clearly window dressed (even if their accounting treatment may have been questionable) considering such items to be window dressed; e.g., we found a number of adjustments made for equity dilution factors which may have been so viewed. Obviously, this apparent contradiction necessitates further research to be explained.

5.8.5 The Seriousness of Window Dressing for Analysts

The debriefing questionnaire also asked analysts their degree of confidence in financial statements and how seriously they viewed the problem of window dressing.

Table 47 reports the scores on these two somewhat related questions for the overall sample and for the experimental and the control group separately. For confidence in financial statements, the scale goes from 1 = total confidence to 6 = no confidence and for the seriousness of window dressing the scale goes from 1 = very serious to 6 = not serious at all.

Table 47

**Confidence in Financial Statements
and Seriousness of Window Dressing**

	n	Confidence		Seriousness	
		Mean	St.Dev.	Mean	St.Dev.
Overall sample	63	3.1	1.0	3.1	1.0
Experimental group	35	3.1	1.2	3.0	1.3
Control group	28	3.1	0.8	3.2	1.3

Table 47 shows a high degree of centrality in the answers given. There were no significant differences between firms in general on these questions and no significant differences between the 11 correctors and the 52 non-correctors (at a level of confidence of $\alpha \leq .05$). These results would be

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consistent with a general lack of interest and of concern about these issues.

5.9 DISCUSSION OF FINDINGS

Rates of correction for window dressing in our study do not differ significantly from zero. Therefore our null hypothesis that analysts do correct appropriately for window dressing cannot be supported by our results which suggests that analysts may not change the results of their analysis to take into account window dressing in financial statements.

However, as we have some indications that analysts may have seen more schemes than they had corrected for, it may not be their ability to pick up window dressed items that is necessarily in question, but their subsequent actions.

We submitted our results to the directors of research in the firms who helped us. In general, they were not surprised by our results. Two explanations were given. Firstly, the level of expertise in financial analysis of certain of their younger financial analysts may have been below that desired by the research directors reflecting the fact that they might have been in a bull market for much of their working life when it was not necessary to investigate company finances

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very deeply. This is consistent with our finding that those who made at least one correction had, on average, more than 10 years experience, while those who did not correct had just over 4 years experience as investment analysts.

They also pointed out that an analyst's (valid) reaction, when facing window dressed financial statements, may not be to correct their forecasts but to call the company's financial director to seek an explanation. They may also have to protect their principal source of information, company contacts, so they are very careful before correcting for any window dressed items in print.

We should also note that stockbroking firms are competing in the information market and must thus respond to the demands of their clients, principally institutional investors. To a great extent investment analyst performance is evaluated by the accuracy of their forecasts. This accuracy is not judged by their forecasts of what might be termed 'real' profit but the presented profit. This gives analysts a great incentive to forecast the window dressed profit. At least when the research was conducted, there was no market for creative accounting adjustments.

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Moreover, as pointed out by one director of research, analysts basically are concerned with predicting correctly the future share price, not the "real" future profit.

Table 6, page 86, shows that firms' published financial statements are very important for analysts. However, we may wonder why they rank accounts so highly if they apparently have problems processing such information in an unbiased way. A number of reasons can be proposed. Firstly, we may consider that analysts tend to work with intangible and incomplete information, sometimes mere rumour and gossip. The annual report and accounts is the only complete document that will figure in their file. Also, financial statements, as they are audited supposedly by independent professionals, offer some guarantee of objectivity. Such advantages of the financial statements, on the other hand, may not overcome their perceived lack of timeliness. When the accounts are finally released almost all the effect they may have is already impounded in share prices (Firth, 1980; Rippington and Taffler, 1993). In addition we should note that skilled financial analysis requires substantial technical expertise and knowledge and a lot of time. Such reasons may perhaps provide some explanation why a firm's accounts are not necessarily always analysed in depth.

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This study took place in the first half of 1990 before the recession had fully started to impact. It may be that now stockbroking analysts view financial analysis as of more fundamental importance and were we to repeat our research our conclusions would be very different. In fact soon after we reported our results to the participating firms, at least three instituted rigorous revision courses in financial analysis for all their analysts.

In a bull market, window dressing may not matter as much. However, in a bear market, with companies experiencing trading difficulties, profit falls and financing problems, it becomes crucial for investment analysts to understand clearly the company's true financial position. Also, in such difficult markets, stockbroking firms may seek to differentiate themselves by offering high quality financial analysis to attract business which was not necessary when returns were appealing by themselves.

Other caveats relate to the nature of the experiment itself:

1- the study was conducted within set time limits, which may have hindered participating analysts from completing the task fully. However, the very low rate of correction raises doubts as to whether more time would have produced better results.

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2- participating analysts may not have read the instructions, relying on the introductory verbal presentation alone, and then not have picked up what the experiment was about. However, the verbal presentation, even if never mentioning the words window dressing directly, which appeared only in the control group's instructions, insisted on the fact that the research was specifically about the way analysts manipulated accounting numbers taken from published accounts to suit their particular needs.

3- potential lack of motivation of participants and consequent lack of interest in the task. However, in each case we were introduced by the relevant head of research who selected the participants, stressed the importance of the research and his personal interest in their results. In addition, it was clearly evident the subjects treated the exercise in a serious and careful manner.

4- potential lack of verisimilitude of the case studies. However it would be difficult to envisage any more realistic research instrument than real accounts and conventional ratio computations.

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Thus, we believe that although such factors could potentially have lowered the correction rate, it is not likely that they could explain alone such a low rate overall.

Therefore, we may conclude from our results that at least at the time the research was conducted stockbroking analysts were not tending to make adjustments for window dressing in the accounts they analysed, which may have implications for market behaviour.

CHAPTER 6

SUMMARY AND CONCLUSIONS

This thesis is concerned with the potential impact of firm manipulation of accounting information on investment analyst information processing behaviour.

Such window dressing of company accounts is often denounced but rarely codified in a financial statement text (Smith, 1992, is probably the only example).

Our analysis highlights the presence of a fair degree of creative accounting in UK company financial statements. However, we must be aware that our discovered rate of window dressing schemes is only an indication of the real position because a number of schemes are almost impossible to detect if not directly disclosed. Therefore, UK company accounts are

CHAPTER 6 SUMMARY AND CONCLUSIONS

more likely to be more heavily window dressed in practice than our results indicate.

We were unable to establish any relationship between the financial situation of the firm, as measured by a UK Altman Z-Score equivalent, and the rate of window dressing found in the accounts save relating to the gearing figure. This result was unexpected and remain partly unexplained.

We do not believe, however, that our findings are really conclusive on this question. If window dressing exists, it must have a specific goal which has to be to improve the image the firm presents to investors, actual or potential. Therefore, we believe that further work is required to explore the issue.

The potential effect window dressing might have on investors is dependent on the importance of financial statement information in their judgmental process. We chose to focus on the key information intermediaries, investment analysts, because of their crucial role in ensuring market efficiency.

To evaluate the importance given to accounting information by them a detailed content analysis of stockbroking circulars was conducted.

CHAPTER 6 SUMMARY AND CONCLUSIONS

Our analysis sought first to identify the principal factors driving the different types of stockbroker recommendation. Accounting numbers, in particular profit, may have a certain role in this process but would appear to be less important than current trading conditions, the quality of management and its future strategy. However, the rates of differentiation between recommendations although statistically significant, were not as good as expected, principally due to a lack of homogeneity between firms in the methods of analysis they used to make their buy/sell/hold recommendations.

This heterogeneity was apparent when we tried to discriminate between stockbroking houses and found good rates of discrimination. One of the principal elements distinguishing between stockbroking firms was the emphasis or otherwise on profitability which had a very different degree of importance depending on the firm concerned.

Further work will need to take into account statistically interactions between recommendation criteria and firms and in addition work explicitly at the individual firm level using a large data sample. Nonetheless, it is clear that accounting information does not have the same importance for different

CHAPTER 6 SUMMARY AND CONCLUSIONS

investment analyst firms with the corollary that window dressing will thus not have the same effect on all analysts. We may expect that some of them will make corrections to take window dressing into consideration as profit is very important for them and some will do nothing as intangible factors such as management and trading conditions are far more important to them in coming to a view of the firm.

Chapter five explores the extent to which a relatively large sample of experienced City-based stockbroking investment analysts was able to deal with window dressing of financial statements using a novel methodological approach. This involved monitoring the extent to which they adjusted for creative accounting in a special designed research instrument.

Key results were that the degree of correction differed insignificantly from zero but those analysts who did correct were more experienced, also that published accounting information is important but less so than company contacts etc...

As laboratory experimental methodology was used there are problems of generalisation to the investment analyst community generally. Also our results may be time specific.

CHAPTER 6 SUMMARY AND CONCLUSIONS

Nonetheless the detailed discussion in the chapter suggests our findings are very unlikely to be experimental artefacts.

At least, two conclusions are possible: 1) investment analysts have no idea how to detect and correct for window dressing 2) window dressing is not relevant for investment analyst purposes.

From the lack of homogeneity found across firms in our analysis of circulars, we may believe that both explanations are partly appropriate. On the one hand, many investment analysts are relatively new to the profession and have limited skill in dealing with accounting manipulations. On the other hand, stockbrokers are in the business of selling shares and are consequently interested not in predicting the "true profit" or even next year's reported profit, but in predicting the future share price.

Investment analysis is a young and heterogeneous profession that is not yet strictly formalised. For example other researchers have underlined the wide spectrum of methods used in different stockbroking firms to appraise equity. Our results raise the question of whether investment analysts in fact play the important role they are supposed to assume in

CHAPTER 6 SUMMARY AND CONCLUSIONS

making the stockmarket more efficient, whether you subscribe to the naive investor or the efficient market hypothesis.

Market efficiency is no more the absolute notion it was in the seventies. Investment analysts have an important role to play even if the market is basically efficient. This role encompasses the interpretation of accounting information before and after the accounts are published. Our results show no evidence that analysts are generally active in this direction. More research is needed in this area.

If investors are not able to decode financial information by themselves and have a tendency to place too much emphasis on the reported profit figure (the functional fixation hypothesis), then investment analysts on our evidence are not able or motivated to redress the situation and interpret the firm's accounting information appropriately for them.

The question of the role investment analysts play is crucial in the understanding of market behaviour. If in fact accounting information is not of deep relevance to the stockmarket, which is satisfied with soft, informal sources of information, however much lip service is paid to the idea, then how has the accounting system managed to survive in its

CHAPTER 6 SUMMARY AND CONCLUSIONS

present form so well? Is in fact the idea of user needs in this context something of a shibboleth?

Our negative results, on their own, can only hint at one aspect of the relationship between investment analysis and accounting information and its implication for market efficiency. Further research is needed to understand more exactly the nature of this relationship. It would probably be a good idea not to base such future work on an initial assumption of the market as being informationally efficient, because this can so easily prove tautological. It is necessary to integrate the findings of related disciplines such as psychology and sociology in establishing a more complex but more representative model of the stockmarket and the manner in which information is processed by it.

APPENDIX 1 OPINIONS OF UK BIG EIGHT TECHNICAL PARTNERS...

OPINIONS OF UK BIG EIGHT'S TECHNICAL PARTNERS
ON THE WINDOW DRESSING OF FINANCIAL STATEMENTS

1. WINDOW DRESSING

1.1 How seriously do you see the problem of window dressing?

- | | |
|-----------------|--------------|
| i) Serious | ii) Serious |
| iii) Moderate | iv) Moderate |
| v) Very serious | |

1.2 How do you evaluate the quality of investment analysts in general?

- | | |
|-------------|---------------|
| i) good | ii) bad |
| iii) good | iv) very good |
| v) very bad | |

1.3 Do you believe that investment analysts can be fooled?

- | | |
|-----------------|---------------|
| i) sometimes | ii) often |
| iii) rarely | iv) sometimes |
| v) all the time | |

1.4 Do you believe that the market in general can be fooled?

- | | |
|-----------------|--------------|
| i) no | ii) fairly |
| iii) not really | iv) a little |
| v) very much | |

2 DEFERRED TAXATION

2.1 Do you believe the liability method is the best?

- | | |
|----------|---------|
| i) yes | ii) yes |
| iii) yes | iv) yes |
| v) yes | |

2.2 Would it be possible to fix a minimum rate of provision?

- | | |
|---------|--------|
| i) no | ii) no |
| iii) no | iv) no |
| v) yes | |

2.3 Do you believe the direct payments method to be a solution?

- | | |
|---------|--------|
| i) yes | ii) no |
| iii) no | iv) no |
| v) no | |

APPENDIX 1 OPINIONS OF UK BIG EIGHT TECHNICAL PARTNERS...

- 2.4 Is there any window dressing in deferred taxation?
i) possibly ii) possibly
iii) -- iv) not really
v) a lot

3 PENSION SCHEMES

- 3.1 Do you see the pension to be difficult to standardize?
i) very ii) very
iii) -- iv) very
v) very

- 3.2 Do you believe that a use of a surplus through a contribution holiday must be presented as an extraordinary item?
i) -- ii) --
iii) -- iv) yes
v) yes

- 3.3 Are pension surpluses from closure extraordinary items?
i) -- ii) --
iii) -- iv) yes
v) yes

4 EXTRAORDINARY ITEMS

- 4.1 Are investment analysts fooled by extraordinary items?
i) not fooled ii) no
iii) no iv) no
v) yes

- 4.2 Should the extraordinary items remain or be abolished?
i) remain ii) abolished
iii) remain iv) remain
v) remain

- 4.3 Are Extraordinary items misused?
i) no issue ii) misused
iii) not so misused iv) misused
v) very misused

- 4.4 Do you believe it possible to produce a statistical definition of what is an extraordinary item (based on the frequency)?
i) no ii) no
iii) no iv) no
v) no

APPENDIX 1 OPINIONS OF UK BIG EIGHT TECHNICAL PARTNERS...

5 DEPRECIATION

5.1 Should depreciation be taken on every tangible fixed asset?

- | | |
|----------|---------|
| i) yes | ii) yes |
| iii) yes | iv) yes |
| v) yes | |

5.2 Can depreciation be split?

- | | |
|----------|--------|
| i) yes | ii) no |
| iii) yes | iv) no |
| v) no | |

5.3 Is 2% of depreciation on buildings a proper rate?

- | | |
|-----------|---------|
| i) -- | ii) low |
| iii) low | iv) low |
| v) depend | |

5.4 Would reducing balance be a better depreciation method?

- | | |
|---------|----------------|
| i) -- | ii) better |
| iii) -- | iv) not better |
| v) -- | |

5.5 Do you believe that any revaluation must be clearly stated?

- | | |
|---------|---------|
| i) -- | ii) yes |
| iii) -- | iv) yes |
| v) yes | |

5.6 Do you believe that amount in the revaluation reserve must balance with the amount added to the assets?

- | | |
|-------------------|----------------|
| i) -- | ii) no issue |
| iii) must balance | iv) don't know |
| v) Must balance | |

6 MERGER AND ACQUISITION

6.1 Do you believe merger accounting to be the best method?

- | | |
|------------------------------|-----------------------|
| i) matter of assets movement | ii) no vendor placing |
| iii) no clear views | iv) -- |
| v) best method in substance | |

6.2 Do you believe acquisition accounting to be the best method?

- | | |
|---------|-----------------|
| i) form | ii) -- |
| iii) -- | iv) best method |
| v) -- | |

APPENDIX 1 OPINIONS OF UK BIG EIGHT TECHNICAL PARTNERS...

6.3 Do you agree that the use of a merger reserve is a problem?

- | | |
|---------------|--------|
| i) -- | ii) no |
| iii) no issue | iv) no |
| v) no | |

6.4 Is goodwill real?

- | | |
|---------|----------|
| i) real | ii) wind |
| iii) -- | iv) real |
| v) real | |

6.5 Must goodwill be written off against reserves?

- | | |
|---------|---------|
| i) no | ii) yes |
| iii) no | iv) no |
| v) no | |

6.6 Can we fix a maximum time limit for the amortization of goodwill?

- | | |
|--------------------------|--------|
| i) no | ii) no |
| iii) 10 years (in a way) | iv) -- |
| v) yes | |

6.7 Must the goodwill be left in the balance sheet?

- | | |
|---------|--------|
| i) yes | ii) no |
| iii) no | iv) no |
| v) no | |

7 INTANGIBLE ASSETS

7.1 Must intangible assets be depreciated?

- | | |
|-------------|---------|
| i) -- | ii) yes |
| iii) mostly | iv) yes |
| v) yes | |

7.2 Is it possible to fix a relatively short period for depreciation purposes?

- | | |
|---------|--------|
| i) -- | ii) no |
| iii) no | iv) no |
| v) no | |

7.3 Do you believe intangibles can be revalued?

- | | |
|--------------|---------|
| i) dangerous | ii) --- |
| iii) -- | iv) --- |
| v) -- | |

APPENDIX 1 OPINIONS OF UK BIG EIGHT TECHNICAL PARTNERS...

8 CAPITAL AND RESERVES

8.1 Are capital and reserves important?

- i) an accounting difference ii) --
- iii) -- iv) --
- v) --

8.2 Do you agree that the share premium must be abolished?

- i) -- ii) non issue
- iii) -- iv) no
- v) non issue

8.3 Can the revaluation reserve be used for writing off anything?

- i) -- ii) limited uses
- iii) limited uses iv) ---
- v) limited uses

8.4 Is there some reserve against which no goodwill may be written off?

- i) --- ii) revaluation reserve
- iii) revaluation reserve iv) --
- v) revenue reserve

9 FOREIGN CURRENCY

9.1 What is the best rate for translating accounts?

- i) -- ii) depend on currency performance
- iii) -- iv) balance sheet date rate for balance sheet.
- v) cannot change so often

9.2 What do you think about splitting the effect of the rate choice between the profit and loss account and the reserves?

- i) -- ii) no issue
- iii) -- iv) --
- v) --

10 OFF-BALANCE SHEET FINANCING?

10.1 Do investment analysts can see it?

- i) very good analysts can ii) no
- iii) -- iv) yes
- v) no

APPENDIX 1 OPINIONS OF UK BIG EIGHT TECHNICAL PARTNERS...

10.2 Is it seeable in the notes to the accounts?

- | | |
|------------|-----------|
| i) yes | ii) no |
| iii) often | iv) often |
| v) no | |

10.3 Do the substance must prevail over the form?

- | | |
|---------|---------|
| i) yes | ii) yes |
| iii) -- | iv) yes |
| v) yes | |

10.4 Which are the worst schemes?

- | | |
|--|-------------------------|
| i) non subsidiary subsidiaries | ii) non subsidiary sub. |
| iii) -- | iv) non subsidiary sub. |
| v) non subsidiary sub. -sales & repurchase of assets | |

10.5 How serious is the problem?

- | | |
|---------------|-------------|
| i) serious | ii) serious |
| iii) moderate | iv) serious |
| v) serious | |

10.6 Do you reject these practices?

- | | |
|---------------------|------------|
| i) not necessarily | ii) fairly |
| iii) yes but softly | iv) yes |
| v) yes | |

11 OTHERS

11.1 Do you see any other important issues relating to window dressing?

- | | |
|--|-------------------------|
| i) no | ii) no |
| iii) no | iv) revenue recognition |
| v) equity-debt issue, bonds and discount loans | |

APPENDIX 2 LIST OF THE COMPANIES ANALYSED

LIST OF THE COMPANIES ANALYSED

1. B.A.T. INDUSTRIES PLC
2. GENERAL ELECTRIC COMPANY
3. J SAINBURY PLC
4. THORN EMI PLC
5. GUINNESS PLC
6. GKN PLC
7. REED INTERNATIONAL PLC
8. ARGYLL GROUP PLC
9. HILLSDOWN HOLDINGS PLC
10. HAWKER SIDDELEY GROUP PLC
11. PLESSEY COMPANY PLC
12. BOWATER INDUSTRIES PLC
13. W.H. SMITH GROUP PLC
14. BABCOCK INTERNATIONAL PLC
15. BUNZL PLC
16. PEARSON PLC
17. JOHN LAING PLC
18. IMI PLC
19. COSTAIN GROUP PLC
20. ENGLISH CHINA CLAYS PLC
21. UNITED NEWSPAPERS PLC
22. DAVY CORPORATION PLC
23. POWELL DUFFRYN PLC
24. FOSECO MINSEP PLC
25. MATTHEW HALL PLC
26. B.S.G. INTERNATIONAL PLC
27. DIXONS GROUP PLC
28. TOOTAL GROUP PLC
29. GESTETNER HOLDINGS PLC
30. HEPWORTH CERAMIC HOLDINGS PLC
31. DAWSON INTERNATIONAL PLC
32. RUGBY GROUP PLC (THE)
33. POLLY PECK INTERNATIONAL PLC
34. Y.J. LOVELL (HOLDINGS) PLC
35. WILLIAM BAIRD PLC
36. MORGAN CRUCIBLE CO. PLC
37. WM LOW & COMPANY PLC
38. DOBSON PARK INDUSTRIES PLC
39. PORTALS HOLDINGS PLC
40. AVON RUBBER PLC
41. AVANA GROUP PLC
42. COATES BROTHERS PLC
43. HAZLEWOOD FOODS PLC
44. BURTON GROUP PLC (THE)
45. MEGGITT HOLDINGS PLC
46. LOOKERS PLC

APPENDIX 2 LIST OF THE COMPANIES ANALYSED

- 47. FINE ART DEVELOPMENTS PLC
- 48. BRYANT GROUP PLC
- 49. RUSH & TOMPKINS GROUP PLC
- 50. M.K. ELECTRIC GROUP PLC

APPENDIX 3 SOURCES OF THE CIRCULARS USED...

16- Vickers		hold
17- John Laing		hold
18- Cambridge Electronic Industries		hold
19- Ratners		hold
20- ICI		hold
21- Boots		hold

FIRM 3

1- English China Clays		hold
2- George Wimpey	(add)	hold
3- Brammer		sell
4- British Gas		sell
5- Johnson Matthey		sell
6- TI	(add)	hold
7- FKI	(add)	hold
8- Misys		hold
9- Morgan Crucible		hold
10- Yellohammer		hold
11- Nurdin & Peacock		hold
12- Storehouse		hold
13- Costain Group		hold
14- Butler Cox		buy
15- Abbott Mead Vickers		buy
16- Grand Metropolitan		buy
17- Ladbroke Group Plc		buy
18- Cable & Wireless		buy
19- TI		buy
20- NSM		buy
21- The Rugby Group		Buy
22- Hanson		buy

FIRM 4

1- CH Industries		hold
2- Schrodgers		sell
3- Hambros		sell
4- Scottish & Newcastle		sell
5- Richemont		hold
6- Hestair		buy
7- Attwoods		buy
8- Greycoat		buy
9- FR Group		buy
10- BSS Group		buy
11- Rolls Royce		buy
12- Fairey Group		hold

APPENDIX 3 SOURCES OF THE CIRCULARS USED...

13- Wellcome	hold
14- M.L. Holdings	hold
15- Huntingdon International Holdings	hold
16- Pilkington	buy
17- London International (wh)	sell
18- Smith and Nephew (wh)	sell
19- Whatham Reeve Angel (wh)	sell
20- Brown & Tawse (wh)	sell
21- Rotork (wh)	sell
22- The Boddington Group	hold

FIRM 5

1- Provident Financial Group	hold
2- P & O	hold
3- Lonrho	hold
4- Nurdin & Peacock	hold
5- Unilever	hold
6- Whitbread	hold
7- Eurotherm International	hold
8- British Airways	sell
9- Blue Circle Industries	sell
10- Burmah Castrol	sell
11- ASW Holdings	sell
12- Glynwed International	sell
13- Llyods Bank	sell
14- Dixons Group	sell
15- Fairey Group	buy
16- Rolls-Royce	buy
17- Wilson Bowden	buy
18- Willis Faber	buy
19- British Petroleum	buy
20- Bardon Group	buy
21- Logitek	buy

APPENDIX 4 POOLED WITHIN-GROUPS CORRELATION MATRICES

POOLED WITHIN-GROUPS CORRELATION MATRICES

DISCRIMINATION BETWEEN RECOMMENDATIONS

MODEL 1

	V1	V2	V3	V4	V5	V6	V7	V8	V9
V1	1.00								
V2	.13	1.00							
V3	.23	.41	1.00						
V4	.01	-.15	-.08	1.00					
V5	-.18	-.04	-.10	.11	1.00				
V6	-.07	-.01	-.04	.09	.33	1.00			
V7	.01	-.13	-.16	.16	-.12	-.17	1.00		
V8	-.03	-.08	-.28	-.09	.00	-.14	.15	1.00	
V9	.04	.08	.34	.11	-.30	-.01	-.03	.07	1.00
V10	.13	-.20	-.01	-.01	.14	.12	-.04	-.12	-.29
V11	.19	.04	-.12	-.02	-.04	.07	-.01	.08	.11
V12	.07	.05	.15	-.05	.16	.17	-.03	-.13	.07
V13	-.02	-.07	-.01	.05	.12	-.04	.06	.11	.17
V14	-.09	.03	-.17	-.09	.07	-.02	-.05	-.08	-.12
V15	-.04	-.10	.06	-.00	.00	.13	.12	.07	.12
V16	-.12	-.01	-.10	.06	-.08	.19	-.07	-.06	.09

	V10	V11	V12	V13	V14	V15	V16
V10	1.00						
V11	.04	1.00					
V12	-.20	-.11	1.00				
V13	-.02	.08	.09	1.00			
V14	-.11	.14	-.15	.15	1.00		
V15	-.00	-.01	.00	.07	-.16	1.00	
V16	-.07	.01	-.13	-.25	.05	.03	1.00

(Variables are presented in the order given in Table 33, from V1= profitability positive, to V15 = management and strategy negative. V16 is ln(turnover) and was added as a proxy for the size.)

APPENDIX 4 POOLED WITHIN-GROUPS CORRELATION MATRICES

MODEL 2

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10
V1	1.00									
V2	-.15	1.00								
V3	.15	.12	1.00							
V4	.15	-.08	-.06	1.00						
V5	-.01	-.20	.17	-.23	1.00					
V6	-.19	.30	-.10	-.02	-.31	1.00				
V7	-.03	.05	.11	.12	-.05	-.14	1.00			
V8	.06	.30	.47	-.06	-.09	.12	.12	1.00		
V9	.18	-.13	-.03	.19	-.06	-.00	.02	-.02	1.00	
V10	.00	.00	-.02	-.04	.20	-.06	.10	.27	-.01	1.00
V11	-.12	-.02	.05	-.13	-.10	-.03	-.01	-.13	-.20	-.05

(Variables are presented in the order given in Table 34, from V1= Firm, to V10 = Negative. V11 is ln(turnover) and was added as a proxy for the size.)

DISCRIMINATION BETWEEN FIRMS

MODEL 1

	V1	V2	V3	V4	V5	V6	V7	V8	V9
V1	1.00								
V2	.09	1.00							
V3	.10	.14	1.00						
V4	-.06	-.18	-.09	1.00					
V5	-.18	.07	-.06	.09	1.00				
V6	-.08	.04	.03	.08	.31	1.00			
V7	.06	-.17	-.13	.23	-.15	-.22	1.00		
V8	-.02	-.10	-.28	-.05	.00	-.13	.13	1.00	
V9	-.14	-.13	.22	.07	-.33	.02	.07	.15	1.00
V10	.24	-.16	.01	-.05	-.12	.01	-.02	-.12	-.33
V11	.21	.18	-.14	-.14	-.05	-.02	.03	.11	-.01
V12	.01	-.00	.15	-.01	.14	.16	-.07	-.13	.12
V13	.02	-.03	-.05	.00	.13	-.13	.04	.09	.11
V14	-.01	.16	-.15	-.13	.07	-.05	-.04	-.10	-.14
V15	-.15	-.18	.08	.02	-.00	.10	.05	.09	.17
V16	-.04	.00	-.07	.08	-.08	.21	-.06	-.08	.15

APPENDIX 4 POOLED WITHIN-GROUPS CORRELATION MATRICES

	V10	V11	V12	V13	V14	V15	V16
V10	1.00						
V11	.02	1.00					
V12	-.15	-.12	1.00				
V13	.01	.12	.05	1.00			
V14	-.12	.17	-.11	.21	1.00		
V15	-.01	-.04	-.15	.00	-.12	1.00	
V16	-.13	.02	-.03	-.24	-.03	.17	1.00

(Variables are presented in the order given in Table 33, from V1= profitability positive, to V15 = management and strategy negative. V16 is ln(turnover) and was added as a proxy for the size.)

MODEL 2

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10
V1	1.00									
V2	-.13	1.00								
V3	.22	.05	1.00							
V4	.10	-.08	-.05	1.00						
V5	.02	-.26	.14	-.26	1.00					
V6	-.18	.25	-.12	-.03	-.35	1.00				
V7	-.04	.03	.05	.05	-.09	-.17	1.00			
V8	.20	.21	.44	.01	-.20	.04	.10	1.00		
V9	.15	-.16	-.06	.15	-.07	-.04	-.05	-.03	1.00	
V10	.11	-.12	-.11	-.09	.14	-.12	.03	.08	-.07	1.00
V11	-.14	.01	.14	-.08	-.06	-.01	.09	-.08	-.15	.04

(Variables are presented in the order given in Table 34, from V1 = Firm, to V10 = Negative. V11 is ln(turnover) and was added as a proxy for the size.)

CASE STUDY MATERIAL

This appendix reproduces an example of the case study material given to the participants to the experiment reported in chapter 5.

First, we have a complete set of instruction given to the members of the experimental group. Then, we have the first two pages of the set of instructions given to the control group. The differences between both sets of instruction are all there in the first page. Finally we have a set of financial statements from Dawson International manipulated to contain some window dressing schemes.

APPENDIX 5 CASE STUDY MATERIAL

INSTRUCTIONS FOR PARTICIPANTS

Stockbroking analysts use financial ratios as an important tool in interpreting a company's performance and financial position and as a basis for forecasting future performance.

Analysts need to be able to rely on the accounting numbers provided by companies in their financial statements and footnotes as being both relevant and accurate.

Our research is designed to identify areas where the provision of accounting information to the investment community can be improved.

To meet this objective we ask you to calculate seven widely used accounting ratios in the same way you would normally do if you were preparing a report on a company for clients. This will help us understand which are the key accounting numbers as far as you are concerned and your particular accounting information needs.

The ratios are:

- 1- Sales margin (operating margin)
- 2- Return on equity
- 3- Return on total assets
- 4- Price/earnings ratio
- 5- Gearing
- 6- Liquidity ratio ('acid test')
- 7- Book value of net assets per share

You have the accounts for two different UK quoted industrial companies and we would like you to calculate the above ratios for each, A and B, for the latest year only, using the information provided alone. So we can follow your calculations and the particular numbers you have used, please provide descriptions of the items you have included in your numerators and denominators on the appropriate part of the attached sheets for each company as well as the actual numbers. An example is attached.

Please note we are particularly interested in the way you adjust and correct the accounting numbers appearing in the

APPENDIX 5 CASE STUDY MATERIAL

two sets of financial statements and footnotes to derive your ratios, rather than the arithmetic values of the ratios themselves.

Keep notes of the times you take to complete the calculations for company A and company B separately and include these at the foot of the respective ratio calculation sheets. The total exercise should take no more than one hour.

This exercise is being conducted for academic research purposes only and your participation is on a strictly confidential basis.

A brief questionnaire is attached at the end of the answer sheets and we would ask you to complete this as well. Thank you in advance for your assistance.

The share prices, at the date of publication of accounts, were:

Company	:	320p
Company	:	395p

APPENDIX 5 CASE STUDY MATERIAL

ANSWER SHEET (example)

ASSET TURNOVER RATIO

$$\begin{aligned} \frac{\text{Sales}}{\text{Total assets}} &= \frac{\text{turnover}}{\text{tangible assets} + \text{current assets} + \text{leased assets}} && \text{(Accounting descriptions)} \\ &= \frac{285,184}{78,467 + 224,370 + 10,214} && \text{(Accounting numbers)} \\ &= \frac{285,194}{313,051} = .911 && \text{(Ratio)} \end{aligned}$$

APPENDIX 5 CASE STUDY MATERIAL

ANSWER SHEET

_____ Company A: year ending 03-31-1987 _____ RATIOS COMMENTS

1- SALES MARGIN (operating margin)

_____ = _____ (Accounting descriptions)
= _____ (Accounting numbers)
= _____ = _____ (Ratio)

2- RETURN ON EQUITY

_____ = _____ (Accounting descriptions)
= _____ (Accounting numbers)
= _____ (Ratio)

3- RETURN ON TOTAL ASSETS

_____ = _____ (Accounting descriptions)
= _____ (Accounting numbers)
= _____ (Ratio)

4- PRICE/EARNINGS RATIO

_____ = _____ (Accounting descriptions)
= _____ (Accounting numbers)
= _____ (Ratio)

APPENDIX 5 CASE STUDY MATERIAL

5- GEARING

_____ = _____ (Accounting descriptions)
= _____ (Accounting numbers)
= _____ (Ratio)

6- LIQUIDITY RATIO (acid test)

_____ = _____ (Accounting descriptions)
= _____ (Accounting numbers)
= _____ (Ratio)

7- BOOK VALUE OF NET ASSETS PER SHARE

_____ = _____ (Accounting descriptions)
= _____ (Accounting numbers)
= _____ (Ratio)

TOTAL TIME _____ MINUTES

APPENDIX 5 CASE STUDY MATERIAL

QUESTIONNAIRE

1- Brief background data

- 1.1 Age
- 1.2 Degrees and/or professional qualifications
-
- 1.3 Number of years of experience as an investment analyst
-
- 1.4 Which sectors do you currently cover.....
-
- 1.5 Number of companies followed in detail on a regular basis
-

2- Rank the different sources of information you use in writing your reports and recommendations for companies, in order of importance (i.e. 1= most important) on the following list:

- annual accounting statements (i.e. P&L, balance sheet, sources and applications of funds, footnotes)
- interim statements
- subsidiaries' accounts
- annual report content, other than accounting statements (eg. chairman's statement, review of operations)
- trade journals
- statistical/macroeconomic forecasts
- preliminary release of annual results
- chart services
- direct company contacts and visits
- company PR/press reports
- other brokers' circulars
- your previous work and market data already collected
- other, please specify

APPENDIX 5 CASE STUDY MATERIAL

3- How confident are you generally in the reliability of the accounting numbers companies provide in their annual reports and accounts?

- 1- totally confident
- 2-
- 3-
- 4-
- 5-
- 6- not confident at all

4- How serious a problem do you feel window-dressing currently to be as far as you are concerned?

- 1- a very serious problem
- 2-
- 3-
- 4-
- 5-
- 6- not a problem at all

5- Have you noticed any window-dressed items in the sets of financial statements submitted to you?

6- If you have noticed such window-dressed items, did it make any difference when forming ratios?

7- Would you like a summary of our research results?
(If so, please complete the next sheet and detach it from the rest of the documents)

8- Any additional comments?

APPENDIX 5 CASE STUDY MATERIAL

INSTRUCTIONS FOR PARTICIPANTS

Stockbroking analysts use financial ratios as an important tool in interpreting a company's performance and financial position and as a basis for forecasting future performance.

Analysts need to be able to rely on the accounting numbers provided by companies in their financial statements and footnotes as being both relevant and accurate.

Our research is designed to show how financial analysts respond to the presence of window-dressed items in accounting statements and then to permit the elaboration of recommendations to improve the provision of accounting information to the stockmarket.

To meet this objective we ask you to calculate seven widely used accounting ratios in the same way you would normally do if you were preparing a report on a company for clients. This will help us understand which are the key accounting numbers as far as you are concerned and your particular accounting information needs.

The ratios are:

- 1- Sales margin (operating margin)
- 2- Return on equity
- 3- Return on total assets
- 4- Price/earnings ratio
- 5- Gearing
- 6- Liquidity ratio ('acid test')
- 7- Book value of net assets per share

You have the accounts for two different UK quoted industrial companies and we would like you to calculate the above ratios for each, A and B, for the latest year only, using the information provided alone. So we can follow your calculations and the particular numbers you have used, please provide descriptions of the items you have included in your numerators and denominators on the appropriate part of the

APPENDIX 5 CASE STUDY MATERIAL

attached sheets for each company as well as the actual numbers. An example is attached.

Please note we are particularly interested in the way you adjust and correct the accounting numbers for any window-dressed items you can identify in deriving your ratios rather than the arithmetic values of the ratios themselves.

Keep notes of the times you take to complete the calculations for company A and company B separately and include these at the foot of the respective ratio calculation sheets. The total exercise should take no more than one hour.

This exercise is being conducted for academic research purposes only and your participation is on a strictly confidential basis.

A brief questionnaire is attached at the end of the answer sheets and we would ask you to complete this as well. Thank you in advance for your assistance.

The share prices, at the date of publication of accounts, were:

Company A: 320p
Company B: 395p

DIRECTORS' REPORT

The directors submit the Balance Sheet of the Company and the Consolidated Balance Sheet at 31st March 1987 and the Consolidated Profit and Loss Account for the year ended on that date, together with supporting notes and schedules.

Activities of the Group and Business Review

The principal activities of the Group are in industrial and commercial sectors. More details of the activities and a full review of the year are contained in the Chairman's Statement and the Review of Group Activities.

Profits and Dividends

The consolidated profit for the year before taxation was £42,129,000 (1986 £35,123,000). The consolidated profit for the year after taxation and extraordinary items was £8,611,000 (1986 £14,233,000). An interim dividend of 1.9p per Ordinary share (1986 1.733p) was paid and the directors recommend a final dividend of 4.3p per share (1986 3.733p). Subject to the necessary approval of the members being given at the Annual General Meeting to be held on 11th July 1987, the final dividend on Ordinary shares will be paid on 1st August 1987, to members on the register on 26th June 1987.

Share Capital

On 12th June 1986, the authorised share capital of the Company was increased from £31,250,000 to £47,000,000 by the creation of an additional 63,000,000 Ordinary shares of 25p each. An allocation of unissued capital is required to cover options granted, but not exercised, in the company's share option schemes amounting in aggregate to £0.56m nominal value.

Explanation of Resolutions Nos. 5 and 6

Under the Companies Act 1985, the Board cannot allot shares without the authority of the shareholders. In order to preserve the Board's powers in respect of the unissued Ordinary shares so that advantage may be taken of any opportunity that occurs to effect acquisitions on favourable terms without delay, it is proposed that the Board's general authority to allot the unissued Ordinary shares of the Company which was agreed at the 1986 Annual General Meeting, be extended by a similar authority valid until the next Annual General Meeting. The Board undertakes that no issue of shares will be made that would effectively alter control of the Company or the nature of its business without the prior approval of the shareholders.

The Companies Act 1985 also requires that where shares are issued wholly for cash, then they must first be offered to existing Ordinary shareholders. Resolution no. 6 renews the Board's powers to allot Ordinary shares for cash both in respect of shares allotted by way of rights issues and in respect on an additional 5% of the issued share capital of the Company without first offering them to existing Ordinary shareholders. It also allows the Board to overcome certain practical difficulties such as to give shareholders resident in certain overseas countries the money's worth of the rights instead of the shares. This power extend to the next Annual General Meeting. Shareholders will be asked to renew annually the powers given in resolution 5 and 6.

Directors

The names of the Directors of the Company are set out at the end of the annual report. The Chairman retired on 31st March 1987 and did not seek re-appointment. Some non-executive directors were appointed.

The interests of the directors and their family in the shares of the Company are stated elsewhere in the review of operations section.

Shareholdings

The Company is not a 'close company' as defined by the Income and Corporation Taxes Act, 1970. So far as the directors are aware, the only interest at 19th June 1987 in excess of 5% of the issued Ordinary shares was 8,406,374 shares in the name of Merchant Navy Officers Pension Funds Trustees Ltd.

Directors' Interest in Contracts

No contracts of significance in relation to the Company's business in which Directors had an interest subsisted at any time during the year.

Fixed Assets

Details of the tangible fixed assets are given in note 10 to the accounts. Group owned and occupied property is depreciated on a straight line basis. The remainder of the properties are held for investment.

Donations

Charitable donations amounting to £67,012 were made during the year. No political donations were made.

Employee Involvement

The Directors recognise the need for communication with employees at every level and regular briefing meetings are held in all areas of the Group. All employees receive a copy of the annual report and accounts. These, together with the bi-monthly newspaper "Link" and frequent internal notice board statements, form a strong communications network.

Disabled Persons

It is the policy of the Group that, within the limitations of the trading activities, disabled persons are employed on equal terms. If employees become disabled every effort is made to continue employment with retraining for alternative work, if necessary. Opportunities for career development are available to disabled persons.

Auditors

Chartered Accountants have expressed their willingness to continue as auditors. A resolution will be proposed appointing them and authorising the Board to fix their remuneration.

By Order of the Board
The Secretary
19th June 1987.

CONSOLIDATED PROFIT AND LOSS ACCOUNT

FOR THE YEAR ENDED 31ST MARCH 1987

	Note	1987	£'000 1986
Turnover	2	285,194	265,633
Operating costs	3	<u>245,181</u>	<u>231,679</u>
Profit from trading		40,013	33,954
Other operating income	4	1,996	1,633
Interest	5	<u>120</u>	<u>(464)</u>
Profit before taxation		42,129	35,123
Taxation	6	<u>15,091</u>	<u>12,626</u>
Profit after taxation		27,038	22,497
Extraordinary items	7	<u>18,427</u>	<u>8,264</u>
Profit for the financial year		8,611	14,233
Dividends	8	<u>8,893</u>	<u>7,743</u>
Retained profit for the financial year		<u>(282)</u>	<u>6,490</u>
Earnings per share		<u>19.0p</u>	<u>16.1p</u>

The calculation of earnings per share is based on earnings of £27,038,000 (1986 £22,497,000) and a weighted average of 142,149,688 shares (1986 139,688,275; adjusted for scrip issue) in issue during the year.

Statement of retained profits

Profit retained in earlier years		70,302	72,898
Retained profit for the year		(282)	6,490
Exchange adjustments	1	(246)	79
Goodwill	1	-	(9,898)
Transfer (to) from revaluation reserve	21	(640)	733
Transfer (to) other reserve		<u>(3)</u>	<u>-</u>
Total retained profit		<u>69,131</u>	<u>70,302</u>

BALANCE SHEET
AS AT 31 MARCH 1987

	Note	1987	£'000 1986
Fixed assets			
Tangible assets	9	58,467	54,826
Investment in leased assets	11	214	509
Intangible assets	12	<u>8,562</u>	<u>8,562</u>
		<u>67,243</u>	<u>63,897</u>
Current assets			
Stocks	1	81,368	75,920
Debtors	13	46,728	41,718
Investments	14	24,576	15,457
Cash and deposits		<u>12,338</u>	<u>24,915</u>
		165,010	158,010
Creditors - amounts due within one year	15	<u>69,587</u>	<u>59,184</u>
Net current assets		<u>95,423</u>	<u>98,826</u>
Total assets less current liabilities		162,666	162,723
Creditors - amounts due later than one year	15	(28,529)	(31,394)
Provisions for liabilities and charges	17	<u>(6,224)</u>	<u>(3,439)</u>
Net assets		<u>127,913</u>	<u>127,890</u>
Capital and reserves			
Called up share capital	19	35,653	23,597
Share premium account	20	1,516	13,021
Revaluation reserve	21	21,312	20,672
Other reserve		301	298
Profit and loss account		<u>69,131</u>	<u>70,302</u>
		<u>127,913</u>	<u>127,890</u>

SOURCE AND APPLICATION OF FUNDS
FOR THE YEAR ENDED 31st MARCH 1987

	<i>1987</i>	<i>£'000</i> <i>1986</i>
Funds generated by operations		
Sources		
Profit before taxation	42,129	35,123
Depreciation	6,048	4,875
Disposal of fixed assets	282	478
Exchange adjustments	<u>(1,042)</u>	<u>273</u>
	<u>47,417</u>	<u>40,749</u>
Applications		
Capital expenditure, net of grants	11,017	8,556
Increase in working capital	<u>5,517</u>	<u>13,379</u>
	<u>16,534</u>	<u>21,935</u>
Surplus from operations	30,883	18,814
Applied towards:		
Redemption of debentures	26	-
Investment in leasing	348	1,374
Tax payments	8,826	10,070
Dividend payments	<u>7,994</u>	<u>7,079</u>
	<u>17,194</u>	<u>18,523</u>
Net cash flow	13,689	291
Other funds movements		
Net consideration for shares issued	20,550	14,385
Medium term US\$ loan	-	20,072
Cost of subsidiaries acquired	(15,370)	(28,085)
Extraordinary items	<u>(8,451)</u>	<u>(2,298)</u>
Increase in liquid resources	<u>10,418</u>	<u>4,365</u>
Movement in working capital	<i>1987</i>	<i>1986</i>
Stocks	5,448	11,724
Debtors	4,301	6,957
Creditors	<u>(6,360)</u>	<u>(4,023)</u>
	3,389	14,658
Exchange adjustments	<u>2,128</u>	<u>(1,279)</u>
	<u>5,517</u>	<u>13,379</u>

NOTES TO THE ACCOUNTS

1- Accounting Policies

(a) Basis of preparation

The Group accounts comprise the consolidated accounts of the holding company and all its subsidiaries, of which the principal companies are identified later. The Accounts have been prepared under the historical cost convention supplemented by revaluation of certain properties. Where changes in presentation are made, appropriate adjustments are made to comparative figures.

A separate profit and loss account dealing with the results of the Company only has not been presented.

These Accounts were approved by the Directors on 19th June 1987.

(b) Subsidiaries

Fair values are attributed to the net tangible assets of subsidiaries at the date of acquisition. The excess of the cost of acquisition over the net assets attributed, so far as not previously written off, is written off to reserves.

(c) Financial year end

Except for certain overseas subsidiaries subject to local requirements, the Group does not operate to a calendar month end accounting timetable. These accounts are made up for a period of 52 weeks ended on 29th March 1987 and the comparative figures are in respect of a period of 52 weeks ended on 30th March 1986.

(d) Foreign currencies

Income and expenditure in foreign currencies are converted to sterling at rates approximating to those ruling at the date of each transaction: assets and liabilities denominated in foreign currencies are translated into sterling at the rates ruling at the balance sheet date. The results of overseas subsidiaries are translated into sterling at average rates for the year. Exchange gains and losses arising on the translation of the net assets of overseas companies have been dealt with in accordance with SSAP 20.

(e) Turnover

Turnover represents the aggregate amount invoiced for goods supplied to customers and is stated net of any value added or sales taxes.

(f) Fixed assets and depreciation

Certain of the Group's properties are included in the accounts at valuation. Additions to these properties and all other fixed assets are included at cost which is stated after deduction of Regional Development and other capital grants receivable. With the exception of leased assets, depreciation is provided on all property, plant and equipment on a straight line basis. Estimates of the useful lives of plant and equipment cannot be made with precision and in practice a range of lives exists. The Group has chosen shorter, rather than longer lives for its depreciation calculations and, where assets are in use on a multi shift basis, these rates are doubled or trebled as appropriate.

The basic annual rates used are:

Freehold property	2%
Leasehold property	over the term of the lease, minimum 2%
Plant and machinery	12 ¹ / ₂ %
Motor vehicles	25%

(g) Intangible fixed assets

Patents and trade marks which have no finite life are stated at valuation. Provision is made for any permanent diminution in value.

(h) Stock

Stock and work in progress is valued at the lower of cost, including appropriate manufacturing overheads, and net realisable value. As the Group is vertically integrated, finished goods held by one company may be sold outside the Group or may form the raw materials of other companies within the Group. In these circumstances, stocks and work in progress have not been sub-classified.

(i) Taxation

Deferred taxation is provided on timing differences which may increase taxation liabilities in the foreseeable future. The amounts provided have been calculated at the Corporation Tax rates expected to apply when the liabilities crystallise. Advance Corporation Tax to be offset against the Corporation Tax liability of the following year is carried forward.

(j) Research and development

Expenditure on research and development is charged against profits in the year in which it is incurred.

(k) Leasing

Tangible fixed assets acquired under finance leases are not capitalised. Rentals payable under both finance and operating leases are written off as incurred.

NOTES TO THE ACCOUNTS

2 Turnover	<i>1987</i>	£'000 <i>1986</i>
The geographical distribution of turnover was as follows:		
UK	117,127	98,576
Other EEC countries	76,702	71,687
Rest of Europe	10,723	10,762
USA/Canada/South America	66,049	68,713
Far East and others	<u>14,593</u>	<u>15,895</u>
	<u>285,194</u>	<u>265,633</u>

3 Operating Costs

Operating costs comprise:

Cost of sales	202,469	193,991
Distribution costs	23,776	20,642
Administration expenses	<u>18,936</u>	<u>17,046</u>
	<u>245,181</u>	<u>231,679</u>

and include the following items:

Depreciation	6,048	4,875
Hire of plant	346	245
Auditors' remuneration	305	294

Employee numbers and costs:

The average number of persons employed by the Group during the year was as follows:

	<i>1987</i>	<i>1986</i>
Production	8,759	8,184
Selling, administration	<u>964</u>	<u>928</u>
	<u>9,723</u>	<u>9,112</u>

Aggregate employment costs were:

Wages and salaries	66,212	59,409
Social security costs	6,381	5,992
Other pension costs	<u>1,566</u>	<u>1,329</u>
	<u>74,159</u>	<u>66,730</u>

Director's remuneration:

Fees	18	18
Other emoluments	325	296

Excluding pension contributions, remuneration of Directors and higher paid UK employees was paid as follows:

Chairman £82,454 (1986 £72,472)

NOTES TO THE ACCOUNTS

	Other directors		Employees	
	1987	1986	1987	1986
£5,001 to £10,000	3	3	-	-
£30,001 to £35,000	-	1	6	9
£35,001 to £40,000	1	-	7	5
£40,001 to £45,000	-	1	3	1
£45,001 to £50,000	1	2	2	2
£50,001 to £55,000	2	-	2	1
£55,001 to £60,000	-	-	1	1
£70,001 to £75,000	-	-	1	-

	£'000	
	1987	1986
4 Other Operating Income		
Income from leasing	340	343
Other income	<u>1,250</u>	<u>1,290</u>
	<u>1,996</u>	<u>1,633</u>

Income from leasing is stated after:

Depreciation	1,802	2,175
Interest received	7	9
Interest paid	542	312

5- Interest:

Interest Receivable

Investment income - listed UK	94	355
- listed overseas	924	917
- unlisted	11	8
Interest received on short term deposits	<u>3,113</u>	<u>2,615</u>
	<u>4,142</u>	<u>3,895</u>

Interest Payable

Bank loans and overdrafts:

- wholly repayable within five years	3,743	4,078
- others	58	60
Debentures	<u>221</u>	<u>221</u>
	<u>4,022</u>	<u>4,359</u>
	<u>120</u>	<u>(464)</u>

NOTES TO THE ACCOUNTS

	<i>1987</i>	<i>1986</i>
6- Taxation		£'000
Based on the profits for the year		
UK Corporation tax at 40% (1985 45%)	10,099	6,945
Overseas taxation	4,872	5,646
Transfer to deferred taxation	<u>120</u>	<u>35</u>
	<u>15,091</u>	<u>12,626</u>

7 Extraordinary items

Costs of proposed acquisition (failed bid) net of the gain on disposal of shares in the target company.	4,340	
Loss on early redemption of quoted loan stock	1,257	
Loss on cessation of certain activities	1,067	1,659
Anticipated loss on disposal of certain US operations	3,803	2,605
Reorganisation and rationalisation	2,450	1,865
Foreign currency deficit arising on consolidation	1,460	835
US subsidiary pre-production expenditures written off	1,250	600
Goodwill written off	<u>2,800</u>	<u>700</u>
	<u>18,427</u>	<u>8,264</u>

8 Dividends

Interim dividend 1.9p per share (1986 1.733p)	2,707	2,456
Proposed final dividend 4.3p per share (1986 3.733p)	<u>6,132</u>	<u>5,287</u>
	<u>8,839</u>	<u>7,743</u>

9 Tangible Fixed Assets

	Land and Buildings				Plant	Total
	Freehold	Leasehold		Plant		
	Long	Short				
Cost or valuation						
at 31st March 1986	39,141	2,799	213	49,460	91,613	
Additions	2,452	105	31	8,429	11,017	
Disposals	(5)	-	-	(1,558)	(1,563)	
Exchange adjustments	<u>(1,180)</u>	<u>396</u>	<u>(7)</u>	<u>(456)</u>	<u>(1,247)</u>	
At 31st March 1987	<u>40,408</u>	<u>3,300</u>	<u>237</u>	<u>55,875</u>	<u>99,820</u>	
Depreciation						
At 31st March 1986	514	54	130	36,089	36,787	
Charge for year	936	48	44	5,020	6,048	
Disposals	-	-	-	(1,281)	(1,281)	
Exchange adjustments	<u>(21)</u>	<u>6</u>	<u>(13)</u>	<u>(173)</u>	<u>(201)</u>	
At 31st March 1987	<u>1,429</u>	<u>108</u>	<u>161</u>	<u>39,655</u>	<u>41,353</u>	

NOTES TO THE ACCOUNTS

	Land and Buildings				Total
	Freehold	Leasehold		Plant	
	Long	Short			
Net book value					
At 31st March 1986	<u>35,627</u>	<u>5,745</u>	<u>83</u>	<u>13,371</u>	<u>54,826</u>
At 31st March 1987	<u>38,979</u>	<u>3,192</u>	<u>76</u>	<u>16,220</u>	<u>58,467</u>

Regional development and other grants receivable, £662,000, have been deducted in arriving at the cost of eligible buildings and plant added during the year.

For land and buildings included above at a valuation carried out in 1986, the equivalent amounts calculated under historical cost accounting rules are shown as follows:

	Freehold		Long Leasehold	
	Valuation	Cost	Valuation	Cost
Cost or valuation				
At 31st March 1986	<u>25,294</u>	<u>11,783</u>	<u>5,334</u>	<u>2,595</u>
At 31st March 1987	<u>25,915</u>	<u>12,195</u>	<u>5,721</u>	<u>2,824</u>
Accumulated depreciation				
At 31st March 1986	<u>-</u>	<u>3,959</u>	<u>-</u>	<u>1,165</u>
At 31st March 1987	<u>519</u>	<u>4,382</u>	<u>115</u>	<u>1,368</u>
Net asset value				
At 31st March 1986	<u>25,294</u>	<u>7,824</u>	<u>5,334</u>	<u>1,430</u>
At 31st March 1987	<u>25,396</u>	<u>7,813</u>	<u>5,606</u>	<u>1,456</u>

No provision has been made for taxation on chargeable gains estimated at £5,746,000 which would become payable on a disposal of the properties at the values incorporated in the accounts.

	1987	£'000 1986
10 Investments		
Shares in Group companies, at cost	38,627	31,789
Amounts written off	<u>3,939</u>	<u>2,025</u>
	<u>34,688</u>	<u>29,764</u>

The changes in cost of shares in Group companies and amount written off arise from a reorganisation of shareholdings within the Group.

NOTES TO THE ACCOUNTS

£'000

11 Investment in Leased Assets

Fixed assets	<i>1987</i>	<i>1986</i>	
Leased to third parties at cost	16,467	17,252	
Accumulated depreciation	<u>8,168</u>	<u>6,952</u>	
	8,299	10,300	
Cash at bank	728	-	
Debtors- amounts falling due within one year			
Due by Group companies	-	17	
Other debtors	189	351	
Creditors- amounts falling due within one year			
Bank loans and overdrafts	(3,200)	(5,053)	
Deferred income	(1,523)	(1,663)	
Accruals	(252)	(41)	
Taxation	(784)	-	
Due to Group companies	(490)	-	
Provisions for liabilities and charges			
Deferred taxation	<u>(2,753)</u>	<u>(3,402)</u>	
	<u>214</u>	<u>509</u>	

The outstanding period of the leases vary from one to six years and the total of future rentals receivable is £8,254,000 (1986 £10,879,000). There were no additions to leased assets in the year and disposals amounted to £784,000 on which accumulated depreciation amounted to £586,000.

12 Intangible assets

Patents and trade marks	<u>8,562</u>	<u>8,562</u>	
-------------------------	--------------	--------------	--

13 Debtors

	Company		Group	
	<i>1987</i>	<i>1986</i>	<i>1987</i>	<i>1986</i>
Amounts due within one year:				
Trade debtors	-	-	38,783	37,161
Due by Group companies	29,512	28,498	490	-
Other debtors	-	-	2,849	1,979
Prepayments and accrued income	24	1	3,478	1,669
Tax recoverable	<u>694</u>	<u>-</u>	<u>1,128</u>	<u>909</u>
	30,230	28,499	46,728	41,718
Amounts due later than one year:				
Advance corporation tax recoverable	<u>2,199</u>	<u>2,266</u>	<u>-</u>	<u>-</u>
	<u>32,429</u>	<u>30,765</u>	<u>46,728</u>	<u>41,718</u>

NOTES TO THE ACCOUNTS

14 Investments	£'000			
	Company		Group	
	1987	1986	1987	1986
Listed: UK	-	-	10	3,035
Overseas	-	-	24,385	12,249
Unlisted	<u>95</u>	<u>95</u>	<u>181</u>	<u>173</u>
	<u>95</u>	<u>95</u>	<u>24,576</u>	<u>15,457</u>

Investments are stated at cost or market value, if lower. In the case of investments held overseas, cost in foreign currencies has been translated in accordance with the accounting policy set out in note 1(d). The value of investments at 31st March was as follows:

	1987	1986
Listed- at market value: UK	£15,000	£3,035,000
Overseas	£25,524,000	£13,036,000
Unlisted- at Director's valuation	£181,000	£173,000

15 Creditors

	Company		Group	
	1987	1986	1987	1986
Amounts due within one year:				
Trade creditors	-	-	23,059	19,825
Accruals	1,029	595	12,202	10,988
Current taxation	2,499	2,725	12,126	7,359
Other taxation and social security costs	-	-	2,836	3,895
Other creditors	-	-	1,644	1,314
Due to Group companies	5,461	1,800	-	17
Bank loans and overdrafts (secured Group £252,000- 1986 £564,000)	7,511	6,173	11,588	10,499
Proposed dividend	<u>6,132</u>	<u>5,287</u>	<u>6,132</u>	<u>5,287</u>
	<u>22,632</u>	<u>16,580</u>	<u>69,587</u>	<u>59,184</u>
Amounts due later than one year:				
Accruals	-	-	390	451
Bank loans (secured £934,000- 1986 £1,757,000)	-	-	20,433	24,919
Debentures (note 15)	2,325	2,351	2,325	2,351
Taxation	<u>-</u>	<u>-</u>	<u>5,381</u>	<u>3,673</u>
	<u>2,325</u>	<u>2,351</u>	<u>28,529</u>	<u>31,394</u>

Bank loans repayable in more than one year bear interest at rates between 7.8% and 11% and include loans of £764,000 repayable in instalments extending beyond five years of which £262,000 is repayable in more than five years. Other repayments fall due as follows:

- Between one and two years-£264,000
- Between two and five years-£19,907,000

NOTES TO THE ACCOUNTS

	£'000	
16 Debentures	1987	1986
7% Debenture Stock 1985/90 (see a and b)	622	648
7 ¹ / ₂ % Debenture Stock 1985/90 (see a)	186	186
10 ³ / ₄ % Debenture Stock 1990/95 (see a and c)	<u>1,517</u>	<u>1,517</u>
	<u>2,325</u>	<u>2,351</u>

a The debentures are secured by first floating charges on the undertakings of the Company and certain of its subsidiaries under a trust deed.

b In each year ending on every 30th November the company is obliged to set aside £50,000 to a non-cumulative sinking fund towards the redemption of the stock providing that in lieu of this the Company may purchase stock for cash which will be accepted at the lower of par or the cost of purchase in satisfaction *pro tanto* of the obligation. During the year £23,000 was expended on purchases of stock. No transfer to sinking fund is required because of purchases in earlier years.

c In each year ending on every 30th November the Company is obliged to set aside £25,000 to a non-cumulative sinking fund towards the redemption of the stock providing that in lieu of this the Company may purchase stock for cash which will be accepted at the lower of par or the cost of purchase in satisfaction *pro tanto* of the obligation. No transfer to sinking fund is required because of purchases in earlier years.

17 Provision for Liabilities and Charges

Provision for exceptional fluctuation in raw material prices and future losses on contracts

1,566 988

Reorganisation of Group activities

1,608 191

Other charges

956 924

Pension commitments (note 18)

2,364 1,689

6,494 3,792

Deferred taxation

200 80

Advance Corporation tax

(470) (433)

6,224 3,439

Potential liability

Capital allowances

5,749 5,542

Other timing differences

2,460 1,533

8,209 7,075

Provided

200 80

18 Pensions

The accounts contain a provision for the pension liability of a German subsidiary which has been calculated in accordance with West German statutory requirements.

The Group operates a number of other pension schemes, the assets of which are independent of the Group. These schemes are regularly reviewed by actuaries and are funded in accordance with their advice.

NOTES TO THE ACCOUNTS

£'000

19 Share Capital

Authorised:

188,000,000 Ordinary Shares of 25P 47,000 31,250

Allotted, called up and fully paid:

142,611,404 Ordinary Shares of 25p 35,653 23,597

Issued Share Capital increased by 47,209,335 ordinary shares as a result of a scrip issue in September 1985 to existing shareholders of one new share for every two shares held.

Since 31st March 1986 options in respect of 1,012,900 ordinary shares have been exercised at prices between 52p and 83.33p per share for a total consideration of £555,517.

Options to subscribe for ordinary shares in the Company granted to certain Directors and employees were outstanding at 31st March 1987 as follows:

<i>Number of ordinary shares</i>	<i>Exercise price per ordinary share</i>	<i>Period during which options may normally be exercised</i>
1,056,350	52p	By August 1987
207,850	83.33p	By December 1989
212,400	118p	Between December 1987 and December 1990
604,500	172p	Between January 1988 and January 1995
173,500	212p	Between January 1989 and January 1996

20 Share Premium Account

At 31st March 1986 13,021
 Premium on shares issued during the year 308
 Costs of issue written off (6)
 Capitalisation (11,807)

At 31st March 1987 1,516

21 Revaluation Reserve

At 31st March 1986 20,672
 Exchange adjustments 645
 Release on disposal of property (5)

At 31st March 1987 21,312

Lease commitments

There were net obligations under finance leases at 31 March 1987 as follows:

	<i>1987</i>	<i>1986</i>
Payable in the first year	13,822	11,276
Payable in the second to fifth year inclusive	16,674	10,321
Payable after the fifth year	<u>2,851</u>	<u>4,499</u>
	<u>33,347</u>	<u>26,096</u>

NOTES TO THE ACCOUNTS

22 Commitments	Group	£'000
	1987	1986
Commitments not provided in the accounts:		
Capital expenditure contracted	6,482	1,759
Capital expenditure authorised but not contracted	4,179	2,263

23 Contingent Liabilities

In respect of documentary credits, indemnities and bills discounted	2,305	2,472
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24 Related company

The principal related company is:

	Country of operation	Country of registration	Shares in issue	Group shareholding
ABC Financial Services (Hldg) plc	UK	England	200 £1 "A" ord. 200 £1 "B" ord. 2000 £1 pref.	100% - 100%

This company was formed during the year to acquire the interests previously held by the Group and by third parties in the issued share Capital of Group Financial Subsidiary Plc and Group Personal Accounts Limited, the principal companies which provide financial services for the Group.

Equity interest in related companies.

The Group's interests in the net assets of ABC as at 31st March 1987 are set out below:

	1987
Fixed assets	
tangible assets	5,150
Other assets	<u>1,832</u>
	6,982
Current assets	
Receivables	70,825
Cash and bank balances	<u>5,834</u>
	<u>76,659</u>
	<u>83,641</u>
Liabilities	
Bank and other borrowings	68,164
Creditors	7,473
Loans from the Group	<u>6,728</u>
	<u>82,365</u>
Net assets	<u><u>1,276</u></u>

REPORT OF THE AUDITORS

To the Members of the Group plc

We have audited the accounts in accordance with approved Auditing Standards.

In our opinion the accounts which have been prepared on the basis of the accounting policies set out in note 1, give a true and fair view of the state of affairs of the Company and of the Group at 31st March 1987 and of the profit and source and application of funds of the Group for the year to that date and comply with the Companies Act 1985.

Chartered Accountants
London

19th June 1987

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