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# STOCK MARKET IMPACT OF A WHITE KNIGHT ENTRY


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# ABSTRACT

This paper investigates how the information flow from a white knight entry affects the stock returns of all companies involved. Additionally, it examines how white knight firms differ from their hostile bidder counterparts in terms of financial characteristics. The sample includes 65 white knight takeover contests covering the period 1995-2010. Using an event study methodology, I show that the target is exposed to positive abnormal returns around the initial hostile bid, while the hostile bidder experiences no significant wealth changes around the time of the opening offer. Upon the white knight entry, the target shareholders earn significant positive abnormal returns, most likely due to the increased bidder competition. In contrast, the white knight's shareholders are confronted with significant negative abnormal returns around the entry announcement, possibly reflecting both its sequential position in the bidding contest and its lack of strategic justification for the takeover. The impact on the hostile bidder's shareholders is not significantly different from zero. However, if the hostile bidders are classified by geographical origin, I find that EU-bidders are confronted with significant negative CARs while US-bidders face positive CARs. Additionally, I show that white knights possess relatively more free cash flow and their CEOs receive a higher percentage of salary compensation compared to the hostile bidders' CEOs.

**KEY WORDS**: Takeovers, mergers and acquisitions, takeover defenses, white knight intervention, hostile takeovers, event study methodology.

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# 1. INTRODUCTION

In medieval times, gallant knights in shining armor came to the rescue of fair maidens that were found in distress. In a courteous manner, the white knight usually eliminated the villain, thereby seducing the swooning lady. In daily business reality, one still comes across these kinds of romantic stories. Specifically in the field of mergers and acquisitions, where a 'white knight' strategy is a popular corporate takeover defense to thwart a hostile offer. After receiving a hostile bid (i.e. with resistance of target management) directed at the company's shareholders, target firms can engage in several anti-takeover tactics. Among these, white knight intervention is one of the most commonly used devices. The target's management will be on the lookout for a friendly bid (i.e. in which the target's management consents to the bidder's offer) from a white knight challenger, a third party that comes to save the anxious target from the clutches of the unwanted suitor.

The dynamics of a white knight corporate control contest are perfectly illustrated by the takeover case of *Cadbury plc*. The battle over this iconic British confectionery company started on September 7th 2009, the day on which *Kraft Foods Inc*, a US-based food conglomerate, initiated a $16.5 billion indicative takeover bid for the company. Cadbury chairman Roger Carr openly rejected the offer, arguing that it fundamentally undervalued the firm and that 'there was no strategic, managerial, operational or financial merit in combining with Kraft'[1]. In return to the rejection, Kraft launched a formal hostile bid for Cadbury on November 9th directly to the shareholders. Partly due to the public resistance against the unsolicited takeover, the management of Cadbury started looking for alternatives, including the search for a collaborative second-bidder. In the financial press of January 14th 2010, Cadbury's white knight is revealed for the first

[1] J. Wiggins, "Cadbury in fierce rebuff to Kraft bid", *The Financial Times*, December 14th 2009.

time[2]: *The Hershey Company*, a US-based chocolate manufacturer that already owns the license to manufacture and sell Cadbury products in the United States. By providing more advantageous terms and claiming a better strategic fit (both Hershey and Cadbury are candy makers), the entry of Hershey offered Cadbury a welcome opportunity to evade the hostile takeover threat. However, on January 18th, Kraft pounced with a sweetened offer, valuing the company at US$ 18.9 billion. The improved takeover bid had put too much pressure on Hershey and leaded to its formal withdrawal from the race. Despite the strong resistance to the bid, Cadbury's board capitulated and recommended the Kraft bid to its shareholders on January 19th 2010. Kraft's subsequent announcement of the acquisition of 75% of the shares on February 5th signified the completion of a five month bidding war.

This brief introduction of the Cadbury takeover case raises a corner of the veil on the complex dynamics of a white knight takeover battle. In this thesis, I will examine how shareholder wealth effects vary depending on the role of the company in the corporate control contest (i.e. target, hostile bidder or white knight bidder). In order to observe the effect of such new pieces of information on the stock market, I will adopt an event study methodology (see for example the leading paper of *Beaver, 1968)*. The *efficient market hypothesis* (EMH), introduced by *Fama* (*1965*), asserts that information flowing from an event affects the future expectations of investors, which in turn is reflected in the company's stock price. By looking at the security prices of all involved parties, I hope to discover how investors respond to the entry of the white knight bidder in the takeover contest. In addition, I will investigate the distinctive characteristics of white knight corporations to get a better insight in the rationale behind a white knight's entry decision.

[2] G. Farrel, "Hershey prepares bid for Cadbury", *The Financial Times*, January 14th 2010.

*Why is this study interesting*? First of all, looking at previous white knight research, I am not aware of academic research that considers more recent white knight corporate control contests. Studies like *Niden* (*1993*), *Banerjee and Owers* (*1993*) and *Carroll, Griffith and Rudolph* (*1998*), mainly focused on white knight cases from the 1980s. During this dynamic period of the 80s, sometimes referred to as *merger mania*, new methods and styles of acquisitions were introduced. During this takeover boom, also the white knight defense increased in popularity and became a common instrument to thwart hostile threats. However, in more recent years, both the development of financial markets and the introduction of more sophisticated corporate government mechanisms allowed for stronger market discipline, implying that managers are increasingly forced to act in line with the interests of the shareholders. *Banerjee and Owers* (*1993*) conclude on their 1974-1984 sample that already 45% of the white knights themselves became targets, restructured or adopted anti-takeover defenses during the five years subsequent to becoming a white knight. According to them, this could be interpreted as managers being punished for their value-reducing investments. In addition, as *Kästle and Trappehl* (*2006*) observed, starting from 1998 the number of hostile takeover transactions, often accompanied with the adoption of defensive measures, increased sharply. To see whether more recent white knight bidders learned from previous findings and if they are monitored more strongly by their shareholders, my sample includes more recent time series data, covering white knight takeover cases from 1995 up to 2010.

Secondly, compared to these earlier studies, this paper's sample is not only confined to takeover contests in the United States, but it includes corporate control cases from all continents over the world, as long as the involved companies are listed on a national stock exchange. Country-specific cases are analyzed, but also cross-border battles are considered. A global sample seems worthwhile because, as for example *La-*

*Porta et al.* (*1997*) note, European companies operate in a corporate governance regime which is very different from that of the United States. *Magnuson* (*2009*) affirms that boards in the US are much freer to adopt defensive measures against takeovers. According to articles 9 and 11 of the *European Takeover Directive*, shareholder approval must be obtained before a target board can take any action that may frustrate an offer. In contrast, most US target boards may adopt defensive measures without the need for shareholder approval. A broad scope makes it possible to analyze the significant differences in results across the geographical regions.

Thirdly, this study looks at the wealth effect of the white knight entry on the share price of *all* of the involved parties (i.e. the target, the hostile bidder and the white knight). This makes it possible to analyze the disparities in results that can be ascribed to their role in the takeover contest. By including the abnormal return analysis at the initial hostile bid, this study tries to provide a comprehensive overview of the wealth creation during the complete takeover battle.

Additionally, I will analyze the specific characteristics of white knight bidders in the sample and compare them to their hostile counterparts. Hereby, this study seeks to supply some extra guidance on the intentions behind a white knight entry. It is contradicting to see that previous studies found successful white knight bidders to sustain significant losses, while the winning hostile bidders experience significant positive abnormal returns. *What could be the underlying motivation of white knight management to enter the fray*? This paper tries to give some insight on the answer to this question.

The thesis will proceed as follows. In the second section I will briefly summarize the existing literature on stock market reactions to corporate takeovers in general, and to white knight takeovers specifically. Next, section three will introduce the theoretical background and develop the paper's hypotheses. The fourth section describes the adopted methodology and section five introduces the dataset. The results are discussed

is the sixth section. Section seven mentions the methodology's limitations that should be taken into account when interpreting the results. Section eight concludes and summarizes the paper. The references and appendices can be found in the final parts, respectively section nine and ten.

# 2. LITERATURE REVIEW

Mergers and acquisitions are an exceptionally popular type of corporate development. Both their economic significance and complexity have attracted a large amount of research attention. One of the most prominent findings in the literature is the existence of merger waves. *Golbe and White* (*1993*) were one of the first to find empirical evidence for the cyclical pattern of merger activity. The economic rationale behind an acquisition of another company is to establish a competitive advantage that will lead to value creation for the firm's shareholders. Synergies between both companies (e.g. due to economies of scale/scope or easier access to debt capital) allow the two companies together to be more valuable than taken separately. The concept of synergies is in line with the *neoclassical hypothesis* of merger waves, developed by *Gort (1969)*, which asserts that once a technological, regulatory or economic shock to an industry's environment occurs, the industry's assets will be reallocated optimally through merger and acquisition transactions. This hypothesis predicts that the performance of the combined firm will be better than the unobservable unmerged performance. In other words, the combined company must be able to generate more net benefits than the companies could achieve on their own.

Another large part of the existing literature focuses on the wealth effects of M&A transactions on corporate value. The underlying question is how to measure the extent of success of a specific acquisition. *Jensen* (*1986b*) states that some researchers argue takeovers are damaging to the morale and productivity of organizations, while others claim takeovers represent productive entrepreneurial activity that helps move assets to more productive uses. As *Sudarsanam* (*2003*) points out, the success criteria depend on the stakeholder perspective adopted. Most of the existing studies on merger impact[3]

[3] See for instance the influential papers of Jensen and Ruback (1983), Healy et al. (1992) and Ghosh (2001).

assess the shareholder perspective, since the shareholders constitute the residual claimant of the firm. *Are acquisitions wealth-creating or wealth-reducing events for the involved shareholders?* The idea of shareholder wealth maximization is reflected in *Sudarsanam'*s 'better-off criteria' stating that wealth gains should be enough to compensate the shareholders for the risk they bear on the investment.

Numerous studies estimate the effects of takeovers on the daily stock returns of bidder and target firms. In their comprehensive literature review, *Agrawal and Jaffe (1999)* conclude that most studies find evidence for the creation of shareholder value in the short-term (i.e. for the target and bidder shareholders combined), but almost all of the value increase is enjoyed by the target's shareholders. The positive returns for the target companies are not unexpected given the high premiums that are usually paid in corporate takeovers. However, the fact that bidder companies are predominantly confronted with very small (or even negative) abnormal returns seems surprising. *Why would a bidder attempt to acquire a company then?* It might be the case that managers are opportunistically pursuing growth. *Jensen* (*1986a*) argued that especially firms generating substantial free cash flow (i.e. cash flow in excess of what is necessary to finance positive return investment projects) rather finance value-reducing investments than pay out to their shareholders. Another interesting explanation is posed by *Roll* (*1986*) in his *hubris hypothesis*, which addresses the personal pride of managers from the acquiring firm in the takeover. He states that these managers are not motivated by shareholder wealth maximization, but they seek to acquire firms for their own personal motives (e.g. job preservation or private financial benefits). Because the takeover does not represent an efficient allocation of resources, it is not in the best interest of the bidder's shareholders. Falling share prices are the logical consequence.

The category of short term studies shows a strong belief in market efficiency, and solely focus on announcement period returns. The authors trust on stock prices to fully

and instantaneously reflect all available information. Specifically, when information on a merger arises, the news spreads quickly and it is fully and correctly incorporated into the stock prices, without a delay. However, opponents of the *efficient market hypothesis* claim that markets cannot be absolutely efficient and are not able to reflect all relevant information in the short run. This would imply that there is also long-run abnormal stock performance stemming from the merger announcement. In studies adopting the longer-term view, the acquirer's shareholders are mostly found to experience significant negative abnormal returns. For instance, *Martynova, Oosting and Renneboog* (*2006*) show a sharp deterioration in acquirer's performance several years after deal completion. This indicates acquisitions often fail to deliver their initial objectives. *Jensen and Ruback* (*1983*) argue that these post-outcome negative abnormal returns are inconsistent with market efficiency and suggest that changes in stock prices during takeovers overestimate the future efficiency gains from mergers.

The M&A literature also investigated several profitability drivers of M&As. Investor expectations about takeover profitability seem to depend on specific attributes of the bid, e.g. the payment method (e.g. *Moeller et al., 2004*), the scope of the acquisition (e.g. *Conn et al., 2005*) or the takeover strategy (e.g. *Doukas et al., 2002*). Furthermore, the deal atmosphere is found to be very important in predicting takeover profitability. The fourth merger wave (1983-1989[4]) was characterized by an unprecedented high level of hostile bids. This trend was facilitated by the development of new financial instruments and markets (e.g. junk bonds) that provided the fuel for these highly leveraged deals. In terms of value creation, *Gregory* (*1997*) shows that the announcement of tender offers and hostile acquisitions (i.e. with resistance of target management) generates higher target as well as bidder returns than the announcement of friendly acquisitions (i.e. the target's management consents to the bidder's offer). *Burkart and Pa-*

[4] According to the merger wave time classification of *Goergen and Renneboog* (2004).

*nunzi* (*2006*) reason that hostile bids are so expensive that they are only done to acquire a better target, with high synergy potential, so they are associated with better long-term performance. This is in line with the disciplinary force of the market of corporate control: hostile acquisitions can be used to correct managerial failure. As *Martin and McConnell* (*1991*) find, following a hostile takeover, the target management is usually removed.

To prevent the hostile bid to succeed, a firm may engage in defensive tactics. Widely known examples are the adoption of a *poison pill* (i.e. the target company attempts to make its stock less attractive for the acquirer), *greenmail* (i.e. buying back recently acquired shares from the putative hostile bidder at a higher price) or the search for a *white knight* (i.e. an alternative company willing to make a friendly takeover offer). It is important to remember that the target's management is supposed to act in line with the interests of the firm's shareholders. According to *Jensen's agency theory* (*1986a*), management should have sound business reasons to reject or resist to a takeover offer and should only approve a transaction that is most fair to shareholders.

Critics on anti-takeover defenses often claim that, by impeding attractive hostile bids, these protective tactics destroy shareholder's wealth and only facilitate managerial entrenchment. Previous academic research documented some interesting effects. Both *Malatesta and Walking* (*1988*) and *Bebchuk, Coates and Subramanian* (*2002*) find that the adoption of a poison pill makes hostile deals significantly less likely to succeed, and reduces the average returns of target shareholders significantly. Studies of *Bradley and Wakeman* (*1983*) and *Mikkelson and Ruback* (*1991*) find that share repurchases ending takeover attempts (i.e. the payment of greenmail) are associated with a significant negative market reaction, because they reduce the probability of a control premium. *Shleifer and Vishny* (*1986*) argue that it is not always against the interests of the target's shareholders to prevent takeover defenses. Target management can increase

the competitiveness, and thereby the expected payoff to its shareholders, of a takeover contest by encouraging new bidders to enter the auction.

As mentioned above, this paper will focus on the wealth effects associated with a white knight takeover defense. A *white knight* is a friendly bidder, often endorsed by the incumbent target management, that enters the bidding contest when the target company is already facing a hostile takeover bid. This dynamic multiple bidder situation offers interesting research opportunities.

One part of the existing literature examines the returns for the firms associated with a white knight corporate control event. *Smiley and Stewart* (*1985*) are the first to specifically examine the share price performance of white knight acquirers. Using monthly stock returns, they were not able to find any significant abnormal returns for white knights in their sample of US firms, covering the period 1972 to 1978. *Bradley, Desai, and Kim* (*1988*) analyze takeover returns in multiple-bidder contests during the period 1963-1984. They find that bidder competition significantly increases the returns to targets, because the successful bidder has to pay more than in a single bidder case. This confirms the findings of *Holl and Kyriazis* (1997) that bid resistance leads to higher wealth gains for *target firms*. A white knight strategy by target management is successful in bidding up the offer price.

However, competition among bidders decreases the return to the acquirer, especially in the case of white knight bidders. The likelihood of overbidding might be increased by the white knight's position in the sequential bidding process. For example, *Banerjee and Owers* (*1992*) show that white-knight bidders experience significant wealth reductions upon their entry announcement. In addition, *Caroll, Griffith and Rudolph (1998)* also find evidence for overbidding of white knights. In contrast with maximizing their shareholders' value, white knights seem susceptible to the winner's curse, the tendency for the winning bid to exceed the intrinsic value of the target firm. *Niden*

*(1993)* also proves that participation in an acquisition does not confer benefits on a white knight's shareholders. She suggests that a white knight takeover is sub-optimal, since a white knight's bid may lack the necessary strategic justification and is relatively unplanned. However, she finds no evidence for overbidding. Controlling for multiple bidders, she is not able to find any significant differences in acquisition returns for targets acquired by a white knight compared to targets acquired in non-white knight takeovers. Also the combined synergistic potential of a white knight acquisition is open for discussion. In a more recent study covering white knight corporate control contests, *Calcagno and Falconieri* (2008) find that despite the fact that white knights are often successful in winning the takeover contest, the value of its synergies as compared to those of the hostile bidder is significantly lower.

Another part of the existing literature focuses on the characteristics of white knights. *What is distinctive about these companies*? *Smiley and Stewart* (*1985*) find that white knight firms are likely to have a high level of leverage. In addition, *Caroll, Griffith and Rudolph (1998)*, acknowledge that white knights have the tendency to spend free cash flow on negative net present value acquisitions. They find that, on average, a white knight manager's decision to overbid for a target is part of a pattern of bad investment decisions, and that white knights make less efficient decisions than hostile bidders do. When managers are endowed with free cash flow, they are able to invest in negative net present value projects rather than pay it out to their shareholders. They also find that white knight managers are less likely to be replaced when they make a visible, value-decreasing acquisition decision.

# 3. HYPOTHESIS DEVELOPMENT

## 3.1. ABNORMAL RETURNS

In this section, I will develop several testable hypotheses for both the effect of the hostile bid and the white knight entry on stockholder returns. To be able to place results in the right perspective, I will first estimate the shareholder value creation around the *first hostile bid* in the corporate takeover contest. Subsequently, I will analyze the abnormal returns flowing from the *white knight entry*. The introduction of the white knight bidder in a corporate control contest might have significant value implications for all involved shareholders. The white knight entry potentially causes event-specific abnormal share price returns for all of the affected parties. This brings me to the first research question of this thesis:

**RQ1***:* ***How does the information flow from a white knight entry affect the stock returns of all parties involved (i.e. the target firm, the hostile bidder and the white knight bidder)?***

To answer the research question empirically, I will estimate the cumulative abnormal returns (CARs) to every party's shareholders over the two event periods, both around the hostile bid and around the white knight entry (see the Methodology section for more information). CAR values above zero indicate positive abnormal returns; CAR values below zero indicate negative abnormal returns.

### a. AROUND THE INITIAL HOSTILE BID

To get a complete picture of the value creation during a takeover contest, I will make a preliminary assessment of *the abnormal returns that are arise around the first hostile bid* in the takeover contest. As mergers and acquisitions are one of the most researched

areas in finance, an abundant amount of studies has already investigated the effects of takeovers on the daily stock returns of bidder and target firms. Most papers find that bidders hardly experience any abnormal returns, however, target firms are found to enjoy significant positive abnormal returns upon the bid announcement. In this section, I will develop hypotheses on the value creation around the initial hostile bid in the takeover contest for both the target companies and the hostile bidders in the sample.

## TARGET COMPANY

Because it is plausible that the target's shareholders incorporate the expected premium of the takeover bid into their share price almost immediately after the hostile bid, they are expected to experience a positive abnormal share price reaction after the offer. As mentioned in the literature review, the increase in equity value is typically attributed to a source of economic synergy between the bidder and the target firm. The potential of exploiting this synergy explains the fact that bidders are willing to pay a large takeover premium (the amount paid over the current market price of the target company prior to the bid). Part of the potential synergy value will be distributed to the target's shareholders in the form of the takeover premium. Moreover, the target's shareholders might also incorporate the expectation that opposition eventually will lead to upward revisions of the bid. This brings me to the first empirical hypothesis of this thesis:

**H1.1:** ***The initial hostile bid announcement in the takeover contest results in a positive abnormal share price reaction for the target's shareholders.***

## HOSTILE BIDDER

Finance theory predicts that companies induce capital investments when they expect them to have a beneficial effect on their market value. Because the potential synergies allow the two involved companies together to be more valuable than taken separately,

it seems straightforward that an acquisition decision is in line with the interests of the bidder's shareholders. Indeed, a small part of existing research noticed positive abnormal returns after the hostile bid announcement (see e.g. *Eckbo and Thorburn, 2000*). This would mean that the bid decision is in line with the interests of the bidder's shareholders and that part of the synergy value is actually obtained by them. If the bidder has a high probability of acquiring the target at a price below its estimated value (including the synergies), part of the potential gains from the takeover should accrue to the bidder's shareholders. Especially in hostile bids (with an incumbent target management), shareholder gains stem from the bidding for undervalued targets in which it is possible to use resources in a more efficient manner.

It is surprisingly however that most studies found insignificant or even small negative returns for hostile bidders in the short-term (see e.g. *Healy, Palepu and Ruback, 1992* or *Jensen and Ruback, 1983*). The negative reaction of the share prices indicates that, for some reason (e.g. the management's hubris theory proposed by *Roll, 1986*), the bidding company pays too much for the target and that all of the potential synergy value would be enjoyed by the target firm's shareholders (in the form of the proposed premium). A negative result might also imply that the bidder's shareholders anticipate resistance of the target management to the hostile approach and that an unsolicited bid eventually requires a higher premium to be paid.

Since there is little consensus in the existing literature about the expected sign of the price reaction to the announcement of a hostile bid, I will empirically test the null hypothesis that the cumulative abnormal returns around the initial hostile bid are not different from zero.

**H1.2:** ***The initial hostile bid announcement in the takeover contest does not result in any abnormal share price reaction for the hostile bidder's shareholders.***

## b. AROUND THE WHITE KNIGHT ENTRY

In this section, I will examine the *value creation around the initial announcement of the white knight competitor*. According to the role of all involved parties, I will develop several testable hypotheses for the effect of the white knight entry on stockholder returns.

### TARGET COMPANY

The entry of a white knight bidder in the contest might be in line with the target's shareholders' interests, because we know from supply/demand theory that increased bidder competition will result in a higher price. By inviting a white knight, the target management encourages the bidding process and increases the expected takeover premium. Under the SEC '*white knight privilege*', withholding confidential information from the unsolicited bidder is allowed. *Rhodes* (*1991*) claims that only the lure of confidential information to which the hostile bidder is not exposed, will be sufficient to entice other parties to enter the auction, given the first bidder's advantage in the bidding context. Consequently the target's share price will react positively to the entry of a white knight.

However, opposition to a takeover bid could also reduce target's shareholders' wealth. Critics of the white knight privilege argue that, for the target company, it is hard to defend this towards its shareholders. Once the confidential information has been disclosed to the preferred party, the friendly bid will unlikely be higher than the target's reservation price (thereby damaging the ability to maximize shareholder value). Additionally, we should remember that a white knight strategy is adopted by the incumbent management as an *anti-takeover instrument* against the unsolicited bid. In theory, the target's managers should recommend a bid unless they have a good chance of getting a better offer, or have a very strong reason to believe that the company is undervalued by the market. However, in practice, the target management might have

different incentives than its stockholders, e.g. the preservation of their jobs, and searching for a white knight may not be the best outcome for the target's shareholders. This means that the investor response to the white entry could be negative.

Because the expectations for the target shareholders' expected abnormal returns are mixed, I will empirically test the null hypothesis that the target's cumulative abnormal return over the event period are not different from zero.

**H1.3:** ***The entry of the white knight bidder in the takeover contest does not result in any abnormal share price reaction for the target's shareholders.***

WHITE KNIGHT BIDDER

The impact of a white knight entry on the white knight's shareholders also seems ambiguous. First of all, when assuming that the bidder's managers are acting for the good of the firm's shareholders, it is expected that the white knight shareholders experience positive returns due to the anticipated synergies of the resource combination. Additionally, the white knight might negotiate a more favorable deal with the target, because its friendly attitude provides the white knight with important private information, e.g. about the potential synergies with the target company, something that is withheld from hostile suitors (*the white knight privilege*). This cooperative and informational advantage allows the white knight to make a better and more appropriate offer for the target, which reduces the chance of overbidding. Consequently, this will be translated into positive abnormal returns for the white knight shareholders upon its entry.

However, the white knight entry could also harm the white knight's shareholders. Since the bid is reactive (i.e. the white knight enters the contest *by invitation* and *after* the hostile bid is posted) and fairly unplanned, the offer might lack the necessary strategic justification. The takeover was not part of the white knight's initial corporate strategic planning, and therefore it might not represent the optimal combination of re-

sources. Moreover, the white knight bid is made in a fairly short time span. This prevents the white knight bidder from exercising the necessary care and diligence in the assessment of the target. Also the white knight's position in the bidding process might not be beneficial to its shareholder's. As a sequential bidder, the white knight might be exposed to a higher likelihood of overbidding. As *Varaiya and Ferris* (*1987*) point out: "the highest bidder will usually be one of the parties that overestimated the value of the target". If investors take these elements into account, the white knight's stock price might be exposed to negative abnormal returns.

Since the existing theory seems inconclusive about the expected CAR for the white knight's shareholders, I will empirically test the following null hypothesis:

**H1.4:** ***The entry of the white knight bidder in the takeover contest does not result in any abnormal share price returns for the white knight bidder's shareholders.***

HOSTILE BIDDER

The share price of the hostile bidder might also be affected by the entry of a collaborative second bidder for the target. The target management's search for a white knight might be seen as a desperate quest to stay out of the hands of the hostile bidder. Furthermore, the interest of an additional party, i.e. the white knight, might signify the high value of the beleaguered target. This would justify the initial bid decision, and could result in significant positive abnormal returns for the hostile bidder's shareholders.

However, the entry of an additional bidder decreases the chances of winning the takeover contest. Additionally, after the contest turns into a multiple bidder situation, the chance of overbidding increases significantly (*Varaiya and Ferris*, *1987*). The hostile bidder knows that the target management is relatively more inclined to engage in a corporate relationship with the white knight competitor. Presumably, the stock market

will incorporate this information, resulting in negative abnormal returns for the hostile bidder's shareholders upon the white knight entry.

Since the theory also shows conflicting expectations for the hostile bidder's shareholders, I will empirically test the following null hypothesis:

**H1.5:** ***The entry of the white knight bidder in the takeover contest does not result in any abnormal share price reaction for the hostile bidder's shareholders.***

## 3.2. WHITE KNIGHT CHARACTERISTICS

To get a deeper insight in the exact rationale behind a white knight intervention, I will try to uncover the specific company characteristics of white knight bidders. *Jensen (1986a)* suggested that due to the agency conflict between the shareholders and the managers of a company, corporate acquisition decisions may be driven by managerial utility maximization motives. The conflict can cause a company's management to make bids with limited value creation prospects or to pay an excessive bid premium. This section recognizes several company characteristics relating to this agency conflict and develops hypotheses on the differences between the sample of white knights and the sample of hostile bidders. This brings me to the second research question of this thesis:

**RQ2:** ***What are the distinctive characteristics of the sample's white knight bidders compared to their hostile bidder counterparts?***

In order to answer this research question, I developed several hypotheses regarding the following characteristics of the bidders in the sample: the amount of free cash flow, the level of debt, the Tobin's q-ratio and the structure of the CEO's compensation package. All data is gathered through the *Datastream* and *Compustat* databases. I will make a

split between the hostile bidders and the white knights from the sample and look at the differences in characteristics between the two subsamples.

### a. FREE CASH FLOW

Free cash flow (FCF) is the cash flow in excess of that required to fund all positive net present value (NPV) projects. When a firm generates substantial free cash flow, the firm's managers can invest in projects earning lower returns, or alternatively, it can pay out to its shareholders. Agency costs stem from the conflict between management and shareholders that arises when management wastes the excess cash flow, e.g. by initiating fruitless acquisitions, instead of paying it out. As *Jensen* (*1986b*) claims, managers might have incentives to expand their firms beyond the size that maximizes shareholder wealth (for example as a matter of '*empire building'*). Since the white knight bid decision often lacks strategic justification, due to the fact that they are invited to the contest *after* the hostile bid, I expect white knights to generate relatively more free cash flow in their organization. As a proxy for free cash flow I will adopt the variable '*earnings before interest, taxes, depreciation and amortization (EBITDA)'* from the *Datastream* database. Similar to the methodology of *Carroll, Griffith and Rudolph* (*1999*), I will control for firm size by normalizing the FCF by the book value of a firm's assets:

$$(1)\quad FCF = \frac{EBITDA}{Book\ value\ of\ total\ assets}$$

The preceding theory will be tested using the following hypothesis:

**H2.1:** ***White knight bidders have, on average, more free cash flow compared to their hostile counterparts.***

### b. LEVERAGE

*Jensen* (*1986a*) argues that leverage reduces the agency costs of free cash flow by acting as a monitoring mechanism. He reasons that debt creation diminishes the cash flow available for spending at the discretion of managers, because the capital structure requires them to pay out future cash flows. In this way, debt acts as a disciplining device, preventing managers from spending free cash flow opportunistically. Consequently, I expect the white knight companies in the sample to be relatively less restricted by their debt position. This would mean that the managers are able to spend their money more on low-value acquisitions. The level of debt is measured by the *debt-to-equity ratio*, a measure of a company's financial leverage, calculated by dividing its total liabilities (both short-term and long-term debt) by the shareholders' equity:

$$(2) \quad D/E\ ratio = \frac{Short\ term\ debt + Long\ term\ debt}{Shareholders'\ equity}$$

More specifically, the developed expectations lead to the following hypothesis:

**H2.2:** ***White knight bidders have, on average, a lower debt-to-equity ratio compared to their hostile counterparts.***

### c. TOBIN'S Q

*Tobin* (*1969*) introduced a measure of performance, *Tobin's q*, which represents the ratio of the market value of a firm's assets relative to the replacement costs of the assets. Studies like *Born and McWilliams* (*1993*) use this measure to identify firms that lack positive NPV projects. If q is greater than one, a firm is worth more than its cost-based value and excess profits are being earned. A q-value lower than 1 would signify that a firm is not able to make value maximizing investment decisions. If the management of a company has previously acted in its shareholders' interest, the Tobin's q ratio

should be higher than 1. Therefore, I will use the Tobin's q performance measure to reflect the manager's tendency to invest in low-value investments. I expect the Tobin´s q for white knights to be lower than the q-value of the hostile bidders in the sample. Since it is hard to estimate both the market value and replacement costs of a company, I will use the following approximation of Tobin's q:

$$(3) \quad Tobin's\ q = \frac{STD\ (BV) + LTD\ (BV) + SE\ (MV)}{Total\ assets\ (BV)}$$

In this equation, the company's market value is represented by the sum of the book value of short-term debt (STD), long-term debt (LTD) and the market value of share-holder's equity (SE). The book value of total assets proxies the replacement value of the company's assets. The Tobin's q variable is used to test the following hypothesis:

**H2.3:** ***White knight bidders have, on average, a lower Tobin's q compared to their hostile counterparts.***

### d. MANAGEMENT COMPENSATION

The managers' compensation packages can be used as a tool to align the interests of both managers and stockholders. In order to deter managers from investing in negative NPV projects, a firm might tailor its managers' remuneration structure. *Bizjak, Brick-ley, and Coles* (*1993*) study the effects of different types of compensation plans on management decision-making. They assert that if a manager's pay scheme includes relatively more performance-based measures, the package provides incentives to the managers to maximize shareholder value since they have a personal interest. Salary compensation of a manager is not linked to performance, so it does not provide any incentives to maximize shareholder's wealth. In order to examine this characteristic for the companies in my sample, I will calculate the degree of salary compensation (SC) for the company's CEO:

$$(4) \quad SC = \frac{Annual\ CEO\ salary\ compensation}{Total\ annual\ CEO\ compensation}$$

The Chief Executive Officer is chosen for analysis, since this data is available through the *Compustat Execomp* database. The variable '*total annual CEO compensation'* consists of salary, bonus, restricted stock grants, LTIP payouts plus all other income received. Consistent with the previous hypotheses, I expect white knight managers to be rewarded with relatively more salary compensation, i.e. less performance-based compensation. This would mean that white knight managers are incentivized less by their compensation package to induce value-creating investments. This expectation is translated into the following hypothesis:

**H2.4:** ***White knight managers have, on average, a relatively higher salary-part in their compensation compared to their hostile counterparts.***

# 4. METHODOLOGY

## 4.1. ABNORMAL RETURNS

In order to test the hypotheses and examine the impact of both the hostile bid and the announcement of a white knight entry on the stock market, I will adopt an *event study methodology*, similar to the one applied in *Martynova and Renneboog (2006*). Event studies have become the most common empirical methodology in research on corporate governance and finance. Early studies like *Beaver (1968), Ball and Brown (1969) and Fama et al. (1969)* were among the first papers that introduced this approach in investigating how stock markets respond to certain pieces of information. They claimed that new information flowing from an event should affect the future expectations of investors, which in turn would be reflected in the stock price.

In this study, I will examine two different event dates: the date the *first hostile bid* is placed and the date of the *first announcement in the financial press of the entry of a white knight in a corporate control contest*. If the event takes place on a non-trading day, the first trading day after the announcement is used. To measure the specific share price reaction to these events, I will calculate the *abnormal returns (AR)* to all affected parties during an event window centered five days around the announcement day. If the value of the company has changed, it is translated in the stock showing an abnormal return. The abnormal returns are determined using *residual analysis*, testing whether the actual stock returns of the firms are greater or less than the returns expected in absence of the event. Technically, this calculation looks as follows:

$$(5) \quad AR_{i,t} = R_{i,t} - NR_{i,t}$$

where $R_{i,t}$ represents the *actual return* for firm *i* on day *t* and $NR_{i,t}$ equals the *normal return*, the expected return in case no announcement has took place. To estimate these *normal returns*, I adopt a *market model* that uses '*clean period'* data, which means it

does not include the event period. At any time, a company's stock price is affected by a mixture of market wide factors and other firm-specific events. To correctly measure the impact of a particular event, these unrelated factors should be controlled for. In this thesis, the clean period estimation period covers 240 trading days, starting 60 trading days before the actual *event day* (*t=0*). Under the assumptions of efficient markets and rational expectations, the market model predicts that a firm's stock return is proportional to a market return. Mathematically, the market model looks as follows:

$$(6) \quad R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t}$$

where $R_{m,t}$ equals the return on the corresponding *market index* (*m*) on day *t* and $\varepsilon_{i,t}$ represents the *random error term*. The *beta-coefficient* (β) of a stock reflects the correlation of the stock price with the market portfolio. The market portfolio equals the market index of the country where a company's primary listing is located. For example in the case of Cadbury, with its primary listing on the London Stock Exchange, I adopted the FTSE100 index as the market portfolio. A complete list of the market portfolios that were used in this study can be found in *table 1*.

**Table 1. Market indices (adopted in the market model).**

| Economy | Stock exchange | Market index |
|---|---|---|
| Australia | ASX | S&P/ASX200 |
| Austria | ATX | ATX |
| Canada | TSX | S&P/TSE 60 |
| Denmark | OMX | OMXC20 |
| France | PAR | CAC 40 |
| Germany | GER | DAX |
| Hong Kong | HKSE | Hang Seng |
| Ireland | ISEQ | ISEQ Overall |
| Italy | BIT | FTSE MIB |
| Japan | TKS | Nikkei 225 |
| Norway | NOR | OSEEX |
| Russia | MOS | RTSI |
| Spain | SPA | IBEX35 |
| Sweden | STO | OMX S30 |
| Switzerland | SWX | SMI |
| The Netherlands | AMS | AEX |
| United Kingdom | LSE | FTSE 100 |
| United States | NASDAQ | Nasdaq 100 |
| United States | NYSE | S&P 500 |

The estimated values for the market model's parameters are used to predict what a firm's stock price would have been, in case the event had not taken place:

$$(7) \quad NR_{i,t} = \alpha_i + \beta_i R_{m,t}$$

By comparing the *actual returns* (R) with the benchmark returns or *normal returns* (NR), one can estimate the abnormal returns. (AR). From the abnormal returns one can see whether investors believe that the occurring of the event, e.g. the entry of a white knight, creates or destroys value. By substituting the previous equation (3) into equation (1), the abnormal return for firm *i* around the announcement day can be calculated as follows:

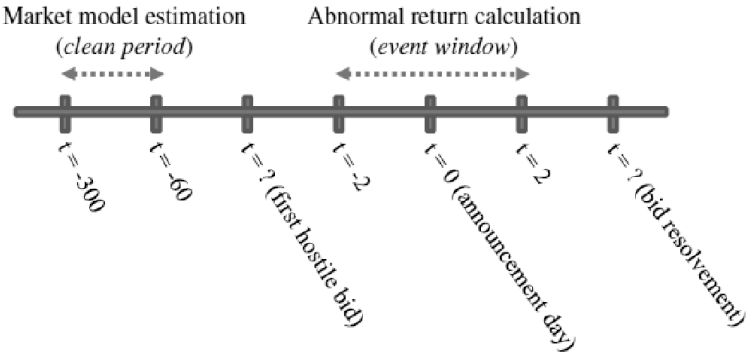
$$(8) \quad AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{m,t})$$

To draw conclusions on the impact of the event over the *whole* event period, all abnormal returns need to be aggregated into *cumulative abnormal returns (CAR).* In this study, the chosen *event window* is relatively short (i.e. 5 days centered around the announcement day), since I would like to focus on the short-term wealth effect of the announcement, assuming that the response of the stock prices to the announcement is almost instantaneous (*informational efficiency of the stock market*) and correctly reflects the change in (discounted) future expectations of the investors. As *Beaver (1968)* and *Fama et al (1969)* find, investor´s response to new pieces of information appears to be very rapid: almost all of the above-normal activity occurs within the announcement week. The event window starts in advance the announcement date (t=-2) so that the study will incorporate potential leakage of information before the official announcement. The CAR over the event window (*m,n*) is then defined to be:

$$(9) \quad CAR_{i,m,n} = \sum_{t=-m}^{t=n} AR_{i,t}$$

This measure is calculated for each of the involved firms (i.e. target company, hostile bidder and white knight bidder). If investors recognize the potential acquisition as a profitable project, the success should translate into positive abnormal returns and CAR value higher than zero; CAR values below zero are a sign of abnormal negative returns. The adopted event study for the white knight entry is summarized by the time line in *figure 1*. The time line for the initial hostile bid methodology is similar, with the event window being located around the first hostile bid.

**Figure 1. Time line of adopted event study methodology.**




## 4.2. WHITE KNIGHT CHARACTERISTICS

In order to examine the specific characteristics of white knight companies compared to hostile bidders, I will adopt *unpaired t-tests*, comparing the two means arising from unpaired data from two independent samples. The necessary t-statistic, to test whether the population means are significantly different from each other, is calculated as follows:

$$(10) \qquad t = \frac{(\bar{X}_1 - \bar{X}_2) - (\mu_1 - \mu_2)}{S_{\bar{X}_1 - \bar{X}_2}}$$

In this equation, $(\bar{X}_1 - \bar{X}_2)$ represents the difference between the means of two independent samples. $(\mu_1 - \mu_2)$ stands for the difference between the corresponding popu-

lation means, assuming that the null hypothesis is true. The denominator ($S_{\bar{X}_1-\bar{X}_2}$) equals the standard deviation of the difference between the two independent means. To check the robustness of the results I will also execute a matched test that links the white knights to the hostile bidders from the same takeover contest. After calculating the difference in each of the characteristics, this test examines if the average differences are significantly different from zero.

# 5. DATA

Using the *SDC Thomson database*, I conducted a search using key expressions relating to white knight defenses and recognized a list of relevant takeover events. For a case to be classified as a white knight contest, it must meet the following criteria:

1) The white knight bid should be subsequent to a hostile bid to acquire control of the target;
2) The management of the target must reject the initial unsolicited bid;
3) The white-knight bid must be friendly (there should be evidence of collaboration between the white knight and the target).

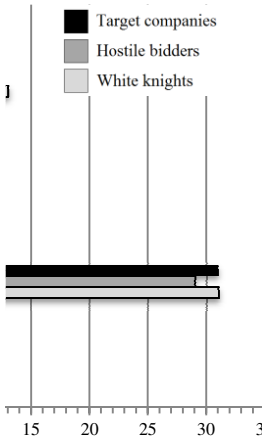
I verified all *SDC* data with information from *LexisNexis*, the *Financial Times* and the *Wall Street Journal*. Similar to the criteria of Niden (1993), the bidders must own less than 50% of target stock at the time of the announcement and must announce an intention to increase its ownership to at least 80% to be included in the sample. With this method, a sample consisting 65 white knight takeover contests was obtained for the period of 1995-2010. For these contests, further details were collected, e.g. the listings of all involved parties, the date of the first hostile bid and the eventual resolution of the takeover battle. The most important detail was the initial announcement of the white knight entering the corporate control contest. A complete overview of the firms included in the sample can be found in the appendix, *table 11*.

The segmentation of the sample across time and across industries can be found in *figure 2, Panel A and B*. In *panel C*, the figure shows the success rates of the companies included in the sample, i.e. which party eventually took control over the target company. In line with the *Calcagno and Falconieri* paper (2008), the analysis shows that, in

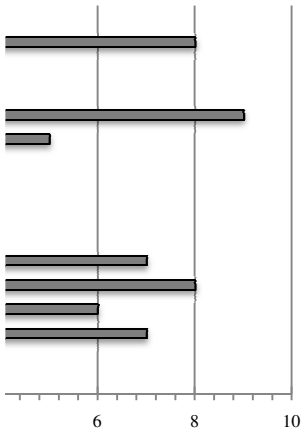
the majority of cases (i.e. 62,5%), white knights are successful in winning the takeover contest.

**Figure 2. Sample characteristics**

**(Panel A) Industry distribution**




**(Panel B) Time distribution**




**(Panel C) Bidder success rate**

The daily share prices of all parties were retrieved from *Datastream* and from the *Center for Research in Security Prices* (CRSP). Due to the caveat of share data availability, at least one of the three involved parties required a stock market listing. To be able to estimate the benchmark returns, the firms' shares must be traded for more than 10 months before the announcement date. As in *Martynova and Renneboog* (2006), only shares with voting rights were considered in the case of dual-class shares. For the examination of the company characteristics, both the *Datastream* and the *Compustat* database were consulted.

# 6. RESULTS

In this section, I will analyze the gathered data and test the empirical hypotheses derived in section three of the paper. In section 6.1, I will start with the analysis of the abnormal returns that were calculated using the event study methodology. I will briefly assess the abnormal returns around the hostile bid, but the main focus will be on the abnormal returns developed around the entry of the white knight bidder. In section 6.2, I will examine the typical differences in white knight and hostile bidder characteristics.

## 6.1. ABNORMAL RETURNS

The abnormal returns are calculated using the event study methodology introduced in section 4. In order to calculate the expected returns, a market model estimated the correlation of each company's stock price with the market portfolio (the so-called beta-coefficient). The calculated beta-coefficients for all companies can be found in the appendix, *table 12*. Evidently, no coefficients could be determined for companies that were not listed on a stock exchange. The appendix also includes an illustration of the methodological procedures that were executed (*figure 12)*. For this purpose, the first corporate takeover contest in the sample, i.e. the takeover of *Aran Energy Plc*, was taken as an example. The results for the abnormal return analysis of the total sample can be found below.

### a. AROUND THE HOSTILE BID

TARGET FIRM

From *table* 2, we can see that the cumulative abnormal returns (CARs) for the 65 target companies are positive and highly significant. For respectively the 1-day, the 3-day and the 5-day event window, the target is exposed to an average CAR of 14.87%, 20.68% and 22.81%. The results for all event windows are significant at the 1%-confidence

level. The findings clearly confirm the expectations and therefore hypothesis 1.1, stating that t*he initial hostile bid announcement in the takeover contest results in a positive abnormal share price reaction for the target's shareholders,* can be accepted. The results are in line with most existing research on target returns. The positive share price reaction for the target's shareholders might be explained by the bargaining power of the target's management. Because the bidder is expected to generate additional value from the takeover, the target shareholders will only be willing to sell their shares if they are offered a substantial takeover premium. In addition, competition among potential bidders might generate wealth benefits for the target by increasing the expected premium.

**Table 2. Target company cumulative abnormal returns around the initial hostile bid.**

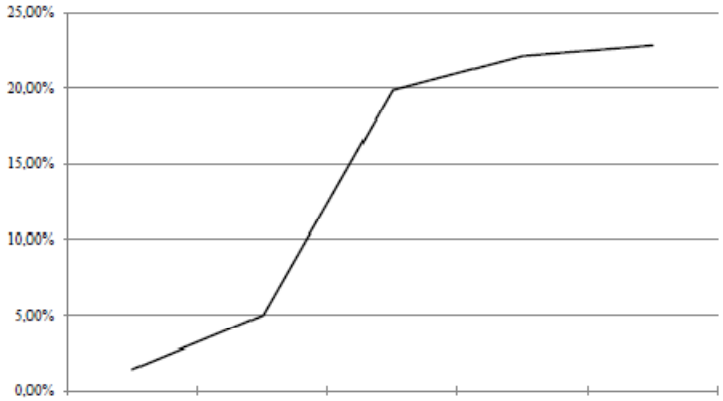
| Event window | [T=0] | [-1,1] | [-2,2] |
|---|---|---|---|
| # observations | 65 | 65 | 65 |
| # positive | 52 | 56 | 58 |
| Average | 14,87% | 20,68% | 22,81% |
| Median | 8,97% | 20,82% | 22,21% |
| Variance | 2,84% | 3,41% | 3,20% |
| Kurtosis | 1,73 | -0,16 | -0,30 |
| Skewness | 1,33 | 0,33 | 0,39 |
| Maximum | 72,05% | 72,00% | 72,40% |
| Minimum | -11,03% | -18,24% | -4,72% |
| T-statistic | 5,4526*** | 8,6707*** | 9,8836*** |
| P-value | 0,0000 | 0,0000 | 0,0000 |

***significant at the 1%-level.

*Figure 3* illustrates the findings for the 5-day event window centered around the hostile offer. The graph shows that most of the abnormal activity takes place closely around the actual event date (t=0), which means that the target's shareholders incorporate the expected premium of the takeover bid into their share price almost instantaneously. Interestingly, the abnormal returns are not limited to the announcement day. There is evidence for abnormal returns already two days prior to the event date (AR=0.0498). These returns are significantly different from zero at the 5%-confidence level (t=2.1045). The pre-announcement returns could point at a price run-up (i.e. the bid is

anticipated) or it could be due to information leakage or informed (insider) trading activities.

**Figure 3. Target company cumulative abnormal returns around the initial hostile bid.**




*Note*: 5-day CARs are found to be significantly higher than zero at the 1 % level.

HOSTILE BIDDER

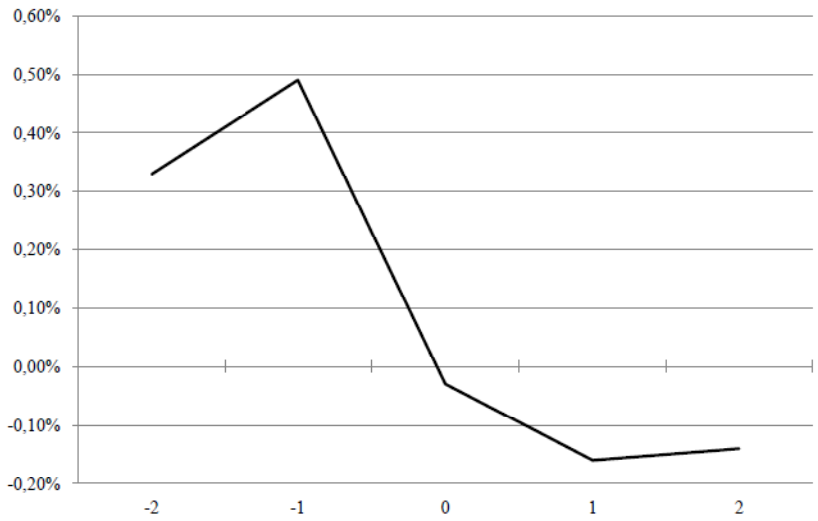
In *table 3* and *figure 4*, one can find the hostile bidder's CARs around the announcement of the initial hostile offer. In comparison to the target CARs, the price reactions for the 52 hostile bidding firms are negligible. Within all adopted event windows, hostile bidders are experiencing small negative abnormal returns: -0.52% (1-day event window); -0.49% (3-day event window); -0,14% (5-day event window).

**Table 3. Hostile bidder cumulative abnormal returns around the initial hostile bid.**

| Event window | [T=0] | [-1,1] | [-2,2] |
|---|---|---|---|
| # observations | 52 | 52 | 52 |
| # positive | 22 | 25 | 26 |
| Average | 0,52% | 0,49% | 0,14% |
| Median | -0,38% | 0,37% | 0,09% |
| Variance | 0,23% | 0,58% | 0,63% |
| Kurtosis | 2,28 | 0,09 | 0,27 |
| Skewness | 1,01 | 0,22 | 0,49 |
| Maximum | 16,38% | 17,47% | 21,12% |
| Minimum | -8,55% | -15,96% | -15,09% |
| T-statistic | -0,7780 | -0,4519 | -0,1296 |
| P-value | 0.4402 | 0,6532 | 0.8971 |

Since none of the findings were found to be significantly different from zero, hypothesis H1.2, stating that t*he initial hostile bid announcement in the takeover contest does not result in any abnormal share price reaction for the hostile bidder's shareholders,* can be accepted. The bidder's shareholders might think that company is overbidding for the target, or they anticipate that resistance of the target management to the hostile offer will eventually leads to a higher premium to be paid. Judging on the insignificant *short-term* value creation for the hostile bidder's shareholders, all synergy benefits seem to be absorbed by the target's shareholders. As mentioned in the literature review, this is in line with the findings of most existing research on M&A returns. As the target shareholders earn large positive abnormal returns and the hostile bidder shareholders do not significantly lose on average, the sample's takeovers are expected to increase the *combined market value* of the merging firms' assets.

**Figure 4. Hostile bidder cumulative abnormal returns around the initial hostile bid.**




*Note*: 5-day CARs are not found to be significantly different from zero.

## b. AROUND THE WHITE KNIGHT ENTRY

### TARGET FIRM

From *table 4*, we can see that, similar to the findings around the initial hostile bid, the cumulative abnormal returns (CARs) for the 65 target companies are positive and highly significant (with an alpha of less than 0.01) for all event windows adopted. For respectively the 1-day, the 3-day and the 5-day event window, the target is exposed to an average CAR of 4.64%, 8.97% and 9,89%. This means that the hypothesis 1.3, '*the entry of the white knight bidder in the takeover contest does not result in any abnormal share price reaction for the target's shareholders*', can be rejected at a confidence level of more than 99%. Findings from the previous section have already shown that the target firm's shareholders benefit substantially from the first hostile bid in the takeover contest and now I find that the target firms face additional significant positive abnormal returns when a white knight enters the fray. Presumably, this favorable share price reaction is caused by the increase in bidder competition. When there are more bidders involved, the expected target price and premium to the target's shareholders will increase.

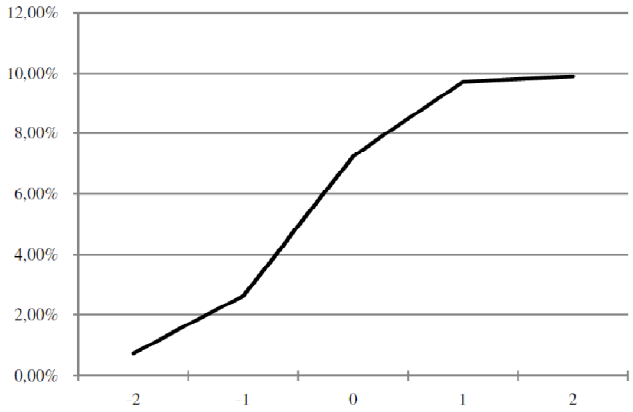
**Table 4. Target company cumulative abnormal returns around the white knight entry.**

| Event window | [T=0] | [-1,1] | [-2,2] |
|---|---|---|---|
| # observations | 65 | 65 | 65 |
| # positive | 43 | 49 | 55 |
| Average | 4,64% | 8,97% | 9,89% |
| Median | 1,76% | 6,92% | 7,26% |
| SD | 8,93% | 11,77% | 11,79% |
| Variance | 0,80% | 1,38% | 1,39% |
| Kurtosis | 15,28 | 7,50 | 5,69 |
| Skewness | 3,16 | 2,23 | 2,01 |
| Maximum | 55,28% | 61,85% | 58,84% |
| Minimum | -5,05% | -5,66% | -4,48% |
| T-statistic | 4,1851*** | 6,1463*** | 6,7624*** |
| P value | 0,0001 | 0,0000 | 0,0000 |

***significant at the 1%-level.

*Figure 5* graphically shows the target's CARs over the complete 5-day event window. The chart illustrates the positive cumulative abnormal returns found in *table 4*. The steep increase around the announcement day indicates that most of the abnormality is incorporated into the share prices relatively fast because it occurs closely around t=0, i.e. during the 3-day event period centered around the first announcement of the white knight entry.

**Figure 5. Target company cumulative abnormal returns around the white knight entry.**




*Note*: 5-day CARs are found to be significantly higher than zero at the 1 % level.

## WHITE KNIGHT BIDDER

The statistical results for the abnormal returns to white knight bidders in the sample (N=54) can be found in *table 5*. The table shows that the CARs to white knights are negative and significant for all event windows adopted. At the announcement day, t=0, a white knight's share price drops on average 0.99% (at a confidence level of 90%). For the 3-day event window, white knight bidders are exposed to abnormal share price losses of 1.98% (at a confidence level of 99%). Over the total 5-day event window, the white knight's shareholders have to cope with a 1.83% abnormal loss (at a confidence level of 95%). Because all CARs are significantly different from zero, the null hypothesis 1.4, '*the entry of the white knight bidder in the takeover contest does not result in any abnormal share price returns for the white knight bidder's shareholders'* can be

rejected for every event window. To be more specific, white knights face significant negative abnormal returns upon their entry in the takeover contest. Probably, this negative share price reaction is explained by the increased chance of overbidding due to the sequential position in the bidding process. Another explanation could be that the investors take into account the white knight's lack of strategic justification for the takeover. The takeover interest is unplanned (only after request of target's management) and the bid needs to be developed in a relatively short time.

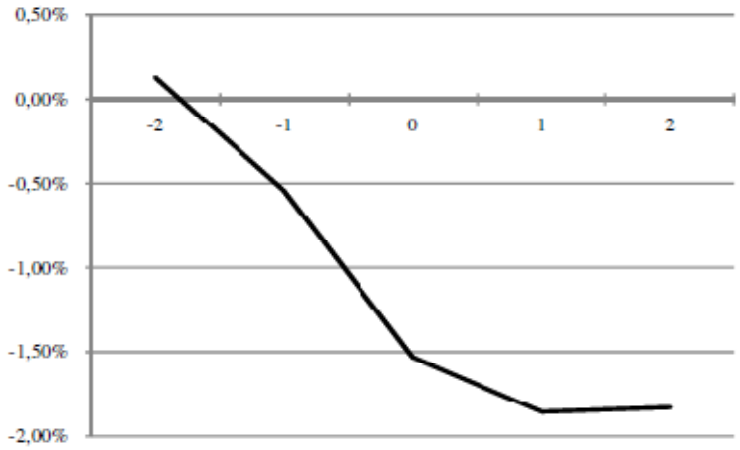
**Table 5. White knight cumulative abnormal returns around the white knight entry.**

| Event window | [T=0] | [-1,1] | [-2,2] |
|---|---|---|---|
| # observations | 54 | 54 | 54 |
| # positive | 26 | 22 | 25 |
| Average | -0,99% | -1,98% | -1,83% |
| Median | 0,00% | -0,83% | -0,46% |
| SD | 4,22% | 5,07% | 5,45% |
| Variance | 0,18% | 0,26% | 0,30% |
| Kurtosis | 18,51 | 6,46 | 4,31 |
| Skewness | -3,77 | -1,91 | -1,50 |
| Maximum | 2,84% | 6,39% | 7,50% |
| Minimum | -24,57% | -24,58% | -24,58% |
| T-statistic | -1,7213* | -2,8770*** | -2,4662** |
| P value | 0,0910 | 0,0058 | 0,0169 |

***significant at the 1%-level.
**significant at the 5%-level.
*significant at the 10%-level.

*Figure 6* demonstrates the white knight's cumulative abnormal returns over the 5-day event window. The graph shows that most of the abnormality occurs in the days preceding the announcement day, t=0. The white knight's shareholders might be informed about the company's interest to enter the takeover contest before the first announcement has been published in the financial press. Similarly as for target companies, hardly any abnormal returns are experienced after t=1. It seems that the investors incorporate all information from the white knight entry into the share prices within a day after the announcement day.

**Figure 6. White knight cumulative abnormal returns around the white knight entry.**




*Note*: 5-day CARs are found to be significantly lower than zero at the 5% level.

## HOSTILE BIDDER

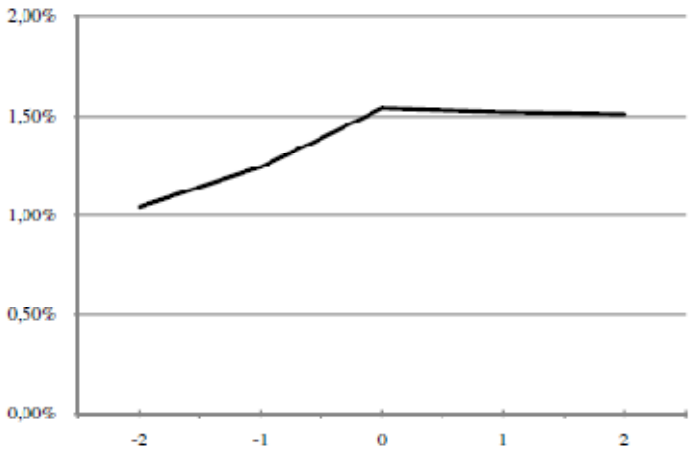
The wealth impact on the hostile bidders' shareholders can be found in both *table 6* and *figure 7*. The sample includes 52 hostile bidders that are listed on a stock exchange. *Table 6* indicates that, on average, the abnormal returns to the hostile bidder's shareholders are positive for all event windows adopted (i.e. 0.30%, 0.48% and 1.51%). However, none of these CARs are found to be significantly different from zero. This means that the null hypothesis 1.5, '*the entry of the white knight bidder in the takeover contest does not result in any abnormal share price reaction for the hostile bidder's shareholders*', cannot be rejected for any of the chosen event windows.

**Table 6. Hostile bidder cumulative abnormal returns around the white knight entry.**

| Event window | [T=0] | [-1,1] | [-2,2] |
|---|---|---|---|
| # observations | 52 | 52 | 52 |
| # positive | 27 | 29 | 31 |
| Average | 0,30% | 0,48% | 1,51% |
| Median | 0,05% | 0,41% | 0,98% |
| SD | 2,57% | 4,10% | 6,95% |
| Variance | 0,07% | 0,17% | 0,48% |
| Kurtosis | 0,76 | 0,17 | 16,60 |
| Skewness | 0,83 | 0,18 | 3,18 |
| Maximum | 7,73% | 10,26% | 39,19% |
| Minimum | -4,03% | -10,32% | -10,80% |
| T-statistic | 0,8391 | 0,8402 | 1,5680 |
| P value | 0,4053 | 0,4047 | 0,1231 |

From this analysis, it becomes not clear whether hostile bidders in general are harmed or benefit from the entry of a white knight competitor in the takeover contest. It seems that the entry of a white knight competitor did not heavily change the hostile bidder's shareholders' prospects on the takeover. The most plausible explanation for this negligible share price reaction is that the hostile bidder's shareholders already anticipated the white knight intervention at the time of the initial hostile approach.

**Figure 7. Hostile bidder cumulative abnormal returns around the white knight entry.**




*Note*: 5-day CARs are not found to be *significantly* different from zero.

## c. SUBSAMPLE ANALYSIS – GEOGRAPHICAL ORIGIN

To observe if the geographical origin of the companies influences the results, I will compare the abnormal returns of two sub-samples: one with *US-based* firms and one with *EU-based* firms. The companies are classified according to the location of their primary listing at a stock exchange. The results are presented in *table 7* and *figure 8*. One can see that both samples of *target companies* (*figure 8, panel A*) experience positive CARs. More specifically, over the 5-day event window, US-based targets (N=24) are confronted with slightly higher average abnormal returns compared to their European counterparts (N=27), i.e. 11.05% for the American companies compared to 8.28% for the European companies. As *Rossi and Volpin (2004)* find, legal environment and takeover regulation are important determinants of the distribution of takeover gains.

Since European companies are characterized by weaker investor protection and less developed capital markets *(LaPorta et al. 1998*), lower takeover premiums can be expected. This would explain the smaller share price reaction for European target, however, with a t-value of -0.77, the samples are not significantly different from each other. From this analysis, we are not able to conclude that the abnormal returns to European and American target companies are significantly different from each other.

**Table 7. CARs around the white knight entry: difference between US- and EU-based firms.**

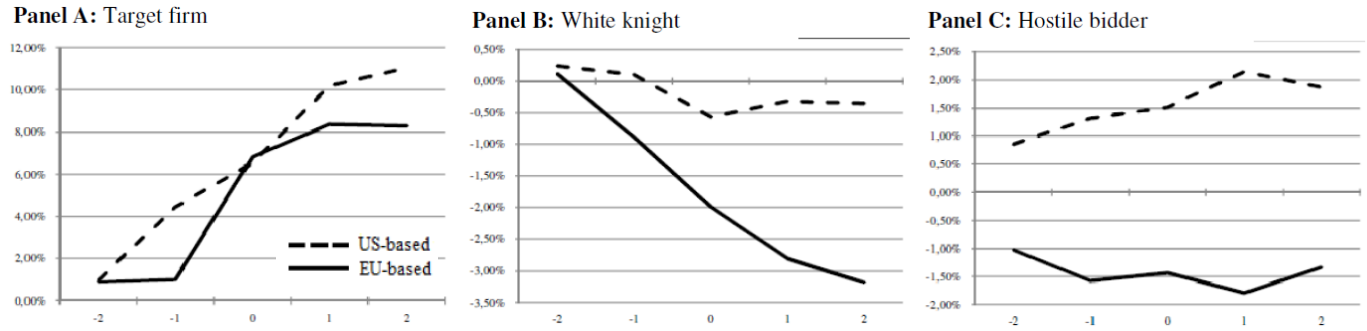
| *5-day event window* | Target firm | | White knight | | Hostile bidder | |
|---|---|---|---|---|---|---|
| | US | EU | US | EU | US | EU |
| # observations | 24 | 27 | 23 | 21 | 25 | 16 |
| # positive | 20 | 21 | 14 | 7 | 15 | 8 |
| Average | 11,05% | 8,28% | 0,35% | -3,18% | 1,87% | -1,33% |
| Median | 6,41% | 4,87% | 0,81% | -1,07% | 1,47% | -1,04% |
| SD | 13,65% | 11,77% | 3,75% | 6,66% | 4,51% | 4,58% |
| Variance | 1,86% | 1,39% | 0,14% | 0,44% | 0,20% | 0,21% |
| Kurtosis | 5,63 | 6,78 | -0,49% | 4,29 | 0,99 | -0,47 |
| Skewness | 2,04 | 2,18 | -0,55 | -1,79 | 0,94 | -0,49 |
| Maximum | 58,84% | 52,52% | 5,14% | 4,81% | 13,55% | 5,09% |
| Minumum | -4,48% | 3,41% | -7,54% | -24,58% | -4,72% | -10,80% |
| T-statistic (difference) | -0,7708 | | 1,7150* | | 2,1974** | |
| P value | 0,4448 | | 0,0964 | | 0,0354 | |

*significant at the 10%-level.
**significant at the 5%-level.

*Table 7* also shows the results from the event study methodology for the two geographical sub-samples of *white knights*. Both US (N=23) and European white knights (N=21) experience negative abnormal returns upon their entry in the takeover contest. However, as also *panel B of figure 8* clearly shows, the loss of European white knights (i.e. 3.18%) is substantially larger than the loss of US-based white knights (i.e. 0.35%). The difference between the two sub-samples is significant at the 90% confidence level. This means that shareholders from European white knights are worse off than the shareholders of white knights from the United States after their company enters the battle for the target firm. European stock markets seem to condemn the bad investment decisions more heavily than the US-based investors. A potential explanation can be found in the

legal environment of the companies. The high degree of shareholder protection in the US, combined with the high degree of disclosure (*Martynova and Renneboog, 2006*), forces a bidder's managers to act more in line with their shareholder's interest. This would imply that US-based companies are more likely to enter a takeover contest only when it is expected to be a value-increasing investment. Consequently, the average CARs flowing to the American white knights will be higher compared to the European white knights.

**Figure 8. CARs around the white knight entry: difference between US- and EU-based firms.**




*Note*: difference is not found to be significant.

*Note*: difference is significant at the 10%-level.

*Note*: difference is significant at the 5%-level.

When the sample of hostile bidders is divided according to their geographical origin, some intriguing results show up. US-based hostile bidders (N=25) on average experience a positive cumulative abnormal return of 1.87% when a white knight enters the scene, while their European counterparts (N=16) are confronted with a negative cumulative abnormal return of -1.33% (see *table 7)*. The material difference in CARs between both sub-samples is also illustrated by *panel C of figure 8.* The t-statistic of 2.20 indicates that the sub-samples are significantly different from each other at the 95% confidence level. The findings prove that shareholders from European hostile bidders encounter abnormal losses when a white knight enters the takeover contest, probably due to the increase in bidder competition and the reduced chance of winning control over the target firm. Looking at the successful track record of the European white

knights in the sample (i.e. 71% of the European white knights eventually took control over the target), another potential explanation could be that the shareholders of European hostile bidders are more intimidated by a white knight entry because it reduces their chance of winning the takeover considerably. In contrast, the shareholders of American hostile bidders experience positive abnormal returns flowing from the white knight entry. For them, an alternative buyer in the form of a white knight might justify the initial bid decision for the target firm. In addition, as the paper of *Magnuson (2009)* has shown, US-based companies are less constrained by their shareholders when it comes to defensive tactics. This is also reflected in the lower success-rate of American white knight (i.e. 47%) compared to their European counterparts. This could indicate that American hostile bidders are threatened to a lesser extent by the entrance of a white knight in the takeover contest.

### d. SUBSAMPLE ANALYSIS – ULTIMATE OUTCOME

It could be the case that the bidder's shareholders anticipate on the future outcome of the takeover contest. This would mean that the abnormal returns of a bidder are influenced by the eventual dénouement of the takeover battle. To examine if this influences the results found, the samples of both classes of bidders (i.e. white knight bidders and hostile bidders) are partitioned in two sub-samples: one containing the successful bidders that eventually won control over the target company and one with their unsuccessful counterparts that lost the takeover contests. Both *table 8* and *panel A of figure 9* show that the CARs from both successful (N=33) and unsuccessful white knights (N=21) are negative (successful white knights' shares drop on average 0.28% more than unsuccessful white knights), but the sub-samples are not significantly different from each other (t=-0.17). This means that the ultimate outcome of the takeover battle does not influence the white knights' CARs at the time of its entry.

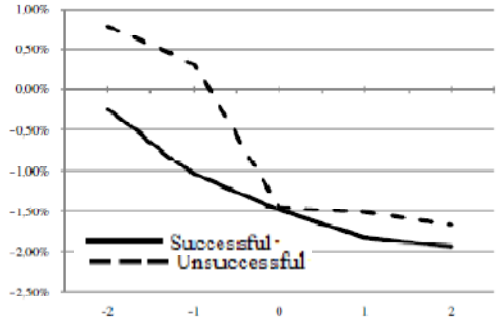
**Table 8. CARs around the white knight entry: difference successful and unsuccessful firms.**

| *5-day event window* | White knight | | Hostile bidder | |
|---|---|---|---|---|
| | Successful | Unsuccessful | Successful | Unsuccessful |
| # observations | 33 | 21 | 19 | 33 |
| # positive | 15 | 10 | 10 | 21 |
| Average | -1,94% | -1,66% | 0,94% | 1,84% |
| Median | -1,07% | -0,17% | 0,45% | 1,19% |
| SD | 4,87% | 6,39% | 4,42% | 8,11% |
| Variance | 0,24% | 0,41% | 0,20% | 0,66% |
| Kurtosis | -1,14 | 8,22 | 2,46 | 14,18 |
| Skewness | -0,14 | -2,56 | 1,12 | 3,08 |
| Maximum | 7,50% | 4,94% | 13,55% | 39,19% |
| Minumum | -10,30% | -24,58% | -5,46% | -10,80% |
| T-statistic (difference) | -0,1687 | | -0,5136 | |
| P value | 0,8671 | | 0,6098 | |

Similar to the method applied in the sub-samples for white knight bidders, the hostile bidders are classified as either successful (N=19) or unsuccessful (N=33) in acquiring control over the target firm. Both *table 8* and *panel B of figure 9* shows that the average CAR for unsuccessful bidders is larger than the average CAR for successful bidders. However, as *table 8* also shows, the difference between the two sub-samples is not significant (i.e. t=-0.51). This means that the average CAR for successful hostile bidders is not statistically different from the average CAR for unsuccessful bidders. In line with the findings for white knights, the ultimate success in the takeover battle does not seem to influence the returns to the hostile bidders' shareholders at the time of the white knight entry. In total, shareholders do not seem to incorporate the eventual acquirer of the target firm in their expectations at the time of the white knight entry.

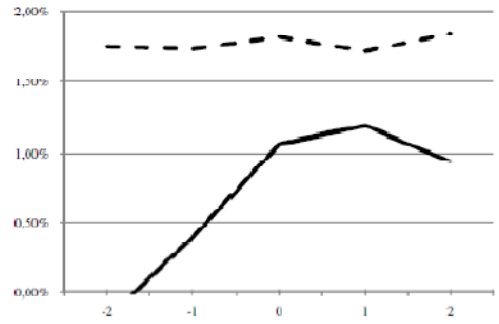
**Figure 9. CARs around the white knight entry: difference successful and unsuccessful firms.**

**Panel A**: White knights




*Note*: the difference is not found to be significant.

**Panel B**: Hostile bidders




*Note*: the difference is not found to be significant.

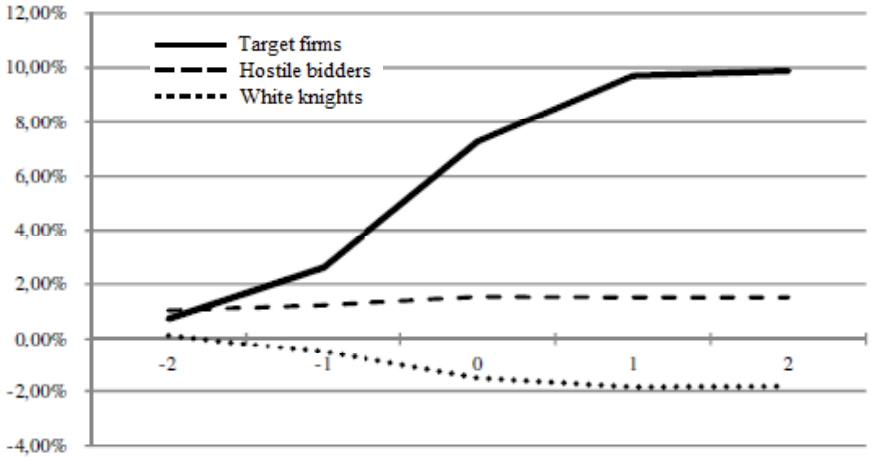
To summarize the findings of the previous section, the preliminary analysis of the abnormal returns around the initial hostile bid shows that the shareholders of target companies experience substantial wealth gains relative to the pre-announcement price whereas those of the hostile bidder experience no significant abnormal returns at all. This result is in line with most existing research in the field of M&A value creation.

To return to the main part of the thesis, and the first research question of this thesis, *how the information flow from a white knight entry affects the stock returns of all parties involved*, the event study methodology posts some comprehensible findings. When a white knight enters the takeover contest:

- The *target firm* benefits and experiences significant positive abnormal returns;
- The *white knight* is punished and faces significant negative abnormal returns;
- The *hostile bidder* experiences no significant abnormal share price reaction.

These results are combined and illustrated in *figure 10*.

**Figure 10. CARs (to all involved parties) around the white knight entry.**




*Note*: the abnormal returns for both the target firm (at the 1%-confidence level) and the white knight bidder (at the 5%-confidence level) are found to be significant, while the hostile bidder's abnormal returns were not found to be significant.

When the samples for both the white knights and the hostile bidders are split up according to the geographical origin of the companies, some interesting results show up. Concerning the target firm sample, no significant difference is found between US-based target firms and European target firms. However for the white knight sample, European

firms have to cope with a larger loss compared to their US-based counterparts. In addition, the sample of hostile bidders shows that US bidders face positive abnormal returns upon the white knight entry, while EU bidders experience negative abnormal returns.

Also the influence of the ultimate outcome of the takeover contest is examined, but no significant difference can be found between successful and unsuccessful bidders. Shareholders of both classes of bidders do not seem to incorporate this into their expectations at the time of the white knight entry.

## 6.2. WHITE KNIGHT CHARACTERISTICS

The previous section showed that shareholders experience significant negative abnormal returns when their company enters a takeover contest in the role of white knight. Keeping this in mind, it seems very intriguing to examine what could be the reason for a company to adopt the role of white knight. If the entrance as a white knight fails to create any value, why is it so popular then? To get a better insight in this mystery, this part of the thesis will look at the distinctive characteristics of white knight bidders.

*Jensen (1986a)* already suggested that due to the agency conflict between the shareholders and the managers of a company, corporate acquisition decisions may be driven by managerial utility maximization motives. The conflict can cause a company's management to make bids with limited value creation prospect or pay excessive bid premium. As the results in the previous section show that white knights are confronted with significantly negative returns, one can expect the agency conflict to be more intense in a white knight firm compared to a hostile bidder. This section recognizes several company characteristics relating to the agency conflict and analyzes the differences between the sample of white knights and the sample of hostile bidders. The corres-

ponding hypotheses were developed in section three of the paper. In order to exclude event-specific influences from the study, data variables are used dating from the year prior to the participant's entry into the control contest. The years of entry for each takeover contest can be found in the appendix, *table 11*.

### a. FREE CASH FLOW

The normalized FCF measure was found available for 49 hostile bidders and 51 white knight bidders in the sample. *Table 9* shows the results of the student t-test, comparing both sub-samples. Hostile bidders are found to have an FCF index of 0.1148 on average, while the white knight bidders in the sample reveal a slightly higher result of 0.1415. This result is also illustrated by the graph in *Panel A of figure 11*. The t-statistic of 1.50 (see *table 9*) indicates that the difference between the two sub-samples is significant at the 10% confidence level, meaning that the expectations are confirmed and hypothesis 2.1 can be accepted: *white knight bidders have, on average, more free cash flow compared to their hostile counterparts.* As found in part (A) of the result section, investors perceive a white knight entry as a value-reducing undertaking. From *Jensen's (1986a) agency theory*, we learned that managers might have incentives to expand their firms beyond the size that maximizes shareholder wealth. The presence of free cash flow encourages managers to initiate value-reducing investments that are not in line with shareholders' best interest. Hostile bidders possess relatively less free cash flow and therefore the company's managers are facilitated less to fund negative net present value projects.

### b. LEVERAGE

To examine this part of the research question correctly, financial institutions (SIC codes starting with 9 and 6) are excluded from the sample. This has been done because of their special regulatory environment and capital structure (*Martynova and Renne-*

*boog, 2006*). The inclusion of these firms in the sample would wrongly influence the outcome of the analysis. The reduction resulted in a remaining sample of 41 hostile bidders and 44 white knights for which a debt-to-equity ratio was calculated. The results are reported in *table 9* and *Panel B of figure 11*. As expected, the outcomes show a higher debt-to-equity ratio for the hostile bidders in the sample. However, mainly due to the high dispersion within both samples, the difference between the samples is not statistically significant (i.e. a t-statistic of 0.44). This means that hypothesis 2.2, '*white knight bidders, on average, have a lower debt-to-equity ratio compared to their hostile counterparts',* should not be accepted. The capital structure of white knights does not turn out to be materially different from that of hostile bidders. Consequently, no disciplining role of debt can be observed from this analysis.

### c. TOBIN'S Q

The Tobin's q test statistic is determined for 45 hostile bidders and 48 white knights in the sample. The results in *table 9* and *panel C of figure 11* show a very minimal difference in the average Tobin's q ratio between hostile bidders (i.e. 2.69) and white knight bidders (i.e. 2.71). The small disparity is not found to be statistically significant (i.e. a t-statistic of -0.06). Similarly to the capital structure analysis in the previous paragraph, this is probably driven by the large dispersion within both sub-samples. The analysis implies that hypothesis 2.3, predicting that *white knight bidders have, on average, a lower Tobin's q compared to their hostile counterpart*, cannot be accepted. One can say that, judging by the company's Tobin's q, a white knight's manager is not tempted to initiate more low-value investments compared to a manager of a hostile bidder. Additionally, with an average white knight Tobin's q of 2.71 and 85% of the white knight showing a Tobin's q larger than the 1.0 threshold, the analysis does not indicate that white knight firms lack positive NPV projects to invest in.

## d. MANAGEMENT COMPENSATION

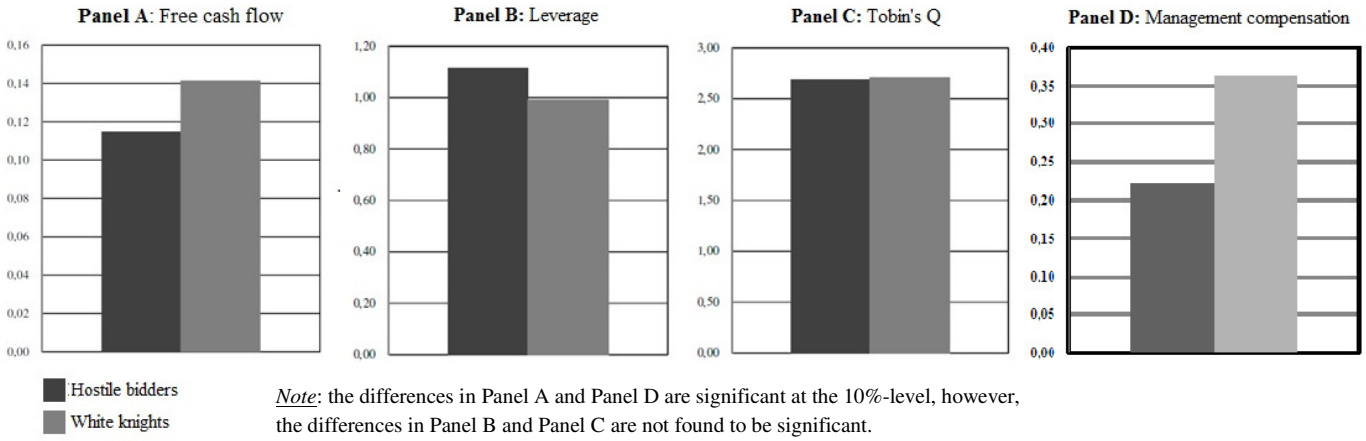
Due to the low data availability on management compensation, the SC variable could only be calculated for 15 hostile and 16 white knight bidders. Despite the small sample, the analysis yields some interesting results. As described in both *table 9* and *panel D of figure 11*, a white knight's CEO is annually paid 36,22% of his total compensation in fixed salary, while the hostile bidder's CEOs on average get paid 22,17% in fixed cash. In line with the expectations, a white knight's CEO, on average, turns out to be compensated relatively more on a salary basis than the hostile bidder's CEO. The difference between the two sub-samples is statistically significant at the 5% confidence level. This means that hypothesis 2.4, '*white knight managers have, on average, a higher salary-part in their compensation compared to their hostile counterparts',* can be accepted. This finding tells us that a hostile bidder's manager is more inclined by its pay package to act in line with its shareholders and consequently is more likely to induce value-creating investments. The monetary benefits from his performance-based pay tend to outweigh the satisfaction of personal empire-building. White knight managers have less incentives stemming from their remuneration scheme, which means that there is a higher chance that the benefits of personal empire building will prevail over their performance-based pay, and that they are more inclined to invest in value-reducing projects (like for instance the entrance as a white knight in a takeover contest).

**Table 9. Company characteristics: white knight bidders compared to hostile bidders.**

| | Free cash flow | | Leverage | | Tobin's Q | | Management compensation | |
|---|---|---|---|---|---|---|---|---|
| | HB | WK | HB | WK | HB | WK | HB | WK |
| # observations | 49 | 51 | 41 | 44 | 45 | 48 | 15 | 16 |
| Average | 0,1148 | 0,1415 | 1,1137 | 0,9898 | 2,6886 | 2,7089 | 0,2219 | 0,3622 |
| Median | 0,1148 | 0,1276 | 0,6218 | 0,6561 | 2,1900 | 2,0250 | 0,1748 | 0,3125 |
| Variance | 0,73% | 0,87% | 195,76% | 137,73% | 250,13% | 331,23% | 5,42% | 5,11% |
| Kurtosis | 5,18 | 1,30 | 9,49 | 15,80 | 2,09 | 0,74 | 3,80 | -1,03 |
| Skewness | 1,66 | 0,83 | 2,92 | 3,44 | 1,59 | 1,21 | 2,01 | 0,43 |
| Maximum | 0,4531 | 0,4554 | 7,0476 | 7,0048 | 7,1300 | 7,4911 | 0,6223 | 0,7222 |
| Minimum | -0,0251 | -0,0207 | 0,0031 | 0,0042 | 0,5900 | 0,8500 | 0,0015 | 0,0432 |
| T-statistic | -1,4986* | | 0,4405 | | -0,0577 | | 1,4022* | |
| P-value (one sided) | 0,0686 | | 0,3304 | | 0,4771 | | 0,0906 | |

* significant at the 10%-level

**Figure 11. Company characteristics: white knight bidders compared to hostile bidders.**




*Note*: the differences in Panel A and Panel D are significant at the 10%-level, however, the differences in Panel B and Panel C are not found to be significant.

To summarize and answer the second research question of the paper (*'what are the distinctive characteristics of the sample's white knight bidders compared to their hostile bidder counterparts?')*, the results of the unpaired t-tests clearly show that, in comparison with the hostile bidders, white knight firms:

- possess relatively more *free cash flow;*
- have no significantly different level of *leverage* in their capital structure*;*
- have no significantly different *Tobin's q ratio*;
- reward their CEO with a higher degree of *salary-based compensation*.

## e. ROBUSTNESS CHECK

To test for the robustness of these results, I linked the white knight bidder and the hostile bidder for the same takeover contest and analyzed these paired samples of bidders. Evidently, this reduced the sample size, because the data was not available for every company involved (data needed to be available for both bidders). FCF differences could be calculated for 45 takeover cases; the leverage variable was examined in 36 cases; Tobin's q in 40 cases and the management compensation variable was available for only 8 matched pairs in the samples. By using a paired sample t-test, I examined if the average difference (i.e. the white knight observation minus the hostile bidder ob-

servation) for each characteristic was significantly different from zero. The results can be found in *table 10*. In short, the findings of this paired sample t-test justify most of the earlier findings from *table 9*. White knights possess relatively more free cash flow than their hostile competitors in a takeover battle, and the difference is found to be significantly different from 0 (at the 10%-confidence level). For both the level of leverage and the Tobin's q ratio, no significant difference could be found between the white knight and the hostile bidders. The management compensation for white knights includes a relatively larger salary-part, but the difference for this remuneration difference turns out to be insignificant. Remarkably, this does not support the findings from 6.2.4 that showed a significantly higher salary-part compensation for white knights. However, it is important to note that it is very likely that this insignificance is caused by the small sample size (only 9 matched pairs).

**Table 10. Company characteristics: paired samples of white knights and hostile bidders**

| | # observations (paired samples) | Average difference | t-value | p-value | |
|---|---|---|---|---|---|
| **1. Free cash flow** | 45 | 0,0043 | -1,6904 | 0,0981 | significant at the 10%-level |
| **2. Leverage** | 36 | -0,0993 | 1,0547 | 0,2981 | not significant |
| **3. Tobin's q** | 40 | 0,0381 | -0,3283 | 0,7449 | not significant |
| **4. Compensation** | 9 | 0,1125 | 1,1793 | 0,2723 | not significant |

# 7. LIMITATIONS

When interpreting the results, it is important to take some limitations into account. First of all, an event study methodology depends on the key assumption of an efficient market. It is assumed that the effects of the event will be reflected immediately in the stock prices. As *Fama (1965*) puts it: a market in which prices always 'fully reflect' available information is called 'efficient'. However, the efficient market hypothesis (EMH) is the subject to broad debate and several economists even believe that stock price movements were, at least partially, predictable. If the EMH does not hold, the abnormal returns might be spread out over such a long period that it exceeds the event window. Because the results in this study are based only on the 1-, 2- and 5-day announcement returns, and do not account for the long term effects of takeovers, they should be interpreted with caution. However, when a longer event period in chosen in the event study, it also becomes harder to isolate the event-specific effects, since you might include other events that are not under investigation. The involved companies could be affected by other events over the event window which would weaken or enforce the event-specific abnormal returns. The choice of event window is therefore very important in an event study and represents a tradeoff. Another caveat of an event study is that the results are highly sensitive to the choices of the market model, the clean estimation period and the sample size. Next to this, an event study only offers estimates of the *shareholder* wealth effects. It is important to remember that a (proposed) merger can also affect other stakeholders like for example the company's employees or customers.

Also the adopted t-test holds some limitations. As common with many statistical tests, the t-tests presented assume that the data from the samples has an approximately normal distribution. The tests assume that samples are randomly drawn from normally distributed populations with unknown variances. If the sample does not turn out to be

normally distributed, the sample mean is not the best measure of central tendency and consequently t-tests will not be valid.

Finally, one should be reminded that relatively small sample size (i.e. 65 takeover cases) might have lead to some of the insignificant findings in this thesis. When the analyses yield no significant results, it might be that there still is a relation, but the limited sample size prevents this relation from being found. This should be taken into account when interpreting the results.

# 8. CONCLUSION

In the world of corporate takeovers, a white knight intervention represents a popular defense to thwart a hostile takeover bid. This paper examines how the information flow from a white knight entry affects the stock market returns of all parties involved. To get a complete picture of the takeover contest, the first part of the thesis looks at the abnormal wealth creation at the time of the hostile bid. The results confirm the findings of earlier papers on M&A wealth creation, in the sense that targets experience significant positive abnormal returns after the first hostile bid, while the hostile bidders hardly experience any abnormal returns after their initial offer. All potential synergy benefits seem to be absorbed by the target's shareholders in the form of the takeover premium.

The main part of the thesis looks at the abnormal wealth creation around the white knight entry in the takeover battle. The most important finding is that the white knight's shareholders experience significant negative abnormal returns upon the company's entry in the takeover contest. This finding implies that the decision to enter a takeover battle as a white knight is not in line with the best interests of the company's shareholders. The negative share price reaction might be caused by the lack of strategic justification behind the white knight bid or the company's sequential position in the bidding process. Comparable to the reaction to the initial hostile bid, target firms are found to experience significant positive returns upon the entry of a white knight party. This seems logical, since an extra party enters the bidding war, and consequently the expected takeover premium to the target's shareholders will increase. Unfortunately, no significant share price reaction could be discovered for the hostile bidders in the sample. It might be that the hostile bidders' shareholders incorporate all expectations already at the time of the first hostile bid, and that no big adjustments are necessary at the time of the white knight entry.

When distinguishing in terms of the geographical dimensions of the merger deals, the event study outcomes show some interesting variations. First of all, European white knights have to cope with a larger loss then their US-based counterparts. For the hostile bidders in the sample, the separation reveals that US-based hostile bidders experience positive returns, while the unsolicited bidders from Europe are confronted with significant negative returns. Both white knights and hostile bidders from Europe seem to suffer more heavily from a white knight entry than their US-counterparts. The higher level of shareholder protection might forces the American bidders' managers to act more in line with its shareholders. For the target companies, the geographical sample partition does not result in any significant difference between both sub-samples. The sample is also split up according to ultimate outcome of the takeover battle, i.e. one sub-sample with the unsuccessful bidders and one sub-sample with the successful bidders. However, for neither the hostile bidders nor for the white knights in the sample any significant difference could be discovered between victorious and defeated firms. It seems that their shareholders do not take into account any expectations concerning the ultimate outcome of the bidding war at the moment a white knight enters the contest.

The main finding of the paper, i.e. the negative abnormal returns of white knight firms, brings up another interesting question: *Why do these firms enter the bidding contest as a white knight*? In order to answer this question, I try to uncover specific characteristics of white knight bidders compared to unsolicited bidders. The paper shows that white knights generate significantly more free cash flow than the hostile bidders in the sample. This provides them the opportunity to initiate fruitless acquisitions that are not in line with their shareholders' best interest. The capital structure of a company could be a disciplining instrument when a company generates substantial amounts of free cash flow. A high level of leverage diminishes the cash flow available for spending at the discretion of managers, because it requires the company to pay out future cash

flows. However, the capital structure of white knights turns out to be not materially different from that of hostile bidders, meaning that the paper's expectations were not confirmed. When looking at the Tobin's q, adopted as a proxy of the manager's tendency to invest in low-value investments, also no significant differences were found between the white knight and hostile bidders in the sample. Some remarkable outcomes do show up when looking at the incentive structure of the CEO's compensation plan. Since salary compensation provides little incentive to maximize firm value, it was expected that white knight managers were compensated relatively more on a cash basis. The results indeed show that white knights reward their CEOs with a significantly higher degree of salary-based compensation (i.e. a smaller performance-based part) than the hostile bidders do, which could induce the white knight's managers to undertake relatively more value-reducing investments.

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# 10. APPENDIX

**Table 11. List of white knight takeover cases included in the sample.**

| Year | Target | Hostile bidder | White knight |
|---|---|---|---|
| 1995 | Aran Energy Plc | Atlantic Richfield | Statoil ASA |
| 1995 | Norweb | North West Water | Houston Industries |
| 1995 | First Interstate | Wells Fargo and Co | First Bank System |
| 1996 | William Cook | Triplex Lloyd | Electra Fleming |
| 1996 | ADT Ltd. | Western Resources | Tyco International |
| 1997 | Healthdyne | Invacare | Respironics |
| 1997 | ITT Corporation | Hilton Hotels | Starwood Lodging |
| 1997 | Wascana Energy | Talisman Energy | Occidental Petro |
| 1997 | Great Western Financial | H.F. Ahmanson & Co. | Washington Mutual |
| 1997 | Ault Foods Inc. | Saputo Group Inc. | Parmalat Food Inc. |
| 1997 | Assurances Generales | Assicurazioni Generali | Allianz Versicherungs |
| 1997 | Allied Colloids | Hercules Inc. | Ciba Chemicals |
| 1998 | Echlin Inc | SPX Corp | Dana Corporation |
| 1998 | Flexovit International | Diamond Tools Group | Saint-Gobain |
| 1998 | Tryckinvest i Norden AB | Carl Bennet | Quebecor Printing Inc. |
| 1998 | AMP Inc. | Allied Signal Inc. | Tyco International Ltd. |
| 1998 | Ibstock | Wienerberger | CRH |
| 1998 | Sun Media Corp | Torstar Corporation | Quebecor Media Inc. |
| 1999 | Gucci Group NV | LVMH | PPR |
| 1999 | Telecom Italia | Olivetti | Deutsche Telekom AG |
| 1999 | Société Générale | BNP | Banco Santander |
| 1999 | Rental Service Corp. | United Rentals Inc. | Atlas Copco AB |
| 1999 | Nat. Westminster Bank | Bank of Scotland | RBS |
| 1999 | Warner-Lambert Co. | Pfizer Inc. | Procter & Gamble Co. |
| 1999 | Mannesmann AG | Vodafone Group PLC | Vivendi |
| 1999 | Esat Telecom Group | Telenor Sverige AB | British Telecom |
| 2000 | Critchley Group PLC | Brady Corporation | Tyco International Ltd. |
| 2000 | Dime Bancorp Inc. | North Fork Bancore | Washington Mutual |
| 2000 | Ulster Petroleums Ltd. | Hunt Oil Co. | Anderson Exploration |
| 2000 | Ranger Oil Ltd. | Petrobank Energy | Canadian Nat. Res. |
| 2000 | Compel Group PLC | Computacenter PLC | Specialist Computer |
| 2000 | Mackenzie Financial | CI Fund Management | Investors Group Inc. |
| 2000 | Berkley Petroleum Corp. | Hunt Oil Corp. | Anadarko Petroleum |
| 2001 | Tempus Group PLC | WPP Group PLC | Havas Advertising SA |
| 2001 | Nautronix Ltd. | Odim Hitec ASA | First Tech Ltd |
| 2001 | FAG Kugelfischer | INA-Hold. Schaeffler | NTN |
| 2002 | Accelio Corp. | Open Text Software | Adobe Systems Inc. |
| 2004 | Aventis | Sanofi-Synthelabo | Novartis |
| 2004 | Harbin Brewery Group | SabMiller | Anheuser-Busch |
| 2005 | Leica Geosystems | Hexagon | Danaher |
| 2005 | Saia-Burgess Electronics | Sumida Corp. | Johnson Electric |
| 2005 | Endesa | Gas Natural | E.on AG |
| 2005 | Dofasco | Arcelor SA | ThyssenKrupp |
| 2005 | Fairmont Hotels Resorts | Carl Icahn | Colony Capital LLC |
| 2006 | Origin Toshu Co. | Don Quijote Co. | Aeon Co. |
| 2006 | Arcelor SA | Mittal Steel Co. NV | Severstal |
| 2006 | Schering AG | Merck & Co Inc | Bayer AG |
| 2006 | BAA | Grupo Ferrovial | Goldman Sachs |
| 2006 | Inco Ltd. | Teck Cominco | Phelps Dodge |
| 2006 | Hokuetsu Paper Mills | Oji Paper Co. Ltd | Nippon Paper Group |
| 2006 | Delta | US Airways | Northwest |
| 2006 | Midwest | Airtran Airways | TPG Capital |
| 2007 | Böhler-Uddeholm | CVC Capital Partners | Voestalpine AG |
| 2007 | Alcan Aluminium Ltd. | Alcoa | Rio Tinto |
| 2007 | Scottish & Newcastle | Carlsberg/Heineken | SabMiller |

| | | | |
|---|---|---|---|
| 2006 | Myojo Foods Co. | Steel Partners | Nissin Food Products |
| 2009 | Terra Industries Inc. | CF Industries Inc. | Yara International |
| 2009 | CV Therapeutics Inc. | Astellas Pharma Inc. | Gilead Sciences |
| 2009 | Facet Biotech | Biogen Idec | Abbott Laboratories |
| 2009 | Cadbury | Kraft Foods Inc. | Hershey Co. |
| 2009 | Freewest Res. Canada | Noront Resources Ltd. | Cliffs Nat. Resources |
| 2009 | Khan Resources Inc. | Atomredmetzoloto JSC | China Nat. Nuclear |
| 2009 | Mama Group | SMS Finance | HMV |
| 2009 | International Royalty | Franco Nevada Corp. | Royal Gold Inc. |
| 2010 | VT Group PLC | Babcock International | Lockheed Martin Corp. |

**Table 12. Beta-coefficients estimated in the market model.**

| # | Target company | β | Hostile bidder | β | White knight | β |
|---|---|---|---|---|---|---|
| 1 | Aran Energy Plc | 0,3814 | Atlantic Richfield Co | 0,5234 | Statoil ASA | - |
| 2 | Norweb | 0,5090 | North West Water | - | Houston Industries | 0,7000 |
| 3 | First Interstate Bancorp. | 1,0359 | Wells Fargo and Co | 1,1097 | First Bank System Inc. | 0,5743 |
| 4 | William Cook | 0,2185 | Triplex Lloyd | 0,1085 | Electra Fleming | - |
| 5 | ADT Ltd. | 0,7937 | Western Resources Inc. | 0,2528 | Tyco International Ltd. | - |
| 6 | Healthdyne Technologies Inc | 0,1708 | Invacare Corp | 0,2369 | Respironics Inc | 0,0641 |
| 7 | ITT Corporation | 0,5047 | Hilton Hotels | 0,8391 | Starwood Lodging | 0,4605 |
| 8 | Wascana Energy Inc. | 0,5275 | Talisman Energy Inc. | 0,5038 | Occidental Petroleum Ltd. | 0,7777 |
| 9 | Great Western Financial Corp. | 1,4172 | H.F. Ahmanson & Co. | 0,9080 | Washington Mutual Inc. | 0,2416 |
| 10 | Ault Foods Inc. | 0,0782 | Saputo Group Inc. | - | Parmalat Food Inc. | 0,8120 |
| 11 | Assurances Generales de France | 0,8242 | Assicurazioni Generali | 0,9484 | Allianz Versicherungs | 1,2832 |
| 12 | Allied Colloids | 0,5333 | Hercules Inc. | 0,5087 | Ciba Specialty Chemicals | 1,0381 |
| 13 | Echlin Inc | 0,6158 | SPX Corp | 0,1531 | Dana Corporation | 0,8222 |
| 14 | Flexovit International NV | 0,3849 | Diamond Tools Group | - | Saint-Gobain | 0,8325 |
| 15 | Tryckinvest i Norden AB | 0,9411 | Carl Bennet | - | Quebecor Printing Inc. | 0,2320 |
| 16 | AMP Inc. | 0,5217 | Allied Signal Inc. | 1,2062 | Tyco International Ltd. | - |
| 17 | Ibstock | 0,2144 | Wienerberger | 0,8203 | CRH | 0,8729 |
| 18 | Sun Media Corp | 0,6361 | Torstar Corporation | 0,5136 | Quebecor Media Inc. | 0,3737 |
| 19 | Gucci Group NV | 0,8773 | LVMH | 0,6415 | Pinault-Printemps-Redoute | 1,1828 |
| 20 | Telecom Italia | 0,7597 | Olivetti | 0,7817 | Deutsche Telekom AG | 0,5776 |
| 21 | Société Générale | 1,3942 | Banque Nationale de Paris | 1,5819 | Banco Santander Central Hispano | 1,3625 |
| 22 | Rental Service Corp. | 1,3250 | United Rentals Inc. | 1,3486 | Atlas Copco AB | 0,7210 |
| 23 | National Westminster Bank | 1,5940 | Bank of Scotland | 1,5605 | Royal Bank of Scotland | 1,3572 |
| 24 | Warner-Lambert Co. | 0,9163 | Pfizer Inc. | 1,3135 | Procter & Gamble Co. | 0,6501 |
| 25 | Mannesmann AG | 1,4698 | Vodafone Group PLC | 0,3534 | Vivendi | 0,8622 |
| 26 | Esat Telecom Group | -0,3984 | Telenor Sverige AB | - | British Telecommunications | 1,5019 |
| 27 | Critchley Group PLC | 0,0648 | Brady Corporation | 0,4859 | Tyco International Ltd. | - |
| 28 | Dime Bancorp Inc. | 0,6112 | North Fork Bancore | 0,7811 | Washington Mutual Inc. | 0,2416 |
| 29 | Ulster Petroleums Ltd. | 0,5047 | Hunt Oil Co. | - | Anderson Exploration Ltd. | 0,6435 |
| 30 | Ranger Oil Ltd. | 0,2516 | Petrobank Energy and Resources | 0,4190 | Canadian Natural Resources | 0,2630 |
| 31 | Coupel Group PLC | -0,0018 | Computacenter PLC | 0,1821 | Specialist Computer Holdings | - |
| 32 | Mackenzie Financial Corp. | 0,2654 | CI Fund Management | 0,2665 | Investors Group Inc. | 0,1525 |
| 33 | Berkley Petroleum Corp. | 0,2586 | Hunt Oil Corp. | - | Anadarko Petroleum Corporation | 0,2069 |
| 34 | Tempus Group PLC | 0,0982 | WPP Group PLC | 1,5946 | Havas Advertising SA | -0,0037 |
| 35 | Nautronix Ltd. | 0,0569 | Odim Hitec ASA | 0,3205 | First Tech Ltd | - |
| 36 | FAG Kugelfischer | 0,2920 | INA-Holding Schaeffler KG | - | NTN | 0,7885 |
| 37 | Accelio Corp. | 0,2859 | Open Text Software Corp. | 0,5605 | Adobe Systems Inc. | 1,0643 |
| 38 | Aventis | 0,8164 | Sanofi-Synthelabo | 1,0469 | Novartis | 0,4819 |
| 39 | Harbin Brewery Group Ltd | 0,5384 | SabMiller | 0,6689 | Anheuser-Busch | 0,4451 |
| 40 | Leica Geosystems | 0,3551 | Hexagon | 0,4188 | Danaher | 1,1508 |
| 41 | Saia-Burgess Electronics | 0,2717 | Sumida Corp. | 0,8248 | Johnson Electric Holdings Ltd. | 1,0330 |
| 42 | Endesa | 1,1652 | Gas Natural | 0,8518 | E.on AG | 0,9365 |
| 43 | Dofasco | 0,7669 | Arcelor SA | 1,1862 | ThyssenKrupp | 0,9335 |
| 44 | Fairmont Hotels and Resorts | 0,9724 | Carl Icahn | - | Colony Capital LLC | - |
| 45 | Origin Toshu Co. | 0,1219 | Don Quijote Co. | 0,1004 | Aeon Co. | 0,2560 |
| 46 | Arcelor SA | 1,1862 | Mittal Steel Co. NV | 0,6285 | Severstal | - |
| 47 | Schering AG | 0,6725 | Merck & Co Inc | 0,6777 | Bayer AG | 0,8047 |
| 48 | BAA | 0,6895 | Grupo Ferrovial | 1,4088 | Goldman Sachs | 1,1847 |
| 49 | Inco Ltd. | 1,2785 | Teck Cominco | 1,8650 | Phelps Dodge | 1,7720 |
| 50 | Hokuetsu Paper Mills Ltd. | 0,0159 | Oji Paper Co. Ltd | 0,0234 | Nippon Paper Group Inc. | 0,6802 |
| 51 | Delta | 0,4054 | US Airways | 1,8465 | Northwest | - |
| 52 | Midwest | 1,8943 | Airtran Airways | 1,8454 | TPG Capital | - |
| 53 | Böhler-Uddeholm | 1,1120 | CVC Capital Partners Ltd | - | Voestalpine AG | 1,2657 |
| 54 | Alcan Aluminium Ltd. | 1,8666 | Alcoa | 1,3057 | Rio Tinto | 1,8935 |
| 55 | Scottish & Newcastle | 0,8656 | Carlsberg/Heineken | 0,5397 | SabMiller | 0,6689 |
| 56 | Myojo Foods Co. | 0,0221 | Steel Partners | - | Nissin Food Products Co. | 0,0975 |
| 57 | Terra Industries Inc. | 0,9037 | CF Industries Inc. | 0,9240 | Yara International | 1,0885 |
| 58 | CV Therapeutics Inc. | 0,7540 | Astellas Pharma Inc. | 0,2245 | Gilead Sciences | 0,7901 |
| 59 | Facet Biotech | 1,1627 | Biogen Idec | 0,6522 | Abbott Laboratories | 0,3432 |
| 60 | Cadbury | 0,5348 | Kraft Foods Inc. | 0,5382 | Hershey Co. | 0,4820 |
| 61 | Freewest Resources Canada Inc. | 0,2383 | Noront Resources Ltd. | 1,0576 | Cliffs Natural Resources | 2,4679 |
| 62 | Khan Resources Inc. | 0,5409 | Atomredmetzoloto JSC | - | China National Nuclear Corp. | 0,3563 |
| 63 | Mama Group | 0,7874 | SMS Finance | - | HMV | 0,4889 |
| 64 | International Royalty Corp. | 0,6848 | Franco Nevada Corp. | 0,4838 | Royal Gold Inc. | 0,5954 |
| 65 | VT Group PLC | 0,3195 | Babcock International Group | 0,5507 | Lockheed Martin Corp. | 0,5686 |

## Figure 12. Methodological procedures

**STEP 1:** The share prices of all involved companies and the corresponding country index levels during the event window [-2,2] were collected for all involved companies.

| # | | Name | Ticker | Share price (event window) - adjusted closing prices | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | t=-2 | t=-1 | t=0 | t=1 | t=2 | |
| | | | | 26-9-1995 | 27-9-1995 | 28-9-1995 | 29-9-1995 | 2-10-1995 | 3-10-1995 |
| 1 | Target | Aran Energy Plc | ARAN | 0,64 | 0,65 | 0,64 | 0,64 | 0,64 | 0,65 |
| | | | | | 1,30% | -1,34% | 0,00% | 0,00% | 1,30% |
| | Hostile bidder | Atlantic Richfield Co | ARC | 53,81 | 53,56 | 53,75 | 53,69 | 53,00 | 52,75 |
| | | | | | -0,46% | 0,35% | -0,11% | -1,29% | -0,47% |
| | White knight | Statoil ASA | - | - | - | - | - | - | - |
| | | | | | - | - | - | - | - |

| # | | name | stock exchange | index | Market index (event window) - adjusted closing prices | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | t=-2 | t=-1 | t=0 | t=1 | t=2 | |
| | | | | | 26-9-1995 | 27-9-1995 | 28-9-1995 | 29-9-1995 | 2-10-1995 | 3-10-1995 |
| 1 | Target | Aran Energy Plc | LSE | FTSE 100 | 3523,30 | 3485,00 | 3479,00 | 3508,20 | 3520,20 | 3524,20 |
| | | | | | | -1,09% | -0,17% | 0,84% | 0,34% | 0,11% |
| | Hostile bidder | Atlantic Richfield Co | NYSE | S&P 500 | 581,41 | 581,04 | 585,87 | 584,41 | 581,72 | 582,34 |
| | | | | | | -0,06% | 0,83% | -0,25% | -0,46% | 0,11% |
| | White knight | Statoil ASA | - | - | - | - | - | - | - | - |
| | | | | | | - | - | - | - | - |

**STEP 2:** The beta-coefficients (i.e. the correlation of the stock price with the market portfolio) were estimated for all involved companies using share prices and index levels from the clean period (from 300 to 60 days before the actual event day).

| # | | Name | Stock exchange | Ticker/Index | Clean period - daily data - adjusted closing prices | | | | | | BETA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | -300 | -299 | ... | -61 | -60 | | |
| | Event date (t=0) | 29-9-1995 | | | 25-7-1994 | 26-7-1994 | ... | 5-7-1995 | 6-7-1995 | | |
| 1 | Target | Aran Energy Plc | LSE | ARAN | 0,33 | 0,33 | ... | 0,31 | 0,32 | | 0,3814 |
| | | | | | | 0,00% | ... | 2,70% | 2,63% | | |
| | | | | FTSE 100 | 3106,10 | 3117,20 | ... | 3394,90 | 3388,30 | | |
| | | | | | | 0,36% | ... | 2,14% | -0,19% | | |
| | Hostile bidder | Atlantic Richfield Co | NYSE | ARC | 53,50 | 53,50 | ... | 55,12 | 56,19 | | 0,5234 |
| | | | | | | 0,00% | ... | -0,58% | 1,94% | | |
| | | | | S&P 500 | 454,25 | 453,36 | ... | 547,26 | 553,99 | | |
| | | | | | | -0,20% | ... | 0,03% | 1,23% | | |
| | White knight | Statoil ASA | - | - | - | - | ... | - | - | | - |
| | | | | - | | - | ... | - | - | | |
| | | | | | - | - | ... | - | - | | |
| | | | | | | - | ... | | - | | |

**STEP 3:** The event period normal (i.e. expected) returns for all companies were determined by multiplying the beta-coefficients (calculated in step 2) with the country index returns from the event window (retrieved in step 1).

| # | Role | Name | Normal returns (event period) - calculation | | | | |
|---|---|---|---|---|---|---|---|
| | | | t=-2 | t=-1 | t=0 | t=1 | t=2 |
| | | | 27-9-1995 | 28-9-1995 | 29-9-1995 | 2-10-1995 | 3-10-1995 |
| 1 | Target | Aran Energy Plc | -0,41% | -0,07% | 0,32% | 0,13% | 0,04% |
| | Hostile bidder | Atlantic Richfield Co | -0,03% | 0,44% | -0,13% | -0,24% | 0,06% |
| | White knight | Statoil ASA | - | - | - | - | - |

**STEP 4:** The abnormal returns were calculated by subtracting the normal returns (calculated in step 3) from the actual returns (determined during step 1). The cumulative abnormal returns for all event windows (i.e. the 1-day, the 3-day and the 5-day event window) were calculated by adding the relevant daily abnormal returns.

| # | Role | Name | Abnormal returns (event period) - calculation | | | | | CAR (5days) | CAR (3days) | CAR (1day) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | t=-2 | t=-1 | t=0 | t=1 | t=2 | | | |
| | | | 27-9-1995 | 28-9-1995 | 29-9-1995 | 2-10-1995 | 3-10-1995 | | | |
| 1 | Target | Aran Energy Plc | 1,98% | -1,47% | -0,32% | -0,13% | 1,52% | 1,57% | -1,92% | -0,32% |
| | Hostile bidder | Atlantic Richfield Co | -0,43% | -0,08% | 0,02% | -1,04% | -0,55% | -2,06% | -1,11% | 0,02% |
| | White knight | Statoil ASA | - | - | - | - | - | - | - | - |