The timing of the release of price sensitive information by South African companies

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ABSTRACT

Over the last decades, several papers have investigated the determinants of managers' disclosure policies as corporate communication, especially financial data, plays a key role in the efficient functioning of capital markets. In fact, by releasing certain information to the market, managers convey information about the future prospects of the company. Prior studies conducted in international markets have documented the existence of patterns of information disclosure by listed firms and have shown that the timing of a release is among the variables that managers can try to strategically manipulate.

This study examines whether patterns also can be identified in the South African market, testing the hypotheses that the timing, intended as intra-day and intra-week, of announcements released by South African firms listed on the Johannesburg Stock Exchange through the SENS is related to the quality of the news (positive, negative or neutral), the size of the company (Small Cap, Mid Cap, Top40) and the interaction of these two variables.

A quantitative methodology was used based on multi-way frequency tables to describe the relationship among the variables. Log linear regression was used to investigate this relationship and CaRT analysis graphically illustrates the results of the research conducted on 774 announcements published on the SENS over the one-year period from June 2011 to May 2012 by companies listed on the Main Board of the JSE.

It was found that, on average, South African managers do not appear to strategically time their announcements in light of the quality of the news. It was also found that the size of the company influences disclosure policies, while the combination of quality and size does not play a role. Although Small companies Mid Cap and Top40 mainly release announcements during trading hours, different patterns can be identified for their releases when the market is closed, with Top40 companies showing a clear preference for early morning releases. These findings can be interpreted in light of the existing regulation and the dynamics of communication within the South African market.

DECLARATION

I, Ilaria Pitea, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

Ilaria Pitea

Signed at Johannesburg

On the 15th day of May 2013

DEDICATION

To Guido.

Your love and encouragement made me move from Italy and embark on this MBA adventure. It was only through your constant support and patience that I reached the goal. I hope this research is worth all the poor meals I cooked for you over the last twelve months.

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CHAPTER 1: INTRODUCTION

1.1 Purpose of the study

The purpose of this research is to evaluate whether patterns exist in the timing of the release of price sensitive information by South African listed companies, in relationship to the quality of the news released and the size of the company.

1.2 Context of the study

Over the last 30 years, literature has devoted increasing attention to the disclosure of price sensitive information made by listed companies, as "Active data flow in economy mainly depends on accounting information disclosed to public and thus on financial statements" (Celik, (2003) as cited by Dogan, Coskun, and Çelik (2007)[1]). Academic interest in this subject derives from the fact that corporate disclosure, which is influenced at macro level by legal, political and economic institutions (Bushman & Piotrosky, 2006), plays a key role in the efficient functioning of capital markets and therefore becomes an important element of corporate governance (Michaely, Rubin, & Vedrashko, 2011; Son & Crabtree, 2011).

Academic literature also observes that besides deciding on the content of disclosure and the way such content is presented (Bowen, Davis, & Matsumoto, 2005; Davis, Piger, & Sedor, 2012; Files, Swanson, & Tse, 2009; Henry, 2006, 2008; Riley, 2011), management can potentially manipulate the timing of information releases, albeit within the boundaries of specific regulations.

In early studies, when manipulation of timing was examined in relationship to the content of the news – positive or negative – certain patterns were identified: management delays as much as possible the dissemination of negative information, relative to positive information (Pastena & Ronen, 1979; Ronen,

[1] The original quotation was in Turkish, therefore the correspondent translation, as reported by the author and others, has been used.

1977), and the likelihood of negative corporate disclosures increases after the close of trading for the day (Patell & Wolfson, 1982). Other studies have observed that management attempts to use a non-trading period for the dissemination and evaluation by the public of news releases and this strategy is more frequently employed in case of non-favourable financial news. One of the possible explanations of this managerial behaviour is that the timing of financial releases could produce different market reactions to positive and negative announcements made during trading and non-trading hours and therefore managers may accordingly try to maximise or minimize the market reaction (Bagnoli, Clement, & Watts, 2005; Francis, Pagach, & Stephan, 1992; Kwon, Hwang, & Ju, 2009).

While the majority of research has unsurprisingly been conducted on the American market, evidence of intentional timing of financial releases has been found also in other countries. Spanish (Abad, Sanabria, & Yague, 2009), Korean (Kwon et al., 2009) and Australian (Balatbat, Gallery, & Jackson, 2011) research studies suggest that companies listed in those countries follow a timing strategy in their corporate disclosures. Interestingly, the timing adopted by Spanish firms is typically the opposite of that adopted by their American, Korean and Australian peers, as Spanish firms typically prefer to announce negative news when the market is open and positive news during non-trading hours, due to different market structures and regulations; in any case, this is always to take advantage of more subdued expected market reactions.

The introduction in many markets of regulations to reduce the information asymmetry that timing of releases may cause has in some cases brought about positive results. For example, the introduction of Regulation Fair Disclosure in the USA (that provides that all publicly traded companies in the United States must disclose material information to all investors at the same time (SEC, 2000)), has mitigated management's propensity to delaying the release of negative news to investors and to leaking positive information to the market (Kothari, Shu, & Wysocki, 2009). This and other similar regulations notwithstanding, the phenomenon of timing the disclosure remains present (Doyle & Magilke, 2009).

The issue of the timing of information disclosure for South African-listed companies is subject to specific regulations (JSE, 2012e) and is clearly important for market participants and commentators as is also evidenced by recent media coverage (Hogg & Burke, 2012). Despite this, no significant attention has been devoted by South African researchers to this matter. This study will therefore try to at least partially fill this void by assessing whether timing patterns exist in the context of financial disclosure by South African-listed companies, by exploring the proposed matter in light of the findings of international academic literature and also considering specific factors (such as, for instance, market regulations and ritualism) that might have an impact on South African companies.

1.2.1 Main problem

Can patterns in the timing of release of price sensitive communications by JSE-listed companies, which depend on the quality of the news released (i.e. good, bad or neutral) and the size of the company (i.e. small, medium or large), be identified?

1.2.2 Sub-problem 1

The first sub-problem is to identify patterns in the timing of release of communications by JSE-listed companies dependent on the quality of the information released (i.e. good, bad or neutral).

1.2.3 Sub-problem 2

The second sub-problem is to identify whether companies with a different size (i.e. small, medium and large market capitalizations, as per JSE classifications) display different patterns in the timing of release of price-sensitive communications.

1.2.4 Sub-problem 3

The third sub-problem is to identify whether the timing of release of financial communication depends on the combination of the quality of the information released (i.e. good, bad or neutral) and the size of the company (i.e. small, medium or large) that releases the information.

1.3 Significance of the study

Having reviewed much of the relevant literature, we found that there are limited works that address the relationship between the quality of financial communication of South African companies listed on the JSE, the timing of the releases and the size of the companies. This research therefore aims at filling this gap.

This study is intended to provide guidance to the financial market participants, including professionals working in the communication industry who wish to better understand the dynamics of financial communication.

Additionally, any patterns we might identify in the timing of communication and in the relationship between news content and timing might stimulate academics and students of financial communication to carry out further studies on the different market reactions to timing of news releases.

Finally, the identification of patterns could represent a starting point for research aimed at investigating the reasons behind managers' behaviour and the effectiveness of South African regulations on the matter of financial disclosure.

1.4 Delimitations of the study

A number of limitations based on the intended scope and the design of the research were identified.

First of all, the study takes into consideration only the announcements made by companies with a primary listing on the Main Board of the JSE and therefore is not representative of all South African-listed companies.

Secondly, it analyses only the financial communications released over a twelve month period, from June 2011 to May 2012. This timeframe was considered of sufficient duration to capture an entire annual business cycle and the relevant financial releases for all the companies in the sample. At the same time, this restricted the amount of data to a proportion that was manageable and that satisfied the statistical requirements of the academic exercise[2].

Thirdly, this analysis initially aimed at considering only one kind of announcements, i.e. financial results, as these are highly significant indicators of a company's performance and are a useful tool for the market to evaluate a firm and its future prospects (Livnat & Mendenhall, 2006; Mlonzi, Kruger, & Nthoesane, 2011). The choice we made also increases the internal validity of the research and controls the effect of confounding variables (e.g. different levels of market expectations and different levels of informative content of different kind of announcements). For the purpose of the analysis we have bundled together announcements of financial results and trading statements. JSE regulations require that trading statements are issued every time management expects that the financial results for the period could differ by at least 20% from the results of the previous corresponding period or from profit forecasts previously provided to the market (JSE, 2011a) and are therefore very likely to cause a share price movement. A company's financial results and trading statements are two different faces of the same coin: the former reflects the ordinary reporting schedule while the latter deviates from the standard schedule to provide to the market insights about the content of the financial results to be released.

The fourth limitation is that certain authors have focused on the intentional postponement of (typically negative) news by management in order to delay as

2 In other words, extending the timeframe of the analysis to over twelve months would have generated an amount of data that would have been not manageable due to the resource and timing constraints of this study, given that the number of announcements would have compounded with the modification in the indexes related to the changes in market capitalization, new IPOs, delisting, mergers, etc.

much as possible the expected negative impact on share price. However, in this study we do not do that, but we only look at whether communication is released during stock market opening versus closing hours.

The fifth limitation of this study is that data from SENS and the JSE is the only information analysed to determine the timing and quality of the release. Even though companies are increasingly using new technologies to convey information directly to investors (Blankespoor, Miller, & White, 2011), we elected to exclusively use SENS data for our analysis as SENS is intended by the law to be the primary source for the dissemination of price-sensitive information (i.e. all such information must first be distributed through SENS, and then optionally also through other channels).

Finally, some of the companies listed on the JSE have their primary listing on other stock exchanges and therefore are subject to different regulations and follow different trading hours; the resulting data would skew the analysis. Consequently, this research focuses exclusively on companies that have their primary listing on the JSE.

1.5 Definition of terms

Johannesburg Stock Exchange (JSE) – is the South African stock market, and it is among the most developed and largest stock exchanges in the world (Neidhart, 2009), ranking 18th in terms of market capitalisation (Loubser, 2010).

Market capitalisation (market cap) - represents the value of a corporation and is calculated by multiplying the number of the company's outstanding shares by the current market price of a share (Downes & Goodman, 1995).

SENS (Stock Exchange News Service) – is a service offered by the JSE which disseminates company announcements and price-sensitive company releases to the public. Companies listed on the JSE are required to publicly disclose any information that might affect the price of the shares on the market through press releases. The press release is initially emailed to SENS, which contacts the company concerned to validate it; immediately after that, the press

release is sent to SENS subscribers**,** including the major wire-services, who in turn release it on their websites. SENS operates between 7am and 6pm on working days (Jefferis & Smith, 2004; JSE).

Trading hours – The time of the day during which the stock exchange is open for trading. JSE operates from 9am to 5pm on business days (JSE, 2012c).

1.6 Assumptions

This research is underpinned by a number of assumptions.

In the first place, we assume that the total number of SENS releases provides adequate data to interpret the phenomena.

Secondly, the change in the share price compared to the change in the related index and to the share volatility was chosen as the specific criterion to classify the content of releases as ”good”, “bad” or “neutral”; different criteria might lead to different results. Furthermore, it was assumed that the impact of the change in share price of a single company on the relative index is negligible; therefore, this study will be able to directly compare the change in the company share price to the change of the index to which the company belongs.

Thirdly, even though changes in the conditions of the external environment have been taken into account by considering the changes in the relevant index over the relevant period, and the market capitalisation sector to which the company belongs has likewise been considered, related factors relevant to the company other than the news issue may affect the share price. For instance: a news item other than trading statements and financial results released within the same period under analysis may cause a change in the share price that has been attributed in this study to the news item considered. As it is assumed that the probability of occurrence of this effect is similar over all the shares, the changes in the share prices over and above the changes in the index of the share and the volatility of the share have been attributed to the news item considered.

In the fourth place, the criterion chosen to classify the firms depending on their size is the same utilized by the JSE:

Large cap: Top40 companies – the largest 40 companies by market cap

Mid Cap: companies ranking 41 to 100 by market cap

Small Cap: all the other companies listed on the JSE

Finally, the study is also based on the assumption that during non-trading hours the market is not fully functioning and therefore the diffusion of releases is less efficient. In fact, as the JSE does not provide delayed market announcements and only parties with a contract to a live data distributor can access this information, releasing news during those periods results in lower media coverage.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This section explores the academic literature related to the timing of corporate announcements, setting out a theoretical framework for this study. The review of available literature also shows how sometimes different research studies have led to radically opposed results.

Section 2.2 presents the background of this literature review. In general, authors are in agreement as to the importance of a timely and unbiased dissemination of information. However, there is no consensus on whether companies strategically manipulate the timing of their announcements to benefit from certain expected market reactions. Researchers are therefore divided between those who believe that managers do behave opportunistically (the "opportunistic hypothesis"), those who think that managers time their releases to guarantee better symmetry of information among investors (the "benign hypothesis") and those who instead think that the size of companies is an important variable influencing management behaviour (the "size hypothesis").

Section 2.3 is dedicated to the **opportunistic hypothesis** and includes those studies that, investigating the connection between the timing of the announcements and the quality of the news, suggest that managers voluntarily decide when to release negative information in order to benefit from investors' lower attention and limited coverage.

Section 2.4 is dedicated to the **benign hypothesis** and reviews those papers whose authors believe that, when firms time their financial releases, they do it in order to more broadly disseminate the information.

Section 2.5 is dedicated to the **size hypothesis** and lists those theories that link the time of the releases not only (or not exclusively) to the content of the news but also to the size of the firm.

Finally, in order to put the research in the context of the South African market, section 2.6 explores the regulatory environment and best practices framework that inform the corporate communication behaviour of JSE listed companies (i.e. the JSE listing requirements, the Service Securities Act and the King III report).

2.2 Background discussion

Financial disclosure by listed companies is an essential element of capital markets, as investors generally rely on the information released by companies for investment decisions and monitoring (Son & Crabtree, 2011). Literature has also confirmed the increased importance that financial announcements have acquired over time, at least with regard to large companies, to convey useful information to the market (Francis, Schipper, & Vincent, 2002).

There is a consistent body of literature that has explored how managers manipulate the content and the tone of financial press releases to influence investors' perception and draw attention to the messages they want to convey (Bowen et al., 2005; Davis et al., 2012; Files et al., 2009; Henry, 2006, 2008; Riley, 2011).

One of the other variables, within the boundaries of the regulations of the market in which their companies operate, that management can manipulate, is the timing of information releases (Doyle & Magilke, 2009; Gennotte & Trueman, 1996; George & Hwang, 2001; Pastena & Ronen, 1979). Timing of financial disclosure is important to prevent (illegal) insider trading, the circulation of misleading information and market rumours and to allow investors to access relevant information in a timely manner (Dogan et al., 2007).

To avoid selective disclosure of information to analysts or institutional investors, several countries introduced specific regulations, such as the Regulation Fair Disclosure in the US, that regulate the diffusion of price-sensitive news to the market (Charoenrook & Lewis, 2009). It is proven, in fact, that insider trading legislation is necessary as part of a well-functioning corporate governance regime. Without this statutory regulation, there are incentives for managers to

be aligned with the large shareholders, at the expenses of small shareholders, to conceal adverse information (Maug, 2002).

Given the relevance of the timing of price-sensitive news, a substantial body of literature has focused on this subject, exploring it from different angles (Doyle & Magilke, 2009; Gennotte & Trueman, 1996; George & Hwang, 2001; Pastena & Ronen, 1979).

For example, certain studies have shown that investors have limited access to financial information after trading hours or during the weekend, as the information flow then decreases significantly; for instance, median rates per hour of overnight information flows are one-seventh the daytime rate (George & Hwang, 2001). Hence, individuals may try to choose the best time to release information, as is expressed in a comment made by President Bill Clinton's counsellor, David Gergen, as reported by Chen and Mohan (1994):

> "… if you have got some news that you don't want to get noticed, put it out Friday afternoon after 4 pm"[3].

The timing of disclosure of news is critical as it also influences the level of press coverage by the financial media (Solomon & Soltes, 2011; Soltes, 2010). Disclosing information during non-trading hours reduces the probability of newspaper coverage from 20% to 9% and the probability of newswire coverage from 95% to 89%. The reasons for this are that journalists of the paper press deal with evening deadlines for the submission of the articles and have a natural cut-off time and that, given the limited number of pages of newspapers, news released in the evening have a lower probability of being published in the press than those released during trading hours. On the other hand, newswire agencies are subject to different dynamics and deadlines, as newswire journalists are motivated by the speed to publish but are not limited by space constraints or deadlines (Tambini, 2010). However, during non-trading hours, the number of staff members is reduced and so is the demand for newswire pieces (Solomon & Soltes, 2011; Soltes, 2010). Therefore, these researches

[3] *New York Times*, reprinted in *The (Oakland) Tribune,* April 7, 1984, page 1.

reinforce the belief that, overall, evening releases are less likely to be covered by both newspapers and newswire agencies.

On a similar note, another author (Peress, 2008) concludes that lower media coverage for news released in the evening could lead to investors reacting less to negative information, with consequently a more positive impact on share prices in the short run. As an aside, it is also interesting to note that companies with a media specialist on the board are able to increase the media coverage in the case of good news and decrease it for negative news (Gurun, 2012) and that investors' "inattention", and a consequent slower reaction to news, is also a function of the number of overall earnings announcements released in the market on a specific day (Hirshleifer, Lim, & Teoh, 2009)

The researchers that investigated the timing of disclosure do not always comment on the reasons why managers might decide to time the release of information. There is also little consensus as to whether managers may try to take advantage of the market's reduced attention during non-trading hours to disclose poor financial results or other negative price-sensitive information, a phenomenon recently recorded in the study by Dellavigna and Pollet (2009).

Several early papers found that firms are more likely to time their financial announcements if the content of their news is negative to strategically benefit from market under-reaction (Damodaran, 1989; Pastena & Ronen, 1979; Ronen, 1977), which we define as the "opportunistic hypothesis" in this study after Patell and Wolfson (1982). Incidentally, whether market under-reaction is obtained by releasing during non-trading hours/Fridays or, instead, during trading hours, depends on the market and most likely on its specific regulations; for example, the New York Stock Exchange has different characteristics than the Spanish Continuous Market (Abad et al., 2009) as we will also elaborate in section 2.3. Other works argue, instead, that managers time their release with a benign attitude to guarantee better symmetry of information among investors and because a longer reporting lag provides investors with more time to process the information, avoiding a rushed and emotional/illogical response from the market. (Doyle & Magilke, 2009; Michaely et al., 2011); in the study,

we define this as the “benign hypothesis”, again following Patell and Wolfson (1982).

Finally, certain authors recognize that there is a relationship between the timing and content of releases and observe that the size of a firm plays a part too (Niessner, 2012; Solomon & Soltes, 2011; Truong, 2010). Consequently, this study investigates what is called here the “size hypothesis”. The relevance of most of these studies is that, when taking into consideration the size of the firm as a variable that can affect the disclosure decisions, they consider it also in relationship to the quality of the news. However, it needs to be taken into consideration that the analysis of these variables is always mixed with that of other variables and therefore it does not provide direct support to the hypothesis that size and quality interact in the timing decisions.

2.3 The timing of financial releases: the “opportunistic hypothesis”

One of the earliest papers about patterns in the timing of companies’ announcements examined the effects of insider trading rules on the incentives for managers to release information to the market. The study concluded that managers have incentives to suppress or delay negative information and disseminate good news as early as possible (Ronen, 1977).

Building on that study, Pastena and Ronen (1979) investigated whether the existence of these incentives affected the pattern of information disclosure by management. The researchers classified announcements associated to a sample of 122 companies as positive, negative and neutral and concluded that management attempt to delay negative information versus positive. Furthermore, by classifying information also as “soft” or “hard”[4], based on the assessed likelihood that the information could be obtained through sources other than companies’ releases, they concluded that managers tend to disclose

[4] “soft” information has a low probability of an imminent disclosure by third party sources, “hard” information has a high probability of imminent disclosure by sources out of the management’s control.

negative information only after such information becomes “hard” (Pastena & Ronen, 1979). This study is relevant because it documents the existence of a “timing behaviour”, however it does not provide any insight about the reasons behind managers’ motivation to release information to the market at specific moments.

Other authors broadened the focus of their research from the timing of information within the reporting year to include the disclosure of financial information within versus outside trading hours. This is also the framework which constitutes the focus of this study. Patell and Wolfson (1982) tested pooled groups of firms that released earnings and dividend announcements at different times of the day. The authors observed that share price movements after the dissemination of information reflected changes in market consensus expectations generated by such announcements. Logically, it follows that news considered by the market as negative caused the share price to drop, positive news increased the share price and neutral news did not affect the market price.

To find a possible explanation to the question why managers might attempt to time their releases, several studies analysed the differences in market reaction to positive and negative announcements made during trading and non-trading hours (Bagnoli et al., 2005; Francis et al., 1992; Gennotte & Trueman, 1996; Kwon et al., 2009). The findings of all these works support the hypothesis that management’s decision about the timing of disclosure is affected by the different market reaction to announcements made during periods when the market is fully functioning versus moments of lower attention: managers time the releases in order to maximize or minimize the market reaction to positive or negative news. These studies conclude that positive news tends to be leaked to the market, whereas managers, on average, withhold negative news until as late as possible. A confirmation that managers try to give lower visibility to negative news can be found also in the fact that announcements made on Fridays usually contain more negative news than announcements made during other days of the week; this may be because on Saturdays financial press publication is more limited (Bagnoli et al., 2005; Damodaran, 1989). With

reference to the South African context, a study by Bhana (1995/1996) postulates that the South African market features an asymmetry of response to positive and negative earnings announcements, as the latter attract more attention; this may represent an incentive for local managers to use a strategic approach to financial releases, for example, timing them, to benefit from reduced attention.

Additional interesting contributions about the disclosure position of firms are provided by field researches based on interviews with managers of disclosing firms and external organizations involved in financial communication (Chen & Mohan, 1994; Gibbins, Richardson, & Waterhouse, 1990). A study conducted in Canada (Gibbins et al., 1990) highlights how a given company's attitude to disclosure has, together with an "opportunistic" component, also a "ritualistic" dimension that defines the companies' adherence to the formal and informal rules of communication. Ritualistic and opportunistic behaviour are tightly connected to norms, opportunities and internal factors such as the firm's tradition and history and the role of external mediators. Subsequent research conducted on the American market (Chen & Mohan, 1994) confirmed the existence of both a ritual component and a strategic behaviour in the timing of disclosure of price sensitive information. About 57% of the managers interviewed in the study declared that their firm maintains a fixed/ritual earnings announcement schedule. Companies changing the date or timing of announcements do so mainly when they are concerned about lower-than-expected earnings and smaller firms are more likely to change the date and time of their release than larger ones.

The conclusion drawn from the studies about the timing of disclosure contributes to reinforce the conventional wisdom that managers are more likely to release negative news after markets close to opportunistically take advantage of reduced public and media visibility. Disclosure timing patterns vary from country to country depending of the structure and regulation of the market: for instance, negative news are released when the market is open in Spain (Abad et al., 2009) and when the market is closed in the USA (Bagnoli et al., 2005; Damodaran, 1989), Korea (Kwon et al., 2009) and Australia (Balatbat

et al., 2011). This is because in order-driven markets (such as Spain), trades occur directly among market participants, some of which might be less sophisticated operators and therefore have less access to information during trading hours (Abad et al., 2009), while in in quote-driven markets (for instance the US Nasdaq is a hybrid order-and quote-driven market) liquidity is provided by market makers who have continuous and comprehensive access to information at all time. As a consequence, in order-driven markets the dissemination of information during trading hours might result in an asymmetric distribution and companies might exploit such asymmetry to influence share price reaction, while in quote-driven markets the attention to company disclosure is maximized during trading hours and, as indicated a few paragraphs above, reduced after them, with a possible lower market reaction.

It is worth noting that the study of Kwon et al. (2009) highlights that the strategy to disclose negative news after trading hours is not an effective way to reduce market attention and therefore the magnitude of market reaction to the announcement.

In the context of academics' disagreement as to whether managers take advantage or not of investors' under-reaction by timing the release of negative news when the market is closed, Niessner (2012) conducted further research. For her work she utilized a dataset of mandatory disclosures that were not scheduled in advance and not as attractive in terms of content as earning announcements, and therefore easier to manipulate by managers (Niessner, 2012). The author found evidence that some companies shift the disclosure of negative information to non-trading hours when investors are more likely to be distracted, thus confirming the 'opportunistic hypothesis'.

2.4 The timing of financial releases: the "benign hypothesis"

In an attempt to verify one of the hypotheses suggested by the empirical findings of Patell and Wolfson (1982), Doyle and Magilke (2009) conducted a test to explore the reasons behind communication patterns. The relevance of their study consists in the fact that they replicated prior research using a

database that extended from 2000 to 2005, and therefore in an environment where the "opportunistic hypothesis" was less likely to hold. In fact, on the assumption that the world of media has evolved to a 24/7 coverage of financial information, individual investors should now have timely access to financial information also when the market is closed (Bagnoli et al., 2005), an opportunity that at the time of the earlier studies was not available. The authors did not find evidence to support the hypothesis that managers opportunistically switch their disclosure habits to release bad news after the market closes or on Friday but found support for the more “benign hypothesis” that managers of more complex companies with worse results released them after the market had closed in order to disseminate the information more broadly (Doyle & Magilke, 2009).

Their finding is also consistent with previous research based on a comprehensive survey conducted with CFOs to highlight the features of accounting information disclosure (Graham, Harvey, & Rajgopal, 2005). The managers interviewed stated that they generally release bad news faster than good news to promote a reputation of transparent reporting, but bad news is sometimes delayed to allow in-depth analysis and better interpretation from analysts and shareholders.

The theory that managers no longer release negative information when market are closed but, instead, managers have over the last decade been releasing negative news while the market is open, has been reinforced by the findings of Cliff, Cooper, and Gulen (2008). Their work, while documenting the stock return differences between trading and non-trading hours, noted that many more earnings announcements now occur after the market has closed and, of the announcements that occurred at night, approximately 60% were positive, 19% neutral and 21% were negative (Cliff et al., 2008).

Further support of the “benign hypothesis”, is the work of Truong (2010) that demonstrates that firms do not gain any benefit from switching to after trading-hours disclosure because there is no muted market reaction. After-hours earnings announcements reflect firms’ policies, deriving from firms’

characteristics, rather than managerial attempts to strategically influence the market.

Finally, although reaching different results than Truong (2010) about market reaction to announcements made in different timing, Michaely et al. (2011) also state that the "opportunistic hypothesis" explanation is implausible and advocate the "benign hypothesis". The market reaction to negative news released during non-trading hours is more severe than for negative results announced when the market is open, therefore negative earnings announcements are more likely to be announced during trading hours. On the other hand, the authors provide evidence that companies with better corporate governance disseminate information outside trading hours to allow investors time to absorb and interpret the news, regardless of the positive or negative content of the news itself (Michaely et al., 2011). In fact, releasing price sensitive information when the market is closed also allows investors and shareholders that do not follow the market continuously and have reduced access to information to have the same available information as institutional traders. Managers interviewed about the practice of reporting when the market is closed confirmed the belief that they benignly attempted to provide to all investors the same opportunity to process the latest information.

This idea is well illustrated by Warren Buffett's statement in a letter to Berkshire Hathaway shareholders (Buffett, 2000):

> "For us, fair reporting means getting information to our 300,000 "partners" simultaneously, or as close to that mark as possible. We therefore put our annual and quarterly financials on the Internet between the close of the market on a Friday and the following morning. By our doing that, shareholders and other interested investors have timely access to these important releases and also have a reasonable amount of time to digest the information they include before the markets open on Monday".

2.5 The timing of financial releases: the "size hypothesis"

Already in 1989, in an attempt to test the "weekend effect" (i.e. the market reaction to announcements made on Friday after trading hours) a study by Damodaran (1989) provided strong evidence that a relationship exists between

the size of a company and the timing of its release of information; namely the smaller the size of the company the more likely it is to release news after the close of trading. A few years later, Chen and Mohan (1994) managers' survey confirmed that the size of a firm has a notable influence on the announcement policies and flexibility to change them, and that smaller companies are more likely to release negative news after trading hours than larger firms in order to avoid a panic reaction by the market.

More recent works (Doyle & Magilke, 2009; Niessner, 2012; Solomon & Soltes, 2011; Truong, 2010) add a new dimension to the analysis of the timing of financial releases, namely that there is a relationship between timing of the release, company size and press coverage. Solomon and Soltes (2011) find that, among the variables that influence the level of press coverage of firm-initiated disclosures, size can explain between 18% and 41% of the variation in press coverage. The size of a company influences press coverage, as larger firms have more shareholders, investors and connections with other firms and, due to this wider range of relationships with readers, editors are inclined to dedicate more coverage to larger companies (Solomon & Soltes, 2011). Similarly, Doyle and Magilke (2009) introduced an additional variable which they reckoned could affect the timing of releases, namely the media/investors' attention, which they detect as a combination of firm size and the number of analysts following the company. The authors found evidence that, on average, smaller, more complex firms tend to release announcements during non-trading hours, while on the other hand they did not find significant evidence that managers opportunistically switch between reporting news when markets are open or closed depending on the quality of the news. Finally, among the other authors that reach similar conclusions about the importance of a company's size relative to the timing of their communication are Truong (2010), who found that after-hour earnings announcements tend to be a trend among small firms and Niessner (2012), who states that companies that time their negative disclosure are typically smaller, high-growth, low-liquidity companies that operate in high-tech industries. An explanation for these phenomena may be that analyst coverage is strongly correlated to company size (Bhushan, 1989; Niessner, 2012), and therefore companies with a larger market cap, more

visible and followed, irrespective of the timing of their releases may not find an advantage in timing their announcements. These latest studies looked at company size not only as a variable that alone may affect the firms' choices in terms of the timing of disclosure, but established that there is a relationship between the interaction of the quality of the news and the company size, although methodologically mixed up with other control variables.

2.6 Regulation and best practices framework informing corporate communication behaviour: JSE rules, Service Securities Act and the King III report

As previously pointed out, corporate disclosure is an important element of corporate governance (Michaely et al., 2011; Son & Crabtree, 2011). The concept of corporate governance in South Africa was introduced in 1994 with the publication of the first King Report, that, among other recommendations, provided a framework for the standards of conduct for directors of companies (Diamond & Price, 2012). The King task group into insider trading legislation was also responsible, together with the JSE and the Financial Services Board (an independent institution established to oversee the South African non-banking financial services industry in the public interest (Financial Services Board, 2013)) for the drafting of the Insider Trading Act in 1998. This is a regulation that aimed at improving the existing legal framework (the Companies Act of 1973). In fact, while the offence of insider trading was unlikely to be prosecuted under the Companies Act, the new Insider Trading Act enabled criminal prosecution and civil action (JSE, 2012b).

In response to the introduction of a number of key international corporate governance codes, the second King report was released in 2002 (Othman, 2011) to address a range of South African affirmative action policies and stakeholder laws and to meet international investors' expectations in term of disclosure and transparency. King II listed seven characteristics of good governance: Discipline, Transparency, Independence, Accountability, Responsibility, Fairness and (Corporate) Social responsibility and included a Code of Corporate Practices and Conduct that applied to, among other entities,

all the companies listed on the JSE and whose adoption was voluntary (Institute of Directors in Southern Africa, 2002).

In 2004, a further step was taken to consolidate the legislation around insider trading. The crime of insider trading falls now under the Securities Services Act of 2004 (SSA), (Government, 2004) and the insider trading provisions are more finely tuned, forming part of the corporate governance regulations. Under the Service Securities Act inside information is defined as “specific or precise information regarding a company which is obtained as an insider and which, if made public, would result in a market response through a change in a company’s share price or value” (Government, 2004).

In 2010, the King III report came into effect to accommodate the introduction of the Companies Act No. 71 of 2008 and in response to the global financial crisis, when the boards of directors were accused of not providing the required oversight in companies. Governments and regulatory bodies around the world were calling for the reform of laws and corporate governance codes to prevent occurrences such as the financial crisis and corporate governance scandals. South Africa itself had experienced high profile corporate failures mainly attributed to poor governance practices (Armstrong, Segal, & Davis, 2005). Among the innovations introduced by King III is a new section governing stakeholder relationships. The principles expressed in this chapter address, among others, the concept of how stakeholders’ perception affects corporate reputation and the idea that transparent and effective communication with stakeholders is essential in order to build and maintain trust and confidence (Institute of Directors in Southern Africa, 2009). King III also states that the board of directors has to ensure that the company communicates with shareowners and relevant stakeholders openly and promptly (Gstraunthaler, 2010).

As per JSE regulations, certain sections of the King III report are now mandatory for listed companies, while others are of voluntary application, albeit under the “apply or explain” principle (i.e. these sections should be by default applied by companies, but exceptions are allowed if explicitly motivated); the King III guidelines related to corporate communication are part of this second

"apply or explain" category (JSE, 2012d) although, obviously, given its relevance, the JSE does regulate (on a mandatory basis) the matter of communications by stating that in respect to price-sensitive information, an issuer must release an announcement through SENS without delay (JSE, 2012e).

JSE regulations now indicate SENS as the official communication channel for listed companies to release price-sensitive information. This means that any announcement must be published on the SENS before it can be distributed through any other channel to guarantee investors an equal and transparent access to price sensitive information. The JSE also required, until the end of 2012, JSE-listed companies to publicise their full results, interim reports and annual financial statements, in an English and Afrikaans (or another official South African language) daily newspaper, immediately after the release on the SENS (JSE, 2011d).

Despite these regulations, the South African market has recently experienced several cases of announcements that reached the press before being published on the SENS, due to leakages from people involved with the preparation of these releases (Whitfield, 2011).

In conclusion, communication by the companies listed on the JSE is subject to both mandatory regulation (i.e. the immediate disclosure of price sensitive information and the SSA regulations about insider trading) and best practices (i.e. the King III guidelines, under the "apply or explain" criterion), with the latter being supported by strong "moral suasion" from the JSE. However, these regulations and best practices leave issuers with ample margin for discretion when deciding the intra-day or intra-week timing of announcement. In fact, the JSE only rules that companies have to publish their annual financial statements within six months of the end of the financial year and at least 21 days before the date of the annual general meeting (JSE, 2011b) and their interim report after the expiration of the first six month period of a financial year, by no later than three months after that date (JSE, 2011c).

2.7 Conclusion

There is abundant literature dedicated to the timing of financial communication of listed companies. Furthermore, there is general consensus that managers strategically time the release of price sensitive communications. However, we did not find conclusive agreement among authors on whether managers voluntarily time the disclosure of price-sensitive news.

Furthermore, even if there are studies that support the hypothesis of a voluntary timing (i.e. they do identify patterns in the timing of the release of information), there is no consensus as to whether managers do it opportunistically (Bagnoli et al., 2005; Damodaran, 1989; S. P. Kothari, Shu, & Wysocki, 2009; Pastena & Ronen, 1979) nor whether they are driven by a benign attitude (Cliff et al., 2008; Doyle & Magilke, 2009; Michaely et al., 2011).

Instead, the literature agrees on a relationship between the timing of negative news and the smaller size of the company (Damodaran, 1989; Doyle & Magilke, 2009; Niessner, 2012; Truong, 2010).

In conclusion, the majority of the literature agrees that patterns in the timing of price sensitive communication exist, although there is no clear understanding of the characteristic of the relationship between timing of the release, quality of the news and size of the company.

2.8 Hypotheses

Given the relevance of the subject, the presence of abundant literature with diverse and conflicting findings, the fact that no evidence of South African case studies has been detected in the literature and the fact that managers in South Africa can decide, within certain margin, when to release price-sensitive information, has led to three hypotheses being formulated. Each of these hypotheses is stated firstly in the form of a research hypothesis, followed by the associated null and alternate hypotheses (Ho and Ha respectively):

Hypothesis 1:

The **timing** of the release of price-sensitive communications by JSE listed companies is dependent on the **quality** of the news released.

Ho: There is no relation between timing of communication releases and the quality of their news;

Ha: There is a relation between timing of communication releases and the quality of their news.

Hypothesis 2:

The **timing** of the release of price-sensitive communication is related to the **size** of the company.

Ho: There is no relation between timing of communication releases and the size of their associated companies;

Ha: There is a relation between timing of communication releases and the size of their associated companies.

Hypothesis 3:

The **timing** of release of communications by JSE listed companies depends on the **combination** of the **quality** of the information released **and** the **size** of the company that releases the information.

Ho: There is no relation between timing of communication releases and the combination of their news quality and associated company sizes;

Ha: There is a relation between timing of communication releases and the combination of their news quality and associated company sizes.

CHAPTER 3: RESEARCH METHODOLOGY

The purpose of this chapter is to present the methodology used in this study. This section initially outlines the quantitative approach utilized for the research and then elaborates on the design of the research, the procedures of collection, the analysis of the data and the validity of the research.

3.1 Research methodology

The research uses a quantitative approach, which is suitable because the study relies on the SENS, a predetermined instrument that yields statistical data (Creswell, 2003). Furthermore a quantitative approach is appropriate as the sample is large and the study looks for patterns and relationships among the variables.

As Creswell (2003) points out, quantitative studies are more deductive in approach – researcher decisions are based on theory and previous empirical findings and the research design is set before the data are collected (Creswell, 2003, p. 100). This is the case of this study, where the empirical findings of previous similar research studies have been the guideline for the research questions and the methodology has been defined before collecting the data from the SENS and the JSE.

No legal or ethical issues were expected from the study as the collection of the data includes only data that was already publicly available.

3.2 Research strategy

The aim of this study is to determine whether the timing of financial releases is related to the quality of the news released, the size of the company that releases the news, or to a combination of news quality and company size. Figure 1 below represents the conceptual map of the study.

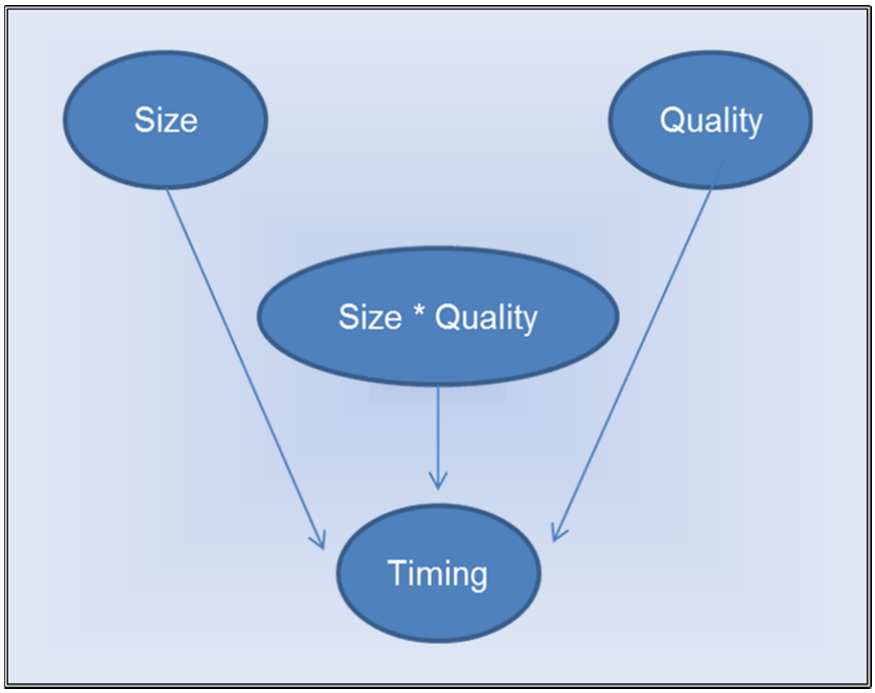


Figure 1: **Conceptual map of hypothesised interdependence of variables**

The experimental design was used to examine changes in share prices from shortly before the announcement to shortly after; this is a pre-test/post-test non-equivalent control group design, given that one "group" (i.e. the company releasing the announcement) is measured twice, once before and once after the announcement, and the other "group", (i.e. the companies comprising the relevant index), measured at the same two times but with no specific treatment on news releases. This is consistent with the definition of a non-equivalent control group design as one that:

> "…uses pre-existing groups, one of which serves in the treatment condition and the other in the control condition. The researcher does not randomly assign individuals to the groups" (Gravetter & Forzano, 2012, p. 289).

Furthermore, this design is classified as quasi-experimental as it attempts to control or limit extraneous variables, for example changes in share prices due to market forces. The design does this by evaluating changes in the share prices of the company releasing the news relative to changes in the index (i.e., changes in share prices of similar companies that did not necessarily release announcements over the period). Thus, the cause-and-effect relationship

between the news announcements and changes in share prices cannot be stated unambiguously (Gravetter & Forzano, 2012).

3.2.1 Independent variables

As the constructs of quality of the news and company size are not directly measurable, the researcher adopted operational definitions for measuring and defining them (Bhattacherjee, 2012) . The rest of this chapter elaborates on how each one of these two variables has been measured.

3.2.1.1 Quality of the news

The method used to categorise the variable "quality of the news" as "good", "bad", or "neutral" is comparing (i) the movement in the share price before versus after the announcement, (ii) the movement in the index before versus after the announcement and (iii) the volatility of the share price over the previous year. This method is an enhancement of the endogenous classification scheme used by Patell and Wolfson (1982) whose methodology however does not remove market-wide effects from the daily price change data.

Alternative methodologies utilized by other authors were considered deficient in some way for the purpose of this research. For example, it has not been possible to compare the content of the announcements to the relative analysts' forecasts (Doyle & Magilke, 2009; S. P. Kothari et al., 2009; Kwon et al., 2009), as analysts forecasts are not available for all the small cap companies of the panel. Skinner's methodology (1994), which, in the absence of pre-expectations, utilizes a comparison to the previous corresponding period results, proved to be inadequate as it does not control for all the confounding variables that may have an impact from one announcement to the following one, such as the level of expectations by the market.

In order to categorise an announcement as "good", "bad" or "neutral", the logic and formula of the standard parametric Z-test for difference scores was used. This test considers the difference between a sample difference and an expected difference, relative to the difference that could be expected by chance, i.e. the

standard error (Field, 2010). Furthermore, the assumptions of the Z-test were satisfied for this application as the Central Limit theorem states that the sampling distribution is normally distributed with a large sample size (Field, 2010), as was the case in this study, which used a large sample of announcements.

The categorisation of the news was established as follows, using a strict or conservative 0.15% (α=0.0015) level of significance, as this level resulted in relatively large sample sizes for each of the categories of “good”, “neutral” and “bad” news:

- Announcements were considered to be “good” news when share price movements were significant and when share price movement over the announcement period exceeded the index movement over the same period.

- Announcements were considered to be “bad” news when share price movements were significant and when share price movement over the announcement period was less than the index movement over the same period.

- Announcements were considered to be “neutral” news when share price movements were not significant and when share price movement over the announcement period did not exceed significantly the index movement over the same period.

This formula required the collection of the following data for each announcement:

- The share price of the company relevant to the announcement, two days before and two days after the announcement. The choice of an event window, the period over which the share prices are examined, plays an important role (Beverley, 2007). In fact, whilst in an efficient market it would be expected to see an immediate reaction to announcements, in reality the market may acquire information in advance and therefore react prior to the release, or may instead take time and not react

immediately to the news. It is therefore common in event studies, such as this, to use an arbitrary event window that encompass the day itself and at least the following day. For the purpose of this study, a five-day window has been chosen for two reasons. Firstly, to ensure that the event window includes the whole process of finalization of the announcement. In fact, from the closing of the board meeting to the publication of a press release to the SENS there are some technical steps that need to take place and can delay the press release by some time, while in the meanwhile information can start leaking to the market. Secondly, short-window studies have proven to be more reliable to detect changes in market returns over an event than long-window periods (Corrado, 2011; S.P. Kothari & Warner, 1997, 2006).

- In order to avoid the noise due to the presence of non-trading days, while calculating the five-day window period, only trading days were considered, as suggested by previous research studies (Chang, Nieh, & Wei, 2006; Chowdhury, 1994; Mbululu & Chipeta, 2012) and recently in a study dedicated to the South African market (Mbululu & Chipeta, 2012). Thus, the window period was extended by a day if one of the days in the window period was a public holiday or weekend day, meaning that the window period always included two trading days on either side of the announcement. Likewise, the window period was extended by two days if two of the days in the window period were a public holiday or weekend days, and so on. Furthermore, as highlighted by previous researches (Berkman & Truong, 2009; Michaely et al., 2011), investors can respond to both announcements made outside trading hours early in the morning, (from 7.00 am to 9.00 am) and to announcements made during trading hours in the same trading day; for these categories of announcements 'T0' is the same day of the announcements. On the other hand, investors can react to announcements made during non-trading hours later in the day (from 5.00 pm to 6.00 pm) only starting from the following day, when the Stock Exchange opens again; for this category of announcements, 'T0' is the trading day following the announcement's date.

- The closing share price of the index of the market segment (Small Cap, Mid Cap, Top40) to which the company making the announcement belonged two days before and two days after the announcement.

- The daily closing share price of the company making the announcement over the year preceding the announcement.

- The daily closing price of the index of the market segment to which the company making the announcement belonged over the year preceding the announcement.

In order to apply this formula, the following computations had to be made for each announcement:

1. The difference between the particular share price movement over the five-day window period and the index movement over the same period. This quantity is referred to here as the "observed share price difference".

2. The mean of the daily differences between the share price and the index over the one year prior to the announcement. This quantity is referred to here as the "expected share price difference".

3. The standard error of the daily differences between the share price and the index over the one year prior to the announcement (i.e. the standard deviation of the daily differences divided by the square root of the number of trading days in the year period). This quantity is referred to here as the "share price difference expected by error or chance".

Accordingly, the Z-statistic was calculated to test the significance of the share price movement relevant to an announcement. For the purpose of categorising each announcement in the study, this Z-score is the observed difference between the share and the index over the five-day window period of the announcement, minus the mean or expected difference between the share and the index over the previous trading year, relative to chance or error fluctuations in the differences over the previous trading year.

Using a strict level of significance of 0.15% (α = 0.0015) and a non-directional test, the critical Z-value required for a significant difference is 3.29 (Berenson, Levine, & Krehbiel, 2008). Thus, if the share price movement over the announcement period exceeded the index movement over this period and if the obtained Z-value exceeded the critical Z-value (Z = 3.29), the news was categorised as “good”; on the other hand, if the share price movement over the announcement period was less than the index movement over this period and if the obtained Z-value was less than the negative critical Z-value (Z = - 3.29) the news was categorized as “bad”. Values in between these two critical values were considered indicative of “neutral” news.

3.2.1.2 Size of the company

The “size of the company” was operationalized as a categorical variable with three levels: “large”, “medium” and “small”, depending on the inclusion of a given company into either the small-, medium- or large-cap index based on its market capitalisation as defined by the JSE.

The JSE updates the list of the index constituents every three months; therefore the lists for the period May 2011 - June 2012 have been utilized to verify, for each announcement, to which category the company released belonged at the date of the announcement, as some of the companies in the panel changed their market cap during the timeframe of this study from one announcement to the following one. When a company making an announcement shifted from one market capitalisation category to another one over the five-day window period, the index of the new market cap was used for to reflect the change.

3.2.2 Dependent variable

The dependent variable, i.e. the timing of the release, was defined based on whether the announcement was issued within or outside the trading time of the day, with the category of “outside” further split according to the time of the announcement. This means that, since SENS operates between 7.00 am and 6.00 pm on working days while the JSE trading hours are from 9.00 am to 5.00 pm, the timing of the release was defined with four levels following the

classification made by Michaely, Rubin and Vedrashko (2011). These authors considered whether an announcement is made during trading or non-trading hours, and apply a further division of non-trading hour announcements, distinguishing between after-the-close announcements and before-the-open announcements. This classification differentiates between announcements that are released when the JSE is closed but in the early morning and therefore are followed by a full day of trading of the share, from announcements made in the late afternoon that are followed by a longer timeframe of non-trading.

A further classification by these authors divides weekdays from Fridays. While for announcements made Monday morning through Friday afternoon the share is tradable in the same or following days, for announcements made on Friday after trading hours the weekend serves as a long gap to trading. In this research, announcements made after trading hours on a day before a public holiday have been included as well in this category, as these follow the same dynamic.

Therefore, in this research the dependent variable of timing has been classified as follows:

In trading hours: announcements released within SENS trading hours, Monday to Friday from 9.00 am to 5.00 pm.

Outside early: announcements released outside trading hours, Monday to Friday from the opening of the SENS at 7.00 am to the opening of the trading at 9.00 am.

Outside late: announcements released Monday to Thursday, outside trading hours, from 5.00 pm to 6.00 pm, from the closing of trading to the closing of SENS.

Outside late on Friday/before public holiday: announcements made on Friday or before a public holiday, from 5.00 pm to 6.00 pm.

In order to assign announcements to this last category, the list of South African public holidays (Government Communications (GCIS); Public Holidays &

Festivals Calendar) was used. Table 1 presents the list of public holidays for the period taken into consideration by the study.

Table 1: List of South African public holidays from 1 June 2011 to 31 May 2012

2011		2012	
16 June	Youth day	**1 January**	New Year's day
9 August	National women's day	**2 January**	Public holiday
24 September	Heritage day	**21 March**	Human rights day
16 December	Day of reconciliation	**6 April**	Good Friday
25 December	Christmas day	**9 April**	Family day
26 December	Day of goodwill	**27 April**	Freedom day
		1 May	Workers' day

3.3 Population and sample

3.3.1 Population

A population is the total collection of elements about which we wish to make inferences (Blumberg, Cooper, & Schindler, 2008). As the unit of analysis of the study is the announcement of a financial result or relative trading statement from companies with primary listings on the Main Board of the JSE, the population of relevance for this study comprises all such announcements of companies so defined. Thus, the parameters of the unit of analysis are defined by both the category of news and the category of company, i.e. those news announcements most likely to affect the share price and those companies with a primary listing on the JSE. This way, the target population comprises announcements most relevant to share price movements of companies most significant to the South African economy.

In order to include the peak time of releases of financial results, typically January and June, the period considered for the announcements of the study was from 1st June 2011 to 31st May 2012. This twelve-month period was considered appropriate for the study as it allowed consideration of announcements over a period that was sufficiently long to observe at least one

statutory announcement from every company in the target population while satisfying the statistical requirements of the academic exercise.

3.3.2 Sample and sampling method

The cost of studying an entire population to answer a specific question is usually very high in terms of time, cost and resources. Therefore, a sample or a subset of subjects representative of a given population is often selected (Sanders & Smidt, 2000). However, as this study is designed to be generalizable, the sample size is critical and generally the larger the number in the sample, the higher the likelihood of a representative distribution of the population (Gravetter & Forzano, 2012).

As the data for this study was secondary data obtained without incurring costs dependent on the number of announcements considered, all announcements consistent with the delimitations of the target population were used. In other words, all the specific kinds of announcements from companies with primary listing on the JSE Main Board were used for analysis, while all announcements that did not fit these criteria were excluded. Thus, the entire population of relevance was used and no sampling method was applied. Table 14 in Appendix A shows the list of companies that represent the population of relevance.

3.4 The research instrument

All the data used in the research is secondary data sourced from the SENS and the JSE databases, and was obtained directly from the JSE. SENS is the primary source of dissemination of price-sensitive information to the market. It is the electronic system managed by the JSE Issuer Regulation Division, which transmits approved company announcements and price-sensitive information to the major newswires.

3.5 Procedure for data collection

The first step of the data collection process for this research entailed collecting all the financial results and trading statements released on the SENS by companies listed on the JSE Main Board in the June 2011- May 2012 period.

Announcements by dual-listed companies with a primary listing in a foreign market were excluded and removed. The list of all the JSE dual listed companies is available on the JSE website (JSE, 2012a) and Table 15, in Appendix A, presents the list of the companies with a primary listing abroad. From the file containing the list of financial results and trading statements, the relative date and timing of releases was obtained.

In the presence of a trading statement and a financial results announcement released by the same company at the same time of the same day, the trading statement has been deleted in order to avoid dependence of the two units of analysis. Furthermore, in order to avoid dependence and double counting in the case of trading statements that preceded the release of the financial results of a company by several days or months, the researcher examined the content of the announcements and included only those announcements that differed. In fact, in countries where there is a clear regulation about the issue of trading statements before the announcement of results, as is the case of South Africa, financial statement released after a trading statement may have less relevance as a primary source of information to the market (Leventis & Weetman, 2004).

Therefore, the procedure entailed verifying whether the content of a trading statement preceding a financial result was related to this financial result itself or it was independent and this reduced the number of announcements from 1,548 to 774.

For each of the remaining announcements, the quality of the announcement, the size of the company and the relative share and index movements have then been categorised as outlined in section 3.2.1.

3.6 Data analysis and interpretation

As Zikmund (2003) points out, the process of data analysis entails summarising large quantities of raw data so the results can be interpreted. In this study, the aim of data analysis was to reveal patterns in the data of news timing related to news quality and company size in order to test the research hypotheses.

3.6.1 Descriptive statistics and graphical representation

Initially, the study used multi-way frequency tables to describe the relationship between timing, quality of the news and size of the company. Subsequently, the relationships were investigated using log linear analysis, and, finally, the significance in the relationships was depicted in a simplified, decision tree-like structure.

3.6.2 Multi-way frequency tables

The research data included three factors: timing, quality of the news and size of the company. Each of these factors was split into subcategories and the cross tabulations of these factors and their subcategories are summarized in multi-way frequency tables. Specifically, multi-way frequency tables show the interaction between the dependent or response variable, in this case the timing, and the design variables, in this case the quality of the news and the size of the company. The multi-way frequency tables are used as the basis for examining the frequencies that occurs in the log linear analysis (Field, 2010).

Chi-square analysis is used to examine relations between two categorical variables (Field, 2010), for example between quality of announcements and timing of the release. Furthermore, Cramer's V is used to determine the strength of the relationship that is found (Field, 2010).

3.6.3 Log linear regression

Log linear regression is used to test, through logarithmic transformations, the multi-way frequencies table for each of the different factors, as well as their interaction to determine their statistical significance (Field, 2010).

This technique allows analysis of multi-way frequencies tables. The statistical significance of the goodness-of-fit of the tested model is verified in two ways. First of all, by reviewing and plotting residual frequencies; if the model is appropriate for the table, then all residual frequencies should consist of positive and negative values of approximately equal magnitudes that are distributed evenly across the cells of the table. This is then followed by checking the statistical significance of effects by looking at two types of Chi-squares, the traditional Pearson Chi-square statistic and the maximum likelihood ratio Chi-square statistic. The interpretation and magnitude of these two Chi-square statistics are essentially identical; both tests evaluate whether the expected cell frequencies under the respective model are significantly different from the observed cell frequencies and, if so, the respective model for the table is rejected (Statsoft, 2012).

As the sample sizes of announcements in the Small Cap, Mid Cap and Top 40 differed substantially, a stratified random sample of 96 announcements (the smallest subgroup, Top40 companies) from each of the Small Cap and Mid Cap announcements was selected. Statsoft recommends this method of using stratified sampling to extract the maximum number of cases from the smallest group or stratum and then use that value as the sample size for all other groups or strata. This method of systematically over-sampling rare events in predictive classification analyses is recommended by Statsoft (Statsoft, 2012). As outlined, stratified random sampling was used to extract the maximum number of cases from the smallest group or stratum and then this number formed the sample size for all other groups or strata (Gravetter & Forzano, 2012). This procedure was designed to ensure adequate and sufficient representation of the frequencies in all groups for analysis. Subsequently, all the frequencies were rebased to 100 (by multiplying by the factor of 100/96) for ease of interpretation.

3.6.4 Classification and Regression Trees

The results of the log linear analysis are displayed in a simple, decision tree-like structure using the Classification and Regression Tree method (CaRT), a less common approach to capital market research whose primary goal is the predictive success of a model (Henry, 2006). CaRT is a decision tree predictive model that is simple to interpret and provides an intuitive image of the underlying relationships among the variables (Lewis, 2000).

CaRT is a non-parametric statistical methodology developed to analyse classification issues either from categorical or continuous dependent variables that produces an accurate set of data classifiers by uncovering the predictive structure of the problem under consideration (Breiman, Friedman, Olshen, & Stone, 1984). CaRT therefore allows assigning observations into the timing categories based on the best splits of the two independent categorical variables of news quality and size, as well as splits that involve their interactions. Thus, the distinctive characteristic of CaRT is that the effect of predicted variables are considered one at a time in a sequence of 'if-then' decision steps, rather than all at once. Among the advantages that CaRT analysis has over other methods is that this methodology is inherently non-parametric. No assumptions are, in fact, made about the linearity of the underlying relationship between the predictor variables and the dependent variable (Statsoft, 2012). Thus, CaRT allows the handling of both highly skewed numerical data and of categorical predictors, as in the case in this study. To run the CaRT analysis, a stratified sample of approximately 100 observations from each of the size categories has been used for consistency and to compare the results with the log linear analysis output. Furthermore, 80% of the observations were assigned to a "training" sample and the remaining 20% assigned to an independent "testing" or "holdout" sample.

3.7 Validity and reliability

A research study is considered to be valid if it accurately answers the questions it is designed to answer. The validity of the research refers to the rigour of the research process employed and the accuracy of the results. Validity is

traditionally considered as external validity and internal validity (Gravetter & Forzano, 2012)

3.7.1 External validity

The measure of external validity of the research study is the extent to which the results can be generalised and thus applied to other populations (Winter, 2000).

Since the target population used in this study is comprised of financial announcements most relevant to share price movements of companies significant to the South African economy, the external validity of the research is considered satisfactory as the results obtained are likely to be relevant to the share price movements of this population of companies in other annual periods. However, it is partially compromised because the generalizability of this study is limited to only certain kind of announcements i.e. trading statements and financial results.

3.7.2 Internal validity

The internal validity of the research is the extent to which the study produces an unambiguous explanation for the relationship between the two variables considered (Gravetter & Forzano, 2012). Factors that allow for alternative explanations are threats to the internal validity of a study (Gravetter & Forzano, 2012).

In line with the quasi-experimental research strategy adopted in this study, several attempts were made to limit the threats to internal validity.

Firstly, although by specifically selecting trading statements and financial results the external validity of the research has been compromised, the internal validity instead has been enhanced. In fact, choosing only certain kind of announcements contributes to control for confounding variables as different typologies of releases have different levels of market expectation and different levels of informative content.

Secondly, the effect of the news was considered over a five-day period from two days prior to the announcements to two days subsequent. This event window has been chosen as it is long enough to reflect the changes in the share price but short enough that it would be less likely to include other confounding variables, extraneous variables that change systematically along with the variables studied (Gravetter & Forzano, 2012).

Thirdly, by considering only the announcements from companies with a primary listing on the Main Board of the JSE, thus by excluding announcements from companies with a primary listing abroad, the effect of share price movements reflecting dynamics in other markets are controlled.

In spite of these attempts to control confounding and extraneous variables, the changes in share prices from before to after announcements cannot be said to be caused solely by the announcements.

3.7.3 Reliability

Reliability of the data refers to the extent to which the data collection techniques will yield consistent findings (Saunders, Lewis, & Thornhill, 2009). The data of this research met the reliability criteria as they are collected from a reliable source. SENS was used as the digital tool to collect data. SENS is licensed as an exchanger and provider of information under the South African Securities Services Act, 2004, to the JSE. Data was therefore uniformly collected and screened, thereby not being subject to the any bias that may be introduced by the researcher (Bhattacherjee, 2012).

3.8 Limitations of the study

A limitation of this study is that the focus on financial results and trading statements only may lead to results that could differ for another kind of price sensitive announcement. As already investigated with regards to the South African market, many other kind of announcements, such as, for instance, share dividends, R&D, capital expenditure and equity financing announcements, are powerful tools that can influence the market value of a firm (Bhana, 1997,

1998a, 1998b, 2001, 2008). However, the results of this study will provide valuable insight for further studies based on a more inclusive range of news categories.

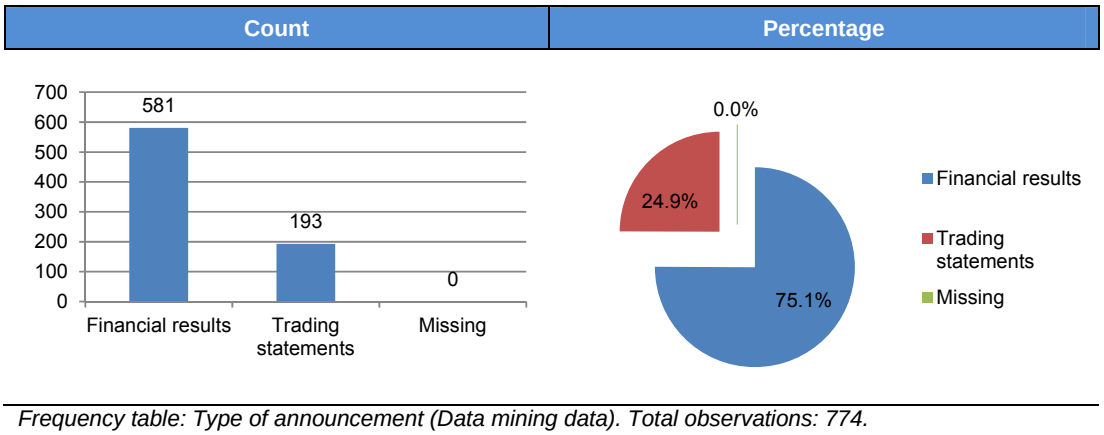
CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

The first part of this results chapter shows the descriptive statistics in the form of frequency tables and graphs to describe each of the variables individually. Thereafter, the relations among the variables are presented as cross tabulations or multi-way frequency tables, followed by analysis of the relationships of the frequencies using log linear Analysis and an alternative Classification Tree analysis (CaRT). Since the (three) hypotheses of the research are all tested as effects within the same log linear analysis and within the same Classification Tree analysis, the results of these two statistical methods are presented first. Thereafter, the results relating to each of the three hypotheses of the study are presented as a summary.

4.2 Description of unit of analysis

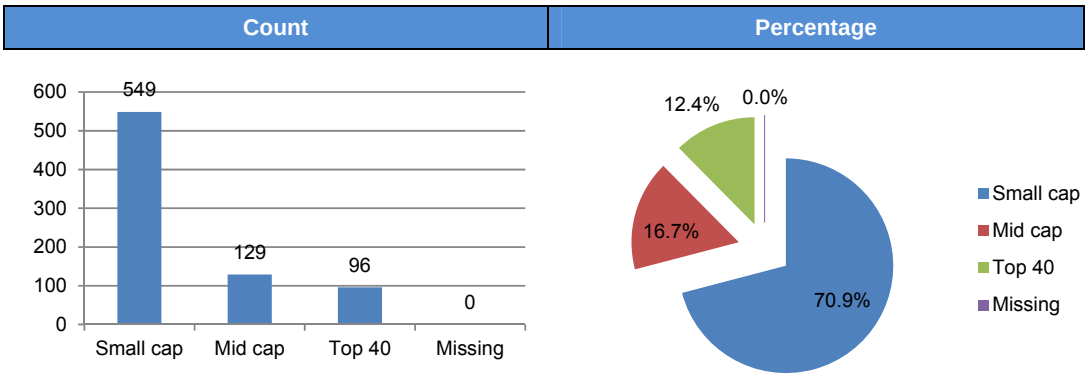
As the described in Chapter 3, the unit of analysis of the study is the announcement of a financial result or relative trading statement from companies with primary listing on the Main Board of the JSE, in this case 774 announcements, three-quarters (75%) of which are financial results and a quarter (25%) trading statements (Figure 2).



Frequency table: Type of announcement (Data mining data). Total observations: 774.

Figure 2: Frequencies of types of announcements

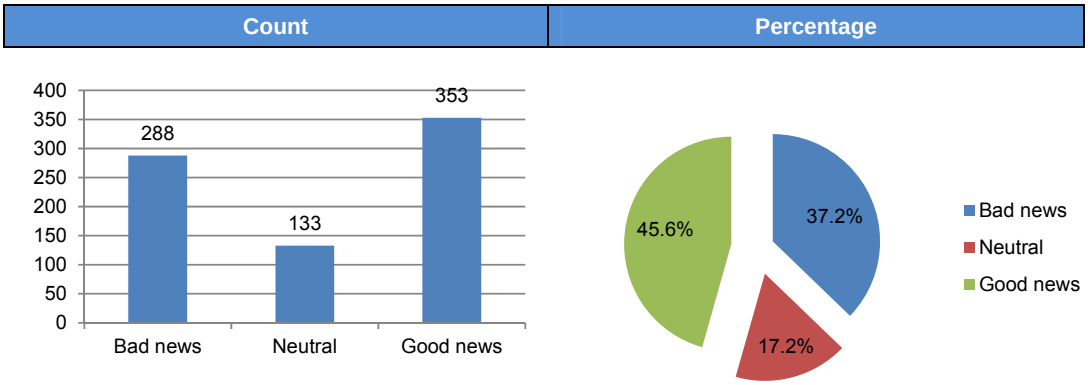
The announcements considered were 71% from Small Cap companies, 17% from Mid Cap companies and 12% from Top40 companies (Figure 3). This split is consistent with the respective incidence of Small Cap, Mid Cap and Top40 companies relative to the total (271 companies, list in Table 14, Appendix A).



Frequency table: Size (Data mining data). Total observations: 774.

Figure 3: Frequencies of companies by size category

Following the criteria as per section 3.2.1, almost half of the announcements (46%) have been classified as "good", 37% as "bad" and 17% as "neutral" (Figure 4).



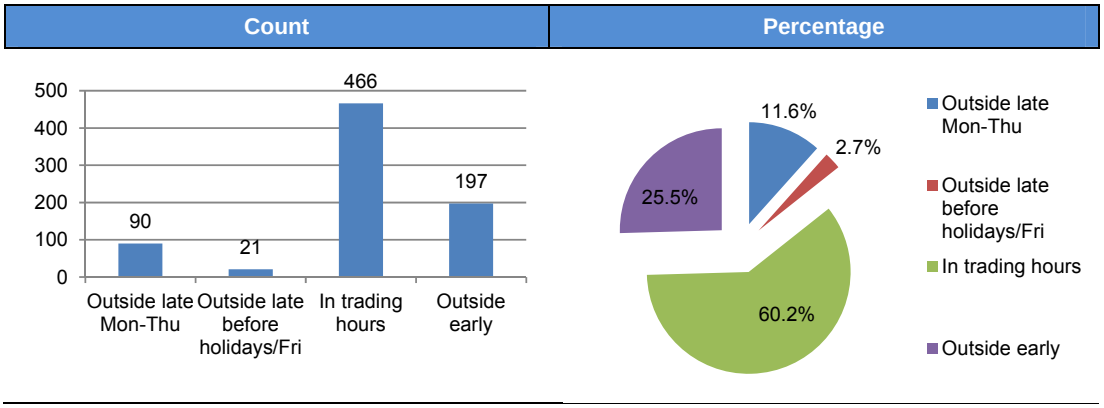
Frequency table: Quality of news (Data mining data). Total observations: 774.

Figure 4: Frequencies of news quality categories

In the following three figures (Figures 5, 6 and 7), the timing of the announcements is described in more detail, i.e. presenting the frequencies at the four levels of timing, followed by the frequencies at the three levels obtained by combining the category "Outside late Monday-Thursday" with the category

"Outside late before public holiday/Friday", and finally at two levels. Frequencies at these levels are presented as these are used in the log linear and CaRT analyses.

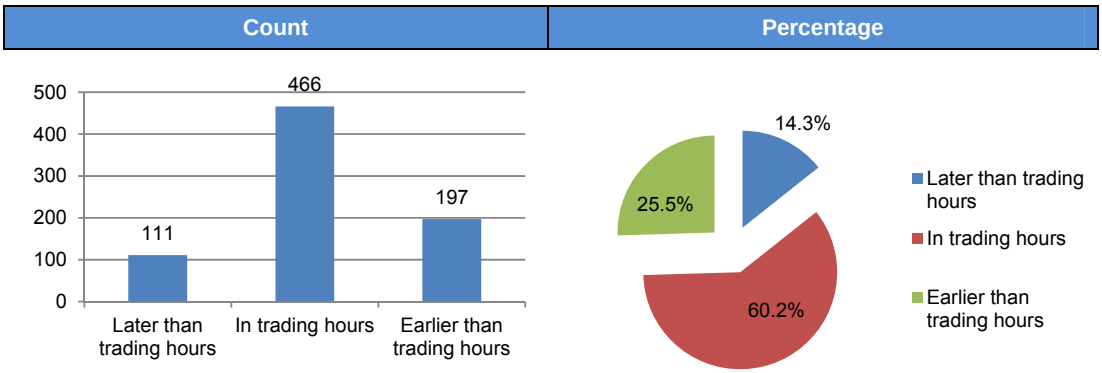
In first instance, the timing of the news was classified with four levels. About 60% of the announcements belonged to the "In trading hours" category, 26% to the "Outside early" category, 12% to the "Outside late Monday to Thursday" category and 3% to the "Outside late-before public holiday/Friday" category (Figure 5).



Frequency table: Timing (Data mining data). Total observations: 774.

Figure 5: Frequencies of timing of announcement categories (four levels)

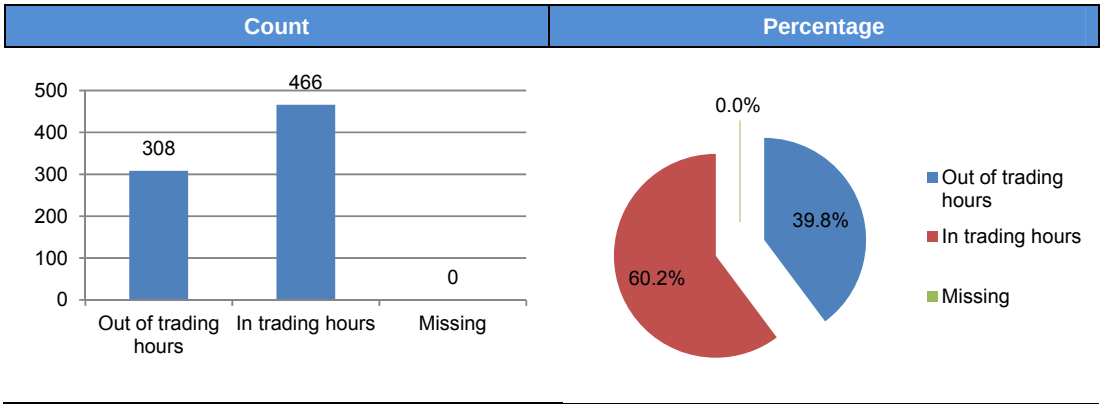
When, in order to perform the log linear regression, the levels of timing were reduced from four to three by aggregating the "Outside late Monday to Thursday" and the "Outside late before public holiday/Friday" categories into the "Later than trading hours" category, this new category represented approximately 14% of the total announcements (Figure 6).



Frequency table: Timing (Data mining data). Total observations: 774.

Figure 6: Frequencies of timing of announcement categories (three levels)

A further aggregation of the timing category has been performed, in order to satisfy the requirements of the CaRT analysis. Of the total announcements, approximately 60% have been released during trading hours and approximately 40% out of trading hours (Figure 7).



Frequency table: Timing (Data mining data). Total observations: 774.

Figure 7: Frequencies of timing of announcements categories (two levels)

In the following section, the relationship among the three categorical variables of timing, size and quality are presented as cross-tabulations with the emphasis on the explanation of timing.

4.3 Multi-way frequency tables cross tabulations

In first instance, when performing the cross tabulation of the variables, the variable timing has been included with four sub-categories, as shown in Table 2.

Table 2: Cross-tabulation Quality x Timing x Size with four levels of timing

	News by type (count)			
	Bad	**Neutral**	**Good**	**Total**
Small cap	**190**	**109**	**250**	**549**
In trading hours	119	76	149	344
Outside early	37	20	57	114
Outside late before holiday/Fri	7	3	8	18
Outside late M-Th	27	10	36	73
Mid cap	**58**	**13**	**58**	**129**
In trading hours	30	10	31	71
Outside early	19	3	21	43
Outside late before holiday/Fri			1	1
Outside late M-Th	9		5	14
Top 40	**40**	**11**	**45**	**96**
In trading hours	26	5	20	51
Outside early	13	5	22	40
Outside late before holiday/Fri			2	2
Outside late M-Th	1	1	1	3
Total	**288**	**133**	**353**	**774**

It appears from the frequencies that in the case of "good" news announcements that related to Small Cap companies, approximately 60% (149 out of 250) were released in trading hours compared to 53% (31 out of 58) that related to Mid Cap and 44% (20 out of 45) related to Top40.

These relations are further described in sections 4.6, 4.7 and 4.8 when addressing the testing of the hypotheses.

As the sample size of timing “Outside late before holiday/Fri” was too small for Mid cap and Top40 announcements, the “Outside late Monday to Thursday” and the “Outside late before public holiday or Friday” levels of announcements have been aggregated, as shown in Table 3. In fact, to run a log linear analysis, all cells must have expected frequencies greater than 1 (Field, 2010). As described later in section 4.4, the log linear analysis was conducted on a

stratified sample of equal numbers of announcements from each market cap level where all expected frequencies were greater than 1 and the minimum cell sizes were greater than in the case of the cross tabulation based on Table 2. Although there was still a single cell with no value after the aggregation, nevertheless the researcher decided to conduct the analysis, as a further aggregation would have involved combining the levels of earlier and later than trading hours and this would have compromised the level of detail of the research.

Table 3: Cross-tabulation of Quality x Timing x Size with three levels of timing

	News by type (count)			
	Bad	**Neutral**	**Good**	**Total**
Small cap	**190**	**109**	**250**	**549**
Earlier than trading hours	37	20	57	114
In trading hours	119	76	149	344
Later than trading hours	34	13	44	91
Mid cap	**58**	**13**	**58**	**129**
Earlier than trading hours	19	3	21	43
In trading hours	30	10	31	71
Later than trading hours	9		6	15
Top 40	**40**	**11**	**45**	**96**
Earlier than trading hours	13	5	22	40
In trading hours	26	5	20	51
Later than trading hours	1	1	3	5
Total	**288**	**133**	**353**	**774**

It can be seen that for each size category, the majority of announcements take place during trading hours. For announcements made outside trading hours, the Top40 companies prefer releasing earlier than trading hours (40 out of 96 announcements, versus 5 out of 96 announcements made later than trading hours), with this preference decreasing for Mid Cap (43 out of 129 announcements released earlier and 15 out of 129 released later than trading hours) and Small Cap (114 out of 549 announcements released earlier than trading hours versus 91 out of 549 released later than trading hours)

Table 4 presents the frequencies at two levels of timing, as this classification has been used in the CaRT analysis.

Table 4: Cross-tabulation of Quality x Timing x Size with two levels of timing

	News by type (count)			
	Bad	**Neutral**	**Good**	**Total**
Small cap	**190**	**109**	**250**	**549**
In trading hours	119	76	149	344
Out of trading hours	71	33	101	205
Mid cap	**58**	**13**	**58**	**129**
In trading hours	30	10	31	71
Out of trading hours	28	3	27	58
Top 40	**40**	**11**	**45**	**96**
In trading hours	26	5	20	51
Out of trading hours	14	6	25	45
Total	**288**	**133**	**353**	**774**

4.4 Log linear regression

The goal of the log linear analysis of the frequency tables in 4.3 is to explain the relationships between the categorical variables of timing, quality and size.

According to the terminology used in the context of log linear analysis, the independent variables of size and quality are referred to as “design factors” and the dependent variable of timing is referred to as the “response variable”. In line with the hypothesis of the research, the analysis is concerned with the interactions between the design variables and timing, rather than between the design variables.

As the sample sizes of announcements in the Small Cap, Mid Cap and Top40 differed substantially (respectively: 549, 129 and 96), a stratified random sample of 96 announcements (the smallest subgroup) from each of the Small Cap and Mid Cap announcements was selected. As outlined in Chapter 3, stratified random sampling was used to extract the maximum number of cases from the smallest group or stratum, and then this number formed the sample size for all other groups or strata. This procedure was designed to ensure adequate and sufficient representation of the frequencies in all groups for analysis.

Thereafter, all the frequencies were rebased to 100 (by multiplying by the factor of 100/96) for ease of interpretation. The original and rebased frequencies are shown in Figure 8 and 9.

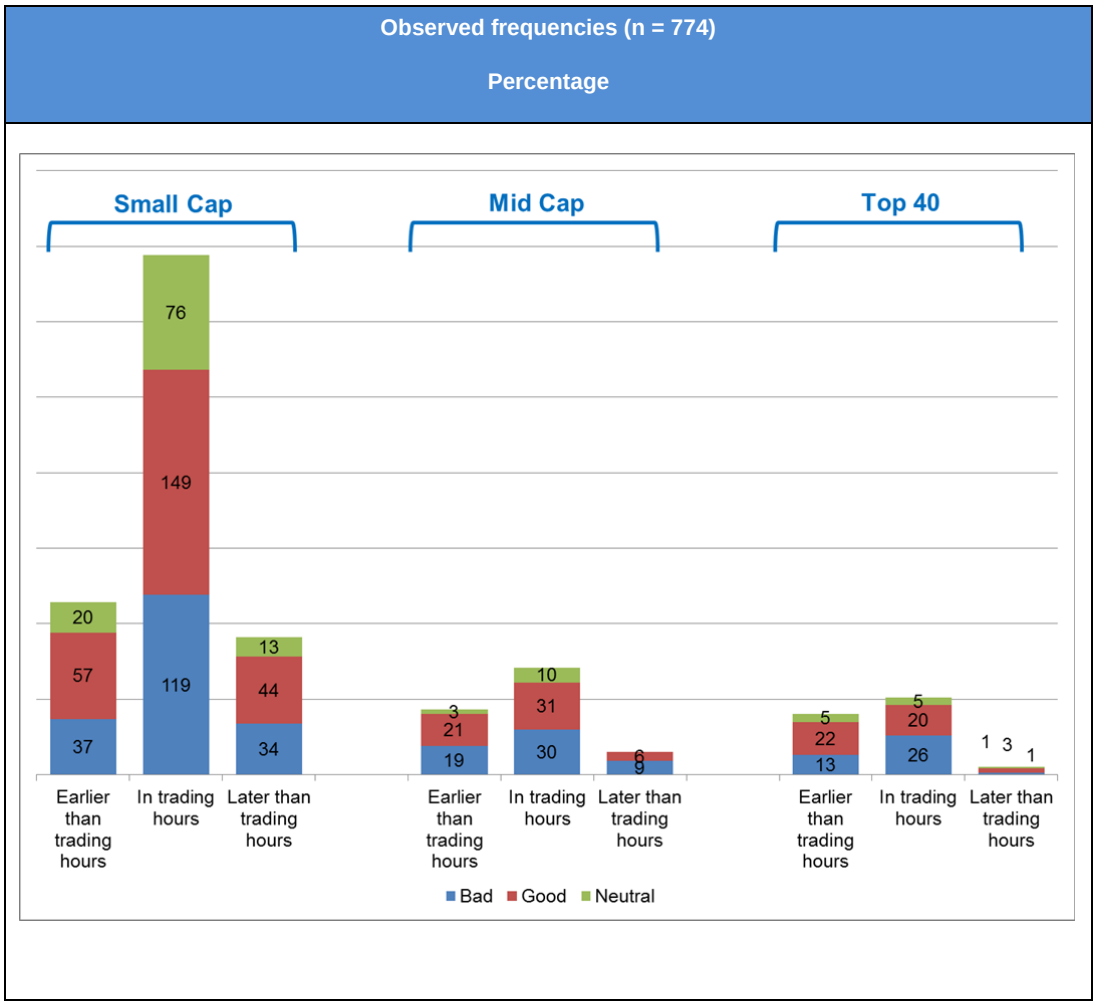


Figure 8: Quality, timing and size combinations with observed frequencies

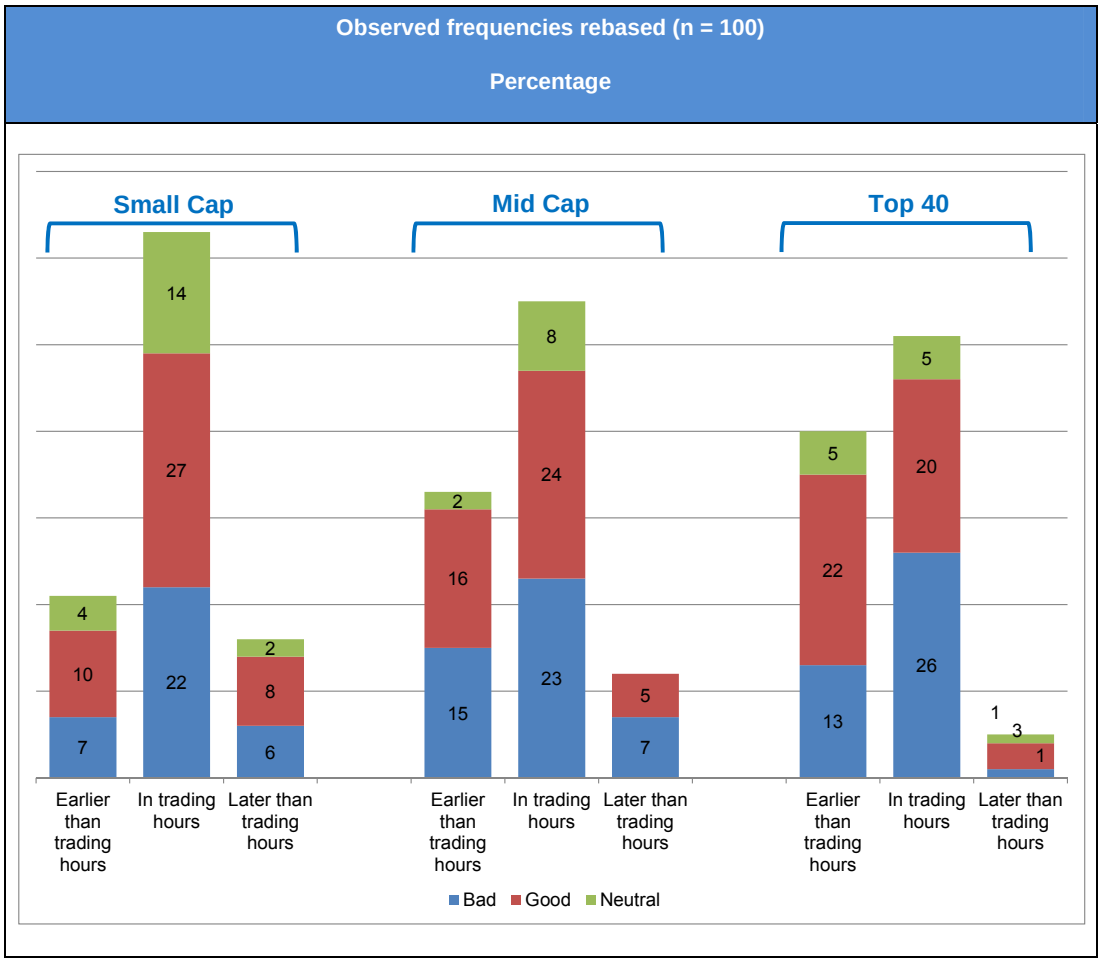


Figure 9: Quality, timing and size combinations with observed rebased frequencies

Initially, simultaneous tests for all 3-factor interactions were computed to examine the contribution of the main effects (k = 1), i.e. size, quality and timing considered individually, the 2-way interactions (k = 2), i.e. quality and timing, or quality and size, or size and timing and the 3-way interactions, i.e. size, timing and quality considered jointly in explaining the pattern of the observed frequencies (Table 5). Table 5 shows that the explanation of the pattern of frequencies by the two-way interaction is significant at the 10% level of significance (Max. likelihood Chi-square = 20.477, p = .059 and Pearson – Chi-square = 19.551, p = .0761), while the interrelations among all three variables of timing, size and quality is not significant (p = .706).

Table 5: Significance tests of K- factor interactions

K-factor	Degrees of freedom	Max likelihood Chi-square	Probabability - p	Pearson - Chi-square	Probabability - p
1	6	15.572	.0000	14.950	***
2	12	20.477	.0586	19.551	*
3	8	5.473	.7060	5.662	ns

*** p < .001

** p < .05

* p < .10

ns = not significant

This labelling convention for p values has been used for all the following tables.

In order to determine which of the combinations of levels of the two-factor interaction effects are significant, the partial association Chi-square tests are presented in Table 6. This test evaluates the significance of the unique effect of the particular interaction effect, for example quality and timing, or quality and size, or size and timing. The results show non-significant relationship between quality and timing (partial association Chi-square = 2.203, p > .05) and between quality and size (partial association Chi-square = 5.153, p > .05), with a significant interaction between timing and size (partial association Chi-square = 13.163, p < .05). This partial association Chi-square test evaluates the significance of each effect by comparing the model that includes all k-factor interactions with the model without the respective effect.

Table 6: Partial association Chi-square test

	Degrees of freedom	Partial association - Chi-square	Partial association - p	Marginal association - Chi-square	Marginal association - p
Quality	2	58.4536	.0000	58.4536	***
Timing	2	97.2683	.0000	97.2683	***
Size	2	0.0000	1.0000	0.0000	ns
Quality x Timing	4	2.2028	.6985	2.1820	ns
Quality x Size	4	5.1531	.2720	5.1323	ns
Timing x Size	4	13.1627	.0105	13.1418	*

Tests of the fit of the model comprising only the three 2-way factors to the data imply a fit of the data to the model as both Maximum likelihood and Pearson Chi-square tests are non-significant (Table 7), implying a non-significant

difference between the frequencies in the data and the model. Thus, the importance of the 2-factor interactions to the explanation of the frequencies is confirmed, with the relation between timing and size being the significant one.

Table 7: Significance of the observed frequencies to the 2- factor model

	Chi-square	df	p
Max likelihood Chi-square	5.473068	8	ns
Pearson Chi-square	5.662101	8	ns

Finally, the nature of the significant effect of timing and size is examined in terms of the expected frequencies in Table 8. All of the expected frequencies exceeded five, satisfying an important assumption of log linear analysis (Field, 2010). In addition, there are no major discrepancies between the observed and the fitted frequencies in the table as shown by the close fit of the points to the line (Figure 10).

Table 8 incorporates a statistical adjustment factor (delta) when computing the expected frequencies, thus the expected sample sizes are marginally different from the observed totals.

The observed (rebased) frequencies displayed in Figure 9 show that announcements from companies of all sizes tend to be made mostly within trading hours, with news from Small Cap companies tending to be announced slightly more often (63,0%) in trading hours compared to news from larger companies (55,0% and 51,0% for Mid Cap and Top40 companies, respectively). Furthermore, news from the Top40 companies tend to be announced slightly more often earlier than trading hours (40.0%), compared to news from companies that are smaller (21,0% and 33% for news from Small and Mid Cap respectively).

Table 8: Expected frequencies of timing of announcements by size of company

	Earlier than trading hours	In trading hours	Later than trading hours	Total
Small cap	21.45	63.45	16.45	101.35
Mid cap	33.45	55.45	12.45	101.35
Top 40	40.45	51.45	5.45	97.35
Total	95.35001	170.35	34.35	300.05

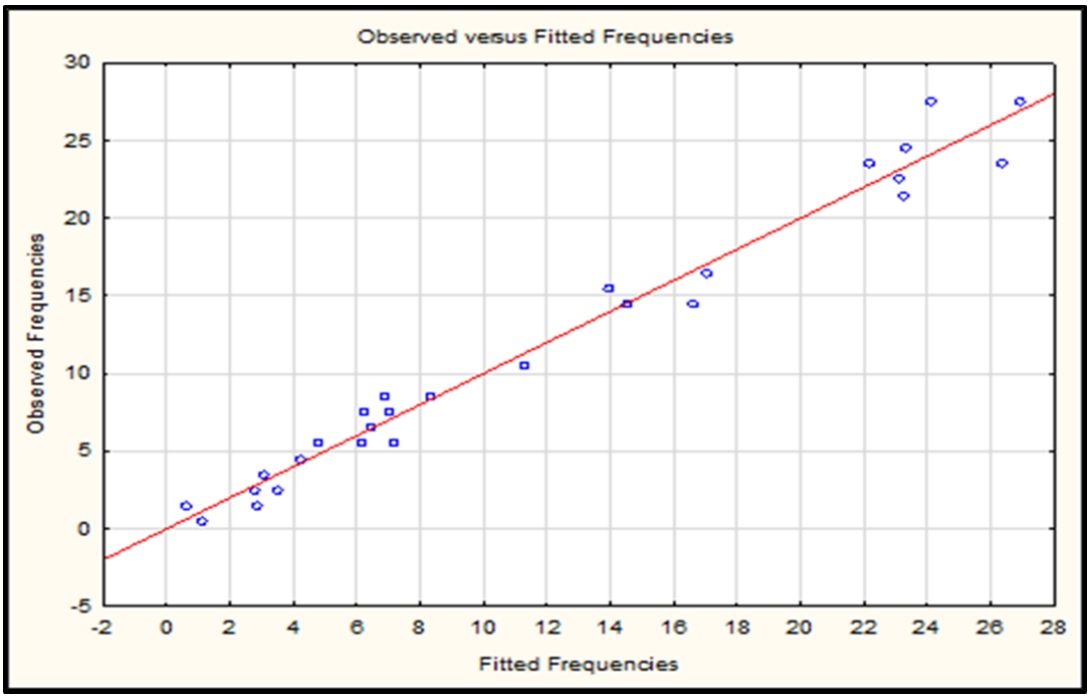


Figure 10: Observed versus fitted frequencies for timing of announcements by size of company

4.5 Classification Trees (CaRT)

As outlined in section 3.6.4, Classification Trees (CaRT) is a method of predicting classification of a categorical dependent variable. In this case, the dependent variable of timing category is based on predictor variables which, in this research, are the quality of the news and the size of the company, using binary splits in a sequence of tree-like decisions based on Chi-square test of

significance. A distinguishing characteristic of Classification Trees is that the effects of predictor variables are considered one at a time within a particular branch of the tree, for example within companies of one particular size only, rather than the effect of the predictor variables being considered all at once as in the case of the log linear analysis. Thus, the CaRT analysis was computed in an attempt to extract further meaning from the data obtained by considering more detailed interaction effects between the various levels of quality, size and timing than would be examined in the log linear analysis.

As anticipated in section 3.6.3 and 3.6.4, for consistency and to enable comparisons between the results of the log linear and CaRT analysis, a stratified sample of approximately 100 observations from each of the size categories was used as the sample for the CaRT analysis, with 80% of the observations assigned to a “training” sample and the remaining 20% assigned to an independent “testing” or “holdout” sample**.**

The results of the CaRT are presented in a tree graph for the dependent variable of timing considered at two levels (“In trading hours” versus “Out of trading hours”) in Figure 11 based on the 80% training sample.

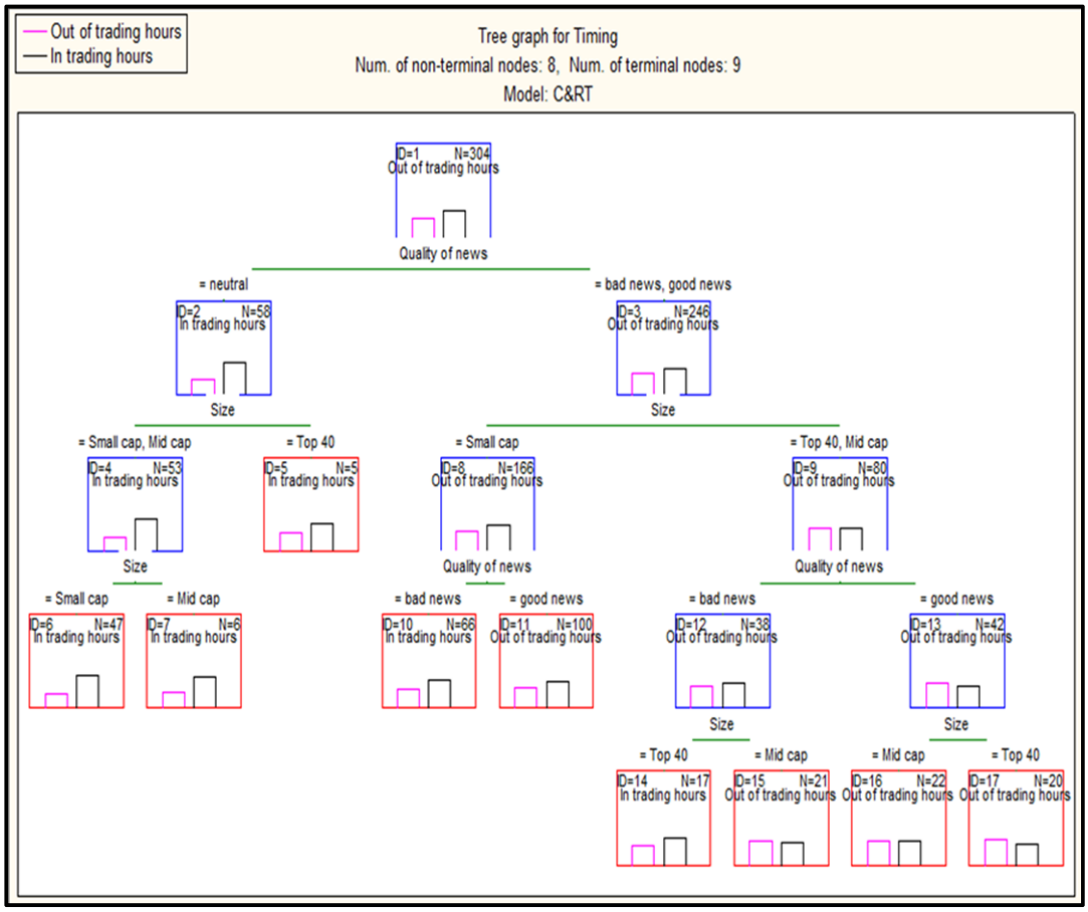


Figure 11: Results of the CaRT analysis for the dependent variable timing at two levels

In this graph, terminal nodes or points on the tree beyond which no further significant splits or decisions on timing are possible are shown in red blocks. There are nine terminal nodes in the figure, with each node identified by a number (ID) in its top left corner and the total number of observation in the node (N) in its top right corner. The height of the bars in the nodes reflects the relative frequencies of the categories with the more frequent category labelled above the bars.

The CaRT analysis that was conducted on the three levels of timing showed a lower than 50% successful prediction rate and is thus not presented. However, the CaRT analysis conducted on two levels of timing (“Out of trading hours” and “In trading hours”) showed a higher success rate. In summary, the results of this CaRT analysis reflected a series of 3-way interactions of quality, size and

timing. However, when the validity of the tree based on the training sample was tested using the independent 20% testing sample, the results were only marginally more successful than chance or guessing as shown in Table 9. This table shows that just over half (53.9%) of announcements made out of trading hours are correctly predicted, and 50.9% of announcements made in trading hours are correctly predicted.

Table 9: Summary frequency table - CaRT prediction model

Timing		Out of trading hours	In trading hours	Total
Out of trading hours	Count	14	12	26
	Percent	53.85%	46.15%	100.00%
In trading hours	Count	28	29	57
	Percent	49.12%	50.88%	100.00%
Total	Count	42	41	83

Observed frequencies in rows; Expected frequencies in columns

A further result of the tree is that neither of the two predictor variables had a significant contribution to the explanation of the frequencies of the timing categorical variable (Chi-square = 1.434 and 2.990 with p-values of .488 and .224 for size and quality respectively). This finding of non-significant predictors is consistent with the low prediction rate.

Briefly, the terminal nodes of the CaRT results show that “neutral” news announcements tend to be released more often within trading hours for all companies, irrespectively of their size (nodes 5, 6 and 7). “Bad” news announcements relating to small cap and Top 40 companies also tend to be released within trading hours (nodes 10 and 14). “Good” news announcements are more often announced “out of trading hours” by companies of all sizes (nodes 11, 16 and 17).

4.6 Results pertaining to Hypothesis 1

The three sets of results pertaining to Hypothesis 1 are presented in turn, followed by a conclusion on whether the hypothesis is supported or not.

Firstly, the cross-tabulation of quality and timing based on the complete sample of 774 announcements is presented and tested via a Chi-square analysis; secondly, the quality by timing interaction effect tested on equally weighted sample sizes of announcements from companies of each size within the log linear analysis is presented; finally, the relevant CaRT finding is mentioned.

For ease of reference, Hypothesis 1 is restated as a research hypothesis:

> The timing of the release of price-sensitive communications by JSE listed companies is dependent on the quality of the news released.

4.6.1 Chi-square analysis

The frequencies of "bad", "good" and "neutral" announcements within each of the three timing categories of "Earlier than trading hours", "In trading hours" and "Later than trading hours" are presented in Table 10 and represented as percentages of each news category in Table 11. No significant differences in the distributions of timing between announcements categorized by quality was found (Chi-square(4) = 6.293, p= .210), meaning there is not sufficient statistical evidence to reject the null hypothesis. The null hypothesis that there is no relation between timing of communication releases and the quality of the news is therefore accepted. The result shows that for all the news categories, the majority of announcements (approximately 60.2%) are within trading hours. Further, for all the news categories, approximately a quarter of announcements are made earlier than trading hours and approximately 14.3% are made later than trading hours.

Table 10: Cross-tabulation of quality by timing

	News by type (count)			
Timing	**Bad**	**Good**	**Neutral**	**Total**
Earlier than trading hours	69	100	28	197
In trading hours	175	200	91	466
Later than trading hours	44	53	14	111
Total	288	353	133	774

Table 11: Cross-tabulation of quality by timing (percentages of news categories)

	News by type (count)			
Timing	**Bad**	**Good**	**Neutral**	**Total**
Earlier than trading hours	24.0%	28.3%	21.1%	25.4%
In trading hours	60.8%	56.6%	68.4%	60.2%
Later than trading hours	15.3%	15.0%	10.5%	14.3%
Total	100.0%	100.0%	100.0%	100.0%

4.6.2 Log linear analysis

The results of the log linear analysis did not detect a significant relation between quality and timing (partial association Chi-square = 2.203, p = .699), once again evidence that the null hypothesis cannot be rejected and therefore accepted. This partial association Chi-square test shows that this quality by timing effect does not significantly contribute to the pattern of frequencies by comparing the model that includes all the 2-way interactions with the model without the quality by timing effect.

4.6.3 CaRT analysis

The results of the CaRT analysis did not find significance for explaining the timing categories using quality of news announcements (Chi-square = 2.990, p = .224) consistent with the results of the non-significant chi square and log linear analyses that indicated that the null hypothesis of no relation between timing of communication releases and the quality of the news be accepted.

In conclusion, the results of the two dimensional cross-tabulation Chi-square analysis, the log linear analysis and the CaRT analysis have not found sufficient evidence of a significant relation between news quality and timing and thus no support has been found to suggest that the timing of the release of price-sensitive communications by JSE listed companies is dependent on the quality of the news released.

4.7 Results pertaining to Hypothesis 2

The three sets of results pertaining to Hypothesis 2 are presented in the same way as for Hypothesis 1, with the presentation of the cross tabulation of size and timing and Chi-square analysis on the full sample size of announcements, followed by the test of the size by timing interaction effect on equally weighted sample sizes of announcements from companies of each size within the log linear analysis, and the CaRT analysis.

For ease of reference, Hypothesis 2 is restated as a research hypothesis:

> The timing of the release of price-sensitive communication is related to the size of the company.

4.7.1 Chi-square analysis

The frequencies of announcements relating to Small Cap, Mid Cap and Top40 companies within each of the three timing categories of "Earlier than trading hours", "In trading hours" and "Later than trading hours" are presented in Table 12 and represented as percentages of each company size category in Table 13. Significant differences in the distributions of timing between announcements categorized by quality were found (Chi-square (4) = 27.881, $p < .001$), with weak effect size (Cramer's V = 0.134), and thus the null hypothesis of no relation between timing of communication releases and the size of the news is therefore rejected. Top40 companies tend to issue their announcements earlier than trading hours more often than companies in the other size categories.

Table 12: Cross-tabulation of size by timing

	News by type (count)			
Timing	**Small cap**	**Mid cap**	**Top 40**	**Total**
Earlier than trading hours	114	43	40	197
In trading hours	344	71	51	466
Later than trading hours	91	15	5	111
Total	549	129	96	774

The result shows that companies of all different sizes announce their results more often during trading hours (62.7%, 55.0% and 53.1% for Small Cap, Mid Cap and Top40 companies, respectively).

Table 13: Cross-tabulation of size by timing (percentages of size categories)

	News by type (count)			
Timing	**Small cap**	**Mid cap**	**Top 40**	**Total**
Earlier than trading hours	20.8%	33.3%	41.7%	25.5%
In trading hours	62.7%	55.0%	53.1%	60.2%
Later than trading hours	16.6%	11.6%	5.2%	14.3%
Total	100.0%	100.0%	100.0%	100.0%

4.7.2 Log linear analysis

The results of the log linear analysis showed a significant relation between size and timing (Partial association Chi-square = 13.163, $p < .05$), once again indicating that the null hypothesis of no relation between timing of communication releases and the size of the news is rejected. This Partial Association Chi-square test shows that this size by timing effect does contribute significantly to the pattern of frequencies when comparing the model that includes all the 2-way interactions with the model without the size by timing effect.

4.7.3 CaRT analysis

The results of the CaRT analysis did not find sufficient evidence of an overall significant explanation of the timing categories using size of companies releasing announcements (Chi-square = 1.434, $p = .488$), suggesting that the null hypothesis of no relation between timing of communication releases and size of the news could not be rejected.

In conclusion, the results of the two dimensional cross-tabulation Chi-square analysis and the log linear analysis found a significant relation between size of companies releasing announcements and timing and thus, despite the non-significant CaRT analysis result, the weight of evidence in the study supports

the hypothesis that the timing of the release of price sensitive communication is related to the size of the company. Companies of all sizes prefer to release during trading hours but, when releasing outside trading hours, bigger companies prefer to announce before trading hours than after the market has closed.

4.8 Results pertaining to Hypothesis 3

For ease of reference, Hypothesis 3 is restated as a research hypothesis:

> The timing of release of communications by JSE listed companies depends on the combination of the quality of the information released and the size of the company that release the information.

The significance of the 3-way interaction was tested by the 3-factor interaction effect in the log linear analysis. This effect was not found to be significant (Chi-square (8) = 5.4731, p = .7060) and thus the null hypothesis of no relation between timing of communication releases and the combination of quality of the information and size of the company cannot be rejected. Although the CaRT analysis displayed some significant splits involving combinations of size, quality and timing, there was no evidence of overall significance of the combination of size and quality. Thus, the results of the study did not find evidence that the timing of announcements depends on the combination of quality of the information and size of the company that released the announcement.

4.9 Summary of the results

Based on the findings of the tests considered, no evidence was found in support of Hypothesis 1 and 3, or that South African companies time the release of their price sensitive news in relation to the quality of the news itself or under the effect of a combination of quality of the announcement and company size.

Instead, a weak relationship was found between timing and company size. Companies belonging to different market cap categories display different behaviour in the timing of their news.

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

Academic literature dedicated to international capital markets extensively confirms that timing is one of the most important variables of financial disclosure and that managers, with different motivations, can strategically manipulate disclosure. Up to now, the studies dedicated to the release of price sensitive information in the South African market have primarily focused on the market reaction to corporate events (Bhana, 1995/1996, 1997, 1998a, 1998b, 2008) and have not investigated the relationship between the timing of financial communication, the quality of the news released and the size of the company that releases them, which instead are the scope of this work.

This chapter discusses the findings related to the three research hypotheses investigated in light of the literature and the features of the South African market. Due to the fact that the results of this study are only partially in line with what was suggested by the relevant literature, the researcher decided to conduct interviews with communication specialists (both internal employees and external consultants of listed companies) in order to speculate about the findings of this research. The outcome of these conversations has been included, where useful, to provide a broader and clearer understanding of qualitative aspects of the disclosure policies of South African companies.

5.2 Discussion pertaining to Hypothesis 1

When investigating the relationship between the timing of a disclosure and the quality of the news disclosed, both earlier studies (Pastena & Ronen, 1979; Patell & Wolfson, 1982; Ronen, 1977) and more recent ones (Abad et al., 2009; Bagnoli et al., 2005; Doyle & Magilke, 2009; Francis et al., 1992; Kwon et al., 2009; Michaely et al., 2011) were able to identify the existence of certain patterns, more specifically with regards to intra-day and intra-week releases.

Although reaching different conclusions about the reasons behind these patterns (different market regulations lead to different market reactions and to different managerial attitudes, opportunistic or benign), overall these studies agreed that the quality of the news plays an important role as a predictor of the timing choices of listed companies. Furthermore, in light of the South African market asymmetry of response to earnings announcements with the negative ones attracting more attention, as identified by Bhana (1995/1996), one would have expected to find that companies with bad results try to strategically reduce the attention that might hurt their share price.

It was therefore quite surprising to find out that, for South African firms, the timing of the release of price sensitive information is actually not related to the quality of the results released.

It was found that South African companies do not seems to put in place strategies to benefit from a possible lower press coverage and attention of the market (i.e. are not “opportunistic”), as suggested, instead, by several researches conducted on international markets (Bagnoli et al., 2005; Damodaran, 1989; Francis et al., 1992; Gennotte & Trueman, 1996; S. P. Kothari et al., 2009; Kwon et al., 2009).

On the other hand, South African companies do not seem to be driven either by a “benign” desire to guarantee that all the players in the market have the same opportunity to process the information disclosed (Doyle & Magilke, 2009; Michaely et al., 2011; Niessner, 2012).

This result lends itself to three possible interpretations that are not mutually exclusive.

A first possible explanation is that South African firms may not have a strategic interest in timing their release depending on the quality of the news, as they perceive no benefit in doing so. This is consistent with the findings of Kwon et al. (2009) and Truong (2010) that the timing of earning announcements in a non-trading period, whether before or after trading hours, does not affect the market adjustment process.

A second possible explanation is that the release of information during trading hours is simply the consequence of companies' established rituals of disclosure, as suggested also by Gibbins et al. (1990) framework and by Chen and Mohan (1994) work.

The third possible explanation is related to the relatively recent overhaul of South Africa's regulatory framework against insider trading. In fact, one could argue that the introduction of South Africa's new Insider Trading Act in 2004 (SSA of 2004) and possibly also the new drive to improve corporate governance that followed the indications of the King III report in 2010 have had an impact on management behaviour with regard to transparency and fair disclosure. Since this study has been conducted in the aftermath of these changes, it might have captured a new corporate attitude towards insider trading. A report commissioned by the Financial Services Board after the introduction of the Insider Trading Act of 1998 to analyse the impact of the new regulation in South Africa seems to confirm that the new regulatory regime had resulted in new policies and approaches among listed companies (Financial Services Board, 2001). Even though insider trading is still hard to prove, the regulation has certainly tightened up control over the last years, as is shown by the fact that the application of the old Insider Trading Act of 1998 had not resulted in a single case being taken to court (Financial Services Board, 2001). In contrast, the introduction of the new act in 2004 has resulted in 26 cases of insider trading and market manipulation being investigated in the 2009 to 2010 period (Wilson, 2011). This might show that, under the new regulation, management is now more careful and might try to avoid an insider trader lawsuit by engaging in strategic timing, especially if the strategy is aimed at reducing market symmetry.

The "ritualism" hypothesis and the "regulation" hypothesis also find support in the informal interviews conducted with relevant communication specialists. Several of them, when questioned about firms' disclosure policies, pointed out that in the case of interim and year-end financial results, companies often make explicit, advance commitments to investors about the day of disclosure (e.g. on their website), and as a result it would therefore be very difficult for them to then change the day of disclosure or engage in intra-day timing strategies.

Furthermore, the communication specialists interviewed also highlighted that nowadays listed companies are extremely careful about how they disclose financial information and want to avoid “being caught” behaving strategically, especially in the presence of poor results.

5.3 Discussion pertaining to Hypothesis 2

In contrast to the results related to timing and quality discussed above, the weight of evidence in this study supports the hypothesis that the timing of the release of price sensitive communication is related to the size of the company. It was found that South African firms of different sizes display a preference towards announcing results during trading hours (62.7% of announcements for Small Caps, 55.0% for Mid Cap and 53.1% for Top40 firms). Instead, quite different patterns were detected for releases outside trading hours, as Top40 companies display a pronounced preference for announcements issued before the start of the trading day.

This result can find a possible explanation in the characteristics of the communication process in the South African market, which we identified also thanks to the comments of the communication specialists interviewed. When releasing financial announcements, especially those that are regularly scheduled such as interim and end year-end results, listed companies (especially Top40) tend to follow a specific schedule:

- The publication of the announcement on the SENS generally happens in the morning, before a conference call between the firm’s management and analysts, investors and journalists. It is common practice to place the announcement on the SENS a few hours before the call to provide the audience of the call with enough time to analyse the release and to prepare for the question-and-answer session (Tasker, 1998).
- The conference call takes place generally in the morning during trading hours and represents a consolidated practice: "the conference call has become one of the primary means for communicating with analysts and portfolio managers" (National Investor Relations Institute (NIRI), 1995).

Among the primary benefit of hosting a presentation is the fact that it enhances the understanding of the announcement released (Kimbrough, 2005), especially through analysts' and journalists' involvement in the question-and-answer session (Matsumoto, Pronk, & Roelofsen, 2011).

- The afternoon is typically dedicated to live radio or press interviews for articles that will be published the following day.

The fact that the call usually takes place during the morning explains why the majority of the announcements are released before the opening of the JSE or in the immediately following hours: if the call is in the morning, e.g. at 10 am, an early-morning disclosure on the SENS becomes a natural choice. An example of such schedule is presented in Appendix B. Figure 12 displays part of the press release of Gold Fields, a Top40 company, announcing all the relevant information about timing and modality of the publication of quarter and year-end financial results. The announcement is released on the company website right after the publication on the SENS, before trading hours, followed by a presentation at 10.00 am and a conference call at 4.00 pm. It is important to note that the timing of the afternoon conference call reflects the company need to engage also overseas investors, taking into account the time zones of their countries. It may also be argued that firms may reach the same objective of providing the time to analyse the announcement by releasing late in the evening on the previous day. However, there are at least three reasons why this timing would not be adequate. Firstly, since "the Investor Relation or media spokesperson must be prepared to explain financial details and provide background to financial reporters immediately after dissemination of the release" (Gillis, 2006), releasing information after trading hours may imply that analysts are not able to immediately engage a firm's representative. The second reason is related to the interplay of the timing of compulsory press publications and articles written by journalists. A company issuing a results-related SENS announcement is also obligated by the listing requirements - although this requirement is about to be removed - to publish the same content in the major publications the following day (as explained in section 2.6): if a company releases an announcement the evening before the earnings call, the compulsory press publication needs to appear in the business press the

following morning to avoid an excessive lag-time; journalists would then be able to publish their piece only the following day (i.e. two days after the first announcement) and by then the news would be stale, providing no incentive for its publication. Finally, financial results are disseminated after they are discussed and approved by the board of directors and the audit committee, which meetings generally last long. The resulting press release is then finalized after the end of these meetings and is prepared for the release the following morning; waiting an additional 8-10 hours after the theoretical early morning deadline before releasing it after trading hours would be a too big a time gap that could lead to news leaking with the potential risk of being accused of insider trading.

Figure 13 in Appendix B shows the timetable of release of another Top40 company (the name of which cannot be disclosed for confidentiality reasons). It can be seen that the board meeting was expected to end in the afternoon and the SENS release planned for the following morning at 7.00 am, with a full day dedicated to presentations and media interviews.

Finally, it is noted that Small Cap companies are marginally more likely than Mid Cap and Top40 companies to release their results after the trading halt (16.2% of announcements, versus 12.3% for Mid Cap and 5.6% for Top40 companies). This phenomenon is consistent with Niessner (2012), Doyle and Magilke (2009) and Truong (2010) findings that smaller firms are more likely to release after trading hours, and can be explained in light of the fact that analysts' coverage (Bhushan, 1989; Niessner, 2012) as well as press coverage (Solomon & Soltes, 2011), are affected by companies' size. If Top40 companies receive a high attention from analysts, the press and the market irrespectively of the timing of their releases, they may find it useless to engage in timing strategies, but some medium and small companies might try to benefit from the reduced attention related to a late release.

5.4 Discussion pertaining to Hypothesis 3

Firstly, it has to be pointed out that the researcher found a gap in the literature with regards to the possible interaction of quality and size in the decisions

concerning the timing of announcements, which is only dealt with tangentially by authors.

In this study, the result of the CaRT (Figure 11) displays some significant splits involving combinations of size, quality and timing, but due to the low significance, this analysis is purely descriptive and does not allow for conclusions to be made on whether the timing of announcements by South African firms is dependent on the combination of quality of the information and firm' size. The evidence is too weak to suggest a possible relationship and cannot be regarded as a reliable finding.

The outcome of this study is therefore that the quality is not a significant predictor of timing, not only as discussed in section 5.2 as an individual variable, but also when combined with the firm's size. The reasons for this finding could lie in the dynamics of the South African market already explained in section 5.2.

5.5 Conclusion

This study examined the behaviour of South African companies listed on the Main Board of the JSE with regards to the disclosure policies of price-sensitive information. Among the variables that managers can manipulate, this study focused on the intra-day and intra-week timing of release and looked for patterns in the timing in relationship to the quality of the news and the size of the company. No support has been found for the hypotheses that a relationship exists between timing and quality of the news or between timing and the interaction of quality of the news and company size. However, a relation has been identified between the timing and company size: South African companies release announcements mainly during trading hours but, if releasing when the market is closed, large companies opt for early morning releases.

These results show that in the South African market company size is a driver of managements' attitudes towards disclosure, while there is no support of the conventional wisdom that firms time their disclosure depending on the perceived positive or negative content or their results.

Finally, beyond merely confirming that a correlation between timing of disclosure and company size exists, a deeper investigation through interviews highlighted that these results are partially attributable to specificities of the South African market, namely the local regulation and the common practices of communication disclosure.

CHAPTER 6: CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

The purpose of this chapter is to summarise the main findings of the research and the possible explanations and implications. Recommendations to Investor Relations specialists, analysts, traders and academics are also discussed in this chapter. Lastly, recommendations for possible future research are made.

6.2 Conclusions of the study

Three major findings are documented.

Firstly, South African companies do not seem to time the release of price-sensitive information according to the quality of the news itself. The quality of financial results and trading statements does not appear to be related to the timing of the release, despite most of the relevant literature suggesting that managers have incentives to strategically time the release of price sensitive information. Although a possible explanation is that firms' corporate governance is shaped by regulations, this research cannot conclusively prove that the current regulation is adequate to provide a benefit to the market. In fact, further studies would be necessary to verify whether South African managers promote market asymmetry and therefore favour professional traders by being "opportunistic", i.e. by strategically not releasing results after the market close to provide all investors with more time to process the information released.

Secondly, the timing of releases by South African companies seems to be weakly related to the size of the company. Although companies of all market caps prefer to announce during trading hours, when opting for a release outside trading hours, the smaller the company, the larger the chance that it will release after the close of the JSE. Instead, Top40 companies, when releasing outside trading hours, clearly prefer early morning announcements.

Thirdly, when the size of the company is taken into consideration, the interaction between size and quality of announcements by South African

companies was found to be not significant, meaning that the quality of the news does not affect firms' decision to disclose during trading or non-trading hours.

6.3 Recommendations

The primary purpose of this study was to provide a better understanding of the dynamics of financial communication by listed companies in the South African environment, especially in connection with earnings announcements and trading results.

Investor Relations specialists, public relations professionals and media specialists can now have a better understanding of how listed companies decide to time the announcement of their financial results. From this study it was found that the main driver of the timing of disclosure is likely to be ritualism in the financial and media environments, i.e. the working habits of their participants, and that this ritualism is also influenced by company's size.

Traders may find it useful to know that, unlike in some other markets, a late release in the South African market is not necessarily a signal of poor performance by the issuer. Trading strategies based on that assumption would therefore not be successful in the context of the JSE.

Lawmakers and regulators can also observe that the introduction of the more recent rules on information dissemination and against insider trading have had some degree of success, in terms of encouraging companies to treat announcements in the same way regardless of whether the results to be disclosed are good, bad and neutral, at least for what concerns the timing of their release.

Finally, academics and students could take the conclusions of this study as the starting point for additional research, which the researcher feel should in particular be aimed at further exploring the explanations of the underlying motives to the specific behaviours we identified for the South African listed companies.

6.4 Suggestions for further research

In the interest of broadening the understanding of the timing dynamics of financial announcements in the South African market, there is a need for future studies to be conducted to further investigate the relationship between the timing of financial communication and the other variables that may influence it.

In first instance, the set of predictors used in this research could be expanded by adding other variables such as the sector of the company, the level of complexity of the firm and the level of the corporate governance, as measured for example by specific South African tools as the GAI (IoDSA, 2012). Another variable that may affect the timing of disclosure is the physical location of companies' operations. There are companies in South Africa with strong links to other countries. Although these companies have their primary listing on the JSE, they may adopt timing strategies that tie the announcement to their investors in markets in other time zones (as explained in section 5.3 about Gold Fields). In summary, other variables than quality of the news and company size could prove to be better predictors of the timing of a firm disclosure and provide better insight about the features of the market.

Additionally, a distinction between voluntary and compulsory disclosure could provide a better understanding of the role played by South African regulations in shaping the communication environment, as the timing of voluntary disclosure could more easily lend itself to strategic manipulation due to the lower regulatory constraints to which it is subject.

Moreover, this study could be replicated for other price sensitive announcements such as dividend, research and development expenditure, changes to the board of directors. The results of such studies would complement the existing event studies conducted on the South African stock market (Bhana, 1997, 1998a, 1998b, 2001, 2008).

It would also be interesting to verify whether a change in the selection of the unit of analysis would bring different results. In this study, the researcher has combined, after the appropriate cleaning of the data, announcements related to

financial statements with those related to trading statements. Although this procedure was considered adequate and useful as explained in section 1.4, trading statements and financial results may presents heterogeneous features regarding the level of expectation by the market. Trading statements are released to inform and revise shareholders' expectations about the company performance and therefore present a surprise to the market. Financial results are, albeit within certain limits, expected by the market as they are subject to the JSE requirements mentioned in section 2.6. As the price reaction to a public announcement is proportional to the importance of the announced information but also to its level of surprise (Kim & Verrecchia, 1991), it could be that treating the two different kinds of announcement as a one category might have affected the outcome. It is hence suggested that future research analyses the financial results only and uses the presence of a preceding trading statement as an additional predictor variable for the combination of timing and quality, even though this methodology was not considered by previous works.

As pointed out in section 2.6, South African listed companies are subject to both mandatory and voluntary regulations that have become tighter. As this research analysed the behaviour of companies in a period following the entrance into force of the new Securities Service Act in 2004 and King III in 2010, further studies could investigate whether in different timeframes, i.e. before 2002, it would be possible to reach different conclusions. While there is a study that documents that changes in the regulatory environment regarding the disclosure of price-sensitive information impacted on managers' strategies in the U.S. (Philipich, 2009), a similar study on the South African market is available only with regards of insider trading (Financial Services Board, 2001) and for a period precedent 2001.

Furthermore, future research could be dedicated to verify whether a partial change in the JSE requirements could affect the traditional communication process and modify firms' disclosure behaviour. As highlighted in section 2.6 and 5.3, one of the possible reasons behind South African firms' preference for releases during trading hours was the regulation that imposes the release on the SENS followed by a publication in the press. This rule has very recently

been changed and from January 1st 2013, JSE companies are allowed to publish their financial results in a short-form in only one newspaper, which may reduce the publication from two pages to a few headlines (Moneyweb, 2012). This move, aimed at reducing corporate expenses and at being in line with the global move towards digital media, is expected to affect the relationships between firms and business press, putting the latter under pressure (Nevill, 2012), and may consequently affect the established communication practices.

Finally, building on the findings of this study, further research could analyse whether the fact that companies release mostly during trading hours affects the market symmetry, i.e. if traders with easy access to information and trading opportunities can benefit from short term profits compared to investors who need a longer time to receive and process the information. It would be relevant to add that while shares of large companies are mainly traded by institutional traders, in the case of Small Cap companies, private investors account a lot for the movement of Small Cap's prices and therefore, when the news is released during trading hours, professional traders have a clear advantage over private investors. In order to investigate the market symmetry it is suggested to use a very tight window periods, of hours and not days, to look at abnormal returns.

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APPENDIX A

Table 14: List of companies listed on the Main Board of the JSE with companies with a primary listing abroad excluded

Company	Company	Company
1Time Holdings Ltd	Barloworld Ltd	Datacentrix Holdings
A E C I Ltd	Basil Read HoLtdings Ltd	Datatec Ltd
Absa Group Ltd	Bauba Platinum Ltd	Decillion Ltd
Adaptit Holdings Ltd	Bell Equipment Ltd	Delta Emd Ltd
Adcock Ingram Holdings Ltd	Bk One Ltd	Digicore Holdings Ltd
Adcorp HoLdings Ltd	Blue Label Telecoms Ltd	Dipula Income Fund Ltd
Adrenna Property Group Ltd	Bonatla Property Holdings Ltd	Discovery Holdings Ltd
Advtech Ltd	Brimstone Investment Corporation Ltd	Distell Group Ltd
Afgri Ltd	BuiLtdmax Ltd	Distrib. And Warehousing Network Ltd
African And Overseas Enterprises Ltd	Business Connexion Group Ltd	Dorbyl Ltd
African Bank Investments Ltd	Cadiz Holdings Ltd	DrdgoLtd Ltd
African Media Entertainment Ltd	Calgro M3 Holdings Ltd	Efficient Group Ltd
African Oxygen Ltd	Cape Empowerment Ltd	Elb Group Ltd
African Rainbow Minerals Ltd	Capevin Investments Ltd	Ellies Holdings Ltd
Afrimat Ltd	Capital Property Fund	Emira Property Fund
Afrocentric Investment Corp Ltd	Capitec Bank Holdings Ltd	Eoh Holdings Ltd
Alexander Forbes Pref Share Inv Ltd	Cargo Carriers Ltd	Eqstra Holdings Ltd
Allied Electronics Corporation Ltd	Cashbuild Ltd Ltd	Esorfranki Ltd
Allied Technologies Ltd	Ceramic Industries Ltd	Evraz HighveLtd Steel & Vanadium Ltd
Amalgamated Appliance Holdings Ltd	Cipla Medpro South Africa Ltd	Excellerate Holdings Ltd
Amalgamated Electronics Corp Ltd	City Lodge Hotels Ltd	Exxaro Resources Ltd

Company	Company	Company
Andulela Investment Holdings Ltd	Clicks Group Ltd	Fairvest Property Holdings Ltd
Anglo American Plat Ltd	Clientele Ltd	Famous Brands Ltd
Anglo Ashanti Ltd	Clover Industries Ltd	First Uranium Corporation
Anooraq Resources Corporation	Colliers South Africa Holdings Ltd	Firstrand Ltd
Arb Holdings Ltd	Comair Ltd	Fortress Income Fund Ltd
Arcelormittal South Africa Ltd	Combined Motor Holdings Ltd	Gijima Group Ltd
Argent Industrial Ltd	Command Holdings Ltd	GoLtd Field Ltd
Aspen Pharmacare Holdings Ltd	Compu-Clearing Outsourcing Ltd	Goliath Gold Mining Ltd
Assore Ltd	Conduit Capital Ltd	Grand Parade Investments Ltd
Astral Foods Ltd	Consolidated Infrastructure Grp Ltd	Grindrod Ltd
Astrapak Ltd	Control Instruments Group Ltd	Group Five Ltd
Austro Group Ltd	Convergenet Holdings Ltd	Growthpoint Properties Ltd
Aveng Ltd	Coronation Fund Managers Ltd	Harmony Gold Mining Company Ltd
Avi Ltd	Country Bird Holdings Ltd	HoLdsport Ltd
Avusa Ltd	Crookes Brothers Ltd	Hosken Consolidated Investments Ltd
Awethu Breweries Ltd	Cullinan Holdings Ltd	Hospitality Property Fund Ltd
Howden Africa Holdings Ltd	Metrofile Holdings Ltd	Primeserv Group Ltd
Hudaco Industries Ltd	Micromega Holdings Ltd	Protech Khuthele Holdings Ltd
Hulamin Ltd	Miranda Mineral Holdings Ltd	Psg Group Ltd
Hyprop Investments Ltd	Mix Telematics Ltd	Purple Capital Ltd
Ifa Hotels And Resorts Ltd	Mmi Holdings Ltd	Putprop Ltd
Iliad Africa Ltd	Mobile Industries Ltd	Racec Group Ltd
Impala Platinum Holdings Ltd	Morvest Business Group Ltd	Rainbow Chicken Ltd
Imperial Holdings Ltd	Mpact Ltd	Rand Merchant Insurance Holding Ltd
Ingenuity Property Investments Ltd	Mr Price Group Ltd	Randgold & Exploration Company Ltd

Company	Company	Company
Insimbi Refractory & Alloy Sup Ltd	Mtn Group Ltd	Raubex Group Ltd
Intertrading Ltd	Murray & Roberts Holdings Ltd	Rebosis Property Fund Ltd
Investec Bank Ltd	Mustek Ltd	Recm And Calibre Ltd
Investec Ltd	Mvelaphanda Group Ltd	Redefine Properties Ltd
Investec Property Fund Ltd	Mvelaserve Ltd	Remgro Ltd
Invicta Holdings Ltd	Nampak Ltd	Resilient Property Income Fund Ltd
Italtile Ltd	Naspers Ltd	Reunert Ltd
Jasco Electronics Holdings Ltd	Nedbank Group Ltd	Reunert Ltd
Jd Group Ltd	Nedbank Ltd	Rex Trueform Clothing Company Ltd
Jse Ltd	Netcare Ltd	Rmb Holdings Ltd
Kairos Industrial Holdings Ltd	New Corpcapital Ltd	Rolfes Holdings Ltd
Kap International Holdings Ltd	Nictus Beperk	Royal Bafokeng Platinum Ltd
Kaydav Group Ltd	Northam Platinum Ltd	Sa Corporate Real Estate Fund
Keaton Energy Holdings Ltd	Nu-WorLtd Holdings Ltd	Sabvest Ltd
Kelly Group Ltd	Oceana Group Ltd	Sacoil Holdings Ltd
Kumba Iron Ore Ltd	Omnia Holdings Ltd	Sallies Ltd
Lewis Group Ltd	Optimum Coal Holdings Ltd	Sanlam Ltd
Liberty Holdings Ltd	Orion Real Estate Ltd	Santam Ltd
Life Healthcare Group Holdings Ltd	Palabora Mining Company Ltd	Santova Logistics Ltd
Litha Healthcare Group Ltd	Pbt Group Ltd	Sanyati Holdings Ltd
Marshall Monteagle Plc	Peregrine Holdings Ltd	Sappi Ltd
Massmart Holdings Ltd	Petmin Ltd	Sasfin Holdings Ltd
Mazor Group Ltd	Pick N Pay Stores Ltd	Sasol Ltd
Merafe Resources Ltd	Pinnacle Technology Holdings Ltd	Sea Kay Holdings Ltd
Mercantile Bank Holdings Ltd	Pioneer Food Group Ltd	Seardel Investment Corporation Ltd

Company	Company	Company
Metair Investments Ltd	PlatfieLtds Ltd	Securedata Holdings Ltd
Metmar Ltd	Platmin Ltd	Sekunjalo Investments Ltd
Metorex Ltd	Pretoria Portland Cement Company	Sentula Mining Ltd
Sephaku Holdings Ltd	Thabex Ltd	Value Group Ltd
Shoprite Holdings Ltd	The Bidvest Group Ltd	Verimark Holdings Ltd
Simmer And Jack Mines Ltd	The Don Group Ltd	Village Main Reef Ltd
South African Coal Mining Holdings Ltd	The Foschini Group Ltd	Vividend Income Fund Ltd
South Ocean Holdings Ltd	The Spar Group Ltd	Vodacom Group Ltd
Sovereign Food Investments Ltd	Tiger Brands Ltd	Vukile Property Fund Ltd
Spanjaard Ltd	Tongaat Hulett Ltd	Vunani Property Investment Fund Ltd
Spur Corporation Ltd	TradehoLtd Ltd	Wescoal Holdings Ltd
Standard Bank Group Ltd	Trans Hex Group Ltd	Wesizwe Platinum Ltd
Stefanutti Stocks Holdings Ltd	Transpaco Ltd	Wilson Bayly Holmes - Ovcon Ltd
Steinhoff International Holdings Ltd	Trematon Capital Investments Ltd	WinhoLtd Ltd
Sun International Ltd	Trencor Ltd	Witwatersrand Cons GoLtd Resources
Super Group Ltd	Trustco Group Holdings Ltd	Woolworths Holdings Ltd
Synergy Income Fund Ltd	Truworths International Ltd	York Timber Holdings Ltd
Taste Holdings Ltd	Tsogo Sun Holdings Ltd	Zci Ltd
Telkom Sa Ltd	Universal Industries Corp Ltd	Zeder Investments Ltd

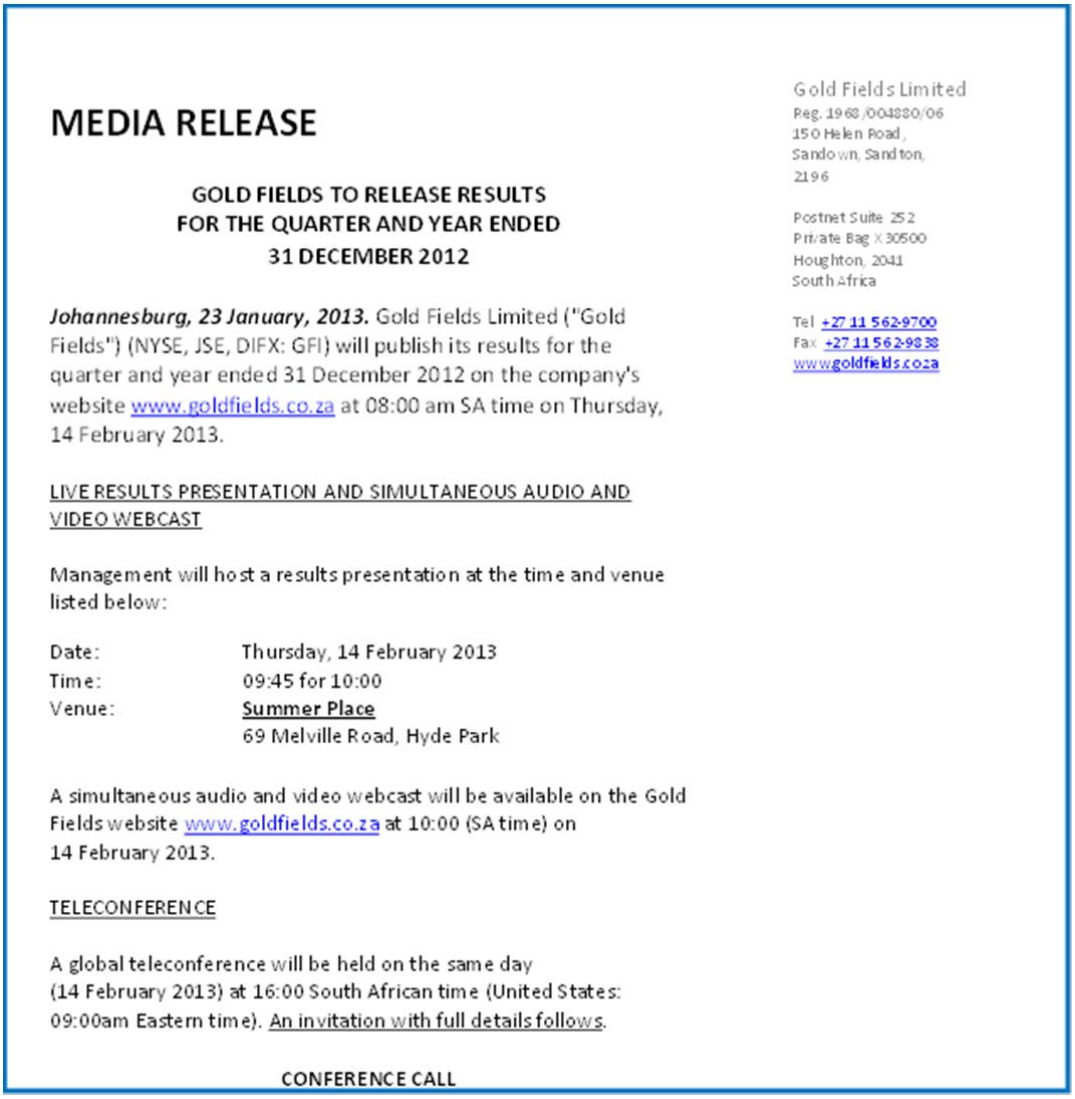
Table 15: List of dual-listed companies with a primary listing abroad

Company name	Exchange name	Listing type
African Eagle Resources Plc	London Stock Exchange	Primary
	JSE	Secondary
Anglo American Plc	London Stock Exchange	Primary
	Botswana Stock Exchange	Secondary
	JSE	Secondary
	Namibian Stock Exchange	Secondary
	Nasdaq Stock Market	Secondary
	Schweizer Borse Swiss Exchange	Secondary
Aquarius Platinum Ltd	Australian Stock Exchange	Primary
	JSE	Secondary
	London Stock Exchange	Secondary
Bhp Billiton Plc	London Stock Exchange	Primary
	Australian Stock Exchange	Secondary
	JSE	Secondary
Brait Se	Luxembourg Stock Exchange	Primary
	JSE	Secondary
	Luxembourg Stock Exchange	Primary
	JSE	Secondary
British American Tobacco Plc	London Stock Exchange	Primary
	JSE	Secondary
Cafca Ltd	Zimbabwe Stock Exchange	Primary
	JSE	Secondary
Capital & Counties Properties Plc	London Stock Exchange	Primary
	JSE	Secondary
Compagnie Financiere Richemont Sa	Schweizer Borse Swiss Exchange	Primary
	JSE	Secondary
Central Rand Gold Ltd	London Stock Exchange	Primary
	JSE	Secondary
Capital Shopping Centres Group Plc	London Stock Exchange	Primary
	JSE	Secondary
Coal Of Africa Ltd	Australian Stock Exchange	Primary
	JSE	Secondary
Diamondcorp Plc	London Stock Exchange	Primary
	JSE	Secondary
Delrand Resources Ltd	Toronto Stock Exchange	Primary
	JSE	Secondary
Eastern Platinum Ltd	Toronto Stock Exchange	Primary
	JSE	Secondary

Company name	Exchange name	Listing type
Ferrum Crescent Ltd	Australian Stock Exchange	Primary
	JSE	Secondary
	London Stock Exchange	Secondary
Forbes & Manhattan Coal Corp	Toronto Stock Exchange	Primary
	JSE	Secondary
Firestone Energy Ltd	Australian Stock Exchange	Primary
	JSE	Secondary
Great Basin Gold Ltd	Toronto Stock Exchange	Primary
	JSE	Secondary
Gold One International Ltd	Australian Stock Exchange	Primary
	JSE	Secondary
Hwange Colliery Company Ltd	Zimbabwe Stock Exchange	Primary
	JSE	Secondary
	London Stock Exchange	Secondary
Investec Plc	London Stock Exchange	Primary
	JSE	Secondary
Ipsa Group Plc	London Stock Exchange	Primary
	JSE	Secondary
Kibo Mining Plc	London Stock Exchange	Primary
	JSE	Secondary
London Finance And Invest. Grp Plc	London Stock Exchange	Primary
	JSE	Secondary
Lonrho Plc	London Stock Exchange	Primary
	JSE	Secondary
Lonmin Plc	London Stock Exchange	Primary
	JSE	Secondary
Mondi Plc	London Stock Exchange	Primary
	JSE	Secondary
New Europe Property Investments Plc	Bucharest Stock Exchange	Primary
	JSE	Primary
	London Stock Exchange	Primary
Net 1 Ueps Technologies Inc	Nasdaq Stock Market	Primary
	JSE	Secondary
Old Mutual Plc	London Stock Exchange	Primary
	JSE	Secondary
	Malawi Stock Exchange	Secondary
	Namibian Stock Exchange	Secondary
	Zimbabwe Stock Exchange	Secondary

Company name	Exchange name	Listing type
Osiris Prop International Co Ltd	Bermuda Stock Exchange	Primary
	JSE	Secondary
Rockwell Diamonds Incorporated	Toronto Stock Exchange	Primary
	JSE	Secondary
Reinet Investments S.C.A	Luxembourg Stock Exchange	Primary
	JSE	Secondary
Rockcastle Global Real Est Co Ltd	Mauritius Stock Exchange	Primary
	JSE	Secondary
Resource Generation Ltd	Australian Stock Exchange	Primary
	JSE	Secondary
Sabmiller Plc	London Stock Exchange	Primary
	JSE	Secondary
Tawana Resources Nl	Australian Stock Exchange	Primary
	JSE	Secondary
Oando Plc	Nigerian Stock Exchange	Primary
	JSE	Secondary
Uranium One Inc	Toronto Stock Exchange	Primary
	JSE	Secondary
Wilderness Holdings Ltd	Botswana Stock Exchange	Primary
	JSE	Secondary

APPENDIX B



MEDIA RELEASE

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GOLD FIELDS TO RELEASE RESULTS FOR THE QUARTER AND YEAR ENDED 31 DECEMBER 2012

Johannesburg, 23 January, 2013. Gold Fields Limited ("Gold Fields") (NYSE, JSE, DIFX: GFI) will publish its results for the quarter and year ended 31 December 2012 on the company's website www.goldfields.co.za at 08:00 am SA time on Thursday, 14 February 2013.

LIVE RESULTS PRESENTATION AND SIMULTANEOUS AUDIO AND VIDEO WEBCAST

Management will host a results presentation at the time and venue listed below:

Date:	Thursday, 14 February 2013
Time:	09:45 for 10:00
Venue:	Summer Place 69 Melville Road, Hyde Park

A simultaneous audio and video webcast will be available on the Gold Fields website www.goldfields.co.za at 10:00 (SA time) on 14 February 2013.

TELECONFERENCE

A global teleconference will be held on the same day (14 February 2013) at 16:00 South African time (United States: 09:00am Eastern time). An invitation with full details follows.

CONFERENCE CALL

Figure 12: Gold Fields' release schedule (Gold Fields, 2013)

TOP40 company audited results release - timetable		
Monday 23 February 2009		
9.30	Board meeting	
13.00	Final approval of media release and SENS announcement	***COMPANY***
By 15:00	SENS announcement sent to JSE and LSE for release on Tuesday by market opening at the latest	***SPONSOR***
Tuesday 24 February 2009		
Johannesburg		
7.00	Results released on SENS and LSE	***SPONSOR***
7.30	Results posted on company web site	***STAFF / CONSULTANT***
	Note advising media and financial community in this regard circulated	
8.00	CEO's note to Group employees circulated	***STAFF / CONSULTANT***
	Media release and announcement distributed to media, analysts and fund managers	
8.30	Staff briefed on results	***CEO***
9.30	Unions briefed on results	***CEO***
10.00	Interview at company offices - **Classic Business**	***GNE***
11.00	Newspaper advertisements signed off - for publication 25 February	***COMPANY / SPONSOR***
11.15	Recording TV Interview – **CNBC TV**	
12.00	Presentation to invited analysts and JHB-based fund managers	***CEO / EXCO***
12.15	Presentation posted on company web site and SENS announcement	***SPONSOR***
13.15	Lunch	
14.15	Interview - **Engineering News Website TV**	***CEO***
15.45	Recording radio Interview (telephonic) – **Moneyweb on SAF**.	***CEO***
16.30	Recording TV Interview – **Summit TV**	***CEO***
18.15	Live telephone interview with Bruce Whitfield - **702 Business**	***CEO***
Wednesday 25 February 2009		
Morning	Statutory financial advertisement published in the following newspapers:	
	- Business Day (in full)	
	- Sake-Beeld (national) (in full)	
Cape Town		
12.00	Results presentation to Cape Town-based Fund Managers	***CEO / EXCO***
13.15	Lunch at the Oasis Restaurant, Mount Nelson	
15.30	Frater Asset Management	***CEO / EXCO***

Figure 13: Example of Top40 company's release schedule (TriLogy, 2009)