CRANFIELD UNIVERSITY

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# HOW DO ANALYSTS DEAL WITH BAD NEWS? GOING-CONCERN OPINIONS AND ANALYST BEHAVIOUR - A SYSTEMATIC REVIEW

SCHOOL OF MANAGEMENT

MRes DISSERTATION

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ACADEMIC YEAR 2004-2005

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31 AUGUST 2005

This thesis is submitted in partial fulfilment of the requirements for the Degree of Master of Research in Management Research

# ABSTRACT

This study systematically reviews the literature that can constitute the foundations for the connection of two areas that have hitherto been developed separately: analyst behaviour and going-concern opinions. Financial literature claims that analyst judgement is biased given their tendency to systematically underreact in the presence of bad news and their tendency to systematically overreact in the presence of good news. Considering that going-concern modifications constitute an unambiguous and acute case of bad news, this event presents a unique opportunity to explore analysts' anticipation of and reaction to the presence of bad news. This analysis can provide further evidence on analysts' optimism and their role in the apparent delayed impact of bad news to investors. A systematic review of the literature is developed in order to guarantee methodological rigour in the review process. The systematic search for studies in the refined scope finds 40 papers that are analysed and synthesised. These papers are discussed in order to justify the potential gap in the literature and the research opportunities available for a doctoral study. The results suggest that the connection between these areas can sustain a doctoral study and contribute for the development of the accounting and finance framework.

*To my family*

## ACKNOWLEDGEMENTS

I would like to gratefully acknowledge the enthusiastic supervision of Professor Richard Taffler, who encouraged and supported me during this process. I also would like to thank Dr. Vineet Agarwal, Mr. Asad Kausar, Mrs. Thabang Mokoalelli-Mokoteli and Dr. David Denyer as panel members, for their stimulating discussions and general advice. I also would like to thank Mrs. Lisa Brooks for her assistance during some critical moments. A special word to Ms. Heather Woodfield for the review of my dissertation.

I am grateful to the institutions that have provided me with the opportunity to study in England, namely the Faculty of Economics, University of the Algarve and Fundação para a Ciência e a Tecnologia. I have to underline the importance of three persons in this process, not only for their support but also for their personal friendship: Professor Efigénio Rebelo, Professor Duarte Trigueiros and Professor Paulo Rodrigues.

Finally, a special word to my friend Luis Coelho. His friendship was essential in helping me spend this first year far away from my loved ones.

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# CHAPTER 1 - INTRODUCTION

The issue of rationality has been discussed in several areas of knowledge without consensus. In the course of this discussion, the different perspectives about the degree of human rationality are drawn from two different views about human behaviour. Rational choice theory proponents argue that human judgment can be modelled mathematically, suggesting that people optimize their decision processes in order to find the *"one best solution"*. The alternative perspective, bounded rationality, states that the previous theory is not realistic since people's limited analytical capacities prevent anything near complete rationality.

In finance, there are two competing approaches to understanding financial markets. The traditional finance framework posits that agents satisfy the conditions of completeness and transitivity, and therefore, behave as fully rational Bayesians maximizers of their subjective utility functions. Behavioural finance constitutes the alternative approach, which is consistent with the arguments of the bounded rationality perspective. Behavioural finance states that some financial phenomena can be better understood using models that consider some agents as not being fully rational. Under this framework, agents use heuristics and rules of thumb when forming their beliefs, rather than the laws of probability (Sandroni, 2005).

Considering the nature of their work, security analysts are viewed as a sophisticated group of decision-makers acting in financial markets. Consequently, these market agents present a unique opportunity to analyse and test the two competing theories in finance and to provide further evidence in the debate between full and bounded rationality. Easterwood and Nutt (1999) present one of the clearest definitions of rationality in the security analyst context. They state that *"a rational analysis of analyst behavior predicts that analysts immediately and without bias incorporate information into their forecasts"*. Under this definition, evidence collected through empirical research suggests that analysts are, in fact, not rational in the sense that their forecasts are biased (e.g., de Bondt and Thaler, 1990; Trueman, 1994; Easterwood and Nutt, 1999; Ahmed et al., 2000; Beckers et al., 2004). One of the most important ideas extracted from this body of literature is that analyst forecasts are optimistic. This optimism is derived from the systematic positive difference between forecast and actual earnings per share (EPS) (e.g., Stickel, 1990; Abarbanell, 1991; Brown, 1997; Easterwood and Nutt, 1999) and the permanent higher number of buy

recommendations compared with the number of sell recommendations (e.g., Womack, 1996; Ho and Harris, 1998; Ryan and Taffler, 2004).

Two principal explanations for this non-rational behaviour are cognitive-bias explanations and economic incentives-based explanations (Kothari, 2001). Broadly speaking, cognitive-bias explanations argue that financial agents use heuristics and rules of thumb when they process information. Under this assumption, analysts are subject to the same biases as subjects in laboratory experiments. In fact, evidence of analysts' systematic asymmetric reaction conditional on the nature of information (Amir and Ganzach, 1998; Easterwood and Nutt, 1999) is better understood under the cognitive-bias approach. On the other hand, economic incentive-based explanations advocate that agency problems underlie analysts' optimism. In fact, the literature suggests that analysts' working environment and incentives can lead to several distortions in their analyses. Easterwood and Nutt (1999) suggest two factors which help us to understand their optimism in this context: the economic incentives that analysts have to promote the purchase of stocks, and their work dependency on the access to the top executives of the firms they follow. One of the most frequently cited examples is the particular optimism regarding analysts who work for brokerage firms (Dugar and Nathan, 1995) or analysts working for brokerage houses with investment banking activities (Michael and Womack, 1999).

The discussion behind rationality in market agents is crucial since this issue constitutes the basis of several debates in accounting and finance. Despite the strong theoretical background underpinning the traditional finance framework, should we ignore empirical evidence showing that, in general, agents present biased behaviour? This question raises a critical issue in the development of finance theory: should we continue to develop research based on the premise that agents are fully rational or should we relax this strong assumption? Analyst behaviour constitutes a unique opportunity to clarify these issues, since they act as sophisticated agents in the market, which recognizes the importance of their opinions given the impact of their recommendations and earnings forecasts (e.g., Stickel, 1991; Womack, 1996; Ho and Harris, 1998; Park and Stice, 2000; Barber et al., 2001; Barber et al., 2003; Ryan and Taffler, 2004).

Although analyst optimism has been documented in general, there is lack of evidence regarding their specific behaviour in extreme situations. As Schipper (1991) points out, it makes sense to investigate decision strategies in extreme cases, because research suggests that optimism seems to be most pronounced in forecasts preceded by share price declines or earnings declines. One of the events that produce substantial declines in share

prices is the going-concern modification (GCM) audit report. Several papers document that audit qualifications in general, and the GCM in particular, have a significant negative impact on the stock market (Firth, 1978; Chow and Rice, 1982; Banks and Kinney, 1982; Dopuch et al., 1986; Frost, 1991; Taffler et al., 2004; Kausar et al., 2004). Given the market reaction to going-concern opinions, it makes sense to investigate how analysts deal with this particular event, which is perceived as a clear case of bad news by markets. In fact, by linking these two areas of the literature, it is possible to give a new insight to analyst optimism and thus, to make a contribution to the development of the accounting and finance disciplines.

The literature review undertaken in this dissertation regarding these two areas is based on the systematic review of the literature suggested by Tranfield et al. (2003). This process allows the definition of a transparent process in order to avoid the weaknesses of the traditional narrative review. Therefore, the connection between analyst behaviour and going-concern opinions is made with an explicit method to identify, select and review the relevant studies. The systematic review of the literature demonstrates that there is a sufficient gap in the literature and unclear issues that justify further research to be developed into a PhD. In fact, the review process shows that going-concern opinions and analysts' behaviour represent two different topics that have been considered separately in the literature. No study has looked at these two domains together and explored their possible relation.

Although there is evidence that analysts underreact to negative information (e.g., Amir and Ganzach, 1998; Easterwood and Nutt, 1999), their reaction to a going-concern opinion has not been explored in the literature to date. Additionally, the fact that markets react asymmetrically to good and bad news in the going-concern context (Kausar et al., 2004), highlights the importance of the research regarding security analysts' role in the whole process. This dissertation discusses several research opportunities extracted from the critical analysis of the papers selected using the systematic review approach. Therefore, the challenge of my doctoral project is to link together these two different areas of the literature that have been developed separately until now.

The dissertation is structured as follows:

Chapter two reviews the major literature relating to this study. Section one discusses the concept of rationality, describes two different approaches to human behaviour drawn from this concept and analyses their implications in two competing theories in finance: traditional finance and behavioural finance. Section two reviews the role of analysts in the

market and explores the nature of their rational (or non-rational) behaviour. Particular emphasis is given to analysts' explanations of forecast bias. Section three explores the issues behind the going-concern assumption and their relevance to markets. Section four discusses the problem and delimits the boundaries of the study.

Chapter three describes the methodology approach based on the systematic review of the literature. Section one analyses the rationale behind this process, section two describes the review aims, and section three defines the systematic review process. This section contains the definition of the process that allows the selection of the papers that constitute the sample for my findings and final discussion.

Chapter four presents the findings of the systematic review process. Section one makes a descriptive analysis of the selected papers. Section two reports the findings with the form of a thematic analysis. Section three presents the discussion of the findings.

Chapter five concludes the dissertation. Section one discusses the implications for further research. Section two presents the methodology appraisal. Section three presents the author's reflections on the learning experience and section four concludes the dissertation.

# CHAPTER 2 – KEY LITERATURE

This chapter reviews the major literature of the two areas that I want to connect: analyst behaviour and going-concern opinions. The chapter begins with a discussion of rationality and the different views regarding human behaviour, considering their implications in the finance domain. In addition, it evaluates analyst behaviour highlighting the behavioural explanations justifying this phenomenon, although reviewing the economic-based explanations. The going-concern assumption is introduced with the objective of analysing the importance of this event for the understanding of analyst behaviour in extreme situations. A common issue in the two areas reviewed is the market impact of each output: analysts' recommendations, earnings forecasts, and accompanying reports and going-concern reports. The delimitation of the systematic review boundaries is presented at the end of the chapter.

## 2.1. The concept of rationality

Classical economic theory is based on the concept of rationality (Arrow, 1986). Classical economists, like Smith and Ricardo, sustained the development of this discipline in notions that are closely related to this concept. Several examples of rational behaviour are present in the discourse of these classical economists: the preference for more rather than less, the investment in industries yielding the highest rate of return, the minimization of costs or profit maximization, among others (Arrow, 1986). Nowadays, economists' definition of rationality is based on the concepts of completeness (choices can be ranked) and transitivity (if $x>y$ and $y>z$, then $x>z$), which together represent the maximization of a function.[1] This approach emerged only in the 1950s since before that time, economists assumed that people were motivated by *"self-interest"* (Arrow, 1986).

Traditional finance draws on classical economics to develop models that explain financial markets based on the assumption that market participants are rational (Barberis and Thaler, 2003). According to Barberis and Thaler (2003), rationality has two meanings: 1) when agents receive new information they update their beliefs correctly, particularly in the manner described by Bayes' law and 2) given their beliefs, agents make choices that are normatively acceptable, in the sense that they are consistent with Savage's (1972) notion of Subjective Expected Utility (SEU).

[1] The function may be related to utility, costs, profits, among other variables.

The next two sections briefly illustrate the foundations of rational behaviour, namely the two main theories behind this issue: rational choice theory and bounded rationality.

### 2.1.1. Rational choice theory

Rational choice theory differs from other perspectives that see human action as involving both rational and non-rational elements. This perspective denies the existence of any other type of action than the purely rational and calculative one (Scott, 2000), suggesting full rationality in decision-makers.[2] Turner (2002) presents five assumptions of rational choice theory:

1. Humans are purposive and goal oriented;
2. Humans have sets of hierarchically ordered preferences, or utilities;
3. In choosing lines of behaviour, humans make rational calculations;
4. Emergent social phenomena - social structures, collective decisions, and collective behaviour - are ultimately the result of rational choices made by utility-maximizing individuals;
5. Emergent social phenomena that arise from rational choices constitute a set of parameters for subsequent rational choices of individuals.

These five points reveal that the rational process is very demanding, assuming that people are goal oriented and, conditional on their preferences, they can find the *"one best solution"*. It is particularly noteworthy that rational choice theory suggests that individuals are able to state their preferences by their wants or goals, and that these preferences motivate the actions taken by individuals. This framework also posits that individuals must anticipate the outcome of every alternative course of action, calculate which will be the best for them and choose the alternative that is likely to give them the greatest satisfaction (Coleman, 1973; Heath, 1976). This means that fully rational man knows the solution of all complex mathematical problems, regardless of their level of difficulty (Selten, 2001). For the defenders of this framework, the available mathematical tools, in particular the rules of Bayes and Bernoulli, are seen as descriptions of actual human judgement (Datson, 1981). The decision process is always associated with information, efficiency, optimization,

[2] The apparent success of economics in explaining human behaviour as a function of money and by the possibility of making a profit, leads other social sciences in this direction (Scott, 2000). According to Scott (2000), these social scientists have tried to build theories around the idea that all action is fundamentally rational in nature and that people do the cost / benefit analysis before making a decision.

implementation and design (Scott, 2003). The understanding of these complex assumptions leads us to conclude that people are required to have unlimited cognitive capabilities whenever taking fully rational decisions.

Hatch (1997) presents a model with five steps that defines a typical rational decision-making process in organizations, which can be generalized to decision-makers. The first step of the model is to define the problem and the collection of relevant information. The following step is the generation and evaluation of all the possible alternatives available, considering the likelihood of the positive and negative consequences of each one. After that, decision-makers should choose the best possible alternative, given their set of objectives. The last steps consist of the implementation of the selected alternative and monitoring the results. In a dynamic perspective, this last action will lead to the first step of the model and to another optimized decision.

The specific limitations of organizations and human capacities provide the arguments that some scholars have used to criticize the assumptions of rational models. Simon presents some limitations of rational decision-making models, which are inconsistent with full rationality (Hatch, 1997):

1. Imperfect and incomplete information;
2. The complexity of problems;
3. Human information-processing capacity;
4. The time available for decision-making processes;
5. The conflicting preferences decision-makers have for organizational goals.

These limitations represent the starting point for the development of an alternative to rational choice models: bounded rationality.

### 2.1.2. Bounded rationality

Bounded rationality theory emerged as a critique to rational choice theory. The empirical evidence and the observation of human behaviour suggest a fundamental role for limited cognition as an aspect of decision-making, something that is not captured by the neo-classical framework. Under this alternative, humans attempt to be rational but their limited capacities prevent anything near complete rationality (Perrow, 1993). The existence of such limitations restricts the usefulness of rational choice assumptions in understanding the

actual behaviour of decision-makers; people are simply unable to follow such demanding processes.

One of the main critiques to rational choice is that people cannot consider all their options in choosing their solutions to given problems. Put simply, decision-makers do not have complete knowledge of the alternative courses of action available to them or they cannot afford to attain that knowledge. Moreover, even if people knew all their alternatives, it would be almost impossible to rank them according with their preferences (Simon, 1997). As a result, people tend to simplify available alternatives and select the first acceptable one.

Several studies document many other restrictions to the optimal choice. Klein (2001) presents eleven boundary conditions for optimizing decisions that review the main assumptions presented in the literature:

1. The goals must be well defined, in quantitative terms (Koopman and Pool, 1991);
2. The decision-maker's values must be stable (Fischhoff, 1991; Slovic, 1995; March, 1978);
3. The situation must be stable (Pitz, 1992);
4. The task is restricted to a selection between options (Berkeley and Humphreys, 1982);
5. The number of alternatives generated must be exhaustive (Janis and Mann, 1977; Koopman and Pool, 1991);
6. The optimal choice can be selected without disproportional time and effort (Gigerenzer and Todd, 1999; Minsky, 1986; von Winterfeldt and Edwards, 1986);
7. The options must be thoroughly compared to each other (Janis and Mann, 1977);
8. The decision-maker must use a compensatory strategy (Janis and Mann, 1977);
9. The probability estimates must be coherent and accurate (Beyth-Marom et al., 1991);
10. The scenarios used to predict failures must be exhaustive and realistic (Pitz, 1992);
11. The evaluation of each scenario must be exhaustive (Pitz, 1992).

It is noteworthy that the existence of these restrictions to optimal choice does not mean that bounded rationality is the same as irrationality. Indeed, we cannot substitute rationality by irrationality just because people's behaviour fails to conform the norms of full

rationality. A decision maker who is guided by aspiration adaptation mechanism rather than utility maximization may be perfectly rational (Selten, 2001), even if he or she does not choose the *"one best decision"*.[3]

Herbert Simon introduced the idea of bounded rationality, originally a psychological concept, into economics.[4] Since then, bounded rationality has started to be viewed as the main alternative to neo-classic rationality. Optimization plays a central role in rational choice theory, and consequently, in the traditional finance approach. Simon (1956) defines optimization as the selection of the best choice, the one with the highest expected utility. However, considering that decision-makers do not have the unlimited cognitive capacities that are required to achieve optimal solutions, Simon developed an alternative theoretical framework. Under this alternative perspective, the satisfying agent takes the place of the rational agent and *satisficing* behaviour substitutes the model of global rationality. This *satisficing* agent is not making a mistake when he chooses his non-optimal payoff, because *satisficing* involves choosing an alternative that exceeds some criterion or target (Simon, 1997). In fact, satisfice means selecting the first course of an action that appears to be successful, even if it is not the best (Klein, 2001).

### 2.1.3. Rationality implications in finance

Considering that rationality is a central issue in the development of finance, these two different views about rationality have implications in the finance domain. The next two sections describe the two alternative approaches in the finance world that are based on the previous discussion.

[3] Simon (1956) develops two alternatives to utility maximization in order to explain decision-making processes: adjusting the aspiration level and adjusting the set of behavioural alternatives. He described decision-making as a search process guided by aspiration levels. An aspiration level is a value of a goal variable that must be reached or surpassed by a satisfactory decision alternative. However, aspiration levels are not permanently fixed but are rather dynamically adjusted to the situation. Aspiration levels are raised if it is easy to find satisfactory alternatives and lowered if satisfactory alternatives are hard to obtain (Selten, 2001). Search for alternatives, satisficing and aspiration adaptation constitute three main concepts in Simon's view of bounded rationality.

[4] Conlisk (1996) presents in his survey four reasons that justify the incorporation of bounded rationality in economic models: 1. There is abundant empirical evidence showing the importance of bounded rationality; 2. Models of bounded rationality have proved themselves in a wide range of impressive work; 3. The standard justifications for assuming unbounded rationality are unconvincing and 4. Deliberation about an economic decision is a costly activity, and good economics requires that we entertain all costs.

### *2.3.1.1. Traditional finance*

Rational optimization of agents and equilibrium constitute the two pillars of traditional finance literature. The rational choice perspective supports the economic definition of rationality, which is embedded in two important concepts: completeness and transitivity.

This approach is largely based on an unrealistic picture of human decision-making, which assumes that economic agents are fully rational Bayesian maximizers of subjective utility.[5] One of the reasons that explains why Bayes' theorem was used to build economic theory and financial modelling is their nonarbitrary characteristic, which is a useful discipline to modelling, although the evidence on heuristics and biases suggests that Bayesian updating is not fully descriptive of human behaviour (Hirshleifer, 2001).[6] Bayesians assume that agents have a coherent preference structure that is characterized axiomatically and defines a notion of a probabilistic mixture of outcomes. These rational agents care about utilitarian characteristics, do not commit cognitive errors, have perfect self-control, are always risk averse and are never averse to regret (Statman, 1999). The traditional finance framework is highly analytical and normative, assuming a world dominated by *homo economicus*, who is fully rational and focused on utility maximization.

Despite the strong theoretical background behind traditional finance perspective, several studies document price behaviour and decision-making processes inconsistent with rational expectations models.[7] According to Sandroni (2005), there are two causes for the documented anomalies: agents suffer from cognitive biases when forming beliefs (do not process information according to Bayes' rule) or do not have sufficient information to hold correct beliefs.

Although finance is considered to be a social science that acknowledges the existence of mental models of choice, the academic study of finance involves little or no examination of individual decision-making (Olsen, 1998). One of the reasons is that finance and economics are primarily concerned with prediction rather than description or explanation (Olsen, 1998). In response to the difficulties faced by the traditional paradigm, behavioural finance

[5] Bayes's theorem is a simple mathematical formula used for calculating conditional probabilities that figures prominently in subjectivist or Bayesian approaches. Subjectivists, who maintain that rational belief is governed by the laws of probability, lean heavily on conditional probabilities in their theories of evidence and their models of empirical learning. Bayes's theorem is used to calculate the formally optimal rule about how opinions, meaning probabilities, should be revised based on new information (Edwards, 1982). According to this approach, these probabilities are just numbers between zero and one that represent the extent to which a somewhat idealized person believes a statement to be true.

[6] Several studies suggest that agents do not update their beliefs correctly since people seem to be influenced by "irrelevant alternatives". For more details, see Hirshleifer (2001).

[7] See Daniel et al. (1998), Shleifer (2000) and Barberis and Thaler (2003) for a literature review of financial anomalies.

has recently emerged in an attempt to understand financial markets. In contrast to traditional finance, behavioural finance states that some financial phenomena can be better understood using models that consider some agents as not being fully rational.

### *2.3.1.2. Behavioural finance*

Behavioural finance relaxes the assumption that agents form beliefs according to the laws of probability and assumes that simpler heuristic rules are used (Sandroni, 2005). This new approach seeks to incorporate the implications of psychological decision processes in the decision-making process (Olsen, 1998). Behavioural finance draws on an extensive experimental literature on judgment under uncertainty that suggests that people do not behave consistently with the rules of probability and statistics (Griffin and Tversky, 2002). Given that time and cognitive resources are limited, natural selection has designed minds that implement *rules-of-thumb*[8] selectively to a subset of cues (Hirshleifer, 2001). Olsen (1998) presents two reasons for the current interest in behavioural finance: the empirical evidence that alternative financial theories seem to be deficient in fundamental ways, and the development of prospect theory.

There are several papers documenting empirical inconsistencies with the traditional finance paradigm.[9] These inconsistencies constituted the starting point for the development of the behavioural finance theory, which is seen as an emerging alternative to traditional finance. Behavioural finance is constituted by two building blocks: psychology and the limits to arbitrage (Barberis and Thaler, 2003).[10]

Given the experimental work showing that people systematically violate SEU theory when choosing among risky gambles (Barberis and Thaler, 2003), several non-SEU theories have been developed in the last few decades.[11] One of the best-known non-SEU theories is prospect theory. Kahneman and Tversky (1979) introduced prospect theory as a critique of expected utility theory. According to SEU theory, utility derives solely from the probability distribution of payoffs resulting from a choice, ignoring people's regret aversion (Hirshleifer, 2001). Kahneman and Tversky (1979) contend that choices made among risky prospects are inconsistent with the basic tenets of the SEU theory. This alternative approach is based on more realistic behavioural assumptions to explain how people deal

[8] The literature defines rules-of-thumb as "algorithms", "heuristics", or "mental models".

[9] For a first approach see the article compilations in Thaler (1993) and Thaler (2005).

[10] For an introduction, see Barberis and Thaler (2003).

[11] Barberis and Thaler (2003) present a list of the better known models based on non-SEU theories.

with loss in making choices in the face of risk and uncertainty, namely capturing the documented risk aversion.[12]

## 2.2. Analyst behaviour

Security analysts play a central role in financial markets. There are several reasons justifying academic research related to analysts'[13] work and their behaviour in financial markets. Additionally, there is empirical evidence showing that market prices move in the direction of analysts' recommendations and earnings estimates (e.g., Stickel, 1991; Womack, 1996; Ho and Harris, 1998; Park and Stice, 2000; Barber et al., 2001; Barber et al., 2003; Ryan and Taffler, 2004). Considering that security analysts are sophisticated agents, can we expect rationality in analysts' behaviour? This section discusses several biases that are inconsistent with rational behaviour and concludes with an overview of several empirical papers that document the biased behaviour of security analysts.

### 2.2.1. Analysts' role in the market

Thousands of analysts follow a large population of companies and produce regular reports evaluating firms' securities. Usually, each analyst follows ten to twenty stocks in a given industry or economic sector, which makes them industry specialists (Schipper, 1991). Analysts are considered sophisticated agents given their importance as intermediaries between firms and investors. These sophisticated agents collect, process and disseminate information to current and prospective investors. Their privileged access to information may lead us to believe that the stocks they recommend will experience superior performance.[14]

One important responsibility of analysts identified in the literature relates to their role in improving market efficiency by providing investors with the information necessary to make informed decisions (Moyer at al., 1989). Market prices do move in the direction of analysts'

[12] According to the proponents of prospect theory, individuals maximize a weighted sum of "values" (analogous to utilities) where the weights are not based on true probabilities, but in functions of probabilities (Hirshleifer, 2001). Another difference is that extremely low probabilities are treated as impossibilities, and extremely high probabilities as certainties. However, very (but not extremely) low probabilities are overestimated, and very (but not extremely) high probabilities are overestimated. For the intermediate probabilities, the weighting function increases with a slope less than one.

[13] There are two different categories of analysts: "sell-side analysts" and "buy-side analysts". Sell-side analysts are security analysts employed by banks and brokerage firms, who release information to markets. "Buy-side analysts" are employed by institutional investment firms. Although both analyst categories make recommendations, sell-side analysts are the primary producers of earnings forecasts (Schipper, 1999).

[14] Beckers et al. (2004) mention that individual and institutional investors use analysts' reports when they make portfolio selections or revision decisions. Additionally, they also state that analysts' earnings forecasts are used in equity valuation models.

recommendations, but prices do not always adjust immediately. In certain cases, there is a drift that persists for several weeks or months (e.g., Womack, 1996) raising doubts about how efficient the market is at incorporating the value of changed stock recommendations. Security analyst power in influencing investors' decisions and stock prices raise one of the most fundamental questions in finance: can analysts intentionally manipulate stock prices, even temporarily, from their equilibrium values? (Michaely and Womack, 2005).

The finance literature also suggests that analyst-monitoring activity is an important control element that helps to reduce agency costs associated with the separation of ownership and management (e.g., Jensen and Meckling, 1976; Doukas et al., 2000). By following firms, analysts contribute to the disciplining of corporate managers (Chung and Jo, 1996) since managers' decisions will be closely monitored and publicized. Consequently, they are less likely to pursue activities that benefit themselves at the expense of shareholders. This situation gives an important social purpose to analysts' work, which highlights the importance of analysts' provision of objective and accurate information to the market and shareholders (Cote and Goodstein, 1999).

Analysts' earnings forecasts are also used as a proxy for market earnings expectations. This method is used as an alternative to statistical models based on previous realizations of earnings since it is more accurate than mechanical models (Schipper, 1991). The literature, in fact, advocates a stronger association between market response to earnings and forecast errors based on analysts' forecasts than those generated by mechanical models. This is not surprising since analysts have direct access to such statistical models and they are able to use more information to project future earnings. [15]

De Bondt and Thaler (1990) set out three reasons justifying the interest in this particular group of market agents. Firstly, research suggests that earnings forecasts and forecasts revisions influence stock prices. Secondly, research advocates that analysts are rather good at what they do since their forecasts often outperform time-series models (e.g., Conroy and Harris, 1987). Thirdly, the precision of analyst expectations represents a natural upper boundary to the quality of the earnings forecasts of less sophisticated agents, since most investors cannot produce their own predictions.

[15] Hirshleifer (2001) argues that it is expected that rational agents provide at least positive incremental value in their forecasting activity.

### 2.2.2. Importance of analysts' opinions to the market

A vast amount of literature suggests that analysts' information releases influence stock prices. In fact, analysts' outputs, such as earnings estimates and changes in recommendations, influence the evaluation of security prices (e.g., Stickel, 1991; Womack, 1996; Ho and Harris, 1998; Park and Stice, 2000; Barber et al., 2001; Barber et al., 2003; Ryan and Taffler, 2004). Empirical research finds that, on average, the markets react favourably to positive changes in recommendations and have a negative reaction to a drop in recommendations.

For instance, Stickel (1991) finds that earnings revisions affect prices, and that their impact is greater when the percentage forecast change is in the top or bottom five percent of the distribution of all forecast revisions. Using a large database of individual analyst forecasts, he also notices that prices do not immediately assimilate such information since they continue to drift in the direction of the revision for about six months. In fact, when Stickel (1991) developed a trading strategy that predicted price reactions based on incomplete incorporation of such publicly available information, he found 6-month average abnormal returns of 8.22 percent and -5.44 percent respectively for his predicted best and worst performance portfolios.

In a subsequent paper, Stickel (1992) claims a positive relation between analysts' reputations and price impact of an earnings forecast revision announcement. Using a different measure of analysts' reputations based on analysts' forecast accuracy compared to a consensus forecast, Park and Stice (2000) conclude that market participants recognize differential analysts' forecast ability. Forecast revisions by superior analysts have a greater impact on security prices than revisions by inferior analysts.

In one of the most frequently cited papers in this area, Womack (1996) finds strong evidence that stock prices are significantly influenced by analysts' recommendation changes. Using US data, he finds significant initial price and volume reaction in the three-day event period around the recommendation change. However, in the case of new buy recommendations, most price impact occurs around the announcement date, while the new sell recommendations have a longer impact.[16] In a parallel UK-based study, Ryan and Taffler (2004) also find that the impact of new sell recommendations is greater than that of new buy recommendations, particularly in the case of small firms. The authors argue that

[16] The post-recommendation drift associated with buy recommendations is significant and short lived (+2.4 percent for the first post-event month), but the post-recommendation drift associated with sell recommendations is larger and longer (-9.1 percent for the first six-month post-event period).

this situation can be explained by the potential cost of disseminating new sell recommendations since such changes are less frequent, and consequently are more costly to analysts' reputations.

## 2.2.3. Analysts' forecasts bias explanations

Despite the studies included in the above section clearly pointing to the relevance of analysts' opinions to the market, several papers present evidence of analysts' biased behaviour. The presence of these biases is consistent with analysts' non-rational behaviour according to Easterwood and Nutt's (1999) definition of analyst rational behaviour. One of the strongest common denominators in these studies is the analysts' optimism. However, Kothari (2001) states that estimates of analysts' optimism vary across studies, in part because of the differences in research design, variable definitions, and periods examined. Additionally, Kothari (2001) presents three hypotheses for such decline in analyst optimism: 1) analysts are learning from the evidence of past bias; 2) analysts' incentives have changed, and 3) the quality of data used in the research examining analysts' forecast properties has improved. There are several reasons for analysts' non-rational behaviour. Kothari (2001) identifies two main explanations for this non-rational behaviour: behavioural cognitive-bias explanations and economic incentives-based explanations. The next sections reflect this distinction, analysing the major papers regarding these two explanations.

### *2.2.3.1. Analyst cognitive-bias explanation*

Cognitive biases that describe analysts' judgement are drawn from the psychological literature that presents evidence of non-rational behaviour in several circumstances. Although some of these psychological effects have potential relevance to security markets, economists have traditionally been sceptical in accepting the relation between psychological effects and markets. The main argument to criticise this approach is that errors are independent across individuals and that they cancel out in equilibrium (Hirshleifer, 2001). However, the experimental psychology literature presents a vast number of studies documenting systematic biases in human behaviour.[17] In a comprehensive survey about investor psychology and asset pricing, Hirshleifer (2001) argues that heuristic simplification, self-deception, and emotional loss of control provide a unified explanation for most known judgment and decision biases. In finance, these

[17] See Gilovich et al. (2002) for a comprehensive review.

cognitive biases are used to explore how people form beliefs and preferences, and how they make decisions (Barberis and Thaler, 2003).

One interesting question that can be extracted from the first hypothesis defined by Kothari (2001) for the decline in analyst optimism is the reason why security analysts in particular, and people in general, do not learn their way out of biased judgment. According to Hirshleifer (2001), they do it to a certain extent, which is consistent with Kothari's first hypotheses above. However, Hirshleifer (2001) presents two barriers that make impracticable the extinction of such biases: the hardness of the learning process and the self-deception bias. This last barrier, which is a tendency to adjust attitudes to match past actions, is a mechanism designed to persuade the individual that he or she is a skilful decision maker. The next three sections discuss some of the main heuristics presented in finance that are able to influence analysts' behaviour.

#### *2.2.3.1.1. Overoptimism and overconfidence*

The tendency to be overoptimistic is one of the best documented psychological errors. Montier (2002) states that such overoptimism results from a number of psychological biases, such as illusion of control and self-attribution. The first bias means that people feel themselves to be far more in control of a situation than they often actually are. The illusion of control, which has a positive correlation with the increase of information, manifests itself when people believe that they have influence over the outcome of uncontrollable events. This illusion of control, which influences the belief that a person can favourably influence unrelated chance events, is defined by Hirshleifer (2001) as a type of *"magical thinking"* given the belief in relations between causally unrelated actions or events.

The self-attribution bias means that people attribute favourable outcomes to skill while bad outcomes are attributed to bad luck, or else they blame external factors for failure (e.g., Fischhoff, 1982; Langer and Roth, 1975; Miller and Ross, 1975 or Taylor and Brown, 1988). The empirical psychology literature reports that as individuals observe the outcomes of their actions, they update their confidence in their own ability in a biased manner, leading to overconfidence (Daniel et al., 1998). This bias contrasts with the economists' view that people learn from past mistakes.

Overconfidence has been documented in several contexts, including those of psychologists, engineers, entrepreneurs, managers, investment bankers, security analysts and others (Daniel et al., 1998). Daniel et al., (1998) and Odean (1998) mention several studies that model overconfidence in these heterogeneous contexts. A particularly interesting

contribution in this domain is that of Odean (1998). In this paper, the author summarizes previous research on overconfidence. Odean (1998) identifies some papers that present evidence consistent with overreaction: people tend to be overconfident in answering questions of moderate to extreme difficulty; people overestimate their ability to do well on tasks; people are unrealistically optimistic about future events; people expect good things to happen to them more often than to their peers; individuals see themselves as being better than the average person, and most individuals see themselves as being better than others see them, and people overestimate their own contributions to past positive outcomes. On the other hand, Griffin and Tversky (1992) suggest that experts tend to be more confident than relatively inexperienced individuals; something that applies to security analysts since they are seen as sophisticated agents in the market (Schipper, 1991).

#### *2.2.3.1.2. Overreaction and underreaction*

In a book of reference, Shleifer (2000) clarifies what under and overreaction means. According to his definition, underreaction to news announcements "*occurs when the average return of the company's stock in the period following an announcement of good news is higher than the average return in the period following bad news"*. Analogous to this, he defines overreaction as occurring when *"the average return following not one but a series of announcements of good news is lower than the average return following a series of bad news announcements"*. This means that after a series of announcements of good news, the agent becomes overly optimistic that future news announcements will also be good and hence overreacts.

Behavioural finance relies on a vast body of literature documenting patterns of returns that cannot be understood in the context of classical pricing theory to criticize the efficient market hypothesis. One of the main critiques to this alternative framework is that some aspects of the anomalous returns patterns documented in the behavioural literature seem contradictory. A clear example of this situation is the apparent market underreaction and overreaction in different contexts (Daniel et al., 1998). In fact, behavioural opponents ask for an integrated theory to explain these phenomena in addition to explanations offered for particular anomalies.[18]

[18] Fama (1998) criticizes this result from the behavioural finance approach. In his view, the overreaction and underreaction phenomena cancel each other out and thus the market should, on average, converge to its fundamental value. He also argues that behavioural finance is unable to provide a proper framework to explain when over and underreaction should be expected.

Daniel et al. (1998) present one of the theories developed to fill this gap based on investor overconfidence about the precision of private information and variations in confidence arising from biased self-attribution. According to their theory, the difference between stock price overreaction and underreaction is the type of the information: stock prices overreact to private information and underreact to public signals. Their theory is based on experimental studies which find that individuals underestimate their error variance in making predictions, and overweight their own forecasts relative to those of others. This differentiation between over and underreaction has implications not only for investors, but also for security analysts since both generate information for trading such as interviewing management, verifying rumors, and analysing financial statements. In overestimating his ability to generate information, an investor or analyst will underestimate his forecast errors leading to overconfidence about his private information, but not to public signals received by all (Daniel et al., 1998). The theory presented by Daniel et al. (1998) to explain the over or underreaction assumes that, when the investor receives confirming public information, his confidence rises, but disconfirming information causes confidence to fall only moderately.

Another important theory explaining the over and underreaction phenomenon states that overreaction is related to good news and underreaction is related to bad news. These two connections are consistent with systematic optimism in response to information. Amir and Ganzach (1998), Easterwood and Nutt (1999) and Nutt et al. (1999) explore this phenomenon in an analyst context and find an explanation for the disparate conclusions presented by de Bondt and Thaler (1990) and Abarbanel and Bernard (1992)[19]. These three papers contend that security analysts tend to overreact when they are disseminating good news, but they tend to underreact in the presence of bad news.

#### *2.2.3.1.3. Representativeness*

Psychologists Daniel Kahneman and Amos Tversky introduced the representativeness heuristic in the literature.[20] They state that intuitive judgment is often the only practical method for assessing uncertainty, because people do not normally have formal models for computing the probabilities of events. More specifically, their research finds that peoples'

[19] By analysing the relation between actual and predicted changes in earnings, de Bondt and Thaler (1990) and Abarbanell and Bernard (1992) find contrasting conclusions. De Bondt and Thaler (1990) argue that analysts systematically overreact to the release of information, but Abarbanell and Bernard (1992) conclude that overreaction to earnings cannot be found among analysts.

[20] Gilovich and Kahneman (2002) have compiled several papers about this heuristic.

intuitive forecasts have a tendency to overweigh salient information in recent news, and underweigh less salient data such as long-term averages.

Tversky and Kahneman (1982) suggest that representativeness leads to the judgement of the probability of an event estimating probabilities by assessing similarity or cognitive distance. Other possible outcomes of representativeness presented by these authors is the estimation of probabilities by assessing availability, or associative distance. This means that items that are easier to recall are judged to be more common, which makes sense if we think that things that are more common are noticed or reported more often, making them easier to remember (Hirschleifer, 2001). In a recent work, Hirschleifer (2001) states that this heuristic *"involves assessing the probability of a state of the world based on the degree to which the evidence is perceived as similar to or typical of the state of the world"*. The perception of how representative a piece of evidence is of a state of the world may match its conditional probability poorly, and thus, lead to suboptimal decisions.

Representativeness is one of the most important principles affecting financial decisions. It is defined as the tendency to judge the probability of an event by finding a comparable known event and assuming that the probabilities will be similar.[21] De Bondt (1992) also suggests that security analysts display representativeness behaviour. He finds that analysts tend to be biased in the direction of recent success when they release long-term earnings forecasts since they are much more optimistic about recent winners than recent losers. Amir and Ganzach (1998) argue that representativeness, as with optimism and anchoring, influences analysts' forecasts and that this heuristic leads to extreme predictions or overreaction.

### *2.2.3.2. Economic incentives-based explanations*

Economic incentives represent a major explanation for analysts' optimism. According to Easterwood and Nutt (1999), the economic incentives can broadly be divided into two characteristics: the direct incentive to promote the purchase of stocks, and the indirect incentive of access to the top executives.

Cote and Goodstein (1999) argue that observers of the securities industry writing in the popular press, practitioner journals and academic journals have raised concerns related to

[21] De Bondt et al. (1985) and de Bondt and Thaler (1987) present evidence of representativeness in finance, namely the winner-loser effect. De Bondt et al. (1985) build a simple investment strategy based on cognitive psychology's work on intuitive prediction. Even considering that their prior winner stocks portfolio is significantly riskier than their prior loser stocks portfolio, losing stocks earn about 25 percent more than winning stocks over the subsequent three years.

the pressure that some security analysts face to release positive recommendations. This pressure is related to analysts who work for firms that also have an investment banking function. In fact, analysts' compensation from their corporate finance arm in investment banking firms is one of the main explanations in the literature for analysts' optimistic behaviour. Analysts' working environments and their incentives can lead to several distortions. According to Michaely and Womack (2005), investment banks traditionally have three income sources that may potentially create conflicts of interest within the bank and with its clients: 1) corporate financing, the issue of securities and merger advisory services; 2) brokerage services and 3) proprietary trading. Some of the main potential conflicts are between the two first sources. The first is responsible primarily for completing transactions for new and current clients, and the second for maximizing commissions and spreads by providing timely, high quality and presumably unbiased information to their clients.

Many security analysts who work for full-service brokerage firms are partly compensated based on the brokerage commissions they generate (Konrad and Greising, 1989). Therefore, this compensation works as an incentive to release favourable recommendations instead of unfavourable ones. As Espahbodi et al. (2001) argue, by issuing an optimistic forecast for a company, the firm's brokers can call investors to buy that company's stock and thus receive brokerage commissions. By issuing pessimistic forecasts, the commissions generated are lower for the firm due to restrictions on short sales and the limited availability and greater risk for options. In this context, Carleton et al. (1998) argue that brokerage firms tend to be significantly more optimistic in predicting future investment performance than non-brokerage houses. In fact, brokerage houses and investment banks employ most of the analysts.

Analysts' need to maintain good relations with the management of the firms they follow is pointed to as another incentive to optimism. Lim (2001) and Das et al. (1998) argue that analysts' optimism can be explained by their need to gain increased access to information from management. In fact, analysts depend on corporate management for accurate and timely information about the companies they follow. Companies use this dependency as a weapon against analysts who issue negative opinions on their stock (Espahbodi et al., 2001). On the other hand, optimism seems to be more pronounced for companies that have more uncertain information environments and for analysts who are more dependent on management access as a source of company information (Lim, 2001).

By issuing negative recommendations, analysts are not only potentially reducing their access to the firm but also reducing the possibility of their investment banking firm doing

business with that firm in the future. Dugar and Nathan (1995) state that earnings forecasts made by analysts working for brokerage firms that have an investment banking relationship with a company are significantly more optimistic than those made by other analysts working for firms without this relation. Since analysts' reputations are also important in their financial compensation, and since this depends on the quality of their recommendations, analysts have to strike a balance between their helpfulness to corporate finance professionals and their external reputation.

### *2.2.3.3. Other explanations*

The finance literature advocates that analysts tend to compare themselves with one another, exhibiting herding behaviour.[22] Generally, herding behaviour can be defined as individuals using a consensus opinion to modify their private beliefs (Cote and Sanders, 1997). In the earnings estimation context, herding refers to the tendency of forecasters to *"shade"* or move their published earnings forecasts toward those of their colleagues (Olsen, 1996). Beckers et al. (2004) present a review of the academic research findings related to herding behaviour among security analysts:

1. The tendency to herd the consensus increases with the number of estimates close to the consensus and with the inaccuracy of one's own past estimates (Stickel, 1990; Graham, 1999);
2. Older analysts are more likely to produce forecasts that deviate from the consensus, and conversely, younger analysts are typically less bold than their older counterparts (Hong et al., 2000);
3. The tendency to herd has no relationship to the accuracy of the consensus forecast (Welch, 2000);
4. Herding increases with earnings unpredictability (Olsen, 1996).

Shiller (1995) suggests that herding can be observed in several contexts, but it is more exposed when the decision-making is complex and limited by time, information and ability. Cote and Sanders (1997) argue that forecasters display those characteristics when producing corporate earnings forecasts. If these forecasts are affected by herding, estimates can become biased and can lead to suboptimal investment decisions. In

[22] See e.g., Trueman (1994) and Olsen (1996).

particular, herding can also create inaccuracy in published earnings estimates (Olsen, 1996).

In fact, one of most frequently mentioned scenarios for herding behaviour is the purchase recommendations for individual stocks by security analysts (Welch, 2000). Trueman (1994) and Olsen (1996) argue that the tendency to comparison can lead to risk aversion, and that such risk averse behaviour causes herding. One possible explanation for this situation is that analysts' compensation may be determined by comparison with other analysts' forecasts, rather than accuracy. Olsen (1996) justifies this possibility by the difficulty in measuring the quality of earnings estimates given the large random component in earnings.

## 2.3. The going-concern assumption

Financial statements are the privileged information vehicle between companies and their stakeholders. A non-standard audit report regarding the financial statements is not desirable and, in particular, a going-concern modified audit firm report is perceived by the market as a clear signal of bad news. If the auditor develops serious doubts about the continuity of the entity being audited in the foreseeable future, the going-concern assumption comes under question and his or her audit report suffers a GCM.[23]

### 2.3.1. Historical background[24]

SAP No.15, issued in 1942, represents the AICPA's first formal effort to consider the effects of uncertainties on the audit report (Bell and Wright, 1995). That statement suggests that the cumulative effect of uncertainties may be so great as to create a situation either in which an auditor's report might require an exception, or in which it might not be possible to render an opinion. After that, the Securities and Exchange Commission's Accounting Series Release (ASR) No. 90 (1962), and the AICPA's SAP No.33 (1963) required that the phrase *"subject to"* be used to introduce a qualification of opinion when the financial statements were materially affected by uncertainties. The need for going-concern disclosure was first recognized in SAS No. 2 (AICPA 1974), since the Auditing Standards Executive Committee concluded that uncertainty about the ability of an entity to continue should be reported in the same manner as any other uncertainty. Since then, SAS No. 34

[23] The going-concern assumption is one of the most important in accounting, indicating that the accounts are drawn up on the basis that the business will continue in existence for the foreseeable future.

[24] This section benefits from the contents of the CPA's journal site. For further details, see http://www.nysscpa.org/cpajournal.

(AICPA 1981) and SAS No. 59 (AICPA 1988) have provided guidelines for the independent auditor's evaluation and disclosure of going-concern problems.

SAS No. 34 entitled *"The Auditor's Consideration When a Question Arises about an Entity's Continued Existence"* accepts the premise that audit reports should be modified for going-concern uncertainties and provides operational guidance to auditors on assessing a client's likely continued existence. This statement states that while an audit does not include a search for evidential matter relating to an entity's continued existence, when an auditor becomes aware of information contrary to its continued existence, modification of the audit report might become necessary. Under SAS No. 34, the auditor had a passive responsibility in assessing an entity's continued existence. That is, the auditor was required to assess the firm's going-concern status only when contrary information was discovered during the audit of the financial statements.

Through its long history, the requirement to disclose going-concern uncertainties has been controversial (Jones, 1996). For instance, in 1982, the AICPA proposed to eliminate this requirement, but public opposition led this proposal to fail. In fact, there were complaints about situations in which firms had gone bankrupt without any warning about going-concern problems in the independent audit report. Despite the public support, the AICPA opposes the requirement of disclosure with the argument that the auditor's evaluation of uncertainties is not superior to evaluations which statement users can make. However, the auditors' opinion may provide useful information given their intimate knowledge of the client's activities and future plans (Mutchler, 1985).

In response to this public concern, AICPA issued the expectation gap standards, including SAS No. 59. Statement on Auditing Standards, *"The Auditor's Consideration of an Entity's Ability to Continue as a Going Concern"*. This statement requires auditors to evaluate whether substantial doubt exists about an audit client's ability to continue as a going-concern for a reasonable period. Generally, this period does not exceed one year beyond the date of the financial statements being audited. SAS No. 59 increased auditors' responsibilities since it requires an explicit evaluation of a company's continued viability in every audit. The first stage in making this going-concern evaluation requires the consideration of whether the results of the audit procedures performed related to the various audit objectives identify existing conditions and events that indicate substantial doubt about the client's ability to continue as a going-concern. Those conditions and events are divided into four categories: 1) negative trends, 2) other indications of possible financial difficulties, 3) internal matters, and 4) external matters.

When, after considering conditions and events in the aggregate, the auditors believe that substantial doubt may exist, they should consider management's plans for dealing with the effects of those conditions and events. If, after considering the conditions and events and management's plans, the auditors conclude that substantial doubt remains, the audit report should include an explanatory paragraph to reflect this uncertainty. Alternatively, the auditors may choose to issue a disclaimer of opinion upon the financial statements.

## 2.3.2. The informational content of the GCM for the market place

Employing the capital-market paradigm, several studies test whether going-concern reports have information value for the market. Asare (1990) sees the particular importance of going-concern audit reports in two ways: the option of this opinion allows the auditor to force disclosures that might not otherwise be forthcoming, and the superior information access auditors have that is restricted for financial statement users.

### *2.3.2.1. No information content*

Some studies question the audit qualifications and going-concern reports' informational content to markets. Considering the case of audit qualifications in general, Ball et al. (1979) conclude that for the sample as a whole, there is an insignificant difference between the returns of qualified shares and the market. After dividing the sample in sub-groups considering the type of audit qualification, they find that only one sub-group presents statistically significant abnormal returns. Contrary to their expectations, their results suggest that audit qualifications, considered as a single group, are not associated with a significant reduction in share prices. Davis (1982), who analyses the informational value of *"subject to"* opinions to market, presents similar results. In fact, he does not find informational value in the *"subject to"* group since there is no significant difference in the average impact in the stock prices compared with the control group that received unqualified opinions. However, he speculates that the lack of investor response may be due to the information impounded by other non-accounting sources of information prior to the release of the annual report.

Elliott (1982) also fails to find a strong pattern of negative returns after the public announcement of the uncertainty, although some *"subject to"* opinions are associated with abnormal returns before the announcement. In addition, Dodd et al. (1984) analyse the association between stock price reaction and audit qualification announcements and conclude that there is little evidence of stock price effects after qualifications. However,

they find that the market anticipates such qualifications, because negative abnormal returns associated with firms suffering these occur from three to six months prior to the qualification announcement. For instance, in the case of the going-concerns, Dodd et al. (1984) find significant abnormal returns during the period of three to six months before the report. On the other hand, prior abnormal return magnitude depends on the type of qualification.

#### *2.3.2.2. Information content*

Despite the exceptions considered in the previous section, most of the studies addressing the informational content of qualified audit opinions, and specifically going-concern reports, show that those events have information content to users. One of the initial studies about the relation between audit reports and market reaction is that of Firth (1978). This study presents evidence that some types of audit qualification have a significant impact on market prices. In fact, investors react differently depending on the audit qualification type. Regarding going-concern reports, he finds significant negative price adjustments, which means that these reports contain significant information that investors use in their investment decisions. Chow and Rice (1982) extend Firth's (1978) study controlling for the effects of earnings reports, firm size, auditor, industry and systematic risk. They compare the average three-month return using a market model with an industry factor to calculate firm-specific stock returns. Their results suggest that firms having an unqualified opinion present higher returns around the announcement period than those that had qualified opinions.

Banks and Kinney (1982) reinforce the notion that uncertainty qualifications are associated with declines in stock prices. Frost (1991) replicates and extends Banks and Kinney's study by examining the influence of several factors on the auditor's decision using a larger sample and with a different period. She finds that Banks and Kinney's (1982) results are robust to changes in the economic climate and the auditing environment. Dopuch et al. (1986) claim that media disclosures of qualified opinions are associated with significant negative stock price effects and the magnitude of the abnormal returns does not depend on whether or not the firm received a similar qualification in the previous year. Fields and Wilkins (1991) also find evidence consistent with the importance of going-concern opinions, particularly for the going-concern withdrawn case. In fact, the results show that there is a significant increase in returns around public announcements of going-concern withdrawals.

More recently, Chen and Church (1996) and Holder-Webb and Wilkins (2000) find that bankrupt firms that previously received going-concern opinions experience lower negative excess returns in the period surrounding bankruptcy filings compared with others without the GCM. Chen and Church (1996) demonstrate that going-concern opinions reduce the surprise associated with bankruptcy even controlling for the probability of bankruptcy, the market's reaction to news announcements prior to bankruptcy and changes in stock price prior to the issuance of the audit report. Holder-Webb and Wilkins (2000) find similar results by controlling for the predictability of bankruptcy filing, the macroeconomic environment, and firm-specific levels of financial distress. Together, these results posit that going-concern opinions have information value.

## 2.4. Discussion of the problem and delimitation of boundaries

The previous sections identify some of the main discussions in the two areas of the literature that I want to connect: analyst behaviour and going-concern opinions. The going-concern assumption is one of the most important assumptions in accounting. The GCM paragraph is added to the audit report every time auditors develop serious doubts during the audit process about the ability of the firm to continue in the foreseeable future. On the other hand, the literature shows that the GCM produces strong negative market reaction around the event. For these reasons, a going-concern opinion represents an extreme case of bad news, and therefore security analysts should not be indifferent to it.

Security analysts, as sophisticated agents in the market, should increase the volume of relevant information available in order to help investors in their investment decisions. Considering the analysts' role in the market and the market impact of their outputs,[25] it is reasonable to expect rational behaviour from analysts in the dissemination of information. As one relevant source of information to the markets, the analysis of going-concern opinions should also reflect this rational behaviour. However, there is evidence that analysts are not always rational in their judgements in several situations. Considering the price reaction to analysts' opinions and going-concern reports, it is clear that these two issues have explanatory power regarding the market movements. However, it seems that these two areas of the literature do not *"talk"* to each other. In fact, considering the non-systematic reading of the main papers in these two areas, it was not possible to find a study covering this issue.

Schipper (1991) argues that it is important to study decision strategies in extreme cases since research suggests that optimism seems to be most pronounced in forecasts preceded

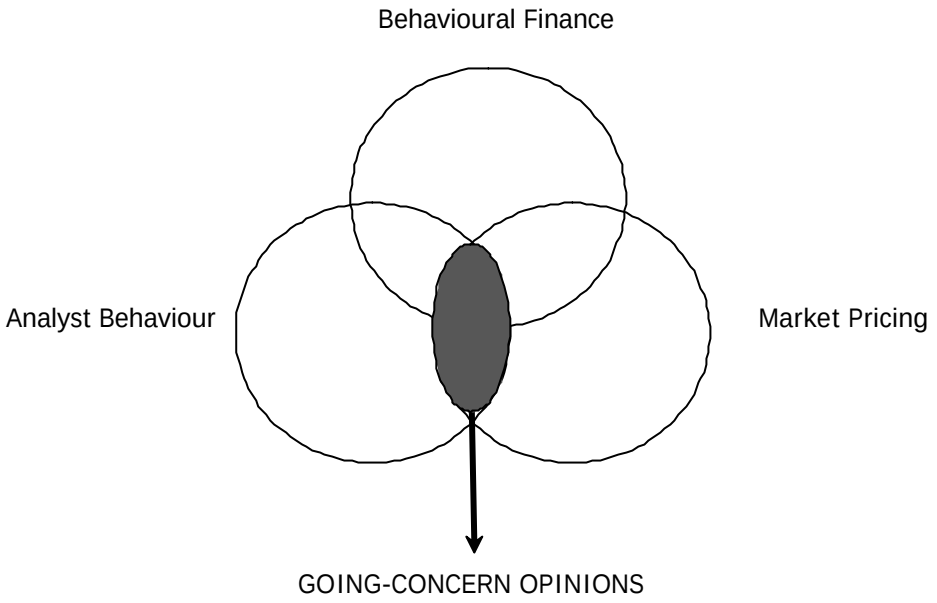
[25] For more details, see sections 2.2.1 and 2.2.2.

by share price declines or earnings declines. This thought seems to justify by itself the importance of the connection between these two areas. In fact, the analysis of the key literature suggests that going-concern opinions are undoubtedly an extreme event preceded and followed by strong negative market reaction. However, at this moment this is not the only argument justifying this idea, and there seem to be other reasons justifying this connection. For instance, there is evidence that analysts tend to underreact in the presence of bad news and overreact in the presence of good news (e.g., Amir and Ganzach, 1998; Easterwood and Nutt, 1999). Therefore, since the GCM and GCM withdrawals constitute two clear cases of bad and good news respectively, it is possible to extend previous research by analysing whether analysts react asymmetrically to this information. Finally, since analysts are considered sophisticated agents with privileged information, it seems to be interesting to explore whether analysts have anticipation power regarding this event. Specifically, research on this domain can clarify whether analysts anticipate and how they respond to the going-concern event.

Together, these arguments seem to justify conducting a systematic review of the literature to evaluate the viability of the connection between analyst behaviour and going-concern opinions. Such a systematic review of the literature will allow a deeper understanding of the field and the identification of a research gap justifying further research in a doctoral study. However, the systematic review should be focused within a refined scope in order to produce useful results. Figure 2.1. establishes the boundaries of the systematic review.

In addition to the area of analyst behaviour, the analysis of the key literature points to two other main areas that can offer important contributions to the understanding of the phenomenon: behavioural finance and market pricing. The growth of the behavioural finance area and the contributions offered in the understanding of some market phenomena seem to justify its inclusion in the analysis. In fact, there is evidence supporting the importance of psychological decision processes in the decision-making process. Consequently, behavioural finance can make an important contribution to explain analyst behaviour in this context. On the other hand, the price reaction to analysts' opinions and going-concern reports implies that the analysis should not ignore the market pricing area. Therefore, market pricing can give a new insight to the discussion.

***Figure 2.1.: Mapping the field***




In sum, the systematic review will look at three different areas in the accounting and finance literature that can be used to analyse the going-concern opinion phenomenon from an analyst perspective: analyst behaviour, behavioural finance and market pricing.

The key literature reviewed in this chapter constitutes the basis for the systematic review. In fact, this scoping study was crucial for a general understanding of the areas that I want to research as well as the definition of the boundaries of my project. The scoping study allowed me to find the key theories, concepts and ideas related to my project. Chapter 2 provided the first step for the development of the systematic review process. The next chapter describes the methodology used to find the papers covering my refined scope.

# CHAPTER 3 - METHODOLOGY

Drawing on the review protocol that I wrote for my MRes paper, this section presents the methodology developed to implement a systematic review of my topic. There are minor changes to the review protocol that are justified to promote the improvement of the search strategy. This literature review is anchored in the systematic review approach that is briefly described in Tranfield et al. (2003). The systematic review process, which is conducted to avoid the weaknesses of the traditional *"narrative"* reviews, allows researchers to use an explicit method to identify, select and review the relevant studies related to the research topic. By doing that, researchers guarantee transparency in the review process.[26]

## 3.1. The rationale of systematic literature review

There is general agreement in the academic world that the literature review is crucial in the research process. The review process allows researchers to understand the research topic, namely what has already been done, how it has been researched, and what the key issues are. There are some aspects that should be considered during the literature review process.[27] More than simply transcribe what other scholars are saying about the topic, reviewers must demonstrate integration, communication skills and open-mindedness. This means that reviewers must be able to connect ideas, theories and experiences and communicate their findings to others with clarity, consistency and coherence.

One of the most important concerns in research is that its output can present something new to knowledge in the field. For the achievement of this purpose, it is essential that researchers have a perfect understanding of previous work, which can be achieved with a good literature review. The quality of this review varies considerably, depending on several factors. Hart (1998) defines quality as *"appropriate breadth and depth, rigour and consistency, clarity and brevity, and effective analysis and synthesis; in other words, the use of the ideas in the literature to justify the particular approach to the topic, the selection of methods, and demonstrating that this research contributes something new."*

Despite the need for quality reviews, Hart (1998) states that value judgements, opinions, moralizing and ideologues often influence the perspective that reviewers adopt, contributing to the bias presented in some literature reviews. Therefore, the richness of the

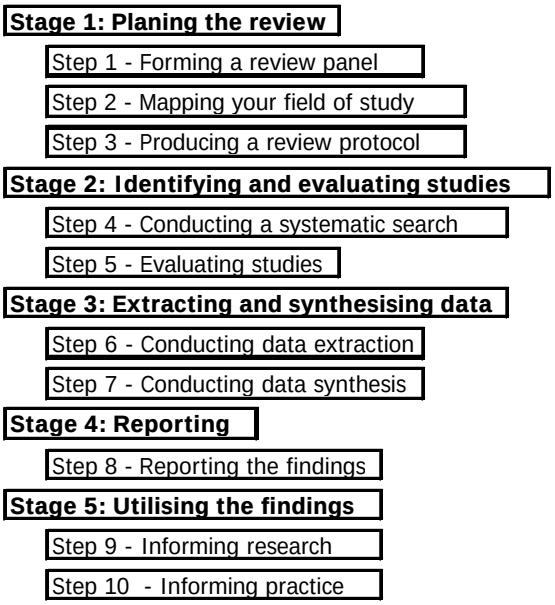
[26] Tranfield et al. (2003) present a critique to traditional "narrative" reviews, highlighting that this approach can lead researchers to be biased and suffer from lack of rigour.

[27] Hart (1998) presents a good summary of these aspects.

literature review depends on the ability of reviewers to capture elements from different theories to form a new synthesis or to provide a new insight.

Despite the importance of a good literature review, there is no agreement concerning the best methodology to manage this process. There are different methods that can be used to produce a review, but there is no such thing as the perfect review (Hart, 1998). However, there are processes that can help to avoid, or at least significantly reduce personal bias, and guarantee methodological rigour in the literature review. One of those processes is the systematic review of the literature, which has been developed in the medical sciences. The systematic review of the literature uses a replicable, scientific and transparent process in order to minimize bias in the process and to provide an audit trail of reviewers' decisions, procedures and conclusions. Literature review is considered a key tool in management research since it is used to manage the diversity of knowledge (Tranfield et al., 2003). For all these reasons, my literature review consists of a systematic review process that is schematically described in figure 1.

***Figure 3.1.: Systematic review procedure***




*Source: AMRC, Cranfield University*

## 3.2. Systematic review aims

Considering that I am connecting two literature areas that have been developed separately, I focus on the issues that can be linked in order to build a strong theoretical framework for my arguments. The systematic review process is essential to ensure transparency in this process. Therefore, I intend to compile accurate and consistent

bibliographies and summarize key ideas with a critical perspective. The main objectives of this dissertation are to:

1. Understand and clarify the relationships between my research and the related areas in the literature;
2. Position and justify my research within these areas;
3. Understand the existing literature and how it relates/supports/contradicts my topic;
4. Identify a research gap and research questions.

## 3.3. Systematic review process

### 3.3.1. Consultation group

My systematic review of the literature is not exclusively a personal project. Although it is mainly an individual effort, the final work is also the result of the involvement of people who manifested interest during this process. I am convinced that the final work benefited from the contribution of several people (see table 3.1.) who constitute my consultation group.

***Table 3.1.: Consultation group composition***

| *Person* | *Title* | *Organization* | *Role in the review* |
|---|---|---|---|
| Richard Taffler | Professor of Accounting and Finance | Cranfield School of Management | Supervisor |
| Vineet Agarwal | Research Fellow | Cranfield School of Management | Advisor for finance issues & panel member |
| Asad Kausar | PhD Student | Cranfield School of Management | Advisor for going-concern literature issues |
| Thabang Mokoaleli-Mokoteli | PhD Student | Cranfield School of Management | Advisor for analyst literature issues |
| Duarte Trigueiros | Professor of Accounting and Finance | Faculty of Economics - University of Algarve | External advisor for accounting and finance issues |
| David Denyer | Senior Research Fellow | Cranfield School of Management | Advisor for systematic review methodology & panel member |
| Heather Woodfield | Social Sciences Information Specialist | Cranfield University | Advisor for literature search |

My main inspiration is Prof. Richard Taffler, who helped me to identify a topic that I am comfortable with and at the same time, contributes to the development of research in the finance and accounting group. As my supervisor, I have had regular meetings with him since the first week I arrived at Cranfield and his supervision has been crucial to find the correct direction for my research.

I also benefited from the involvement of Prof. Taffler's PhD students, such as Mr. Asad Kausar and Ms. Thabang Mokoaleli-Mokoteli, who offered some hours of their time to clarify and debate issues related to my project and with the field in general. These two colleagues have been very important for the development of my work, since for the past four years they have been undertaking research in going-concern and investment analyst behaviour respectively, which are the two main foci of my research.

As an experienced researcher in finance, Dr. Vineet Agarwal has helped me during these few last months. His support before the Student Presentation Seminar and the contributions made during the MRes paper discussion have positively influenced my work.

As an external academic, I involved Prof. Duarte Trigueiros because he is a specialist in the field and because he has a vast amount of related research experience. Prof. Trigueiros is a very important source of motivation for me since he was my MSc supervisor and he is the Head of the Management Group of the university where I am a lecturer. He is very closely involved with my project and I have regular contact with him by e-mail, and personally, when I go to Portugal.

Besides the involvement of specialists in accounting and finance, I felt the need for guidance in the systematic review process and in the literature search. The MRes sessions in the systematic review and literature search processes provided by Dr. David Denyer and Ms. Heather Woodfield respectively have helped me considerably in understanding the importance of this process and how to use important research tools. These two advisors always manifested available to answer my concerns via e-mail or personally, when I asked for help.

### 3.3.2. Description of search strategy

The search strategy is a critical step in the systematic review, since it delimits the subject topic. I followed two stages in the filtering process: the first is based on the reading of titles and abstracts of articles located in the electronic databases, and the second on the reading of full papers. My choice to restrict my literature search to journal articles is justified since they represent the most important source of information for doctoral studies, offering a relatively concise and up-to-date format for research.

### *3.3.2.1. Definition of keywords and search strings*

The systematic search is undertaken in citation databases by the use of various keywords combined in search strings. The definition of keywords and search strings is essential as they are responsible for the identification of the studies extracted. The scoping study made in chapter 2 facilitated the definition of the keywords to use in the search strings. Considering the importance of this step, the participation of the panel members, particularly my supervisor, was essential to guarantee a comprehensive list of keywords. Table 3.2. presents those keywords, divided by the three main areas of the literature in which I focused my review (analyst behaviour, behavioural finance and market pricing) and the event that I am looking at (going-concern opinion).

***Table 3.2.: Keyword search***

| *Subject* | *Keywords* | *Subject* | *Keywords* |
|---|---|---|---|
| **Analyst behaviour** | analyst behaviour<br>analyst behavior<br>rationality<br>forecasts<br>recommendations<br>coverage<br>news<br>announcements<br>incentives<br>performance | **Behavioural finance** | behavioural finance<br>behavioral finance<br>optimism<br>overconfidence<br>underreaction<br>overreaction<br>bias<br>heuristic<br>representativeness<br>herding |
| **Going-concern opinion** | going-concern<br>going-concern opinion<br>going-concern modifiction<br>going-concern withdrawal<br>qualified opinion<br>going-concern assumption<br>expectation | **Market pricing** | market reaction<br>price reaction<br>market price<br>abnormal return |

The keywords lead to the definition of five search strings that are used in the database search. The combination of keywords using Boolean operators (*"AND"* and *"OR"*) is the key for the final size of the sample. The search strings must not be too broad or too narrow in order to allow the selection of a manageable number of papers that will cover the main aspects of my research.

***Search string 1:***

(analyst* AND behavio*) AND (rationality OR forecast* OR recommendation* OR coverage OR incentives OR performance OR news OR announcements);

***Search string 2:***

analyst* AND (going AND concern OR qualification) AND (opinion* OR modification OR withdrawal OR assumption);

***Search string 3:***

analyst* AND (behavio* finance OR optimism OR overconfidence OR underreaction OR overreaction OR bias* OR heuristic OR representativeness OR herding);

***Search string 4:***

analyst* AND (market reaction OR abnormal returns OR price reaction OR market price OR rationality);

***Search string 5:***

((going AND concern) OR qualification*) AND (reaction OR abnormal returns OR rationality OR expectation*).

The first search string[28] selects the papers that connect analyst behaviour with some of their outputs, like forecasts or recommendations, and associated performance. Given that the literature concerning security analysts constitutes a very broad area, this string restricts the selected papers to those that cover only issues that connect analysts' behaviour with important topics identified during the scoping study. These topics involve coverage, rationality and incentives faced by analysts in a behavioural context.

The second search string restricts the selection to papers that link the analyst literature with the going-concern literature. To be more specific, this string will restrict the search for connection between analysts and going-concern opinions, GCM, GCM and going-concern assumptions.

The third search string identifies papers that look at the analyst literature from a behavioural finance perspective. Given the fact that behavioural finance is a very broad area, the search is restricted to relevant topics identified in the scoping study that have direct linkage with analysts' behaviour. Such topics are optimism, overconfidence, underreaction, overreaction, bias, heuristic, representativeness or herding.

The fourth search is looking at papers that analyse market price reaction, abnormal returns or the market price associated with the work of analysts. Given that analysts' outputs have

[28] The asterisks will allow the inclusion of singular, plural, possessive words and non-possessive cases.

market impact, it is important to analyse papers that cover this issue. It also identifies papers that analyse the degree of rationality of their work, which is one of the main discussions in my work.

The last search string selects papers that link audit qualifications in general, and going-concern opinions in particular, with market reaction and abnormal returns, in order to analyse the importance of these qualifications to the market. Rationality and expectations constitute the other topics that are linked with audit qualifications in order to cover these important issues in this context.

The above search strings are used in the selected citation databases regarding titles and abstracts of academic papers since they summarise and highlight the major points covered in the studies. Abstracts are expected to concisely describe the content, scope, methodology, findings and conclusions of these papers.

#### *3.3.2.2. Database search*

Several databases can be used as citation databases. Among the possible sources, accounting and finance research can be developed using databases like ProQuest, EBSCO, Social Science Citation Index, Emerald (produced by MCB Press) or Science Direct (produced by Elsevier). All these databases present a collection of academic journals that can be searched. However, most of the journals contained in each database are also available in others. Therefore, with the help of the panel, I chose to work with three main databases, which together cover a high number of academic journals. The three databases are:

1. ProQuest
2. EBSCO
3. Social Science Citation Index

#### *3.3.2.3. Other information sources*

The systematic review is based solely on scholarly journals accessible in the citation databases. Despite the importance of other information sources, like working papers, books, conference papers or thesis, the systematic search among these sources is not possible since there are no comprehensive databases for them. However, it is possible to find some good pieces of work in these sources that might be important in my review, although impossible to search systematically.

This is particularly important for working papers since they represent the most recent contributions to research. It is possible to conduct such a search in web sites that contain working papers. For example, the main authors usually list recent works that are being developed in their personal pages, and the Social Science Research Network constitutes the most important source of working papers in the accounting and finance area. However, these sources are not comprehensive since they contain only a restricted number of working papers. On the other hand, the quality assessment regarding the working papers is also a concern since, unlike the published papers, working papers have not been rigorously reviewed by experts in the field. Nevertheless, considering the importance of the working papers and the suggestions made by the review panel in my MRes review presentation, I decided to include working papers in my review. Another important suggestion made by the review panel during my MRes review presentation, which I will consider, is related to cross-references. Although this procedure is not systematic, it can help to identify seminal papers omitted in the systematic search for my review because it is impossible to guarantee that a database or a procedure will find all the relevant papers. Finally, I also considered studies suggested by the panel.

### 3.3.3. Selection criteria

The sources of information described in previous sections present the approach to identifying the first tranche of studies for my review. However, considering that I use three different databases to run the same search strings, it is necessary to eliminate the duplications. Additionally, since the database search is exclusively based on titles and abstracts, it is expected that most of the papers identified will be out of my refined scope. Therefore, it is necessary to establish exclusion criteria based on the reading of the titles and abstracts for a first trial. The next step is related to the exclusion of certain papers, based on a reading of the full papers.

#### *3.3.3.1. Elimination of duplications*

Considering that the search strings are applied to three different databases that contain common scholarly journals, it is necessary to eliminate all the duplicate references. In order to do that, I used ProCite's functionality to identify the duplicated studies. First, I identified duplications by aggregating the output of each search string. Second, I identified duplicates by aggregating the references identified in all search strings. This procedure allows the construction of a comprehensive database without duplications.

### *3.3.3.2. Exclusion criteria based on the reading of titles and abstracts*

After identifying the papers selected by the search strings without duplications, it is necessary to exclude papers that are out of the defined scope. The objective of this first trial is to eliminate all the papers that, for different reasons, do not fit within the defined scope. Table 3.3. presents the criteria for exclusion based on a reading of the titles and abstracts, and the corresponding rationale. In order to implement these criteria it is necessary to print, using ProCite, all the titles and abstracts of those papers. Table 3.3. shows the three main reasons for the exclusion. I defined sub-criteria for the third set of exclusion criteria since these papers could be useful in future. The papers that are excluded based on these criteria could be important for future research in this area if I were to enlarge the scope of the research. Therefore, I kept these references in a database for possible future use.

***Table 3.3.: Criteria and rationale for exclusion***

| Criteria | | | | Rationale |
|---|---|---|---|---|
| 1. | Articles published in other sources than scholarly journals | | | Analysts and going-concern opinions are two subjects often mentioned in the media and other sources than scholarly journals. Since this is a systematic review for academic research, I will exclude magazines, trade publications and newspapers. I will also exclude these since I can not search systematically for them. |
| 2. | Studies that mention the defined keywords as residual issues or in other contexts than accounting and finance | | | In some cases, the combination of some keywords can lead the search to papers in other areas than accounting and finance or papers that mention the defined keywords as residual issues. In these cases, I will exclude them since that is not my focus. |
| 3. | Insuficient relation to be considered in the refined scope defined for the systematic review | 3.1. | Behavioural finance issues not related with financial analysts | There are several topics in behavioural finance that can be applied to other market agents rather than financial analysts. Since my focus is in the financial analysts issues, I will exclude all the studies in this situation. |
| | | 3.2. | Financial sector and utilities studies | Financial sector firms have different characteristics compared with other sectors, namely accounting, financial indicators or regulation. Usually, this sector is treated separately in accounting and finance studies given these specific characteristics. For similar reasons, I will also exclude studies based on utilities. |
| | | 3.3. | Studies based on other markets than Europe, United States and Japan | Europe, US and Japan markets are the largest and most developed in the world. Since studies based in other markets are residual and my research will use US data, I will exclude studies using other markets. |
| | | 3.4. | Studies using analysts' forecasts as proxy for market earnings expectations in other contexts | Analysts' forecasts are used as a proxy for market earnings expectations in other contexts than analysts behaviour. Since I will be focusing on analyst behaviour, I will exclude all these studies. |
| | | 3.5. | Other reasons | The systematic review is based on a very refined scope in order to cover issues that have direct impact with my research. Therefore, all the studies that not present that close relation and cover a broader scope will be eliminated. |

### *3.3.3.3. Exclusion criteria based on the reading of full text papers*

The next step in the selection process involves full text reading. After the first trials, the remaining papers are tested against the theoretical, empirical and methodological criteria defined below. This last step allows the definition of the key papers for my research before the exclusion based on quality criteria.

Theoretical papers must contain:

1. Clear and self-contained description of the research problem or issue;
2. Motivation for the study of the problem;
3. Current state of understanding of the problem;
4. Assumptions and development of a new theoretical model to explain the problem;
5. Discussion of the theoretical model's contribution.

Empirical papers must contain:

1. Literature review justifying the research questions;
2. Definitions of the hypotheses;
3. Clear description of the methodology;
4. Clear definition of the sample (time window, place of the study, sample size);
5. Discussion of the data analysis and results;
6. Results interpretation in the context of the research question.

Methodological papers must contain:

1. Clear definition of a methodology;
2. Discussion of the methodological assumptions.

### *3.3.3.4. Exclusion criteria based on quality criteria*

The last step in the trial is related to the quality evaluation of the studies that successfully pass through the other filtrations. All the studies that successfully passed the exclusion criteria involving a reading of titles and abstracts and a reading of full text will be tested against the quality criteria defined in table 3.4.

***Table 3.4.: Numerical approach to quality assessment***

| Elements to consider | Level | | | | |
|---|---|---|---|---|---|
| | 0 - Absence | 1 - Low | 2 - Medium | 3 - High | Not applicable |
| **Contribution** | The article does not provide enough information to assess this criteria | The paper adds little to the body of knowledge in this area | Contribution to knowledge is trivial in importance and significance | Significant addition to current knwledge; Fill na important theory gap | This element is not applicable to this paper |
| **Theory** | The article does not provide enough information to assess this criteria | Literature review is inadequate; Failure to motivate study with practical implications; No unserlying economic story | Theoretical base is acceptable; Having practical rationales for study in some extent | Excellent review of prior literature; Strong theoretical basis; Study has important implications for practitioners | This element is not applicable to this paper |
| **Methodology** | The article does not provide enough information to assess this criteria | The idea of study is poorly executed; Inappropriate quantitative methods; Failure to justify proxies for economic variables | Justified research design; Acceptable proxies for economic variables; The idea of study is not fully executed | Research design adequately examine the theoretical argument; Proxies are adequately defined | This element is not applicable to this paper |
| **Data Analysis** | The article does not provide enough information to assess this criteria | Data sample insufficiency. Weak connection between statistical results and economic story; Inconclusive statistics | Appropriate data sample. Statistical results relates to economic story; Adequate statistics but inadequate explanation | Adequate data sample; Statistical results support theoretical arguments; Well explained statistics; Include limitation analysis | This element is not applicable to this paper |

Source: Marcos, J. (2002).

The measures for evaluating the quality of the studies are based on the systematic review lectures, where criteria for the evaluating papers were discussed. I used a numerical approach to assess the quality of the papers (table 3.4.), which was developed in the Cranfield School of Management and was presented during the selecting and appraising studies session. This numerical approach was developed by Marcos (2002) and presents a concise and generic approach to evaluate the quality of studies based on the following criteria:

1. Contribution;
2. Theory;
3. Methodology;
4. Data analysis.

The quality level is scaled as zero (absence), one (low), two (medium) and three (high) for each of the four elements defined. *"Not applicable"* is used when the element is not applicable. All the papers that have two scores below two are excluded from the final sample.

### 3.3.4. Data extraction process

The final sample of papers is made up of those that passed the selection criteria described in the previous sections. These papers are the references for my systematic review. I conducted an extraction process of the papers containing citation, methodological, thematic and quality assessment information in order to compile a rich database. Table 3.5. present an example of data extraction form.

The main information (author, title, journal, date of publication, abstract and keywords) about the papers identified during the database search are imported into ProCite before the selection criteria, since it is necessary to read all the titles and abstracts at the first stage. For the papers that passed the criterion based on a reading of the titles and abstracts, it is necessary to import the pdf file in order to determine whether they also pass the criterion based on a reading of the full paper and the quality assessment. To the papers that constitute the final sample, it is necessary to type in all the missing information manually, since the information imported from the databases is not comprehensive. Information relating to all the remaining papers and working papers are input manually.

***Table 3.5.: Example of data extraction form***

| | |
|---|---|
| **General Description** | |
| Author Name: | Taffler, R. // Lu, J. // Kausar, A. |
| Article Title: | In denial? Stock market underreaction to going-concern audit report disclosures |
| Journal Title: | Journal of Accounting & Economics |
| Author Affiliation: | Cranfield University |
| Publication Date: | 2004 |
| Volume: | 38 |
| Page Numbers: | 263-296 |
| Research Category: | Empirical |
| Study Location: | UK |
| Data Description: | 108 non-finance firms with first-time GCM (1995-2000) |
| **Quality Assessment** | |
| Contribution: | 3 |
| Theory: | 3 |
| Methodology: | 3 |
| Data Analysis: | 3 |
| Include (Yes/No) | Yes |
| Exclusion Reason | - |
| **Abstract:** | We investigate the stock price reaction to UK going-concern audit report disclosures in the calendar year subsequent to publication. Over this period our firm population underperforms by between 24% and 31% depending on the benchmark adopted. This market underreaction to such an unambiguous bad news release is not a post-earnings announcement drift phenomenon; it is also robust to other potentially confounding explanations. However, whatever the reason for such stock mispricing, we find costly arbitrage prevents rational investors forcing prices back into line with fundamental value. Our reselts have implications for the market's ability to impound bad news appropriately and the incompleteness of arbitrage in such small *"loser"* firm situations. |
| **Keywords:** | Market anomalies; Investor biases; Behavioural finance; Limits to arbitrage. |
| **Motivation:** | Investigate the stock price reaction to UK going-concern audit report disclosures in the calendar year subsequent to publication. |
| **Findings:** | ➢ Evidence that market takes time to assimilate bad news;<br>➢ Results suggest that market underreacts to going-concern modifications after the release of those reports;<br>➢ Results show that the market underreaction is not a post-earnings announcement drift phenomenon;<br>➢ Costly arbitrage prevents rational investors forcing prices back into line with fundamental value. |
| **Additional Information** | |
| Related papers: | Kausar et al. (2004) |
| Location of item: | C:\Documents and Settings\Administrador\Os meus documentos\Database\Journal of Accounting & Economics\ Taffler et al. (2004).pdf |

### 3.3.5. Literature synthesis process

The last step in the systematic review is to synthesise the selected papers into a connected whole. Indeed, this process is crucial in order to understand the research topic and to identify connections and patterns within the literature. Moreover, it might help to clearly identify the gap in the literature and to refine the initial research questions.

Accordingly, I designed a literature tree in order to map out the structure of my research topic. Analyst behaviour and the going-concern topics constitute the starting points of this structure, which will allow the identification and the connection of theories, ideas and results. Given that my topic consists of the connection of two different areas, particular emphasis is given to the issues that can be linked. The other main purpose will be the identification of connections between papers, which is essential to the definition of the *"connected whole"*.

More specifically, some questions will lead my systematic review. These questions represent my guideline during the synthesis of the selected papers that constitute my review:

1. What do we already know in the areas related to my research topic?
2. What are the characteristics of the key concepts?
3. What are the relationships between these key concepts?
4. What are the existing theories?
5. Where are there inconsistencies in existing knowledge?
6. What alternatives can be tested?
7. How can my research contribute to a better understanding of my research question?
8. What are the strengths and weaknesses of the available methods?

This chapter described the methodology used to conduct my systematic review. The next chapter presents the descriptive analysis of the selected papers and the report of the findings in the form of a thematic analysis. Finally, it discusses main ideas extracted from the process.

# CHAPTER 4 - FINDINGS

This chapter presents the findings extracted from the systematic review process. It has the objective of facilitating the reader's understanding of the research by synthesizing the papers that successfully met the criteria defined in the methodology and which constitute the final sample. The chapter is divided into two main sections. First, I present a descriptive analysis of the selected literature by aggregating papers using simple sets of categories. This description allows an understanding of the main characteristics associated with the papers, in terms of authors, journals and age of the articles. Second, the findings are reported to present a thematic analysis of the research that has been done within the defined scope that I am using to ground my research. This critical analysis of the findings is crucial in order to justify my topic, refine my research questions and construct a theoretical argument for the development of the research.

## 4.1. Descriptive analysis of the selected papers

This section briefly describes the process defined by the methodology. It also presents a descriptive analysis of the selected studies analysed in the systematic review of the literature.

### 4.1.1. Process description

The application of the search strings in the three databases defined in the methodology enables the first stage of documents selection. Table 4.1. reviews the number of documents extracted from each database.

***Table 4.1.: Number of documents by search string and database***

| | | Proquest | EBSCO | SSCI | TOTAL |
|---|---|---|---|---|---|
| **Search String 1** | All Sources | 294 | 162 | N/A | 456 |
| | Academic journals | 102 | 117 | 131 | 350 |
| **Search String 2** | All Sources | 19 | 4 | N/A | 23 |
| | Academic journals | 3 | 3 | 1 | 7 |
| **Search String 3** | All Sources | 2.285 | 693 | N/A | 2.978 |
| | Academic journals | 268 | 252 | 223 | 743 |
| **Search String 4** | All Sources | 1.007 | 301 | N/A | 1.308 |
| | Academic journals | 193 | 169 | 76 | 438 |
| **Search String 5** | All Sources | 980 | 276 | N/A | 1.256 |
| | Academic journals | 100 | 108 | 90 | 298 |
| **TOTAL** | All Sources | 4.585 | 1.436 | N/A | 6.021 |
| | Academic journals | 666 | 649 | 521 | 1.836 |

Table 4.1. shows that there is a massive number of documents available in each database. The total number of documents considering all the databases is 6,021. However, since the systematic review is only based on academic papers, I separated the academic journals from other sources in the database search. The number of academic papers in the three databases is 1,836. The next step consists of the elimination of duplications using ProCite, as the three databases contain common scholarly journals. This procedure eliminates 623 papers between the three databases, which means that I have to apply the exclusion criteria based on the reading of titles and abstracts to 1,213 papers.

The title and the abstract of each of the 1,213 papers were crossed with the exclusion criteria defined in the methodology chapter. The results are presented in table 4.2.

***Table 4.2.: Selection of papers process***

| | |
|---|---|
| Documents from all sources | 6.021 |
| Other sources than academic papers | -4.185 |
| Academic papers | 1.836 |
| Duplications | -623 |
| Academic papers after duplication removal | 1.213 |
| Papers excluded based on criterion 1 | -21 |
| Papers excluded based on criterion 2 | -866 |
| Papers related with my reseach | 326 |
| Papers excluded based on criterion 3.1 | -6 |
| Papers excluded based on criterion 3.2 | -6 |
| Papers excluded based on criterion 3.3 | -12 |
| Papers excluded based on criterion 3.4 | -9 |
| Papers excluded based on criterion 3.5 | -251 |
| Papers included in my refined scope | 42 |
| Papers excluded based on the reading of full text | -6 |
| Papers excluded based on quality criteria | -2 |
| Papers selected based on the methodology | 34 |
| Papers included based on the cross-references | 4 |
| Papers included based on panel suggestions | 2 |
| **Final sample of papers for the systematic review** | **40** |

Despite being classified as academic papers, 21 documents were removed due to deficient classification in the databases. These documents were interviews, biographies and other situations. A high number of papers were also excluded because they cover areas other than accounting and finance, or cover residual issues. This criterion finds 866 studies in those conditions. Therefore, I considered 326 papers related to my topic that could be useful for the development of my current and future research. For that reason, I exported these 326 references to ProCite for future use. The other 284 papers were excluded given the refined scope defined for my systematic review. Table 4.2. separates the third exclusion criteria by specific reasons based on the methodology.

The full reading of the 42 selected papers leads to reject 6 empirical papers based on the empirical criteria defined for the reading of full text papers. Additionally, the application of the quality criteria excluded two more papers that did not pass the numerical approach to quality assessment. Consequently, the final number of papers selected based on the methodology defined in Chapter 3 is 34. Considering the suggestions made by the panel in the MRes review, I also included four papers based on the cross-references and two papers suggested by the panel members. The search for working papers, also suggested during the MRes review, allow the inclusion of one study, which is one of the two suggested by the panel. As a result, the final number of papers to consider in the systematic review of the literature is 40.

### 4.1.2. Descriptive statistics

The objective of this section is to provide the descriptive analysis of the papers by using a simple set of categories with the use of extraction forms. The 40 papers included in my literature review have different characteristics, which are briefly described in the following tables.[29] Table 4.3. presents the list of the 40 papers included in the systematic review, which reveal a high heterogeneity of authors.[30]

***Table 4.3.: List of papers included in the systematic review of the literature***

| | |
|---|---|
| 1. Abarbanell and Bernard (1992) | 21. Hodgkinson (2001) |
| 2. Ackert and Hunter (1994) | 22. Hong and Kubik (2003) |
| 3. Ackert and Hunter (1995) | 23. Huberts and Fuller (1995) |
| 4. Ameen et al. (1994) | 24. Jones (1996) |
| 5. Amir and Ganzach (1998) | 25. Kausar et al. (2004) |
| 6. Asare (1990) | 26. Lim (2001) |
| 7. Asquith et al. (2005) | 27. Löffler (1998) |
| 8. Beckers et al. (2004) | 28. Loudder et al. (1992) |
| 9. Blay and Geiger (1995) | 29. McNichols et al. (1997) |
| 10. Brown (1997) | 30. Michaely and Womack (1999) |
| 11. Capstaff et al. (1995) | 31. Moses (1990) |
| 12. Cote and Goodstein (1999) | 32. Mutchler (1985) |
| 13. Das (1998) | 33. O'Hanlon and Whiddett (1991) |
| 14. De Bondt and Forbes (1999) | 34. Rubinstein (2001) |
| 15. De Bondt and Thaler (1990) | 35. Sedor (2002) |
| 16. Ding et al. (2004) | 36. Stevens and Williams (2004) |
| 17. Dugar and Nathan (1995) | 37. Taffler et al. (2004) |
| 18. Easterwood and Nutt (1999) | 38. Tamura (2002) |
| 19. Espahbodi et al. (2001) | 39. Trueman (1994) |
| 20. Ho and Harris (2000) | 40. Welch (2000) |

[29] A summary of the 40 selected papers can be found in appendix 1.

[30] Mutchler (1985), Moses (1990), Loudder et al. (1992) and Espahbodi et al. (2001) were selected using cross-references. Asare (1990) and Kausar et al. (2004) were selected based on panel suggestion. All the remaining were selected using the search strategy.

Figure 4.1. shows that the papers analysed are published from 1985 to date. There is no special tendency in the age profile, but 75 percent of the papers analysed were published after 1995, which seems to indicate the current interest in the topic.

***Figure 4.1.: Age profile of the papers***

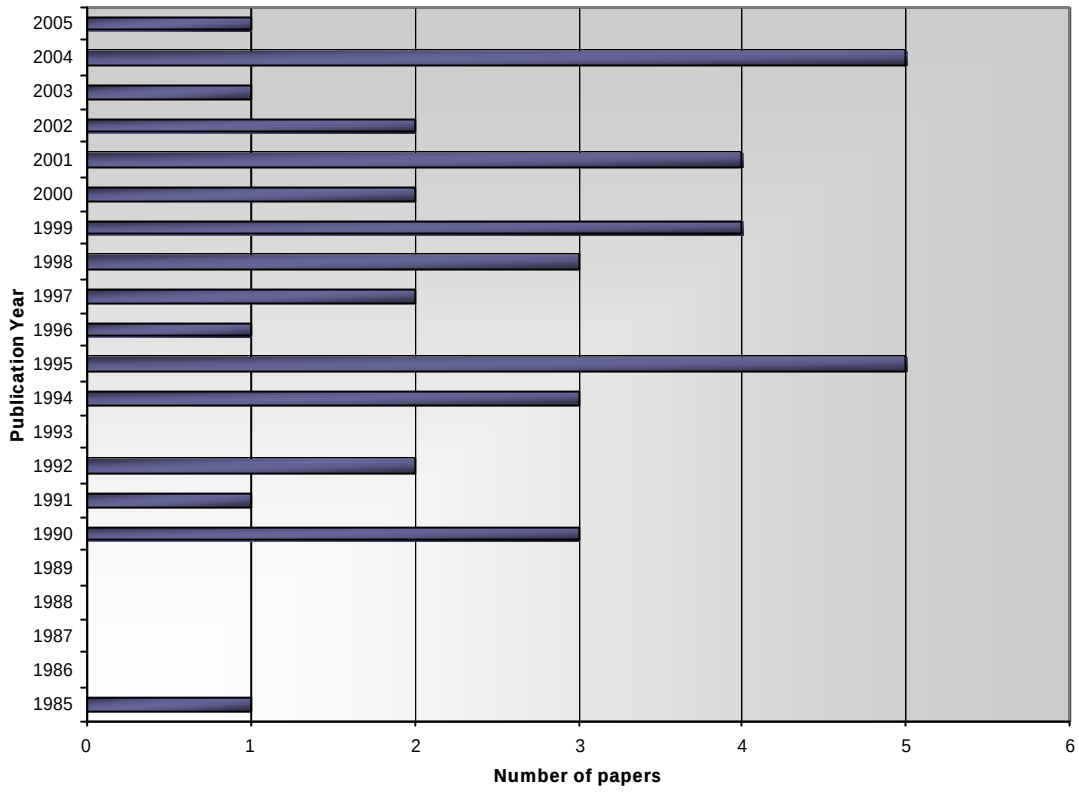



Table 4.4. aggregates the studies by discipline, journal title and projected quality, grading for the papers' journals. The aggregation is based on the *"Journal Recommendations for Academic Publication"* edited by Cranfield School of Management. The analysis of table 4.4 shows that most of the papers are classified in just one area of knowledge. In fact, 86.5 percent of the classified papers are included in the finance and accounting discipline, which is not unexpected considering the refined scope defined for my systematic review. The systematic review also includes four papers classified in the economics and decision science disciplines and one paper classified in the corporate social responsibility discipline. The other two academic papers are not classified in the Journal Recommendations for Academic Publications, nor is the working paper. The analysis of the studies by journal title indicates that there are only three journals with more than three papers in the systematic review. Financial Analysts Journal is the most important source with five studies, followed by the Journal of Accounting, Auditing & Finance and the Journal of Finance with four

studies each. The analysis of the projected quality grading[31] measure indicates that 37.8 percent of the papers included in the systematic review are classified as *"Top international quality"* and only 5.4 percent are classified as *"Lower national quality"*, which seems to indicate a high-quality level in the papers analysed.

***Table 4.4.: Distribution of studies by discipline, journal title and projected quality grading***

| Discipline | Journal Title | Number of papers | Projected Quality Grading |
|---|---|---|---|
| Finance & Accounting | Accounting and Business Research | 1 | 2* |
| | Accounting Review | 1 | 4* |
| | Contemporary Accounting Research | 1 | 3* |
| | European Financial Management | 1 | 2* |
| | Financial Analysts Journal | 5 | 3* |
| | Journal of Accounting & Economics | 1 | 4* |
| | Journal of Accounting and Public Policy | 1 | 3* |
| | Journal of Accounting Literature | 1 | 3* |
| | Journal of Accounting Research | 3 | 4* |
| | Journal of Accounting, Auditing & Finance | 1 | 3* |
| | Journal of Business, Finance & Accounting | 4 | 2* |
| | Journal of Finance | 4 | 4* |
| | Journal of Financial Economics | 2 | 4* |
| | Journal of Financial Research | 2 | 2* |
| | Journal of Multinational Financial Management | 1 | 2* |
| | Managerial Finance | 1 | 1* |
| | Review of Financial Studies | 2 | 4* |
| | TOTAL | 32 | - |
| Economics & Decision Science | International Journal of Forecasting | 1 | 3* |
| | Journal of Economic Behavior & Organization | 1 | 2* |
| | Review of Financial Economics | 1 | 1* |
| | The American Economic Review | 1 | 4* |
| | TOTAL | 4 | - |
| Corporate Social Responsability | Journal of Business Ethics | 1 | 2* |
| N/A | Experimental Economics | 1 | N/A |
| | The Financial Review | 1 | N/A |
| | TOTAL | 2 | - |
| N/A | Cranfield Woorking Paper | 1 | N/A |

Additionally, the vast majority of the selected papers have a clear positivistic approach and some of them, despite being classified in the accounting and finance discipline, are clearly associated with the psychology discipline. Moreover, 90 percent of the analysed papers can be classified as empirical (see figure 4.2.), despite the fact that most of them have a strong

[31] The Journal Recommendations for Academic Publications define 4* as "Top international quality", 3* as "Lower international quality", 2* as "Top national quality" and 1* as "Lower national quality".

theoretical justification for the empirical analyses. Finally, figure 4.3. shows that most empirical studies are located in the US (80.6 percent), followed by UK (13.9 percent). Empirical studies located in other countries are residual.

***Figure 4.2.: Percentage of empirical and non-empirical studies***

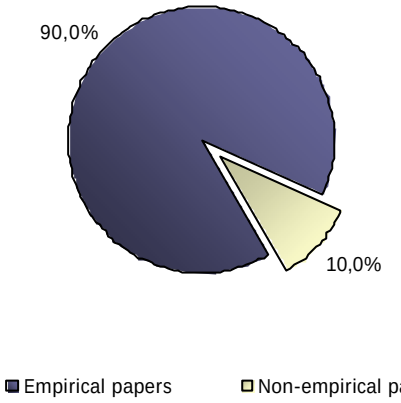
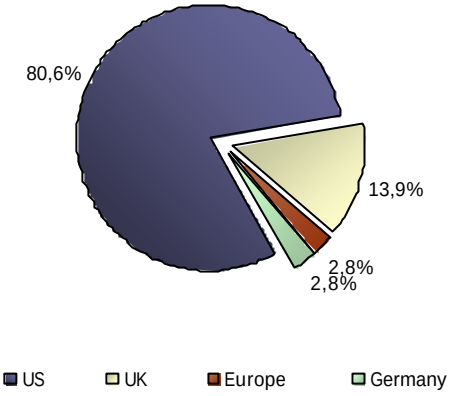



***Figure 4.3.: Percentage of empirical studies by location***




## 4.2. Report of the findings

Considering that my research connects two areas of the literature that have hitherto been developed separately, I decided to divide the selected papers accordingly into two categories: analyst behaviour and going-concern literatures.

### 4.2.1. Analyst behaviour

In this section, I review the selected papers related to analyst behaviour. Since the search strings that I used to select them were somehow connected with analysts' behaviour in a specific context (rationality and bias), the papers reflect that choice. On the other hand, the papers also reflect the preference for analysing analyst behaviour in the specific context of distressed firms. The sections below are presented thematically.

#### *4.2.1.1. Analysts' forecast errors*

Prior to the discussion of analyst rationality, it is important to understand what is expected from rational behaviour. Ackert and Hunter (1995) define the main characteristics for rational expectations in two separate categories. First, the forecast errors, conditional on the available information set, should have zero means (orthogonality property of rational expectations). Second, the forecast errors should be uncorrelated with the values of all the

variables in the information set, and therefore, with their own past values (lack of serial correlation property). Accordingly, Easterwood and Nutt (1999) present one of the simplest definitions of rationality in the analyst context: *"a rational analysis of analyst behavior predicts that analysts immediately and without bias incorporate information into their forecasts"*.

Given the difficulties of defining what is meant by a rational market, Rubinstein (2001) proposes three market categorizations based on the degree of rationality: maximally rational markets, rational markets, and minimally rational markets. The first category of market rationality assumes that all investors are rational; the second assumes that asset prices are set as though all investors are rational, and the last assumes that even if markets are not rational, abnormal profit opportunities may not exist. This categorization is based on the view that investors' rationality is *"clearly an expository device not to be taken seriously"* and thus, the debate should be regarding the degree of market rationality.

Despite the clear relevance of analysts' opinions to the market (see section 2.2.2.), much of the financial literature claims that analyst judgement is biased. In fact, several studies identify patterns in analysts' behaviour inconsistent with analyst rationality (e.g., de Bondt and Thaler, 1990; Trueman, 1994; Easterwood and Nutt, 1999; Beckers et al., 2004). Interestingly, these papers use different terms when mentioning the same idea of analyst biased behaviour. The most frequent terms are forecast bias (Beckers et al., 2004), irrational forecasts (Easterwood and Nutt, 1999) and suboptimal forecasts (Easterwood and Nutt, 1999). The understanding of the reasons behind this type of biased behaviour and the specific situations that stimulate this behaviour are critical to analyse new events in which analysts' biases can be tested. By connecting analyst behaviour and the going-concern event, it is possible to contribute to the discussion of this phenomenon from a new point of view.

One of the most important ideas extracted from the analysis of the selected papers is that the biased behaviour is usually connected (implicitly or explicitly) with analysts' optimism. In fact, almost all of the analyst studies analysed identify patterns systematically consistent with optimism. The main reason justifying this optimistic analyst behaviour is related to the systematically positive difference between forecasted and actual earnings per share (e.g., Brown, 1997; Easterwood and Nutt, 1999).[32] According to Beckers et al. (2004), forecast

[32] The systematically higher number of buy recommendations compared with the number of sell recommendations, particularly in the US, is another reason consistent with analysts' optimism. In fact, one major difference between US and UK studies is the ratio of new buy to new sell recommendations. Considering US studies, the ratio is approximately 7:1 (Womack, 1996) and between 4.1:1 and 5.2:1, depending on rating system used (Ho and Harris, 1998). Using UK

errors fall in two broad categories: optimism and herding. Therefore, the next sections analyse analysts' optimism, particularly in the case of distressed firms and herding behaviour among analysts.

#### *4.2.1.1.1. Optimism in general situations*

Huberts and Fuller (1995) argue that if analysts are entirely rational forecasters, then on average, their estimates of EPS should not be unduly optimistic or pessimistic. However, their results contrast with this view since they find systematic analyst optimism. Additionally, analysts' optimism is most pronounced for companies whose earnings have been hard to predict in the past. Considering this prediction bias, they find abnormal returns consistent with the forecast errors, even considering adjustments for industry factors, systematic risk, firm size and book-to-market. In fact, stocks of companies whose earnings have been previously hard to predict underperform the stocks of companies whose earnings have been relatively easy to predict. Huberts and Fuller's (1995) results also show that analysts are not learning from past mistakes, since EPS forecasts appear to be biased in a consistently positive manner. An alternative explanation presented in this work is that analysts' incentives do not facilitate the adjustment of their forecasts appropriately.

Capstaff et al. (1995) present further evidence regarding analysts' rationality. They examine the accuracy and rationality of earnings forecasts using a large sample of UK analysts. Their results raise considerable doubt as to the rationality of earnings forecasts made by UK analysts. Through the use of econometric methods, they find evidence of optimism bias and overreaction in the forecasts. Additionally, analysts seem not take account of all available information when producing their forecasts, given that there was information available to analysts which has incremental explanatory power over that provided by the analysts' forecasts. On the other hand, results point to the partial predictability of analysts' forecast revisions since these forecasts are not independent of prior forecast changes in earnings.

Despite the body of literature that suggests optimism in analysts forecasts, Brown (1997) argues that documented optimism has decreased over time. However, he does not question the optimism among security analysts. For instance, he finds that the mean surprise, which is one of the five definitions of error used in the analysis, is negative for all

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data, Ryan and Taffler (2004) calculate a ratio of 2.3:1, which suggests that UK analysts appear to be less optimistic than their US counterparts.

the years considered in the study, with just one exception. This means that, despite the fact that the results point to the reduction of forecast errors for the recent years of the sample, the optimism bias remains significant. Brown (1997) also states that the magnitude of analysts' earnings forecast errors depends on the nature of the firms they are following. In fact, results reveal that analysts' forecasting errors are smaller for firms listed in the S&P 500, for large market capitalization firms, for firms with higher absolute value of earnings forecast and with higher number of analysts following them. After dividing the sample firms by industry, Brown's (1997) analysis demonstrates that there are some industries associated with larger forecasting errors.

In another study addressing analysts' optimism, Lim (2001) suggests that optimism in analysts' forecasts should be higher for companies that have a more uncertain information environment, and for analysts who are more reliant on management access as a source of information. This assumption is justified by the issue of improving access to company management. His results show that analysts' forecasts are more optimistic for smaller companies, and those that have a smaller analyst following, higher volatility, and past poor performances.

Beckers et al. (2004) explore the influences on the accuracy of consensus earnings forecasts using a sample constituted by European stocks. The study is stimulated by the lack of evidence regarding the relation between optimism and herding behaviour among analysts and the simultaneous impact of firm characteristics, company sector and country affiliation. Beckers et al. (2004) find persistent and systematic differences in accuracy considering some of the above factors. In line with Brown (1997), they find that an increase in the number of analysts following a firm reduces forecast errors, and that the company's sector has a significant effect on analysts' accuracy. However, results do not support the relation between market capitalization and country effect with forecast accuracy.

In a recent study, Ding et al. (2004) explore analyst forecast behaviour under different scenarios. The authors present an interesting approach by relating analyst forecast behaviour to prospect theory with the analysis of how analysts react to positive and negative events, namely positive and negative earnings growth. The results show an asymmetric behaviour towards positive and negative earnings growth given that the higher earnings growth, the lower the forecast error. During times when the company's EPS is growing, analysts are quite accurate in their forecast of EPS, which contrasts with the high overoptimism and overestimation of EPS when firms face a decline. This asymmetric

behaviour in terms of the positive and the negative earnings growth on forecast errors is similar to the value function of prospect theory, where gains and losses have an asymmetric impact on the value of a prospect. Another asymmetry on forecast errors extracted from the analysis relates to the impact of market sentiment. Ding et al. (2004) find that sentiment impacts forecast errors primarily during negative earnings growth, resulting in a significant positive impact on analysts' forecast errors, but not during positive earnings growth.

The six studies above show that despite the general degree of optimism, optimism seems to be most pronounced in some specific cases. Therefore, it is particular important for my research to review studies that analyse analyst behaviour regarding distressed firms.[33] This analysis verifies whether analysts continue to exhibit optimism in this particular case. The next section covers this question.

#### *4.2.1.1.2. Optimism regarding distressed firms*

Moses' (1990) study presents evidence regarding how analysts' earnings forecasts differ between different classes of firms, namely failing and healthy firms. Additionally, it examines whether those forecasts are useful indicators of impending bankruptcy. The results suggest that properties of analysts' forecasts may differ considering failing and healthy firms, and may be a function of information disclosure practices of firms. In fact, analysts' forecasts are of poor quality for firms approaching failure. Forecast errors and analysts' overoptimism were greater for failing firms and increased as bankruptcy approached. However, despite this situation, Moses (1990) finds that analysts' forecasts contain useful information for predicting future states of firms, specifically bankruptcy.

In a more recent paper addressing analyst behaviour regarding distressed firms, Espahbodi et al. (2001) analyse analysts' optimism regarding bankrupt and turnaround firms which experienced financial distress. The authors' hypothesis is related to the possibility that analysts' decisions to issue optimistic earnings forecasts is based on a comparison of the

[33] Taking into account the fact that some characteristics mentioned in this section are present in most going-concern companies, it is important to analyse what the literature suggests regarding analyst behaviour in the specific case of distressed firms. In fact, although Beckers et al. (2004) do not support the results, Brown (1997) and Lim (2001) suggest that analysts' forecast errors are higher in the case of small companies. On the other hand, Brown (1997) and Beckers et al. (2004) find that the higher number of analysts following a firm, the smaller the number of forecast errors. Considering that going-concern companies are generally small companies (Kausar et al., 2004) and that consequently it is expected that the number of analysts following them is not high, this analysis can be important.

costs and benefits of doing so.[34] Espahbodi et al. (2001) argue that when the costs of issuing an optimistic forecast are higher than the benefits of doing so, optimism will be less apparent, or even absent. Espahbodi et al. (2001) test two hypotheses: 1) analysts are able to distinguish between bankrupt and turnaround firms; 2) optimism will be reduced when the cost of being optimistic exceeds the benefits. If the first hypothesis is correct, optimism in analysts' forecasts for turnaround firms should persist, despite symptoms of financial distress. If the second hypothesis is valid, a decline in optimism is expected for both bankrupt and turnaround firms from the first signals of distress until recovery is established. Interestingly, the results indicate that some of the properties of analysts' earnings forecasts for financially distressed firms are different from healthy firms considered in other works. Despite general analyst optimism shown for bankrupt and turnaround firms, forecast bias for bankrupt firms declines to insignificant levels one year before the bankruptcy filing. These findings are consistent with the theory that analysts' forecast behaviour changes as they perceive the costs of issuing optimistic forecasts to be superior to the benefits of doing so. Considering the turnaround firms, results show that optimism declines by insignificant levels in the year of recovery and remains insignificant during the first half of the following year. Espahbodi et al. (2001) interpret these results as analysts' inability to distinguish between bankrupt and turnaround firms after two or more consecutive years of poor performance. Another signal of this inability is related to the analysts' underreaction during the four years preceding bankruptcy, considering the cases of both bankrupt and turnaround firms.

Another paper that examines the systematic differences between losing and profitable firms is Das (1998). This work analyses analyst forecast accuracy and bias by distinguishing between firms with positive and negative earnings realized. The objective of this distinction is to understand whether the properties of analysts' forecasts documented in the literature extend to loss-making firms. Results show that, despite the general optimism for both cases, there are statistically significant differences in the bias and accuracy between loss and non-loss firms. In fact, analysts are more optimistic and less accurate considering the loss-making firms' case rather than the profitable firms' case. On the other hand, Das (1998) also finds that the magnitude of bias for both groups declines and the accuracy improves as the forecast horizon gets closer to the earnings announcement. These

[34] According to Espahbodi et al. (2001), when analysts release optimistic earnings forecasts, they benefit from higher brokerage commissions and better management relations. By issuing optimistic forecasts, analysts' costs are associated with their reputation and legal liability.

differences persist after controlling for differences due to forecast horizon, year of forecast and industry.

Sedor (2002) offers an alternative explanation for analyst optimism in the context of loss-making and profitable firms. She uses a full-factorial 2x2 between-subjects experiment, where the structure of information (scenario vs. list) and the sign of prior earnings (loss vs. profit) represent the independent variables, and participants' forecasted earnings constitute the dependent variable to analyse the hypotheses. According to Sedor's (2002) results, when managers use scenarios to frame information about their plans to increase future earnings, they are facilitating scenario thinking, which leads analysts to issue unintentionally optimistic forecasts. By doing that, managers are reducing analysts' cognitive efforts to process the information, and consequently increasing the likelihood that the envisioned future performance improvement could occur. On the other hand, she also hypothesizes that analysts provided with management plans to increase future earnings make relatively more optimistic forecasts for a firm reporting losses than a firm reporting profits, since managers' plans for loss-making firms are generally more informative. Additionally, scenario-induced optimism is greater for firms reporting prior losses than for firms reporting prior profits.

#### *4.2.1.1.3. Herding behaviour*

This section reviews four papers selected during the systematic search that cover analysts' herding behaviour. It analyses one theoretical paper, two empirical papers documenting herding behaviour in the UK and US and finally, a paper which explores the motivations and implications of herding behaviour among security analysts.

Trueman (1994) challenges the assumption that forecasts publicly released by analysts reflect their private information in an unbiased manner given analysts' apparent herding behaviour. He develops a theoretical framework which suggests that under certain circumstances an analyst prefers to release a forecast that is close to prior expectations, even if issuing a more extreme forecast is justified by his private information. On the other hand, he states that the likelihood that the analyst releases a forecast similar to those previously announced by other analysts is greater than could be justified by his own information.

De Bondt and Forbes (1999) present empirical evidence of herding behaviour among UK analysts. Besides results confirming a strong tendency to overoptimism and overreaction bias in consensus forecasts, they also find that UK analysts present evidence of herding

behaviour. Their findings show that although the accuracy of the EPS forecasts deteriorates sharply as the time horizon lengthens, analyst consensus is unaffected and remains strong. When the authors divide their analysts' forecasts by group, it is clear that the absolute errors increase with the forecast horizon but analyst disagreement remains almost unchanged. Additionally, de Bondt and Forbes (1999) state that the dispersion and range of forecasted earnings is alarmingly small. Other conclusions supporting the herding behaviour phenomenon is that, despite the tendency to an increase in the level of disagreement while coverage increases, this relation does not result in a significantly wider range of opinion about a company's earnings beyond eight analysts.

Using US data, Welch (2000) presents further evidence of herding behaviour among US security analysts. He analyses the influence of prevailing consensus and the most recent revisions by other analysts on current analysts' choices by developing a new statistical methodology to measure that influence. The results suggest that the most recent two revisions have a positive influence on the next analyst revision. The strength of this influence is more pronounced when revisions are more recent and when they turn out to be more accurate predictors of security returns ex-post. On the other hand, results also suggest that the prevailing consensus has influence on analysts' choices. A final idea extracted from this paper is that herding towards the consensus is significantly stronger when recent returns were positive and when the consensus is optimistic.

Cote and Goodstein (1999) explore the motivations and implications of herding behaviour among security analysts. According to these authors, the motivation is related to the preservation of an analyst's reputation, given the serious consequences when analysts issue contrary forecasts that are not correct. Herding behaviour implies the exacerbation of an existing directional forecast bias (optimistic or pessimistic) and the artificial constraint of boundaries among earnings forecasts. Consequently, Cote and Goodstein (1999) question the ethics associated with herding behaviour since the motivation of protecting one's reputation should not justify the reduction of forecast accuracy.

#### *4.2.1.2. Analysing analysts' forecast errors*

##### *4.2.1.2.1. Do analysts under or overreact in their forecasts?*

Analyst under and overreaction has been the focus of much discussion in the last few years. However, there is no consensus regarding this issue, since several studies document analysts' tendency to systematically underreact to information, and others suggest analysts'

tendency to systematically overreact to information. Despite the conflicting results, recent research contributes to clarifying what is behind these situations and where analysts' underreaction or overreaction can be expected. The search results find five papers that reflect this discussion and the advances made in recent years.

De Bondt and Thaler (1990) present one of the first studies addressing overreaction in security analysts.[35] They investigate the forecast changes in earnings per share produced by security analysts for one and two year time horizons. Specifically, they analyse whether forecast errors in EPS are systematically linked to forecasted changes and whether the bias in the forecasts gets stronger as uncertainty grows and less is known about the future. The first question provides an explanation for forecast changes being too extreme and the second question provides an explanation for the increase of optimism over the forecast horizon. Their results indicate that forecasts are too optimistic and are simply too extreme to be considered as rational, which is consistent with security analysts' generalized overreaction. According to de Bondt and Thaler (1990), these results can be justified by behavioural explanations of anomalous financial market outcomes. However, they present two reasons to be cautious when justifying optimism bias with behavioural explanations. First, their econometric results present some exceptions to overreaction, and second, the agency interpretation can partially explain the optimism. Interestingly, the exceptions to overreaction and the economic incentives faced by analysts became two important topics in following research.

In a subsequent study, Abarbanell and Bernard (1992) criticize de Bondt and Thaler's (1990) conclusion that security analysts systematically overreact to earnings. Despite the fact that Abarbanell and Bernard's (1992) findings suggest that analysts issue extreme forecasts of EPS changes, they do not support the explanation of overreaction to earnings information. The authors argue that there is one condition to conclude about overreaction that is not satisfied: extremely high forecasts should be related to firms recently experiencing strong earnings performance, and extremely low forecasts should be related to firms recently experiencing weak earnings forecasts. In fact, analysts' forecasts were most in error in situations where they were optimistic despite poor recent earnings performance. Consequently, Abarbanell and Bernard (1992) argue that analysts seem to underreact to information about earnings although they possibly overreact to some other unspecified information.

[35] The previous sections of the findings review two other articles that mention analysts' overreaction: Capstaff et al. (1995) and de Bondt and Forbes (1999).

O'Hanlon and Whiddett (1991) present further evidence of analysts' underreaction. Using UK data, they compared two portfolios of companies attracting high and low revisions of earnings forecasts with the subsequent earnings forecasts of each group and the actual changes in annual earnings with forecast changes in annual earnings. In contrast with de Bondt and Thaler (1990), these authors suggest that analysts underreact. O'Hanlon and Whiddett (1991) conjecture that the differences between their UK study and US studies could be justified by different remuneration systems and possible international differences in investment regulation.

Amir and Ganzach (1998)[36] provide a new insight to this discussion by presenting an explanation for the under and overreaction among security analysts. Although de Bondt and Thaler (1990) and Abarbanell and Bernard's (1992) results are inconsistent with each other, both are consistent with the non-rational forecast view. In order to clarify the inconsistencies in the literature, Amir and Ganzach (1998) distinguish between positive and negative forecast changes in order to examine a possible asymmetric behaviour. In fact, they confirm this possibility by finding a tendency to overreaction considering the positive forecast modification case (good news) and a tendency to underreact considering the negative forecast modifications case (bad news).[37] A complementary analysis shows that for the negative forecast revision group, the tendency to underreact diminishes considerably as the earnings release month approaches. In contrast, for positive revision forecasts there is little change in overreaction over time. Amir and Ganzach (1998) justify these results using a behavioural decision theory explanation. They state that there are three heuristics influencing earnings forecasts, and thus contributing to the explanation of their results: leniency, representativeness, and anchoring and adjustment.

Easterwood and Nutt (1999) present additional evidence of different analyst reactions conditional on the nature of the information received. After discriminating between good and bad news and the type of reaction by analysts, these authors conclude that analysts systematically overreact only to new positive earnings information. Regarding new negative earnings information, Easterwood and Nutt (1999) claim the opposite reaction. The underreaction to bad news and overreaction to good news phenomenon is inconsistent with the perspective that analysts systematically overweight information. This asymmetric

[36] Amir and Ganzach (1998) distinguish between two types of forecast modification. Forecast revisions are defined as the difference between the new earnings forecast and the previous forecast. Forecast changes are defined as the difference between the prediction of future earnings and the previously announced earnings figure.

[37] After dividing their sample into positive forecast revisions and negative forecast revisions, they show that for the first sub-sample most of the forecast errors are negative, but for the negative forecast revision group most of the forecast errors are positive.

behaviour shows that analysts are systematically optimistic concerning the implications of new information, rather than systematically misinterpreting all new information.

#### *4.2.1.2.2. Do economic incentives influence analysts' forecasts?*

The paper selection finds four studies addressing the relation between the economic incentives faced by analysts and their forecasts. From the reading of the previous sections it is possible to conjecture that there are cognitive explanations behind analysts' behaviour. However, as de Bondt and Thaler (1990) argue, there are many reasons to be sceptical that sophisticated agents are subject to the same biases as students in laboratory experiments. In fact, these authors suggest that the agency interpretation can partially justify analysts' optimism as a complementary explanation to cognitive reasons.

Dugar and Nathan (1995) analyse the incentives enjoyed by analysts working for brokerage firms that provide investment banking services to the follow firms (investment banker analysts) when forming their opinions. The results show that earnings forecasts and investment recommendations provided by such analysts are more optimistic relative to other analysts who are not in that situation (non- investment banker analysts). Additionally, the results suggest that capital market participants seem to recognize investment banker analysts' higher level of optimism. In contrast with investment banker analysts, non-investment banker analyst reports are associated with a significant market reaction around the release date.

Michaely and Womack (1999) also present evidence consistent with particular optimism regarding analysts who work for brokerage houses with investment banking relations among the firms they are following. This study suggests that underwriter analysts' recommendations of Initial Public Offerings (IPO) firms have significantly worse performance than non-underwriter analysts. Results demonstrate that the difference between these groups is more than 50 percent considering a two-year holding period starting from the IPO day. The authors also suggest that there is conflict of interest between analysts' fiduciary responsibility to investing clients and their incentive to market stocks underwritten by their firms. With the objective of evaluating the impact of cognitive explanations in the results, Michaely and Womack (1999) survey investment bankers and investment managers involved in the IPO process. Their findings show that results can be explained by conflict of interest rather than cognitive explanations.

In a more recent paper, Hodgkinson (2001) addresses the relation between the accuracy and efficiency of analysts' forecasts and the type of relationship that the analyst has with a

firm. Despite the confirmation that analysts provide optimistic forecasts for broker firms, results suggest that the close working relationship may not mean superior information. In fact, results show that analysts' forecasts are not more accurate for broker firms. The author argues that this may be explained by analysts' choice not to pass that privileged information to investors. In an attempt to understand the effect of firm size on analyst forecasts, Hodgkinson (2001) does not find a more pronounced bias for small firms, although there is evidence that analyst forecasts are less accurate for these firms.

Hong and Kubik (2003) present further evidence regarding economic incentives faced by analysts. They examine analysts' career concerns by relating their earnings forecasts to job moves. Their findings suggest that analyst careers are dependent on their accuracy, but this is not the only reason for being rewarded. The authors find that extremely inaccurate analysts are about 62 percent more likely to experience a move down the hierarchy, and extremely accurate analysts are about 52 percent more likely to experience a move up. However, brokerage houses also compensate optimistic analysts since these analysts are more likely to experience favourable job changes. Optimistic analysts are 38 percent less likely to move down the hierarchy and 90 percent more likely to move up the hierarchy. This reward for optimism is more acute when analysts are covering stocks underwritten by their brokerage houses. Considering this case, job moves depend less on accuracy and more on optimism. Nevertheless, this conflict should not be reduced solely to the underwriting relationship cases, since results suggest that analysts are rewarded for promoting stocks even when they do not have this relationship.

#### *4.2.1.2.3. Cognitive or economic-based explanation?*

The studies analysed previously give some insight into the reasons underlying the analysts' optimism. Some of them justify analysts' optimism with cognitive explanations and others with economic incentives. However, the precise weight that each explanation has in the understanding of analysts' optimism still unclear. In fact, given the difficulty of separating these influences, research does not present a clear answer to this question. The following paragraphs review three papers that cover this discussion.

Löffler (1998) addresses the question of earnings forecasts' rationality by discriminating among several competing explanations for biases using a large sample of individual analyst earnings forecasts of German companies. The basic assumption behind his analysis is that analysts deviate from the rational prediction when this has favourable effects on the assessment of their forecasting ability. The study's results support this view since analysts

tend to issue biased forecasts when they believe that they can be useful for communicating information about forecast precision. In order to do that, analysts distort their estimates in a way which gives them a more appropriate weight in the clients' decision process.

Tamura (2002) focuses on individual analysts' forecast errors by analysing their relation to the number of analysts covering the company, volatility of the stock, amount of past forecast error, broker's reputation and average *"distance"* between the analyst's forecast and the consensus forecast. Although results indicate a significant positive serial correlation between forecast errors and both ordinary consensus and individual-analyst averages, they also demonstrate that some analysts' characteristics are correlated with forecast errors. Tamura (2002) suggests that analysts dealing with bad news and analysts who herd to consensus forecasts tend to underreact in the presence of new information compared with other analysts. Moreover, results point out that analysts are affected by their personalities in forecasting, particularly when they are dealing with bad news. In fact, by analysing the optimistic and pessimistic analysts separately, the author concludes that a relatively optimistic analyst tends to continue to be optimistic, while a pessimistic analyst tends to continue to be pessimistic.

In an attempt to clarify the potential influence of cognitive factors in explaining analyst optimism, Stevens and Williams (2004) construct a scenario where environmental factors and incentives unique to analysts are absent and human decision bias is more evident. Their choice for experimental research is justified by the possibility offered by this method to differentiate between forecast misreaction caused by incentives unique to analysts and misreaction caused by human decision bias. Stevens and Williams (2004) use undergraduate students in accounting and economics classes to test whether these subjects present the same systematic optimism regarding positive and negative information showed by analysts. Stevens and Williams' (2004) results show that subjects' forecasts systematically underreact to both positive and negative informational signals and tend to underreact more to positive signals than to negative signals. These results suggest that prior archival evidence of forecast overreaction to positive information is unlikely to be attributable to human decision bias.

#### *4.2.1.2.4. Analysts' preference to withhold unfavourable forecasts*

McNichols et al. (1997) investigate analysts' optimism from a different perspective. Instead of focusing on the incentives that analysts have to issue optimistic forecasts, these authors examine their disincentives to disclose negative information. Specifically, McNichols et al.

(1997) explore whether analysts are more likely to report on stocks about which they have favourable views. The results suggest analysts' preference to withhold unfavourable forecasts, since analysts tend to start covering firms they view favourably and stop covering firms they view unfavourably. In fact, McNichols et al. (1997) show that stocks recently added into analysts' lists of followed stocks are heavily weighted toward *"Strong Buy"* recommendations compared with other stocks with previous recommendations. In contrast, stocks dropped by analysts tend to have lower ratings than those whose coverage continues. McNichols et al. (1997) reinforce the fact that their results should be interpreted as partial explanation for analysts' optimism by refuting the idea that analysts introduce less forecast bias near the end of coverage. The authors support this view, arguing that analysts do not report forecasts when they drop stocks from coverage. Consequently, analysts do not reflect negative information in their final sample of observed forecasts and thus the final sample of observed forecasts will be, on average, too high given the selection conditional to their expectations.

#### *4.2.1.2.5. Do forecast errors imply analysts' non-rational behaviour?*

Despite the fact that most studies argue that the forecast errors should be considered as evidence for analysts' non-rational behaviour, there are some exceptions. Ackert and Hunter (1994) hypothesise that despite the rejection of the simple form of the rational expectation hypothesis, analysts' forecasts may be converging toward rational expectations forecasts from a dynamic perspective. They present two possible explanations to justify this possible dynamic form of rationality. First, forecasts can become more rational with the accumulation of additional relevant information. This information includes future corporate earnings, and the determinants of these earnings or estimates of other analysts. Second, rationality of analysts' forecasts may simply depend on the amount of time between the forecasts and the date on which actual earnings are announced. After concluding that analysts' forecasts do not conform to the simple rational expectations notion of an optimal forecast, Ackert and Hunter (1994) analyse the econometric outputs from a dynamic perspective. Their results show a dynamic behaviour of the estimated constant and slope coefficients, which is consistent with their initial hypothesis. The rejection of the simple rational expectations hypothesis in favour of dynamic rationality leads Ackert and Hunter (1994) to interpret these results as a consequence of heterogeneity in security analyst

information processing abilities.[38] They also argue that their results are consistent with the presence of herding behaviour among security analysts as later papers show (e.g., Trueman, 1994; de Bondt and Forbes, 1999; Welch, 2000).

In a subsequent study, Ackert and Hunter (1995) argue that the use of less general statistical tests, which establish necessary but not sufficient conditions for rationality, has undoubtedly been a contributing factor to explain the lack of consensus regarding analysts' rationality.[39] Ackert and Hunter (1995) define two methodological problems in most of the studies addressing analysts' rationality. First, most of these studies only consider the lack of serial correlation property to reach a conclusion about analysts' rationality, which although it is necessary, is not sufficient to draw conclusions about rationality. Another methodological issue criticised by Ackert and Hunter (1995) is that the few studies dealing with orthogonality do not address the aggregation problems associated with the samples. In fact, by using published expectation series based on aggregated or averaged values, these may not constitute perfect measures of the true underlying expectations of the individual agents. This situation can lead researchers to reject (fail to reject) rationality when the individual agents are in fact rational (not rational). The results of their econometric tests reject analyst forecast rationality, but results are sensitive to the data used. Therefore, Ackert and Hunter (1995) do not support the rational expectation hypothesis, but exceptions can be found depending on the analysts' forecasts chosen, the time period covered or the observation interval.

Lim (2001) presents an alternative view justifying the empirical evidence rejecting the classical standards of the analysts' rational expectation hypothesis. The argument is simple: considering that analysts' livelihoods depend on the accuracy of their forecasts, it seems reasonable to look at these forecasts as if they were analysts' best expectations. Therefore, he argues that optimistic forecasts can be rational if they act to decrease forecast errors. By issuing optimistic forecasts for a given firm, analysts can improve their access to company management and thus benefit from this key source of non-public company

[38] Their interpretation is based on Haltiwanger and Waldman's (1985) model, which assumes that there are congestion and synergy effects associated with the forecasts of agents and that sophisticated agents can anticipate naïve agents' behaviour. Congestion effect refers to a situation where for any agent i, the higher the number of other agents who make the same forecast as agent i, the less well off is agent i (in terms of utility or monetary compensation). Synergistic effect refers to a situation opposite to that of congestion effect. Considering this effect, for agent *i*, the higher the number of other agents who make the same forecast as agent *i*, the better off is agent *i*. Ackert and Hunter (1994) argue that the rejection of the simple rational expectations hypothesis is consistent with the notion that synergistic effects dominate congestion effects among analysts, meaning that naïve or non-rational analysts have a disproportionately large effect on equilibrium forecasts.

[39] As mentioned in section 4.2.1.1., orthogonality and lack of serial correlation properties are necessary to draw conclusions about rational expectations.

information. By issuing unfavourable forecasts, analysts may reduce or eliminate their access to this source of information, given that managers may create difficulties for these analysts in responsing to those forecasts. Based on these assumptions, Lim (2001) proposes and tests a quadratic-loss utility function for modelling earnings forecasts, where analysts trade off bias to improve management access and forecast accuracy. Results show that forecast bias varies predictably across companies and analysts consistently with the author's assumptions. These results suggest that optimism may be a rational property of optimal earnings forecasts.

#### *4.2.1.3. Informational content of analysts' reports*

There is strong evidence that markets consider analysts' opinions important. Several papers demonstrate that analysts' earnings forecasts and recommendations have influence in stock prices. However, the informational content of the accompanying analysts' reports in addition to their most visible outputs is not so clear. This section reviews two papers addressing this question.

Ho and Harris (2000) examine the full text of the accompanying analysts' reports in order to evaluate what information is provided by analysts to justify the changes in recommendations/earnings forecasts, and whether the rationale used is different considering the upgrade and downgrade investment advice. Additionally, they analyse the market reaction considering the different rationales provided to investors: information based on the underlying company (e.g., revisions in earnings forecasts) and publicly available information on changes in share prices. Their conclusions reveal that analysts reports associated with most analysts' recommendations provide fundamental information to markets. First, most recommendation changes (approximately 70 percent) mention analysts' earnings revisions or an assessment of business factors. Second, despite the general market reaction to recommendation changes, Ho and Harris (2000) find that the market reacts more strongly to explicit fundamental information. In fact, the largest price reaction is related to recommendations supported by an analyst's revised earnings forecast. This suggests that markets seem to pay attention to the words behind analysts' investment advice. On the other hand, analysts seem to be more careful when issuing downgrades since they only do that when they are sufficiently confident to support the change with a quantitative analysis, namely an earnings forecast revision. In contrast, a general business factor seems to be sufficient for an upgrade.

In a recent study, Asquith et al. (2005) present further evidence that the market does not ignore security analysts' reports. Since most papers only analyse stock recommendations and earnings forecasts, these authors add the entire content of analysts' reports in the analysis of the information provided by analysts. Their results support the idea that the content of analysts' reports has information value. In fact, stronger arguments supporting analysts' opinions lead to stronger market reaction. Additionally, the market impact of earnings revisions and recommendation downgrades are significantly greater for small firms and for firms with a smaller analyst following. On the other hand, the market treats an analyst report differently according to whether it is an old recommendation, an upgrade or a downgrade. In fact, Asquith et al. (2005) show that the contents of analysts' reports receive the most scrutiny in the case of downgrades.

## 4.2.2. Going-concern opinions

### *4.2.2.1. Do going-concern opinions have informational value?*

Asare (1990) presents a review of several studies addressing the informational value of audit qualifications in general and going-concern opinions in particular. The literature review of this topic finds that there is no consensus regarding the utility of the going-concern report. Asare (1990) highlights the conflicting results of these market-based studies and presents some possible explanations for the contradictions: i) studies are not consistent in their use of qualification announcement dates; ii) studies are not consistent in the use of windows for testing the information content hypotheses; iii) inability to unequivocally control for other concurrent information accompanying the financial statements; and iv) some studies use *"subject to"* opinions in general and are not designed to specifically address the going-concern report. Additionally, Asare (1990) suggests that researchers may increase the power of their statistical tests of stock price effects if they distinguish between *"predictable"* opinions and *"surprises"*.

Ameen et al. (1994) argue that the failure of some studies to find information content for audit qualification (Elliott, 1982; Dodd et al., 1984) may be related to the amount of information available for those firms. In fact, most of the studies that find no informational content in audit qualifications use very large firms and firms which are traded on national stock exchanges. Therefore, Ameen et al. (1994) hypothesise that the more information available to investors, the less salient any particular source becomes for users of this information. Considering this hypothesis, large firms are less influenced by audit

qualifications than smaller firms. The authors design a study to test the informational content of audit reports for small firms and conclude that the market reacts negatively before the first observable public announcement. In fact, the only sub-period with significant negative abnormal returns is before the announcement, which means that when the qualification is announced, the reaction is mitigated by previous market reaction in response to the expectations. However, given that this study analyses audit qualifications in general, it may be possible that some of them may provide information less severe than expected (good news), while others may provide information more severe then expected (bad news). For this reason, the audit qualifications in general do not constitute a clear case of bad news, and an unambiguous case of bad news should be used to understand this phenomenon.

#### *4.2.2.2. Different market reaction to going-concern opinions*

The final sample of papers contains two studies that directly address the information content of going-concern opinions to the markets. The methodology develop by Taffler et al. (2004) and Kausar et al. (2004) to examine this question allows a clarification of this issue by avoiding the methodological problems suggested by Asare (1990). These two studies suggest that the going-concern report itself has market value. Using UK and US data respectively, Taffler et al. (2004) and Kausar et al. (2004) present clear evidence that the market underreacts to bad news. Kausar et al. (2004) also find that good news (namely the case of GCM withdrawal) is fully anticipated by the market.

Taffler et al. (2004) contribute to the literature by suggesting that the market takes time to assimilate bad news. Using the unambiguous bad news event of a first time going-concern audit modification report by a firm, they find that the UK market underreacts after the release of these reports. In fact, results show that in the 12 months after the information disclosure, firms underperform by between 24 percent and 31 percent, depending on the benchmark adopted. After testing for alternative explanations, the authors conclude that the underreaction cannot be explained by poor firm matching or bad model problems.[40] This possibility is refuted by matching the sample firms on a one-to-one basis with firms that present the same earnings collapse but with no audit GCM. The results show that the market underreaction is not a post-earnings announcement drift phenomenon.

[40] In fact, since most GCM-issue firms in the sample also experience earnings collapses during the same period, and considering the literature that suggests that extreme negative earnings changes are followed by abnormally low returns (e.g., Ball and Brown, 1968; Bernard and Thomas, 1989), one could argue that GCM issuances are merely a proxy for earnings surprises.

Kausar et al. (2004) extend Taffler et al. (2004) by analysing the market reactions to good and bad news in the going-concern opinion context.[41] This study analyses the twelve-month pre- and post-event monthly returns following the publication of the GCM audit report and its withdrawal for 845 firms from 1994 to 2002. Considering the mean buy-and-hold returns in the twelve months prior to the GCM and subsequent GCM withdrawal, firm stock prices decline by -50 percent and rise by 102 percent respectively. Moreover, after the GCM and GCM withdrawal public announcement, the two samples exhibit different patterns. Considering the twelve month period after the event announcement, the first-time GCM sample underperforms by -16 percent, whereas the GCM withdrawal firms exhibit no significant market reaction. These results indicate that market fully anticipates good news (GCM withdrawal) while it underreacts to bad news (GCM opinion).

The different market reaction in the GCM context constitutes additional evidence that the traditional finance paradigm has some deficiencies in explaining the market behaviour. The authors offer two different psychological theories drawn from behavioural explanations in order to theoretically justify the results. First, mental accounting and investor inability to realize losses (Shefrin and Statman, 1985) based on Kahneman and Tversky's (1979) prospect theory presents a consistent explanation to explain the results of Taffler et al. (2004) and Kausar et al. (2004). Second, Kausar et al.'s (2004) results are aligned with Taffler et al.'s (2004) explanation that the market denies GCM releases. Additionally, these two studies suggest that the opportunity to earn profits by trading on this anomaly is limited and highly risky. In fact, results show that the trading costs (bid-ask spread, stock borrowing costs and trading commissions) associated with a possible arbitrage strategy are likely to eliminate any potential profits that might apparently be earned. These results are consistent with the minimally rational paradigm (Rubinstein, 2001).

### *4.2.2.3. Expectations of a GCM*

Finance research suggests that markets anticipate some events. Asare (1990) suggests that, in the case of going-concern opinions, it is important to researchers to distinguish between *"predictable"* opinions and *"surprises"* in order to increase the power of the statistical tests. This section reviews four papers that cover whether or not going-concern opinion decisions can be predicted using publicly available information.

[41] This study presents a new approach to the GCM literature since it analyses not only the market reaction to first-time GCM opinion (bad news), but also the market reaction to the subset of firms that one year later received the withdrawal of such opinions (good news).

For instance, Mutchler (1985) applies a discriminant analysis approach using the top six ratios ranked by auditors as useful in identifying a company with a potential going-concern problem to discriminate between companies receiving this auditor opinion decision and others that do not.[42] She uses 119 companies that receive a going-concern opinion and 119 companies with going-concern difficulties that do not receive going-concern opinion. Her results suggest that her financial ratio-based model is able to predict a going-concern opinion with a relatively high level of accuracy using only publicly available financial information.

Further research suggests that negative stock price adjustments are dependent on the expectation of forthcoming going-concern opinions.[43] Loudder et al. (1992) mention that previous findings of no market reaction to audit qualifications may be explained by the failure to control for market expectations. Their results show that the disclosure of an unexpected opinion and the non-disclosure of an expected opinion have market impact. In particular, their study emphasizes that *"unexpected"* audit opinion firms are more likely to exhibit negative abnormal returns around the qualification disclosure date than the *"expected"* firms, because the market has already anticipated and impounded this information. These findings reinforce the benefits of incorporating expectations into an event model when there are different prior probabilities of the sample firms experiencing the event under examination (Loudder et al., 1992).

Jones (1996) analyses firms' abnormal returns surrounding the release of the auditor's report for going-concern uncertainties (bad news) and unqualified reports for distressed firms (good news).[44] Broadly speaking, he finds negative abnormal returns surrounding the release of the auditor's report for firms receiving going-concern opinions and positive abnormal returns considering the case of good news. Jones (1996) also uses a logistic regression containing publicly available data to estimate the likelihood of a firm receiving a going-concern opinion in order to measure the market expectation.[45] In fact, the magnitude of the abnormal returns depends on the extent to which the opinion type was

[42] Ratio choice is based on Mutchler (1984).

[43] See Loudder et al. (1992) and Fleak and Wilson (1994).

[44] Distressed companies were defined as those with negative income from operations and either: 1) negative retained earnings or 2) negative working capital.

[45] The going-concern prediction can be made using different statistical methods. Koh and Low (2004) compare the performance of different techniques like neural networks, decision trees and logistic regression for this task. All these techniques are considered as data mining, but only logistic regression can be considered a traditional statistical method. The results suggests that all three techniques give adequate results, but highlight that neural networks and decision trees can supplement and complete traditional statistic methods. Indeed, Trigueiros and Taffler (1996) have concluded that neural network approaches could make a potential contribution in accounting research.

unexpected. Jones' (1996) results suggest that researchers should recognize the importance of going-concern expectations and should be aware of the influence of default or debt restructuring surprise when analysing market reaction to disclosures by distressed firms.

Blay and Geiger (2001) examine whether firms' subsequent viability status is related to the magnitude of abnormal returns surrounding the announcement of a going-concern audit report. Before using a proxy for market expectations, they do not find abnormal returns significantly different from zero considering their entire sample. However, when their sample is divided into two, depending on the firms' subsequent outcome, abnormal returns are significantly lower for the viable group compared with the subsequently bankrupt group. This seems to indicate an association between the bankruptcy partition with market expectations and share price adjustments for the sample of first-time going-concern report recipients. The authors defend their results on the basis that this naïve partition is an incremental measure of market expectations for a going-concern audit report.

## 4.3. Discussion

This section has two objectives. The first is to review the main conclusions extracted from the synthesis of the selected papers in an integrated form. The second is to present the basis for the suggestions for further research.

### 4.3.1. Optimism

The systematic review of the literature shows that the strongest idea presented in the papers addressing analyst behaviour is that these market agents are optimistic. In fact, the papers analysed suggest that analysts tend to be optimistic in their analyses, and that optimism is most pronounced in some specific situations. Table 4.5. reviews the main findings regarding analysts' optimism from the selected papers. In fact, the papers analysed are unanimous in considering analysts' forecasts as optimistic (directly or indirectly). That tendency is verified in different markets and different periods of time. Research on analysts' forecasts in the UK, US and Europe, considering samples from 1976 to date, points to a significant excess of optimism. This tendency is justified by the systematic positive difference between forecasts and actual EPS, and the systematic higher number of buy recommendations compared with the number of sell recommendations. However, the review of the selected papers shows that there are scenarios where analysts' optimism seems to be more prominent.

***Table 4.5.: Summary of empirical evidence on analysts' optimism***

| Study | Data | Sample location | Main findings regarding analysts' optimism |
|---|---|---|---|
| De Bondt and Thaler (1990) | Forecast changes in EPS for one and two-year time horizons (1976-1984) | US | Forecasts are too optimistic. |
| Moses (1990) | Annual EPS forecasts for 136 firms declaring bankruptcy | US | Evidence of general optimism. Analysts' optimism seems to be more pronounced for failing firms and increases as bankruptcy approached. |
| Abarbanell and Bernard (1992) | EPS forecasts for 178 firms (1976-1986) | US | Analysts' optimism despite poor recent earnings performance. |
| Capstaff et al. (1995) | 56,090 forecasts of EPS for 1,315 firms (1987-1990) | UK | Results suggest optimistic bias among analysts. |
| Huberts and Fuller (1995) | Mean estimates of analysts' EPS for all the largest 1,500 firms (1977-1990) | US | Results suggest analysts' systematic optimistic. Current forecasts of earnings are excessively optimistic for companies whose earnings were hard to predict in the past. |
| Brown (1997) | Analysts' quarterly earnings forecasts (1983-1996) | US | Significant analysts' optimism bias although its decrease over time. The magnitude of analysts' earnings forecast errors seems to be less acute for firms not listed in the S&P 500, firms with small market capitalization, firms with smaller number of analysts following and firms with lower absolute value of earnings forecasts. |
| Das (1998) | Mean monthly analysts' forecasts (1985-1993) | US | General optimism considering the all sample. Analysts are more optimistic and less accurate for loss firms than profitable firms. Optimism declines as the forecast horizon gets closer to the earnings announcement. |
| Amir and Ganzach (1998) | Monthly consensus forecasts of annual EPS (1976-1990) | US | Analysts' optimism that weakens as the release of the actual earnings approaches |
| Easterwood and Nutt (1999) | 10.694 consensus forecasts of annual EPS | US | Analysts' forecasts are systematically optimistic. |
| De Bondt and Forbes (1999) | 441,000 forecasts of EPS for 1,731 firms (1986-1997) | UK | Strong evidence of excessive optimism. |
| Lim (2001) | Analysts' quarterly earnings forecasts for 300 brokerage firms (1984-1996) | US | Evidence of analysts' optimism. Analysts' optimism seems to be more pronounced for smaller firms, firms with smaller number of analyst following, firms with higher volatility and firms with past poor performance. |
| Espahbodi et al. (2001) | Analysts forecasts for 350 bankrupt firms (1985-1993) and 631 turnaround firms (1983-1991) | US | General optimism for both bankrupt and turnaround firms. Analysts' inability to distinguish between these two groups of firms after two or more consecutive years of poor performance. |
| Sedor (2002) | Analysis of case material by 86 sell-side analysts | US | Forecast optimism is an unintentional consequence of analysts' reactions to the structure of information about managers' future plans. Scenario-induced optimism is greater for firms reporting losses. |
| Beckers et al. (2004) | Earnings forecasts for selected companies (1993-2002) | Europe | Evidence consistent with optimism in analysts consensus earnings forecasts. The increase in the number of analysts following a firm reduces forecast errors. |
| Ding et al. (2004) | Quarterly EPS forecasts for 2,084 firms (1987-2000) | US | Analysts' optimism during periods of negative earnings growth. |

The studies addressing analysts' optimism reveal that tendency towards optimism is particularly manifested in situations of financial distress. In fact, optimism seems to be more evident for failing firms (Moses, 1990), loss-making firms (Das, 1998), firms with past

poor performance (Lim, 2001) and during periods of negative earnings growth (Ding et al., 2004). Even considering samples of bankrupt firms, analysts maintain this tendency (Moses, 1990 and Espahbodi et al., 2001).

The review of these papers also suggests that the magnitude of errors in analysts' forecasts depends on the number of analysts following. Studies like Brown (1997), Lim (2001) and Beckers et al., (2004) find that analysts' optimism seems to be more evident when firms have a smaller number of analysts following them. On the other hand, the studies' results propose that firm size can explain the degree of optimism in analysts' forecasts. Although Beckers et al. (2004) do not corroborate this idea for their European sample, Brown (1997) and Lim (2001) find higher levels of optimism for small firms and firms not in the S&P 500. This relation seems to be consistent with the excessive optimism for firms whose earnings were hard to predict in the past (Huberts and Fuller, 1995), firms with lower absolute values of earnings forecasts (Brown, 1997) and firms with higher volatility (Lim, 2001). Additionally, the company's sector seems to influence the level of analysts' optimism given their significant effect on analysts' accuracy (Brown, 1997; Beckers et al, 2004). Finally, other consistent findings among the papers analysed is the decline of optimism as the forecast horizon gets closer to the earnings announcement (Amir and Ganzach, 1998; Das, 1998).

### 4.3.2. Cognitive-bias explanation

Some of the above results are consistent with several asymmetries in analyst behaviour. For instance, studies like Amir and Ganzach (1998) and Easterwood and Nutt (1999) find that analysts exhibit an asymmetric behaviour in the presence of good and bad news. This situation is explained by Amir and Ganzach (1998) by the behavioural decision theory, which is one of the main explanations for the analysts' biased behaviour. Table 4.6. reviews the main findings of the eight studies included in the systematic review addressing the under and overreaction to earnings forecasts.

De Bondt and Thaler (1990) and O'Hanlon and Whiddett (1991) present conflicting results regarding the under and overreaction in analysts' forecasts, which were explained by O'Hanlon and Whiddett (1991) as due to the possible effects of different remuneration systems and different investment regulation between the US and UK. However, Capstaff et al. (1995) and de Bondt and Forbes (1999) find overreaction in UK analysts, which contradicts O'Hanlon and Whiddett's (1991) explanation. Abarbanell and Bernard's (1992) results are in line with O'Hanlon and Whiddett (1991), given that they find evidence

consistent with analysts' forecast underreaction. Although Abarbanell and Bernard (1992) support the argument of analysts' forecasts being too extreme, they reject the overreaction phenomenon since their results fail to relate extremely high forecasts with firms recently experiencing strong earnings performance, or extremely low forecasts with firms experiencing weak earnings forecasts. Amir and Ganzach (1998) and Easterwood and Nutt (1999) divide analysts' forecasts conditional to the nature of the information preceding the forecast: good news and bad news. Broadly speaking, these two studies find that analysts underreact in the presence of good news and overreact in the presence of bad news, consistent with systematic optimism. This explanation seems to clarify the conflicting results in the previous literature and is consistent with behavioural theories justifying asymmetric behaviours. Finally, Espahbodi et al. (2001) present evidence supporting this different reaction given the analysts' underreaction to the bankruptcy.

***Table 4.6.: Summary of empirical evidence on under and overreaction in analysts' forecasts***

| Study | Data | Sample location | Main findings regarding analysts' under and overreaction |
|---|---|---|---|
| De Bondt and Thaler (1990) | Forecast changes in EPS for one and two-year time horizons (1976-1984) | US | Overreaction in analysts' forecast. |
| O´Hanlon and Whiddet (1991) | Revisions of the consensus EPS forecasts (1987-1990) | UK | Underreaction in analysts' forecasts. |
| Abarbanell and Bernard (1992) | EPS forecasts for 178 firms (1976-1986) | US | Analysts' forecasts underreact to recent earnings. |
| Capstaff et al. (1995) | 56,090 forecats of EPS for 1,315 firms (1987-1990) | UK | Regression analysis suggests analysts' forecast overreaction to EPS. |
| Amir and Ganzach (1998) | Monthly consensus forecasts of annual EPS (1976-1990) | US | Analysts' overreaction to positive forecast modifications and analysts' underreaction to negative forecast modifications. |
| De Bondt and Forbes (1999) | 441,000 forecasts of EPS for 1,731 firms (1986-1997) | UK | Strong evidence of overreaction bias in consensus forecasts. |
| Easterwood and Nutt (1999) | 10,694 consensus forecasts of annual EPS | US | Analysts' underreaction to negative information and analysts' overreaction to positive information. |
| Espahbodi et al. (2001) | Analysts forecasts for 350 bankruot firms (1985-1993) and 631 turnaround firms (1983-1991) | US | Analysts' underreaction during four years preceding bankruptcy considering both cases of bankrupt and turnaround firms. |

## 4.3.3. Economic-based explanation

The systematic review also reveals some studies that justify analysts' optimism with the agency conflicts faced by analysts. Table 4.7 reviews the main findings regarding the economic-based incentives explanation. These papers are unanimous in suggesting that

the agency interpretation can justify, at least partially, analysts' optimistic forecasts and recommendations. There are different incentives faced by analysts that might lead to overoptimism. Dugar and Nathan (1995) show that investment banker analysts produce more optimistic forecasts than non-investment banker analysts. Hodgkinson's (2001) results are in line with Dugar and Nathan (1995) since she finds that the close relation between firms and analysts working for broker firms provides more optimistic forecasts than analysts who do not have that relation. The argument used to justify this situation is similar to Lim (2001), who suggests that analysts' need to improve their access to firms' management to benefit from this key source of non-public company information. Michaely and Womack (1999) present further evidence on Dugar and Nathan's (1995) argument of agency conflicts regarding broker analysts with investment banking relations. In fact, they find that underwriter analysts' recommendations of IPO firms have significantly worse performance than non-underwriter analysts. Additionally, Hong and Kubik (2003) mention analysts' career concerns as relevant to explain analysts' optimism, since brokerage houses seem to reward analysts for their optimism.

***Table 4.7.: Summary of empirical evidence on analysts' agency conflict***

| Study | Data | Sample location | Main findings regarding analysts' agency conflict |
|---|---|---|---|
| Dugar and Nathan (1995) | Analysts' research reports (1983-1988) | US | Investment banker analysts are more optimistic relative to other analysts, both in terms of their earnings forecasts and their investment recommendations. |
| Michaely and Womack (1999) | Analysts' recommendations of 391 IPOs (1990-1991) | US | Underwriter analysts' recommendations of IPO firms have significant worse performance than non-underwriter analysts. |
| Hodgkinson (2001) | 1,096 analysts' forecasts for 475 firms (1990-1993) | UK | Strong evidence that analysts provide optimistic forecasts for broker firms. Results suggest that analysts may provide optimistic forecasts for firms where accss to information may increase the superiority of their forecasts. |
| Hong and Kubik (2003) | Earnings forecasts for 12,336 analysts (1983-2000) | US | Analysts who are optimistic relative to the consensus are more likely to experience favourable job separations. |

Although there are papers stating that cognitive biases constitute the explanation for analysts' optimism, and others arguing that economic factors are behind this behaviour, there is no consensus regarding what constitutes the real explanation for this phenomenon. The lack of consensus is related to the difficulties that researchers face to isolate each explanation; however, Tamura (2002) presents evidence supporting the cognitive explanation since he advocates that analysts are affected by their personalities in forecasting. In fact, a relatively optimistic analyst tends to continue to be optimistic, while a pessimistic analyst tends to continue pessimistic. Contrary to this, Stevens and Williams (2004) suggest that human decision bias is unlikely to be the cause for analysts' optimism

given the results of their experimental research. These contrary results indicate that perhaps there is no *"one explanation"*. Therefore, research on this issue is needed to understand the weight that each explanation has in the justification of analysts' optimism.

### 4.3.4. Herding behaviour

Some of the papers reviewed present evidence of herding behaviour among security analysts. According to Cote and Goodstein (1999), herding behaviour implies the exacerbation of optimism and constrains artificially the boundaries of analysts' earnings forecasts. Trueman (1994) presents a theoretical framework suggesting that, under certain circumstances, an analyst prefers to release a forecast that is close to prior expectations. Two additional papers find herding behaviour among analysts in the UK and US markets. Using UK data, de Bondt and Forbes (1999) show that although absolute errors increase with the forecast horizon, analyst disagreement remains almost unchanged. Welch (2000) finds that the most recent two revisions by other analysts have a positive influence on the next analyst revision.

### 4.3.5. Analysts' rationality

Despite the disagreement about the reasons, it seems to be consensual that analysts are optimistic. According to Easterwood and Nutt's (1999) definition of rational analyst behaviour, analysts' systematic optimism is inconsistent with rationality. However, the systematic review finds three papers arguing that the analysts' apparently biased behaviour may not imply a non-rational behaviour. In fact, Ackert and Hunter (1994) show that analysts' forecasts are converging towards rational expectations from a dynamic perspective. Moreover, Acker and Hunter (1995) argue that some of the papers claiming analysts' non-rational behaviour present methodological inadequacies, like ignoring the necessary orthogonality property and the use of samples with aggregation problems. More recently, Lim (2001) has presented an alternative explanation for analysts' optimistic behaviour. He suggests that optimistic forecasts may be consistent with rationality if they act to decrease forecast errors. In fact, by issuing optimistic forecasts, analysts are improving their access to firms' management and thus, contributing to a possible increase in their accuracy.

The rationality issue has been discussed for decades. Rubinstein (2001) argues that the markets' degree of rationality should be the central question to evaluate rationality in the accounting and finance domain. His categorizations of markets based on the degree of

rationality do not assume that all agents are rational. For instance, the minimum degree of market rationality is defined by the author allowing the possibility of agents' non-rational behaviour. However, in order to ensure the minimally rational market, it is necessary that abnormal profit opportunities should not exist. This new insight into the discussion of rationality should be taken into account since apparent *"irrationalities"* may not imply irrational markets.

### 4.3.6. Going-concern opinion issues

In two studies closely related to my research topic, Taffler et al. (2004) and Kausar et al. (2004) find that, despite the underraction to GCM (Taffler et al., 2004 and Kausar et al., 2004) and overreaction to GCM withdrawal (Kausar et al., 2004), their results are consistent with this minimally rational market. These two studies conclude that, after considering the arbitrage costs for small loss-making firms, the apparent magnitude of abnormal returns associated with a trading strategy creates an illusion of profit opportunity. Taffler et al. (2004) and Kausar et al. (2004) represent the starting point for my discussion regarding the going-concern opinion. There is no consensus on the informational value of going-concern opinions.[46] Broadly speaking, the conflicting results may be due to a lack of consistency in the use of qualification announcement dates and windows for testing hypotheses, inability to control for concurrent information, and failure in distinguishing between *"predictable"* opinions and *"surprises"* (Asare, 1990). This last justification is consistent with the findings of Ameen et al. (1994), who find negative market reaction to audit qualifications only for the period before the public announcement. Considering that markets appear to anticipate going-concern opinions, it seems reasonable to examine whether this event can be predicted using publicly available information. By doing this, it may be possible to increase the power of the statistical tests (Asare, 1990). Table 4.8. reviews the main findings of papers analysing the predictability of going-concern opinions. The analysis of the four papers addressing this issue suggests that the going-concern opinion can be predicted with a high level of accuracy using public information. Moreover, that expectation is important to explain differences in the magnitude of abnormal returns. Mutchler (1985) applied a discriminant analysis, using as dependent variables the top six ratios ranked by auditors as useful in identifying a going-concern problem. Her results suggest that this information is useful to distinguish, among the firms with going-concern problems, those firms with GCM and those without GCM. Additionally,

[46] Section 2.3.2. reviews this issue.

Loudder et al. (1992) and Jones (1996) find that the magnitude of abnormal returns is dependent on the expectation for an audit opinion and going-concern opinion respectively. In a subsequent work, Blay and Geiger (2001) find that the firm's subsequent viability has implications in the abnormal returns generated.

***Table 4.8.: Summary of empirical evidence on the predictability of going-concern opinions***

| Study | Data | Sample location | Main findings regarding the predictability of going-concern opinions |
|---|---|---|---|
| Mutchler (1985) | 119 GCM and 119 non-GCM firms (1981-1982) | US | Financial ratio-based model is able to predict a going-concern opinion with a relatively high level of accuracy using only publicly available financial information. |
| Loudder et al. (1992) | 101 firms with "subject to" audit opinion | US | "Unexpected" audit opinion firms are more likely to exhibit negative abnormal returns around the qualification disclosure date then the "expected" firms. |
| Jones (1996) | 68 GCM and 86 non-GCM firms (1979-1988) | US | The magnitude of the abnormal returns depend on the extent to which the opinion type was unexpected. |
| Blay and Geiger (2001) | 121 GCM firms (1990-1992) | US | Abnormal returns are dependent of subsquent firm's viability. Abnormal returns significantly lower for the "viable" group compared to the subsequent bankrupt group. |

This chapter reviewed the 40 papers selected in the systematic review process. The report of the findings is organized thematically in order to provide a comprehensive analysis of the phenomena. The next chapter presents the implications of the findings for further research as well as some reflections about the process and the methodology used.

# CHAPTER 5 - CONCLUSION

## 5.1. Implications for further research

This systematic review of the literature confirms that no study to date has connected analyst behaviour with going-concern opinions in an attempt to clarify how analysts behave in this extreme case of bad news. In fact, the search strings defined to select papers within a restricted scope do not find any study analysing this phenomenon. Additionally, the review of the selected papers finds some questions about analysts' behaviour, which remain unclear and represent opportunities for further research.

Studies consistently document the fact that analysts are optimistic. However, little is known about their specific behaviour in extreme situations. As Schipper (1991) points out, it makes sense to investigate decision strategies in extreme cases, because evidence suggests that optimism seems to be most pronounced in forecasts preceded by share price declines or earnings declines. In fact, section 4.3.1. shows that analysts are particularly optimistic in situations of financial distress. Therefore, it is important to explore thoroughly how analysts deal with bad news. The study of analysts' anticipation and response to bad news events can provide even clearer evidence of analysts' optimism and their role in the apparent delayed impact of bad news on investors. Since the GCM is considered to be an extreme and unambiguous case of bad news, which has never previously been connected with analyst behaviour, this reason seems by itself to justify the relevance of my research. However, there are more reasons justifying this connection.

Taffler et al. (2004) and Kausar et al. (2004) find a substantial decline in the market value of first time going-concern firms one year before the event, attesting that a GCM audit firm report is perceived by the market as a clear signal of bad news. Despite the results showing that the market (partially but not fully) anticipates this event, analysts' role in this process is unknown. Consequently, this gap generates an interesting research opportunity that I want to explore. By analysing analysts' earnings and price forecasts, recommendations as well as their reports, it is possible to examine whether analysts anticipate the forthcoming GCM, and the nature of their response to it. The alternative hypothesis is that analysts simply ignore this event.

The study of analysts' reports seems to be interesting given the evidence of informational value in these documents (Asquith et al., 2005). By studying analysts' reports for the period around the GCM, it may be possible to clarify if analysts are able to anticipate this

event and the nature of their reaction. For instance, content analysis may be used in order to detect tone differences in analysts' reports before and after the audit report disclosure. Additionally, considering the results of McNichols and O'Brien (1997), which point to analysts ceasing to cover firms they view unfavourably, it seems attractive to explore whether that situation also arises considering the GCM. This can provide further evidence on the anticipation/reaction discussion. Given that analysts act as sophisticated agents in the markets, it is reasonable to expect some active attitudes to relevant events Therefore, first time going-concern firms offer a clean test for studying analysts' behaviour in extreme situations.

Despite the opening question about how analysts behave in the presence of going-concern opinions, the results of Kausar et al. (2004) indicate the need for a deeper analysis. In fact, Kausar et al. (2004) find different market reactions to going-concern opinions. They find that the market underreacts to GCM (bad news), whilst fully anticipating GCM withdrawal (good news). The joint analysis of GCM (good news) and GCM withdrawals present a unique opportunity to investigate whether analysts exhibit asymmetric behaviour. If this hypothesis is correct, it can be understood as analysts potentially influencing the market asymmetrically. This test can provide further evidence to the results of Amir and Ganzach (1998) and Easterwood and Nutt (1999), who find that analysts tend to underreact in the presence of bad news and overreact in the presence of good news, but only considering the earnings change scenario.

The above discussion can be enhanced with the introduction of the expectations for a going-concern opinion. Some studies show that some techniques are useful to identify a firm with a potential going-concern problem (Mutchler, 1985) and the magnitude of the abnormal returns depends on the extent to which the opinion was expected (Loudder et al., 1992; Jones, 1996). Consequently, it is important to know whether analysts are using this publicly available information when they make recommendations and forecasts. If the magnitude of the price impact by the market depends on the predictability of the going-concern event, it is reasonable to hypothesise that analysts behave differently conditional on the expected or unexpected news.

Considering the discussion surrounding the reasons that justify analysts' biased behaviour, the study of going-concern opinions might be able to clarify whether the cognitive-bias explanation is behind this behaviour. In fact, GCM firms represent a set of firms where the agency conflicts are minimized. The argument is the same used by Espahbodi et al. (2001) for bankrupt firms, which states that the economic benefits to analysts associated with

these firms are relatively small. In this particular case, analysts do not face high economic incentives to be particularly optimistic in this situation since these firms carry a high risk. Therefore, the management of these firms has a higher likelihood of being changed and thus, analysts' incentives to cultivate good relations with the management are lower. The investor interest in analysts' outputs, particularly from institutional investors, is also lower, and the potential for generating brokerage commissions is likely to be small.

Some of the papers addressing analyst rationality state that the optimism bias may not imply irrationality. Despite analysts' biased judgement, analysts may be converging towards rational expectations from a dynamic perspective by becoming more rational with the accumulation of additional relevant information (Ackert and Hunter, 1994). Therefore, the analysis of the magnitude of the bias can help us to understand whether analysts are rational from a dynamic perspective, although there is the possible rejection of the simple form of rational expectations hypothesis. There are some additional ingredients to this discussion. Espahbodi et al. (2001) find that for bankrupt firms, forecast bias declines to insignificant levels by the year prior to bankruptcy filing, although there is evidence of underreaction in the four years prior to bankruptcy. Since a considerable percentage of bankrupt firms has previously received a GCM, it is reasonable to consider the going-concern firms as a cleaner case to study how analysts behave prior to the public announcement of the GCM.

For all these reasons, the connection between analysts' behaviour and going-concern opinions can be a contribution to both the accounting and finance literature.

## 5.2. Methodology appraisal

The systematic review of the literature revealed an important tool to avoid some weaknesses of the traditional literature review. In fact, the methodology defined in the chapter 3 is transparent and replicable to all that want to use it. This transparent process helped me to avoid some of my personal biases. For instance, I reviewed some non-positivistic papers that otherwise I would certainly avoid given my strong quantitative background. Additionally, some papers analysed would certainly have been ignored if I had not searched systematically on the databases.

However, I am convinced that this process is not free of criticism. First, one can always disagree with the definition of the keywords arguing that some are missing. The selection of keywords is crucial since all the remaining process will be sustained on the first selection of papers based on the search strings. In order to find a comprehensive set of keywords,

the involvement of the panel was essential given their knowledge in the area. Second, the selection of the papers based on the reading of titles and abstracts may exclude some papers that other researcher may include. The definition of the study's refined scope is a personal choice of the researcher. Third, the classification of papers based on the quality appraisal is not straightforward, since different researchers may classify studies differently. In fact, it is not unusual that specialists attribute different classifications to academic studies. Finally, it can be argued that studies other than academic papers could enhance the quality of the review. In my systematic review, I searched for other sources of information, especially working papers that could be included in the review. Despite the effort, there are obvious limitations to the search process since it is not possible to search systematically for other sources of information.

Overall, I am convinced that this dissertation benefited from the systematic review methodology. In fact, the level of possible criticism to a traditional literature review is much higher than with the systematic review methodology. The questions debated in the previous paragraph are related to the degree of freedom that every process has.

## 5.3. Learning experience

The systematic review of the literature revealed itself to be a continuous learning process. Since the beginning of the MRes course, I realized that this new approach is significantly different from my previous experience in my MSc in Finance that I completed a few years ago. The research conditions that I had during that time were incomparably inferior to those offered by Cranfield University at this time. My MSc dissertation in Finance was based only on the main references provided by my supervisor and some cross-references that I used. After the systematic review process, I realized that my first research experience would have been much better if I had had the opportunity to apply this process.

One of the first aspects that most impressed me was the power of the databases and their contribution to the quality of the final work. Research institutions like Cranfield University, which are well equipped with learning resource centres built around technology have important sources of information that should not be ignored. In this context, library and information skills are very important to be able to take advantage of these resources. This new approach to information selection and research supported by electronic resources opened up new opportunities to conduct a rigorous and unbiased literature review. During this year, I learned how to work with the databases and how to manage a huge amount of references with the appropriate software. By doing this, besides the increase in rigour, it is possible to accelerate the research process. In my personal case, this is very important

since, as a lecturer in a Portuguese university, research will continue to be my work and these learning outcomes will have a positive impact on my work in the foreseeable future.

The availability of thousands of papers is not free of risk. In fact, researchers should define from the very beginning the refined scope to apply the systematic search approach. There is the potential danger of defining too broad scope for the research study and thus working with an unmanageable number of studies that do not focus on the core issues of the research. The systematic review also opened my mind to other ways of conducting research. Although most of the papers in my systematic review are written from a clear positivistic approach, which is not unexpected given the strong positivistic approach of the field, this transparent process made possible the analysis of papers with a different approach. Otherwise, I am sure that I would have unconsciously avoided these papers given my strong positivistic background. The reflection about this important discussion in the research process allows me to conclude that papers with a different approach can substantially increase the value of the research with their different approach to the subject.

Additionally, I felt that the contributions made by other people during the process were extremely important. In fact, the establishment of a panel at the beginning of the process allowed me contact with experts from the very beginning of the process. The discussion of my topic with researchers in the area and the contributions made by the literature specialists were crucial to the final output of my work. After this process, and compared with my first research experience, I understand the importance of the involvement of other people in my research.

However, it is not possible to apply the systematic review method to other sources of information outside academic papers. This weakness of the process should be compensated for by a search for relevant sources of information like unpublished papers, and particularly working papers, which contain research in progress. I also realise that the systematic review is not by itself the solution to our problems. In fact, there is also a degree of subjectivity during the process, particularly during the definition of keywords and search strings, as well as the definition of the selection criteria. The definition of these issues is fundamental to the whole process, since it defines the basis for the selection of papers. For instance, one could argue that important keywords are missing or that the selection criteria are too broad or too narrow. This situation highlights the importance of the involvement of the panel and the idea that the systematic review eradicates researcher bias. However, it is unquestionable that the systematic method of conducting the review is

important in significantly reducing the personal bias and guaranteeing transparency of the process.

## 5.4. Concluding remarks

This dissertation is a literature review of the studies that can provide support for the connection between analyst behaviour and going-concern opinions and the basis of this research gap to constitute the focus of my PhD research. The next step is related to the extraction of the necessary data to answer the questions raised during the systematic review. In fact, the development of my project requires, at this stage, analyst data for all the US firms that received a first-time GCM. The required information includes, inter alia, earnings and price forecasts, earnings and actual prices, analysts' recommendations and brokerage house reports.

The systematic review of the literature used in this dissertation represents an alternative method to avoid the weaknesses of the traditional *"narrative"* review. After finishing this process, I am convinced that this method of conducting a review gave additional value to my findings and conclusions. I finish my work with a quotation that I found particularly important during this process:

*"There is no such thing as the perfect review."*

Hart (1998)

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# Appendices

## Appendix 1: Summary of selected papers

**Study 1:** Abarbanell and Bernard (1992)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| EPS forecasts for 178 firms (1976-1986) | US | Empirical |

**Study's motivation:** Investigate whether security analysts underreact or overreact to prior earnings information.

**Findings:**

- Analysts' forecasts are extreme;
- Analysts' forecasts underreact to recent earnings;
- Results do not support the overreaction phenomenon since analysts' forecasts were most in error in situations where they were optimistic despite poor recent earnings performance;
- Security analysts' behaviour is at best only a partial explanation for stock price underreaction.

**Study 2:** Ackert and Hunter (1994)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 1,716 estimates (1st quarter of 1986) and 2,145 estimates of EPS (4th quarter of 1988) | US | Empirical |

**Study's motivation:** Examine the effect of new information on analysts' forecast revisions and evaluate whether these revised forecasts converge to rational expectations forecasts.

**Findings:**

- Rejection of the simple form of the rational expectations hypothesis;
- Analysts' earnings forecasts conform to a dynamic form of rationality;
- Results are consistent with the presence of herding behaviour among security analysts.

**Study 3:** Ackert and Hunter (1995)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 3,640 earnings estimates for 220 firms (1984-1990) | US | Empirical |

**Study's motivation:** Analyse the rationality of analysts' earnings forecasts by conducting generalized orthogonality tests that evaluate forecasts rationality in the sense of reflecting publicly available information.

**Findings:**

- Results reject analyst forecast rationality, but not without exception;
- Analysts' rational hypothesis is sensitive to the analysts' forecasts chosen, time period and observation interval.

**Study 4:** Ameen et al. (1994)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 51 first-time qualified opinions (1975-1988) | US | Empirical |

**Study's motivation:** Evaluate whether audit qualifications for small firms have informational value to investors.

**Findings:**

- Market reacts negatively before the first observable public announcement.
- No significant negative response is associated with the announcement of the qualification. The reaction is mitigated by previous market reaction in response to the expectation;
- The market reacts to the circumstances underlying the qualification prior to the initial release of the report.

**Study 5:** Amir and Ganzach (1998)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Monthly consensus forecasts of annual EPS (1976-1990) | US | Empirical |

**Study's motivation:** Analyse hypotheses derived from behavioural decision theory regarding conditions that lead to overreaction and conditions that lead to underreaction in analysts' earnings forecasts.

**Findings:**

- Definition of a model where three heuristics jointly influence earnings forecasts: leniency, representativeness and anchoring and adjustments;
- Results suggest a tendency towards overreaction in forecast changes and underreaction in forecast revisions;
- Results show that there is overreaction to positive forecast modifications and underreaction to negative forecast modifications;
- Results suggest the longer the prediction horizon, the larger the prediction bias.

**Study 6:** Asare (1990)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| - | - | Non-empirical |

**Study's motivation:** Review the evolution of the going-concern report and the empirical research.

**Findings:**

- Studies addressing the informational value of going-concern reports are not always consistent;
- The conflicting results may be due to a lack of consistency in the use of qualification announcement dates and windows for testing hypotheses, inability to control for concurrent information, and failure in distinguishing between "predictable" opinions and "surprises";
- Research results can be enhanced by using statistical tests of stock price effects that distinguish between "predictable" opinions and "surprises".

**Study 7:** Asquith et al. (2005)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 1,126 analyst reports (1997-1999) | US | Empirical |

**Study's motivation:** Investigate the association between market returns and the content of security analyst reports.

**Findings:**

- Changes in summary earnings forecasts, stock recommendations, and price targets provide independent information to the capital markets;
- Analyst reports have a role in interpreting information from other sources;
- The strength of the written arguments made to support an analysts' opinion is important to justify market reaction. The stronger the justification provided in the report, the stronger the market's reaction to the report;
- The market treats an analyst report differently according to whether it is an old recommendation, an upgrade or a downgrade.

**Study 8:** Beckers et al. (2004)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Earnings forecasts for selected companies (1993-2002) | Europe | Empirical |

**Study's motivation:** Study whether fundamental company characteristics, sector and country affect analysts' forecast errors.

**Findings:**

- Forecast error and forecast optimism increase with dispersion in analyst forecasts and with stock return volatility;
- Geographical differences do not explain earnings forecast errors;
- Earnings forecast accuracy exhibits significant sector effects;
- One month before the earnings announcement date, only analyst dispersion and stock price volatility remained significantly positively related to forecast bias.

**Study 9:** Blay and Geiger (1995)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 121 GCM firms (1990-1992) | US | Empirical |

**Study's motivation:** Assess market reaction to going-concern report recipients by using previously proposed measures of market expectations and a naïve model based on actual subsequent viability status.

**Findings:**

- Abnormal returns surrounding the announcement of a going-concern audit report are not significantly different from zero for the entire group of 121 firms;
- When partitioned based on subsequent viability status, abnormal returns were significantly lower for the viable group compared to the subsequent bankrupt group;
- Results indicate that actual subsequent bankruptcy or viability acts as a proxy for market expectations of a firm performance.

**Study 10:** Brown (1997)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Analysts' quarterly earnings forecasts (1983-1996) | US | Empirical |

**Study's motivation:** Analyse whether analyst forecasting errors are related to firms' characteristics.

**Findings:**

- Analyst forecasting errors and bias have decreased over time;
- Analyst forecasting errors are smaller for S&P 500 firms than for other firms;
- Analyst forecasting errors are smaller for firms with comparatively large amounts of market capitalization, absolute value of earnings forecast, and analyst following;
- Analyst forecasting errors are smaller for firms in certain industries.

**Study 11:** Capstaff et al. (1995)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 56,090 forecasts of EPS for 1,315 firms (1987-1990) | UK | Empirical |

**Study's motivation:** Provide a comprehensive analysis of the accuracy and rationality of UK analysts' forecasts earnings.

**Findings:**

- Results cast considerable doubt on the rationality of earnings forecasts;
- Analysts' earnings forecasts superiority diminishes over longer horizons;
- Analysts do not take account of all available information when producing their forecasts;
- Analysts' forecast revisions are in part predictable given their relation to prior forecast changes in earnings.

**Study 12:** Cote and Goostein (1999)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| - | - | Non-empirical |

**Study's motivation:** Create an awareness of the ethical dimension of the herding behaviour phenomenon.

**Findings:**

- Motivations and implications of herding behaviour among security analysts are discussed;
- The authors question the ethics of herding behaviour when the motive to protect reputation takes precedence over the forecast accuracy motive;
- They claim for the need to cultivate a climate of personal and public integrity.

**Study 13:** Das (1998)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Mean monthly analysts' forecasts (1985-1993) | US | Empirical |

**Study's motivation:** Explore whether there are systematic differences in the commonly used metrics of analyst performance between a losing and a profitable firm.

**Findings:**

- Results suggest that analysts are in general more optimistically biased for loss firms than they are for non-loss making firms;
- Analysts are less accurate in their earnings forecasts for loss firms relative to non-loss firms;
- The magnitude of bias for loss and non-loss firms decline and the accuracy improves as the forecast horizon gets closer to the earnings announcement.

**Study 14:** De Bondt and Forbes (1999)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 441,000 forecasts of EPS for 1,731 firms (1986-1977) | UK | Empirical |

**Study's motivation:** Analyse the accuracy and dispersion of financial analyst earnings forecasts in the UK.

**Findings:**

- Results point to excessive optimism and overreaction bias in consensus forecasts;
- Results suggest herding behaviour among financial analysts;
- As the forecast horizon lengthens, the accuracy of the EPS forecasts deteriorates sharply but analyst consensus is unaffected and remains strong;
- As more analysts produce forecasts, disagreement rises until 8 predictions. Additional forecasts do not add to the forecast dispersion.

**Study 15:** De Bondt and Thaler (1990)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Forecast changes in EPS for one and two-year time horizon (1976-1984) | US | Empirical |

**Study's motivation:** Study whether security analysts overreact in their forecasts.

**Findings:**

- Forecast changes are simply to extreme to be considered rational;
- Results suggest unrealistic optimism among security analysts;
- Results are consistent with generalized overreaction.

**Study 16:** Ding et al. (2004)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Quarterly EPS forecasts for 2,084 firms (1987-2000) | US | Empirical |

**Study's motivation:** Examine how prospect theory can be used to explain stock returns and analysts' forecast behaviour.

**Findings:**

- Stock returns react strongly to positive earnings surprise, but negative earnings surprise has no significant impact on returns;
- Despite analysts' accuracy during positive earnings growth, their forecasts are highly optimistic during negative earnings growth;
- Overly optimistic forecast errors during periods of negative earnings growth are associated with the presence of positive investor sentiment.

**Study 17:** Dugar and Siva (1995)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Analysts' research reports (1983-1988) | US | Empirical |

**Study's motivation:** Analyse the incentives that analysts face when the brokerage firm employing them also provides investment banking services to the (client) company about which the analyst issues research reports.

**Findings:**

- Financial analysts of brokerage firms that provide investment banking services to a company (investment banker analysts) are optimistic, relative to other (non-investment banker) analysts;
- Capital market participants appear to be aware of the conflict of interest problems of the investment banker analyst. There is a significant market reaction around the non-investment banker analyst's research report date, but not around the investment banker analyst's research report date;
- Earnings forecasts of investment banker analysts are, on average, as accurate as those of non-investment banker analysts.

**Study 18:** Easterwood and Nutt (1999)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 10,694 consensus forecasts of annual EPS | US | Empirical |

**Study's motivation:** Investigate the apparent tendency of analysts to misinterpret earnings information.

**Findings:**

- Analysts underreact to negative information, but overreact to positive information;
- Analysts underreact to the negative implications of weak prior-earnings performance, and overreact to the positive implications of strong prior-earnings performance;
- Analysts' revision of forecasts in response to the prior year's forecast error suggest that analysts underreact to abnormally negative forecast errors and overreact to abnormally positive forecast errors;
- Results are consistent with systematic optimism in reponse to earnings information.

**Study 19:** Espahbodi et al. (2001)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Analysts forecasts for 350 bankrupt firms (1985-1993) and 631 turnaround firms (1983-1991) | US | Empirical |

**Study's motivation:** Evaluate whether observed optimism in analysts' forecasts of earnings is related to the cost and benefits to analysts of issuing optimistic forecasts.

**Findings:**

- Results show that some of the properties of analysts' earnings forecasts for financially distressed firms are different from non-distressed firms;
- Considering a sample of bankrupt firms, analysts' forecasts bias declines to insignificant levels by the year prior to bankruptcy filing;
- Forecast bias for the turnaround firms disappears in the year of recovery and remains absent during the first half of the following year;
- Results support the idea that analysts' optimism will be less apparent or absent when the cost of issuing optimistic forecast is high relative to the benefits of doing so.

**Study 20:** Ho and Harris (2000)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 4,002 analyst recommendation changes (1989-1992) | US | Empirical |

**Study's motivation:** Explore the rationales provided when sell-side analysts change investment recommendations.

**Findings:**

- Statements accompanying most analyst recommendations provide fundamental information about companies to markets;
- Market participants apparently pay attention to the words behind analysts' investment advice;
- Analysts seem to be more careful when issuing downgrades. They only do that when they are sufficiently confident to support the change with a quantitative analysis, namely an earnings forecast revision;
- Price reactions are not confined to the two-day period around the release of the recommendation.

**Study 21:** Hodgkinson (2001)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 1,096 analysts' forecasts for 475 firms (1990-1993) | UK | Empirical |

**Study's motivation:** Extend previous research by examining the impact of the relationship between brokers and firms.

**Findings:**

- Analysts' forecasts are not more accurate for brokerage firms;
- Results show strong evidence that analysts provide optimistic forecasts for brokerage firms;
- Analysts may provide optimistic forecasts for firms where access to information may increase the superiority of their forecasts over time-series forecasts.

**Study 22:** Hong and Kubik (2003)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Earnings forecasts for 12,336 analysts (1983-2000) | US | Empirical |

**Study's motivation:** Analyse security analysts' career concerns by relating their earnings forecasts to job separations.

**Findings:**

- Analysts who are more accurate are more likely to experience a move up the hierarchy;
- Analysts who issue relatively optimistic forecasts are more likely to experience favourable job separations;
- For analysts who cover stocks underwritten by their houses, job separation depend less on accuracy and more on optimism.

**Study 23:** Huberts and Fuller (1995)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Mean estimates of analysts' EPS for all the largest 1,500 firms (1977-1990) | US | Empirical |

**Study's motivation:** Evaluate the persistence and magnitude of "predictability bias" in the US market.

**Findings:**

- Analysts' estimates of earnings were excessively optimistic for companies whose earnings have been hard to predict in the past;
- Stocks of firms whose earnings have been previously hard to predict underperform the stocks of firms whose earnings have been relatively easy to predict;
- Analysts are not learning from past mistakes, since EPS forecasts appear to be biased in a consistently positive manner.

**Study 24:** Jones (1996)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 68 GCM and 86 non-GCM firms (1979-1988) | US | Empirical |

**Study's motivation:** Analyse the informational content of the independent auditor's going concern disclosure by examining the stock returns surrounding the release of the independent auditor's opinion.

**Findings:**

- Mean abnormal returns surrounding the release of the auditor's report was negative for firms which received going concern opinions and positive for distressed firms which received clean opinions;
- Mean abnormal returns surrounding the release of the auditor's report were lower for going concern opinions than for clean opinions;
- The magnitude of the abnormal returns depends on the extent to which the opinion type was unexpected.

**Study 25:** Kausar et al. (2004)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 845 non-finance firms with first-time GCM (1994-2002) | US | Empirical |

**Study's motivation:** Study the medium-term stock price behaviour of firms with first-time GCM audit opinions and examine differential market responses to the GCM event and cases where the GCM is withdrawn.

**Findings:**

- Market fully anticipates good news while underreact to bad news;
- Adjusting for transaction costs, the opportunity to earn profits by trading on this anomaly is highly risky;
- Results consistent with the minimally rational paradigm of Rubinstein (2001).

**Study 26:** Lim (2001)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Analysts' quarterly earnings forecasts for 300 brokerage firms (1984-1996) | US | Empirical |

**Study's motivation:** Test a set of predicted cross-sectional relationships between forecast bias and company and analysts characteristics.

**Findings:**

- Forecast bias varies predictably across firms and analysts consistently with the idea that trading off bias to improve management access and forecast precision may minimize the expected squared error of analysts' forecasts.
- Results suggest that positive and predictable bias may be a rational property of optimal earnings forecasts;
- Analysts' forecasts are more optimistic for smaller companies, and those that have a smaller analyst following, higher volatility, and past poor performances.

**Study 27:** Löffer (1998)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Between 2,857 and 4,670 earnings forecasts (1988-1993) | Germany | Empirical |

**Study's motivation:** Test the rationality of earnings forecasts and discriminating among several competing explanations for biases.

**Findings:**

- Results suggest that biases can be useful for communicating information about forecast precision;
- When analysts believe their clients misconceive the true precision of the forecast, they distort their estimates in a way which gives them a more appropriate weight in the clients' decision process;
- Results seem to support the psychological literature and seem to be only of limited economic importance.

**Study 28:** Loudder et al. (1992)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 101 firms with "subject to" audit opinion | US | Empirical |

**Study's motivation:** Analyse the information content of a "subject to" opinion by distinguish between the expected opinions and unexpected opinions.

**Findings:**

- The disclosure of an unexpected opinion and the non-disclosure of an expected opinion have market impact;
- Results show that "unexpected" audit opinion firms are more likely to exhibit negative abnormal returns around the qualification disclosure date than the "expected" firms.

**Study 29:** McNichols and O'Brien (1997)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 13,258 analysts' recommendations and earnings forecasts (1990-1994) | US | Empirical |

**Study's motivation:** Investigate the relation between analysts' information about a stock's future prospects and their decision to issue investment recommendations.

**Findings:**

- Results document the influence of self-selection on the distribution of analysts' forecasts and recommendations. Analysts tend to start covering firms they view favourably and stop covering firms they view unfavourably;
- Evidence suggests that analysts infrequently issue sell recommendations;
- Results should be interpreted as partial explanation for analysts' optimism by refusing the idea that analysts introduce less forecast bias near the end of coverage.

**Study 30:** Michaely and Womack (1999)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Analysts' recommendations of 391 IPOs (1990-1991) | US | Empirical |

**Study's motivation:** Investigate the conflict of interest and the credibility of underwriter analyst recommendations.

**Findings:**

- Recommendations by underwriter analysts show significant evidence of bias;
- Recommendations by underwriters are significantly worse then the performance of firms recommended by other brokerage houses;
- Results suggest a potential conflict of interest inherent in the different functions that investment bankers perform.

**Study 31:** Moses (1990)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Annual EPS forecasts for 136 firms declaring bankruptcy | US | Empirical |

**Study's motivation:** Study differences in analysts' earnings forecasts between failing and healthy firms.

**Findings:**

- Results suggest that the properties of forecasts may be a function of information disclosure practices of firms;
- Forecast errors are larger and increase for failing firms as bankruptcy approaches;
- Forecasts are overoptimistic and bias increases for failing firms as bankruptcy approaches;
- Measures developed from analysts' forecasts have information content for predicting bankruptcy.

**Study 32:** Mutchler (1995)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 119 GCM and 119 non-GCM firms (1981-1982) | US | Empirical |

**Study's motivation:** Evaluate the relation between the going-concern opinion and publicly available information.

**Findings:**

- Results suggest that financial ratio-based model is able to predict a going-concern opinion with a relatively high level of accuracy using only publicly available financial information;
- While going-concern opinion does not appear to have additional information content for the majority of companies, there are specific cases in which the qualification has marginal information content.

**Study 33:** O'Hanlon and Whiddett (1991)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Revisions of the consensus EPS forecasts (1987-1990) | UK | Empirical |

**Study's motivation:** Observe the relationship between the magnitude of earnings changes and the magnitude of the forecast earnings changes.

**Findings:**

- Consensus EPS forecasts have been subjected to underreaction;
- Results are in conflict with those of various US studies;
- Analyst remuneration system and possible international differences in investment regulation are presented as possible explanations for the conflicting results.

**Study 34:** Rubinstein (2001)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| - | - | Non-empirical |

**Study's motivation:** Analyse the hypothesis of rational markets.

**Findings:**

- The author proposes three market categorizations based on the degree of rationality: Maximally rational markets, rational markets and minimally rational markets;
- The paper discusses behavioural arguments justifying human beings irrationality;
- The paper discusses some of the most serious historical evidence against market rationality.

**Study 35:** Sedor (2002)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Analysis of case material by 86 sell-side analysts | US | Empirical |

**Study's motivation:** Evaluate whether analysts' cognitive reactions to the structure of information about manager's future plans cause patterns of unintentional optimism in earnings forecasts.

**Findings:**

- The use of scenarios to provide analysts with information about a manager's plans to increase future earnings causes optimism in analysts' forecasts for two years ahead;
- Scenario-induced optimism is greater for a firm that reports prior losses than a firm that reports prior profits;
- Results show that the form in which managers communicate information can lead analysts to issue unintentionally optimistic forecasts, particularly for loss firms.

**Study 36:** Stevens and Williams (2001)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Forecasts elicited from 101 undergraduate students in accounting and economics | US | Empirical |

**Study's motivation:** Examine inefficiency in analysts' earnings forecasts using experimental research.

**Findings:**

- Results reveal systematic underreaction to both positive and negative information;
- Underreaction is generally greater for positive information than negative information;
- Results suggest that the optimism bias found in archival studies is not attributable to general human decision-making bias.

**Study 37:** Taffler et al. (2004)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 108 non-finance firms with first-time GCM (1995-2000) | UK | Empirical |

**Study's motivation:** Investigate the stock price reaction to UK going-concern audit report disclosures in the calendar year subsequent to publication.

**Findings:**

- Evidence that market takes time to assimilate bad news;
- Results suggest that market underreacts to going-concern modifications after the release of those reports;
- Results show that the market underreaction is not a post-earnings announcement drift phenomenon;
- Costly arbitrage prevents rational investors forcing prices back into line with fundamental value.

**Study 38:** Tamura (2002)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| Individual-analyst historical earnings estimates (1986-1998) | US | Empirical |

**Study's motivation:** Examine how characteristics of analysts affect their forecast errors.

**Findings:**

- Results suggest that analysts dealing with bad news and analysts who herd to consensus forecasts tend to underreact in the presence of new information compared with other analysts;
- Analysts are affected by their personalities in forecasting, particularly when they are dealing with bad news.

**Study 39:** Trueman (1994)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| - | - | Non-empirical |

**Study's motivation:** Develop a theoretical explanation for herding behaviour among analysts.

**Findings:**

- Under certain circumstances an analyst prefers to release a forecast that is close related to prior earnings expectations, even if issuing a more extreme forecast is justified by his private information;
- The likelihood that the analyst releases a forecast similar to those previously announced by other analysts is greater than could be justified by his own information.

**Study 40:** Welch (2000)

| Data | Sample location | Empirical / Non-empirical |
|---|---|---|
| 50,000 analysts' recommendations (1989-1994) | US | Empirical |

**Study's motivation:** Test empirically for the presence of herding behaviour among security analysts.

**Findings:**

- Evidence of a positive influence of the most recent two revisions on the next analyst's revision;
- The influence of the prevailing consensus is not stronger if the consensus accurately forecasts subsequent stock price movements;
- Herding towards the consensus is significantly stronger when market conditions are favourable.