Media Impacts on Mergers and Acquisitions: Evidence from UK Market

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Abstract

This thesis examines the impact of financial media on UK merger and acquisition (M&A) deals from several perspectives. The Chapter 2 examines the impact of financial media on M&A performance using UK M&A data from 1981 to 2010. The results show that, both in the short run and long run, deals with media coverage outperform deals without media coverage. Moreover, the results indicate a significantly negative correlation between media pessimism and post-merger performance both in the short run and long run. These findings suggest that pre-merger news released by influential financial media has a large impact on market reactions to M&A announcements, consistent with the investor recognition hypothesis. Furthermore, the negative correlation between media pessimism and acquirer returns suggests that high media pessimism about M&As leads to downward pressure on market prices.

Chapter 3 examines how media coverage and media pessimism influence takeover outcomes, based on the same database as in the first chapter. It is generally believed that financial newspapers directly impact investor sentiment concerning both individual stocks and the market as a whole (Antweiler and Frank, 2004; Joe et al., 2009; Ferguson et al., 2012; Jegadeesh and Wu, 2012; Chen et al., 2013; Garcia, 2013). Moreover, M&As often occur due to either takeovers or tender offers and usually require bidders to buy the target stock for more than its current market value (Jensen and Ruback, 1983). However, Branch et al. (2008) state that about 10% of announced takeover attempts fail, including those withdrawn by the acquirer or rebuffed by the target firm. Failure usually consists of withdrawn or pending takeovers. Successful takeovers are contractual agreements in which both acquirers and targets have enough interest to agree on an offer.

Chapter 4 tests the different impacts of media pessimism in hot and cold markets. This paper is primarily motivated by the growing importance of media sentiment among merger waves. The principle result suggests that acquirers are subject to less media pessimism when the deal is announced during a hot market valuation period. Moreover, the results also show that acquirers obtain significantly higher short-run announcement returns for deals announced during hot markets with low media pessimism and significantly lower long-run returns for deals announced during cold markets with low media pessimism. The finding is in line with early investigations by Petmezas (2009), who states that managers undertaking takeovers during hot markets can earn positive returns in the short run and earn insignificant returns during cold markets.

Declaration

The material contained in the thesis has not previously been submitted, either in whole or in part, for a degree in this or any other institution.

Statement of Copyright

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To my beloved parents

Chapter 1: Introduction

1. Motivation

This thesis investigates the relation between stock market reactions to merger and acquisition (M&A) deals and quantitative media information. Financial newspapers are generally believed to play an important role in disseminating information. Therefore, financial media (quality and quantity) have a direct impact on investor sentiment concerning either the whole market or individual stocks and hence significantly affect market reactions to M&A deals. There are few studies on media's relation with the financial market. As Tetlock (2007) shows, news content can predict the future movements of the whole stock market. More specifically, Tetlock et al. (2008) suggests that media reports can predict an individual firm's stock returns.

M&As are among the largest corporate events that attract high media attention (Hayward, Rindova, and Pollock (2004), Malmendier and Tate (2008)). Recent studies examine the relation between the media and financial markets in providing sentiment to media coverage. Fang and Peress (2009) suggest that media reports can predict an individual firm's stock returns, providing informational content to media news and thus alleviating informational frictions in the stock market. New information released by the financial media naturally affects stock market valuations. Ahern and Sosyura (2013) suggest that managers might manipulate the media coverage during the negotiation period, which can generate a short-lived run-up in bidders' prices.

While the literature shows that the financial media have a strong influence on firm stock performance, a significant gap remains. To the author's best knowledge, only a few papers examine the relation between the financial media and corporate events such as M&As. Therefore, the original motivation of this paper is to fill this important gap. M&A deals are expected to

interact with the financial media through two major channels. First, stock market reactions to a takeover announcement are generally believed to mainly reflect investor recognition of this corporate event. Since investor recognition can vary with news reports released by the financial media, a significant relation between financial news and acquirers' abnormal returns around takeover announcements is expected. In addition, Tetlock et al. (2008) demonstrate that the fundamental information transmitted by financial news can resolve information asymmetry. Such news provides additional information for investors to adjust their prospects in M&A deals and valuations. Thus an acquirer's long-term post-merger performance should be affected by media reports as well.

2. Media Coverage and Sentiment

This thesis adds to the literature examining media sentiment/coverage and asset returns. Liu, Sherman, and Zhang (2008) examine the interaction between the volume of media coverage and the final offer prices of initial public offerings (IPOs) using the level of media interest as a proxy for investor attention. They argue that, due to their frequent intercommunications, the opinions of journalists and investors on Wall Street will be highly correlated, implying that media coverage can proxy for information revealed to underwriters by such investors during book building. Any additional information gained from investors is therefore 'second hand' and has the potential to be biased by the opinions of the investors themselves. Second, journalism is very rarely neutral. The social psychology literature examining the media argues that consumers seek 'interpretation' and coherent and entertaining presentation rather than raw information (Hayakawa, 1940; Jensen, 1979; Severin and Tankard, 1992). To meet this need, journalists frame their stories on behalf of their readers, selecting facts while omitting equally credible ones and introducing salience to influence readers to think in a certain way (Entman, 2007).

Engleberg, Sasseville, and Williams (2010) provide supporting evidence that investors follow explicit media recommendations from studying market reactions to stock recommendations made on the popular US CNBC TV show *Mad Money*. They observe temporary overnight abnormal returns positively associated with the recommendations made but present evidence that these did not reflect fundamental information or lead to long-term abnormal returns. Political economy studies also present evidence that media reports influence the sentiments, beliefs, and decision making processes of media consumers in a direction consistent with the bias observed in the media consumed (e.g. Kull, Ramsay, and Lewis, 2003; Gerber, Karlan, and Bergen, 2009). Finally, journalists are not passive agents restricted to rebroadcasting information from a prospectus. Investigative journalism is a key part of media's role in financial markets and has been shown to be relevant in enforcing corporate law (Borden, 2007) and deterring and detecting fraud (Dyck, Morse, and Zingales, 2010).

Other studies have used media as a proxy for investor attention. Fang and Peress (2009) report that stocks that receive no media coverage earn higher returns than those that do, consistent with Merton's (1987) investor recognition hypothesis. Barber and Odean (2008) report that retail investors are net buyers of stocks that are featured in the news. Using advertising in the media as a similar measure, Grullon, Kanatas, and Weston (2004) show that firms that spend more on advertising have more individual and institutional investors, while Chemmanur and Yan (2009) show that firms who spend more on advertising experience larger stock returns initially but smaller returns in subsequent years. Da et al. (2010) use search volume data from the online search engine Google as a measure of investor attention. Contrary to Liu et al (2009), they provide evidence that increased investor attention in an IPO issue creates higher first-day returns followed by a significant long-term reversal. In doing so, they question the assumption of Liu et al (2009), Barber and Odean (2008), Fang and Peress (2009), and others, that media coverage and

investor attention are automatically correlated, suggesting that, in the modern information age, the volume of media available creates a poverty of attention among investors.

This thesis adds to the literature examining the influence of quantitative measures of semantic media content on market reactions to M&A deals. Tetlock (2007) was among the first to examine media's influence on market prices using such techniques, analysing the language in a regular *Wall Street Journal* column. The author showed that a high frequency of words from the pessimism category of the *Harvard Psychosocial Dictionary* predicted short-term downward pressure on prices. Tetlock, Saar-Tsechansky, and Macsskassy (2008) present evidence that a qualitative measure of language in media related to earnings announcements conveys fundamental information. Loughran and McDonald (2010) refine the *Harvard Psychosocial Dictionary* used by Tetlock (2007) and Tetlock et al. (2008) and show their new word lists capture fundamental information from firms' 10-K filing reports.

Henry and Leone (2009) and Tetlock (2007) find that negative words have a much stronger correlation with stock returns than positive words do. Many papers also suggest that the frequency of negative words in an article decides its tone (Das and Chen 2007, Davis et al. 2011, Loughran and McDonald 2011). Therefore, the method proposed by Tetlock et al. (2008) are employed to measure media sentiment. Because this formula focuses on the negative words, the media pessimism score stands for the level of media sentiment.

3. Main Findings

Chapter 2 examines two aspects of the impact of the financial media on M&As: media pessimism and media coverage. Acquiring firms with positive media coverage in the pre-merger period are expected to outperform those with negative media coverage. This outcome is predicted by both the information and sentiment hypotheses of media sentiment. To distinguish the dominant

hypothesis in the case of M&As, both the short-run performance and long-run performance of takeover deals are examined. Media coverage can eliminate information asymmetries (Fang and Peress, 2009). Travlos (1987) argues that the performance difference between stock and cash acquisitions is due to the signalling effect of overvaluation in stock acquisitions and this difference is expected to be more pronounced for deals with low media coverage.

Using a sample of UK M&A deals conducted during 1981–2010, this paper examines the market reactions to M&A events based on different levels of media coverage and media pessimism. In contrast to the previous literature, which focuses on the relation between financial media and the entire stock market, this thesis sheds light on one of the most representative corporate events, the M&A, to further investigate the effect of media news on financial markets.

To conduct the empirical research, a unique, comprehensive data set was manually collected that contains 274,201 financial news articles, as well as data on 251 bidders. The M&A deals are split into subsamples according to their levels of relative media coverage and pessimism. To evaluate the performance of M&A deals, both the short-term cumulative abnormal returns (CARs) and long-term buy and hold abnormal returns (BHARs) for each firm are calculated. Comparing the average CARs of the two subsamples, the results in chapter 2 show that the market appears to favour takeover deals announced by firms with media coverage over those without. Moreover, the results also indicate that deals with lower pessimism earn a higher return. These findings appears to hold in the longer term, supporting the informational dissemination hypothesis of media news.

Chapter 3 examines how media coverage and media pessimism influence takeover outcomes in takeover deals, that is, whether financial news influences the success of takeovers. The literature suggests that the media can influence takeover outcomes in two ways. First, Fang and Peress

(2009) show that stocks without media coverage outperform those heavily covered by the media by 3% per year. Therefore, there is a hypothesis that deals with high media coverage prior to the merger announcement have a lower possibility of success than deals with low media coverage prior to the announcement. On the other hand, Li (2006) finds that text-based information measures can potentially offer a more independent test of market efficiency, since many of the quantitative measures (e.g. counts of media coverage) are significantly correlated, so different anomalies possibly reflect the similar empirical regularity. In addition, Buehlmaier (2012) uses text-based media content and shows that news content is positively related to takeover success. Tetlock et al. (2008) also state that negative words convey negative information. Therefore, there is another hypothesis of a significantly negative interaction between media pessimism and takeover success.

The empirical results are consistent with the hypotheses. The results show that deals with low media coverage have higher completion rates than deals with high media coverage. This finding is consistent with the findings of Fang and Peress (2009), who state that stocks with no mass media coverage outperform those heavily covered by the media. The authors argue that deals with lower media coverage lead to less investor recognition and stocks with low levels of investor recognition must offer higher stock returns to compensate their shareholders. Moreover, Asquith et al. (1983) find that gains during the takeover announcement period are larger if the takeover is successful. In addition, Liu and McConnell (2013) state that the media play an important role in changing shareholders' and managers' interests, which could result in the abandonment of value-reducing takeover attempts. Further, Joe et al. (2009) suggest that individual investors appear to react negatively to the exposure of media coverage.

This chapter also investigates the correlation between media pessimism and takeover outcomes. The empirical results indicate that deals with low media pessimism levels have lower completion

rates than deals with high media pessimism. This finding is in line with early investigations by Buehlmaier (2012), who indicates that news content is positively related to takeover success. The findings are also related to those of Tetlock (2007), who states that textual sentiment has a potentially strong impact on stock returns and trading volumes; Tetlock et al. (2008) and Davis et al. (2011), who indicate that a highly pessimistic media forecast places downward pressure on the market because negative words that convey negative information can be used to forecast low corporate earnings prices; and Samuelson and Rosenthal (1989), who find a positive relation between stock prices and the chance of tender success.

Chapter 3 is motivated by the growing importance of media sentiment in merger waves. Bouwman et al. (2009) and Vadnais (2012) suggest that takeovers during cold markets are very different from those during hot markets in terms of volume, premiums, and methods of payment. This paper is the very first to consider this connection between different market valuations, media sentiment, and market reactions to M&A announcements. This is a unique setting, since both hot and cold markets have distinctive characteristics that can lead to very different market reactions.

The empirical result of this chapter suggests that acquirers are subject to high media pessimism when the deal is announced during a hot market valuation period. Moreover, the results show that acquirers obtain significantly higher announcement returns for deals announced during high-valuation markets in conjunction with high media pessimism. The finding is in line with early investigations by Petmezas (2009), who states that takeovers during hot markets lead to positive returns in the short run and lead to insignificant returns during cold markets. Moreover, in the long run, the returns will reverse and negative returns are observed in both hot and cold markets. This result is also consistent with the findings of Bouwman et al. (2009), who find that bidding firms earn significantly higher returns during hot markets and their announcement returns are significantly negative for takeovers announced in cold markets. The results are of interest to

investors who wish to understand how net trader positions influence market returns and how this relation could change in different macroeconomic environments. The results also have implications for academics and market practitioners seeking to understand the relationship between news sentiment and market movements for different market valuations.

4. Contribution

This thesis makes several contributions to the literature. Chapter 2 is the first using UK data to investigate the relation between financial media and M&As based on stock market performance. Extending previous literature on the interaction between financial media and stock market movements, this paper refines the research window. The event window is specified by the most important of corporate events, the M&A. This thesis finds substantial empirical evidence that media news from popular financial newspapers has a significant impact on stock market reactions to takeover announcements. News stories are classified into two data sets, by media pessimism and media coverage. And this thesis comprehensively investigates the overall picture and discovers the impact of media pessimism/coverage on short- and long-term reactions to takeover announcements, methods of payment, deal outcomes, as well as market valuations and merger waves. The conclusion of this chapter has further implications for investor sentiment research and suggests that media sentiment could be considered an effective proxy for investor sentiment.

Chapter 3 contributes to the literature by first testing the influence of media coverage and media pessimism on the likelihood of deal success or failure. While the previous literature considers many factors that could influence takeover outcomes, this chapter empirically shows that pre-announcement media pessimism/coverage plays an important role in determining deal outcomes.[1] In addition, previous research regarding the financial media focuses mainly on the

[1] Strategic vision and fit, deal structure, due diligence, pre-merger planning, post-merger integration, external factors, negotiation outcome, the nature of the recommendations of the target directors, and bid premium levels and offer price revisions are also shown to be important in discriminating between successful and failed takeovers (Epstain, 2005; Fabel and Kolmar, 2012; Henry, 2003).

US market (Birza and Lott, 2011; Akhtar et al., 2012); however, the UK and US media are very different. As Shaw (1999) suggests, the UK media are more independent, whereas the US media are more conformist. Using UK media data, this chapter provide new insights to the literature.

Chapter 4 tests the effect of media pessimism regarding takeovers deals under different stock market valuations. Since takeover quantities and media pessimism in hot markets are quite different from those in cold markets, the effects of media pessimism should be tested separately. This study fills the gaps in the previous literature, since it is the first to consider such an issue. Furthermore, Severin and Tankard (1992) suggest that journalism is very rarely neutral. The social psychology literature examining the media argues that consumers seek interpretation and coherent and entertaining presentation rather than raw information. The results indicate that media pessimism tends to be more positive towards M&A announcements when the deals are conducted during a hot market, which suggests that media pessimism could exhibit forms of herding and lead to different market reactions to M&A deals.

The rest of the thesis is arranged as follows: Chapter 2 is the first empirical chapter and investigates media pessimism and bidder short- and long-run performance. Chapter 3 looks into the correlation between the media and takeover outcomes. Chapter 4 examines the media's impact on M&A deals under different market valuation settings. Chapter 5 concludes the thesis.[2]

5. Limitation

base on the nature of the media study, one could not possibly to obtain all media article due to the time constrain, ideally , I should collect universal media data and calculate the sentiment index from it. This will be another extension I plan to do in the future.

[2] The relevant literature is separately reviewed in each chapter. Therefore, this is no independent literature review chapter.

The existing textual analysis using standard dictionary to calculate sentiment index, however there is no "weight" for each positive and negative words. for example, " good " and excellent will be given the same weight at existing methodology. I would like to carry out another research to identify the weights for all positive words and negative words by examine the usage frequency in a universal financial media data base.

6. Further Research Directions

There are many opportunities for further research that emerge on the back of the empirical findings of this thesis. The results indicate that pre-announcement media coverage has a statistically significant post-announcement effect. Further research could analyse the persistence in this media coverage over time, post-announcement in order to ascertain whether there is any change in the level of coverage or the tone of its content after the acquisition completes.

Chapter 2. Media Sentiment and Bidder Performance: Evidence from UK M&As

1. Introduction

Research on media pessimism and its interaction with acquirer return is a relatively new area that has received substantial attention in the last few years. This chapter examines how media coverage and pessimism can influence acquirer returns in takeover deals, based on a universal mergers and acquisitions (M&As) data draw from the UK market. Shiller (2000) indicates that market sentiment is motivated by news content and finds that media coverage has a major impact on stock trading and returns. In the case of a merger deal, the media disseminates information to market participants and plays a crucial role in shaping investor expectations about the combined firms' future value. Moreover, the increase in media coverage has a significant and positive effect on stock returns in the short-term and has an opposite effect in the long-term (Barber and Odean (2008); Da et al. (2011)). Further, high media pessimism leads to downward pressure on market prices (Tetlock (2007)).

It is generally believed that financial newspapers directly impact investor sentiment concerning both individual stocks and the market as a whole (Antweiler and Frank (2004); Chen et al. (2013); Garcia (2013); Ferguson et al. (2012); Jegadeesh and Wu (2012)). Tetlock (2007) shows that news content can predict future stock market movements and Chen et al. (2013) find opinions expressed in both articles and commentaries can predict future stock returns. However, Das and Chen (2007) find no evidence that sentiment has predictability in future returns and trading volumes. Moreover, Carretta et al. (2011), Henry (2008), and Tetlock et al. (2008) conclude that pessimistic news brings about lower future stock returns, while Antweiler and Frank (2004) find that positive news leads to negative returns the next day. In addition, Tetlock et al. (2008) suggest that negative words in news can predict individual firms' stock returns, while Buehlmaier (2012)

proposes that positive news content can predict stock returns. Studies also find that media reports of a firm's previously unreleased fundamental information can predict future performance.

While the literature shows that the financial media have a strong influence on firm stock performance, a significant gap exists in the research: The study of mergers and acquisitions (M&As) is one of the important components of the corporate finance literature and it has received significant attention in the last few decades. Moreover, M&As are major corporate events and usually receive large amounts of media attention, using merger announcements as a testing ground to examine media sentiment and market reactions should generate meaningful implications for the two schools of literature. However, no existing papers examine the relation between the financial media and major corporate events such as M&As. Second, previous research has focused on the US market and the relation between financial news and stock returns (e.g., Birza and Lott (2011); Akhtar et al. (2012)). However, the UK media and US media are very different. As Shaw (1999) suggests, the UK media are more independent, whereas the US media are more conformist. Therefore, this chapter's primary motivations are to fill these two important gaps.

Based on the literature on financial media and market reactions to corporate events, the media can influence merger returns in two ways. First, since the financial media can influence investor recognition and Merton's (1987) investor recognition hypothesis states that the greater the media coverage, the lower the information asymmetry, the higher investor demand to buy stocks, which should drive prices upwards accordingly; Therefore a significant relation between media coverage around merger announcements and acquirer abnormal returns is expected to observed. However, previous M&A research states that stock market reactions to takeover announcements are critical. According to Knapp *et al*. (2005), market reactions to takeover announcements are significantly negative. In addition, Dutta and Jog (2009) suggest positive market reactions to

takeover announcements, but with prompt corrections to such overreactions. Bhanot *et al*. (2014) state that news announcements offer additional and exclusive information to market investors to influence the future performance of the financial industry within the Eurozone. It is generally believed that stock market reactions mainly reflect investor recognition of such corporate events. Second, Tetlock *et al*. (2008) demonstrate that fundamental information transmitted by financial news resolves the problem of information asymmetry; therefore financial news can provide additional information for investors with which to evaluate their prospects in M&A deals and hence reduce information asymmetry. Garcia (2013) shows that the ability to forecast stock returns by using news content is concentrated around recessionary periods. Moreover, Tetlock (2007) states that high media pessimism leads to downward pressure on market prices. Therefore, a negative and significant relation between media pessimism around merger announcements and acquirers' abnormal returns is expected to observed.

The empirical result is consistent with the hypotheses. The result shows, over the short run, deals with media coverage outperform deals without media coverage. The finding is in line with early investigations by Shiller (2000) and Barber and Odean (2008), who indicate that the returns of stocks covered by the media should be much higher than those of stocks without media coverage due to information recognition. As Buehlmaier (2012) suggests, media coverage can lessen information asymmetry between targets and acquirers since it releases information on future firm value. However, the finding is inconsistent with of Fang and Peress (2009), who show that stocks without media coverage outperform those heavily covered by the media by 3% per year. The result is probably due to the nature of UK data – in that the sample consists of many small firms – and therefore, based on a differential information hypothesis that suggests that more pre-announcement information is available on large firms than on small firms (Atiase (1985)), a stronger magnitude of market reaction for M&A deals is expected to be seen.

Moreover, by employing a media pessimism formula based on negative words, the result shows that pre-merger media pessimism exhibits a significant negative relation with both short-run and long-run acquirer returns. That is, greater media pessimism leads to a lower takeover return. This finding is consistent with those of Carretta et al. (2011), Henry (2008), and Tetlock (2007), who argue that high media pessimism leads to low investor sentiment, resulting in a decrease in stock prices.

Apart from media coverage and media pessimism, many other factors can influence takeover performance. Fuller et al. (2002) state that returns are greater when stocks are the method of payment. However, most studies show that the operating performance of all-equity acquisitions is significantly worse than that of bids consisting of cash (for the United States, see Ghosh (2000), and for the United Kingdom, see Carline et al. (2002), and Martynova and Renneboog (2011). Moreover, Baker and Wurgler (2002) find that low-leverage firms are likely to increase equity when market valuations are high and high-leverage firms tend to raise funds when their market valuations are low. In the long run, value bidders gain higher abnormal returns than glamour bidders do around takeover announcements. However, the reverse is the case in the short run (Lang et al. (1989); Servaes (1991); Rau and Vermaelen (1998)). This chapter considers these factors as well.

This chapter provides clear contributions to the literature. It is the first to use M&A data to test the relation between media coverage (pessimism) and market efficiency in major corporate events. Such M&As attract media attention and therefore both firm-specific information and market information are available for empirical investigation. In contrast to the previous literature, which focuses on the relation between financial media and the entire stock market, this study specifically investigates the effect of media news on M&As. The large amounts of media coverage around takeover announcements could provide the perfect test ground for this relation,

since such an experiment would be less prone to selection bias in the media data. Second, given that the UK is the second largest financial centre in the world, this study extends previous research by investigating whether and how the influence of media coverage and pessimism on bidder performance can offer new evidence. Third, not only the impact of media coverage but also the influence of media pessimism in both the short run and long run is examined. The findings have practical implications for the investor sentiment literature and suggest that media pessimism could be considered an effective proxy for investor sentiment.

This chapter is organized as follows. Section 2 reviews the related literature and formulates the hypotheses. Section 3 describes the sample selection and empirical methodology. Section 4 shows the main results, Section 5 presents the discussions about the results, followed by a robustness test in Section 6. And Section 7 concludes.

2. Related Literature and Hypothesis Development

In this section, the relevant literature is reviewed and the hypotheses for the first chapter's research questions are shown as well.

2.1 Takeover waves

A great number of studies indicate that takeovers occur in waves. The academic literature shows five complete waves, in the early 1900s, 1920s, 1960s, 1980s, and 1990s. Firm events are mixtures of two activities important to firm finance: investment decisions and financing decisions. The latter includes stock repurchases, seasoned equity offering (SEOs)3, and initial public offerings (IPOs)4. Rau and Stouraitis (2011) analyze takeover waves accompanied by other corporate activities. After examining a large and comprehensive data set from 1980 to 2004, the authors show that stock issuance activities are negatively correlated to the stock repurchases.

[3] A seasoned equity offering (SEO) refers to a new equity issue by an already publicly traded firm.

4 An initial public offering (IPO) is a kind of public offering where security shares in a firm are sold to the public on a stocks exchange for the first time.

Apart from that, significantly positive correlations between different forms of stock issuance exist at the industry level. Moreover, the results of autoregressive models demonstrate a distinct pattern in lagged events. Lagged SEO volume forecasts future IPO volume and both the SEO and IPO volumes forecast future stock-financed takeover volume. Lagged stock-financed takeovers can also predict future repurchase events. In addition, the results of a bootstrap simulation method demonstrate that even though different corporate activity waves overlap, each wave has a time pattern. Just as the vector autoregressive analysis shows, takeover waves with stock financing occur after the stock issue waves, with SEOs preceding IPOs and, finally, stock repurchase waves.

According to the neoclassical efficiency hypothesis, firm managers concentrate on efficiency when they plan firm takeovers. By buying targets and taking equity issuance, they make investments in positive net present value projects or take advantage of growth opportunities. The neoclassical efficiency hypothesis states that payment methods should not be associated with making acquisitions. Moreover, the market misvaluation hypothesis states that rational managers profit from irrational market misvaluations by issuing stock in exchange for cash or other corporations. However, Shleifer and Vishny (2003) argue that the neoclassical theory that focuses upon industry-specific shocks is imperfect, since it does not explain aggregate merger waves and, whether stock or cash is used to pay the shareholders of acquired firms, it also has difficulty reconciling stock market evidence.

Martynova and Renneboog (2008) note that all waves have common factors: They are preceded by industrial or technological shocks and occur in a positive political and economic environment, coinciding with fast credit expansion and stock market booms. The M&As toward the end of a wave are usually driven by non-rational and frequently self-interested managerial decision making.

Bhagat et al. (2005) and Harford (2005) demonstrate that the total announcement wealth effects of M&As in periods outside surging takeover waves are always significantly lower than the gains earned during upward-moving takeover waves. Both studies also reveal that the highest combined M&A gains are realized at the beginnings of takeover waves. This finding is also confirmed by Moeller et al. (2004) for the fifth takeover wave, whose second half (i.e., 1998–2001) includes the takeovers with the largest losses. However, a study of diversifying acquisitions reflects a different picture: Akbulut and Matsusaka (2003) present evidence that diversifying takeovers are associated with insignificant abnormal returns for combined firms in the first halves of the takeover waves, with significant abnormal gains in their second halves.

Examining the fourth takeover wave in the 1980s, Mitchell and Mulherin (1996) argue that the rate of takeover activities is directly associated with economic shocks. The evidence suggests that the density and time series of these activities are differentiated by industry and that the activities cluster in a few particular industries. Furthermore, most of these industries experienced great fundamental shocks during the sample period, which are considered the cause of M&A waves. The results show that proper research design should consider not only macroeconomic but also industry-level factors.

2.2 Takeover motivations

2.2.1 Good bidders acquire bad targets

Martin and McConnell (1991) investigate the disciplinary role of corporate takeovers by employing a sample of 253 successful tender offer takeovers that took place between 1958 and 1984. A firm's takeover is categorized as disciplinary if there is top manager turnover in the target firm shortly after the M&A and other types of takeover are categorized as non-disciplinary. The authors employ two sets of empirical tests and the results suggest that the takeover market plays a

significant role in controlling top managers and aligning the incentives of senior executives with the interests of stockholders. Moreover, the authors also classify takeovers as hostile or friendly and, for both samples, the rate of turnover in top senior corporate executives increases considerably after M&A activities. Furthermore, the results indicate that tender offer M&As create value for the shareholders of the involved firms, irrespective of the motivation.

Martin and McConnell (1991) compute the cumulative average prediction errors (CPEs) and cumulative industry-adjusted returns (CIARs) for the full sample of 253 successful takeover target firms and show that information leakage regarding M&As has an effect on security returns during the pre-takeover period. The authors' evidence shows that all acquired firms perform better than the market; however, they perform worse than others in their industry peer group. Moreover, the statistics reveal an industry effect in the pre-takeover performance of tender offer targets.

Martin and McConnell (1991) also indicate that acquired firms of M&As with changes in senior corporate executives following the takeover perform much worse than those acquired firms with no change in senior corporate executives. In addition, the data are in line with the hypothesis that M&As are a device to discipline the top executives of poorly performing firms. Additionally, the findings indicate that if the bidder's managers successfully take control of the acquired firm and decide to change the senior corporate executives, they will seek possible replacement candidates from both within the acquired firm and in external labor market, without consideration of the candidate's previous affiliation. Moreover, the results indicate that bidders consider changing the top manager of non–value-maximizing target firms rather than the other senior executives, although in many cases when the top manager is changed, the other top executives are changed as well.

Furthermore, for both the hostile and friendly samples, the turnover rate in the top manager goes up significantly in the two years after a successful takeover, although it does not differ considerably between the two samples. In addition, neither the hostile nor the friendly sample shows any differences between disciplinary and non-disciplinary takeovers and the pre-takeover performance of acquired firms of disciplinary takeovers is not different from that of non-disciplinary takeovers. Finally, the results suggest that the M&A gains to bidders and targets appear to be the same, whether the takeover is disciplinary or non-disciplinary. Further, the level of competition among bidders as measured by the number of multiple- and single-bidder contests is the same in both disciplinary and non-disciplinary takeovers.

2.2.2 Factors influencing takeover performance

Kini, Kracaw, and Mian (1995) note that M&As act as a substitute for outside directors when viewed as an alternative control device. Moreover, the authors demonstrate that the discipline associated with corporate mergers extends beyond top management to affect the restructuring of the whole board. The nature of the discipline depends on the composition of the acquired firm board prior to the merger. Disciplinary mergers have two outcomes: (1) For inside-dominated acquired firms, the number of inside directorships is reduced while the number of outside directorships remains the same. (2) For outside-dominated boards, the number of inside directorships increases while the number of outside directorships decreases. Accordingly, the board is recomposed to a more even balance between outside and inside directorships.

Fuller et al. (2002) employ a sample of 3135 takeovers and find that bidders are more likely to obtain higher stock returns when buying a private firm or subsidiary and are more likely to suffer losses when purchasing a public firm. Moreover, the return is greater when the target is a large firm and stocks are the method of payment.

Grinblatt and Titman (2002) suggest that the stock return of a bidder at the time of a takeover announcement may reveal more information about how the market is re-evaluating the acquirer's business than about the value of takeover. Therefore, the return at the time of announcement cannot truly reflect the takeover's expected effect on profitability. Similarly, Hietala, Kaplan, and Robinson (2003) find that a takeover announcement reveals information about the potential synergies of the combination, the standalone values of the acquirer(s) and target(s), and how the value will be distributed between them. It is hard to isolate these three effects in mergers.

Baker and Wurgler (2002) suggest that equity market timing is a significant aspect of actual financial policy and examine how equity market timing influences capital structure in the long and short run. The authors propose the theory that capital structure is the cumulative outcome of previous efforts to time the market because past market valuations significantly influence capital structure in a statistically robust manner. The market-to-book ratio is utilized to measure market timing opportunities and the results are in line with the hypotheses that market timing has a significant and persistent influence upon capital structure, with persistence tested three ways. What is more, Baker and Wurgler find that low-leverage firms are likely to increase equity when market valuations are high and high-leverage firms tend to raise funds when their market valuations are low. In addition, their findings indicate that market valuation fluctuations have strong influences on capital structure that persist for at least a decade.

The earlier research focuses on three theories, the first of which is trade-off theory. Firms with considerable investment opportunities and growth lose the most when overhanging debt stops fresh capital from being raised or leads to inefficient bankruptcy negotiations and, ultimately, lost investment opportunities. In addition, the evidence shows that variations in the market-to-book ratio have a decades-long influence on capital structure. The second is pecking order theory. This theory considers the market to book as a measure of investment opportunities and the results

suggest that periods of many investment opportunities are likely to decrease leverage. Moreover, the results show high market-to-book ratio firms reduce leverage by issuing equity, not by retaining earning, and leverage is more strongly determined by past market-to-book values. The last theory is managerial entrenchment theory. High valuations and excellent investment opportunities assist equity finance, allowing managers to become entrenched. These managers may then avoid increasing debt to rebalance in later periods.

Baker and Wurgler (2002) propose the market timing theory. There are two versions of equity market timing that have the same capital structure dynamics. The first one, with a dynamic form, involves rational investors and managers and adverse selection costs that vary across time or across firms. Firms are likely to announce equity issues after releasing information, which might decrease information asymmetry. Moreover, if the costs deviations from an optimal capital structure are smaller than the resulting variation in issuing costs, past variations in the market-to-book ratio may have a continuing influence. The second version involves irrational investors or managers and time-varying mispricing. Investors issue equity when they think its cost is too high. In sum, much of Baker and Wurgler's evidence shows that marketing timing is a significant aspect of actual financing decisions.

2.3 The M&A process

The earlier literature does not strictly distinguish between sources of takeover financing and methods of payment. Recent papers focus on bidder financing decisions. One of the most representative works is that of Martynova and Renneboog (2009), the first to empirically examine sources of financing along with payment media. The authors investigate bidding firms' choices of transaction financing sources in European M&As during 1993–2001. They highlight that the decisions of payment means and financing sources in a takeover are driven by different factors. The results indicate the financing decision in a takeover bid is affected by pecking order

preferences, the need for flexibility in managing corporate funds, and the corporate governance environment, all of which are related to the costs of external capital. Martynova and Renneboog conduct multinomial and nested logit analyses to show that bidders have systematic preferences for particular financing sources that depend on the characteristics of the firm and the takeover. The authors also find that the payment means decision is indirectly influenced by the acquiring firm's large shareholders' desire to keep control after the transaction and the intention of the acquiring firm's shareholders to buy out all the shareholders or to share the risk of the merger with the acquired firm's shareholders. Moreover, the bidder's financing decision has considerable influence on the market's reaction to the takeover announcement. Finally, Martynova and Renneboog conclude that the way a takeover deal is financed signals significant information to the market about the quality of the bidder and the profitability of the M&A activity.

Martynova and Renneboog (2009) find over the six months prior to or after the takeover announcement, the M&A returns to the bidding firm's shareholders are significantly negative in M&As involving equity financing. The analysis reveals that a negative price revision follows the takeover announcement when the M&A involves equity financing. It also confirms that investors interpret bank provision of funding to mean the takeover is profitable and all-equity-financed takeovers are associated with considerably lower announcement returns compared to cash and debt financing. The results show that transaction financing sources are a significant determinant of bidding firm share price reactions to M&A announcements, as well as of payment methods. Moreover, Martynova and Renneboog also find that announcements of equity financing in takeovers bring about lower returns for the acquirer shareholders. One explanation for this finding is that investors consider an equity payment a signal that the bidding firm's shares are overvalued and therefore decrease the share price after equity financing is announced. Another explanation is the market considers equity payment as a negative signal that the quality of the acquired firm and its potential acquisition synergies are uncertain, because investors think the

bidding firm is likely to pay with equity to share the risks with the acquired firm's shareholders.

Dividing samples of takeovers into tender offers and mergers, Schwert (1996) and Franks and Harris (1989) illustrate that the shareholders of acquired firms earn significantly higher premiums in tender offers than in mergers. Since the means of payment in mergers is usually equity, whereas cash bids prevail in tender offers, the authors also find that all-cash bids are more profitable for target shareholders than all-equity ones. However, even within each takeover type subsample (mergers, friendly acquisitions, and tender offers), Franks et al. (1988), Andrade et al. (2001), and Goergen and Renneboog (2004) find evidence that all-equity bids trigger lower target returns than all-cash bids.

Most studies show that the operating performance of all-equity acquisitions is significantly worse than that of bids consisting of cash (see, e.g., Ghosh, 2001, for the United States and Carline et al., 2002, for the United Kingdom).

2.4 Bidder returns in M&As

Numerous studies show mixed results for bidder returns. Market reactions to merger announcements depend on the bidder's payment method, motives, and pre-merger financial condition, among many other factors. Neoclassical theory states that mergers can create synergy by combining firms and therefore the market should react positively to merger announcements. On the other hand, behavioral finance theory offers alternative explanations, such as market timing and the overconfidence hypothesis.

Shleifer and Vishny (2003) show that acquisitions are the best strategy for acquirers, since they might benefit from positive perceived synergies. In addition, the shareholders of the bidding firm can contribute to its earnings by undertaking mergers and thus take advantage of high valuations.

Both target and bidding firms' managers can take advantage of acquisitions by getting good jobs or cashing out by selling shares and by increasing their equity's long-term value, respectively. Shleifer and Vishny's arguments are consistent with Jensen and Ruback's (1983) conclusions, that firm M&As create positive gains and that the shareholders of both the acquired and acquiring firms benefit from takeovers.

After examining the interactions between the merger gains and q ratios of acquired and bidder firms in a sample of 704 takeovers and tender offers, Servaes (1991) finds that M&As are larger when the acquired firm performs poorly (has a low q ratio) and the acquiring firm has excellent performance (has a high q ratio). Ambrose and Megginson (1992) find that "the probability of receiving a takeover bid is positively related to tangible assets, and negatively related to firm size and to the net change in institutional holdings." Unlike traditional approaches, which focus on firm-level characteristics to explain unperfected investment behavior and investment cash flow sensitivity, Malmendier and Tate (2005) propose that the key firm decision maker's personal characteristics are also significant. Moreover, by regressing investment on cash flow, the interaction of overconfidence and cash flow, and the overconfidence measure, the authors find a strong positive relation between managerial overconfidence and investment cash flow sensitivity.

Rau and Vermaelen (1998) report that, in the long run, value bidders gain higher abnormal returns than glamour bidders around takeover announcements. However, the reverse is the case in the short run; that is, the stock prices of firms with high book-to-market ratios increase much more than those of their peers with low book-to-market ratios around merger announcements. The authors' evidence indicates that this is because when the attraction of a takeover is evaluated, not only the acquirer's management but also the market overestimates the acquirer's past performance, which is reflected by the acquirer's book-to-market ratio. Fama and French (1993) propose a methodology controlling for low book-to-market firms' returns where below-average

returns would show no constant negative abnormal returns. Servaes (1991) and Lang et al. (1989) show that short-horizon announcement returns are negatively correlated with book-to-market ratios.

By examining the post-acquisition stock returns from 947 acquisitions, Loughran and Vijh (1997) show that bidders paying for takeovers by issuing stocks gain significantly negative abnormal returns and cash bidders gain significantly positive abnormal returns in the five years after a takeover. Hayward and Hambrick (1997) report that acquisition premiums are "positively correlated with proxies for past managerial performance such as recent organizational success and media praise for the CEO." Just as their vector autoregressive analysis shows, takeover waves with stock financing occur after stock issue waves, with SEOs followed by IPOs and, finally, stock repurchase waves.

On the other hand, Gentzkow and Shapiro (2004) argue that the media have no effect on M&As because increased exposure to media information is not necessarily related to an accurate understanding of global events. Moreover, different news sources have strong correlations with attitudes toward the West and terrorist activities. However, a number of articles still argue that media coverage has an effect. Engelberg and Parsons (2011) examine the causal relation between the media and stock market reactions. In particular, they investigate whether media coverage of a financial event influences investor behavior. One of their main results is that trading in each of the 19 markets is strongly associated with local newspaper coverage of the announcement. Moreover, the authors contribute to the growing number of studies investigating the influence of the media on actual outcomes. Their results show that local media coverage has a positive and statistically significant effect on the logarithm of the dollar trading volume. Controlling for local trading, pre-existing demand, and home bias, Engelberg and Parsons estimate the pure effect of media coverage on trading volume to be around 28%.

By examining the cross-sectional relation between expected stock returns and media coverage, Fang and Peress (2009) suggest that the media play an important role in reducing informational friction and influence stock pricing, even when they do not provide real news. Additionally, the authors argue that stocks without media coverage obtain higher returns than securities with high media coverage. The argument is stronger for small securities and securities with low analyst following, high individual ownership, and high idiosyncratic volatility. Media coverage is positively related to idiosyncratic volatility, which suggests that media coverage facilitates the integration of information into stock prices. Media coverage also has a positive correlation with analyst forecast dispersion, which suggests that the media do not bring about a convergence of opinions. Finally, Fang and Peress show that the breadth of information dissemination influences security returns.

2.5 Financial media and stock market returns

Textual analysis is a subset of the finance literature on qualitative information. Loughran and McDonald (2010) find that negative word categorizations are an efficient way to measure media tone and show their significant correlation with other financial variables. Compared with the Harvard list, the Fin-Neg list has more significant correlations with stock returns when media articles and SEOs are examined. Loughran and McDonald therefore concentrate on the Fin-Neg list's more regular word cataloging approach to measure tone.

However, other papers prefer alternative approaches founded on vector distance, probability ratios, naïve Bayes categorizations, and other categorization algorithms. Li (2009) investigates the advantages of employing a statistical method over word categorization and argues that categorization may not adequately capture influence for corporate filings because of the lack of a readily available dictionary. Tetlock (2008) considers the disadvantages of employing approaches

that "require the estimation of likelihood ratios based on difficult to replicate and subjective classification of texts' tone."

Loughran and McDonald (2010) also uncovered a measurement problem in which, if the Harvard dictionary is used, about three-fourths of the negative word counts in 10-K5 filings are not typically negative in a financial news context. The authors introduced two methods to resolve this issue: First, they generated a word list that included typically negative words in financial reports; second, they constructed a term-weighting scheme that reduces the influence of high-frequency words and gives lower-frequency words greater influence. Either method can reduce the noise caused by word misclassification. Furthermore, Loughran and McDonald created five other word categorizations, based on positive, uncertain, litigious, strongly modal, and weakly modal words, respectively.

Carretta et al. (2011) analyze the relation between the mass media and stock returns, using Italy's key financial media. Their results show that stock returns are likely to increase after ownership news if the firm has not been profitable when the news is released; otherwise, returns tend to decrease. This finding means public investors react negatively to ownership news about profitable firms and are likely to sell their securities. The results also indicate that "the tone and content of corporate governance news are not statistically significant related to cumulative abnormal returns6" (hereafter CARs; Carretta et al., 2011). The authors suggest that investors can determine the type of corporate governance event only prior to the news release, since after its publication individual investors are affected by its content and tone. Moreover, the authors find that stock returns are negatively influenced by news when changes occur to the board of directors of profitable firms.

5 Form 10-K is an annual report required by the U.S. Securities and Exchange Commission that comprehensively summarizes a firm's performance.

6 Cumulative abnormal return(CAR) is the sum of abnormal returns. Cumulative Abnormal Returns are often calculated over small windows, usually only 3days, 5days and 11days.

Tetlock (2007) examines the relation between media content and stock market activity. The author suggests that a highly pessimistic media forecast places downward pressure on market prices followed by a reversion to fundamentals and that unusual optimism or pessimism predicts high market trading volume. Furthermore, pessimistic forecasts seem to have a particularly large negative influence that reverses itself in small stocks quite slowly.

Tetlock et al. (2008) investigate the utilization of a quantitative language measure to forecast corporate earnings and stock returns. They present three main findings: First, within corporation-specific news stories, part of the negative words that convey negative information can be used to forecast low corporate earnings. Second, corporate share prices react to such information with a short delay. Third, the predictability of earnings and stock returns from negative words is strongest for stories that concentrate on fundamentals. Tetlock et al. (2008) conclude that "linguistic media content captures otherwise difficult to quantify aspects of firms' fundamentals" that investors rapidly impound into share prices. However, the authors show only that negative word counts have predictability and do not consider the effect of positive words.

Buehlmaier and Zechner (2013) present strong evidence that information in the financial media is not fully impounded in security prices. The authors also demonstrate that media content influences takeover arbitrage returns but the results for media coverage are not significant. Moreover, media information released on the announcement day includes information proven to be largely unrelated to the likelihood of deal completion. The authors do not provide any strong evidence supporting a certification role for the media.

Based on Tetlock's (2008) finding, Garcia (2013) examines the sentiment effect on asset prices by investigating financial news from *The New York Times* in the 20th century. Employing the

fractions of negative and positive words as a proxy for media pessimism, Garcia shows that the ability to forecast stock returns by using news content focuses on recessionary periods. Moreover, predictability is especially strong on Mondays and following holidays, since readers have more time to read the news before the afternoon of the trading day. Additionally, Garcia argues that the effect partially reverses after the next four trading days. In sum, investor sentiment has an important impact during recessions.

In addition, Vadnais (2012) concentrates on the media's influence on pricing and the completion of takeover transactions in the high-tech industry. The author suggests that average media sentiment about takeover transactions has a positive correlation with the final price of the acquired firm. However, the author finds no evidence that media sentiment affects the probability of takeovers being withdrawn or completed. Moreover, the transaction size and amount of media coverage strongly influence the extent to which media sentiment affects a takeover transaction's pricing, with greater transaction size and news coverage associated with stronger media sentiment influence. Finally, the author concludes that the media not only covey information to investors, but also have a strong influence on the financial markets and a strong ability to affect the high-tech industry landscape.

After examining news about gross domestic product growth, unemployment, retail sales, and durable goods, Birza and Lott (2011) find that the news about gross domestic product growth and unemployment significantly affects stock returns. However, the correlations between stock returns and news about durable goods and retail sales are statistically insignificant.

Schumaker et al. (2012) pair the Arizona Financial Text system, a financial news article prediction system, with a media sentiment analysis tool. They conclude that subjective news articles facilitate forecasting the direction of price and obtain a 3.30% stock return with an

uncomplicated trading engine. After investigating the role of author attitude among the financial articles, they also state that news articles with a negative attitude make it easier to forecast the direction of price and achieve a 3.04% return. Moreover, they note that their system is effective in forecasting price decreases in news articles with positive sentiment (53.5%) and negative/neutral sentiment (52.4%).

Ahern and Sosyura (2014) suggest a firm uses media coverage to affect and manipulate its stock price after a takeover. They state that acquirers in fixed exchange ratio takeovers release more media coverage when they start the takeover negotiations in private before the public announcement. During this period, the stock exchange ratio is already established. In addition, acquirers in floating exchange ratio indicate do not show apparent differences in news release issuance in this period. This strategy leads to short-lived increases in the new coverage and the valuation of acquirers. The authors also find that media management has an influence on takeover gains and there is a positive relation between the increase in media coverage during takeover negotiations and the firm's share of takeover gains.

Barber and Odean (2008) propose that the buying behavior of individual investors is more heavily influenced by media attention than their selling behavior is because individual investors only sell stocks that they already own and most hold relatively few common stocks in their portfolios. Moreover, the buying behavior of individual investors is more heavily influenced by attention than the buying behavior of professional investors, because investors can, individually, consider the merits—both economic and emotional—of selling each stock they own and individual investors do not devote themselves to full-time stock research. The authors conclude that attention-driven buying is also driven by the complexity involved in individual investors exploring the numerous stocks they may buy.

Buehlmaier (2012) note a positive relation between news content and takeover success. The media measure constructed by naïve Bayes is the most significant explanatory variable, with a large marginal effect and goodness of fit. Ohl et al. (1995) show that relevant news content during M&As is influenced not only by a firm's press releases but also by media access to the firm's executives.

Focusing on Russia during 1999–2002, Dyck et al. (2008) find that media coverage has a crucial effect on corporate governance and can be influenced by the parties involved. The authors also note that a firm's intrinsic newsworthiness and the Hermitage fund result in foreign media coverage of major corporate governance abuses.

Using equity data and a new panel data set of news counts for 23 emerging markets, Veldkamp (2006) shows that when asset market volatility increases, news coverage intensifies and that more news coverage is correlated with higher asset prices and greater cross-market price dispersion.

Da, Zhi, Engelberg, and Gao (2011) states two reasons why more Google searches with investor overconfidence may lead to stronger stock price momentum: First, according to Gilovich, Griffin, and Kahneman (2002), many psychological studies find that people have more confidence if they obtain more information or expertise. Second, when people search on Google for stock information, investors may be influenced by the same information sets and their private signals have more correlations with each other.

After comparing reactions to earnings announcements on Fridays with those on other weekdays, Dellavigna and Pollet (2009) find that Friday announcements are followed by a higher delayed market response. The delayed response is 60% of the total response on Friday and 40% of the total response on other weekdays. Considerable returns can be earned by investing a portfolio in

the differential Friday drift. The authors find investors undertake fewer work-related activities on Fridays than on others weekdays and the limited attention may lead to investors underreacting to earnings information. Eventually, investors realize the mispricing and incorporate the information. The authors conclude that limited attention leads to underreaction to information, which plays a crucial role in post-earnings announcement drift.

Examining evidence of post-news drift, Chan (2003) finds results in line with the idea that investors underreact to information. The underreaction is strongest following bad news. Moreover, the subsequent reversal in extreme price movements is inconsistent with public news. Chan also notes that trading frictions, such as short-sale constraints, show a significant relation with the pattern of post-bad news drift. First, Stocks with negative public media coverage also have negative drift. However, stocks with positive news have few negative drift. Chan explains that stocks prices are slowly react negative public media coverage. Second, stocks without media coverage in the event month have a tendency to reverse in the following month even considering the controlling variables such as firm size, book-to-market ratio, and influences of liquidity. This result supports the view that investment practitioners always overreact to the movements of spurious stock price. This lead to "excess" volatility and trading volume and then also cause the stock price reverse. In sum, investors are slow to react to information and overreact to price movement are two major thought among investors. Moreover, investors respond to media coverage slower in small stocks than large ones.

Solomon (2012) investigates how positive and negative media coverage influence stock prices by examining the influence of investor relations firms. The results show that the investor relations firms "spin" their customers' news by generating more positive media coverage releases then negative media coverage releases, and then increases returns of announcements. Solomon also reports that positive news increasing the expectations of investors and negative news creating the

disappointment of investors.

2.6 Hypothesis development

Based on the above findings, this paper examines whether the financial media influence takeover gains. Both short-run and long-run abnormal returns are examined. As Shiller (2000) shows, market sentiment is motivated by news content. The author also proposes that media coverage has a major impact on stock trading and returns. Moreover, according to Merton's (1987) investor recognition hypothesis, a firm with greater investor recognition should experience higher demand, which should drive its price up accordingly. A firm covered by the media should therefore follow such a pattern, as stated in the hypothesis below. In addition, Sankaraguruswamy et al. (2013) state that more frequent news releases are associated with lower information asymmetry. This intuition is formalized in the following hypothesis.

H1: *Deals with media coverage prior to the merger announcement should outperform deals without such media coverage in both the short run and the long run.*

As Tetlock (2007), Tetlock et al. (2008), and Fang and Peress (2009) show, both the attitude and coverage of the financial media have significant impacts on the stock market, for example, affecting investor sentiment and resolving information asymmetry. This finding suggests that when a takeover is announced, news stories previously released by the financial media can partially influence market reactions to bidder stock prices. This section evaluates media attitude via media sentiment. Moreover, Henry (2008) states that abnormal returns are higher, since the attitude of the news release is more positive and Chen et al. (2013) find that the pessimistic sentiment in online articles is negatively related with abnormal returns in the short run. Therefore, greater bidder's media pessimism triggers lower post-merger abnormal returns. This leads to the following hypothesis.

H2: *There is a significantly negative interaction between media pessimism and market responses*

to takeover announcements in both the short run and long run.

To sum up, this paper proposes that the financial media affect two functional aspects of stock market reactions around M&A events. First, news stories released by the financial media partially bias market and investor sentiment and an effect is quickly reflected in firm stock price movements. Thus H1 examines whether this function is still valid for the announcement returns of M&A deals. On the other hand, H2 is more concerned with the relation between merging firms' post-merger performance and the financial media over both the short run and long run. As already noted, merging firms' post-merger stock performance is an important criterion in judging the success of takeover deals. The second function of the financial media is the disclosure of unreleased information and the resolution of potential information asymmetry.

3. Data and Methodology

3.1 Data

The analysis uses three types of data: M&A data, UK media data, and stock price and accounting data. The data were collected from three databases. First, M&A data on public bidding firms between November 30, 1981, and January 1, 2010, were obtained from the Thomson One Banker Deals database. The deal must be successfully completed and the acquirers and targets must be UK firms. Moreover, following standard M&A research practices, strongly regulated industries such as utilities and financial institutions are excluded. According to the criteria shows, there are 11829 deals in the M&A data.

Second, all media data were manually collected from the LexisNexis database, which includes four influential UK media sources: the *Financial Times*, *The Times*, *Guardian*, and the *Mirror*. These sources released 274,201 media articles between November 30, 1981, and January 1, 2010, covering 251 UK firms. (Since this chapter checks pre-merger media coverage, the media data

period is longer than the merger data's.) As Table 2.1 shows, these top four media sources comprise more than 98% of the total media sources.

Third, stock price and accounting data were obtained from Datastream. The data includes the daily stock prices, book-to-market ratios, earnings before interest, taxes, depreciation, and amortization (EBITDA)7, leverage, price-to-earnings (PE)8 ratios and market values. All of them are collected between November 30, 1981 and January 1, 2010. Moreover, FTSE All-Share Index levels data is between November 30, 1981 and January 1, 2013. It is three years longer than other data, because the 36-month buy-and-hold abnormal returns are calculated in 36 months following the takeover announcement.

To match the data from the three different databases, a unique identifier is required. Thomson One Banker and Datastream both use the Datastream code as a firm identifier. Since the raw media data do not have Datastream codes, manual searches for these firms' name in the media database were carried out to ensure each article to match with a Datastream code. The STATA program was used for the data cleaning and matching processes in this chapter. After controlling for anomalies and matching the three databases, a final sample containing 4,384 completed deals carried out by 1,116 UK public bidders is obtained, with 989 deals covered by media news within 365 days before the takeover announcement.

[Insert Table 2.1 Here]

3.2 Methodology

To calculate the media pessimism for each firm prior to its M&A announcement, the words in each article are compared with the positive and negative word lists of Loughran and McDonald

7 EBITDA refers to a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. The EBITDA of a firm show people about the current operational profitability of the firm's business.

8 PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year.

(2010). In this case, the numbers of positive and negative words and the total number of words are obtained.9 In the most recent version of the word lists, 353 words are positive and 2337 words are negative.

Tetlock et al. (2008) define the media sentiment score as the standardized fraction of negative words in each news story, measured by

$$Neg = \frac{No.of\ negative\ words}{No.of\ total\ words} \quad (1)$$

$$neg = \frac{Neg - \mu_{Neg}}{\sigma_{Neg}} \quad (2)$$

where μ_{Neg} is the mean of *Neg* and σ_{Neg} is the standard deviation of *Neg* over the prior calendar year. Standardization is necessary if *Neg* is nonstationary. The variable *neg* is the stationary measure of media pessimism and is employed in the regression analyses.

Each article is given a pessimism score and an arithmetic average score is calculated for each bidder. Similar results from using more than one formulas are obtained, such as the quantity of positive words minus the quantity of negative words, divided by the sum of positive and negative word counts or total words (Rees and Twedt 2012). However, Henry and Leone (2009) and Tetlock (2007) find that negative words have a much stronger correlation with stock returns than positive words do. Many papers also suggest that the frequency of negative words in an article decides its tone (Das and Chen 2007, Davis and Tama-Sweet 2012, Loughran and McDonald 2011). Therefore, the method proposed by Tetlock et al. (2008) to is employed measure media pessimism. Because this formula focuses on the negative words, the media pessimism score stands for the level of media sentiment.

9 We used the computer program WordStat to obtain the sentiment data and Stata for the other calculation.

Accounting data, such as daily stock prices, book-to-market ratios, and price indices, are all obtained from Datastream and matched with the media data by Datastream code. Campbell, Lo & MacKinley (1997) point out that an investor use cumulative abnormal returns to measure firm performance and Fama (1998) argues that BHARs can predict significant long-run abnormal performance, even if none is present due to short-run influences. Therefore, this study uses two primary metrics to quantify short- and long-run market reactions: cumulative abnormal returns (CARs) and buy and hold abnormal returns (BHARs).

To control for the BHAR skewness problem, a bootstrapping methodology is adopted to calculate the unbiased critical value. Rau and Vermaelen (1998) suggest that bootstrapping is an effective methodology that is robust to problems that have a negative influence on standard long-run statistical significance tests.

The short-term analysis follows the methodology of Brown and Warner (1980) and Fuller, Stegemoller and Netter (2002). Abnormal returns are defined as anything earned above a normal return for the security in question. To establish whether or not the market does react efficiently to the M&A announcement, a normal return for each acquirer should be established. The normal acquirer return is defined as the difference between the acquirer's return and the market's return on each day of the event window (Brown and Warner, 1980; Fuller et al., 2002), denoted:

$$AR_i = r_i - r_m \qquad (4)$$

Where r_i is the return for acquirer i and r_m is the return of the underlying market benchmark. In this paper, the FTSE Allshare is used as the benchmark as opposed to FTSE 100, 250 or 350 which have size biases incorporated within them.

For each event window, the abnormal returns are summated across the event day to generate the cumulative abnormal return (*CAR*) for each deal:

$$CAR_i = \sum_i^n AR_i \qquad (5)$$

Where CAR_i is the cumulative abnormal return for acquirer *i*. The null hypothesis is that for each sample, there is no statistically significant CAR generated so that $CAR_i = 0$, i.e. the media does not have a significant impact on investors or indeed the market reacts quickly, within the event window, to the arrival of information related to the M&A. The alternative is that there is a statistically significant profit generated such that $CAR_i \neq 0$, i.e. the media does have a significant impact on investors or indeed the market reacts slowly to the arrival of information related to the M&A.

Finally, the BHARs measure the difference between compounded actual returns and compound predicted returns:

$$BHAR_{it} = \prod_{t=0}^{T}[1 + R_{it}] - \prod_{t=0}^{T}[1 + R_{mt}] \qquad (6)$$

where R_{it} is the arithmetic return (including dividends) at time *t* on security *i* and R_{mt} is the arithmetic return at time *t* on the value-weighted FTSE All-Share Index.

In the Univariate Test, to examine the effects of media pessimism, the media pessimism score is sorted into two media pessimism portfolios after deals are ranked by the pessimism score from highest to lowest, the top 50% for high media pessimism and the bottom 50% for low media pessimism.

All hypotheses are tested by employing ordinary least squares regression models. To examine the

relation between the level of media pessimism and stock returns and to test whether the media data have any stock return predictability, following regressions are run in this chapter:

$$CAR_{i,t} = \beta_1 + \beta_2 MC + \beta_3 Payment\ Method + \beta_4 Ln(MV)_{i,t} + \beta_5 Controls \quad (7a)$$

$$BHAR_{i,t} = \beta_1 + \beta_2 MC + \beta_3 Payment\ Method + \beta_4 Ln(MV)_{i,t} + \beta_5 Controls \quad (7b)$$

$$CAR_{i,t} = \beta_1 + \beta_2 MP + \beta_3 LnPayment\ Method + \beta_4 Ln(MV)_{i,t} + \beta_5 Controls \quad (8a)$$

$$BHAR_{i,t} = \beta_1 + \beta_2 MP + \beta_3 Payment\ Method + \beta_4 Ln(MV)_{i,t} + \beta_5 Controls \quad (8b)$$

The media coverage and media pessimism for the days prior to the takeover announcement are regressed, respectively, and then compare them to determine which affects the stock returns most significantly. To investigate the effects of media coverage existence, the entire merger sample is split into two subsamples, with media coverage and without media coverage. The key variable *MC* is the media coverage in the 365 days prior to the takeover announcement. It is a dummy variable that takes the value one if there are articles covering takeover news are published on a given period, and takes the value zero if there are none articles about the takeover news. The key variable *MP* is media pessimism in the 365 days prior to the takeover announcement. It is a continuous variable rather than a dummy variable. The level of media pessimism depends on the textual analysis, which divides words into positive and negative subsamples by using the financial news word lists created by Loughran and McDonald (2010).

The method of payment and market value are the main variables. Travlos (1987) reports that the use of equity as a payment method in takeovers signals to the market that the acquirer is overvalued, while an all-cash payment indicates potential undervaluation of the acquirer. Therefore, two payment method dummy variables are included: *Stock* and *Cash*. The stock variable, *Stock*, takes the value of one if the bidder uses 100% equity to buy the target firm and the cash variable, *Cash***,** takes the value of one if the bidder uses 100% cash financing to pay for

the target. Moreover, a lag in the key return predictability variables' size (measured as the natural logarithm of the market value) is included, as for Tetlock et al. (2008), as well as the logarithm of the acquirer's size, *Ln(Size)*, defined as the acquirer's market value measured one month before the deal announcement.

In addition, the multivariate tests include a series of control variables that have a significant influence on acquirer returns according to previous studies. First, Rau and Vermaelen (1998) find that value acquirers (with a high book-to-market ratio) outperform glamour acquirers (with a low book-to-market ratio) after a takeover. This may due to 'performance extrapolation' and hubris, which lead to poorer takeover decisions by glamour acquirers. Second, Lang et al. (1994) report a strong negative relation between firm leverage and firm future growth during 1970–1989. Jensen (1986) and Stulz (1990) suggest that leverage brings about poor investment opportunities and helps prevent firm overinvestment. Third, a firm's EBITDA indicates its current operational profitability. Fourth, Travlos (1987) states that the relative size variable is used to account for difficulties in measuring abnormal returns due to the larger size of bidders relative to the size of their targets. Fifth, Brealey and Myers (1996) state that the PE ratio is part of the everyday vocabulary of investors in the stock market. Sixth, an increase in a stock's media coverage could temporarily increase investor attention to this stock, resulting in a price run-up followed by a correction (Barber and Odean, 2008; Huberman and Regev, 2001). Therefore, the following variables are also included: the book-to-market ratio (*B/M Ratio*), defined as the acquirer's book value divided by its market value; leverage (*Leverage*), defined as the amount of debt used to finance a firm's assets; EBITDA (*EBITDA*); the relative size of the transaction (*Relative Size*), defined as the deal value divided by the acquirer's market value, measured one month before the deal announcement; the PE ratio (*PE ratio*), measured as a firm's current share price compared to its per-share earnings; and the run-up stock return of the acquirer measured over a window from 365 to 28 days before the announcement (*Run-Up*). Moreover, *hostile, public, tender, and*

diversification are dummy variables that take the value of one for hostile, tender, and diversifying mergers, respectively, and zero otherwise. Moreover, *hostile, public, tender and diversification* are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise.

4. Main Results

4.1 UK M&A deal transaction values

Figure 2.1: Volatility of the UK M&A deal transaction values of the FTSE 100, 1981–2010.

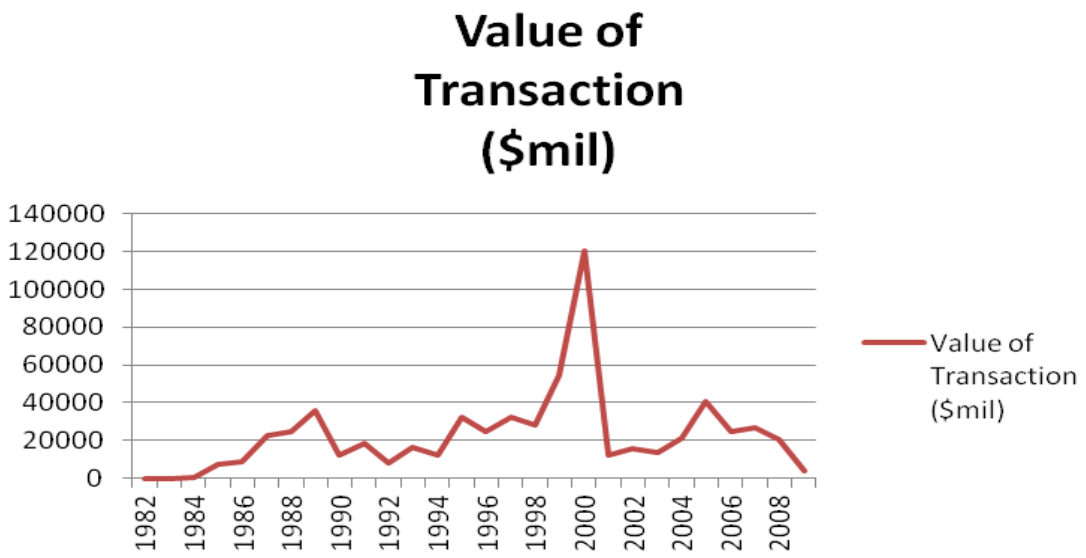

Figure 2.1 shows the volatility of UK M&A deal transaction values of the FTSE 100 during 1981–2010. There are three waves and the total value of transactions peaks first in 1989–1990. After that, the transactions decrease and subsequently peak in 1999–2000. In the middle of 2000, M&A activity collapsed and the value of takeover deals decreased and remained significantly below the peak of 1999–2000 until the end of 2010. After 2003, takeover market activity picked up but slowed down again in 2007 due to the worldwide sub-prime and credit crisis (Martynova and Renneboog, 2009).

4.2 Sample descriptive statistics

4.2.1. Sample descriptive statistics

Table 2.2 and 2.3 include two summary statistics for a sample of UK acquisitions and focuses on media coverage and media pessimism respectively, including the total number of observations, means, medians, and standard deviations of the financial, asset, and ownership structure variables under the media coverage classifications. The UK sample comprises 4,384 deals. Within 365 days

before the takeover announcements, 989 deals are covered by the media and 3,395 deals are not. Moreover, media pessimism level is also classified into high pessimism and low pessimism, and 494 deals are covered by the news with high pessimism and 494 with low pessimism.

In Table 2.2, the firm size of acquirers with media coverage is equal to £1.28 trillion, on average, while acquirers without media coverage have a mean size of £600.92 billion. These statistics show that the size of acquirers with media coverage is much greater compared to that of those without media coverage. This result is consistent with Chan (2003) and Da *et al*. (2011), who report a positive relation between firm size and the number of news articles released because of the costs faced by reporters in finding available information on small firms. Fang and Peress (2009) also find that large firms are much more likely to be covered by the media and firm size has a significant influence on media coverage. In Table 2.3, the average firm size of acquirers with high media pessimism is equal to £1467.47 billion, on average, while those with low media pessimism have a mean size of £1085.16 billion. These statistics show that the size of acquirers with high media pessimism is much greater than for those with low media pessimism.

The results of Table 2.2 show 36.68% of transactions are fully financed by cash and only 5.04% are fully financed by stock. The rest of the transactions are financed by a mix of cash and stock. Most acquirers in the United Kingdom prefer cash payments in takeovers. Martynova and Renneboog (2009) explain that the announcement of equity financing in takeovers is supposed to bring about lower returns for the acquirer's shareholders. The reason is investors think an equity payment is a signal that the bidding firm's shares are overvalued and therefore decrease the share price after equity financing is announced.

Moreover, in Table 3.2, the average market-to-book value of acquirers with media coverage is 3.08, while that without media coverage is 2.88. It shows that the market-to-book value of

acquirers with media coverage is larger than that of acquirers without media coverage. In Table 2.3, the average market-to-book value of acquirers with media coverage is 2.91, while that without media coverage is 3.25. It shows that the market-to-book value of acquirers with low media pessimism is also much larger than that of acquirers with high media pessimism. According to the previous literature, market-to-book ratio has predictive ability for stock returns (Fama and French (1992), Rosenberg et al. (1985) , Strong and Xu (1997)) and stocks with lower market-to-book ratios earn higher returns (Chen (2011)). Therefore, the results indicate that acquirers without media coverage outperform that with media coverage, and acquirers with high media pessimism obtain higher returns than that with low media pessimism.

In Table 2.2, the price to earnings ratios of acquirers with media coverage is 17.68, while that without media coverage is 18.2. It indicates that the price to earnings ratios of acquirers with media coverage is larger than that of acquirers without media coverage. In Table 2.3, the price to earnings ratios of acquirers with media coverage is 17.03, while that without media coverage is 18.34. It shows that the price to earnings ratios acquirers with low media pessimism is also much smaller than that of acquirers with high media pessimism. According to Houmes and Chira (2015), a lower price–earnings ratio (P/E ratio) will be accompanied by a higher rate of return. Therefore, the results indicate that acquirers with media coverage outperform that without media coverage, and acquirers with low media pessimism obtain higher returns than that with high media pessimism.

Both results of run-ups in Table 2.2, and 2.3 are positive. According to Meulbroek (1992) and Servaes (1991), a positive run-up implies that it may be caused by information leakage to the marketplace as a result of insider trading or market anticipation through the rumors in the media coverage.

[Insert Table 2.2 Here]

[Insert Table 2.3 Here]

4.2.2. Univariate Analysis: Media Coverage

This section reports the empirical relations between takeover returns and media coverage in the 1981–2010 sample, based on univariate tests. The results are stratified once more according to known determinants highlighted by the previous literature: the method of payment (i.e. cash versus stock) and acquirer size (i.e. large versus small).

Table 2.4 presents the means and preliminary analysis of the 11-day CARs for the full samples of deals with and without media coverage. The stocks are divided into a group with no media coverage and a group with media coverage and their difference is analysed. The results in Panel A show that over the 11-day event window, those deals with media coverage earn announcement returns of 1.5% (*p*-value: 0.000) and deals without media coverage earn returns of 1.2% (*p*-value: 0.000). Cash financed deals with media coverage earn announcement returns of 1.6% (*p*-value: 0.000) and deals with no media coverage earn 1.4% (*p*-value: 0.000) announcement returns. However, the two-sample statistical analysis between these two groups shows that the difference between takeovers with and without media coverage is 0.2% (*p*-value: 0.313) and insignificant in the short run, even when the method of payment of considered. This finding does not support the first hypothesis that media coverage significantly increases an acquirer's returns.

Panels B of Table 2.4 presents the means and preliminary analysis of the 11-day CARs for large firms. Over the 11-day event window, for large acquirers, those deals with media coverage earn announcement returns of 1.0% (*p*-value: 0.000) and deals without media coverage earn returns of 0.2% (*p*-value: 0.207). The two-sample statistical analysis between these two groups shows that for large acquirers, takeovers with media coverage statistically outperform takeovers without

media coverage in the short run by 0.8% (*p*-value: 0.013), on average. And considering about the payment, mixed financed deals also show a significant difference between deals with and without media coverage.

Panels C of Table 2.4 presents the means and preliminary analysis of the 11-day CARs for small firms. Over the 11-day event window, for small acquirers, those deals with media coverage earn announcement returns of 4.3% (*p*-value: 0.000) and deals without media coverage earn returns of 2.2% (*p*-value: 0.000). The two-sample statistical analysis between these two groups shows that for small acquirers, takeovers with media coverage statistically outperform takeovers without media coverage in the short run by 3.2% (*p*-value: 0.004), on average. When acquirers choose cash as the payment method, the results show that deals with media coverage earn 0.061% (*p*-value: 0.000) abnormal returns, while deals with no media coverage earn 0.023% (*p*-value: 0.000) abnormal returns. The two-sample statistical analysis between these two groups shows that for small acquirers, takeovers with media coverage statistically outperform takeovers without media coverage in the short run by 3.8% (*p*-value: 0.008), with the cash payment.

Panel D shows the results of the two-sample statistical analysis of the difference between large and small firms in the short run. First, the results indicate that for the whole sample, small firms outperform large firms by 1.8% (*p*-value: 0.000). For cash financed takeovers, small firms also outperform large firms by 2.1% (*p*-value: 0.000). For mixed financed takeovers, small firms also outperform large firms by 1.8% (*p*-value: 0.000). Second, for takeovers covered by news, small firms outperform large firms by 3.3% (*p*-value: 0.000). For cash financed takeovers covered by news, small firms also outperform large firms by 5.4% (*p*-value: 0.000). For mixed financed takeovers, small firms also outperform large firms by 1.8% (*p*-value: 0.000). Third, for takeovers with no media coverage, small firms outperform large firms by 1.9% (*p*-value: 0.000). For cash financed takeovers covered by news, small firms also outperform large firms by 1.9% (*p*-value:

0.000). For mixed financed takeovers, small firms also outperform large firms by 2.3% (*p*-value: 0.000).

[Insert Table 2.4 Here]

Table 2.5 presents the means and preliminary analysis of long-run performance with and without media coverage over a 12-month holding period after the announcement of takeovers. The results of Panel A show that deals with media coverage earn announcement returns of 4.3% (*p*-value: 0.000), while deals without media coverage lose 1% (*p*-value: 0.088) announcement returns. Both of these results are positively significant and cash-financed takeovers with media coverage earn 5.8% (*p*-value: 0.000) long-run returns which is significantly positive. Mixed-financed takeovers with media coverage earn 3.1% (*p*-value: 0.000) long-run returns while those without media coverage lose 2% (*p*-value: 0.000) long-run abnormal returns. Moreover, the two-sample statistical analysis between takeovers with and without media coverage shows that takeovers with media coverage statistically outperform takeovers without media coverage in the long run by 5.3% (*p*-value: 0.000), on average. Moreover, both cash-financed takeovers and mixed-financed takeovers with media coverage statistically outperform takeovers without media coverage in the long run by 5.0% (*p*-value: 0.004) and by 5.1% (0.001), respectively.

Panel B of Table 2.5 presents the means and preliminary analysis of the 11-day CARs for small firms. It shows large acquirers without media coverage lose 4.3% (*p*-value: 0.000) in announcement returns. Moreover, Panel B shows that cash-financed takeovers without media coverage lose a significant average of 3.3% (*p*-value: 0.017) returns in the long run and mixed-financed takeovers lose 5.3% (*p*-value: 0.000) returns. In addition, the two-sample statistical analysis between these two groups shows that large acquirers with media coverage statistically outperform takeovers without media coverage in the long run by 4.9% (*p*-value:

0.003). And mixed-financed takeovers with media coverage statistically outperform takeovers without media coverage in the long run by 6.0% (*p*-value: 0.012).

Panel C of Table 2.5 presents the means and preliminary analysis of the 11-day CARs for small firms. It indicates that small acquirers with media coverage earn 17.8% (*p*-value: 0.000) announcement returns, while acquirers without media coverage earn announcement returns of 2.6% (*p*-value: 0.011). Moreover, cash-financed takeovers with media coverage earn returns of 21.6% (*p*-value: 0.001) and mixed-financed takeovers with media coverage earn returns of 16.9% (*p*-value: 0.001). In addition, the results also demonstrate that small firms with media coverage outperform those without media coverage by 15.2% (*p*-value: 0.000). For cash-financed takeovers, small firms with media coverage outperform those without media coverage by 17.7% (*p*-value: 0.008), and for mixed-financed takeovers, small firms with media coverage outperform those without media coverage by 14.8% (*p*-value: 0.004).

Panel D of Table 2.5 shows the results of a two-sample statistical analysis between large and small firms. It indicates that takeovers in small firms statistically outperform takeovers in large firms by 17.2% (*p*-value: 0.000) and 6.9% (*p*-value: 0.000), with and without media coverage, respectively. Moreover, Panel D also shows that cash-financed deals in small firms statistically outperform takeovers in large firms by 2.2% (*p*-value: 0.002) and 7.2% (*p*-value: 0.001), with and without media coverage, respectively. Mixed-financed deals in small firms statistically outperform takeovers in large firms by 16.2% (*p*-value: 0.003) and 7.3% (*p*-value: 0.000), with and without media coverage, respectively.

[Insert Table 2.5 Here]

4.2.3. Univariate Analysis: Media Pessimism

Table 2.6 presents the means and preliminary analysis of the 11-day CARs with high and low pessimism. Media pessimism is assigned based on the highest 50% and the lowest 50%. The stocks are divided into a high-pessimism group and a low-pessimism group and the difference between them is computed. The results in Panel A show that those deals with high media pessimism earn 1.3% (*p*-value: 0.000) short-run abnormal returns, while deals with low media pessimism earn 1.7% (*p*-value: 0.000) short-run abnormal returns. Cash-financed deals with high media pessimism earn 1.0% (*p*-value: 0.020) short-run abnormal returns, while deals with low media pessimism earn 2.1% (*p*-value: 0.000) short-run abnormal returns. Mixed-financed deals with high media pessimism earn 1.5% (*p*-value: 0.000) short-run abnormal returns, while deals with low media pessimism earn 1.4% (*p*-value: 0.000) short-run abnormal returns. The results are all significant. However, the difference between high- and low-pessimism deal returns is negative 0.4% (*p*-value: 0.343) and not significant. For cash-financed deals, the difference between high- and low-pessimism deal returns is negative 1.1% (*p*-value: 0.076), which is statistically significant.

Panel B of Table 2.6 presents the means and preliminary analysis of the 12-month BHARs for large firms. The result indicates that, for large acquirers, deals with high media pessimism earn announcement returns of 1.0% (*p*-value: 0.008), while deals low media pessimism earn 1.1% (*p*-value: 0.008) announcement returns. Both of these results are positively significant and cash-financed takeovers with low media pessimism earn 1.0% (*p*-value: 0.079) long-run returns which is significantly positive. Mixed-financed takeovers with high media pessimism earn 1.4% (*p*-value: 0.014) long-run returns while those low media pessimism also earn 1.4% (*p*-value: 0.021) long-run abnormal returns. However, the difference between large acquirers with high-pessimism news and those with low-pessimism news is insignificant, even if the payment

method is considered.

Panel C of Table 2.6 presents the means and preliminary analysis of the 12-month BHARs for small firms. The result indicates that, for small acquirers, deals with high media pessimism earn announcement returns of 3.5% (*p*-value: 0.009), while deals low media pessimism earn 4.7% (*p*-value: 0.000) announcement returns. Both of these results are positively significant and cash-financed takeovers with low media pessimism earn 7.2% (*p*-value: 0.000) long-run returns which is significantly positive. Mixed-financed takeovers with high media pessimism earn 3.2% (*p*-value: 0.057) long-run returns while those low media pessimism also earn 3.2% (*p*-value: 0.002) long-run abnormal returns. However, the difference between small acquirers with high-pessimism news and those with low-pessimism news is insignificant, even if the payment method is considered.

Panel D of Table 2.6 shows, in the low-pessimism column, the difference between small and large acquirers is 3.7% (*p*-value: 0.000) and positively significant. In the high-pessimism column, the difference between small and large acquirers is 2.5% (*p*-value: 0.064) and also positively significant. These findings indicate that small acquirers earn higher announcement returns than large acquirers in both takeovers with low-pessimism news and high-pessimism news over the short run. Moreover, in takeovers with low or high media pessimism, small cash acquirers statistically outperform large cash acquirers by 6.3% (*p*-value: 0.001).

[Insert Table 2.6 Here]

Table 2.7 presents the means and preliminary analysis of 12-month BHARs with high- and low-pessimism. The results show that deals with low pessimism earn 7.2% (*p*-value: 0.000) long-run returns, cash-financed deals with low pessimism earn 9.5% (*p*-value: 0.000) long-run

returns, and mixed-financed deals with low pessimism earn 5.9% (*p*-value: 0.002) long-run returns. The difference between deals with high and low media pessimism is -5.9% (*p*-value: 0.003) and negatively significant. For cash-financed takeovers, the difference between deals with high and low media pessimism is -7.4% (*p*-value: 0.010) and negatively significant. For mixed-financed takeovers, the difference between deals with high and low media pessimism is -5.8% (*p*-value: 0.034) and negatively significant. These results show that highly pessimistic acquirers earn lower returns than less pessimistic acquirers, even the payment methods is cash or mixed. This result supports the second hypothesis.

Panel B of Table 2.6 presents the means and preliminary analysis of the 12-month BHARs for large firms. The result indicates that, for large acquirers, deals with high media pessimism lose announcement returns of 3.6% (*p*-value: 0.035), while deals low media pessimism earn 5.9% (*p*-value: 0.003) announcement returns. Cash-financed takeovers with high media pessimism lose 4.7% (*p*-value: 0.074) long-run returns while takeover with low media pessimism earn 7.2% (*p*-value: 0.000) long-run returns. Mixed-financed takeovers with low media pessimism earn 6.6% (*p*-value: 0.032) long-run returns. The two-sample statistical analysis between these two groups shows that for large acquirers, takeovers with low pessimism statistically outperform takeovers with high pessimism in the long run by 9.6% (*p*-value: 0.000), on average. When acquirers choose cash as the payment method, the two-sample statistical analysis between these two groups shows that for large acquirers, takeovers with low pessimism statistically outperform takeovers high pessimism in the short run by 9.9% (*p*-value: 0.005).

Panel C of Table 2.6 presents the means and preliminary analysis of the 12-month BHARs for small firms. The result indicates that, for small acquirers, deals with high media pessimism earn announcement returns of 17.7% (*p*-value: 0.018), while deals low media pessimism earn 17.8% (*p*-value: 0.000) announcement returns. Cash-financed takeovers with low media pessimism earn

22.1% (*p*-value: 0.000) long-run returns. Mixed-financed takeovers with high pessimism earn 17.1% (*p*-value: 0.062) abnormal returns and those with low media pessimism earn 16.7% (*p*-value: 0.009) long-run returns. However, the difference between small acquirers with high-pessimism news and those with low-pessimism news is insignificant, even if the payment methods are considered.

Panel D of Table 2.7 indicates that in the low-pessimism column, the difference between small and large firms is 11.9% (*p*-value: 0.009). In the high-pessimism column, the difference between small and large firms is 21.4% (*p*-value: 0.007). Both of the results show that takeovers with low pessimism and with high pessimism in small firms outperform takeovers with large firms. The result is also significant in the columns for pure cash and low pessimism.

Takeover abnormal returns with media coverage are higher, on average, than those without media coverage in the long run. However, there is no evidence to show that takeover abnormal returns with media coverage are higher, on average, than those without media coverage in the short run, except when cash is the payment method. In addition, takeover abnormal returns with low media pessimism are higher, on average, than those with high media pessimism in the long run. However, there are no significant results showing the relation between takeover abnormal returns and media pessimism in the short run.

[Insert Table 2.7 Here]

4.2.4. Multivariate Analysis: Media Coverage

Univariate analysis is unable to take more factors into account because of its inherent limitations and it is unable to examine the relations between different factors. Correlations or inversions cannot be modelled using univariate analysis. Moreover, multivariate tests may be expected to

create more accurate predictions than univariate tests (Preez and Witt 2003). Therefore, multivariate analysis with additional controls is employed to examine the relations between takeover returns and media coverage and between takeover returns and media pessimism.

The results of a multivariate analysis for media coverage are reported in Table 2.8. This section reports the empirical relations between takeover returns and a media coverage dummy in the 1981–2010 sample with 4384 takeover deals, based on multivariate tests. All regressions include variables for size, method of payment, the book-to-market ratio, run-up, public deals, diversifying deals, tender offers, hostile, PE ratios, EBITDA, leverage, year, and industry as controls. Since winsorization replaces extreme data values with less extreme values, accounting variables at the 5% and 95% levels are winsorized to mitigate the influence of outliers.

First, the 11-day CAR(-5, 5) values for 365 days of media coverage during the period of 11 days before the takeover announcements to 11 days after the announcements are computed. The key independent variable is the media coverage dummy for a stock in a given period. Column (1) in Table 2.8 shows that the *p*-value is 0.055, which is statistically significant, and the estimated coefficient is 0.005 and positive. These findings indicate that 365-day media coverage is positively correlated with short-run firm returns. The result is therefore in line with the univariate tests and with the findings of Fang and Peress (2009): Financial media coverage has a significant impact on the stock market.

Second, Table 2.8 also reports the 12-month BHAR results for media coverage sample. Column (2) in Table 2.8 shows that the *p*-value is 0.000, which is statistically significant. The estimated coefficient is 0.069 and positive. This result indicates that the 365-day media coverage is strongly correlated with long-run firm returns and it is in line with short-run firm returns.

The findings are related to those of Shiller (2002) and Barber and Odean (2008). Shiller (2000) notes that media coverage has a major impact on stock trading and returns. Moreover, Barber and Odean (2008) propose the investor recognition hypothesis as an explanation of the role media coverage plays in stock prices. According to this hypothesis, in deciding which stocks to buy among a large amount of available stocks, investors prefer those that catch their attention and then filter through these stocks according to their investment preferences. Hence, media coverage plays a crucial role in influencing investor choice in both the short run and long run. The returns of stocks covered by the media should be higher than those without media coverage because investors receive more information and know more about the condition of the firms. The results are consistent with the findings of Barber and Odean (2008) and show that the 11-day CARs and 12-month BHARs are highly correlated with media coverage, since they display a positive and statistically significant (at the 10% confidence level or less) relation when media coverage is within 365 days before the takeover announcements.

Over both the short run and long run, the size of the bidding firms 365 days before a takeover is shown to be statistically and negatively related to bidding firm returns. This finding indicates that the larger a firm, the lower the long-run return for its shareholders. This result is consistent with that of Fama and French (1993) regarding the influence of size on firm returns. The logarithm of the EBITDA of bidding firms is shown to be statistically positively related to bidding firm returns. The variables Cash and RelativeSize are shown to be positively related to acquirer abnormal returns when the news covers a period 365 days prior to the announcement. Moreover, the run-up and market-to-book ratio are positively related to long-run firm returns while Leverage is negatively related to long-run returns. In addition, the other control variables, Stock, PE ratio, Public, Diversification, Hostile, and Tender are all generally found to be unrelated to short-run

and long-run bidding firm returns.[10]

[Insert Table 2.8 Here]

4.2.5. Multivariate Analysis: Media Pessimism

The results of a multivariate analysis are reported in Table 2.9. This section reports the empirical relations between takeover returns and a media pessimism in the 1981–2010 sample with 989 takeover deals, based on multivariate tests. First, the 11-day CAR(-5, 5) values for 365 days of media pessimism are computed during the period 11 days before the takeover announcement to 11 days after the announcement. The key independent variable is the media coverage dummy about a stock in a given period. Column (1) in Table 2.9 reports that its *p*-value is 0.012, which is statistically significant, and the estimated coefficient is -0.004. These findings indicate that the 365-day media pessimism is negatively correlated with short-run firm returns. Second, Table 2.9 also reports the 12-month BHAR results for the media coverage sample. Column (2) in Table 2.9 indicates that its *p*-value is 0.002 and the estimated coefficient is -0.022. These findings are consistent with the short-run results and indicate that the 365-day media pessimism is negatively correlated with long-run firm returns. In other words, the lower the media pessimism, the higher the firm returns in the long run.

Similar to the media coverage sample, over both the short run and long run, the size of bidding firms during the period between 365 days and one day before the announcement date is shown to be statistically and negatively related to bidding firm returns. This finding indicates that the larger a firm, the lower the long-run returns for its shareholders. This result is consistent with that of Fama and French (1993) regarding the influence of size on firm returns. The logarithm of the EBITDA of the bidding firms is shown to be statistically positively related to bidding firm returns.

[10] The results show that the influence of media coverage and media sentiment is strongest in small acquirers. Fama and French (1993) suggests that small equities have higher average returns than large equities and higher average returns are thought as compensation for higher risks.

Moreover, RelativeSize is positively related to returns, while the Public variable is negatively related to firm returns in the short run. In addition, the other control variables – Stock, Cash, MTBV, Run-up, Leverage, PE Raito, Public, Diversification, Hostile, and Tender – are all generally found to be unrelated to short-run and long-run bidding firm returns.

[Insert Table 2.9 Here]

The findings are consistent with those of Tetlock *et al*. (2008), who demonstrate that fundamental information transmitted by the financial news resolves the problem of information asymmetry. Therefore, financial news can provide additional information for investors with which to evaluate their prospects in M&A deals and hence reduce information asymmetry. Moreover, this result is in line with the findings of Durnev and Mangen (2011) and Tetlock (2007), who state that high media pessimism forecasts a decrease in future stock returns. In addition, using textual analysis software to quantify the tone in press releases, Davis and Tama-Sweet (2012) discover similar findings, that higher levels of pessimistic are associated with lower future return on assets. However, these findings are not consistent with those of Huang *et al*. (2013), who report that abnormal positive tone in the earnings press release is associated with poor future earnings in the long run. Managers tend to mislead investors through tone manipulation.

5. Robustness Tests

In this section, a number of robustness tests and explore a number of alternative explanations. To use different event window are briefs described, the short-run pre-announcement window is changed from 11 days to 5 days and the long-run window is changed from 12 months to 36 months. Most of the results are consistent with the main findings when different event windows are employed.

The results of the robustness test for media coverage are reported in Table 2.10. First, the 5-day CAR(-2, 2) values for 365-days media coverage during the period of 2 days before the takeover announcements to 2 days after the announcements are computed. The key independent variable is the media coverage dummy for a stock in a given period. Column (1) in Table 2.10 shows that the *p*-value is 0.058, which is statistically significant, and the estimated coefficient is 0.004 and positive. These findings indicate that 365-day media coverage is positively correlated with short-run firm returns. Second, Table 2.10 also reports the 36-month BHAR results for media coverage sample. Column (1) in Table 2.10 shows that the *p*-value is 0.000, which is statistically significant, and the estimated coefficient is 0.171 and positive. These findings indicate that 365-day media coverage is positively correlated with long-run firm returns.

[Insert Table 2.10 Here]

The results of the robustness test for media pessimism are reported in Table 2.11. First, the 5-day CAR(-2, 2) values for 365-days media pessimism during the period of 2 days before the takeover announcements to 2 days after the announcements are computed. The key independent variable is the media pessimism for a stock in a given period. Column (1) in Table 2.11 shows that the *p*-value is 0.212, which is insignificant, and the estimated coefficient is -0.001. These findings indicate that 365-day media pessimism is not correlated with short-run firm returns. Second, Table 2.11 also reports the 36-month BHAR results for media coverage sample. Column (1) in Table 2.11 shows that the *p*-value is 0.016, which is statistically significant, and the estimated coefficient is 0.044 and negative. These findings indicate that 365-day media pessimism is negatively correlated with long-run firm returns.

[Insert Table 2.11 Here]

6. Endogeneity

The analysis so far suggests a positive relation between media coverage and 11-day cumulative abnormal returns. Moreover, a negative relation between media pessimism and 12-month buy and hold abnormal returns is also shown in the analysis. However, the potential endogenous relation between CAR/BHAR and media coverage/media pessimism is a concern in the analysis. Endogeneity can arise due to unobservable heterogeneity when unobservable firm-specific factors affect media coverage, media pessimism, CAR and BHAR.

The instrumental variables method is applied to address endogeneity. Following prior studies (e.g., El Ghoul et al. (2011)), the media coverage published between 365 days and 730 days before the takeover announcements is used as the instrumental variable in this thesis. The results of the instrumental variables are reported approach in columns (1) and (2) of Table 2.12. The coefficients on the fitted value of media coverage are significantly positive for CAR11, suggesting that the positive relation between media coverage and 11-day cumulative abnormal returns holds after controlling for endogeneity based on the instrumental variables methodology. Moreover, The coefficients on the fitted value of media pessimism are significantly negative for BHAR12, suggesting that the positive relation between media pessimism and 12-month buy and hold abnormal returns holds after controlling for endogeneity based on the instrumental variables methodology.

[Insert Table 2.12 Here]

7. Conclusion

This paper addresses the question of whether media coverage and media pessimism can influence bidder return in M&As during the period of 1981-2010 for UK market. Controlling for firm size, method of payment and acquirer/target industry. The empirical results indicate that, over the short term, deals with media coverage outperform deals without media coverage. Moreover, the result

shows a significantly negative correlation between media pessimism and post-merger performance in the long term.

The first hypothesis proposes that deals with media coverage prior to the merger announcement should outperform deals without such media coverage. Theoretically, this is based on the market sentiment theory by Shiller (2000) and investor recognition theory by Merton (1987). Market sentiment theory proposes that market sentiment is motivated by news content and media coverage has a major impact on stock trading and returns. Moreover, scheduled news announcements contributes to reduce information uncertainty, and unscheduled news announcements increase information uncertainty (Jiang et al. (2012)). This outperformance remains even after controlling for a number of known anomalies. However, there is no relation between media pessimism and long-run abnormal returns. This result is consistent with Bradley et al (2008) who states that long-run stock returns will not be affected by analysts' research coverage.

Furthermore, a significantly negative interaction between media pessimism and market response to takeover announcements has been found from the empirical results which indicate that there is a significantly negative interaction between media pessimism and market response to takeover announcements over the long run but not over the short during the takeover event. The results are in line with Chan (2003) who states that stocks with media coverage in the event month have a tendency to reverse in the long run because investment practitioners overreact to the spurious movements of stock price in the short-run. However, The results are in contrast to the view of Tetlock (2007), who found that high media pessimism predicts downward pressure on market prices followed by a reversion to fundamentals, and unusually high or low pessimism predicts high market trading volume.

The results indicate that the media coverage and media sentiment have statistically significant influences on firm performance which open up many future research avenues, one area particularly interest is to analyse whether media coverage and media sentiment influence the failure or success of takeover deals. And media coverage quantity can also be examined, that is, whether deals with high media coverage prior to the merger announcement outperform deals with low media coverage prior to the announcement.

Table 2.1 Summary Statistics of Media Sources

This table reports the summary statistics of media sources, including four main media sources. Other media sources including FT online and Times online. It also shows the number of news items and their percentage among all the sources.

	Number of news items	Percentage
Top four media sources	270,967	98.821
Financial Times	143,017	52.158
The Times (London)	56,694	20.676
The Guardian (London)	45,465	16.581
The Mirror	25,791	9.406
Other media sources	3,234	1.179
Total	274,201	

Table 2.2 Summary Statistics: Media Coverage

This table reports the summary statistics for the full sample and focuses on the media coverage. The media coverage variable is a dummy variable that takes the value one if there are articles covering takeover news are published on a given period. Table 2.2 presents the overview of the variables with media coverage which is published within 365 days before the takeover announcements and the variables without media coverage data. This table also presents the total number of observations, means, medians and standard deviations of the financial, asset, and ownership structure variables under the media coverage classifications. The total number of observations is 4384 deals. There are 989 deals with media coverage and there are 3395 deals without media coverage. The CAR (-5,+5) is acquirer's 11-day cumulative announcement abnormal return. The CAR is measured by using the formula $CAR_i = \sum_{i=0}^{n} AR_i$. The BHAR (0, +12) is 12-month buy-and-hold abnormal return measured from the announcement date. The buy-and-hold abnormal return is measured using the formula $BHAR_{it} = \prod_{t=0}^{T}[1 + R_{it}] - \prod_{t=0}^{T}[1 + R_{mt}]$. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Book-to-market ratio is book-value of acquirer divided by market value of acquirer, as of the end of the previous year. RUNUP is the stock performance of the acquirer prior to the takeover announcement measured using the CAR [-365, -7]. Leverage is the percentage of total debt divided by total capital in annual terms and is measured at the year prior to the deal announcement. EBITDA is a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year. Cash is deals financed using 100%, Stock is 100% stock. Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Hostile, public, tender and diversification are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise.

	All Sample				With Media Coverage				No Media Coverage			
	Mean	**SD**	**Median**	**N**	**Mean**	**SD**	**Median**	**N**	**Mean**	**SD**	**Median**	**N**
Media Coverage	0.23	0.42	0	4384	1	0	1	989	0	0	0	3395
CAR	0.01	0.07	0.01	4384	0.01	0.06	0.01	989	0.01	0.07	0.01	3395
BHAR	-0.06	0.33	-0.06	4384	0	0.31	0.02	989	-0.07	0.34	-0.08	3395
Stock	0.05	0.22	0	221	0.04	0.19	0	37	0.05	0.23	0	184
Cash	0.37	0.48	0	1608	0.43	0.49	0	422	0.35	0.48	0	1186
Run-up	0.13	0.34	0.12	4384	0.12	0.32	0.11	989	0.14	0.35	0.12	3395
Size	753.03	1193.34	234.86	4384	1275.21	1480.29	553.57	989	600.92	1048.11	168.33	3395
MTBV	2.92	2.27	2.21	4384	3.08	2.29	2.39	989	2.88	2.26	2.15	3395
PE	18.09	10.05	15.2	4384	17.68	9.11	15.4	989	18.2	10.31	15.1	3395
RelativeSize	0.11	0.15	0.04	4384	0.08	0.13	0.03	989	0.11	0.15	0.05	3395
Leverage	26.18	17.96	25.54	4384	28.39	18.06	27.14	989	25.54	17.88	24.96	3395
Public	0.12	0.33	0	4384	0.13	0.34	0	989	0.12	0.32	0	3395
Diversification	0.52	0.5	0	4384	0.47	0.5	0	989	0.53	0.5	1	3395
EBITDA	10.55	1.51	10.46	4384	11.4	1.35	11.32	989	10.3	1.47	10.14	3395
Tender	0.09	0.28	0	4384	0.09	0.29	0	989	0.08	0.28	0	3395
Hostile	0.01	0.09	0	4384	0.01	0.08	0	989	0.01	0.09	0	3395

Table 2.3 Summary Statistics: Media Pessimism

This table reports the summary statistics for the full sample and focuses on the media pessimism. News is published within 365 days before the takeover announcements. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top half are then classified as high pessimism, while the bottom half are classified as low pessimism. The deals are ranked by size from highest to lowest. The top 33% are then classified as large firms, while the bottom 33% are classified as small firms. Table 2.3 presents the overview of the variables with high media pessimism and with low media coverage. This table also presents the total number of observations, means, medians and standard deviations of the financial, asset, and ownership structure variables under the media coverage classifications. The total number of observations is 4384 deals. There are 989 deals with media coverage and there are 3395 deals without media coverage. The CAR (-5,+5) is acquirer's 11-day cumulative announcement abnormal return. The CAR is measured by using the formula $CAR_i = \sum_{i=0}^{n} AR_i$. The BHAR (0, +12) is 12-month buy-and-hold abnormal return measured from the announcement date. The buy-and-hold abnormal return is measured using the formula $BHAR_{it} = \prod_{t=0}^{T}[1 + R_{it}] - \prod_{t=0}^{T}[1 + R_{mt}]$. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Book-to-market ratio is book-value of acquirer divided by market value of acquirer, as of the end of the previous year. RUNUP is the stock performance of the acquirer prior to the takeover announcement measured using the CAR [-365, -7]. Leverage is the percentage of total debt divided by total capital in annual terms and is measured at the year prior to the deal announcement. EBITDA is a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year. Cash is deals financed using 100%, Stock is 100% stock. Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Hostile, public, tender and diversification are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise.

	Media Pessimism Sample				**High Media Pessimism**				**Low Media Pessimism**			
	Mean	**SD**	**Median**	**N**	**Mean**	**SD**	**Median**	**N**	**Mean**	**SD**	**Median**	**N**
Pessimism	-0.02	0.6	0.01	989	0.02	0.04	0.01	494	-0.06	0.85	0	494
CAR	0.01	0.07	0.01	4384	0.01	0.06	0.01	494	0.02	0.06	0.01	494
BHAR	-0.06	0.33	-0.06	4384	-0.02	0.31	0.01	494	0.02	0.3	0.02	494
Stock	0.05	0.22	0	221	0.03	0.17	0	15	0.04	0.21	0	22
Cash	0.37	0.48	0	1608	0.44	0.5	0	217	0.41	0.49	0	204
Run-up	0.13	0.34	0.12	4384	0.09	0.32	0.09	494	0.15	0.31	0.12	494
Size	753.03	1193.34	234.86	4384	1467.47	1534.71	752.49	494	1085.16	1400.15	437.46	494
MTBV	2.92	2.27	2.21	4384	2.91	2.1	2.33	494	3.25	2.46	2.51	494
PE	18.09	10.05	15.2	4384	17.03	8.61	15.1	494	18.34	9.55	15.65	494
RelativeSize	0.11	0.15	0.04	4384	0.07	0.13	0.02	494	0.09	0.14	0.03	494
Leverage	26.18	17.96	25.54	4384	29.6	18.37	27.75	494	27.23	17.68	26.13	494
Public	0.12	0.33	0	4384	0.14	0.35	0	494	0.13	0.33	0	494
Diversification	0.52	0.5	0	4384	0.48	0.5	0	494	0.46	0.5	0	494
EBITDA	10.55	1.51	10.46	4384	11.62	1.32	11.61	494	11.17	1.36	11.08	494
Tender	0.09	0.28	0	4384	0.1	0.29	0	494	0.09	0.28	0	494
Hostile	0.01	0.09	0	4384	0.01	0.1	0	494	0	0.04	0	494

Table 2.4 Univariate Tests: Media coverage in the short-run

This table reports acquirer short-run 11-day cumulative announcement abnormal returns (CARs) for the full sample. The CAR is measured by using the formula $CAR_i = \sum_{i=0}^{n} AR_i$. The media coverage published within 365 days before the takeover announcements. The No Media sample contains those deals which are not covered by the news while the With Media sample relates to those deals which are covered by the news. Size is measured as the average market value of acquirers over the previous calendar year (in millions). The deals are ranked by size from highest to lowest. The top 33% are then classified as large firms, while the bottom 33% are classified as small firms.Column Differential relates to the differential performance between deals with media coverage and without media coverage (With Media -No Media). Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Panel A relates to the full sample (Full Sample); Panel B relates to larger acquirers as measured as those firms in the highest one third of bidders once ranked by their market value(Large Firms); Panel C relates to small acquirers as measured as those firms in the lowest one third of bidders once ranked by their market value(Small Firms); and Panel D relates to the differential performance between small and large bidders (Panel C -Panel B). The *p*-value is shown in parentheses and is calculated using the t-test for CARs. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	All				**No Media**				**With Media**				**Differential (With Media - No Media)**			
	All	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**
Panel A: All Firms																
Mean	0.013***	0.014***	0.005	0.013***	0.012***	0.014***	0.003	0.013***	0.015***	0.016***	0.012	0.014***	0.002	0.002	0.009	0.002
***p* -Value**	0.000	0.000	0.363	0.000	0.000	0.000	0.580	0.000	0.000	0.000	0.311	0.000	0.313	0.585	0.493	0.574
N	4384	1608	221	2555	3395	1186	184	2025	989	422	37	530				
Panel B: Large Firms																
Mean	0.005***	0.005**	0.006	0.005**	0.002	0.004*	0.008	0.000	0.010***	0.006	-0.001	0.014***	0.008**	0.002	-0.009	0.014***
p -Value	0.001	0.019	0.477	0.015	0.207	0.088	0.390	0.965	0.000	0.105	0.970	0.000	0.013	0.668	0.641	0.002
N	1461	620	70	771	927	386	51	490	534	234	19	281				
Panel C: Small Firms																
Mean	0.023***	0.026***	0.004	0.023***	0.022***	0.023***	0.000	0.023***	0.043***	0.061***	0.037	0.032***	0.021***	0.038***	0.037	0.009
p -Value	0.000	0.000	0.700	0.000	0.000	0.000	0.984	0.000	0.000	0.000	0.223	0.000	0.004	0.008	0.237	0.302
N	1461	459	90	912	1355	420	81	854	106	39	9	58				
Panel D: Differential (Panel C - Panel B)																
Mean	0.018***	0.021***	-0.002	0.018***	0.019***	0.019***	-0.008	0.023***	0.033***	0.054***	0.037	0.018*				
p -Value	0.000	0.000	0.856	0.000	0.000	0.000	0.537	0.000	0.000	0.000	0.262	0.055				

Table 2.5 Univariate Tests: Media coverage in the long-run

This table reports the acquirer long run 12-month Buy-and-Hold Abnormal Returns (BHARs) for the full sample. The buy-and-hold abnormal return is measured using the formula $BHAR_{it} = \prod_{t=0}^{T}[1 + R_{it}] - \prod_{t=0}^{T}[1 + R_{mt}]$. The media coverage published within 365 days before the takeover announcements. The No Media sample contains those deals which are not covered by the news while the With Media sample relates to those deals which are covered by the news. Size is measured as the average market value of acquirers over the previous calendar year (in millions). The deals are ranked by size from highest to lowest. The top 33% are then classified as large firms, while the bottom 33% are classified as small firms. Column Differential relates to the differential performance between deals with media coverage and without media coverage (With Media -No Media). Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Panel A relates to the full sample (Full Sample); Panel B relates to larger acquirers as measured as those firms in the highest one third of bidders once ranked by their market value(Large Firms); Panel C relates to small acquirers as measured as those firms in the lowest one third of bidders once ranked by their market value(Small Firms); and Panel D relates to the differential performance between small and large bidders (Panel C -Panel B). The *p* -Value is shown in parentheses and is calculated using the t-test for BHARs. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	All				**No Media**				**With Media**				**Differential (With Media - No Media)**			
	All	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**
Panel A: All Firms																
Mean	0.043***	0.021**	0.001	-0.010	-0.010*	0.008	-0.009	-0.020***	0.043***	0.058***	0.051	0.031**	0.053***	0.050***	0.060	0.051***
***p*-Value**	0.000	0.010	0.976	0.157	0.088	0.413	0.724	0.009	0.000	0.000	0.313	0.025	0.000	0.004	0.284	0.001
N	4384	1608	221	2555	3395	1186	184	2025	989	422	37	530				
Panel B: Large Firms																
Mean	0.005***	0.005**	0.006	0.005**	-0.043***	-0.033**	-0.031	-0.053***	0.005	-0.004	0.089	0.007	0.049***	0.029	0.120	0.060**
***p*-Value**	0.001	0.019	0.477	0.015	0.000	0.017	0.493	0.000	0.683	0.843	0.315	0.716	0.003	0.184	0.197	0.012
N	1461	620	70	771	927	386	51	490	534	234	19	281				
Panel C: Small Firms																
Mean	0.023***	0.026***	0.004	0.023***	0.026**	0.039	0.010	0.020	0.178***	0.216***	0.070	0.169***	0.152***	0.177***	0.060	0.148***
***p*-Value**	0.000	0.000	0.700	0.000	0.011	0.034	0.817	0.110	0.000	0.001	0.574	0.001	0.000	0.008	0.643	0.004
N	1461	459	90	912	1355	420	81	854	106	39	9	58				
Panel D: Differential (Panel C - Panel B)																
Mean	0.018***	0.021***	-0.002	0.018***	0.069***	0.072***	0.041	0.073***	0.172***	0.220***	-0.019	0.162***				
***p*-Value**	0.000	0.000	0.856	0.000	0.000	0.001	0.487	0.000	0.000	0.002	0.892	0.003				

Table 2.6 Univeriate Tests: Media pessimism in the short-run

This table reports acquirer short-run 11-day cumulative announcement abnormal returns (CARs) for the full sample. The media coverage published within 365 days before the takeover announcements. The CAR is measured using the formula $CAR_i = \sum_{i=0}^{n} AR_i$. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top half are then classified as high pessimism, while the bottom half are classified as low pessimism. Size is measured as the average market value of acquirers over the previous calendar year (in millions). The deals are ranked by size from highest to lowest. The top 33% are then classified as large firms, while the bottom 33% are classified as small firms. Column Differential relates to the differential performance between deals with high media pessimism and with low media pessimism (High -Low). Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Panel A relates to the full sample (Full Sample); Panel B relates to larger acquirers as measured as those firms in the highest one third of bidders once ranked by their market value(Large Firms); Panel C relates to small acquirers as measured as those firms in the lowest one third of bidders once ranked by their market value(Small Firms); and Panel D relates to the differential performance between small and large bidders (Panel C -Panel B). The p-Value is shown in parentheses and is calculated using the t-test for CARs. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	All				**Low Media Pessimism**				**High Media Pessimism**				**Differential (High - Low)**			
	All	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**
Panel A: All Firms																
Mean	0.013***	0.014***	0.005	0.013***	0.017***	0.021***	0.009	0.014***	0.013***	0.010**	0.016	0.015***	-0.004	-0.011*	0.007	0.001
***p*-Value**	0.000	0.000	0.363	0.000	0.000	0.000	0.574	0.000	0.000	0.020	0.373	0.000	0.343	0.076	0.756	0.874
N	4384	1608	221	2555	494	204	22	268	494	217	15	262				
Panel B: Large Firms																
Mean	0.005***	0.005**	0.006	0.005**	0.011***	0.010*	-0.019	0.014**	0.010***	0.003	0.020	0.014**	-0.001	-0.006	0.039	0.000
***p*-Value**	0.001	0.019	0.477	0.015	0.008	0.079	0.371	0.021	0.008	0.521	0.424	0.014	0.875	0.408	0.226	0.963
N	1461	620	70	771	233	104	10	119	301	130	9	162				
Panel C: Small Firms																
Mean	0.023***	0.026***	0.004	0.023***	0.047***	0.072***	0.039	0.032***	0.035***	0.039	0.033	0.032*	-0.012	-0.033	-0.006	0.000
***p*-Value**	0.000	0.000	0.700	0.000	0.000	0.000	0.315	0.002	0.009	0.113	0.624	0.057	0.415	0.244	0.933	0.997
N	1461	459	90	912	69	25	6	38	37	14	3	20				
Panel D: Differential (Panel C - Panel B)																
Mean	0.018***	0.021***	-0.002	0.018***	0.037***	0.063***	0.058	0.018	0.025*	0.036	0.013	0.017				
***p*-Value**	0.000	0.000	0.856	0.000	0.000	0.001	0.181	0.118	0.064	0.151	0.849	0.301				

Table 2.7 Univariate Tests: Media pessimism in the long-run

This table reports the acquirer long run 12-month Buy-and-Hold Abnormal Returns (BHARs) for the full sample. The buy-and-hold abnormal return is measured by using the formula $BHAR_{it} = \prod_{t=0}^{T}[1 + R_{it}] - \prod_{t=0}^{T}[1 + R_{mt}]$. The media coverage published within 365 days before the takeover announcements. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top half are then classified as high pessimism, while the bottom half are classified as low pessimism. Size is measured as the average market value of acquirers over the previous calendar year (in millions). The deals are ranked by size from highest to lowest. The top 33% are then classified as large firms, while the bottom 33% are classified as small firms. Column Differential relates to the differential performance between deals with high media pessimism and with low media pessimism (High -Low). Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Panel A relates to the full sample (Full Sample); Panel B relates to larger acquirers as measured as those firms in the highest one third of bidders once ranked by their market value(Large Firms); Panel C relates to small acquirers as measured as those firms in the lowest one third of bidders once ranked by their market value(Small Firms); and Panel D relates to the differential performance between small and large bidders (Panel C -Panel B). The *p*-Value is shown in parentheses and is calculated using the t-test for BHARs. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	All				Low Media Pessimism				High Media Pessimism				Differential (High - Low)			
	All	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**
Panel A: All Firms																
Mean	0.043***	0.021**	0.001	-0.010	0.072***	0.095***	0.018	0.059***	0.013	0.020	0.098	0.002	-0.059***	-0.074**	0.080	-0.058**
***p*-Value**	0.000	0.010	0.976	0.157	0.000	0.000	0.768	0.002	0.365	0.349	0.296	0.925	0.003	0.010	0.468	0.034
N	4384	1608	221	2555	494	204	22	268	494	217	15	262				
Panel B: Large Firms																
Mean	0.005***	0.005**	0.006	0.005**	0.059***	0.051**	0.061	0.066**	-0.036**	-0.047*	0.119	-0.036	-0.096***	-0.099***	0.058	-0.102
***p*-Value**	0.001	0.019	0.477	0.015	0.003	0.029	0.651	0.032	0.035	0.074	0.370	0.141	0.000	0.005	0.733	0.010
N	1461	620	70	771	233	104	10	119	301	130	9	162				
Panel C: Small Firms																
Mean	0.023***	0.026***	0.004	0.023***	0.178***	0.221***	0.066	0.167***	0.177**	0.207	0.078	0.171*	0.000	-0.014	0.013	0.004
***p*-Value**	0.000	0.000	0.700	0.000	0.000	0.000	0.521	0.009	0.018	0.242	0.837	0.062	0.995	0.919	0.993	0.965
N	1461	459	90	912	69	25	6	38	37	14	3	20				
Panel D: Differential (Panel C - Panel B)																
Mean	0.018***	0.021***	-0.002	0.018***	0.119***	0.170**	0.004	0.101	0.214***	0.255	-0.041	0.208**				
***p*-Value**	0.000	0.000	0.856	0.000	0.009	0.015	0.977	0.121	0.007	0.149	0.960	0.033				

Table 2.8 Multivariate Tests: Media Coverage

This table reports acquirer short-run 11-day cumulative announcement abnormal returns (CARs) and acquirer long run 12-month Buy-and-Hold Abnormal Returns (BHARs) for the full sample. The media coverage published within 365 days before the takeover announcements. The CAR is measured by using the formula $CAR_i = \sum_{i=0}^{n} AR_i$. The buy-and-hold abnormal return is measured by using the formula $BHAR_{it} = \prod_{t=0}^{T}[1 + R_{it}] - \prod_{t=0}^{T}[1 + R_{mt}]$. Column (1) reports the results for the media coverage samples in the short run while Column (2) refers to the media coverage samples in the long run. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Book-to-market ratio is book-value of acquirer divided by market value of acquirer, as of the end of the previous year. RUNUP is the stock performance of the acquirer prior to the takeover announcement measured using the CAR [-365, -7]. Leverage is the percentage of total debt divided by total capital in annual terms and is measured at the year prior to the deal announcement. EBITDA is a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year. Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Hostile, public, tender and diversification are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise. The mean of CAR and BHAR are reported with the *p*-value in parentheses. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	(1) Short-run Media Coverage	(1) Long-run Media Coverage
Media Coverage	0.005*	0.069***
	(0.055)	(0.000)
STOCK	-0.000	0.026
	(0.930)	(0.362)
CASH	0.004*	0.026**
	(0.057)	(0.017)
WRUNUP_365_7	0.002	0.080***
	(0.600)	(0.000)
WLNMV	-0.013***	-0.154***
	(0.000)	(0.000)
WMTBV	0.001	0.016***
	(0.188)	(0.001)
WPE	0.000	0.001
WRelativeSize	0.041***	0.100**
	(0.000)	(0.022)
WLeverage	-0.000	-0.001**
	(0.345)	(0.015)
Public	-0.019***	-0.022
	(0.000)	(0.250)
Diversification	0.002	-0.010
	(0.499)	(0.366)
WLNEBITDA	0.009***	0.148***
	(0.003)	(0.000)
Tender	-0.003	0.000
	(0.524)	(0.995)
Hostile	-0.001	0.028
	(0.955)	(0.532)
_cons	-0.039*	-1.023***
	(0.058)	(0.000)
N	4384	4384
R-sq	0.064	0.129
adj. R-sq	0.051	0.117

Table 2.9 Multivariate Tests: Media Pessimism

This table reports acquirer short-run 11-day cumulative announcement abnormal returns (CARs) and acquirer long run 12-month Buy-and-Hold Abnormal Returns (BHARs) for the full sample. The media coverage published within 365 days before the takeover announcements. The CAR is measured by using the formula $CAR_i = \sum_{i=0}^{n} AR_i$. The buy-and-hold abnormal return is measured by using the formula $BHAR_{it} = \prod_{t=0}^{T}[1 + R_{it}] - \prod_{t=0}^{T}[1 + R_{mt}]$. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top half are then classified as high pessimism, while the bottom half are classified as low pessimism. Column (1) reports the results for the media pessimism samples in the short run while Column (2) refers to the media pessimism samples in the long run. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Book-to-market ratio is book-value of acquirer divided by market value of acquirer, as of the end of the previous year. RUNUP is the stock performance of the acquirer prior to the takeover announcement measured using the CAR [-365, -7]. Leverage is the percentage of total debt divided by total capital in annual terms and is measured at the year prior to the deal announcement. EBITDA is a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year. Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Hostile, public, tender and diversification are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise. The mean of CAR and BHAR are reported with the *p*-value in parentheses. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	(1) Short-run Media Pessimism	(1) Long-run Media Pessimism
Pessimism	-0.004**	-0.022***
	(0.012)	(0.002)
STOCK	0.007	0.008
	(0.599)	(0.886)
CASH	0.003	0.017
	(0.479)	(0.424)
WRUNUP_365_7	0.007	0.084
	(0.442)	(0.130)
WLNMV	-0.016**	-0.146***
	(0.019)	(0.000)
WMTBV	-0.000	0.011
	(0.944)	(0.236)
WPE	0.000	0.002
	(0.399)	(0.283)
WRelativeSize	0.040*	0.103
	(0.063)	(0.229)
WLeverage	-0.000	-0.001
	(0.393)	(0.263)
Public	-0.015*	-0.011
	(0.097)	(0.775)
Diversification	0.004	-0.015
	(0.347)	(0.464)
WLNEBITDA	0.011*	0.122***
	(0.090)	(0.000)
Tender	0.001	-0.009
	(0.895)	(0.822)
Hostile	0.019	0.048
	(0.246)	(0.674)
_cons	-0.005	-0.629***
	(0.904)	(0.004)
N	989	989
R-sq	0.100	0.195
adj. R-sq	0.047	0.148

Table 2.10 Robustness Tests: Media Coverage

This table reports the findings of robustness checks. It reports acquirer short-run 5-day cumulative announcement abnormal returns (CARs) and acquirer long run 36-month Buy-and-Hold Abnormal Returns (BHARs) for the full sample. The media coverage published within 365 days before the takeover announcements. The CAR is measured by using the formula $\mathrm{CAR_i} = \sum_{i=0}^{n} \mathrm{AR_i}$. The buy-and-hold abnormal return is measured by using the formula $\mathrm{BHAR_{it}} = \prod_{t=0}^{T}[1 + \mathrm{R_{it}}] - \prod_{t=0}^{T}[1 + \mathrm{R_{mt}}]$. Column (1) reports the results for the media coverage samples in the short run while Column (2) refers to the media coverage samples in the long run. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Book-to-market ratio is book-value of acquirer divided by market value of acquirer, as of the end of the previous year. RUNUP is the stock performance of the acquirer prior to the takeover announcement measured using the CAR [-365, -7]. Leverage is the percentage of total debt divided by total capital in annual terms and is measured at the year prior to the deal announcement. EBITDA is a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year. Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Hostile, public, tender and diversification are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise. The mean of CAR and BHAR are reported with the *p*-value in parentheses. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	(1) Short-run Media Coverage	(2) Long-run Media Coverage
Media Coverage	0.004*	0.171***
	(0.058)	(0.000)
STOCK	-0.004	0.002
	(0.293)	(0.971)
CASH	0.004**	0.089***
	(0.022)	(0.000)
WRUNUP_365_7	-0.002	0.011
	(0.444)	(0.770)
WLNMV	-0.007***	-0.203***
	(0.003)	(0.000)
WMTBV	0.000	0.031***
	(0.921)	(0.001)
WPE	0.000**	-0.004**
	(0.013)	(0.025)
WRelativeSize	0.029***	-0.020
	(0.000)	(0.807)
WLeverage	-0.000	-0.003***
	(0.874)	(0.007)
Public	-0.013***	0.033
	(0.000)	(0.444)
Diversification	0.001	-0.072***
	(0.646)	(0.001)
WLNEBITDA	0.004*	0.200***
	(0.080)	(0.000)
Tender	-0.007*	-0.007
	(0.073)	(0.879)
Hostile	-0.006	0.250**
	(0.457)	(0.012)
_cons	-0.010	-1.435***
	(0.501)	(0.000)
N	4384	4382
R-sq	0.064	0.120
adj. R-sq	0.051	0.108

Table 2.11 Robustness Tests: Media Pessimism

This table reports the findings of robustness checks. It reports acquirer short-run 5-day cumulative announcement abnormal returns (CARs) and acquirer long run 36-month Buy-and-Hold Abnormal Returns (BHARs) for the full sample. The media coverage published within 365 days before the takeover announcements. The CAR is measured by using the formula $\mathrm{CAR_i} = \sum_{i=0}^{n} \mathrm{AR_i}$. The buy-and-hold abnormal return is measured by using the formula $\mathrm{BHAR_{it}} = \prod_{t=0}^{T}[1 + \mathrm{R_{it}}] - \prod_{t=0}^{T}[1 + \mathrm{R_{mt}}]$. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top half are then classified as high pessimism, while the bottom half are classified as low pessimism. Column (1) reports the results for the media pessimism samples in the short run while Column (2) refers to the media pessimism samples in the long run. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Book-to-market ratio is book-value of acquirer divided by market value of acquirer, as of the end of the previous year. RUNUP is the stock performance of the acquirer prior to the takeover announcement measured using the CAR [-365, -7]. Leverage is the percentage of total debt divided by total capital in annual terms and is measured at the year prior to the deal announcement. EBITDA is a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year. Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Hostile, public, tender and diversification are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise. The mean of CAR and BHAR are reported with the *p*-value in parentheses. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	(1) Short-run Media Pessimism	(2) Long-run Media Pessimism
Pessimism	-0.001	-0.044**
	(0.212)	(0.016)
STOCK	0.004	-0.181*
	(0.680)	(0.076)
CASH	0.005	0.042
	(0.106)	(0.256)
WRUNUP_365_7	0.000	0.219**
	(0.971)	(0.011)
WLNMV	-0.005	-0.243***
	(0.304)	(0.000)
WMTBV	-0.001	0.034**
	(0.273)	(0.029)
WPE	0.000	-0.006*
	(0.835)	(0.088)
WRelativeSize	0.040**	-0.053
	(0.014)	(0.743)
WLeverage	-0.000	-0.000
	(0.810)	(0.774)
Public	-0.017**	0.087
	(0.022)	(0.267)
Diversification	0.003	-0.049
	(0.377)	(0.243)
WLNEBITDA	0.002	0.193***
	(0.734)	(0.001)
Tender	0.001	0.000
	(0.875)	(0.997)
Hostile	0.016	0.228
	(0.320)	(0.309)
_cons	0.041	-1.045***
	(0.221)	(0.007)
N	989	989
R-sq	0.089	0.255
adj. R-sq	0.035	0.211

Table 2.12 Regression Analysis to address Endogeneity concerns

This table reports the regression for testing endogeneity issue. Instrument variable analysis of UK acquirers engaging in cross-border M&As. Short-run 5-day cumulative announcement abnormal returns (CARs) for the full sample. The media coverage published within 365 days before the takeover announcements. The CAR is measured by using the formula $\mathrm{CAR_i} = \sum_{i=0}^{n} \mathrm{AR_i}$.acquirer long run 12-month Buy-and-Hold Abnormal Returns (BHARs) for the full sample from the announcement date stratified by the target industry. The buy-and-hold abnormal return is measured by using the formula $\mathrm{BHAR_{it}} = \prod_{t=0}^{T}[1 + \mathrm{R_{it}}] - \prod_{t=0}^{T}[1 + \mathrm{R_{mt}}]$. Column (1) reports the results for the media coverage samples while Column (3) refers to the quantity of media coverage and Column (3) refers to the media pessimism. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Book-to-market ratio is book-value of acquirer divided by market value of acquirer, as of the end of the previous year. RUNUP is the stock performance of the acquirer prior to the takeover announcement measured using the CAR [-365, -7]. Leverage is the percentage of total debt divided by total capital in annual terms and is measured at the year prior to the deal announcement. EBITDA is a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year. Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	iv media coverage	iv media coverage quantity	iv media pessimism
CAR5	0.001*	0.000*	
	0.089	0.059	
BHAR12			-0.196
			0.111
STOCK	-0.003	-0.004	0.044
	0.767	0.740	0.614
CASH	0.001	0.001	0.394**
	0.831	0.818	0.015
WRUNUP_365_7	-0.004	-0.004	-0.122
	0.517	0.531	0.015
WLNMV	-0.011**	-0.011**	-0.122*
	0.010	0.010	0.092
WMTBV	0.000	0.000	0.007
	0.120	0.972	0.582
WPE	0.000*	0.000	0.004
	0.055	0.143	0.267
WRelativeSize	0.025	0.025*	0.071
	0.126	0.053	0.905
WLeverage	0.000	0.000	0.006*
	0.985	0.131	0.057
Public	-0.031***	-0.030***	0.200
	0.000	0.000	0.242
Diversification	0.002	0.002	0.184*
	0.560	0.549	0.074
WLNEBITDA	0.009**	0.009**	0.019
	0.033	0.044	0.810
Tender	0.014	0.014	-0.299
	0.122	0.124	0.165
Hostile	0.006	0.006	0.006
	0.795	0.799	0.840
Constant	-0.023	-0.017	0.210
	0.397	0.533	0.731

Chapter 3. Financial Media and Takeover Outcomes: Evidence from UK Successful and Fail Deals

1. Introduction

Research on media sentiment and its interaction with takeover outcomes is a relatively new area that has received substantial attention in the last few years. It is generally believed that financial newspapers directly impact investor sentiment concerning both individual stocks and the market as a whole (Antweiler and Frank, 2004; Joe et al., 2009; Chen et al., 2013; Ferguson et al., 2012; Jegadeesh and Wu, 2012; Garcia, 2013). Moreover, mergers and acquisitions (M&As) often occur due to either takeovers or tender offers and usually require the bidders to offer that buying the target stock at a higher price than its current market value of the targets (Jensen and Ruback, 1983). However, Branch et al. (2008) states that about 10% of announced takeover attempts fail, including those that are withdrawn by the acquirer and rebuffed by the target firm. Failure usually consists of either a value-destroying merger taking place or a value-creating merger failing to take place. Successful takeovers are contractual agreements in which both acquirers and targets have enough interest to agree on an offer (Bruslerie, 2013). This chapter examines how media coverage and media sentiment influence takeover outcomes in takeover deals, based on universal M&A data drawn from the UK market from 1981 to 2010.

This chapter is the first empirical work study how media coverage and media pessimism affect takeover outcomes in the UK market. This chapter has several contributions for the research. First, little research has been undertaken that considers the influence of media coverage and media pessimism on the likelihood of deal success or failure. The previous literature considers many factors that could influence takeover outcomes. Variables that

increase the supply of ‘obtainable shares’, that is, the increased ownership of target firm shares by the bidder, are shown to increase the probability of success and variables that impede the tender offer decrease the probability of success (Walkling, 1985). Strategic vision and fit, deal structure, due diligence, premerger planning, post-merger integration, external factors, negotiation outcome, the nature of the recommendations of the target directors, and bid premium levels and offer price revisions are also shown to be important in discriminating between successful and failed takeovers (Henry, 2003; Epstain, 2005; Fabel and Kolmar, 2012). However, board composition and chairperson identity of target firms and director, institutional investor, and external share ownership in targets have minimal effects on the likelihood of takeover success (Henry, 2004). This chapter considers the influence of media on takeover outcomes. Second, the research by Ahern and Sosyura (2014) on media coverage focuses on the number of news articles. Buehlmaier's (2012) research on media content focuses on text-based information. This chapter considers not only the media coverage but the media content. Third, previous research regarding financial media focuses on the US market (Birza and Lott, 2011; Akhtar et al., 2012); however, the UK and US media are very different. As Shaw (1999) suggests, the UK media are more independent, whereas the US media are more conformist. Fourth, this chapter considers the endogeneity resulting from the strategic interaction of media coverage and takeovers.

Based on the literature on financial media and takeover completion, the media can influence takeover outcomes in two ways. First, Fang and Peress (2009) show that stocks without media coverage outperform those heavily covered by the media by 3% per year. Deals with lower media coverage lead to less investor recognition and stocks with low levels of investor recognition must offer higher stock returns to compensate their shareholders. Moreover, Asquith et al. (1983) find that gains during the takeover announcement period are larger if the

takeover is successful. Therefore, there is a hypothesis that deals with high media coverage prior to the merger announcement have a lower possibility of success than deals with low media coverage prior to the announcement, because the stock return will increase to compensate the holders if the takeover is successful. Second, Li (2006) find that compared with the number-based measures, text-based information is able to potentially offer a more independent test of market efficiency, because many of the number-based measures are significantly correlated so different anomalies possibly will reflect the similar empirical regularity. And Buehlmaier (2012) uses text-based media content and shows that news content is positively related to the takeover success. Moreover, Tetlock et al. (2008) also state that negative words convey negative information. Therefore, there is another hypothesis that a significantly negative interaction exists between media pessimism and takeover success.

The empirical results are consistent with the hypotheses. The results show that deals with low media coverage have higher completion rates than deals with high media coverage. This finding is consistent with Fang and Peress (2009), who state that stocks without media coverage outperform those heavily covered by the media. They explain this is because deals with lower media coverage lead to less investor recognition and stocks with low levels of investor recognition must offer higher stock returns to compensate their shareholders, who are imperfectly diversified. Moreover, Asquith et al. (1983) find that gains during the takeover announcement period are larger if the takeover is successful. Therefore, the stock return will increase to compensate the holders if the takeover is successful. In addition, Liu and McConnell (2013) state that the media play an important role in changing shareholders' and managers' interests, this could result in the abandonment of value-reducing takeover attempts. Further, Joe et al. (2009) state that individual investors appear to react negatively to the exposure of media coverage.

The results also indicate that deals with high market pessimism levels have lower completion rates than deals with low pessimism levels. The finding is in line with early investigations by Buehlmaier (2012), who indicates that the news content is positively related to takeover success. The findings are also related with those of Tetlock (2007) who state that textual sentiment has potentially strong impacts on stock returns and trading volumes and those of Tetlock et al. (2008) and Davis et al. (2011) who indicate that a highly pessimistic media forecast places downward pressure on market because negative words that convey negative information can be used to forecast low corporate earnings prices and Samuelson and Rosenthal (1986) who find there is a positive relation between the stock price and the chance of tender success. However, it is inconsistent with Vadnais (2012) and Cooke et al. (1998) who find no apparent relation between media sentiment and takeovers outcomes.

Apart from media coverage and media sentiment, many other factors can affect takeover outcomes to some extent. Fishman (1989) and Branch et al. (2008) state that cash offers and friendly takeovers increase the likelihood of takeover success. Branch et al. (2008) find that takeover success is negatively related to the percentage of equity the bidding firm is seeking. Moreover, Ambrose and Megginson (1992) find that the probability of receiving a takeover bid is negatively related to firm size. Morellec and Zhdanov (2008) state that an asymmetric equilibrium exists in financing policies, including endogenous leverage, takeover terms, and bankruptcy. The policies state that acquirers with the lowest leverage win the takeover negotiation. Capron and Shen (2007), Chang (1998), and Fuller et al. (2002) find that the bidding firms of private targets usually earn higher returns than those of public targets. This chapter considers these factors as well.

This chapter provides clear contributions to the literature. It is the first to employ M&A data to test the relation between media coverage (pessimism) and takeover outcomes in M&As. In contrast to the previous literature, which focuses on the relation between financial media and the entire stock market, this study specifically investigates the effect of media news on M&As. The large amounts of media coverage around takeover announcements could provide the perfect testing ground for this relation, since such an experiment would be less prone to selection bias from the media data. Second, given that the United Kingdom is the world's second largest financial centre, this study extends previous research by investigating whether and how the influence of media coverage and sentiment on takeover outcomes can offer new evidence in UK market. Third, the impact of not only media coverage but also media sentiment are examined. The findings have practical implications for the investor sentiment literature and suggest that media sentiment could be considered as an effective proxy for investor sentiment.

This chapter is organized as follows. Section 2 reviews the literature review and presents the hypotheses. Section 3 introduces the data and describes the empirical methodology. Section 4 presents summary statistics and univariate and multivariate results. Sections 5 and 6 conduct robustness checks and endogeneity, respectively. Section 7 concludes the study.

2. Related Literature and Hypothesis Development

2.1 The Motivation of Takeovers

During the takeover process, bidding firms aim to obtain some benefit, called synergistic gain, to offset the financial expenditure of the purchase. The total value obtained by the acquirers and targets after merging is believed to be much higher than the sum of their values as two separate entities. The synergy is defined as the following quote.

> Value created by the combination of two firms, resulting in more efficient management, economies of scale, improved production techniques, the combination of complementary resources, the redeployment of assets to more profitable uses, the exploitation of market power, or any number of value creating mechanisms. (Bradley, Desai, and Kim, 1998, p.184)

Strategic reasons sometimes lead to M&As; for example, bidders need to diversify into new markets or to combine expertise to better position themselves in their markets (Hillier et al., 2013; Rumelt, 1974). One of the other main reasons for takeovers is to benefit from improved economies of scale, such as a boost in production capacity or larger purchases of products from suppliers at cheaper prices (Eckbo, 1985). Another benefit from takeovers is reduced capital requirements, since firms can share certain resources and save multiple costs (Fee and Thomas, 2004; Shahrur, 2005).

From the perspective of accounting, Cosh et al. (1989) state that the acquirer's profitability and firm performance are significantly increased after the takeovers. After investigating the 50 largest takeover deals in the US market from 1979 to 1985, Healy et al. (1992) also find that the cash flows and capital turnover ratios of acquirers are significantly increased as well. Moreover, Parrino and Harris (1999) find that acquirers' cash flow after takeovers increases 2.1% and post-merger performance could be better. In sum, the synergy is considered an important reason for post-merger performance improvement.

Capron, Dussauge, and Mitchell (1998) state that horizontal acquisitions often lead to extensive resource reorganizations between acquirers and targets. Synergy is created when the value of combined firms is greater than the sum of their own pre-merger values.

Thompson (1978) states that synergy refers to the economies of scale at the firm level and also comes from intangible assets such as goodwill, knowledge, and organizational arrangements in an industry.

Gaughan (2002) classifies synergies into three types: operating synergy, management synergy, and revenue sharing synergy. Operating synergy refers to cost reductions resulting from economies of scale. Revenue sharing synergy refers the combined firm's increase in capability to generate revenues after the takeover activities.

Williamson (2008) finds that firms tend to undertake M&As and expand their scale to pursue, maintain and strengthen their monopolistic position in the market rather than improve efficiency. By increasing market share through M&As, competition can usually be reduced and greater monopoly profits obtained. Moreover, in the long run, acquirers will no longer be able to improve efficiency or reduce risks through takeovers, removing the incentive for further takeovers. Market power is generally judged in terms of industry concentration. For instance, a high concentration denotes the top four to eight firms together comprising more than 30% of the market share, a moderate concentration 15–30% of the market share, and a low concentration 15% of the market share.

Eun et al. (1996) find both foreign acquirers and targets earn positive gains, which showing that cross-border M&As are synergy-creating activities. After comparing the post-merger performance of merged firms from different countries, the authors also find that shareholders of the U.S. targets earn significant wealth gains, regardless of the acquirers' nationality. In contrast, foreign acquirer shareholders earn varied greatly across acquirers' countries. The Japanese takeovers earn the largest net wealth gains while UK firms suffer substantial

negative excess returns and Canadian firms are somewhere in between. Moreover, the authors also find after controlling for the influences of relevant economic variables, such as the targets' Research and development capabilities or the relative market value of targets and acquirers, strong differences of gains between countries become insignificant.

The long-term performance of cross-border takeovers was first studied by Cosh and Guest (2001). They find that in the pre-takeover period, the profit returns of target firms decrease significantly in hostile takeovers, and have significantly negative cumulative excess returns. However, in the post-takeover period the profit returns of hostile takeovers increase significantly. On the contrary, the profit returns of friendly takeovers do not improve and the takeovers also experience significantly negative long-run returns.

After studying cross-border takeovers in the US market, Doukas and Travlos (1988) conclude that the wealth of US shareholders does not increase and acquirers do not benefit from takeovers. After researching a large number of takeover deals where US acquirers merged with Canadian, British, and European firms, Oyon (1998) finds that US acquirers earn a negative return when they merge with Canadian and British firms and a positive return when they merge with European firms.

2.2 The Takeover Process

Using a unique dataset, Martynova and Renneboog (2009) find that external sources of financing (debt and equity) are often exerted in takeovers involving cash payments. Takeovers with the same payment methods and distinct transaction funding sources are quite different. Takeovers financed with debt significantly outperform those financed with internally generated funds. The financing decision of a takeover is related to the acquirer’s

pecking order preferences, its corporate governance environment, and its growth potential. The choice of equity versus internal financing is also related to the acquirer's strategic preferences with respect to payment methods.

Ghosh and Jain (2000) state that there is a positive relation between financial leverage and the operating performance of takeovers. Since cash payments are more likely to lead to more increase of debt capacity than stock payment, there is a economically and statistically significant increase of firm leverage following takeovers.

Hirshleifer and Thakor (1994) find that a failed takeover attempt always leads to a high rate of management turnover. They explain that a takeover attempt disseminates adverse information possessed by the acquirers about the performance of managers. A manager's forced resignation can be either good or bad news for the firm when the board is not effective. Moreover, if more adverse public information is disseminated about the manager and there is a higher probability of an ineffective board prior to the takeover, an optimistic effect is expected to dominate.

Kaplan and Weisbach (1992) examine a sample of large takeovers completed from 1971 to 1982. The bidding firms divested around 44% of the acquired firms until 1989. The authors characterize divested takeovers' success ex post and classify 34–50% divestitures as failed. Acquirer returns and total returns (including acquirer and acquired firms) takeover announcement are significantly higher for takeovers that are not divested and successful divestitures than for failed divestitures. Although diversifying takeovers have four times the likelihood of being divested than related takeovers, the results do not indicate that related takeovers are more successful than diversifying ones.

There are many explanations for why the stock prices of acquirers decrease following the announcements of M&As. Roll (1986) explains that sometimes the acquirers' managers are overconfident and overpay for the targets. Myers and Majluf (1984) and Travlos (1987) suggest that paying with equity can lead to negative returns.

Moeller (2004) finds that firm size is one of the decisive factors that lead to negative abnormal returns and larger firms are more likely to yield negative returns because they usually pay more and their manager often suffer from hubris. Demsetz and Lehn (1985) explains that the managers of large firms may be more overconfident that those in small firms, since the latter are more cautious because they have fewer assets.

After examining the effect of takeovers on the wealth of the acquirers' shareholders, Asquith et al. (1983) and Jarrell and Poulsen (1989) suggest that the returns are significantly and positively related to the relative sizes of the acquirers and targets. Moreover, Asquith et al. (1983) also find that the gains during the takeover announcement period are larger if the takeover outcome is successful. On the contrary, using a three-day event window, Draper and Paudyal (2006) find that firms with a low relative size ratio earn significantly higher excess returns when the acquirers are private firms.

Travlos (1987) and Franks, Harris, and Mayer (1988) found that there is major differences in the excess returns between common stock exchanges and stocks exchanges that using the cash payment. In the US market, shareholders of bidding firms earn significant abnormal losses upon takeover announcements when equity is used for payment. This results are in line with the signalling hypothesis, which indicates that stock payment provides the negative

information the bidding firm is overvalued. Moreover, hostile takeovers always choose cash payment and earn a positive premium while friendly takeovers always earn lower premium and negative abnormal returns. In addition, Loughran and Vijh (1997) suggest that in the long run, acquirers can earn positive abnormal returns if they choose cash as the payment method in takeovers. On the contrary, stock payments lead to negative long-run abnormal returns.

Chang (1998) finds that, when buying private targets, acquirers using stock payments earn positive abnormal returns and acquirers using stock payments earn zero abnormal returns, which is unlike publicly traded targets. Fuller et al. (2002) find that acquirers achieve significant positive abnormal returns when buying private targets irrespective of the payment method, but bidders gain the highest abnormal return when using equity.

Bruslerie (2013) find that analyses of the offer premiums and payment methods should be performed together. Employing a sample of European takeovers from 2000 to 2012, Bruslerie (2013) indicates that, in a contractual empirical approach, offer premiums and payment methods are jointly set. In addition, there is a positive relation between the cash percentage and the tender offer premium; that is, higher offer premiums lead to higher percentages of cash payments.

Mayers and Majluf (1984) show that firms prefer stock as the payment method when the shares of bidding firm are overvalued and cash payments when the shares of bidding firm are undervalued. Roll (1986) states that managers of bidding firms overpay because of hubris, referring to managerial overconfidence. The managers of successful firms are more likely to be overconfident about their abilities and to overpay because they believe they can conduct a successful takeover.

Capron and Shen (2007), Chang (1998), and Fuller et al. (2002) find that the bidding firms of private targets usually earn significantly higher returns than those of public targets. The bidders gain when buying a private target but lose when buying a public target. Moreover, the abnormal returns are greater when acquiring public targets and using the stock payment. However, the abnormal returns are significantly positive when acquiring private and subsidiary targets, regardless of payment methods. In this case, returns are higher for bidders use stock offer than for bidders use cash offer.

2.3 Media Coverage and Media Sentiment

Textual analysis is a subset of the finance literature on qualitative information. Loughran and McDonald (2010) find that negative word categorizations are an efficient way to measure media tone and show their significant correlation with other financial variables. Compared with the Harvard list, the Fin-Neg list has more significant correlations with stock returns when media articles and seasoned equity offerings are examined. Loughran and McDonald therefore concentrate on the Fin-Neg list's more regular word cataloguing approach to measure tone.

Loughran and McDonald (2010) also uncover a measurement problem in which, if the Harvard dictionary is used, about three-fourths of the negative word counts in 10-K filings11 are not typically negative in a financial news context. The authors introduce two methods to resolve this issue: First, they generate a word list that included typically negative words in financial reports; second, they construct a term-weighting scheme that reduces the influence of high-frequency words and gives lower-frequency words greater influence. Either method

11 Form 10-K is an annual report required by the US Securities and Exchange Commission that comprehensively summarizes a firm's performance.

can reduce the noise caused by word misclassification. Furthermore, Loughran and McDonald create five other word categorizations, based on positive, uncertain, litigious, strongly modal, and weakly modal words, respectively.

Two other papers look at the role of media in corporate finance, both in the setting of initial public offering (IPOs). Cook, Kieschnick, and Ness (2006) investigate the relation between marketing efforts, including media coverage, and the success of an IPO. They find that news coverage significantly affects IPO outcomes. Similarly, Liu, Sherman, and Zhang (2009) examine the role of media in IPOs and show that offerings with greater media coverage have higher initial returns and greater long-term value.

Focusing on Russia from 1999 to 2002, Dyck et al. (2008) examine the relation between media coverage and corporate governance. They conclude that the lobbying of investment funds increases the media coverage of corporate governance violations in the Anglo-American press. Moreover, they also indicate that media coverage in the Anglo-American press boosts the chances of a corporate governance violation being reversed. At the beginning of the term, this influence is present even when the authors instrument media coverage with an exogenous determinant, the fund's portfolio composition. The fund's strategy seems to not only influence Russian firms' reputation abroad but also force regulators into action.

Joe et al. (2009) examine the influence of the press on the behaviour of various economic agents by analysing how media coverage about the ineffectiveness of a firm's board influences corporate governance, stock prices, and investor trading behaviour. Their focus on board quality is stimulated by the strong media criticism to which corporate boards and

corporate America have recently been generally subjected. The results show that media releases of information have significant economic impacts. In particular, media coverage of board ineffectiveness forces acquired agents to act correctively and increases shareholder wealth. Individual investors appear to react negatively to media exposure, whereas investment firms act as if they anticipate the acquired firms' corrective actions.

Riorden et al. (2013) examine the influence of newswire messages on intraday price discovery, trading activity, and liquidity in an electronic limit order market. They use an objective measure of the message tone to examine the influences of positive, negative, and neutral messages on intraday price discovery and trading intensity. They find negative messages lead to higher adverse selection costs than neutral or positive messages do. Moreover, positive and neutral messages increase liquidity and negative messages decrease liquidity. All news increases trading activities. The results also indicate that market participants gather different information and that negative news is particularly informative and leads to stronger market reactions.

By examining the data on stock prices and trading activity for acquired firms in 172 successful takeovers in the US market between 1981 and 1985, Jarrell and Poulsen (1989) analyse how several factors influence the market. They find that rumours in the news close to the beginning of a takeover are the strongest variable in explaining unanticipated premiums and pre-takeover runups for tender offer acquired firms. Moreover, they also report the attitude, whether friendly or hostile, of the takeover has no statistical significance in explaining unexpected returns. In addition, they find that insider trading allegations are positively related to unexpected returns. The influence of media speculation and of foothold takeovers on unexpected returns and pre-takeover runups are in line with a legitimate market

for information. Furthermore, the authors indicate that significant pre-takeover market activity is in line with no illegal and little insider trading.

Basil et al. (1991) state that negative television advertising has a significant impact on political candidates. Their results indicate that the influences of positive and negative advertising differ based on the context in which the advertising appears and the criterion used to assess influences. In addition, advertising is most influential when matching the surrounding context and negative advertising can certainly alienate voters.

Berry and Howe (1994) state that the arrival of public information, which measured by the number of news releases, is nonconstant and display seasonalities and different intraday patterns. The authors also find there is a moderate positive relation between public information and trading intensity. However, they find no relation between public information and price volatility.

Utilizing computer-aided content analysis, Price et al.(2012) investigate the relation between the incremental informativeness of quarterly earnings conference calls and stock market reactions. The results show that conference call linguistic tone has significant predictability for trading volume and abnormal stock returns.

To measure the effectiveness of firm press releases, Obl et al. (1995) use an agenda setting framework and consider the number and types of press releases against subsequent press clippings in terms of length and content. Both the quantity (number of column lines and average number of articles per firm) and quality (lead and point of view) of newspaper coverage are examined. Their findings indicate that how the media builds and subsequently

sets the public news agenda during hostile takeovers can be influenced through public relations-created news releases if the information in the release reflects the source's point of view, is accompanied by follow-up contact, and that contact is between the firm and the reporter. The authors also show that newspaper content during takeovers is directly influenced by two factors: first, by firms' press releases and, second, by media access to management. This happens during a period of public information scarcity, where the major source of new information for journalists is the acquirer and the target.

2.4 The Relation between Takeovers and the Media

Carretta et al. (2011) analyse the relation between the mass media and stock returns, using Italy's key financial media. Their results show that stock returns are likely to increase after ownership news if the firm has not been profitable when the news is released; otherwise, returns tend to decrease. This finding means public investors react negatively to ownership news about profitable firms and are likely to sell their securities. The results also indicate that there is no statistically significant relation between the tone/content of corporate governance news and the cumulative abnormal returns12 (Carretta et al., 2011). The authors suggest that investors can determine the type of corporate governance event only prior to the news release, since after its publication individual investors are affected by its content and tone. Moreover, the authors find that stock returns are negatively influenced by news when changes occur to the board of directors of profitable firms.

Fang and Peress (2009) investigate this hypothesis and find that stocks with no media coverage earn higher returns than stocks with high media coverage. However, when

12 The cumulative abnormal return is the sum of abnormal returns and is often calculated over a small window, usually only three days, five days, and eleven days.

considering the media and trading in the stock market, it is crucial to distinguish between the impact of media reporting and the impact of the events being reported. Engelberg and Parsons (2011) address this question and find that local media coverage causes local trading activity. Ahern and Sosyura (2013) and Buehlmaier (2012) show that media content can be manipulated during corporate acquisitions. Dyck et al. (2008) consider corporate governance and find that media coverage leads to reversals of corporate governance violations.

After examining 34,180 firm–years with annual report filing dates from 1994 to 2005, Li (2006) finds a negative relation between risk sentiment and future earnings and that the risk sentiment of annual reports can forecast future returns. That is, firms with a larger increase in risk sentiment have fewer earnings changes and less negative returns the next calendar year. Moreover, the author also finds that, compared with number-based measures, text-based information potentially offers a more independent test of market efficiency, because many of the number-based measures are significantly correlated so that different anomalies possibly reflect similar empirical regularities.

Tetlock (2007) examines the relation between media content and stock market activity. The author suggests that a highly pessimistic media forecast places downward pressure on market prices followed by a reversion to fundamentals and that unusual optimism or pessimism predicts high market trading volume. Furthermore, pessimistic forecasts seem to have a particularly large negative influence that reverses itself in small stocks quite slowly.

Tetlock et al. (2008) investigate the utilization of a quantitative language measure to forecast corporate earnings and stock returns. They present three main findings: First, within corporation-specific news stories, some of the negative words that convey negative

information can be used to forecast low corporate earnings. Second, corporate share prices react to such information with a short delay. Third, the predictability of earnings and stock returns from negative words is strongest for stories that concentrate on fundamentals. Tetlock et al. (2008) conclude that linguistic media content is difficult to capture to quantify aspects of firms' fundamentals, which investors rapidly impound into share prices. Moreover, the authors show that only negative word counts have predictability and do not consider the effect of positive words. However, a more recent study by Jegadeesh and Wu (2012), using a new term-weighting scheme, discovers a significant relation between document tone and market reaction for positive words as well, so the authors emphasize the importance of choosing the appropriate term-weighting scheme.

Buehlmaier and Zechner (2013) present strong evidence that information in the financial media is not fully impounded in security prices. They also demonstrate that media content influences takeover arbitrage returns but the results for media coverage are not significant. Moreover, media information released on the announcement day includes information proven to be largely unrelated to the likelihood of deal completion. The authors do not provide any strong evidence supporting a certification role for the media.

Based on Tetlock's (2008) findings, Garcia (2013) examines the sentiment effect on asset prices by investigating financial news from *The New York Times* in the 20th century. Employing the fractions of negative and positive words as a proxy for media sentiment, Garcia shows that the ability to forecast stock returns by using news content focuses on recessionary periods. Moreover, predictability is especially strong on Mondays and following holidays, since readers have more time to read the news before the afternoon of the trading day. Additionally, the author argues that the effect partially reverses after the next four trading

days. In sum, investor sentiment has an important impact during recessions.

Kearney and Liu (2014) review the textual sentiment literature in finance by focusing on three main aspects: information sources, content analysis methods, and the financial models used to examine whether and how textual sentiment impacts people, institutions, and markets. They agree with Antweiler and Frank (2004) and Tetlock (2007), in that textual sentiment has a potentially strong impact on stock returns and trading volumes. The media-expressed sentiment literature demonstrates that textual sentiment has contemporaneous or short-term effects on stock prices, returns, abnormal returns, and trading volumes.

Examining around 20,000 firm earnings announcements during 1998–2006, Demers and Vega (2011) use textual analysis to obtain two dimensions of managerial soft information: certainty and net optimism. The authors indicate that soft information has predictability for valuation fundamentals and that it influences asset prices both during the announcement period and during the two-month post-announcement period. Moreover, the authors find that linguistic certainty reduces the response during the post-announcement period to unanticipated net optimism, is in line with idiosyncratic volatility during the announcement period, and also forecasts future idiosyncratic volatility.

Yu et al. (2013) conclude that, overall, social media has a stronger relationship with firm stock performance than conventional media does, while social and conventional media have a strong interaction effect on stock performance. More interestingly, they find that the impact of different types of social media varies significantly. Different types of social media also interrelate with conventional media to influence stock movement in various directions and to various degrees.

Recent research shows that failed tender offers can influence the share returns of acquired firms for two years past the announcement of the tender offer. Fabozzi et al. (1988) study target returns in the period from the announcement to one year after the withdrawal of the tender offer. After examining a sample of acquired firms that did receive any bids during the year following an unsuccessful tender offer, the authors find that the entire premium of the tender offer disappears when information of the failure is disseminated to the public. They also conclude that there are no excess returns in the year after the failure. They explain that this is probably because of the effective opposition by the acquired firms' management and government intervention.

Schumaker et al. (2012) find that subjective news articles are easier to predict in terms of price direction (59.0% versus 50.0% for chance alone) and, using a simple trading engine, subjective articles garner a 3.30% return. Looking further into the role of author tone in financial news articles, the authors find that articles with a negative sentiment are easiest to predict in terms of price direction (50.9% versus 50.0% for chance alone) and have a 3.04% trading return. Investigating negative sentiment further, they find that their system is able to predict price decreases in articles of positive sentiment 53.5% of the time and price increases in articles of negative sentiment 52.4% of the time.

Ahern and Sosyura (2014) view the firm as an active player, using media coverage to influence its own outcome. They state that firms have an incentive to manage media coverage to influence their stock prices during important corporate events. Using comprehensive data on media coverage and merger negotiations, the authors find that bidders in stock mergers originate substantially more news stories after the start of merger negotiations but before the

public announcement. This strategy generates a short-lived runup in bidders' stock prices during the period when the stock exchange ratio is determined, which substantially impacts the takeover price. The authors' results demonstrate that the timing and content of financial media coverage can be biased by firms seeking to manipulate their stock prices.

Aman (2013) attempts to identify a possible linkage between stock price crashes and jumps and media coverage by using data from Japanese stock markets and newspaper articles. The evidence clearly indicates that crash frequency increases with media coverage and its seasonal concentration. This key finding supports the notion that intensive media reports on a firm provoke extremely large market reactions to corporate news. Further, by using an alternative measure of the scale of crash returns, the author confirms the increasing effect of media coverage on crashes. Aman also finds that the media effect is caused by market reactions, particularly to news on official disclosure information such as announcements of accounting results.

Chan (2001) examines returns to a subset of stocks after public news about them is released. The author finds a major difference between the return patterns for the two sets. Moreover, the author also finds evidence of post-news drift, which supports the idea that investors underreact to information. This phenomenon is strongest after bad news.

One of the first empirical studies to explore the relation between news information and stock prices is that of Cutler et al. (1989). Their research expresses difficulty in explaining the variance in stock prices, finding that only around half of the asset price volatility can be explained by news about fundamentals. After accounting for significant macroeconomic news, the authors find that news about fundamentals can explain up to one-third of stock price

movements and that significant world news about politics or natural disasters does have some effect on stock prices.

By using the textual analysis program Diction, Demers and Vega (2008) find that unexpected net optimism in managers' language influences abnormal returns during the announcement period and forecasts post-earnings announcement drift in 1998–2006. They also find that it is easier for the market to understand the implications of hard information (data that are easy to store, quantify, and transmit through impersonal means) than those of soft information (data that are directly verifiable only by the person who collected and produced it, that cannot be definitely documented) .

By examining a sample including 194 firms, Keown and Pinkerton (1981) provide evidence of excess returns earned by investors in targets prior to the first public takeover announcements. The results show that impending takeover announcements are poorly held secrets and trading activities on this non-public information abound. In particular, the leakage of inside information is a serious problem at a significant level up to 12 trading days prior to the first public announcement of a planned takeover.

By analysing the approximately 23,000 earnings press releases issued during 1998–2003 and by using categories based on linguistic theory, Davis et al. (2011) categorizes words into two groups: optimistic words and pessimistic words. They then develop a method to measure the managers' net optimistic language for each earnings press release. They state that this measure is positively correlated with the future average of return on assets and generates a significant market response around the earnings announcement date in the short term. The results are in line with the hypothesis that the earnings press release language predicts the

expected future firm performance and that the market also counteracts this signal provided by the language. The authors explain that managers use language in earnings press releases to communicate valuable information about expected future returns.

Since newspaper stories provide an interpretation of statistical releases, Birza and Lott (2011) choose newspaper stories as their measure of news. Their findings indicate that news about gross domestic product and unemployment does affect stock returns. Boyd et al. (2005) find that news about rising unemployment in contractions leads to lower expected earnings and, therefore, results in lower stock prices. However, in expansions, the same news about rising unemployment leads to lower expected interest rates on government bonds, causing stock prices to rise. McQueen and Roley (1993) find a similar result for industrial production index and unemployment surprises. In particular, they find that good news about these variables in expansions raises stock prices.

Since newspaper stories provide an interpretation of the statistical releases, Birza and Lott Jr (2011) choose newspaper stories as the measure of news. Their findings indicate that news about GDP and unemployment does affect stock returns. Boyd et al. (2005) find that news about rising unemployment in contractions, leads to lower expected earnings and therefore, results in lower stock prices. However in expansions, the same news about rising unemployment leads to lower expected interest rates on government bonds, causing stock prices to rise. McQueen and Roley (1993) find a similar result for industrial production index and unemployment surprises. In particular, they find that good news about these variables in expansions raises stock prices.

Aitken et al. (1992) show considerable evidence regarding pre-announcement price and

volume reactions to M&A announcements. Although insider trading could take place, much pre-bid trading is probably due to event anticipation. The authors document the impact when the print media disseminates the anticipation. Their results indicate that measures of turnover and unexpected returns decrease by one-third when media information is controlled for.

After controlling the firm characteristics, Huang et al. (2011) find that abnormal positive tone (ABTONE) includes negative information about future firm fundamentals one to three years ahead. Moreover, there is a positive relation between ABTONE and immediate stock price reactions to earnings announcements and a negative relation between ABTONE and the one- and two-quarter delayed market reactions. In general, the evidence is in line with strategic tone management that disseminates incorrect information to investors about firm future fundamentals.

By examining a trading strategy on the basis of the score measured by the tone of news articles, Sinha (2010) finds that the market underreacts to the tone and attitude of news articles. Moreover, the author also finds that the news offers a straightforward explanation for short-run stock return reversals: Short-run reversals do not happen when the returns are associated with information that matches their direction.

Veldkamp (2006) relates surges in prices and cross-market price dispersion to media coverage. The author explains these anomalies with information market complementarities. These results are obtained because information is fundamentally distinct from other goods. It has a fixed cost of discovery and a near-zero cost of replication. High volume thus makes information inexpensive and low prices induce investors to buy information that others also buy. Veldkamp finds empirical support for the model's prediction that asset market

movements generate news and that news raises prices and price dispersion.

Hong et al. (2000) test the gradual information diffusion model developed by Hong and Stein (1999) and obtain two main findings. First, if firm size is kept constant, momentum strategies work better among securities with low analyst coverage. Next, the impact of analyst coverage is larger for securities that are past losers than for past winners. These results support the authors' hypothesis that firm-specific information, particularly negative information, diffuses only slowly across the investing public.

For all earnings announcements of Standard & Poor's 500 Index firms, Engelburg and Parsons (2011) find that local media coverage strongly predicts local trading, after controlling for earnings, investor, and newspaper characteristics. Moreover, local trading is strongly related to the timing of local reporting, a particular challenge to non-media explanations.

Barber and Odean (2008) propose that the buying behaviour of individual investors is more heavily influenced by media attention than their selling behaviour because individual investors only sell stocks that they already own and most hold relatively few common stocks in their portfolios. Moreover, the buying behaviour of individual investors is more heavily influenced by attention than the buying behaviour of professional investors is, because investors can individually consider the merits – both economic and emotional – of selling each stock they own and individual investors do not devote themselves to full-time stock research. The authors conclude that attention-driven buying is also driven by the complexity involved in individual investors exploring the numerous stocks they could buy.

Bushee and Miller (2007) find that firms that hire investor relations firms experience an

increase in media coverage, institutional ownership, and valuation. Solomon (2012) shows that investor relations firms influence both media coverage and stock returns. Investor relations corporate news favourably, and bring more media coverage of positive news releases than negative news releases. And this spin can result in a temporary increase in stock announcement returns. This finding is in line with positive sentiment increasing the expectations of investors, while negative sentiment disappointing the investors.

2.5 Media and Takeover Outcomes

Vadnais (2012) focuses on the influence of media on pricing and the outcomes of takeovers in the high-tech industry. The research demonstrates a positive correlation between average media sentiment about mergers and the final prices of the acquirers. However, the author finds no apparent relation between media sentiment and takeover outcomes.

Cooke et al. (1998) state that there is no evidence to show that the characteristics of defence documents can influence the hostile takeover outcome, which is measured as success or failure. It is in line with a view that defence is undertaken not to correct mispricing of the target firms' stock by additional news to shareholders to keep independent, but to drive up the purchase consideration and increase the wealth of shareholders. Moreover, the disclosures in defence documents have no impact on correcting market mispricing.

Buehlmaier (2012) addresses the question of how important the media are in the likelihood of deal completion. The author uses text-based media content and shows that news content is positively related to takeover success. Naïve Bayes is used to develop a media measure with goodness of fit and a large marginal effect. The measure has since become a key explanatory variable. Moreover, the author states that a value-creating acquirer runs a media campaign to

signal to target shareholders that the deal is good, while a value-destroying acquirer has no incentive to run a media campaign because it is too costly.

Using a large sample of merger announcements, Buehlmaier and Zechner (2013) provide strong evidence that information in financial media is not fully incorporated in stock prices. Cross-sectional regressions show that a one standard deviation increase in the media-implied probability of deal completion results in a 1.2% increase in the subsequent 12-day return. Media content information released on the announcement day contains information not captured by announcement day stock returns that is found to be largely unrelated to the probability of deal completion. The results for media coverage are much weaker. A trading strategy based on media content increases annualized alphas by 12.5%, while the effect of media coverage on alphas is statistically insignificant. Finally, the authors find weak evidence in favour of a certification role for the media, with the top newswire and top newspapers contributing more information to the market.

Examining 636 large takeover attempts accompanied by a negative stock price reaction upon announcement (value-reducing takeover attempts) from 1990 to 2010, Liu and McConnell (2013) state that the sensitivity of managers to the firm's stock price reaction around the takeover announcement is related to the level of media attention and the media attitude toward the expected transaction. The managers then decide whether to go through with the value-reducing takeover attempt or abandon it. The authors suggest that managers and shareholders have reputational capital at risk when they make corporate capital allocation decisions and that the level of media attention and the media attitude increase the influence of a value-reducing takeover on the managers' reputational capital. The media play an important role in changing shareholders' and managers' interests, which can lead to the abandonment of

value-reducing takeover attempts.

2.6 Factors Influence Takeover outcomes

Branch et al. (2008) states that about 10% of announced takeover attempts fail, including those withdrawn by the acquirers or rebuffed by the target firms. Comparing the traditional logistic regression model and artificial neural network technology, the authors construct a takeover outcome prediction model and empirically show that spread, target resistance, deal structure, and transaction size are the key factors that influence the success of a takeover attempt. Moreover, the authors find that friendly takeover attempts have a better chance of success than hostile takeover attempts do. A deal also has a greater likelihood of success when it has less risk arbitrage spread and uses a stock payment. In addition, takeover success has a negative relation with the percentage of equity the bidding firm is seeking.

By examining the medium of exchange, including both cash and stock payments in tender offers, Fishman (1989) finds that cash offers can increase the likelihood of the takeover's success in tender offers, mandatory bids, competing bids, and hostile takeovers and are therefore preferred by bidders in such transactions. Moreover, a stock payment signals a high value for the acquired firm and thus has the benefit of pre-empting competition.

Morellec and Zhdanov (2008) analyse the relation between financial leverage and takeover activity. They design a takeover model in which not only the financing strategies of bidding firms but also the timing and terms of takeovers are determined. They indicate that capital structure determines the outcome of takeover negotiation. Moreover, an asymmetric equilibrium exists in financing policies that include endogenous leverage, takeover terms, and bankruptcy. The policies state that acquirers with the lowest leverage win takeover

negotiations. According to this equilibrium, the model predicts that the leverage of the winning acquirer is below the industry average and that bidders should increase their leverage after the takeover is complete.

By testing for earnings management for the UK market, which is the world's second largest M&A market from 1997 to 2001, Botsari and Meeks (2008) find that Earnings management by bidding firms ahead of share-financed bids can play an important role in the outcome of a hostile takeover and have irreversible consequences for industry structure, shareholder wealth, and management structure.

After examining the three cases of hostile takeover in Germany 1946 to present, Franks and Mayer (1998) find that banks play an important role in affecting takeover outcomes. In all three cases, the bank representatives were the chairs of their supervisory boards. Banks also voted many proxies in significant decisions influencing takeovers. Moreover, the authors report that low returns were earned by shareholders from two of the acquired firms and explain that the low takeover premium was due to ineffective regulation in Germany.

By analysing a takeover battle as a contest between two managers, Fabel and Kolmar (2012) indicate that negotiation outcomes determine the likelihood of a successful takeover and the manager who will be the leader of the acquired firm. In addition, asymmetries in CEO compensation structure have influence on negotiation behaviour and outcomes.

Ambrose and Megginson (1992) find that the likelihood of getting a takeover bid is positively related to tangible assets, and negatively related to firm size, to the net change in institutional holdings in the quarter before the announcement and to the Blank-check preferred stock

authorizations. However, the absolute levels of institutional shareholdings and insider have no significant effect on the the bid probability.

Walking (1985) develops and tests a model for the prediction of tender offer outcomes. Variables that increase the supply of obtainable shares (such as increased bid premiums or solicitation fees) are shown to increase the probability of success. Increased ownership of target firm shares by the bidder also increase the probability of success. Variables that impede the tendering of shares (such as target management opposition or a competing bid) decrease the probability of success.

Henry (2004) examines the influence of corporate governance and the ownership attributes of target firms on takeover outcomes in Australia between 1991 and 2000. The findings suggest that board composition and the chairperson identity of target firms and director, institutional investor, and external share ownership in targets have minimal effects on the likelihood of takeover success. The nature of the recommendations of target directors is found to be the most significant determinant of takeover success or failure and bid premium levels and offer price revisions are also shown to be important in discriminating between successful and failed takeovers.

Epstain (2005) concludes six determinants of merger success: strategic vision and fit, deal structure, due diligence, pre-merger planning, post-merger integration which is vital to the takeover success, and external factors. Failure of any one of the six can impede the achievement of merger goals. Strategic vision and fit means firms must evaluate whether the targets are good choices as takeover partners to fulfil the strategic vision. Deal structure

includes two aspects: price paid and financing type. The due diligence includes the formal financial review of assets, revenues, liabilities, and expenses and substantiation of the financial records. In post-merger procedure, shareholders must blend the human resources management, technical operations, and customer relationships carefully and make important decisions.

Since targets always earn excess returns around the takeover announcement date in both successful and failed bids, Brown and Raymond (1986) and Samuelson and Rosenthal (1986) find that the market can estimate the likelihood of takeover success quite well. The average price of successfully targeted firms is likely to increase during the takeover announcement period and is close to the offer price. However, the average price of failed targets is likely to remain below the offer price. Hutson (2000) finds that the model proposed by Brown and Raymond (1986) has a few weaknesses, such as it limits the share price of the acquired firm to a range that could be influenced by the data and could lead to huge difficulties in estimating a correct post-bid share price. Moreover, Hutson (2000) proposes a model that overcomes these weaknesses and applies it to the share price behaviour of 245 acquired firms in takeovers in Australia from 1980 to 1993. First, the author finds the average pre-announcement runup is 32% for successfully acquired firms and 39% for the targets in unsuccessful acquisitions. Next, the prices of firms that failed to be acquired are likely to be higher than those of successfully acquired firms, but not significantly so. Last, the prices of successfully acquired firms do not rise closely with the offer price of bid completion. The author also finds that, in the takeover period, trading activities in successfully targeted stocks are likely reduced and cease before the bid completion in many cases. The author explains why the dispersion in traders' beliefs about acquired firms' future prices is likely to collapse around the offer price.

Using an event study methodology, Marcus and Singh (2011) examine not only informed trading but also contraire trading preceding successful takeover announcements for US acquired firms from 2001 to 2006. They state that on the US stock market, both contraire trading and informed trading exist within the period preceding successful takeover announcements. In addition, abnormal trading activity is reflected in abnormal trading volumes in both put and call options.

Samuelson and Rosenthal (1986) report that the movements in the stock prices of acquired firms during the tender offer period are able to predict the success or failure of the tender offer during the period 1976–1981. There is a positive relation between stock prices and the chance of tender success. What is more, the authors also report that target firms are usually undervalued during the offer period. An optimal investment strategy possibly earn abnormal returns by buying undervalued targets. On the other hand, the opportunities for earning abnormal returns do not happen frequently.

After developing a takeover success prediction model that tries to use information that is publicly available during the announcement period to predict the probability of a successful takeover and avoid risks, Branch et al. (2008) conclude that arbitrage spread, target resistance, deal structure, and transaction size are the vital factors that can influence takeover outcomes. Moreover, by comparing two models, the authors find that a feed forward neural network (FFNN) performs as well as logistic regression in forecasting successful takeovers and outperforms logistic regression in forecasting unsuccessful takeovers.

2.7 Hypothesis Development

Based on the above findings, this chapter examines whether the financial media influence takeover outcomes. Fang and Peress (2009) state that stocks without media coverage outperform those heavily covered by the media. Moreover, Asquith et al. (1983) find that the gains during the takeover announcement period are larger if the takeover outcome is successful. In addition, Liu and McConnell (2013) state that the media plays an important role in changing shareholders' and managers' interests, which can lead to the abandonment of value-reducing takeover attempts. This leads to the following hypothesis.

H1: *Deals with low media coverage prior to the takeover announcement have a higher possibility of success than deals with high media coverage prior to the takeover announcement.*

Although Cooke et al. (1998) and Vadnais (2012) find no apparent relation between the media sentiment and the takeover outcomes, Buehlmaier (2012) uses text-based media content and shows that news content is positively related to the takeover success. Moreover, Tetlock et al. (2008) who demonstrate that fundamental information transmitted by the financial news resolves the problem of information asymmetry. This leads to the following hypothesis.

H2: *There is a significantly negative interaction between media pessimism and takeover success.*

3. Data and Methodology

3.1 Data

Three types of data is included in the analysis: 1) Takeover data between November 30, 1981, and January 1, 2010 from Thomson One Banker Deals database, and the initial sample

consists of 15205 deals carried out by 2465 public UK bidders. 2) UK media data from LexisNexis database, which includes four influential UK media sources: the *Financial Times*, *The Times*, *Guardian*, and the *Mirror*. These sources released 274,201 media articles between November 30, 1981, and January 1, 2010, covering 251 UK firms. 3) stock price and accounting data between November 30, 1981 and January 1, 2010 from Datastream databases. These data include the FTSE All-Share Index levels, daily stock prices, book-to-market ratios, earnings before interest, taxes, depreciation, and amortization (EBITDA)[13], leverage, price-to-earnings (PE)[14] ratios, and market values.

To match the data from the three different databases, a unique identifier is required. Thomson One Banker and Datastream both use the Datastream code as a firm identifier. Since the raw media data do not have Datastream codes, manually searches for these in the media database were carried out to ensure each article had a Datastream code. The STATA program was used for the data cleaning and matching processes in this chapter. After all media firms without a Datastream code or an available date are deleted, the Thomson One Banker Deals and media databases by Datastream code are merged together. At last, media data released over 180 days before the takeover announcement is deleted, because only deals with media coverage are examined in this chapter. Of the final sample, there are 1218 deals covered within 180 days before the takeover announcement.

3.2 Methodology

To calculate the media pessimism for each firm prior to its M&A announcement, the words in each article are compared with the positive and negative word lists of Loughran and

13 EBITDA refers to a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. The EBITDA of a firm show people about the current operational profitability of the firm's business.

14 PE ratio refers to a equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year.

McDonald (2011). In this case, the numbers of positive and negative words and the total number of words are obtained.15 In the most recent version of the lists, 353 words are positive and 2337 words are negative.

Tetlock et al. (2008) define the media sentiment score as the standardized fraction of negative words in each news story, measured by:

$$Neg = \frac{No.of\ negative\ words}{No.of\ total\ words} \quad (1)$$

$$neg = \frac{Neg - \mu_{Neg}}{\sigma_{Neg}} \quad (2)$$

where μ_{Neg} is the mean of *Neg* and σ_{Neg} is the standard deviation of *Neg* over the prior calendar year. Standardization is necessary if *Neg* is nonstationary. The variable *neg* is the stationary measure of media pessimism that is employed in the regression analyses.

Each article is given a pessimism score and an arithmetic average score is calculated for each bidder. Three overall article pessimism indices are calculated for the 180 days prior to the takeover. The similar results are attained from using other sentiment formulas, such as the quantity of positive words minus the quantity of negative words, divided by the sum of positive and negative word counts or total words (Rees and Twedt 2012). However, Henry and Leone (2009) and Tetlock (2007) find that negative words have a much stronger correlation with stock returns than positive words do. Many papers also suggest that the frequency of negative words in an article decides its tone (Das and Chen 2007, Davis et al. 2011, Loughran and McDonald 2011). Therefore, the method proposed by Tetlock et al. (2008) are employed to measure media sentiment. Because this formula focuses on the

15 We used the computer program WordStat to obtain the sentiment data and Stata for the other calculation.

negative words, the media pessimism score stands for the level of media sentiment.

To investigate the effects of media coverage quantity, news is sorted into three media coverage portfolios: the top 25% for high media coverage and the bottom 25% for low media coverage. Similarly, to investigate the effects of media pessimism, the media pessimism score is sorted into three media pessimism portfolios, the top 50% for high media pessimism and the bottom 50% for low media pessimism.

Since the dependent variable is a binary one, all hypotheses are tested by employing Logistic regression models. Developed by David Cox in 1958, logistic regression is a regression model where the dependent variable is categorical in statistics. This thesis covers the case of binary dependent variables—that is, where it can take only two values, success and fail.

To examine the relation between media coverage, the level of media pessimism, and takeover outcomes, the following regressions are employed:

$$DealStatus_{i,t} = \beta_1 + \beta_2 MC + \beta_3 Payment\ Method + \beta_4 Ln(MV)_{i,t} + \beta_5 Controls \quad (3)$$

$$DealStatus_{i,t} = \beta_1 + \beta_2 MP + \beta_3 Payment\ Method + \beta_4 Ln(MV)_{i,t} + \beta_5 Controls \quad (4)$$

Media coverage and media pessimism are regressed for the days prior to the takeover announcement, and then compare them to determine which affects the stock returns most significantly. The key variable *MC* is the media coverage in the 180 days prior to the takeover announcement. The key variable *MP* is media pessimism in the 180 days prior to the takeover announcement.

The method of payment and market value are the main variables. Travlos (1987) reports that the use of equity as a payment method in takeovers signals to the market that the acquirer is overvalued, while an all-cash payment indicates potential undervaluation of the acquirer. Therefore, two payment method dummy variables are included: *Stock* and *Cash*. The stock variable, *Stock*, takes the value of one if the bidder uses 100% equity to buy the target firm and the cash variable, *Cash***,** takes the value of one if the bidder uses 100% cash financing to pay for the target. Moreover, a lag in the key return predictability variables' size (measured as the natural logarithm of the market value) is included, as for Tetlock et al. (2008), as well as the logarithm of the acquirer's size, *Ln(Size)*, defined as the acquirer's market value measured one month before the deal announcement.

In addition, the multivariate tests include a series of control variables that have a significant influence on acquirer returns according to previous studies. First, Rau and Vermaelen (1998) find that value acquirers (with a high book-to-market ratio) outperform glamour acquirers (with a low book-to-market ratio) after a takeover. This may due to 'performance extrapolation' and hubris, which lead to poorer takeover decisions by glamour acquirers. Second, Lang et al. (1994) report a strong negative relation between firm leverage and firm future growth during 1970–1989. Jensen (1986) and Stulz (1990) suggest that leverage brings about poor investment opportunities and helps prevent firm overinvestment. Third, a firm's EBITDA indicates its current operational profitability. Fourth, Travlos (1987) states that the relative size variable is used to account for difficulties in measuring abnormal returns due to the larger size of bidders relative to the size of their targets. Fifth, Brealey and Myers (1996) state that the PE ratio is part of the everyday vocabulary of investors in the stock market. Sixth, an increase in a stock's media coverage could temporarily increase investor attention to this stock, resulting in a price run-up followed by a correction (Huberman and Regev, 2001;

Barber and Odean, 2008). Therefore, the following variables are also included: the book-to-market ratio (*B/M Ratio*), defined as the acquirer's book value divided by its market value; leverage (*Leverage*), defined as the amount of debt used to finance a firm's assets; EBITDA (*EBITDA*); the relative size of the transaction (*Relative Size*), defined as the deal value divided by the acquirer's market value, measured one month before the deal announcement; the PE ratio (*PE ratio*), measured as a firm's current share price compared to its per-share earnings; and the run-up stock return of the acquirer measured over a window from 365 to 28 days before the announcement (*Run-Up*). Moreover, *hostile, public, tender, and diversification* are dummy variables that take the value of one for hostile, tender, and diversifying mergers, respectively, and zero otherwise.

4. Main Results

4.1 Sample Descriptive Statistics

Table 3.1 and Table 3.2 show summary statistics for a sample of UK acquisitions, focusing on media coverage and media pessimism, respectively, including the total number of observations, means, medians, and standard deviations of the deal characteristics and firm characteristics. The UK sample comprises 1,133 deals within 180 days before the takeover announcements, including 358 deals with high news coverage and 337 with low news coverage. Moreover, 566 deals are covered by high-pessimism news and 566 deals by low-pessimism news.

The results of Table 3.1 show that the average number of media coverage for the full sample is 25 news articles per takeover deal. The whole sample is then split into two subsamples: firms with high media coverage and firms with low media coverage. The average media coverage for the high-coverage subsample is 72 news articles per takeover deal, while that for

the low-coverage subsample is only one news article per takeover deal. In Table 3.2, the average score of the high media pessimism subsample is around 0.04, much higher than the average score of the low media pessimism, which is around -0.06.

In Table 3.1, the firm size of acquirers in the whole sample equals £2.04 billion, on average. Acquirers with high media coverage have a mean size of £4.44 billion, while acquirers with low media coverage have a mean size of £1.25 billion. These statistics show that the size of acquirers with high media coverage is much greater compared to the size of those with low media coverage. This result is consistent with the findings of Chan (2003) and Da et al. (2011), who report a positive relation between firm size and the number of news articles released because of the costs faced by reporters in finding information on small firms. Fang and Peress (2009) also find that large firms are much more likely to be covered by the media and firm size has a significant influence on media coverage. In Table 3.2, acquirers with high media pessimism have a mean size of £2.21 billion, while acquirers with low media pessimism have a mean size of £1.86 billion. These statistics show that the size of acquirers with high media pessimism is slightly greater compared to those with low media pessimism.

The results of Table 3.1 show that 43% of transactions are fully financed by cash and only 4% are fully financed by stock. The rest of the transactions are financed by a mix of cash and stock. Even in the high- and low-media coverage subsamples and high and low media pessimism subsamples, the cash transactions are much more frequent than the stock transactions. Most acquirers in the United Kingdom prefer cash payments in takeovers. Martynova and Renneboog (2009) explain that announcements of equity financing in takeovers are supposed to bring about lower returns for the acquirer's shareholders, since investors perceive an equity payment as a signal that the bidding firm's shares are overvalued

and therefore decrease the share price after equity financing is announced.

Moreover, Table 3.1 also shows that the average leverage with high media coverage is 33.56, while that with low media coverage is 28.66. It shows that the leverage of acquirers with high media coverage is larger than that of acquirers with low media coverage. This can be explained that larger firms are covered by more news articles released (Chan (2003) and Da et al. (2011)) and larger firms tend to be more leveraged (Faulkender and Petersen (2006)). In Table 3.2, the average leverage with high media pessimism is 32.70, while that with low media pessimism is 28.88. It indicates that the leverage of acquirers with high media pessimism is larger than that of acquirers with low media pessimism.

The results of the runups in Table 3.1 and Table 3.2 are all positive. According to Meulbroek (1992) and Servaes (1991), a positive runup implies that it may be caused by information leakage to the marketplace due to insider trading or market anticipation through rumours in the media. Moreover, the leverage of firms with high media coverage and high media pessimism is much higher than that of firms with low media coverage and low media pessimism.

[Insert Table 3.1 Here]

[Insert Table 3.2 Here]

4.2 Univariate Analysis: Media Coverage

This section reports the empirical relations between takeover outcomes and media coverage in the 1981–2010 sample, based on univariate tests. The results are stratified once more according to known determinants highlighted by the previous literature: the method of

payment (i.e. cash versus stock) and acquirer size (i.e. large versus small).

Table 3.3 presents the means and preliminary analysis of the takeover outcomes for the full samples of deals with low and high media coverage published within 180 days before the takeover announcement. The stocks are divided into a low media coverage subsample and a high media coverage subsample and their difference is analysed. The results in Panel A show that deals with high media coverage have an 84.4% completion rate and deals with low media coverage have a 91.1% completion rate. For cash payments, deals with high media coverage have an 85.6% completion rate, while deals with low media coverage have a 90.4% completion rate. For stock payments, deals with high media coverage have a 75% completion rate, while deals with low media coverage have a 90.9% completion rate. For mixed payments, deals with high media coverage have an 83.9% completion rate, while deals with low media coverage have a 91.6% completion rate. Moreover, the two-sample statistical analysis between these two groups shows that the difference between takeovers with low and high media coverage is -6.7% (*p*-value: 0.007) and statistically significant. This indicates that deals with low media coverage have significantly higher completion rates than deals with high media coverage. This finding supports the first hypothesis, that media coverage significantly influences takeover outcomes and deals with low media coverage prior to the takeover announcement have a higher possiblity of success than deals with high media coverage prior to the takeover announcement. Further, for mixed payments, the difference between takeovers with low and high media coverage is -7.7% (*p*-value: 0.029) and also significant. However, for the cash or stock payments, the differences are insignificant.

Panel B of Table 3.3 indicates that firm size plays a significant role in returns to takeovers. Large acquirers' takeovers with high media coverage have an 83.6% completion rate, while

large acquirers' takeovers with low media coverage have a 97.6% completion rate. For cash payments, deals with high media coverage have an 85.7% completion rate, while deals with low media coverage have a 93.3% completion rate. For stock payments, deals with high media coverage have a 77.8% completion rate, while deals with low media coverage have a 100% completion rate. For mixed payments, deals with high media coverage have an 81.7% completion rate, while deals with low media coverage have a 100% completion rate. Moreover, the difference shows that large acquirers' takeovers with low media coverage have a 14% (*p*-value: 0.000) statistically higher completion rate than takeovers with high media coverage. Similar to Panel A, by using mixed payments, the difference between takeovers with low and high media coverage is -18.3% (*p*-value: 0.000) and also significant. However, for cash or stock payments, the differences are insignificant.

Panel C of Table 3.3 indicates that for small acquirers, deals with high media coverage have an 81.8% completion rate, while deals with low media coverage have a 90.8% completion rate. For cash payments, deals with high media coverage have an 82.4% completion rate, while deals with low media coverage have an 89.7% completion rate. For stock payments, deals with high media coverage have a 66.7% completion rate, while deals with low media coverage have a 100% completion rate. For mixed payments, deals with high media coverage have an 83.3% completion rate, while deals with low media coverage have a 91.2% completion rate. However, this also shows the difference between small acquirers' takeovers with high and low media coverage is insignificant, even considering the methods of payment.

Moreover, Panel D shows the results of the two-sample statistical analysis of the difference between large and small firms. This indicates that large acquirers with low media coverage have a 6.8% (*p*-value: 0.042) higher completion rate than small acquirers with low media

coverage. For mixed payments, large acquirers have an 8.8% (*p*-value: 0.002) higher completion rate than small acquirers. However, for cash or stock payments, the differences between small and large acquirers are insignificant. Further, for acquirers with high media coverage, the difference is insignificant, even considering the payment methods.

[Insert Table 3.3 Here]

4.3 Univariate Analysis: Media Pessimism

Table 3.4 presents the means and preliminary analysis of takeover outcomes with high and low media pessimism. Pessimism are assigned based on the highest 33.333% and the lowest 33.333%. The stocks are divided into a high-pessimism subsample and a low-pessimism subsample and then the difference between them are computed. The results in Panel A show that those deals with high media pessimism has 87.5% completed rate, while those deals with low media pessimism has 88.1% completed rate. And with cash payment, deals with high media pessimism has 87.2% completed rate while deals low media pessimism has 89.2% completed rate. With stock payment, deals with high media pessimism has 83.3% completed rate while deals with low media pessimism has 82.4% completed rate. With mixed payment, deals with high media pessimism has 88.1% completed rate while deals with low media pessimism has 87.8% completed rate. However, the difference between high- and low-pessimism deal returns is negative 0.5% (*p*-value: 0.824) and not significant, even after considering the methods of payment.

Panel B of Table 3.4 indicates that for large acquirers, deals with high media pessimism has 86.8% completed rate while deals with low media pessimism has 89.2% completed rate. And with cash payment, deals with high media pessimism has 89.4% completed rate while deals

with low media pessimism has 84.8% completed rate. With stock payment, deals with high media pessimism has 80% completed rate while deals with low media pessimism has 100% completed rate. With mixed payment, deals with high media pessimism has 84.9% completed rate while deals with low media pessimism has 91.1% completed rate. However, the difference between large acquirers with high-pessimism news and those with low-pessimism news is insignificant, even if the payment method is considered.

Panel C of Table 3.4 indicates that for small acquirers, deals with high media pessimism has 93.8% completed rate while deals with low media pessimism has 88% completed rate. And with cash payment, deals with high media pessimism has 90.5% completed rate while deals with low media pessimism has 90.2% completed rate. With stock payment, deals with high media pessimism has 100% completed rate while deals with low media pessimism has 85.7% completed rate. With mixed payment, deals with high media pessimism has 96% completed rate while deals with low media pessimism has 86.9% completed rate. But Similar to the Panel B, the difference in returns between small acquirers with high- and low-pessimism news is insignificant, even when the method of payment is considered.

Panel D of Table 3.4 shows, in the high-pessimism column, the difference between small and large acquirers is 6.9% (*p*-value: 0.066) and positively significant. In the low-pessimism column, the difference between small and large acquirers is negative 1.2% (*p*-value: 0.785) and insignificant, even the methods of payment are considered. These findings indicate that small acquirers has higher completed rate in takeovers with high-pessimism news. Moreover, in takeovers high media pessimism, small acquirers using mixed payment method statistically has higher completed rate by 11.1% (*p*-value: 0.031). However, the differences between small and large acquirers using cash or stock payment are insignificant.

[Insert Table 3.4 Here]

The completed rate of takeovers with low media coverage are higher, on average, than those with high media coverage. However, there is no evidence to show that the completed rate of takeovers with low media pessimism are higher, on average, than those with higher media pessimism, even considering the payment methods.

4.4 Multivariate Analysis: Media Coverage

Univariate analysis is unable to take more factors into account because of its inherent limitations and it is unable to examine the relations between different factors. Correlations or inversions cannot be modelled using univariate analysis. Moreover, multivariate tests can be expected to create more accurate predictions than univariate tests (Prezz and Witt 2003). Therefore, multivariate analysis with additional controls is employed to examine the relations between takeover returns and media coverage and between takeover returns and media pessimism.

The results of multivariate analysis are reported in Table 3.5. This section reports the empirical relations between takeover outcomes and the quantity of media coverage and media pessimism in the 1981–2010 sample with 1,133 takeover deals, based on multivariate tests. All regressions include control variables for size; method of payment; the book-to-market ratio; runups; public deals; diversifying deals; tender offers; hostile takeovers; price–earnings ratios; earnings before interest, taxes, depreciation, and amortization; leverage; year; and industry. Since winsorization replaces extreme data values with less extreme values, accounting variables are winsorized at the 5% and 95% levels to mitigate the influence of

outliers.

Column (1) in Table 3.5 shows the takeover outcomes of media coverage during the period of 180 days before the takeover announcements. The key independent variable is the quantity of media coverage for a stock in a given period. The *p*-value is 0.041, which is statistically significant, and the estimated coefficient is -0.0014. These findings indicate that 180-day media coverage is negatively correlated with takeover outcome. The result is therefore in line with the univariate tests and the findings of Fang and Peress (2009): Financial media coverage has a significant impact on the stock market.

These findings are also related to those of Shiller (2000), Joe et al. (2009), Fang and Peress (2009) and Asquith et al. (1983). As Shiller (2000) and Joe et al. (2009) show, market sentiment is motivated by news content and media coverage has a major impact on economic impacts. Moreover, Fang and Peress (2009) state that stocks without media coverage outperform those heavily covered by the media, because deals with lower media coverage lead to the less investor recognition and stocks with a low level of investor recognition have to offer higher stock returns to compensate their shareholders who are imperfectly diversified. And Liu and McConnell (2013) state that the media play an important role in changing shareholders' and managers' interests, which can lead to the abandonment of value-reducing takeover attempts. Therefore, the explanation is the deals with high media coverage leads to the lower stock returns, then this may made managers abandon the takeover attempts. In addition, another explanation is that the gains during the takeover announcement period are larger if the takeover outcome is successful. (Asquith et al., 1983). Therefore, deals with low media coverage can compensate their shareholders with higher stock returns by the means of increasing the takeover completion rate.

4.5 Multivariate Analysis: Media Pessimism

The multivariate analysis results for media coverage are reported in Column (2) of Table 3.5. The results show that the *p*-value is 0.053, which is statistically significant, and the estimated coefficient is -0.0561. These findings indicate that 180-day media pessimism is negatively correlated with takeover outcomes. Therefore, the lower the media pessimism, the higher the possibility of takeover success.

The findings are consistent with those of Tetlock et al. (2008), who demonstrate that fundamental information transmitted by the financial news resolves the problem of information asymmetry. Therefore, financial news can provide additional information for investors with which to evaluate prospects in M&A deals and hence reduce information asymmetry. The results are in line with those of Buehlmaier (2012), who uses text-based media content and shows that news content is positively related to takeover success. There is two explanations for this result: first, textual sentiment has potentially strong impacts on stock returns and trading volumes (Antweiler and Frank, 2004; Kearney and Liu, 2014; Tetlock , 2007; and Tetlock et al., 2008), and a highly pessimistic media forecast places downward pressure on market because negative words that convey negative information and decrease the expectations of investors can be used to forecast low corporate earnings prices (Tetlock, 2007; Tetlock et al., 2008; and Davis et al., 2011; Solomon, 2012) while optimistic media raises stock prices by increasing the expectations of investors (McQueen and Roley, 1993). Moreover, According to the Samuelson and Rosenthal (1989), there is a positive relation between the stock price and the chance of tender success. Therefore, a highly pessimistic media leads to a lower completion rate while a lowly pessimistic media leads to a higher completion rate. Second, Liu and McConnell (2013) state that the sensitivity of

managers to the firm's stock price reaction around the takeover announcement is related to the level of media attention and the media attitude to the expected transaction. And then the managers decides whether to take the value-reducing takeover attempt or abandon it. The media play an important role in changing shareholders' and managers' interest, this may leads to the result that value-reducing takeover attempts are possible to be abandoned. However, the results are inconsistent with those of Vadnais (2012), who finds no apparent relation between media sentiment and takeover outcomes.

[Insert Table 3.5 Here]

4.6 Other Variables

First, Column (1) in Table 3.5 shows that the *p*-value of cash payments is 0.93 and the *p*-value of stock payments is 0.275, both of them are insignificant. Column (2) in Table 3.4 shows that the *p*-value of cash payments is 0.896 and the *p*-value of stock payments is 0.279, both of them are insignificant as well. The results indicate that the method of payment has no influence on takeover outcomes. This is inconsistent with the finding of Fishman (1989), who finds that cash offers can increase the likelihood of takeover success in tender offers and are therefore preferred by bidders in such transactions.

Second, a public target is shown to be statistically negatively related to bidding firm returns. Column (1) in Table 3.5 shows that the *p*-value of the public target dummy is 0.000, while the coefficient is -0.6419, and Column (2) in Table 3.4 shows that the *p*-value of the public target dummy is 0.000 while the coefficient is -0.6532. This shows that when bidding firms acquire public targets, the takeover has a lower possibility of success.

Third, a hostile takeover is shown to be statistically negatively related to bidding firm returns. Column (1) in Table 3.5 shows that the *p*-value of the hostile takeover dummy is 0.054, while the coefficient is -0.7587, and Column (2) in Table 3.5 shows that the *p*-value of the hostile takeover dummy is 0.060, while the coefficient is -0.7415.This finding indicates that hostile takeovers have a lower possibility of succeeding than friendly takeovers do. This is in line with the finding of Branch et al. (2008), who indicate that a friendly takeover attempt is more likely to succeed than a hostile takeover attempt is.

Fourth, the size of the bidding firms is shown to be insignificantly related to takeover outcomes. Column (1) in Table 3.5 shows that the *p*-value of size is 0.181, while the coefficient is -0.1954, and Column (2) in Table 3.5 shows that the *p*-value of size is 0.265, while the coefficient is -0.1553. This result is inconsistent with the finding of Ambrose and Megginson (1992), who state that the probability of receiving a takeover bid is positively related to firm size.

5. Robustness Checks

To increase reliability of the previous results, robustness checks for the long and short-term are necessary. The pre-announcement window is lengthen from 180 days to 365 days to further investigate the impact of media coverage and pessimism on stock returns. The results from 365 days are very similar with the previous results and are largely consistent with the main findings above when following robustness tests are employed, although several coefficients lose their significance.

First, the media coverage for the 365 days prior to the takeover announcement are regressed. Column (1) in Table 3.5 shows that the t-statistics are 0.023, which is statistically significant,

and the estimated coefficient ˆb1 is 0.0008 and negative. These findings indicate that 90-day media coverage is negatively correlated with takeover outcomes. The result is therefore in line with the univariate tests, multivariate tests and the findings of Fang and Peress (2009) and Liu and McConnell (2013).

Second, the media pessimism for the 365 days prior to the takeover announcement are regressed. Column (2) in Table 5 shows that the t-statistics are 0.339, which is statistically insignificant, and the estimated coefficient ˆb1 is 0.1296 and negative. This result indicates that the 365-day media quantity lose its significance in takeover outcomes.

[Insert Table 3.6 Here]

6. Endogeneity

The analysis so far suggests a negative relation between media coverage and takeover success. Moreover, a negative relation between media pessimism and takeover success is also shown in the analysis. However, the potential endogenous relation between takeover outcomes and media coverage/pessimism is a concern in the analysis. Endogeneity can arise due to unobservable heterogeneity when unobservable firm-specific factors affect media coverage, media pessimism, or takeover outcomes.

The instrumental variable method are applied to address endogeneity. Following prior studies (e.g. El Ghoul et al. 2011), media coverage published between 180 days and 730 days before the takeover announcements are used as the instrumental variable. The results of the instrumental variable approach are reported in Column (3) of Table 3.6. The *p*-value is 0.057, which is significant. Moreover, the coefficients of the fitted value of media coverage are

significantly negative, suggesting that the negative relation between media coverage quantity and takeover success holds after controlling for endogeneity based on the instrumental variable methodology.

7. Conclusion

This chapter addresses the question of whether media coverage and media pessimism can influence takeover outcomes in M&As during 1981–2010 for the UK market. Controlling for firm size, method of payment, and acquirer/target industry, the empirical results indicate that deals without media coverage have higher completion rates than deals with media coverage. Moreover, the results show a significantly negative correlation between media pessimism and takeover success. That is, deals with a barely negative media attitude have significantly higher completion rates than those with a highly negative media attitude.

The results of this chapter indicate that deals with low media coverage have higher completion rates than deals with high media coverage published 180 days prior to the merger announcement. This outperformance persists even after controlling of a number of known anomalies. They are related to the findings of Joe et al. (2009) who state that media releases of information have significant economic impacts and Fang and Peress (2009) who indicate that stocks without media coverage outperform those heavily covered by the media and Asquith et al. (1983) who show that the gains during the takeover announcement period are larger if the takeover outcome is successful. Moreover, it is also related to the finding of Liu and McConnell (2013) who state that the media plays an important role in changing shareholders' and managers' interests, this can leads to the result that value-reducing takeover attempts are possible to be abandoned.

Furthermore, a significantly negative interaction between media pessimism and takeover success is found in the empirical results. The results are in line with those of Buehlmaier (2012), who uses text-based media content and shows that news content is positively related to the takeover success. The findings are also related with those of Tetlock (2007) who state that textual sentiment has potentially strong impacts on stock returns and trading volumes and those of Tetlock et al. (2008) and Davis et al. (2011) who indicate that a highly pessimistic media forecast places downward pressure on market because negative words that convey negative information can be used to forecast low corporate earnings prices and Samuelson and Rosenthal (1986) who find there is a positive relation between the stock price and the chance of tender success. However, the result is inconsistent with those of Vadnais (2012), who finds no apparent relation between media sentiment and takeovers outcomes.

The results indicate that media coverage and media sentiment have a statistically significant influence on takeover outcomes, which opens up many future research avenues. One area of particular interest is whether media coverage and media sentiment influence takeover performance. Moreover, after the quantity of media coverage is measured, another area of interest is whether deals with media coverage outperforms those without media coverage. In addition, this chapter considers only media coverage in a window of 180 days and other windows, such as windows of 365 days and of 90 days, can be examined and compared in future research.

Table 3.1 Summary Statistics: Media Coverage

This table reports the summary statistics for the full sample and focuses on media coverage. The media coverage variable is a dummy variable that takes the value one if articles covering takeover news are published in a given period. Table 3.1 presents an overview of the variables with high media coverage published within 180 days before the takeover announcements and those with low media coverage data. This table also presents the total number of observations, means, medians, and standard deviations of the financial, asset, and ownership structure variables under the media coverage classifications. The total number of observations is 1133. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars); the book-to-market ratio is the acquirer's book value divided by its market value, as of the end of the previous year; RUNUP is the acquirer's stock performance prior to the takeover announcement, measured using CAR [-365, -7]; Leverage is the percentage of total debt divided by total capital in annual terms and is measured in the year prior to the deal announcement; EBITDA is subtracted from a firm's final accounting of its income and costs; the PE ratio refers to an equity valuation ratio of the firm's current market share price compared to its per-share earnings in one year; Cash denotes deals financed using 100% cash, Stock denotes deals financed using 100% stock; and Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Hostile, public, tender and diversification are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise.

	All Sample				**High Media Coverage**				**Low Media Coverage**			
	Mean	SD	Median	N	Mean	SD	Median	N	Mean	SD	Median	N
Media Coverage	25.33	75.59	5	1133	72.39	121.89	24	358	1.46	0.5	1	337
Stock	0.04	0.19	0	41	0.04	0.21	0	11	0.03	0.18	0	16
Cash	0.43	0.5	0	491	0.49	0.5	0	136	0.4	0.49	0	174
Runup	0.11	0.29	0.08	1133	0.07	0.28	0.04	358	0.14	0.29	0.14	337
Size	2036.52	3361.76	616.12	1133	4435.29	4650.83	2460.46	358	1251.92	58.23	330.06	337
MTB	3.07	2.45	2.34	1133	3.06	2.68	2.19	358	3.1	2.3	2.39	337
PE	17.24	7.88	15.4	1133	17.23	8.31	14.9	358	17.25	7.6	15.5	337
RalativeSize	0.09	0.15	0.03	1133	0.09	0.16	0.02	358	0.09	0.15	0.03	337
Leverage	30.8	21	28.64	1133	33.56	21.14	30.57	358	28.66	20.15	26.67	337
Public	0.16	0.36	0	1133	0.25	0.43	0	358	0.11	0.31	0	337
Diversification	0.47	0.5	0	1133	0.5	0.5	0.5	358	0.51	0.5	1	337
EBITDA	11.59	1.45	11.45	1133	12.65	1.38	12.89	358	10.79	1.11	10.78	337
Tender	0.1	0.3	0	1133	0.15	0.35	0	358	0.06	0.24	0	337
Hostile	0.01	0.11	0	1133	0.02	0.14	0	358	0.01	0.08	0	337

Table 3.2 Summary Statistics: Media Pessimism

This table reports the summary statistics for the full sample and focuses on media pessimism. After a pessimism score is calculated, deals are ranked by score, from highest to lowest. The top third of deals is then classified as high pessimism, while the bottom third is classified as low pessimism. Table 3.2 presents an overview of the deals with high media pessimism published within 180 days before the takeover announcements and those with low media pessimism data. This table also presents the total number of observations, means, medians, and standard deviations of the financial, asset, and ownership structure variables under the media coverage classifications. The total number of observations is 1133. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars); the book-to-market ratio is the acquirer's book value divided by its market value, as of the end of the previous year; RUNUP is the acquirer's stock performance prior to the takeover announcement, measured using CAR [-365, -7]; Leverage is the percentage of total debt divided by total capital in annual terms and is measured in the year prior to the deal announcement; EBITDA is subtracted from a firm's final accounting of its income and costs; the PE ratio refers to an equity valuation ratio of the firm's current market share price compared to its per-share earnings in one year; Cash denotes deals financed using 100% cash, Stock denotes deals financed using 100% stock; and Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Hostile, public, tender and diversification are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise.

	Media Pessimism Sample				**High Media Pessimism**				**Low Media Pessimism**			
	Mean	SD	Median	N	Mean	SD	Median	N	Mean	SD	Median	N
Media Pessimism	-0.01	0.92	0.01	1133	0.04	0.12	0.01	566	-0.06	1.29	0	566
Stock	0.04	0.19	0	41	0.03	0.17	0	17	0.04	0.2	0	12
Cash	0.43	0.5	0	491	0.47	0.5	0	139	0.4	0.49	0	172
Runup	0.11	0.29	0.08	1133	0.09	0.29	0.07	566	0.13	0.29	0.11	566
Size	2036.52	3361.76	616.12	1133	2211.1	3454.53	814	566	1863.85	3262.92	477.76	566
MTB	3.07	2.45	2.34	1133	3	2.37	2.31	566	3.14	2.53	2.38	566
PE	17.24	7.88	15.4	1133	16.84	7.62	15.3	566	17.64	8.13	15.4	566
RalativeSize	0.09	0.15	0.03	1133	0.08	0.14	0.02	566	0.1	0.16	0.03	566
Leverage	30.8	21	28.64	1133	32.7	22.03	29.44	566	28.88	19.77	27.3	566
Public	0.16	0.36	0	1133	0.17	0.38	0	566	0.14	0.35	0	566
Diversification	0.47	0.5	0	1133	0.46	0.5	0	566	0.48	0.5	0	566
EBITDA	11.59	1.45	11.45	1133	11.79	1.36	11.67	566	11.39	1.5	11.24	566
Tender	0.1	0.3	0	1133	0.11	0.32	0	566	0.08	0.27	0	566
Hostile	0.01	0.11	0	1133	0.01	0.1	0	566	0.01	0.12	0	566

Table 3.3 Univariate Tests: Media Coverage

This table reports takeover outcomes for the full sample. Media coverage is published within 180 days before the takeover announcements. Deals are ranked by media coverage quantity from highest to lowest. The top 33% are classified as high media coverage, while the bottom 33% are classified as low media coverage. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars). The deals are ranked by size from highest to lowest. The top 33% are then classified as large firms, while the bottom 33% are classified as small firms. Cash denotes deals financed using 100% cash, Stock denotes deals using 100% stock, and Mix denotes a mixture of cash and stock. Panel A relates to the full sample. Panel B relates to larger acquirers, measured as those firms in the highest half of bidders ranked by market value. Panel C relates to small acquirers, measured as those firms in the lowest half of bidders, ranked by market value. Panel D relates to the differential performance between small and large bidders (Panel C minus Panel B). The p-values are shown in parentheses and are calculated using the t-test for CARs. Significance at the 1%, 5%, and 10% levels is denoted ***, **, and *, respectively.

	All				**Low Media Coverage**				**High Media Coverage**				**Differential (High media-Low media)**			
	All	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixe**
Panel A: All Firms																
Mean	0.868	0.866	0.854	0.872	0.911	0.904	0.909	0.916	0.844	0.856	0.750	0.839	-0.067	-0.048	-0.159	-0.077
***p*-Value**													0.007	0.192	0.279	0.029
N	1133	491	41	601	337	136	11	190	358	174	16	168				
Panel B: Large Firm																
Mean	0.865	0.855	0.857	0.874	0.976	0.933	1.000	1.000	0.836	0.857	0.778	0.817	-0.140	-0.076	-0.222	-0.183
***p*-Value**													0.000	0.317	0.169	0.000
N	377	173	14	190	41	15	3	23	225	112	9	104				
Panel C: Small Firm																
Mean	0.881	0.871	0.938	0.883	0.908	0.897	1.000	0.912	0.818	0.824	0.667	0.833	-0.090	-0.074	-0.333	-0.078
***p*-Value**													0.158	0.480	0.423	0.350
N	377	155	16	206	174	68	4	102	44	17	3	24				
Panel D: Differential (Panel C-Panel B)																
Mean	0.016	0.015	0.080	0.010	-0.068	-0.036	0.000	-0.088	-0.017	-0.034	-0.111	0.016				
***p*-Value**	0.513	0.685	0.493	0.766	0.042	0.639	-	0.002	0.786	0.743	0.777	0.854				

Table 3.4 Univariate Tests: Media Pessimism

This table reports takeover outcomes for the full sample. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top half are classified as high pessimism, while the bottom half are classified as low pessimism. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars). The deals are ranked by size from highest to lowest. The top 33% are then classified as large firms, while the bottom 33% are classified as small firms. Cash denotes deals financed using 100% cash, Stock denotes deals using 100% stock, and Mix denotes a mixture of cash and stock. Panel A relates to the full sample. Panel B relates to larger acquirers, measured as those firms in the highest half of bidders, ranked by market value. Panel C relates to small acquirers, measured as those firms in the lowest half of bidders, ranked by market value. Panel D relates to the differential performance between small and large bidders (Panel C minus Panel B). The *p*-values are shown in parentheses and are calculated using the t-test for CARs. Significance at the 1%, 5%, and 10% levels is denoted ***, **, and *, respectively.

	All				**Low Media Pessimism**				**High Media Pessimism**				**Differential (High media-Low media)**			
	All	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixe**
Panel A: All Firms																
Mean	0.868	0.866	0.854	0.872	0.881	0.892	0.824	0.878	0.875	0.872	0.833	0.881	-0.005	-0.020	0.010	0.003
***p*-Value**													0.824	0.587	0.948	0.926
N	1133	491	41	601	377	139	17	221	377	172	12	193				
Panel B: Large Firm																
Mean	0.865	0.855	0.857	0.874	0.892	0.848	1.000	0.911	0.868	0.894	0.800	0.849	-0.024	0.045	-0.200	-0.06
***p*-Value**													0.598	0.542	0.374	0.307
N	377	173	14	190	83	33	5	45	144	66	5	73				
Panel C: Small Firm																
Mean	0.881	0.871	0.938	0.883	0.880	0.902	0.857	0.869	0.938	0.905	1.000	0.960	0.058	0.003	0.143	0.091
***p*-Value**													0.102	0.959	0.356	0.037
N	377	155	16	206	175	61	7	107	96	42	4	50				
Panel D: Differential (Panel C-Panel B)																
Mean	0.016	0.015	0.080	0.010	-0.012	0.053	-0.143	-0.042	0.069	0.011	0.200	0.111				
***p*-Value**	0.513	0.685	0.493	0.766	0.785	0.476	0.356	0.439	0.066	0.857	0.374	0.031				

Table 3.5 Multivariate Tests

This table reports takeover outcomes for the full sample. Media coverage is published within 180 days before the takeover announcements. Column (1) reports the results for the media coverage samples, while Column (2) refers to the media pessimism samples. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars); the book-to-market ratio is the acquirer's book value divided by its market value, as of the end of the previous year; RUNUP is the stock performance of the acquirer prior to the takeover announcement, measured using Run-up[-365, -7]; Leverage is the percentage of total debt divided by total capital in annual terms, measured in the year prior to the deal announcement; EBITDA is subtracted from a firm's final accounting of its income and costs; the PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year; Cash denotes deals financed using 100% cash, Stock denotes deals financed 100% in stock, and Mix is a mixture of cash and stock; and relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Hostile, public, tender and diversification are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise. Significance at the 1%, 5%, and 10% levels is denoted ***, **, and *, respectively.

	DealStatus	
	(1)	**(2)**
Media Coverage	-0.0014**	
	(0.041)	
Media Pessimism		-0.0561*
		(0.053)
STOCK	0.3089	0.3047
	(0.275)	(0.279)
CASH	0.0092	0.0135
	(0.930)	(0.896)
WRUNUP_365_28	-0.0114	-0.0150
	(0.959)	(0.946)
WLNMV	0.1954	0.1553
	(0.181)	(0.265)
WMTBV	-0.0184	-0.0118
	(0.554)	(0.702)
WPE	-0.0065	-0.0072
	(0.415)	(0.369)
WRelativeSize	-0.5308	-0.5467
	(0.223)	(0.211)
WLeverage	0.0018	0.0019
	(0.548)	(0.514)
Public	-0.6419***	-0.6532***
	(0.000)	(0.000)
Diversification	-0.0809	-0.0674
	(0.477)	(0.552)
WLNEBITDA	-0.1503	-0.1488
	(0.272)	(0.272)
Tender	0.1427	0.1705
	(0.521)	(0.448)
Hostile	-0.7587*	-0.7415*
	(0.054)	(0.060)
N	1128	1128
R-sq	0.1373	0.1339

Table 3.6 Robustness Checks

This table reports the findings of robustness checks. Media coverage is published within 365 days before the takeover announcements. Column (1) reports the results for the media coverage samples, while Column (2) refers to the media pessimism samples. Column (3) reports the endogeneity test. Media coverage published between 180 days and 730 days before the takeover announcements are used as the instrumental variable in the first-stage regression. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars); the book-to-market ratio is the acquirer's book value divided by its market value, as of the end of the previous year; RUNUP is the stock performance of the acquirer prior to the takeover announcement, measured using Run-up[-365, -7]; Leverage is the percentage of total debt divided by total capital in annual terms, measured in the year prior to the deal announcement; EBITDA is subtracted from a firm's final accounting of its income and costs; the PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year; Cash denotes deals financed using 100% cash, Stock denotes deals financed 100% in stock, and Mix is a mixture of cash and stock; and relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Hostile, public, tender and diversification are dummy variables that take the value 1 for hostile, tender and diversifying mergers, respectively, and 0 otherwise. Significance at the 1%, 5%, and 10% levels is denoted ***, **, and *, respectively.

	Deal Status		
	(1)	**(2)**	**(3)**
Media Coverage	-0.0008**		
	(0.023)		
Media Pessimism		-0.1296	
		(0.339)	
Endogeneity			-0.0006*
			(0.057)
STOCK	0.4256	0.4186	0.3113
	(0.134)	(0.137)	(0.271)
CASH	0.0039	0.0083	0.0189
	(0.969)	(0.934)	(0.857)
WRUNUP_365_28	-0.0215	-0.0252	-0.0252
	(0.920)	(0.907)	(0.909)
WLNMV	0.1425	0.1002	0.1945
	(0.317)	(0.459)	(0.184)
WMTBV	-0.0387	-0.0317	-0.0178
	(0.178)	(0.264)	(0.568)
WPE	-0.0059	-0.0066	-0.0066
	(0.470)	(0.419)	(0.403)
WRelativeSize	-0.6123	-0.6195	-0.5309
	(0.150)	(0.145)	(0.223)
WLeverage	0.0025	0.0025	0.0018
	(0.397)	(0.384)	(0.536)
Public	-0.5873***	-0.5968***	-0.6447***
	(0.001)	(0.001)	(0.000)
Diversification	-0.0963	-0.0824	-0.0868
	(0.399)	(0.471)	(0.444)
WLNEBITDA	-0.1069	-0.1038	-0.1507
	(0.415)	(0.421)	(0.273)
Tender	0.1076	0.1370	0.1377
	(0.624)	(0.538)	(0.533)
Hostile	-0.9151**	-0.9004**	-0.7444*
	(0.019)	(0.020)	(0.060)
N	1213	1213	1128
R-sq	0.1408	0.1366	0.1368

Chapter 4: Media Sentiment and M&A Performance: New Evidence from a Market Valuation Perspective

1. Introduction

Media sentiment about announced takeovers has played an important role in the stock market in recent years. The last few decades of research in finance have generated a large number of papers concentrating on the relation between media sentiment and stock market. While some of these papers study the impact of media sentiment on stock market (e.g. Shiller, 2000; Tetlock, 2007; Buehlmaier, 2012; Ho et al., 2013), others explore merger waves and market valuations (Harford, 2005; Maksimovic and Phillips, 2001; Rhodes-Kropf and Viswanathan, 2004). The goal of this chapter is to test the different impacts of media pessimism in hot and cold markets from 1981 to 2010. Former chair of the Board of Governors of the Federal Reserve System Bernanke states the importance of confidence: '*As in all past crises, at the root of the problem is a loss of confidence by investors and the public in the strength of key financial institutions and markets*'.

This paper is primarily motivated by the growing importance of media sentiment in merger waves. Vadnais (2012) suggests that the media not only covey information to investors but also have a strong influence on the financial markets. For public investors and analysts to make rational portfolio optimization choices, it is necessary to understand how takeover news events influence stock returns and the market conditions that could influence the results of media sentiment impact. Moreover, as Bouwman et al. (2009) suggest, takeovers during cold markets are very different from those during hot markets. While there is a literature concerning the relationship between news sentiment and takeover returns in the equity market, this paper is the first to consider the relation between media and returns in different market

valuations This is important, because both hot and cold markets have distinctive characteristics that can lead to somewhat dissimilar returns from those in the whole equity market.

Much of the literature relates to the importance of different market valuations. According to recent debate, merger waves are highly correlated with high market valuations, usually called hot markets. Harford's (2005) results support the neoclassical view of merger waves: Specific industry shocks that require large-scale reallocations of assets drive the occurrence of merger waves. In addition, the author states market timing could also be a cause of merger waves. The macro-level liquidity component drives industry waves of mergers to cluster in time, since economic motivation and low transaction costs triggering larger transaction volumes are two causes of merger waves. Leinweber and Sisk (2011), Riordan et al. (2013), and Smales (2013) state that negative news is more informative than positive news, reactions to negative news are more significant, and thus negative sentiment signals are more exploitable. Therefore, this chapter employs media pessimism to evaluate media sentiment.

To explain the influences of media sentiment, human nature is considered, since it is the main subject of all social sciences. First, cognitive dissonance theory (Festinger (1957)) is still a very hot issue, especially in psychology and economics, and useful in studies of consumer behaviour since a long time. It states that investors are subject to conflicting cognitive elements, including discrepancies between past decisions and empirical evidence, and they then alleviate their discomfort by adjusting their beliefs to conform to their actions in the past. Moreover, according to Telci et al. (2011), cognitive dissonance theory focuses on the relationships among cognitions which are people's knowledge about their perceptions, behaviours, attitudes, feelings, beliefs, and environments. Several researchers examine the

possible psychological bases for trader behaviours. Second, Frydman and Rangel (2014) define the disposition effect as the fact that investors tend to sell risky assets when their capital increases and tend to hold risky assets when their capital decreases. Third, Galariotis et al. (2015) define herding behaviour as the process in which market participants contemporaneously trade in the same direction and/or their behaviour converges to a consensus in financial markets.

This chapter contributes to the literature in a number of ways. It is the first, to the best of my knowledge, to test the effect of media pessimism about takeovers under different stock market valuations. Since the takeover quantities and media sentiment in hot and cold markets are quite different, the effects of media pessimism should be tested separately. This addresses a gap in the literature, since the previous literature never discriminates between hot and cold markets. Second, a section of the literature has focused on the entire stock market, but this chapter employs merger and acquisition (M&A) data to test the relation between sentiment and returns in M&As. Such M&As attract media attention and therefore both firm-specific information and market information are available for empirical investigation. The large amounts of media coverage around takeover announcements could provide a perfect test ground for this relation, since such an experiment would be less prone to selection bias in the media data. Third, given that the UK is the second largest financial centre in the world, this study extends previous research by investigating whether and how the influence of media coverage and sentiment on bidder performance can offer new evidence. Last, the impact of media sentiment in both the short and long run is examined. The findings have practical implications for the investor sentiment literature and suggest that media sentiment can be considered an effective proxy for investor sentiment.

The principle results suggest that acquirers are subject to lower media pessimism when the deal is announced during a hot market valuation period. Moreover, the results show that acquirers obtain significantly higher short-run announcement returns for deals announced during hot markets with low media pessimism and significantly lower long-run returns for deals announced during cold markets with low media pessimism. The finding is in line with early investigations by Petmezas (2009), who states that managers undertaking takeovers during hot markets can earn positive returns in the short run and earn insignificant returns during cold markets. Moreover, in the long run, the returns will reverse and managers obtain negative returns in both hot and cold markets. These results are partly consistent with the findings of Bouwman et al. (2009), who find that takeovers during cold markets are very different from those during hot markets. Bidding firms earn significantly higher returns during hot markets and their announcement returns are significantly negative for takeovers announced in cold markets. The results are of interest to investors who wish to understand how net trader positions influence market returns and how this relationship can change in different macroeconomic environments. The results also have implications for academics and market practitioners seeking to understand the relationship between news pessimism and market movements for different market valuations.

Apart from media sentiment, many other factors can affect takeover outcomes. Rhodes-Kropf and Viswanathan (2004) find that acquirers obtain high returns in stock takeovers while the targets obtain low returns in cash takeovers. Moreover, in the long run, stock takeovers lead to negative returns, while cash takeovers lead to positive returns. Branch et al. (2008) and Fishman (1989) state that cash offers and friendly takeovers increase the likelihood of takeover success. Branch et al. find that takeover performance is negatively related to the percentage of equity the bidding firm is seeking. Moreover, Ambrose and Megginson (1992)

find that the probability of receiving a takeover bid is negatively related to firm size. Morellec and Zhdanov (2008) state that acquirers with the lowest leverage win the takeover negotiation. Capron and Shen (2007), Chang (1998), and Fuller et al. (2002) find that the bidding firms of private targets usually earn higher returns than those of public targets. This paper considers these factors as well.

This chapter is organized as follows. Section 2 provides some background literature and presents several hypotheses that are empirically tested. Section 3 introduces the and describes the methodology. Section 4 presents the empirical testing of the relation between media pessimism and stock returns in hot and cold markets and in the short and long run, seperately, and then presents summary statistics and univariate and multivariate results. Sections 5 conduct robustness checks, respectively. Section 6 concludes the study.

2. Related Literature and Hypothesis Development

2.1 Bear and Bull Markets

Bouwman et al. (2009) find that takeovers during cold markets are very different from those during hot markets. Bidding firms earn significantly higher returns during hot markets and their announcement returns are significantly negative for takeovers announced in cold markets. Moreover, bidders generate lower long-term stock and operating performance than what they earn during cold markets. This pattern shows short-term momentum followed by long-run stock price reversals. Bouwman et al. find managerial herding to be the reason for long-term underperformance. The authors also find takeovers with cash payments undertaken in the 1980s earned positive long-term abnormal returns for bidders, whereas takeovers with cash payments undertaken in the 1990s earned negative long-term abnormal returns due to

the underperformance of high-market takeovers with cash payments. This suggests that when stock prices are soaring during hot markets, cash payments can decrease shareholder value.

Nyberg (2013) points out that bear and bull markets are predictable according to analysis of a US data set. In particular, allowing for a dynamic structure in the binary response model can increase the predictive power. Probability predictions of the US stock market can also be used to arrive at optimal asset allocation decisions between bonds and stocks. The author finds that, in statistical forecast accuracy measures, dynamic models earn higher portfolio returns than the buy-and-hold trading strategy. In dynamic probit models, the term spread between short- and long-run interest rates and the dividend–price ratio are the best predictive variables for future market states.

Using a UK takeover sample from 1990 to 2005, Croci et al. (2010) find that the interaction between the different behavioural traits of managers and market valuation influences acquirer returns. The authors state that non-overconfident managers create greater returns than overconfident managers do in both high and low market valuations. They also argue that acquirers with non-overconfident managers obtain the highest returns in high market valuations and the difference in five-day CARs around the announcement date between takeovers by non-overconfident managers in a bull market and those by overconfident managers in a bear market is 3.05% and statistically significant. Moreover, even in the long run, the non-overconfident managers earn higher BHARs than overconfident bidders do.

Fabozzi and Francis (1977) categorize bull and bear markets based on market trends. The sample months are divided into two mutually exclusive and exhaustive subsamples that place

most months of increasing market valuation in the bullish category. However, they classify months when the market rose amidst adjacent bearish months as part of the bearish subset.

Employing data from the London Stock Exchange, Siganos and Chelley-Steeley (2005) investigate the increase in profitability of the popular momentum strategy following hot and cold markets. The authors define hot and cold markets according to market returns (FTSE All-Share) over different time horizons and find that investors can achieve greater momentum following downward trends. Moreover, the longer the period used to identify bear markets, the higher the momentum returns. The results contradict investor overconfidence theory (Daniel et al., 1998) and the follow-the-trend model (Kim, 2002) but are in line with the results of the trader hesitation model (Du, 2002).

Considering intraday returns over six days and combining different phases of the Spanish market, Miralles-Marcelo et al. (2014) argue that negative shocks are less important than positive shocks, especially in bear markets, in which the authors find a significant overreaction that is related to the pessimism prevailing in a cold market after positive shocks.

Bull and bear market cycles have received much more attention than any other economic phenomena and investors and analysts agree that bull markets are strongly related to constantly rising stock prices, investor interests, and improved financial well-being. Gonzalez et al. (2005) identify the turning points of bear and bull markets by identifying turning points and the results show that the phases of bull and bear markets are related to persistent and distinct mean return shifts. Moreover, the authors emphasize return evidence that differentiates cold markets as different investment return regimes. The authors also highlight the properties of hot markets that can be useful to investors, such as the persistence of return

differences between cold and hot markets and relationships between hot markets and investor interest.

Researchers use Granger causality tests and principal components analysis to study the portfolio diversification implications of sector index co-movements in the US, UK, German, French, and Japanese stock markets in hot and cold markets,. Meric et al. (2008) find that, in a hot market, investors with domestic diversification obtain less profit than those with global diversification, even when they invest in the same sector in different countries. In a cold market, the sectors of different countries tend to be more closely related and opportunities for diversification are limited.

Shleifer and Vishny (2003) present a model to examine the relation between market valuations and takeover decisions, payment methods, bidding firm performance, and takeover waves. They argue that the clustering of takeovers is driven by stock market valuations. The fundamental assumption of their theory is that the market is inefficient and rational managers take advantage of this market. This theory differs from Roll's (1986), who assumes that the market is efficient but managers are irrational. Shleifer and Vishny conclude that takeovers disproportionately favour stock payments during hot markets and cash payments during cold markets. They also find that acquirers obtain high returns in stock takeovers while targets obtain low returns in cash takeovers. However, acquirers in a stock takeover can create overvaluation by manipulating earnings and through insider selling. Moreover, in the long run, stock takeovers lead to negative returns while cash takeovers lead to positive returns. In addition, takeovers between different industries yield higher returns than those between related industries.

According to the earlier research proposed by Shleifer and Vishny (2003) and Rhodes-Kropf and Viswanathan (2004), stock market misvaluation drives takeovers. Petmezas (2009) examines the relation between bidder performance and high market valuation. The author states that acquirer reactions to takeovers in both the short and long run are in accordance with forecasts of investor sentiment (optimism). Undertaking takeovers during hot markets, managers can earn positive returns in the short run and earn insignificant returns during cold markets. However, in the long run, the returns will reverse and managers obtain negative returns in both hot and cold markets because of misvaluations due to overestimating returns and pressure from the 'urge to merge' to profit from the overall market status.

Using a bounce-back augmented Markov switching model, Zeng and Bec (2015) propose an empirical study of the shape of recoveries in financial markets. This model is used to estimate the monthly returns of stock markets within five developed countries after 1970. Their results indicate that the bounce-back effect is statistically significant within all countries except Germany. Moreover, taking rebound into account, they find that a negative influence on the share price index in cold markets is significantly reduced.

Cheng et al. (2013) examine how the innate characteristics, such as age and gender, of retail futures traders and external factors, such as hot and cold markets and the security traded, are influenced by the disposition effect on the Taiwan Futures Exchange over a period of six years. Their results show a stronger disposition effect in bear markets and that both internal and external factors are related to the disposition effect and investor behaviour. Women exhibit a significant disposition effect, indicating that women are more risk averse and trade less actively than men do. These findings are in line with the relevant literature in psychology, sociology, and economics. Moreover, the results indicate that mature trades have a stronger

disposition effect. In addition, the authors disagree with the results of Dhar and Zhu (2006) and Korniotis and Kumar (2011), that older investors exhibit a weaker disposition effect. Cheng et al. (2013) argue that this finding is biased because the data include many more men than women and many more older investors than others. Furthermore, the authors find a trading microstructure factor in the security traded to be correlated with the disposition effect. Because traders have different levels of risk tolerance, they are interested in diverse products and their different extents of being subject to the disposition effect are reflected in the trading of diverse products. Additionally, Cheng et al. demonstrate that a cold market has a stronger and more significant disposition effect, which shows that investor behaviour can be influenced by market conditions.

Jansen and Tsai (2010) examine asymmetries in the influence of monetary policy surprises on stock returns between cold and hot markets in 1994–2005 and investigate how these influences respond to the capability of firms to gain external finance. The authors find a significant large negative influence of a surprise monetary policy in a cold market, even across portfolio sizes. Moreover, the results show that the influence of a surprise policy action in a cold market is greater than in a bull market. In addition, the returns of firms in cold markets respond more than those of firms in hot markets after controlling for the ability to obtain external financing. The ability to obtain external financing is more important in a cold market than in a hot market, because it alleviates the greater influence of monetary policy in a cold market.

Bradley et al. (2012) find that, when a high-value IPO is underpriced, unaffiliated all-star analysts from banks of high reputation issue less strong-buy advice and unaffiliated all-star analysts from banks of low reputation maintain their level of optimism. On the other hand,

unaffiliated non-star analysts from banks of both high and low reputation issue more strong-buy advice. Moreover, the authors consider a hot market essential for inducing the type of behaviour that brings about noticeable conflict. Their results also show that, in the hot market from 1999 to 2000, unaffiliated analysts, conjectured to be biased and with similar incentives as affiliated analysts, faced conflicts of interest when earnings from investment banking activities were high.

2.2 Takeover Waves

Rhodes-Kropf and Viswanathan (2004) state that firm-specific and market-wide misvaluations could cause merger waves, influence the level of takeover activity, methods of payment, and the final decision to be a bidder or a target. In their model of rational managerial behaviour and uncertainty about misvaluation sources, rational targets with imperfect information tend to accept takeover from overvalued acquirers during hot markets because the targets overestimate the takeover synergies during such periods. Moreover, Rhodes-Kropf et al. (2005) state that market misvaluation fundamentally influences takeover activity. Their results show that potential market value deviations can bring about a correlation between market valuation and stock merger activity. In addition, they find that takeover waves and cash/stock payment waves can be motivated by overvaluation and undervaluation periods of the stock market.

Harford's (2005) results support the neoclassical theory of merger waves: Specific industry shocks that require the large-scale reallocation of assets drive the occurrence of merger waves. Sufficient overall capital liquidity is required to accommodate the asset reallocation. Economic, technological, and regulatory shocks drive merger waves. In addition, the author states market timing could also be a cause of merger waves. The macro-level liquidity

component drives industry waves of mergers to cluster in time, since economic motivation for transactions and low transaction costs triggering larger transaction volumes are two causes of merger waves.

2.3 Market Valuations

Nelson (1959) and Andrade et al. (2001) find that takeovers are highly concentrated in time and happen more frequently during periods of high market valuation than periods of low market valuation and managers generally choose stock as the method of payment. In the 1980s, 45.6% of takeovers were paid by stock, compared to 70.9% in the 1990s. After examining quarterly merger data from 1895–1956, Nelson (1959) concludes that stock prices are significantly and positively related to takeovers, but the relation between takeovers and industrial production is not significant. Verter (2002) also confirms the higher levels of takeover activity in hot markets and their correlation with greater dispersion in market valuations.

Ma et al. (2013) examine whether takeovers create returns in the long run. The authors use an alternative measure of long-run economic takeover influence on the value of firms: post-takeover changes in intrinsic value as estimated by a residual income model. They find that the intrinsic value of targets suffers a decrease, on average, within three years following takeover completion, particularly with bidders with high initial intrinsic values. The fundamental reasons for the decrease in intrinsic value are the loss of expected earnings and increases in capital. The authors state that high pre-takeover price-to-value ratios, which are usually used to measure the levels of firm valuation, are highly related to increases in intrinsic value. On the contrary, high pre-merger price-to-book ratios, which are also usually used to measure levels of firm valuation, are highly related to decreases in post-takeover

intrinsic values in the three years after deal completion and are associated with negative 36-month BHARs. In addition, the authors show that loss in intrinsic value rather than in valuation level changes leads to low post-takeover returns. They also find that higher initial intrinsic value is related to losses in intrinsic value over the long term. Their results suggest that the performance extrapolation hypothesis proposed by Rau and Vermaelen (1998) involves both an intrinsic value effect and a valuation effect.

Maksimovic and Phillips (2001) argue that high activity periods are strongly correlated with high market valuations. They find that the probability of a multiple-division firm selling its assets is positively related to the productivity of both the assets and the industry segment. The probabilities of takeovers and firm sell-offs are negatively related to the productivity of the selling firm and positively related to industry demand shocks. Moreover, the authors find that the productivity of selling firms in other divisions influences the sale probability. If the prospects of other divisions are better, then a division has a greater probability of being sold. In addition, the authors suggest that the firm is more likely to buy additional assets, given its size and efficiency.

After examining the influence of takeover momentum on the returns of acquirers in both the short and long run, Antonio et al. (2008) focus on high-valuation markets and sources of momentum and find that investors obtain significant and positive gains in the short run and suffer negative returns in the long run as returns are reversed because initial expectations could not be fully met. The results are in line with the predictions of investor overconfidence. Moreover, the authors find that the takeover performance of firms is an integral component of market-wide (mis)valuations. In addition, they state that firms that make takeover deals

during high market valuations perform less well than those that make takeover deals in other periods and, during hot markets, the motivations of managers can affect takeover decisions.

GAO (2010) analyses the influence of managerial horizons on takeover activity. The main prediction is that acquirers managed by short-horizon managers earn higher returns at takeover announcements and are more likely to use cash to pay for deals, with inferior long-term performance after takeovers. In addition, the author indicates that long-horizon managers are more likely to initiate takeovers in response to high market valuations.

Kimbrough (2007) states that firms that can manage at least part of their research and development (R&D) assets always gain advantages from the higher market valuations of their developed technology. Moreover, the author shows some mechanisms by which analysts can affect R&D market valuations. First, the earnings forecasts of analysts are included in their expectations of the future. This pays off for R&D and is the basis for R&D current valuations. Subsequently, information about a firm's R&D activities during the preparation of earnings forecasts could be revealed in analysts' commentary and analyses.

Baker et al. (2008) find evidence that imperfect integration across world stock markets provides a role for cross-border multinational arbitrage. They find that, consistent with multinational arbitrage as a determinant of foreign direct investment patterns, foreign direct investment flows increase quickly with source-country stock market valuations. The results indicate a cheap financial capital channel that consists partly of the use of relatively low-cost capital available to overvalued parent firms in the source country.

2.4 Cognitive Dissonance

Prast and de Vor (2005) examine whether there is a relation between the depreciation of the euro–US dollar exchange rate in 2000 and the asymmetric reactions of investors to news, including economic and political media coverage. The daily euro–dollar exchange rate from 1 April 2000 to 22 September 2000 is regressed on news the euro and dollar areas. The results indicate that whether an asymmetry exists in the investor response to media coverage depends on whether the coverage comes from the euro and dollar areas. Further, the results show that cognitive dissonance is reduced as investors react differently to positive and negative news. In addition, favourable news about the real economy has a positive effect on the euro–dollar exchange rate. Cognitive dissonance theory predicts that investors filter media coverage in a biased manner, since they always pay more attention to negative news than to positive news about the euro area.

Friesen and Weller (2006) examine how psychological biases influence investor behaviour and stock prices. Since systematic mispricing can lead to significant resource misallocation, the authors state that overconfidence and limited attention probably foster investor credulity about strategic incentives. The authors suggest that government and private planners should set up rules to improve choices and make decisions more efficient. In particular, governments should also avoid actions that exacerbate investor bias.

Friesen and Weller (2006) develop a model of analyst earnings forecasts that differentiate between the behaviour of rational investors and that induced by the cognitive dissonance that also exists in international data. In this model, analysts issue sequential forecasts by considering not only new information but also information contained in previous forecasts.

The authors employ this model to test for cognitive dissonance and quantify its magnitude. The results indicate that analysts are overconfident about the accuracy of the information they obtain because of cognitive bias; however, they can correct bias in the forecasts of others. The authors suggest that their overconfidence measure varies according to the book-to-market ratio.

Many researchers have investigated why so many keep investing in poorly performing mutual funds. For example, Goetzmann (1997) states that cognitive dissonance may be a factor in the process of mutual fund evaluation and investor memories show a positive bias that is conditional upon previous investor choice, which is consistent with cognitive dissonance theory. Even well-informed investors are likely to have perceptions biased by past performance, since they tend to rationalize their behaviour through biased beliefs. Moreover, by examining economic and psychological frictions in the mutual fund industry through a cross-sectional study of equity mutual funds, Goetzmann finds a relation between an unusually high frequency of funds with low returns and investor 'inertia', which may be due to the high costs of economic change. In addition, the author suggests that if investors concentrate on the past performance ranking of fund firms, the best strategy is to increase the number of funds and individual fund volatility and decrease the cross-fund correlation.

The cognitive dissonance theory proposed by Festinger (1957) states that investors suffer from conflicting cognitive elements, including discrepancies between past decisions and empirical evidence, and they alleviate their discomfort by adjusting their beliefs to conform to their past actions. Cognitive dissonance is always considered a psychological cost.

Erlich et al. (1957) employ cognitive dissonance theory and investigate consumer response to advertising followed by the major decision of purchasing a new car. They provide evidence that consumers selectively notice the advertisement that can validates their choice. By examining the cognitive dissonance of mutual fund individuals, mutual fund firms have developed various sales strategies. Goetzmann (1997) concludes that advertisements may not be able to affect the decisions of new investors; however, they can help funds managers keep their current customers.

According to Telci et al. (2011), cognitive dissonance theory focuses on the relationships among cognitions which are people's knowledge about their perceptions, behaviours, attitudes, feelings, beliefs, and environments. Telci et al. (2011) analyses the application of theory in the fields of management, marketing, and psychology and evaluates the theory's contribution to the development of knowledge. The theory of cognitive dissonance is usually used to explain consumer behaviour and post-purchase situations in the marketing field and to investigate human-related issues in management. Telci et al. (2011) investigates underdeveloped areas and extends the literature for theoretical and empirical research. In the field of management, this theory is used not only to explain employee behaviours and attitudes during periods of organizational change, but also to explain the psychological reasons for moral divergence, forecast entrepreneurial and managerial behaviour, and explain the reasons for individuals' attempts at consistency.

Friesen et al. (2009) propose a theoretical framework to explain the obvious success of not only pattern-based technical rules but also trend-following trading rules. Their model introduces a concept of cognitive dissonance that has been broadly used in the psychological literature and depicts individuals' tendency to explain information selectively to be in line

with a given set of thoughts and beliefs. In the model, information is broken down into signals of different magnitudes and frequencies. Large and infrequently observed signals are explained rationally by investors. On the other hand, the explanations of investors with less informative and more frequent signals are biased by the recently observed large signals. Moreover, the model makes two empirical predictions. First, the model forecasts negative return autocorrelations in the very short and long term and positive return autocorrelations in the medium term. Second, the time series of jumps in equity price are positively autocorrelated. In addition, the authors use bi-power variation estimation to identify significant equity jumps in individual component stocks of the S&P 100 Index from 1999 to 2005. They discover time-series equity jumps to be economically and significantly positively autocorrelated. Furthermore, according to the empirical work of Gutierrez and Kelley (2008), who indicate negative weekly autocorrelations immediately after events of extreme information, Friesen et al. (2009) use this model and discover that there are momentum profits can be made several weeks following an extreme return, up to one year. The authors also discover that markets react similarly to private and explicit news.

Chen and Lai (2010) investigate the role of reputation stretching in the context of mutual funds. They suggest that reputation stretching increases the net fund inflows to new funds that are managed by successful fund managers, increasing fund inflows to fund families. When investors select funds, they can assess fund managers by considering their one-year performance. The authors find a positive relation between the decrease in information asymmetry and managerial reputation that benefits investors by increasing the returns of new funds in the short term. The authors conclude that reputation stretching benefits not only investors but also fund families. Moreover, cognitive dissonance could lead to traders relying

on observable mutual fund attributes, such as family size and fund age, to choose mutual funds.

2.5 Disposition Effect

Frydman and Rangel (2014) define the disposition effect as the fact that investors tend to sell risky assets when their capital increases and tend to hold risky assets when their capital decreases. The authors employ a stock trading laboratory test to determine the possibility of reducing the tendency of subjects to exhibit a disposition effect by minimizing the information about a stock's purchase price and therefore about capital gains and losses. They compare two conditions: a high-saliency condition and a low-saliency condition. The high-saliency condition refers to the stock purchase price being significantly displayed by the trading software, while the low-saliency condition refers to the software showing nothing at all. The results indicate that investors show a 25% lower disposition effect under the high-saliency condition than under the low-saliency condition. This finding indicates the possibility that investors reduce the disposition effect by decreasing the saliency with which information about a stock's purchase price is displayed in financial statements and on online trading platforms.

Barbarise and Xiong (2009) examine whether a disposition effect can be predicted by the preferences of prospect theory. They state two prospect theory implementations: First, preferences refer to annual losses and profits; second, preferences refer to overrealized losses and profits. The authors conclude that the annual profit/loss model is unable to predict a disposition effect; however, the realized profit/loss model can. Therefore, utility from realized profits and losses can shed light on certain aspects of investor trading.

Odean (1998) explains why investors tend to sell their stocks as a paper when they gain and hold the stocks when they loss. The author states that investors show a strong preference for realizing winners rather than losers. Moreover, their behaviour is not driven by a desire to avoid the higher trading costs of low-priced stocks or to rebalance portfolios. Their behaviour is also not justified by subsequent portfolio performance. In addition, taxable investments are not optimal and incur lower after-tax returns. Tax-driven selling is most apparent in December.

Using Chinese brokerage account data, Chen et al. (2007) examine investment decision making in a developing market. The results indicate that Chinese investors always make poor trading decisions, since the stocks they buy underperform those they sell. Moreover, Chinese investors suffer from behavioural errors: First, in line with a disposition effect, they are likely to sell stocks whose price has increased; second, they are overconfident; third, they tend to believe that past returns can be an indicator of future returns. Moreover, generally speaking, Chinese individual investors are more overconfident and exhibit a stronger disposition effect than US investors. In addition, the authors find that, in China, experienced investors do not always have fewer behavioural biases than inexperienced investors.

Examining the differences in the disposition effect across individuals and interpreting them according to underlying investor characteristics, Dhar and Zhu (2006) confirm the existence of a disposition effect and find that rich individuals and professionals have a lower disposition effect. Moreover, a higher frequency of trading is likely to diminish the disposition effect. In addition, according to tax considerations, individuals with a high disposition effect always have lower after-tax returns than those not subject to the disposition effect. There is a positive relation between the disposition effect and the extent of investor

bias. The authors suggest that non-profit organizations and policy makers should make individual investors aware of these biases to help them pay more attention to poorly performing stocks in their portfolio and make them aware of the tax benefits of realizing losses. In addition, their findings could help investors in brokerage firms gain higher profits. The brokerage firms could precisely target low-income investors in non-professional occupations because they are the most affected by the disposition effect.

Examining US mutual funds and the disposition effect, Singal and Xu (2011) find that 30% of mutual funds display some degree of the disposition effect and underperform other funds by 4–6% per year. What is more, smaller funds are more attracted to funds prone to the disposition effect than other mutual funds are. The results indicate that mutual fund investors can minimize investments in such funds. Therefore, funds prone to the disposition effect have considerably higher failure rates than other mutual funds and thus reduce the influence of such trading behaviour on stock prices.

Costa et al. (2013) devise a computer program to simulate the stock market and test whether investing experience can reduce the disposition effect. Dividing the subjects into two groups, experienced investors and inexperienced investors, the authors find that, although both groups exhibit the disposition effect, experienced investors are less influenced by it.

Employing recently published managerial ownership data, Fu and Wedge (2011) state that a large number of mutual funds display the disposition effect. Mutual funds with managerial ownership show less of a disposition effect than those without a managerial ownership and the extent of the effects decreases with the percentage of managerial ownership. Moreover, the authors find a negative relation between the disposition effect and the degree of board

independence and fund performance. Their results suggest that the governance of mutual funds could affect the disposition effect and greater managerial ownership could mitigate the problem.

Frino et al. (2004) state that the disposition effect is not driven by rational economics but, rather, by psychological considerations. They find that the disposition effect exists among not only local traders but also non-local traders; however, it is stronger among local traders. Moreover, the authors find that the paper losses of local traders have a greater likelihood than those of non-local traders of becoming either realized or paper gains by the next trading period. The results indicate that locals have the privilege of knowing inside information in their short-term trading, which helps them make precise forecasts of the direction and strength of short-run market price shifts.

Li and Yang (2013) propose an equilibrium model to investigate the disposition effect, trading volumes, and asset prices. Decreasing sensitivity can forecast a disposition effect, a decreased return volatility, a positive return–volume correlation, and price momentum, while loss aversion usually forecasts the opposite. Their model is useful in explaining a large number of financial phenomena and also proposes new testable forecasts.

Raw (2014) examines gender differences in the disposition effect in an experiment. The results indicate that female investors realize fewer capital losses, exhibit significantly higher disposition effects, and are more loss averse than male investors.

Duxbury et al. (2015) examine both the tendency of investors to exhibit the disposition effect and the house money effect. The authors find that these two effects coexist in a single stock

market and over half of the investors exhibit these two effects simultaneously. The authors also show the significance of differentiating prior outcomes through two dimensions: realized/unrealized and portfolio/stock levels. In addition, they find the house money effect can reduce the disposition effect, indicating that cognitive errors do not always lead to negative outcomes.

Chou and Wang (2011) predict a positive relation between prior returns and subsequent trading activities, taking into account overconfidence and disposition errors. Using a database from the Taiwan Futures Exchange, they examine the different implications of the disposition effect and overconfidence hypotheses. The overconfidence models forecast an increase in trader aggressiveness when overconfidence levels are high. This is why overconfident investors always submit more aggressive orders to increase the chance of such orders being executed. Further, the authors examine disposition effects and overconfidence among various types of traders. The results show that the behavioural mistakes they display are quite different. Domestic institutions exhibit an overconfidence bias rather than a disposition bias, while individual investors show both types of bias. The results also indicate that individual investors are likely to have stronger behavioural biases.

According to the results of a Thai individual trader survey, DeWeaver and Shannon (2010) argue that the disposition effect is a special case of waning vigilance, that is, traders do not pay enough attention to analysis and new information when making decisions about loss makers, which leads them to sell too slowly when arguments in favour of holding are no longer valid. The authors conclude that vigilance is decreased following losses.

2.6 Takeovers and Media Sentiment

Golbe and White (1987) conclude the following factors affect the observed pattern of takeovers: Tobin's q, changes in economic circumstances (changes in tax regimes and in relative prices), greater divergences of opinion about future economic prospects, the real costs of capital, the size of the economy, the tax regime, and a corrective factor for the cutoff point bias.

Smales (2014) uses commodity-specific news sentiment data downloaded from Thomson Reuters News Analytics to investigate the relation between news sentiment and stock returns in the gold futures market from 2003 to 2012. The author confirms an asymmetric response to news releases with negative news sentiment and a greater response in the returns of gold futures. Moreover, the author also states that the positions of net traders significantly affect the sentiment relation, their influence being greatest when holding positions opposite their natural position. The author explains that this may be due to constraints imposed on net traders according to exchange-imposed limits, credit availability, or the inventory necessary for a physical settlement. In addition, recession cycles and related changes in the cost of credit influence the sizes of net positions and the relation between news sentiment and stock returns.

Riordan et al. (2013) explain how information is translated into market prices. They examine the influence of newswire messages on intraday price discovery, liquidity, and trading intensity in an electronic limit order market. They measure message tone to investigate the influences of positive, negative, and neutral messages on trading activity and price discovery. Their results show higher costs of adverse selection for newswire message arrivals. Moreover, the authors find that negative news has a greater likelihood of resulting in higher adverse

selection costs than positive or neutral news does. Liquidity decreases around negative news announcements and increases around positive and neutral news. Both the available order book depth and trading intensity increase around all messages. The results show that market investors have different information gathering and processing capabilities and that a negative media sentiment is more informative and results in strong market reactions.

Since more and more market investors use news analytics software to measure the huge amounts of unstructured data from the media, Smales (2014) uses original data from RavenPack to examine market reactions to stock-specific news flow during an extended period in the Australian stock market. The key variables from 484,440 pieces of media content suggest distinctive responses in volatility, spreads, stock returns, and market activities. Smales obtains findings similar to those of previous research, indicating that the relevance of media coverage is critical in identifying important influences. Additionally, negative news has the strongest impact on market activity, volatility, and bid–ask spreads. The findings are also consistent after controlling for market dynamics and cross-dependencies between key variables in a high-frequency vector autoregression model.

Loughran and McDonald (2010) find that negative words can measure media tone more efficiently than positive and neutral words can and are related to other financial variables. Moreover, to measure media tone, the authors focus on the more regular word cataloguing approach of the Fin-Neg list instead of the Harvard list because it reveals stronger relations with stock returns when examining media coverage and seasoned equity offerings.

Carretta et al. (2011) find that public investors react negatively to ownership news about profitable firms and are likely to sell their securities. Their results also indicate that the tone

and content of corporate governance news are not statistically significant related to cumulative abnormal returns[16] (Carretta et al., 2011). The authors suggest that investors can determine the type of corporate governance event only prior to the news release, since afterward individual investors are affected by its content and tone. Moreover, the authors find that stock returns are negatively influenced by news when changes take place in the board of directors of profitable firms.

Tetlock (2007) examines the relation between media content and stock market activity. The author suggests that a highly pessimistic media forecast places downward pressure on market prices followed by a reversion to fundamentals and that unusual optimism or pessimism predicts high market trading volumes. Furthermore, pessimistic forecasts seem to have a particularly strong negative influence that reverses itself in small stocks quite slowly.

Tetlock et al. (2008) investigate the utilization of a quantitative language measure to forecast corporate earnings and stock returns. They present three main findings: First, within corporation-specific news stories, part of the negative words that convey negative information can be used to forecast low corporate earnings. Second, corporate share prices react to such information with a short delay. Third, the predictability of earnings and stock returns from negative words is highest for stories that concentrate on fundamentals. Tetlock et al. (2008) conclude that linguistic news content captures difficult to quantify aspects of firms' fundamentals' that investors rapidly impound into share prices. However, the authors show only that negative word counts have predictability and do not consider the effect of positive words.

[16] The CAR is the sum of abnormal returns and is often calculated over small windows, usually only three days, five days, and 11days.

Buehlmaier and Zechner (2013) present strong evidence that information in the financial media is not fully impounded in security prices. They also demonstrate that media content influences takeover arbitrage returns but the results for media coverage are not significant.

Based on Tetlock's (2008) findings, Garcia (2012) examines the sentiment effect on asset prices by investigating financial news from *The New York Times* in the 20th century. Employing the fractions of negative and positive words as a proxy for media sentiment, Garcia shows that the ability to forecast stock returns by using news content focuses on recessionary periods. Moreover, the author finds that negative mood states, such as job losses and uncertainty about the future, change investors' decision making abilities. Market participants are happy and optimistic during hot markets but fearful and anxious during cold markets. This indicates that market participants implement distinct decision making rules in cold markets more so than in hot markets because they are more sensitive to news in cold markets. Moreover, predictability is especially strong on Mondays and following holidays, since readers have more time to read the news before the afternoon of the trading day. Additionally, Garcia argues that the effect partially reverses after the next four trading days. In sum, investor sentiment has an important impact during recessions.

In addition, Vadnais (2012) concentrates on the media's influence on pricing and the completion of takeover transactions in the high-tech industry. The author suggests that average media sentiment about takeover transactions has a positive correlation with the final price of an acquired firm. However, the author finds no evidence that media sentiment affects the probability of takeovers being withdrawn or completed. Moreover, transaction size and the amount of media coverage strongly influence the extent to which media sentiment affects a takeover transaction's pricing, with greater transaction size and news coverage associated

with stronger media sentiment influence. Finally, the author concludes that the media not only covey information to investors, but also have a strong influence on the financial markets and a high ability to affect the high-tech industry landscape.

Schumaker et al. (2012) pair the Arizona Financial Text System, a financial news article prediction system, with a media sentiment analysis tool. They conclude that subjective news articles facilitate forecasting the direction of prices and achieve a 3.30% stock return with an uncomplicated trading engine. After investigating the role of author attitude among financial articles, they also state that news articles with a negative attitude make it easier to forecast the direction of prices and achieve a 3.04% return. Moreover, they note that their system is effective in forecasting price decreases in news articles with either positive sentiment (53.5%) and negative/neutral sentiment (52.4%).

Ahern and Sosyura (2014) suggest a firm uses media coverage to affect and manipulate its stock price after a takeover. They state that acquirers in fixed exchange ratio takeovers attract more media information when they start takeover negotiations in private before the public announcement. The stock exchange ratio is already established during this period. In addition, acquirers in floating exchange ratio indicate no apparent differences in news release issuance in this period. This strategy leads to short-lived increases in new coverage and the valuation of acquirers. The authors also find that media management has an influence on takeover gains and a positive relation exists between the increase in media coverage during takeover negotiations and a firm’s share of takeover gains.

Barber and Odean (2008) argue that the buying behaviour of individual investors is more heavily influenced by media attention than by their selling behaviour, because individual

investors only sell stocks that they already own and most hold relatively few common stocks in their portfolios. Moreover, the buying behaviour of individual investors is more heavily influenced by attention than by the buying behaviour of professional investors, because investors can, individually, consider the merits –both economic and emotional – of selling each stock they own and individual investors do not devote themselves to full-time stock research. The authors conclude that attention-driven buying is also facilitated by the complexity involved in individual investors exploring their numerous stock purchase choices.

Buehlmaier (2012) note a positive relation between news content and takeover success. The media measure constructed by naïve Bayes is the most significant explanatory variable, with a strong marginal effect and high goodness of fit. Ohl et al. (1995) show that relevant news content during M&As is influenced not only by a firm's press releases but also by media access to the firm's executives.

Da, Zhi, Engelberg, and Gao (2011) state two reasons why more Google searches and investor overconfidence can lead to stronger stock price momentum: First, according to Gilovich, Griffin, and Kahneman (2002), many psychological studies find that people have more confidence if they obtain more information or expertise. Second, when people search Google for stock information, investors could be influenced by the same information sets and their private signals have greater autocorrelations.

Examining evidence of post-news drift, Chan (2003) finds results in line with the idea that investors underreact to information. The underreaction is strongest following bad news. Moreover, subsequent reversals in extreme price movements are inconsistent with public news. Chan also notes that trading frictions, such as short-sale constraints, show a significant

relation with the pattern of post-bad news drift. First, stocks with negative public media coverage also experience negative drift; however, stocks with positive news experience little negative drift. The author explains that stocks prices are slow to react to negative public media coverage. Second, stocks without media coverage in the event month have a tendency to reverse the following month, even when controlling variables such as firm size, the book-to-market ratio, and influences of liquidity are considered. This result supports the view that investment practitioners overreact to the movements of spurious stock prices. This leads to 'excess' volatility and trading volumes and then reverses the stock price. In sum, slowness to react to information and overreactions to price movements are two major characteristics of investors. Moreover, investors respond more slowly to the media coverage of small stocks than that of large stocks.

Solomon (2012) investigates how positive media coverage and negative media coverage influence stock prices by examining the influence of investor relations firms. The results show that investor relations firms 'spin' their customers' news by generating more positive media coverage releases then negative ones and increasing returns around announcements. The author also reports that positive news increases investors' expectations and negative news disappoints them.

2.7 Herding

Chang and Lin (2015) examine the determinants of trader decision making in stock markets worldwide. The results indicate that herding behaviour usually occurs amidst confusion and in less sophisticated stock markets. Moreover, the authors find that some national cultural indexes are highly correlated with the herding observations. Further, traders' behavioural pitfalls dominate their tendency to herd.

Choi and Skiba (2015) explore the herding behaviour of institutional traders in international markets. The authors use a sample that covers widespread herding in 41 countries to examine the relation between institutional demand and future returns and find that institutional herding can stabilize prices. Moreover, they explore the relation between the herding behaviour of institutional traders and information asymmetry levels. The degree of information asymmetry is measured along five dimensions: stock market development, ease of access to information, firm transparency, the strength of trader rights, and macroeconomic determinants related to the information environment. The authors find that the herding effect is stronger among institutional traders in markets with less information asymmetry. The results show that the herding behaviour of institutional traders is possibly motivated by correlated signals from basic information and prices adjust more quickly within a more transparent market.

Lakonishok et al. (1992) define herding as simultaneously buying/selling the same stocks as other managers. The authors evaluate the potential effect of trading on stock prices by addressing two aspects of trading: herding and positive-feedback trading, which is defined as buying past winners and selling past losers. The results suggest that stock prices can be destabilized by institutions and pension managers do not always pursue these potentially destabilizing practices.

Dasgupta et al. (2010) develop a theoretical model to examine the influence of institutional herding on asset prices. They conclude that institutional herding positively forecasts short-run returns and negatively forecasts long-run returns. Moreover, they generate new testable predictions related with institutional herding, the time-series properties of stock returns, and trade volumes.

Sias (2003) states that institutional investor demand for a stock in a quarter is positively related with their demand in the last quarter. The author explains this phenomenon as being due to herding behaviour and institutional traders acting like momentum investors. Moreover, the results show that institutional herding is a result of inferring information from each other's trades.

Galariotis et al. (2015) test for the herding effect in the UK and US stock markets. Their results show that US traders are likely to herd following the release of significant macro data and herding spillover from the US to the UK existed during earlier financial crises. Regarding the difference in herding between US and UK markets, the authors find that traders herded due to both fundamentals and non-fundamentals during different crises in the US and but only due to fundamentals and during the dot-com bubble bursting in the UK. This suggests that the motivations for herding are country and period specific.

Kremer and Nautz (2013) examine the causes and consequences of institutional trader herding behaviour by using a German security market database. The authors state that institutions display herding behaviour on a daily basis. Moreover, the intensity of herding depends on security characteristics, including volatility and past returns, in an asymmetric fashion. For example, rising stock volatility increases sell herding and decreases buy herding. The effect of volatility is asymmetric because volatility is mostly unintentional and motivated by ordinary reactions to risk measures that force regulated investors to buy low-volatility stocks and sell high-volatility stocks.

2.8 Hypothesis Development

The first hypothesis is the following.

H1: *Acquirers should be subject to lower media pessimism when a deal is announced during a hot market.*

The hypothesis that media pessimism can be affected by different market valuations is supported by earlier empirical studies that report a direct link between news and hot/cold markets. For example, Shleifer and Vishny (2003) argue that takeovers cluster because they are driven by stock market valuations. The fundamental assumption of their theory is that the market is inefficient while managers are rational and take the advantage of market. Rhodes-Kropf and Viswanathan (2004) state that firm-specific and market-wide misvaluations could cause merger waves and influence takeover activity levels, methods of payment, and the final decision to be a bidder or a target. In their model of rational managerial behaviour and uncertainty about misvaluation sources, rational targets with imperfect information tend to agree to takeovers by overvalued acquirers during hot markets because the targets overestimate the takeover synergies during such periods. Maksimovic and Phillips (2001) argue that periods of high activity are highly correlated with high market valuations. This result can be interpreted as evidence that the media tend to use more positive words when describing takeovers to attract investor attention in a hot market because there are many more takeovers in a hot markets than in a cold market, whereas in a cold market negative words are used more frequently because the market is in a recession and overall sentiment is low. Therefore, this chapter expects acquirers buying during high-valuation markets to be subject to lower media pessimism and those buying during low-valuation markets to be subject to greater media pessimism in the short run.

The second hypothesis is the following.

H2: *There is a negative relation between media pessimism and takeover returns in a hot market in the short run.*

This hypothesis assumes that, in a hot market, low media pessimism about takeovers results in higher takeover returns and high media pessimism results in lower returns in the short term. This is supported by the findings of earlier empirical studies. Vadnais (2012) states that average media sentiment about takeover transactions has a positive correlation with the final price of the acquired firm. Tetlock et al. (2008) demonstrate that fundamental information transmitted by financial news resolves information asymmetry; therefore, financial news can provide additional information for investors with which to evaluate their prospects in M&A deals and hence reduce information asymmetry. Antonio et al. (2008) focus on high-valuation markets and sources of momentum and find that investors obtain significant and positive gains in the short run. This could be due to positive news increasing the investors' expectations and negative news disappointing them (Prast and de Vor, 2005; Solomon, 2012). Another explanation is that negative news has a greater likelihood of resulting in higher adverse selection costs than positive or neutral news does (Riordan et al. 2013). In addition, herding could take place following the news release. This argument is in line with the findings of Choi and Skiba (2015), who state that the herding effect is stronger among institutional traders in markets with less information asymmetry. The authors show that the herding behaviour of institutional traders is possibly motivated by correlated signals from basic information. In addition, Dasgupta et al. (2010) conclude that institutional herding positively predicts short-run returns and negatively predicts long-run returns.

The third hypothesis is the following.

H3: *The relation between long-run returns and media pessimism in hot markets is insignificant.*

Third, Andrade et al. (2001) and Nelson (1959) find that takeovers are highly concentrated in time and more frequent during periods of high market valuations than low market valuations. Verter (2002) confirm the higher levels of takeover activity in hot markets and their correlation with greater dispersion in market valuations. Therefore, the media coverage is excessive for such long periods in hot markets. Such large quantities of media coverage make it difficult for investors to focus on media sentiment information. Therefore, the relation between media pessimism and long-run returns should be insignificant in the hot markets.

The fourth hypothesis is the following.

H4: *There is a insignificant relation between short-run returns and media pessimism in cold markets.*

Fourth, Bouwman et al. (2009) find that takeovers during cold markets are very different from those during hot markets. Garcia (2012) suggests that market participants are happy and optimistic during hot markets but fearful and anxious during cold markets. This indicates that market participants more likely abide by distinct decision making rules in a cold market than in a hot market because they are more sensitive to news in a cold market. Generally, bidding firms earn significantly higher returns during hot markets and their announcement returns are significantly negative for takeovers announced in cold markets. Petmezas (2009) states that acquirer reactions to takeovers, in both the short and long run, are consistent with forecasts of investor sentiment (optimism). Undertaking takeovers during hot markets, managers can earn positive returns in the short run but only insignificant returns during cold markets. This fact is open to interpretation, since media coverage is scant and hard for analysts and investors to observe in a cold market within a short period. Therefore, there should be no apparent relation between media pessimism and takeover returns in a cold market in the short run.

The first hypothesis is the following.

H5: *There is a positive relation between media pessimism and takeover returns in cold market in the long-run.*

Fifth, Petmezas (2009) states that, in the long run, returns will reverse and managers will obtain negative returns in both hot and cold markets because of misvaluations due to managers' return overestimations and the urge to merge to profit from the overall market status. Bouwman et al. (2009) also state that, during cold markets, bidders generate lower long-term stock and operating performance. Antonio et al. (2008) find that investors suffer negative returns in the long run, since the returns are reversed because initial expectations could not be fully met. Ma et al. (2013) state that the intrinsic value of targets suffers a decrease, on average, within three years following takeover completion due to the loss of expected earnings and increases in capital. This hypothesis is also supported by the theory of overconfidence and cognitive dissonance theory. Friesen and Weller (2006) indicate that analysts are overconfident about the accuracy of the information they obtain because of their cognitive bias. Erilch et al. (1957) employ cognitive dissonance theory to investigate consumer response to advertising and provide evidence that consumers selectively notice advertisements that rationalize their choice. Both overconfidence and cognitive dissonance lead price reversals in the long run. Therefore, this chapter expects a positive relation between media pessimism and takeover returns in a cold market in the long run.

3. Data and Methodology

3.1 Data

Three types of data are included in the analysis: 1) takeover data for the period 30 November 1981 to 1 January 2010, obtained from the Thomson One Banker Deals database; 2) UK

media data from the LexisNexis database, which includes four influential UK media sources – the *Financial Times*, *The Times*, the *Guardian*, and the *Mirror*, which released 274,201 media articles between 30 November 1981 and 1 January 2010 – covering 251 UK firms; and 3) stock price and accounting data from the Datastream databases. The data include daily stock prices; book-to-market ratios; earnings before interest, taxes, depreciation, and amortization (EBITDA);[17] leverage; price-to-earnings (PE)[18] ratios; and market values. All of the data were from 30 November 1981 to 1 January 2010 and the FTSE All-Share Index level data were from 30 November 1981 to 31 December 2012. These periods are three years longer than for the other data, because the 36-month BHARs are calculated in the 36 months following takeover announcements.

A unique identifier is required to match the data from the three different databases. Thomson One Banker and Datastream both use the Datastream code as a firm identifier. Since the raw media data do not have Datastream codes, they were manually sought in the media database to ensure each article had a Datastream code. Stata was used for the data cleaning and matching processes in this chapter. After all media firms without a Datastream code or an available date were deleted, the Thomson One Banker Deals and media databases were merged by Datastream code. Finally, media data released over 90 days before the takeover announcement were deleted. The final sample covers 751 deals within 90 days before the takeover announcement.

[17]A firm's EBITDA refers to its earnings before interest payments, tax, depreciation, and amortization are subtracted from the final accounting of its income and costs. It indicates the firm's current operational profitability.

[18] The PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year.

3.2 Methodology

To calculate the media pessimism for each firm prior to its M&A announcement, the words in each article are compared with the positive and negative word lists of Loughran and McDonald (2011). In this case, the numbers of positive and negative words and the total number of words are obtained.[19] In the most recent version of the lists, 353 words are positive and 2337 words are negative.

Tetlock et al. (2008) define the media sentiment score as the standardized fraction of negative words in each news story, measured by

$$Neg = \frac{No.of\ negative\ words}{No.of\ total\ words} \tag{3.1}$$

$$neg = \frac{Neg - \mu_{Neg}}{\sigma_{Neg}} \tag{3.2}$$

where μ_{Neg} is the mean of *Neg* and σ_{Neg} is the standard deviation of *Neg* over the previous calendar year. Standardization is necessary if *Neg* is nonstationary. The variable *neg* is the stationary measure of media sentiment that was employed in the regression analyses.

Each article is given a pessimism score and an arithmetic average score is calculated for each bidder. Because this formula focuses on negative words, the media pessimism score represents the level of media pessimism. Three overall article pessimism indices are calculated for the 90 days prior to the takeover. Similar results are obtained by using other sentiment formulas, such as the number of positive words minus the number of negative words, divided by the sum of positive and negative word counts or the total number of words

[19] The computer program WordStat was used to obtain the sentiment data and Stata was used for the other calculations.

(Rees and Twedt, 2012). However, Henry and Leone (2009) and Tetlock (2007) find that negative words have a much stronger correlation with stock returns than positive words do. Many papers also suggest that the frequency of negative words in an article decides its tone (Das and Chen, 2007; Davis et al., 2011; Loughran and McDonald, 2011). Therefore, the method proposed by Tetlock et al. (2008) is employed to measure media sentiment.

To investigate the effects of media pessimism, the entire merger sample is split into two subsamples, one for high media pessimism and one for low media pessimism. To examine the effects of media pessimism, the media pessimism score is sorted into three media pessimism portfolios, the top third for high media pessimism and the bottom third for low media pessimism.

All hypotheses are tested through ordinary least squares regression models. To examine the relation between the level of media pessimism and stock returns and to test whether the media data have any stock return predictability in different market valuations, the following regressions are employed:

High Media Pessimism Group:

$$CAR_{i,t} = \beta 1 + \beta 2 \text{Media Pessimism} + \beta 3 \text{Market Valuation Dummy} + \beta 4 \text{Controls} \quad (3.3)$$

$$BHAR_{i,t} = \beta 1 + \beta 2 \text{Media Pessimism} + \beta 3 \text{Market Valuation Dummy} + \beta 4 \text{Controls} \quad (3.4)$$

Low Media Pessimism Group:

$$CAR_{i,t} = \beta 1 + \beta 2 \text{Media Pessimism} + \beta 3 \text{Market Valuation Dummy} + \beta 4 \text{Controls} \quad (3.5)$$

$$BHAR_{i,t} = \beta 1 + \beta 2 \text{Media Pessimism} + \beta 3 \text{Market Valuation Dummy} + \beta 4 \text{Controls} \quad (3.6)$$

Media pessimism is regressed for the days prior to the takeover announcement and then compared to determine which pessimism affects the stock returns most significantly. The key variable *MP* is media pessimism in the 90 days prior to the takeover announcement.

Different methods are used to classify periods of low, neutral, and high market valuations. The key classification method is based on the P/E ratio of the FTSE All-Share Index. Since the market P/E gradually increases over the sample period, it is detrended first to make sure that low-/high-valuation markets do not correspond only to the first (or second) half of the period from 1981 to 2010. An alternative classification method split the market valuation into two subsamples, high and low, with the top 25% representing high market valuation and the bottom 25% representing low market valuation. The results are generally similar.

The sample period is split into times of high, neutral, and low market valuations and the performance of firms that announce acquisitions under these different market circumstances is compared. This chapter uses several stock and operating performance measures. This chapter examines acquiring firms' short-run stock performance (with three-day CARs) and long-run stock performance (with two-year BHARs and calendar-time portfolio returns) to see whether the market's initial reaction is consistent with acquirers' long-run stock performance. The performance of acquisitions during periods of high, neutral, and low market valuation is examined in a univariate setting and in a multivariate regression framework in which other factors that could affect acquisition performance are controlled for, including the method of payment, the acquisition type (tender/merger), the relative size of the acquisition, and the acquirer's market-to-book ratio. Both approaches yield similar results.

The method of payment and market value are the main variables. Travlos (1987) reports that the use of equity as a payment method in takeovers signals to the market that the acquirer is overvalued, while an all-cash payment indicates potential undervaluation of the acquirer. Therefore, two payment method dummy variables are included: *Stock* and *Cash*. The stock

variable, *Stock*, takes the value of one if the bidder uses 100% equity to buy the target firm and the cash variable, ***Cash*****,** takes the value of one if the bidder uses 100% cash financing to pay for the target. Moreover, a lag in the key return predictability variables' size (measured as the natural logarithm of the market value) is included, as for Tetlock et al. (2008), as well as the logarithm of the acquirer's size, *Ln(Size)*, defined as the acquirer's market value measured one month before the deal announcement.

In addition, the multivariate tests include a series of control variables that have a significant influence on acquirer returns according to previous studies. First, Rau and Vermaelen (1998) find that value acquirers (with a high book-to-market ratio) outperform glamour acquirers (with a low book-to-market ratio) after a takeover. This may due to 'performance extrapolation' and hubris, which lead to poorer takeover decisions by glamour acquirers. Second, Lang et al. (1994) report a strong negative relation between firm leverage and firm future growth during 1970–1989. Jensen (1986) and Stulz (1990) suggest that leverage brings about poor investment opportunities and helps prevent firm overinvestment. Third, a firm's EBITDA indicates its current operational profitability. Fourth, Travlos (1987) states that the relative size variable is used to account for difficulties in measuring abnormal returns due to the larger size of bidders relative to the size of their targets. Fifth, Brealey and Myers (1996) state that the PE ratio is part of the everyday vocabulary of investors in the stock market. Sixth, an increase in a stock's media coverage could temporarily increase investor attention to this stock, resulting in a price run-up followed by a correction (Huberman and Regev, 2001; Barber and Odean, 2008). Therefore, the following variables are also included: the book-to-market ratio (*B/M Ratio*), defined as the acquirer's book value divided by its market value; leverage (*Leverage*), defined as the amount of debt used to finance a firm's assets; EBITDA (*EBITDA*); the relative size of the transaction (*Relative Size*), defined as the deal

value divided by the acquirer's market value, measured one month before the deal announcement; the PE ratio (*PE ratio*), measured as a firm's current share price compared to its per-share earnings; and the run-up stock return of the acquirer measured over a window from 365 to 28 days before the announcement (*Run-Up*). Moreover, *hostile, public, tender, and diversification* are dummy variables that take the value of one for hostile, tender, and diversifying mergers, respectively, and zero otherwise.

4. Results and Discussion

4.1 Sample Descriptive Statistics

Table 4.1 indicates summary statistics for the whole sample of UK acquisitions, focusing on media pessimism and market valuation, respectively, including the total number of observations, means, medians, and standard deviations of abnormal returns and deal and firm characteristics. After all takeovers not covered by the media are deleted, the sample comprises 751 deals. Within 90 days before the takeover announcements, 250 deals are covered by the news with high media pessimism and 250 deals are covered with low media pessimism. After classification of market valuation as high or low, 251 takeover deals are found to have been completed in a hot market while only 154 takeover deals took place in a cold market. The results show that more takeover deals are made in hot markets than in cold markets, consistent with the findings of Nelson (1959), Andrade et al. (2001) and Shleifer and Vishny (2003). They find that takeovers are highly concentrated in time and more frequent during periods of high market valuation than periods of low market valuation. Maksimovic and Phillips (2001) also argue that periods of high activity are highly correlated with high market valuations.

In Table 4.1, the firm size of acquirers is £1.495 trillion, on average. Tables 3.2 and 3.3 indicate that the average firm size of acquirers in a hot market is £1.346 trillion and £1.390 trillion in a cold market. The results indicate that the number of deals is higher but the average size is smaller in a hot market, while the number of deals is smaller in a cold market but the average size is larger. This suggests that more large firms make M&A deals in a cold market than in a hot market. This can be explained by the fact that, in a cold market, only competitive acquirers, which are generally large firms, tend to make M&A deals.

The results of the run-ups in Tables 4.1 to 4.3 are all positive. According to Meulbroek (1992) and Servaes (1991), a positive run-up implies possible information leakage in the marketplace due to insider trading or market anticipation due to rumours in the media.

[Insert Table 4.1 Here]

[Insert Table 4.2 Here]

[Insert Table 4.3 Here]

4.2 Univariate Analysis: Media Pessimism

This section reports the empirical relations between takeover returns and media coverage in the 1981–2010 sample, based on univariate tests. The results are stratified once more according to known determinants highlighted in the previous literature: the method of payment (i.e. cash versus stock), market valuation (i.e. hot market versus cold market), and media pessimism (i.e. high versus low).

Table 4.4 presents the means and preliminary analysis of the three-day CARs for the full samples of takeover deals in hot and cold markets in the short term. The stocks are divided

into hot and cold market groups and their differences analysed. Moreover, the stocks are divided into a high media pessimism subsample and a low media pessimism subsample and their differences analysed. The results in Panel A show 323 deals were paid in cash and only 23 deals were paid in stock in the whole sample; that is, 43% of transactions were fully financed by cash and only 3.06% were fully financed by stock. The rest of the transactions, comprising 53.93% of deals, were financed by a mix of cash and stock. The results are almost the same for the hot and cold markets. This finding indicates that most UK acquirers prefer cash payments in takeovers. This finding is consistent with that of Gao (2010), who analyses the influence of managerial horizons on takeover activity. The main prediction is that acquirers managed by short-horizon managers earn higher returns at takeover announcements, are more likely to use cash to pay for deals, and exhibit inferior long-term performance after the takeovers.

Moreover, the results in Panel A of Table 4.4 also show that, over the three-day event window, deals with low media pessimism earn returns of 0.7% (*p*-value: 0.004) and deals with high media pessimism earn returns of 0.8% (*p*-value: 0.000). Deals with low media pessimism earn returns of 0.7% (*p*-value: 0.052) and deals with high media pessimism earn returns of 0.9% (*p*-value: 0.013) through cash payments. Deals with low media pessimism earn returns of 0.7% (*p*-value: 0.029) and deals with high media pessimism earn returns of 0.8% (*p*-value: 0.010) by using mix payments. Cash and mixed payment deals earn positive returns in the short run. However, the statistical analysis between these two subsamples shows that the difference between takeovers with high and low media pessimism is -0.1% (*p*-value: 0.669) and insignificant in the short run, even considering payment methods.

Panel B of Table 4.4 indicates that, in a hot market over a three-day event window, deals with low media pessimism earn returns of 1% (*p*-value: 0.032) and deals high media pessimism earn returns of 0.5% (*p*-value: 0.283). That means takeover deals with low media pessimism earn lower returns in the short run. However, the statistical analysis between these two subsamples shows that the difference between takeovers with high and low media pessimism is 0.5% (*p*-value: 0.470) and insignificant in the short run, even considering payment methods.

Panel C of Table 4.4 indicates that, in a cold market, takeover deals paid by stock with high media pessimism earn 9.9% (*p*-value: 0.002) returns in the short run. Panel C also shows the results of the statistical analysis of the return difference between high pessimism and low pessimism takeovers and they indicate that acquirers with high pessimism outperform those with low pessimism in the short run for stock payments.

Panel D of Table 4.4 shows the results of the statistical analysis of the difference between the hot and cold markets and they indicate that takeover deals in a hot market outperform those in a cold market in the short run. The results also show that deals with low pessimism in a hot market outperform those in cold market. Furthermore, deals with high pessimism in a cold market outperform those in a hot market for mixed payment deals.

[Insert Table 4.4 Here]

Table 4.5 presents the means and preliminary analysis of long-run performance with high and low pessimism in hot and cold markets over a 24-month holding period after the announcement of takeovers. The results of Panel A show that deals with low media

pessimism earn announcement returns of 6.1% (*p*-value: 0.038) and announcement returns of 13.5% (*p*-value: 0.003) for cash payments. Moreover, under the condition of cash payment, the statistical analysis between these two groups shows that takeovers with low pessimism statistically outperform takeovers with high pessimism by 5.3% (*p*-value: 0.000), on average, in the long run. That is, greater media pessimism leads to lower takeover returns. This finding is consistent with those of Carretta et al. (2011), Henry (2008), and Tetlock (2007), who argue that high media pessimism leads to low investor sentiment, decreasing stock prices.

Panel B of Table 4.5 shows that, in a hot market, deals with stock payments experience an average loss of 19.4% (*p*-value: 0.073), while, in a cold market, deals with cash payments experience an average loss of 1.02% (*p*-value: 0.089). Panel D shows the results of the two-sample statistical analysis of the difference between hot and cold markets and they indicate that takeover deals in a hot market outperform those in a cold market in the long run. However, in this table, none of the differences are significant.

[Insert Table 4.5 Here]

Table 4.6 presents the means and preliminary analysis of media pessimism for high and low market valuations. The results of Panel A show that deals in a cold market lead to a pessimism level of 1.8% (*p*-value: 0.093), while deals in a cold market lead to a pessimism level of 1.1% (*p*-value: 0.000) for mixed payments. Panel B indicate that, for large firms, deals in a cold market lead to a pessimism level of 1.5% (*p*-value: 0.000) for mixed payments and deals in a hot market lead to a pessimism level of 1.7 (*p*-value: 0.000) for cash payments. Panel C indicates that, for small firms, deals in a hot market lead to a pessimism level of 1.4% (*p*-value: 0.043) for mixed payments.

[Insert Table 4.6 Here]

4.3 Multivariate Analysis

Univariate analysis cannot take more factors into account because of its inherent limitations and it cannot examine the relations between different factors. Correlations or inversions cannot be modelled using univariate analysis. Moreover, multivariate tests could be expected to make more accurate predictions than univariate tests (Preez and Witt, 2003). Therefore, a multivariate analysis with additional controls is employed to examine the relations between takeover returns and media coverage and between takeover returns and media pessimism.

Table 4.7 reports the results of a short-run and long-run multivariate analysis. This section reports the empirical relations between takeover returns and media pessimism including periods of pessimism of 90 days in the 1981–2010 sample in hot markets, based on multivariate tests. The media coverage takes place within 90 days before the takeover announcements. The 90-day media pessimism periods include 251 deals. All regressions include variables for size, method of payment, the book-to-market ratio, run-ups, public deals, diversifying deals, tender offers, hostile takeovers, PE ratios, EBITDA values, leverage, year, and industry as controls. Accounting variables are winsorized at the 5% and 95% levels to mitigate the influence of outliers.

First, the three-day CAR(-1, 1) values in a hot market are computed for 90 days of media coverage during the period one day before the takeover announcement to one day after. The key independent variable is the media pessimism for a stock in a given period. Column (1) in Table 4.7 shows that the *p*-value is 0.003, which is statistically significant, and the estimated

coefficient is 0.0463 and negative. These findings indicate that 90-day periods of media pessimism are negatively correlated with short-run firm returns. The results are therefore in line with the univariate tests and with the findings of Durnev and Mangen (2011) and Tetlock (2007), who state that high media pessimism forecasts a decrease in future stock returns. In addition, using textual analysis software to quantify the tone of press releases, Davis and Tama-Sweet (2012) make similar findings, that higher levels of pessimism are associated with lower future returns on assets.

Table 4.7 also reports the results of a long-run multivariate analysis. This section reports the empirical relations between takeover returns and media pessimism for 90-day periods of media pessimism in the 1981–2010 sample in hot markets, based on multivariate tests. First, the 24-month BHAR values in a hot market are computed for 90 days of media coverage during a period of 24 months after the announcements. The key independent variable is the media pessimism for a stock in a given period. Column (2) in Table 4.7 shows that the *p*-value is 0.757, which is insignificant, and the estimated coefficient is 0.0486. These findings indicate that there is no relation between 90-day periods of media pessimism and returns in the long run.

[Insert Table 4.7 Here]

Table 4.8 reports the results of a short-run and long-run multivariate analysis. This section reports the empirical relations between takeover returns and media pessimism during 90-day period of media pessimism in the 1981–2010 sample in cold markets, based on multivariate tests. First, the three-day CAR(-1, 1) values in a cold market are computed for 90 days of media coverage during the period one day before the takeover announcements to one day

after. The key independent variable is the media pessimism for a stock in a given period. Column (1) in Table 4.9 shows that the *p*-value is 0.214, which is insignificant, and the estimated coefficient is 0.0208 and negative.

Table 4.8 reports the results of a long-run multivariate analysis in a cold market. This section reports the empirical relations between takeover returns and media pessimism for 90-day period of media pessimism in the 1981–2010 sample in cold markets, based on multivariate tests. First, the 24-month BHAR values in a cold market are computed for 90 days of media coverage during the period 24 months after the announcements. The key independent variable is the media pessimism for a stock in a given period. Column (2) in Table 4.8 shows that the *p*-value is 0.017, which is statistically significant, and the estimated coefficient is 0.4285 and positive. Moreover, the market-to-book ratio is positively related to long-run firm returns, with a *p*-value of 0.077 and a coefficient of 0.0573. The variable Hostile is also positively related to long-run firm returns, with a *p*-value of 0.005 and a coefficient of 0.6520.

[Insert Table 4.8 Here]

Table 4.9 reports the results of a pessimism analysis. This section reports the empirical relations between market valuation and media pessimism during 90-day, 180-day, and 365-day periods of media pessimism in the 1981–2010 sample, based on multivariate tests. The key independent variable is the market valuation dummy in a given period. Column (1) in Table 4.11 shows that the *p*-value is 0.017, which is statistically significant, and the estimated coefficient is 0.4285 and positive. Moreover, the PE ratio is positively related to pessimism, with a *p*-value of 0.079 and a coefficient of 0.0025. The market-to-book ratio is

also negatively related to long-run firm returns, with a *p*-value of 0.072 and a coefficient of -0.0047.

[Insert Table 4.9 Here]

5. Robustness Tests

This section briefly describes a number of robustness tests and explores alternative explanations. As different event windows, the analysis employs a short-run pre-announcement window from three days to five days and a long-run window from 24 months to 36 months. The results from the five-day short-run window and the 36-month long-run window are very similar to the previous results and are consistent with the main findings above when the following robustness tests are employed.

First, Table 4.10 reports the results of a short-run multivariate analysis in hot markets. This section reports the empirical relations between takeover returns and 90 days of media pessimism in the 1981–2010 sample in hot markets, based on multivariate tests. First, the five-day CAR values in a hot market are computed for 90 days of media coverage during the period of five days around announcements. The key independent variable is the media pessimism for a stock in a given period. Column (1) in Table 4.10 shows that the *p*-value is 0.054, which is statistically significant, and the estimated coefficient is 0.0399 and negative. The result shows a negative relation between the five-day CAR and media pessimism in a hot market, consistent with the result of the three-day CAR. Moreover, the variable Stock payment is also negatively related to short-run firm returns, with a *p*-value of 0.032 and a coefficient of 0.0344. In addition, the variable Hostile is positively related to long-run firm returns, with a *p*-value of 0.009 and a coefficient of 0.0453.

Second, Column (2) of Table 4.10 reports the results of a long-run multivariate analysis in a hot market. This section reports the empirical relations between takeover returns and 90 days of media pessimism in the 1981–2010 sample in hot markets, based on multivariate tests. First, the 36-month BHAR values in a hot market are computed for 90 days of media coverage during the period 36 months after the announcements. The key independent variable is the media pessimism for a stock in a given period. Column (2) in Table 4.10 shows that the *p*-value is 0.448, which is insignificant, and the estimated coefficient is 0.1480 and positive. The result shows no relation between the 36-month BHAR pessimism in a hot market and this result is consistent with that of 24-month BHARs.

Third, Table 4.10 reports the results of a short-run multivariate analysis in a cold market. This section reports the empirical relations between takeover returns and 90 days of media pessimism in the 1981–2010 sample in cold markets, based on multivariate tests. First, the five-day CAR values in a cold market are computed for 90 days of media coverage during the period five days around the announcements. The key independent variable is the media pessimism for a stock in a given period. Column (3) in Table 4.10 shows that the *p*-value is 0.202, which is insignificant, and the estimated coefficient is 0.0284 and negative. The result shows no relation between the five-day CAR and pessimism in a cold market, consistent with the results for the three-day CAR.

Fourth, Table 4.10 reports the results of a long-run multivariate analysis in a hot market. This section reports the empirical relations between takeover returns and 90 days of media pessimism in the 1981–2010 sample in cold markets, based on multivariate tests. First, the 36-month BHAR values in a cold market are computed for 90 days of media coverage during

the period 36 months after the announcements. The key independent variable is the media pessimism for a stock in a given period. Column (4) in Table 4.10 shows that the *p*-value is 0.057, which is statistically significant, and the estimated coefficient is 0.4677and positive. The result shows a positive relation between the 36-month BHAR and media pessimism in a hot market, a result consistent with that of the 24-month BHAR. Moreover, the market-to-book ratio is also positively related to long-run firm returns, with a *p*-value of 0.086 and a coefficient of 0.0786. In addition, the variable Hostile is also negatively related to long-run firm returns, with a *p*-value of 0.026 and a coefficient of 0.5892.

[Insert Table 4.10 Here]

6. Conclusion

This paper addresses whether media coverage and media pessimism can influence bidder returns in M&As during 1981–2010 for the UK market. Controlling for firm size, method of payment, and acquirer/target industry, the empirical results indicate that acquirers should be subject to lower media pessimism when the deal is announced during a hot market. Moreover, the results show that media pessimism about takeovers affects stock returns differently between hot and cold markets.

The empirical results are consistent with the hypotheses. First, the results indicate a negative relation between media pessimism and takeover returns in a hot market in the short run. This could be explained by the finding of Tetlock et al. (2008), who state that fundamental information transmitted by financial news resolves information asymmetry. Moreover, positive news increases investors' expectations and negative news disappoints them (Prast and de Vor, 2005; Solomon, 2012). An alternative explanation is that negative news has a

greater likelihood of resulting in higher adverse selection costs than positive or neutral news does (Riordan et al. 2013). In addition, a herding effect could exist following the news release and it is stronger among institutional traders in markets with less information asymmetry (Choi and Skiba, 2015). This result is in line with the findings of Antonio et al. (2008) and Dasgupta et al. (2010), who suggest that investors obtain positive gains in the short run and institutional herding positively forecasts short-run returns.

Second, the results also show a positive relation between media pessimism and takeover returns in a cold market in the long run, because the returns will reverse and managers will obtain negative returns in a cold market over a long period (Petmezas, 2009). In addition, bidding firms earn significantly higher returns during hot markets and their announcement returns are significantly negative for takeovers announced in cold markets (Bouwman et al., 2009). This hypothesis can be explained by the overconfidence theory and cognitive dissonance theory. Analysts are overconfident about the accuracy of the information they obtain because of their cognitive bias (Friesen and Weller, 2006). Both overconfidence and cognitive dissonance lead to a price reversal in the long run.

Third, the relation between long-run returns and media pessimism in hot markets is insignificant, as is the relation between short-run returns and media pessimism in cold markets. These results can be explained that because of the higher levels of takeover activity in hot markets, the media coverage is excessive during long periods in a hot market. Such a large quantity of media coverage usually makes it hard for investors to focus on media sentiment information. However, in a cold market and in the short run, media coverage is low and hard for analysts and investors to observe. The finding is in line with early investigations

by Petmezas (2009), who states that managers undertaking takeovers during hot markets can earn positive returns in the short run but only insignificant returns during cold markets.

The results indicate that media sentiment has a different and statistically significant influence on takeover returns between hot and cold markets, which opens up many future research avenues. This chapter considers only media coverage in a 90-day window and other windows, such as windows of 180 days and 90 days, can be examined and compared in future research.

The findings of the thesis suggest that financial media is a effective way to predict merging firms short-term and long-term performance. It is generally believed that the financial media plays an important role in disseminating information to financial market participants. This media have a direct impact on investor sentiment concerning either the further earning perspectives of the bidding firm or short-term market fluctuation regarding the merger deals itself. Therefore, this paper have a direct implication that managers should keep close communication with financial media to make sure the all firm information is unbiasly and effectively covered by financial media.

For risk arbitrager, financial media might serve as an effectively way to get public information and taking position on the media sentiment subtracted from this information.

To sum up, the main implication we draw from the thesis for bidding firms as well as the target firms is to design a well-structured media campaign before and after the merger announcement, not only to draw a attention from vast majority investors but also to attract favourable media sentiment toward the outcome of the deal.

Table 4.1 Summary Statistics

This table reports the summary statistics for the full sample and focuses on media coverage and media pessimism. The media coverage variable is a dummy variable that takes the value one if articles covering takeover news are published in a given period. After a pessimism score is calculated, deals are ranked by score, from highest to lowest. The top third of deals is then classified as high pessimism, while the bottom third is classified as low pessimism. Table 4.1 presents an overview of the variables with high and low media pessimism. This table also presents the total number of observations, means, medians, and standard deviations of the financial, asset, and ownership structure variables under the media pessimism classifications. The total number of observations is 751. including 250 deals with high pessimism and 250 deals with high pessimism. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars); the book-to-market ratio is the acquirer's book value divided by its market value, as of the end of the previous year; RUNUP is the acquirer's stock performance prior to the takeover announcement, measured using CAR [-365, -7]; Leverage is the percentage of total debt divided by total capital in annual terms and is measured in the year prior to the deal announcement; EBITDA is subtracted from a firm's final accounting of its income and costs; the PE ratio refers to an equity valuation ratio of the firm's current market share price compared to its per-share earnings in one year; Cash denotes deals financed using 100% cash, Stock denotes deals financed using 100% stock; and Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year.

	Mean	SD	Median	N
HighVSLow MV	0.62	0.49	1.00	405
High Pessimism	1.00	0.00	1.00	250
Low Pessimism	0.00	0.00	0.00	250
High Market Valution	1.00	0.00	1.00	251
Low Market Valution	0.00	0.00	0.00	154
Media Coverage	11.85	33.28	3.00	751
Media Pessimism	0.02	0.12	0.01	751
Stock	0.03	0.17	0.00	751
Cash	0.43	0.50	0.00	751
Run-up	0.12	0.34	0.10	751
Size	1495.20	1846.38	628.77	751
Market-to-book	3.08	2.60	2.34	751
PE	18.16	11.45	15.30	751
RalativeSize	0.09	0.16	0.03	751
Leverage	29.18	19.24	27.85	751
Public	0.13	0.33	0.00	751
Diversification	0.48	0.50	0.00	751
EBITDA	11.54	1.38	11.49	751
Tender	0.10	0.29	0.00	751
Hostile	0.01	0.07	0.00	751

Table 4.2 Summary Statistics

This table reports the summary statistics for the hot market sample and focuses on media coverage and media pessimism. The media coverage variable is a dummy variable that takes the value one if articles covering takeover news are published in a given period. After a pessimism score is calculated, deals are ranked by score, from highest to lowest. The top third of deals is then classified as high pessimism, while the bottom third is classified as low pessimism. Table 4.2 presents an overview of the variables with media pessimism published within 90 days before the takeover announcements. This table also presents the total number of observations, means, medians, and standard deviations of the financial, asset, and ownership structure variables under the market valuation classifications. The total number of observations is 251, including 76 deals with high pessimism and 87 deals with high pessimism. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars); the book-to-market ratio is the acquirer's book value divided by its market value, as of the end of the previous year; RUNUP is the acquirer's stock performance prior to the takeover announcement, measured using CAR [-365, -7]; Leverage is the percentage of total debt divided by total capital in annual terms and is measured in the year prior to the deal announcement; EBITDA is subtracted from a firm's final accounting of its income and costs; the PE ratio refers to an equity valuation ratio of the firm's current market share price compared to its per-share earnings in one year; Cash denotes deals financed using 100% cash; Stock denotes deals financed using 100% stock; and Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year.

	Mean	SD	Median	N
High Market Valuation	1.00	0.00	1.00	251
High Pessimism	1.00	0.00	1.00	76
Low Pessimism	1.00	0.00	1.00	87
Media Coverage	13.02	40.23	4.00	251
Media Pessimism	0.02	0.15	0.01	251
Stock	0.05	0.21	0.00	251
Cash	0.43	0.50	0.00	251
Run-up	0.11	0.39	0.06	251
Size	1345.67	1502.28	569.91	251
Market-to-book	3.53	2.66	2.59	251
PE	19.82	11.14	16.70	251
RalativeSize	0.09	0.14	0.02	251
Leverage	28.84	18.25	29.02	251
Public	0.17	0.37	0.00	251
Diversification	0.50	0.50	1.00	251
EBITDA	11.40	1.39	11.30	251
Tender	0.14	0.35	0.00	251
Hostile	0.00	0.06	0.00	251

Table 4.3 Summary Statistics

This table reports the summary statistics for the cold market sample and focuses on media coverage and media pessimism. The media coverage variable is a dummy variable that takes the value one if articles covering takeover news are published in a given period. After a pessimism score is calculated, deals are ranked by score, from highest to lowest. The top third of deals is then classified as high pessimism, while the bottom third is classified as low pessimism. Table 4.3 presents an overview of the variables with media pessimism published within 90 days before the takeover announcements and those without media coverage data. This table also presents the total number of observations, means, medians, and standard deviations of the financial, asset, and ownership structure variables under the market valuation classifications. The total number of observations is 838, including 52 deals with high pessimism and 57 deals with high pessimism.. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars); the book-to-market ratio is the acquirer's book value divided by its market value, as of the end of the previous year; RUNUP is the acquirer's stock performance prior to the takeover announcement, measured using CAR [-365, -7]; Leverage is the percentage of total debt divided by total capital in annual terms and is measured in the year prior to the deal announcement; EBITDA is subtracted from a firm's final accounting of its income and costs; the PE ratio refers to an equity valuation ratio of the firm's current market share price compared to its per-share earnings in one year; Cash denotes deals financed using 100% cash; Stock denotes deals financed using 100% stock; and Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year.

	Mean	SD	Median	N
Low Market Valuation	0.00	0.00	0.00	154
High Pessimism	0.00	0.00	0.00	52
Low Pessimism	0.00	0.00	0.00	57
Media Coverage	16.19	36.14	4.00	154
Media Pessimism	0.02	0.13	0.01	154
Stock	0.03	0.18	0.00	154
Cash	0.42	0.49	0.00	154
Run-up	0.06	0.28	0.08	154
Size	1389.60	1399.29	817.69	154
Market-to-book	2.61	1.66	2.20	154
PE	14.81	5.99	13.40	154
RalativeSize	0.07	0.12	0.03	154
Leverage	28.89	19.08	28.94	154
Public	0.17	0.38	0.00	154
Diversification	0.53	0.50	1.00	154
EBITDA	11.74	1.26	11.83	154
Tender	0.09	0.29	0.00	154
Hostile	0.01	0.11	0.00	154

Table 4.4 Univarite Tests: Short-run

This table reports acquirer short-run 3-day cumulative announcement abnormal returns (CARs) for the full sample. The CAR is measured by using the formula $CAR_i = \sum_{i=0}^{n} AR_i$. The media coverage published within 90 days before the takeover announcements. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top third are classified as high pessimism, while the bottom third are classified as low pessimism. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Panel A relates to the full sample (Full Sample); Panel B relates to hot market; Panel C relates to cold market; and Panel D relates to the differential performance between small and large bidders (Panel C -Panel B). The *p*-Value is shown in parentheses and is calculated using the t-test for CARs. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	All				**Low Pessimism**				**High Pessimism**				**Differential (Low -High)**			
	All	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**
Panel A: All Firms																
Mean	0.009***	0.009***	0.002	0.010***	0.007***	0.007*	0.006	0.007**	0.008***	0.009**	0.006	0.008***	-0.001	-0.002	0.000	-0.001
***p*-Value**	0.000	0.000	0.877	0.000	0.004	0.052	0.733	0.029	0.000	0.013	0.782	0.010	0.699	0.700	0.995	0.854
N	751	323	23	405	250	98	11	141	250	104	9	137				
Panel B: Hot Market																
Mean	0.009***	0.009**	0.000	0.010***	0.010**	0.010	0.013	0.009	0.005	0.006	-0.019	0.007	0.005	0.004	0.032	0.002
***p*-Value**	0.001	0.015	0.999	0.009	0.032	0.188	0.573	0.120	0.283	0.388	0.434	0.320	0.470	0.686	0.314	0.799
N	251	107	12	132	87	30	7	50	76	35	4	37				
Panel C: Cold Market																
Mean	0.000	-0.003	0.020	0.001	-0.005	-0.002	-0.033	-0.004	0.004	-0.007	0.099***	0.005	-0.009	0.005	-0.132**	-0.009
***p*-Value**	0.999	0.475	0.585	0.837	0.257	0.654	0.170	0.541	0.440	0.355	0.002	0.452	0.191	0.594	0.014	0.334
N	154	64	5	85	57	24	3	30	52	19	2	31				
Panel D: Differential (Panel C-Panel B)																
Mean	-0.009**	-0.012**	0.020	-0.009	-0.015***	-0.012	-0.046	-0.014	-0.001	-0.013	0.118**	-0.002				
***p*-Value**	0.022	0.026	0.605	0.111	0.019	0.175	0.115	0.140	0.917	0.203	0.012	0.857				

Table 4.5 Univariate Tests: Long-run

This table reports acquirer short-run 24-month buy-and-hold abnormal returns (BHARs) for the full sample. The buy-and-hold abnormal return is measured using the formula $BHAR_{it} = \prod_{t=0}^{T}[1 + R_{it}] - \prod_{t=0}^{T}[1 + R_{mt}]$.The media coverage published within 90 days before the takeover announcements. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top third are classified as high pessimism, while the bottom third are classified as low pessimism. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Panel A relates to the full sample (Full Sample); Panel B relates to larger acquirers as measured as those firms in the highest one third of bidders once ranked by their market value(Large Firms); Panel C relates to small acquirers as measured as those firms in the lowest one third of bidders once ranked by their market value(Small Firms); and Panel D relates to the differential performance between small and large bidders (Panel C -Panel B). The *p*-Value is shown in parentheses and is calculated using the t-test for CARs. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	All				**Low Pessimism**				**High Pessimism**				**Differential (Low-High)**			
	All	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**
Panel A: All Firms																
Mean	0.045***	0.069**	-0.109	0.035	0.061**	0.135***	-0.043	0.018	0.008	0.014	-0.130	0.013	0.053	0.121*	0.087	0.005
***p*-Value**	0.010	0.011	0.406	0.140	0.038	0.003	0.877	0.662	0.776	0.757	0.404	0.754	0.220	0.059	0.713	0.934
N	751	323	23	405	250	98	11	141	250	104	9	137				
Panel B: Hot Market																
Mean	-0.006	-0.025	-0.194*	0.027	0.060	0.115	-0.102	0.050	-0.051	-0.075	-0.332	0.002	0.111	0.189	0.230	0.047
***p*-Value**	0.851	0.581	0.073	0.502	0.249	0.198	0.820	0.487	0.317	0.398	0.124	0.974	0.128	0.120	0.468	0.628
N	251	107	12	132	87	30	7	50	76	35	4	37				
Panel C: Cold Market																
Mean	-0.052	-0.102*	-0.106	-0.012	-0.043	-0.070	-0.253	0.001	-0.013	-0.017	0.114	-0.018	-0.030	-0.053	-0.367	0.018
***p* -Value**	0.172	0.089	0.858	0.828	0.496	0.457	0.884	0.995	0.865	0.893	0.787	0.858	0.135	0.727	0.864	0.894
N	154	64	5	85	57	24	3	30	52	19	2	31				
Panel D: Differential (Panel C-Panel B)																
Mean	0.335	-0.076	0.088	-0.039	-0.103	-0.185	-0.151	-0.049	0.038	0.057	0.446	-0.020				
***p* -Value**	0.329	0.298	0.822	0.553	0.221	0.156	0.809	0.668	0.659	0.705	0.586	0.867				

Table 4.6 Univariate Tests: Market Valuation

This table reports the difference between the cold markets and hot markets. The media coverage published within 90 days before the takeover announcements. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top third are classified as high pessimism, while the bottom third are classified as low pessimism. Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. Panel A relates to the full sample (Full Sample); Panel B relates to larger acquirers as measured as those firms in the highest one third of bidders once ranked by their market value(Large Firms); Panel C relates to small acquirers as measured as those firms in the lowest one third of bidders once ranked by their market value(Small Firms); and Panel D relates to the differential performance between small and large bidders (Panel C -Panel B). The *p*-Value is shown in parentheses and is calculated using the t-test for CARs. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	All				**Cold Market**				**Hot Market**				**Differential (Cold -Hot)**			
	All	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**	**All**	**Cash**	**Stock**	**Mixed**
Panel A: All Firms																
Mean	0.018***	0.022***	0.028	0.014***	0.018*	0.028	0.024	0.011***	0.015	0.017	0.007	0.015	0.003	0.011	0.017	-0.003
***p*-Value**	0.000	0.005	0.118	0.009	0.093	0.293	0.225	0.000	0.113	0.195	0.247	0.326	0.819	0.706	0.370	0.816
N	751	323	23	405	154	64	5	85	251	107	12	132				
Panel B: Large Firms																
Mean	0.018***	0.022**	0.009	0.016*	0.025	0.035	0.022	0.015***	0.015	0.017***	-0.001	0.014	0.011	0.018	0.023	0.000
***p*-Value**	0.004	0.020	0.240	0.078	0.160	0.315	0.480	0.000	0.293	0.000	0.920	0.544	0.631	0.598	0.461	0.988
N	440	192	12	236	92	48	3	41	140	52	5	83				
Panel C: Small Firms																
Mean	-0.002	-0.029	0.013	0.009**	0.004	0.002	0.026	-0.001	-0.015	-0.104	0.006	0.014**	0.020	0.106	0.019	-0.015
***p*-Value**	0.847	0.469	0.179	0.033	0.709	-	0.509	0.957	0.599	0.420	0.129	0.043	0.530	-	0.591	0.356
N	68	21	6	41	11	1	2	8	29	7	4	18				
Panel D: Differential (Panel C-Panel B)																
Mean	-0.020	-0.051	0.004	-0.006	-0.021	-0.033	0.003	-0.015	-0.030	-0.120	0.007	0.000				
***p*-Value**	0.146	0.224	0.722	0.509	0.317	-	0.932	0.313	0.356	0.354	0.430	0.995				

Table 4.7 Multivariate Tests in Hot Markets

This table reports acquirer short-run 3-day cumulative announcement abnormal returns (CARs) in the hot market. It also reports the acquirer long-run 24-month Buy-and-Hold Abnormal Returns (BHARs) in the hot market from the announcement date stratified by the target industry. The media coverage published within 90 days before the takeover announcements. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top third are classified as high pessimism, while the bottom third are classified as low pessimism. The CAR is measured by using the formula $\mathrm{CAR_i} = \sum_{i=0}^{n} \mathrm{AR_i}$. The buy-and-hold abnormal return is measured by using the formula $\mathrm{BHAR_{it}} = \prod_{t=0}^{T}[1 + \mathrm{R_{it}}] - \prod_{t=0}^{T}[1 + \mathrm{R_{mt}}]$. Column (1) reports the results for the 90 days samples in the short run while Column (2) refers to the long run. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Book-to-market ratio is book-value of acquirer divided by market value of acquirer, as of the end of the previous year. RUNUP is the stock performance of the acquirer prior to the takeover announcement measured using the CAR [-365, -7]. Leverage is the percentage of total debt divided by total capital in annual terms and is measured at the year prior to the deal announcement. EBITDA is a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. PE ratio refers to a equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year. Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. For additional variables noted in the literature, only the cases of acquisitions of publicly listed targets and acquirers are considered. Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. The mean CAR and BHAR are reported with the *p*-value in parentheses. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	1	2
90pessimism	-0.0463***	0.0752
	(0.003)	(0.603)
STOCK	-0.0108	-0.1598
	(0.491)	(0.444)
CASH	0.0020	-0.0936
	(0.741)	(0.154)
WRUNUP_365_7	-0.0233*	0.0063
	(0.075)	(0.967)
WLNMV	0.0071	-0.2953***
	(0.482)	(0.004)
WPE	-0.0002	-0.0001
	(0.703)	(0.989)
WRelativeSize	0.0454	0.4357
	(0.251)	(0.205)
WLeverage	-0.0001	-0.0028
	(0.527)	(0.235)
WMTBV	0.0002	0.0481**
	(0.918)	(0.030)
Public	-0.0002	0.0443
	(0.989)	(0.737)
Diversification	-0.0022	-0.1114*
	(0.705)	(0.075)
WLNEBITDA	-0.0092	0.2426**
	(0.354)	(0.015)
Tender	-0.0096	-0.1790
	(0.497)	(0.289)
Hostile	0.0036	-0.3161*
	(0.798)	(0.060)
_cons	0.0948	-1.5047*
	(0.249)	(0.068)
N	251	251
R-sq	0.120	0.237
adj. R-sq	-0.042	0.095

Table 4.8 Multivariate Tests in the Cold Markets

This table reports acquirer short-run 3-day cumulative announcement abnormal returns (CARs) in the cold market. It also reports the acquirer long-run 24-month Buy-and-Hold Abnormal Returns (BHARs) in the cold market from the announcement date stratified by the target industry. The media coverage published within 90 days before the takeover announcements. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top third are classified as high pessimism, while the bottom third are classified as low pessimism. The CAR is measured by using the formula $\mathrm{CAR_i} = \sum_{i=0}^{n} \mathrm{AR_i}$. The buy-and-hold abnormal return is measured by using the formula $\mathrm{BHAR_{it}} = \prod_{t=0}^{T}[1 + \mathrm{R_{it}}] - \prod_{t=0}^{T}[1 + \mathrm{R_{mt}}]$. Column (1) reports the results for the 90 days samples in the short run while Column (2) refers to the long run. Size is measured as the average market value of acquirers over the previous calendar year (in millions). Book-to-market ratio is book-value of acquirer divided by market value of acquirer, as of the end of the previous year. RUNUP is the stock performance of the acquirer prior to the takeover announcement measured using the CAR [-365, -7]. Leverage is the percentage of total debt divided by total capital in annual terms and is measured at the year prior to the deal announcement. EBITDA is a firm's earnings before interest payments, tax, depreciation, and amortization are subtracted from final accounting of its income and costs. PE ratio refers to a equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year. Cash is deals financed using 100%, Stock is 100% stock and Mix is a mixture of cash and stock. For additional variables noted in the literature, only the cases of acquisitions of publicly listed targets and acquirers are considered. Relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. The mean CAR and BHAR are reported with the *p*-value in parentheses. Significance at the 1%, 5% level and 10% levels is denoted ***, ** and * respectively.

	1	2
90pessimism	-0.0208	0.4285**
	(0.214)	(0.017)
STOCK	0.0210	-0.1255
	(0.383)	(0.620)
CASH	-0.0040	-0.0714
	(0.539)	(0.372)
WRUNUP_365_7	-0.0182	0.2710
	(0.291)	(0.150)
WLNMV	0.0001	-0.0479
	(0.987)	(0.731)
WPE	0.0008	-0.0129
	(0.274)	(0.197)
WRelativeSize	-0.0385	0.2091
	(0.217)	(0.592)
WLeverage	0.0000	-0.0036
	(0.884)	(0.243)
WMTBV	-0.0064***	0.0573*
	(0.002)	(0.077)
Public	-0.0222*	-0.0858
	(0.070)	(0.608)
Diversification	0.0084	0.0992
	(0.235)	(0.269)
WLNEBITDA	-0.0030	0.0647
	(0.729)	(0.625)
Tender	0.0171	-0.1505
	(0.284)	(0.459)
Hostile	0.0039	0.6520***
	(0.874)	(0.005)
_cons	0.0582	-0.5220
	(0.345)	(0.615)
N	154	154
R-sq	0.363	0.468
adj. R-sq	0.122	0.266

Table 4.9 Multivariate Tests

This table presents media pessimism for merger portfolios of all, high- and low-valuation acquirers. The media coverage published within 90 days before the takeover announcements. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top third are classified as high pessimism, while the bottom third are classified as low pessimism. Column (1) reports the results for the news samples in 90 days before takeover announcement. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars); the book-to-market ratio is the acquirer's book value divided by its market value, as of the end of the previous year; RUNUP is the stock performance of the acquirer prior to the takeover announcement, measured using Run-up[-365, -7]; Leverage is the percentage of total debt divided by total capital in annual terms, measured in the year prior to the deal announcement; EBITDA is subtracted from a firm's final accounting of its income and costs; the PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year; Cash denotes deals financed using 100% cash, Stock denotes deals financed 100% in stock, and Mix is a mixture of cash and stock; and relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Significance at the 1%, 5%, and 10% levels is denoted ***, **, and *, respectively.

	1
90pessimism	-0.0809**
	(0.046)
STOCK	0.0070
	(0.789)
CASH	0.0039
	(0.748)
WRUNUP_365_7	-0.0759
	(0.100)
WLNMV	-0.0311
	(0.255)
WPE	0.0025*
	(0.079)
WRelativeSize	0.0093
	(0.836)
WLeverage	-0.0006
	(0.146)
WMTBV	-0.0047*
	(0.072)
Public	0.0636
	(0.300)
Diversification	-0.0062
	(0.703)
WLNEBITDA	0.0354
	(0.273)
Tender	-0.0646
	(0.240)
Hostile	-0.0284
	(0.388)
_cons	-0.2365
	(0.228)
N	405
R-sq	0.116
adj. R-sq	-0.011

Table 4.10 Robustness Tests

This table reports the findings of robustness checks. The media coverage published within 90 days before the takeover announcements. After a pessimism score is calculated, deals are ranked by score from highest to lowest. The top third are classified as high pessimism, while the bottom third are classified as low pessimism. Column (1) reports the results for deals in hot market and returns in the short run, column (2) refers to deals in hot market and returns in the long run, and column (3) refers to deals in cold market and returns in the short run. column (4) refers to deals in cold market and returns in the long run. The variable Size is measured as the average market value of acquirers over the previous calendar year (in millions of dollars); the book-to-market ratio is the acquirer's book value divided by its market value, as of the end of the previous year; RUNUP is the stock performance of the acquirer prior to the takeover announcement, measured using Run-up[-365, -7]; Leverage is the percentage of total debt divided by total capital in annual terms, measured in the year prior to the deal announcement; EBITDA is subtracted from a firm's final accounting of its income and costs; the PE ratio refers to an equity valuation ratio of a firm's current market share price compared to its per-share earnings in one year; Cash denotes deals financed using 100% cash, Stock denotes deals financed 100% in stock, and Mix is a mixture of cash and stock; and relative size is measured as the deal value divided by the market value of the acquirer over the previous calendar year. Significance at the 1%, 5%, and 10% levels is denoted ***, **, and *, respectively.

	1 Short&Hot	2 Long&Cold	3 Short&Cold	4 Long&Cold
Media Pessimism	-0.0399*	0.1480	-0.0284	0.4677*
	(0.054)	(0.448)	(0.202)	(0.057)
STOCK	-0.0344**	-0.3047	0.0342	-0.1555
	(0.032)	(0.183)	(0.181)	(0.601)
CASH	0.0046	-0.1035	-0.0065	0.0275
	(0.538)	(0.146)	(0.452)	(0.784)
WRUNUP_365_7	-0.0133	0.1002	0.0141	0.3667
	(0.413)	(0.576)	(0.504)	(0.128)
WLNMV	0.0075	-0.2705**	0.0123	-0.1337
	(0.561)	(0.017)	(0.372)	(0.467)
WPE	-0.0008	-0.0072	-0.0004	-0.0088
	(0.281)	(0.330)	(0.674)	(0.477)
WRelativeSize	0.0311	0.3364	-0.0366	0.2156
	(0.496)	(0.272)	(0.432)	(0.612)
WLeverage	-0.0001	-0.0028	0.0003	-0.0015
	(0.626)	(0.314)	(0.403)	(0.695)
WMTBV	0.0003	0.0435*	-0.0094***	0.0786*
	(0.857)	(0.089)	(0.002)	(0.086)
Public	0.0028	0.3707**	-0.0180	0.0596
	(0.902)	(0.027)	(0.232)	(0.797)
Diversification	-0.0045	-0.1130	0.0145	0.0840
	(0.542)	(0.117)	(0.141)	(0.451)
WLNEBITDA	-0.0081	0.1865*	-0.0178	0.1323
	(0.512)	(0.088)	(0.198)	(0.443)
Tender	-0.0084	-0.3008	0.0023	-0.3062
	(0.660)	(0.148)	(0.915)	(0.258)
Hostile	0.0453***	-0.7378***	0.0100	0.5892**
	(0.009)	(0.001)	(0.739)	(0.026)
_cons	0.1031	-0.8813	0.1652*	-1.7239
	(0.298)	(0.299)	(0.084)	(0.221)
N	251	251	154	154
R-sq	0.133	0.288	0.312	0.471
adj. R-sq	-0.027	0.156	0.052	0.270

Chapter 5. Conclusion

This thesis examines the interaction between the financial media and market reactions to mergers and acquisitions (M&As) in three different settings. Chapter 2 examines the correlation between media pessimism/media coverage and bidder performance. Acquiring firms with media coverage in the pre-merger period are expected to outperform those without media coverage. And firms with low media pessimism in the pre-merger period outperform with high media pessimism. These outcomes are predicted by both the information and sentiment hypotheses. The results of the first chapter are consistent with the hypothesis. Chapter 3 looks into the impact of financial media on M&A outcomes and finds that deals with high media coverage/low pessimism have higher completion rates than deals with low media coverage/high pessimism. This finding is consistent with those of Fang and Peress (2009), who state stocks with no mass media coverage outperform those heavily covered by the media. Chapter 4 contributes to the literature by examining the market valuation hypothesis together with media impact on takeover deals. The results show that acquirers obtain significantly higher announcement returns for deals announced during high-valuation markets in conjunction with low media pessimism, and for deals announced during low-valuation markets in conjunction with high media pessimism.

This thesis builds on the financial media literature, which shows that either media pessimism or media coverage affects firm performance. However, the literature has neglected the media effect on M&As. This thesis addresses the issue and fills in the gaps by showing clear evidence that the financial media can indeed alter investors'

expectations towards bidder's future earning abilities and eventually change market reactions to a merger deal.

While most financial media studies focus on the US market, this thesis contributes to the literature by using UK data. As Shaw (1999) suggests, the UK and US media are very different, with the UK media being more independent and the US media more conformist.

Overall, this thesis provides empirical evidence to support the hypothesis that the general pessimism of the financial news released during the pre-announcement period strongly affects the reactions of the financial market to takeover deals. It shows that the increasing level of media pessimism in the pre-announcement time window significantly reduces acquirers' five-day announcement abnormal returns. This hypothesis still holds in a cross-sectional multivariate analysis after controlling for various known factors. This relationship seems to hold in the longer run, supporting the information release explanation of financial media news rather than the sentiment hypothesis. In addition, media coverage can serve to alleviate information asymmetries and the difference in announcement performance between cash and stock deals is more pronounced for acquirers subject to low media coverage. In conclusion, irrespective of the sentiment, positive or negative, of the financial media, high media coverage conveys more information to acquirers' investors.

Furthermore, the empirical results indicate that media coverage and media pessimism have a statistically significant influence on takeover outcomes, which opens up many

future research avenues. One area of particular interest is whether media coverage and media pessimism in a series of merger deals influence future takeover performance. Moreover, after the quantity of media coverage is measured, another area of interest is whether deals with intensive media coverage for a short period outperform those without such media coverage, since intensive media coverage could suddenly raise investor attention and therefore temporarily drive up bidder prices. Furthermore, target managers could also use financial media to raise such investor recognition and drive up the target price to gain a better position in deal negotiation. All the above-mentioned ideas require further investigation and could provide new insight to the literature.

The main contribution of this thesis to the literature is a comprehensive study of the financial media's role in M&As as an effective supplement to media research. In addition, the relation between the media and M&As has implications for future research. For instance, the diversity of media sentiment between various news stories is a potential proxy for the diversity of opinions in the stock market.

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