

# **Takeovers at gun-point: Does hostility pay off in the long-run?**

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Radboud University

Joep Wennekers  
s1043372

Supervisor: Dr. Nolte

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**Radboud Universiteit Nijmegen**

### *Abstract*

Corporate restructures may take various forms, motives or attitudes. Takeover attitudes are generally characterised as either friendly or hostile. The latter definition has been studied in terms of short-term abnormal returns by a variety of academics. Where the literature on short-term results in the majority of cases are consistent, do long-run performances of hostile takeovers show different outcomes. This study utilises an event study for 63 hostile takeovers, which are defined as mergers and acquisitions, and defines long-run performance as cumulative- and buy-and-hold abnormal returns after a three-year period. The study opts to explain the effect of payment methods, industry- and country-specification, and the effect of hostility in different time periods. The results show negative abnormal returns in general for both dependent variables, but positive returns after a one-year period, therefore contradicting the hypothesized outcomes on short-term and long-run performance. However, mixed payment takeovers and same-industry hostile deals show positive abnormal returns in the long-run, as well do 1997-2007 takeovers compared to 2008-2017 transactions. Therefore, does hostility pay-off? In general no, but in certain situations it does.

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## *CHAPTER 1 – Introduction*

The first chapter covers the academic relevance of the study, as well as a concise description of the literature review, methodology and preliminary results. Moreover, the opted contribution as well as the study's limitations are discussed.

### *1.1 Academic relevance*

Do hostile acquirers overpay more than friendly acquirers in the long run? Merger and acquisition (M&A) literature has dedicated a wide spectrum on takeover activity. Motives to initiate a takeover may vary widely, such as punishing bad management, utilising synergies or diversification. Firms who seek takeovers as part of their business strategy, can initiate a friendly- or a hostile strategy. Either way, opposing management will aim to maximise the offer price, leading to an acquisition premium on top of the firm's market capitalisation in order to gain control. Given the fact that acquirers have a range of strategies at their disposal, at the same time, the target firm's management can adopt a range of takeover defences as well. The question arises, which strategy leads to the best or optimal takeover benefits. Unfortunately, a clear definition for mergers or acquisitions to be beneficial does not exist. The question is: which factor is deemed beneficial? It could be key personnel, product-line diversification but also increased efficiency or a larger market share. Academic literature has numerous studies which examine short-term abnormal returns, which analyse how the acquiring firm's as well as the target firm's stock price move during a specified time frame. According to Goergen & Renneboog (2004), target firm shareholders face a significant wealth increase of 23% prior to the announcement, and includes the announcement effect of 9%. The bidding companies see a mere 0.7% announcement effect for bidding company shareholders. Their study analysed M&A activity in Europe during the 1990's, which ex post showed to be largely increased in the number of deals (Goergen & Renneboog, 2004). Their findings were in line with the results of M&A return trajectories in studies analysing the United States and the United Kingdom, giving a robust insight on how short-term returns move. Moreover, Goergen & Renneboog (2004) found that the status of such transactions play a significant role on the abnormal returns. The results show that hostile acquisitions return 30%, including the run up, for target firms compared to a return of 22%, including run up, for target firms if approached friendly. The substantial difference between hostile bids and friendly bids may be the result of reluctance of target management,

which often receives a revised offer price including an increased premium, hence a higher return (Goergen & Renneboog, 2004). This intuition is confirmed when the returns for shareholders of the bidding firms are analysed. For hostile acquisitions, the abnormal return for bidding companies show a negative return of 2.5%, compared to a positive return of 2.5% for bidder's shareholders if the bid is friendly (Goergen & Renneboog, 2004). In addition, the study on European mergers and acquisitions by Martynova & Renneboog (2006) found comparable results during the fifth European merger wave. According to Martynova & Renneboog (2006), the announcement effects are almost exactly the same as found by Goergen & Renneboog (2004). The reported abnormal returns show the same sign as Goergen & Renneboog (2004), however, the magnitude of the abnormal returns for acquiring companies was less: a negative abnormal return of 0.4% was found for hostile bids. While bidders achieved a positive return of 0.8% for friendly takeovers. Moreover, a larger announcement effect was found if the takeover attempt was hostile (Martynova & Renneboog, 2006). One may preliminary conclude that friendly bids result in more appropriate outcomes in terms of returns. As showed by Goergen & Renneboog (2004) and Martynova & Renneboog (2006), hostile takeove attempts show larger announcement effects which are often beneficial for target shareholders while it has a negative effect on the shareholders of the bidder. Contrary to these findings, Dube, Glascock, & Romero (2008) found that friendly takeovers are not superior to hostile attempts. Dube, et al. (2008) however did not dispute that friendly takeovers ensure lower premia and in addition may be less controversial and/or have higher synergy values, in the long-run the friendly attempt seems not to be superior. The findings of Dube, et al., (2008) point to an interesting finding, as traditional research on takeovers and abnormal returns focus the analysis on short-term return trajectories relative to a benchmark return. Shedding light on the evidence previously presented, it becomes clear that in the short-run shareholders of targeted companies experience postive abnormal returns, independent of the bid attitude. Abnormal returns for bidding companies differ between friendly- and hostile takeovers in the short-run. Taking the perspective from the corporates, such business strategies should result in long-term growth. Therefore, should management be concerned with short-term wealth changes of their shareholders? Assuming investors have a long time horizon the answer would be no. Hence, is it not much more relevant for acquirers to analyze how the abnormal returns of hostile takeover bids develop in the long-run? Consulting the findings of Fuller, Netter, & Stegemoller (2002), who concluded that interpreting long-run

results on acquiring companies are difficult. One reason, and perhaps the most important one, is confounding events. Fuller, et al., (2002) controlled for only acquiring firm characteristics as a confounding event.

However, one may hypothesize that much more than confounding events alone may influence the abnormal long-run returns of bidding companies. It becomes apparent that academics have presented a variety of findings regarding abnormal returns. This study will focus on hostile acquirers' abnormal returns in the long run. Therefore, the research question states:

*“Does a hostile takeover pay off in the long run?”*

### *1.2 Literature review*

Over the course of several decades, the market for corporate control has seen numerous takeover activities. The market is extremely diverse in terms of motives, payment methods, time periods and attitudes. A great deal of academics has devoted their research to the attitude of such corporate restructurings. As mentioned in the section regarding academic relevance, the takeover market distinguishes friendly bids and hostile bids. This study focuses on the latter category: hostile takeover bids. According to Sudarsanam & Mahate (2006), who analysed over 500 takeover transactions between 1985 and 1995 in the United Kingdom, single hostile bidders outperformed multiple hostile bidders, white knights and friendly bidders. This contradicts the perception that hostile takeovers destroy value rather than create value, hence lower (or negative) long-term abnormal returns. The findings of Sudarsanam & Mahate (2006) imply that hostile takeovers are able to offer significant benefits to the bidders' shareholders. Moreover, Sudarsanam & Mahate (2006) do note that recent legislation has included anti-trust regulations, which can be problematic. However, such anti-trust regulations can be anticipated or push target companies into actions to increase the probabilities of anti-trust violations. Therefore, Sudarsanam & Mahate (2006) concluded that hostile takeovers' gains outweigh the costs such as disclosures, regulatory oversights and public scrutiny. Studies of Goergen & Renneboog (2004) and Dube, Glascock, & Romero (2008) found contradicting results regarding abnormal returns for hostile acquirers in the short run. Even though the majority of the academic literature supports the implications that hostile bids are mostly beneficial for the target's shareholders. The

literature in most cases neglects the possibility that hostile bids could pay off for the bidder in the long run as well. Assuming a trade-off between target shareholder benefits and bidder shareholder benefits seem therefore short-sighted. Reviewing Cosh & Guest (2001), who analysed UK hostile takeovers in the period 1985-1996. Cosh & Guest (2001) utilised share returns and accounting measures in order to analyse short-run as well as long-run performance of the bidding company who completed a hostile takeover. Firstly, the results indicated that the disciplinary hypothesis, in which bad management of target firms is punished, did not hold. Hence, underperformance of target firms did not play a role in possible long-run returns. Furthermore, Cosh & Guest (2001) find that not only underperformance but performance in general of target companies do not play a role in the long-run performance of hostile acquirors. This implies that if positive abnormal returns are realised, it is caused by value creation (synergies). Moreover, the returns following a hostile takeover show to improve over time. Cosh & Guest (2001) compared the returns after a hostile takeover with a friendly takeover, and found that the returns after the completion of a friendly takeover do not improve. However, taking a closer look to the transaction, the superior performance of hostile takeovers in the longer-run does not hold when the deals are controlled for method of payment. It seems that long-run performance correlates with cash acquisitions for hostile bids (Cosh & Guest, 2001). In addition, Schwert (2000) found acquiring companies chose the hostile strategy rationally. The study analysed hostile takeovers from 1975 to 1996, and in particular in which cases hostile bids are successful or not using time series. Schwert (2000) concluded that the higher premiums paid to takeover and lower success rates of hostile bids do not result in a lower stock return of the bidding companies. Moreover, Schwert (2000) found strong evidence that auctions play a significant role in hostility. An auction can be the result of the management entrenchment theory but also the bargaining strategy of target's management. Schwert (2000) is inclined to favour the bargaining strategy since the average premia for hostile characterised takeovers show to be higher, which caused deal acceptance. The conclusion hostile takeovers are not dominantly employed to punish bad management was also found by Franks & Mayer (1996). The findings point to bad expected performance rather than realised bad performance by target companies (Franks & Mayer, 1996). Moreover, the small study also shows ultimately accepting a revised bid or rejecting an initial bid was not influenced by pre-bid performance of the target (Franks & Mayer, 1996). All in all, academic literature concerning hostile takeovers concentrate largely

around 1980's and 1990's data. Furthermore, the perception that hostile takeovers ultimately realise lower returns compared to friendly takeovers is contradicted by various studies. Thirdly, researchers have focused in the majority of cases on short-term abnormal returns, whereas long-run returns are at least as interesting.

Therefore, existing literature on hostile takeovers and abnormal returns provide a solid foundation in order to formulate a theoretical framework and construct an empirical model, which will contribute to the literature.

### *1.3 Method & data*

The results are estimated using an ordinary least square regression, which is utilised to examine an event study. The event window is set on -250 to +750. Using the OLS approach, daily stock data from companies which completed a hostile takeover are fitted within the time period. The period -250 to 0 is used to calculate the expected return, using the CAPM intuition. In this manner, the expected return can be estimated which in turn is used to establish the abnormal return. The long-run hostile performance,  $t$  to  $t+750$ , is measured by calculating cumulative abnormal returns (CAR) and buy-and-hold abnormal returns (BHAR), the dependent variables. The abnormal returns are opted to be explained by three explanatory variables. Namely, the method of payment, industry-specification and country specification. Moreover, bidders' and targets' accounting- and financial indicators are added into the model in order to control for previous performance, accounting measures and size. Data is retrieved from Zephyr and Refinitive databases, which provided 63 initial hostile mergers and acquisitions (referred to as takeover).

### *1.4 Preliminary results*

The overall results showed negative abnormal returns for hostile acquirers after a three-year period, independent of payment methods, industry- and country specification. The explanatory variables showed to be significant, but changed in coefficient sign and magnitude when applied on the abnormal returns in different situations. Most findings replicate the results from previous studies. However, a mixed payment method showed to be the one payment method that results in positive abnormal returns, which also holds for non-diversification affecting abnormal returns. On the other hand, the findings contradict that hostile bidders in fact do earn abnormal returns in

the short-term, which was predominantly not the case in previous published literature. Furthermore, hostile bidders' abnormal returns were expected to correlate with all-cash payments, this was not found in this dataset, which favoured the mixed payment method instead. Also, the trajectories and end-results of cumulative- and buy-and-hold abnormal returns are different when they are separated into two decades, where the 1997-2007 period earns significant higher abnormal returns compared to the 2008-2017 period.

### *1.5 Contribution*

The study takes the findings of various academic papers into consideration. First of all, most studies concentrate around takeovers in the United Kingdom and the United States. Secondly, most studies limit the scope of the deals to a decade. Hence, most studies analyse the takeovers that took place in the 1980's or 1990's. Lastly, the studies contrast friendliness and hostility when examining takeovers, and additionally cover firm and deal characteristics in the analysis. In light of the perspectives of previous studies, this study contributes by expanding the scope to global takeover activity. Given the rapid internationalisation of modern businesses and extreme global economic growth which has almost tripled from 2000 to 2019 (World Bank, 2021), cross-border (cross-continent) takeovers are much more likely to take place. Moreover, the time period is extended from one decade to two decades in order to contrast pre tech-era and post tech-era inconsistencies such as two financial crises (2001 and 2007) which nicely relates to the theory that during crises M&A activities declines and increases thereafter. Lastly, hostile takeovers are examined on their own. The rationale behind excluding friendly deals is the number of such deals and the desire to examine hostility in light of different intuitions than only compare hostility to friendliness. Therefore, the study assigns more weight to analyse longer-time periods and global activity over attitude comparisons. In addition, the research contributes to compare recent takeovers, which took place in a tech-driven and internationalised global economy, to studies who focused on country-specific takeovers which took place in a specified decade.

### *1.6 Limitations*

Considering the narrow scope hostile takeovers offer, the research on hostility in corporate control in the first place is compromised by the sample size. As shown in various studies, the number of hostile deals is fairly limited in comparison to friendly takeovers. Especially when dealing with a particular time frame, one decade in most studies (Schwert, 2000); (Cosh & Guest, 2001). Furthermore, since this research deals with long-run performance rather short-term, confounding factors such as economic character of that particular time may influence the performance positively as well as negatively and could cause bias in concluding the result of hostility.

The study will adhere to the following structure. The next chapter will outline the theoretical framework in which both recent and older relevant research findings are described. The third chapter focuses on the method(s) utilised, the description and rationale regarding collected data, and explanations and argumentation of the included variables. Moreover, chapter four will show the results and describes the findings. Lastly, the fifth chapter covers the conclusion and discussion section of the study.

## *CHAPTER 2 – Theoretical framework*

The second chapter covers the theoretical framework of the study. Academic literature involving the market for corporate control, takeover attitudes and time dependent performance are examined.

### *2.1 Market for corporate control*

Through history, the market for corporate control has seen numerous deals which had various motives, methods and end results. According to Jarrel, Brickley, & Netter (1988), during the 1980's the activity in the market of corporate control has increased dramatically. Jarrel, et al. (1988) examine how gains are realised for acquiring companies as well as for target companies. The evidence demonstrates what now is commonly accepted: target shareholders benefit from corporate control activities, be it a merger or acquisition, since gaining control requires a premium in order to acquire. Jarrel, et al. (1988) show that returns for bidding companies depend on the attitude: friendly or hostile. The study offers an interesting take on the reason why returns following the announcement differ between the attitudes. Jarrel, et al. (1988) present various takeover defense strategies which could be responsible for a decrease in the stock price of a hostile bidder. Knowing that companies utilise such defence tactics, let's first examine the rationale behind corporate restructurings. In essence, there are two possible corporate restructures: an operational restructure and a financial restructure (DePamphilis, 2018). Financial restructuring is preferred when a company seeks to alter the capital structure of the firm. Examples of a financial restructure are share buybacks, a leveraged buyout or liquidation. Operational restructuring on the other hand focuses on business improvements. Examples of operational restructures are joint ventures, realignment, divestures, spin-offs and takeovers (DePamphilis, 2018). This study focuses on the last category: takeovers. As mentioned, takeovers seek to accelerate growth of a company by mergers and acquisitions. DePamphilis (2018) outlines nine primary motives for takeovers: synergies, diversification, strategic realignment, hurbis, acquiring undervalued assets (Q-ratio), managerialism, tax considerations, market power, and misvaluation. Each motive shares a common objective: improvement of the current business model and therefore increase shareholder value. Analysing some motives more closely, Ismail (2011) adds on existing literature by taking into account the estimated synergy creation by the bidding company ex ante. Ismail (2011) found that management predicted

synergies are not related to the premium paid. This implies that higher premia do not necessarily imply greater value creation. Hence, higher premia may be the result of other reasons. Revisiting the findings of Jarrel, et al. (1988), takeover defence strategies are proposed as possible factor of higher premia. Jarrel, et al. (1988) preliminary concluded that hostile bidders offering higher premia result in negative abnormal returns in the short-run. Furthermore, misvaluation is proposed as a significant factor for merger and acquisition deals to happen as well. The stock market performance plays a crucial role for this motive. Shleifer & Vishny (2003) analysed acquisitions based on stock market performance. Their findings of short-run performance are consistent with the majority of the cited literature, which has stated that targets' return increase whereas the returns of the bidders decrease. However, Shleifer & Vishny (2003) note that the utilised model becomes interesting when long-run performance is analysed. The model implies that overvalued bidders only use cash-bids if the target is undervalued, disregarding if the offer price exceeds the market price. Hence, a premium is paid. This strategy would yield a positive return in the long-run for the acquiring company. Moreover, Shleifer & Vishny (2003) direct their conclusion towards acquisition through stocks (all-equity). This strategy would only be executed if the bidding company has overvalued stock relative to the target stock. Hence, the stock price is forecasted to decline over time, since it is overvalued, but would not decrease as much if the relative less overvalued target is acquired through stock. Thus, even though the bidder sees a negative abnormal return in the long-run, it could have been worse if the less overvalued company was not taken over (Shleifer & Vishny, 2003). Lastly, the diversification motive is examined more closely. According to Doukas & Kan (2006), firms who have a global span in terms of their operations, trade at a discount relative to similar a portfolio of stand-alone businesses. Doukas & Kan (2006), study 612 cross-border acquisitions and compared diversifiable and non-diversifiable transactions in order to analyse pre- and post acquisition stock prices. Consistent with the findings reported by Denis, Denis, & Yost (2002), Doukas & Kan (2006) show that post diversifying acquisitions the stock price of bidders decline. However, some nuances have to be made in terms of the capital structure of those firms. According to Doukas & Kan (2006), leverage plays a significant role in losing firm value. In contrast to all-equity bidding companies, who did not see a decrease. Lastly, even though their findings show that global diversification favors bondholders rather than shareholders (it lowers shareholders' wealth), it did not show diversification destroyed firm value (Doukas & Kan, 2006). Taking

these highlighted motives for mergers and acquisitions, one observes that the market for corporate restructures offers various possibilities, in which takeover strategies are diverse as well. The forementioned studies from Jarrel, et al. (1988), Shleifer & Vishny (2003), and Doukas & Kas (2006) related several takeover motives to long-term performance. The consensus on the short-run performance is not disputed, it seems that motives, attitude, payment method or industry are not contradicted by the abnormal returns of targets and bidders. Long-run abnormal returns are argued to be much more vulnerable to specific deal characteristics. Therefore, in section 2.2, friendly- and hostile takeovers are outlined and which characteristics are important to take into account.

### *2.2 Hostile- and friendly takeovers*

Reviewing DePamphilis (2018), takeovers are either friendly or hostile. According to DePamphilis (2018), the definition of friendly takeovers is a negotiated tender offer between the acquiring company and the target firm's board. Hence, a friendly takeover takes place when the firm who is seeking the acquisition approaches the management team of the target in order to discuss the merger of acquisition. On the other hand, a hostile tender offer is characterised by the circumvention of the target's management team and a direct approach towards the target business' shareholders (DePamphilis, 2018). A hostile tender offer has five different strategies that can be used in order to reach the shareholders. Option one is called a bear hug, which is a public announcement of the bidding company, stating it seeks to acquire the target for a substantial premium, hoping target shareholders pressure the board to accept the offer (DePamphilis, 2018). Option two is a proxy fight, in which the bidding company approach majority shareholders in the hope to persuade them to remove current management by takeover-favoured executives (DePamphilis, 2018). The third option is purchasing shares at the stock market and thus obtaining voting rights. Note, that a toehold of 5% is usually the first time disclosures must be given regarding ownership. Hence, when acquiring companies reach the toehold of 5% one usually assumes a hostile takeover attempt if intentions are not disclosed (DePamphilis, 2018). Fourthly, litigation may be used as a hostile strategy, accusing current target's management of improper conduct (DePamphilis, 2018). Lastly, a hostile tender offer directly to the shareholders. Aiming to induce target's shareholders to accept without consulting the executive board (DePamphilis, 2018). Note that the definition of a tender offer is a formal

proposal from the bidder towards the target, and can be either friendly or hostile. According to Bhagat, Dong, Hirshleifer, & Noah (2005) academics and commentators have proposed two theories in order to explain the economic perspective of takeovers: bad management punishment and exploitation of business opportunities (synergies). In general, friendly takeovers are associated with synergy-creation, where hostile takeovers are related to punishment of incapable management (Bhagat, et al., 2005). Consistent with earlier findings, Bhagat, et al. (2005) find for negative abnormal returns for hostility. One important feature, however, has yet not been discussed: takeover defences. One could argue that going to shareholders directly would avoid difficult negotiations or delays in the takeover process. Thus, offer a sufficient premium. Takeover defence mechanisms refute this argument. Takeover defence strategies comprise various actions in order to make a hostile bid undesirable. Schoenberg & Thorton (2006) analysed 56 hostile bids in the United Kingdom, which were announced during 1996-1999. The study examined the influence of takeover defence tactics in case a hostile bid was announced. Schoenberg & Thorton (2006) find that around half of the hostile bids were successfully fended off, and report white knights and profit announcements as most frequently used defence tactics. Analysing the success rates of the white knight defence, Schoenberg & Thorton (2006) show a 80% success rate at a statistical significance level of 1%. A second noteworthy finding is the management retention rate. Schoenberg & Thorton (2006) show that 73% of the target's management were not retained at the firm. This 27% retention rate is reported to be significantly lower compared to a 39% retention rate for all completed and friendly and hostile acquisitions (Schoenberg & Thorton, 2006). This finding supports the hypothesis that the market for corporate control's function is punishing bad management. Moreover, Schoenberg & Thorton (2006) shed light on the theories on takeover defence perspectives. Academics have described two perspectives on takeover defences: the management entrenchment theory and the shareholders' interest theory. Schoenberg & Thorton (2006) analysed both theories related to the bid premium and whether the takeover was completed or not. Schoenberg & Thorton (2006) show however no conclusive evidence to support either one of the theories. However, Schoenberg & Thorton (2006) do note that increasing bid premia are beneficial for shareholders. In terms of the management entrenchment theory, the results show that white knights and management buyouts (MBO) are the most promising strategies in order to entrench. Considering the 27% retention rate, current executives should focus on a MBO in order to retain their position

in the firm. Summarising the findings on the difference between friendly and hostile takeover, and therefore the characteristics and implications of hostile tender offers, one may be wondering which route towards a takeover to take. For friendly takeovers, negotiations are undertaken with the target's board, which results in a premium in order to reach an agreement. On the other hand, hostile takeovers circumvents the board but faces other alterations which induce acquirers to pay a premium as well. In section 2.3, the short-run performance are taken under review.

### *2.3 Hostile takeovers short-run performance*

As shown in chapter one and reported in various studies in the literature review, hostile takeovers, in general, realise negative abnormal returns in the short-run. Goergen & Renneboog (2004) examined European merger and acquisition activity, differing from the majority of M&A studies which concentrate on the United States and United Kingdom. The study analyses cumulative average abnormal returns (CAAR) of mergers and acquisitions in an event study. The analysis is conducted in different windows concentrating around the announcement day. Interestingly, Goergen & Renneboog (2004) report CAAR for both the target as well as the bidder. For an event window of  $t-1$  to  $t$   $(-1,0)$  referring to one day prior to the event to the announcement day, the target achieves a CAAR of 9.01% and the bidder realises a CAAR of 0.7%. For an event window of  $t-2$  to  $t+2$   $(-2,2)$ , the CAAR for the target is 12.96% and for the bidder 1.18%. For the event window  $t-40$  to  $t$   $(-40,0)$ , the target firm shows a CAAR of 23.10% compared to 0.4% for the bidder. The last event window is  $t-60$  to  $t+60$   $(-60,60)$  shows a CAAR of 21.66% for the target company and a CAAR of -0.48% for the acquirer (Goergen & Renneboog, 2004). Furthermore, Goergen & Renneboog (2004) show that all cumulative average abnormal returns of the target is statistically significant at 1%. However, when analysing bidders, the cumulative average abnormal returns are only statistical significant, at 1%, for the short event windows ( $t-1$  to  $t$  and  $t-2$  to  $t+2$ ). Therefore, the implications that bidding companies experience shareholder value loss is insignificant at best and inconclusive at worst. Moreover, when Goergen & Renneboog (2004) specify for deal attitude (friendly or hostile), they find consistency with the literature and see negative abnormal returns in all specified event windows for hostility. Only the  $t-60$  to  $t+60$  window shows not to be significant where the others are statistical significant at 1%. Even though the abnormal returns for the bidder when hostile are negative, the magnitude is less for longer event windows. Recapping Goergen & Renneboog (2004), the study

nicely shows the price run up, and therefore the cumulative average abnormal returns. However, their statistically significant results all end at the announcement day or two days after. Hence, these results should be interpreted as price run ups prior to the announcement date, and give negative abnormal returns for hostility up to and at the announcement date. One can therefore conclude, according to Goergen & Renneboog (2004), the hostile process causes negative abnormal returns, but cannot conclude how the returns develop post announcement. Martynova & Renneboog (2006) conducted a similar study and show similar results as Goergen & Renneboog (2004). However, Martynova & Renneboog (2006) report lower magnitudes regarding the abnormal returns, for both friendly and hostile. Martynova & Renneboog (2006) examined the fifth European merger wave, and found an unprecedented number of hostile deals, as well as 501 billion US dollars of total hostile deal value. Martynova & Renneboog (2006) find that deal type and attitude are irrelevant for bidders in terms of hostility or friendliness. In all cases, bidders realise three months after the announcement a negative return, interestingly hostile bids show less negative abnormal returns than friendly ones. As mentioned previously, Dube, Glascock, & Romero (2008) showed that friendly takeovers are not superior to hostile tender offers. Dube, et al. (2008) found that on announcement day friendly deals show positive price corrections, opposed to hostile tender offers. However, three months following the deal, prices decline significantly. This shows that a friendly deals are overestimated by the market at the announcement day and correct over time (Dube, et al., (2008). Moreover, Moeller, Schlingemann, & Stulz (2005) describe that large losses in takeover deals are due to hostility. However, the fraction hostile deals occupy in the total sample is low. Therefore, the results are unlikely bound by deal characteristics (Moeller, et al., 2005). Summarizing the findings for hostile acquirers and their short-term performance seems to be difficult. Studies find in some cases contrary conclusions, but when the short-term performance of hostile and friendly tender offers are compared the friendly ones usually earn 'better' abnormal returns. Even though the implications of short-term abnormal returns, long-run performance analysis will not be affected much. Knowing the share price movements one, two or three months post announcement is mostly interesting for speculation purposes. As DePamphilis (2018) described, mergers and acquisitions have nine motives. However, the most prominent motives relate to long-term objectives and are difficult to implement and benefit from in a one to three month time frame.

#### *2.4 Hostile takeovers long-run performance*

Contrary to short-run performance of hostile tender offers, bidders' long-run abnormal returns are positive in certain situations. Where academics have consensus over the short-run performance, the findings of long-run performance vary. Tuch & O'Sullivan (2007) have examined empirical evidence from several angles. The analysis reviews post-acquisition performance from various perspectives. First, studies which focus on different event windows are listed including their main findings. Tuch & O'Sullivan (2007) summarize the findings for acquirers that either returns are insignificant or abnormal returns are negative in the long-run. Moreover, Tuch & O'Sullivan (2007) point out that long-run performance results may have reliability issues due to overlapping events. The same was found by Fuller, Netter, & Stegemoller (2002), who argued that long-run performances of takeovers are difficult to interpret due to confounding effects. Nevertheless, various studies have examined long-term return trajectories post takeover. Academics who analysed hostile takeover implications have reported several important characteristics which are relevant in order to get an intuition on hostility. First of all, the literature on long-term hostile takeover performance show inconclusive results on the abnormal returns for hostile bidders. Reported long-run abnormal returns by Schwert (2000), Powell & Stark (2005), Cosh & Guest (2001), Sudarsanam & Mahate (2006) and Giannopoulos, et al. (2017) are not consistent with one another in coefficient sign, magnitude and significance level. In addition, and therefore the second relevant insight, the perspective of performance differs among studies. Schwert (2000) and Giannopoulos, et al. (2017) adopt the share price movement perspective, which sheds light on companies' performance relative to the market, pre- and post announcement. On the other hand, Powell & Stark (2005) view hostility from accounting measures, which refer to improvements in profitability and efficiency ratios. The third important factor which has an influence on long-run performance of hostile takeovers is the method of payment. Academics report more consensus on payment methods. Schwert (2000) found that all-cash payments in hostile takeovers outperformed all-equity or mixed payments. This finding was replicated by Giannopoulos, et al. (2017) as well. Lastly, Powell & Stark (2005) indicated differences between same-industry and cross-industry takeovers. Moreover, Giannopoulos, et al. (2017) concluded that specialisation outperforms diversification. Hence, industry characteristics do matter in the analysis on hostility. Reviewing each factor in-depth, the study of Schwert (2000) contributed significantly to the

academic literature on hostile takeovers and their long-run returns. Schwert (2000) used more than two thousand takeover deals over the 1975 to 1996 time period in order to analyse whether hostile deals are significantly different from non-hostile deals. Schwert (2000) adopted four different definitions of 'hostility' to capture a sufficient amount of deals. The findings presented by Schwert (2000) are consistent with the majority of the literature, predicting a negative cumulative abnormal return post announcement for hostile bidders. Schwert (2000) uses historical returns in order to calculate the market model as a benchmark which reflects the normal trajectory of the bidder. However, the market model shows they have a positive intercept prior to the announcement, indicating unusual performance, which does not carry over post announcement. In order to correct for this increased negative trend, Schwert (2000) measures the abnormal returns by subtracting the estimated return by the estimated market model, and setting the intercept equal to zero. Running the regression, Schwert (2000) estimates the four different definitions of hostility separately, of which only the variable in which the target is in play pre-bid shows statistically significant results, indicating speculation before an official bid is submitted. The pre-bid hostility variable shows a negative coefficient of 4.7 (with a t-statistic of -2.12) where the three other measurements (Wall Street Journal/ Dow Jones News Retrieval identification for hostility, Stock Data Company indicator for hostility and unnegotiated tender offers) show statistically insignificant results, where only the WSJ/DJNR report a positive coefficient of 4.8% (Schwert, 2000). Furthermore, Schwert (2000) found correlations of the bidders' returns with the stock price run-up and mark-up, which contradicts the accepted perception that lower bidder returns are the result of overpayment of the target's shares. Hence, the time period and its characteristics are influential on the return trajectory. Cosh & Guest (2001) follow a similar approach as Schwert (2000) and Powell & Stark (2005), and take a sample of 64 hostile takeover deals which have taken place in the UK between 1985 and 1996. In contrast to other studies, Cosh & Guest (2001) widen the event window and examine the abnormal returns three years after the takeover announcement. Cosh & Guest (2001) explain the median post-takeover returns as a result of median pre-takeover performance of the combined firms. Furthermore, additional independent variables are added to the model, such as the deal attitude, method of payment and horizontal/vertical takeover. Moreover, the market-to-book value is introduced as control variables. Cosh & Guest (2001) analysed share price movements as well. Cosh & Guest (2001) find consistent results in terms of target returns, both hostile- and

friendly takeover target's show to have significant abnormal returns of 5.0% and 9.1% respectively. For bidding companies, Cosh & Guest (2001) find for a four-year period after the takeover a -4.1% median abnormal return for hostile bidders, which are insignificant. While friendly bidders show a -22.1% median abnormal return, which is significant at the 1%-level (Cosh & Guest, 2001). Furthermore, an insignificant return of -7.4% return for shareholders of the hostile bidder, whereas shareholders of a friendly bidder return -16.6% at a 5% significance level (Cosh & Guest, 2001). The negative abnormal returns could be the result of missing confounding variables, according to Cosh & Guest (2001). However, the results clearly indicate the difference between friendly takeovers and hostile takeovers, and from the bidder's vantage point, a hostile approach would be preferred. More recently, Giannopoulos, Holt, Khansalar, & Mogoya (2017) reviewed the long-run performance of United States acquirers post M&A activities. Giannopoulos, et al. (2017) contributed to the literature by applying the Fama-French 3-factor model as the expected return for M&A bidders and go into detail on several effects. Moreover, the study distinguishes itself from the previous literature discussed in the sense that it does not examine the 1980's and or 1990's, but focus predominantly on the 2000's (1999-2008) and on US bidders rather than UK or European bidders. Giannopoulos, et al. (2017) hypothesize that after a three-year period post-announcement, hostile acquirers achieve higher abnormal returns than friendly bidders. The results which specify deal attitude do not reject the hypothesis. Hostile deals score in the three event windows (0-12 months, 0-24 months and 0-36 months) on a 1% significance level higher abnormal returns than the abnormal returns for friendly takeovers, which are significant on a 1% level as well. Moreover, the abnormal returns for friendly deals are negative in each time window. Hostility on the other hand, seems to return 20.4% in year 3 (Giannopoulos, et al., 2017). However, the results should be treated with caution. The sample size of the hostile deals is extremely small (n=9), especially in contrast to the sample size of the friendly takeovers (n=343). In addition, the results of Giannopoulos, et al. (2017) are consistent with the reported abnormal returns of Cosh & Guest (2001) for UK acquirers in terms of the differences in returns considering deal attitude. Sudarsanam & Mahate (2006) analysed the long-run performance in the market of corporate control, but distinguished deal attitude into four categories: hostile, friendly, white knight or hostile facing multiple competitors. In line with the previous studies, Sudarsanam & Mahate (2006) conclude that three-years after the takeover, hostile bids showed the 'best' abnormal returns which were ranging between -1% to -6% but are

insignificant. Friendly bids showed abnormal returns ranging between -10% and 16% and are significant (Sudarsanam & Mahate, 2006). Additionally, the difference between hostile and friendly abnormal returns are significant at a 5% level. Moreover, Sudarsanam & Mahate (2006) conclude that single hostile acquirers outperform friendly bidders, hostile bidders facing rivals and white knights. The latter three categories do not differ in performance according to Sudarsanam & Mahate (2006). Finally, Sudarsanam & Mahate (2006) concludes not to be able to reject the hostility hypothesis, which stated hostile bidders experienced greater wealth gains. The deepening specification on deal attitudes, white knights and multiple bidders, raises the question how competition (friendly and hostile) influence abnormal returns. The influence of competition, known as the 'auction effect', show that abnormal returns of single hostile bidders are higher than a multi-bidding auction. Moreover, white knights do not gain higher abnormal returns than non-white knight acquirers (Sudarsanam & Mahate, 2006). Shifting to the second factor, the perspective of performance, Powell & Stark (2005) differ in their approach. Rather than analysing stock price movements over time, Powell & Stark (2005) take operating profits, or earnings before interest, taxes, amortization and depreciation (EBITDA), in order to see how the operational cash flows of a firm develop following a takeover. As concluded from the literature review on short-run performances, doubts arise how well integration is accomplished. The EBITDA measurement provides a relatively easy and well-known financial indicator of operational performance. However, EBITDA is limited in its explanatory power due to lacking investment and working capital requirements (shown by free cash flows). Therefore, Powell & Stark (2005) utilise two definitions for the performance measurements. Firstly, EBITDA is adjusted for changes in working capital and prepayments less non-tax and non-interest accruals, in order to correct for accounting policies, redefined as pure operating cash flows. Second, the regular EBITDA measure is taken in order to make comparisons. In the methodology, Powell & Stark (2005) account for pre-announcement characteristics, such as size, (dominant) financial performance and/or accounting measurements. In addition, the benchmarks also account for such characteristics (size and performance), in which the performance indicators are measured relative to pre- and post takeover industry medians. However, when testing improvements following a takeover methodological issues arise. Powell & Stark (2005) utilised a regression-based method and a change-based method. Based on statistical results, the change-based method is not a good predictor to estimate improved operating cash flows. Furthermore, Powell & Stark (2005) found

that the pure operating cash flows perform as the best predictor. Moreover, the adjusted benchmarks for industry, size and characteristics do not alter the results compared to other utilised benchmarks. In addition, the results seem not sensitive for deal attitude, method of payment and other characteristics. Due to the lack of strong influence of the controls and the sensitivity of the methodology applied, the findings are difficult to base conclusions on. In conclusion, Powell & Stark (2005) found that the sample size of UK takeovers did not show operating cash flow improvements, this goes for hostile takeovers as well. Powell & Stark (2005) examined a different approach to show if takeovers result in improvements. The main issue, as mentioned, is sensitivity in the methodological approach and constructing an accurate benchmark in order to measure incremental operational cash flows as a result from the takeover. In addition, Cosh & Guest (2001) examined performance using accounting measurement as perspective as well. Cosh & Guest (2001) measured performance of the bidder as profit return, which can be analysed from different perspectives. Cosh & Guest (2001) refer to two perspectives in which profit returns can be adopted. The first perspective is improvement in the operating margin or improved asset productivity. Secondly, selling poor performing assets is used as the other perspective. Operating margin improvements can come from a variety of sources. Employment costs such as salaries and/or remuneration packages however show for both friendly and hostile takeovers insignificant results (Cosh & Guest, 2001). Contrary to employment, sales as the core component of measurement does show statistically significant results with operating profit generated by a unit of sales. Hostile takeovers show pre-announcement -0.1% abnormal profit margin which transform to 0.3% post takeover. Friendly takeover, however, do not show increased profit margins (Cosh & Guest, 2001). Moreover, Cosh & Guest (2001) examined the cash proceeds which were earned by the sale of poor performing assets. Again, hostile takeovers show a significant increase in asset sales of 1.0%, where friendly takeovers do not show disposals of assets. Lastly, capital expenditures are reviewed in order to measure improved performance. Cosh & Guest (2001) show a 2% decrease in capital expenditures of hostile takeovers, however, the reported results are not significant. Thirdly, the method of payment has been found an important factor by Schwert (2000) and Sudarsanam & Mahata (2006). Schwert (2000) pointed to the importance of payment methods for hostile takeovers. The all-cash payments showed to positively affect bidder returns, which is consistent with the literature even though the found coefficient showed to be larger (11.4%) than found in seasoned equity offer

studies. One possible explanation offered by Schwert (2000) states that all-cash offers imply positive information towards the market regarding the bidder's shares value, while all-equity offers usually imply overvaluation (misvaluation by the market), as implicated by Shleifer & Vishny (2003). Moreover, the method of payment once again has been indicated as a factor for performance differences between friendly and hostile takeovers. Sudarsanam & Mahate (2006) report that friendly takeovers prefer all-equity or mixed bids, where hostile bids usually are offered using all-cash or mixed bids. Hostile acquirer's tendency to use all-cash payments origin from deal execution speed, legal considerations and stock listing disclosures (Gregory & Matatko, 2004). Lastly, Giannopoulos, et al. (2017) show that bidding companies which utilise a specialisation strategy outperform bidders who aim on diversification in the long-run. Over time, several merger-waves have been observed. The latest merger-wave follows global economic developments, related to internationalisation and technological leaps forward, observing cross-border and cross-industry merger-and-acquisition activity. The results found by Giannopoulos, et al. (2017) could imply that vertical takeovers require much longer to integrate in order to improve performance rather than horizontal mergers, which apparently benefit (more) rapidly from economies of scale and/or economies of scope. In summary, long-run performances of hostile acquirers do differ from short-run abnormal returns. Various studies have examined the long-run abnormal returns by hostile bidders in contrast to friendly acquirers. The literature is inconclusive in terms of positive or negative abnormal returns following hostility, which can be examined from different perspectives, but does however reject the dominance of friendly takeovers which is seen in the short-run. Moreover, methods of payments likely are attitude dependent in order to be beneficial for the takeover, which is shown by hostile takeovers' success correlation with all-cash payments. Lastly, industry specification (horizontal or vertical takeover) cause differences in performance, where cross-industry takeovers seem to decrease firm value.

## *2.5 Hypotheses*

Following the presented literature, several interesting insights are gained in order to formulate hypotheses regarding hostile takeovers. First of all, various (or a lot) of studies have analysed takeovers, distinguishing friendliness and hostility, and yet so much is inconclusive or contradicted by two or more studies. It seems hostility, which is confirmed by its absolute number of occurrence relative to friendly takeovers, are used in specific situations with apparently a difficult rationale to grasp in a model. Nevertheless, several hypotheses are defined in order to contribute to the existing academic literature. Considering the studies described, one notices that hostile bidders do not underperform in the long-run compared to friendly takeovers and reverses the results from short-run performance. However, conclusions are based on comparison studies rather than isolating different restructuring strategies. Hostile takeovers are expected to earn abnormal returns in the long-run, specified as a three-year period, but show negative abnormal returns one month after the announcement, which refers to the short-run performance. Therefore, hypothesis one (H1) reflects expectations regarding long-run performance, where hypothesis two (H2) defines expectations in terms of short-run performance.

*H1: Takeovers which are by definition hostile, earn a positive abnormal return after a three-year period*

*H2: Takeovers which are by definition hostile, earn a negative abnormal return after a one-month period*

Advancing towards an in-depth analysis on hostility, academics pointed out how secondary characteristics occupy a relevant role in a takeover's success. A widely accepted premise on takeovers is the role of method of payments. For hostile takeover, a positive correlation between positive long-run abnormal returns and all-cash payments was found. Therefore, the third hypothesis (H3) aims to replicate this intuition. In addition, industry specification is not as conclusive as payment methods, but nevertheless does show to be influential on whether abnormal returns are positive or negative in the long-run. Therefore, hypothesis four (H4) defines expectations on industry influence on long-run performances. Moreover, the increased international economic system raises the question how takeovers perform when they are cross-

border. Given the different cultures, regulations and other country characteristics, the fifth hypothesis (H5) states the expectation on long-run performance of hostile takeovers when comparing cross-border and within-border takeovers. Lastly, the sixth hypothesis involves a comparison between the different time periods, 1997-2007 to 2008-2017. Since no time period comparisons are found in the literature, but rather confirming findings, the hypothesis six (H6) states the expectation that no differences in abnormal returns are found between the two time periods.

*H3: Hostile takeovers using all-cash payments outperform hostile takeovers using all-equity or mixed payments in terms of abnormal returns after a three-year period*

*H4: Same-industry hostile takeovers outperform cross-industry hostile takeovers in terms of abnormal returns after a three-year period*

*H5: Within-border hostile takeovers outperform cross-border hostile takeovers in terms of abnormal returns after a three-year period*

*H6: Abnormal returns are similar in terms of trajectory and performance between 1997-2007 and 2008-2017 after a three-year period.*

## *CHAPTER 3 – Methodology*

The third chapter covers the methods, variables and data which are involved in the analysis. Furthermore, the chapter concludes with descriptive statistics before proceeding to the results.

### *3.1 Methods*

Following Schwert (2000), Cosh & Guest (2001), Sudarsanam & Mahate (2006) and Giannopoulos, et al. (2017), this study as well adopts an event study approach in order to estimate abnormal returns post hostile takeovers. Even though the referred to studies do not estimate abnormal returns to a similar definition, CAR or BHAR as dependent variable for example, an event study provides the research to analyse stock return movements over a specified period of time. An ordinary least square regression enables the research to estimate the effect(s) of one or more explanatory variable on the dependent variable. In this case, which factors attribute significantly to positive or negative abnormal returns. However, according to Brown & Warner (1985), estimating events using ordinary least square (OLS) regressions face some estimation biases. Brown & Warner (1985) simulated daily stock data and found consistencies with their previous results on monthly stock data. An important takeaway on Brown & Warner (1985) points to particular issues which could be faced when utilising an OLS regression for an event study. First of all, non-normality on returns and abnormal returns in this case. Dealing with non-normality, not normally distributed data issues potentially arise when taking the Gauss-Markov theorem in mind. However, Brown & Warner (1985) downplay this issue by stating a sufficiently large sample size mitigates non-normality. Nevertheless, as discussed in previous literature and in the contribution part in particular, hostile takeovers are significantly less frequently used compared to friendly takeovers or other restructuring strategies. Hence, researching hostile acquisitions have almost per definition a low sample size and consequently have to cope with non-normally distributed data. Brown & Warner (1985) fortunately conclude on non-normality of daily data does not affect the event study methodology and remains a reliable method to show significance levels. The second issue tabled by Brown & Warner (1985) is autocorrelation of abnormal returns related to the rejection of the null-hypotheses. For multi-day event studies, Brown & Warner (1985) find that t-statistics testing can be improved by applying simple alterations on the variance estimations. However, such alterations result in limited improvements and mostly apply to special cases. In addition,

MacKinlay (1997) argues that research concerning corporate finance has adopted event studies dominantly. Event studies suit wealth effects and price movement research after corporate events well, and can be considered robust given the fact event studies have been used in numerous merger and acquisition research (MacKinlay, 1997). This study therefore will adopt an event study as its method. The event study is broken down into a pre-takeover phase, completion date and post-takeover phase. Considering Schwert (2000), Cosh & Guest (2001) and Giannopoulos, et al. (2017), the long-run abnormal returns have been estimated in a three-year post-announcement time frame. The pre-takeover period varies among studies. Schwert (2000) uses one year, Cosh & Guest (2001) use three-years prior to the takeover, and Giannopoulos, et al. (2017) argue pre-announcement stock prices are irrelevant given the long-run perspective of the study. This argument is believed to be flawed, since a benchmark return is calculated based on historical data, hence a pre-takeover time period is important after all. Therefore, this study follows Schwert (2000) in order to construct a benchmark which is based on a period not long before the takeovers are completed (one year), and enable to put the abnormal returns into perspective. Taking a one year period prior to the event repulses time specific characteristics that may influence the historical return and therefore the benchmark. Furthermore, given the fact the study deals with stock returns, the time period needs to be adjusted for trading days rather than all days in a year. This adjustment leads to 250 trading days in a year. Therefore, the event window is set on 250 trading days prior to the takeover and 750 trading days post-takeover (-250, 750).

### *3.2 Variables*

As described previously, an ordinary least square regression includes a dependent variable, explanatory variables and control variables. Section 3.2 outlines each category in detail.

#### *3.2.1 Dependent variable*

The dependent variable is the abnormal return for acquirer  $i$  in time period  $t$ . Abnormal returns can be calculated according to different equations. This study favours stock price data over accounting measurements, since such values could be exposed to ‘accounting tricks’ which potentially could alter or mislead its implication. Therefore, this study utilises the cumulative abnormal return (CAR) and buy-and-hold abnormal return (BHAR) approaches as its dependent

variable. The two calculations differ in the sense of intuition, where the CAR refers to a simple sum of abnormal returns, where BHAR includes the compounding effect (Agathee, Sannassee, & Brooks, 2014). BHAR calculations incorporate compounded returns and therefore could satisfy acquiring shareholders better (Agathee, et al., 2014). Cumulative abnormal returns are simply the sum of the abnormal return realised in each period  $t$ . Note that the CAR and BHAR calculations are extremely similar in terms of their equation, but differ slightly in their intuition. However, both approaches are measured related to a benchmark which is the same in both equations.

$E(R_{it})$  refers to the benchmark return for company  $i$  in time period  $t$ . Constructing the benchmark return can be done through various methods. Financial economics literature offers a variety of methods which measure expected returns. Popular approaches include the famous capital asset pricing model (CAPM), the Fama-French three factor model and Carhart's four factor model. Considering the latter two models, who include additional factors to the CAPM. Fama and French proposed an alteration to the 'classical' capital asset pricing model by adding size effects and the value premium on top of the market excess return. The company's size is controlled for by including the market capitalisation, where the value premium distinguishes between value and growth companies which is shown by book-to-market equity values (Fama & French, 1993). Carhart (1997) altered the three-factor model of Fama and French, and added a momentum factor into the equation. According to Carhart (1997), momentum shows the velocity of stock price trajectories and should be taken into consideration when analysing expected returns. However, both models go beyond the required expected return needed for this study. Fama-French's three-factor model in essence control for size and value premium, which in this study will be firm specific control variables. Hence, if the three-factor model is utilised, such factors are accounted for twice and are not analysed which effect they have on hostile abnormal returns. Carhart's four-factor model again includes these control variables but also includes momentum. This extension, certainly relevant, does not fall within the hostility perspective in this study. The analysis on long-run performance of hostile takeovers requires knowledge on how company  $i$  moves measured its benchmark, similar to Fama-French's three-factor model, the study includes controls which could imply momentum. More importantly, looking ahead towards the explanatory variables, including the factors into the benchmark might result into being unable to analyse the factors' coefficients and influence on the abnormal returns. Therefore, the

expected return is estimated using the intuition like Fama and MacBeth suggested (Fama & French, 2004), and defined CAPM as shown in equation 1.

$$R_{it} - R_{ft} = \alpha + \beta_{mt} * (R_{mt} - R_{ft}) + \varepsilon_{it} \quad (1)$$

The expected return's most important component is the beta ( $\beta$ ), which refers to the risk-profile of a company relative to the market. For an event study, the run-up period prior to the announcement is used in order to measure the risk profile. Hence, the one-year period before the takeover takes place is used to calculate the expected return, utilising the intuition of CAPM.

The abnormal return (AR) is obtained by subtracting a benchmark return, the return that the acquiring company is expected to return  $E(R_{it})$  to its shareholders from the actual realised return  $R_{it}$ . The abnormal return formula is defined in equation 1 (Barber & Lyon, 1997).

$$AR_{it} = R_{it} - E(R_{it}) \quad (2)$$

Cumulative abnormal returns are calculated by summing up all periods' abnormal returns. The cumulative abnormal return formula is defined in equation 3 (Barber & Lyon, 1997). The CAR approach is a relatively simple approach in order to measure either positive or negative abnormal returns and shows by how much the takeover under- or overperforms over a period of time.

$$CAR_i = \sum AR_{it} \quad (3)$$

The buy-and-hold abnormal return (BHAR) differs from the cumulative abnormal returns by not assuming rebalancing after each period and does show investors' experience (Lyon, Barber, & Tsai, 1999). According to Barber & Lyon (1997), the cumulative abnormal returns and buy-and-hold abnormal returns do differ when analysed over time (in the long-run). Barber & Lyon (1997) briefly analysed the differences between CAR's and BHAR's based on 100 portfolios consisting of 100 sorted companies by size with annualised data, and found when the annual BHAR approaches 28%, it drastically outperforms cumulative abnormal returns. Hence, when the effect of compounding reaches its potential, the buy-and-hold abnormal returns shows

shareholders its relevance. Barber & Lyon (1997) define BHAR as stated in equation 4, where  $\Pi(1 + R_{it})$  is the compounded actual realised return and is subtracted by  $\Pi(1 + E(R_{mt}))$  is the compounded benchmark return.

$$BHAR_i = \Pi(1 + R_{it}) - \Pi(1 + E(R_{it})) - 1 \quad (4)$$

Summarizing the dependent variable, three elements are of importance. First of all, the benchmark return is estimated according to CAPM's intuition. Second, the abnormal return is calculated by subtracting the expected return (benchmark) from the actual quoted return. Lastly, two approaches, CAR and BHAR, are consulted in order to capture a 'simple' approach, period-by-period, and a shareholders' approach. Furthermore, examining two different models serve nicely as a robustness check as well.

### *3.2.2 Explanatory variables*

Revisiting section 2.5 in which the hypotheses were stated, two hypotheses focused on the implications of time on hostile takeovers' performance where the remaining three hypotheses capture the study's three explanatory variables. The explanatory variables are method of payments, same- or cross-industry takeovers and same- or cross-country takeovers. Note that most studies include such variables into their study as a control variable rather than as an explanatory variable. However, by including methods of payment, country and industry specifications as explanatory variables, the study opts to draw conclusions on their influence on hostile takeovers' performance, which is contradictory to most studies, which apply the variables in order to distinguish the results of friendliness versus hostility, while controlling for size, methods of payment, industry specification and other variables.

The methods of payment are divided into three categories: all-cash, all-equity or a mix between cash and stock (mixed), which is consistent with the majority of the literature. Given the nature of takeover analysis, most attention is drawn to the abnormal returns of one or various takeover strategies (CAR and BHAR). Nevertheless, in-depth analysis reveals more about whether hostility results in success. Studies who opt to examine which characteristics influence takeover performance are able to select a wide range of such characteristics. The method of payment has

been argued to show positive market implications whereas all-equity bids point to overvaluations. Studies have showed all-cash payments are most often used by hostile takeovers, arguably to benefit from execution speed of the transaction and less regulatory compliances. The method of payment will be a dummy variable, since a deal is financed either with cash, stocks or a mix of both, and is denoted as MOP in the regression model. Note that all-cash payments are used as the reference category for all regressions. Secondly, industry specification is utilised in order to grasp which role diversification plays on hostility. Theory suggests that diversification destroys firm value rather than it increases value. One proposed explanation relates to the lack of synergy benefits when cross-industry firms are taken over. After the event, it could be difficult to maximise department combinations in order to benefit from economies of scale and scope and remove redundant staff and/or departments. Similar to the methods of payment variable, the industry characteristic is a binary variable. Therefore, in order to measure its influence on post-takeover performance, an industry dummy variable is included as an explanatory variable of which the cross-industry category is used as the reference. The variable is denoted as SAMEIND. Lastly, taking into account an increased internationalised economic environment, which has evolved the economic and financial system in terms of cross-border involvement, therefore, the one may hypothesize that merger and acquisition activities see a similar trend. However, whether cross-border activity increases is not extremely relevant, the relationship between cross-border activity and long-run returns is. Therefore, the third explanatory variable will again be a dummy variable which specifies whether the hostile takeover is cross-border or not, for which the cross-country category is the reference. The variable is denoted as SAMECON in the model.

### *3.2.3 Control variables*

The main intuition on control variables refers to exclude any other effects that may influence the long-run abnormal results of hostile acquirers. Factors such as size, turnover, excess liquidity and/or operational efficiency could cause hostile acquirers to earn abnormal returns. In order to interpret the explanatory variables correctly, the abnormal returns should be explained by the independent variables, independently of other factors, the control variables. The control variables are consulted from both an acquirer-perspective as target-perspective. Cited in various studies, the market-to-book ratio is argued to be a relevant factor for a takeover (Schwert, 2000).

Distinguishing value companies from growth companies, the market-to-book value shows whether a company is overvalued or undervalued. Companies with a high market-to-book ratio are believed to perform well by the market relative to its book ratio, whereas companies with a low market-to-book ratio are believed to underperform. Note that the market-to-book ratio is not used to explain a takeover motive, but rather control for any post-acquisition performance. Hence, the long-run performance is not influenced the previous market-to-book ratios of both the acquirer and/or the target firm, and is denoted as MTBV and TMTBV respectively. Secondly, the acquirers market capitalisation (MKTCAP) is controlled for as well. Larger sized companies could benefit more easily from economies of scale or scope in order to smoothen integration, resulting in synergies and ultimately positive long-run performance. In addition, the debt-to-equity (DE) of the acquirer is accounted for as well. Controlling for highly leveraged companies controls for gearing, in which operations may be financed by its liabilities or equity. Moreover, the net revenues (REV) of the acquirer are controlled for, following a similar argument as for size. In addition, the earnings before interest, taxes, depreciation and amortization (EBITDA) of the acquirer is included as control as well, in order to exclude the influence of pre-takeover operating performance (in relation to revenues). In turn, the target's operating efficiency is controlled for by measuring the turnover relative to the target's total assets (TTAT). The measurement sheds light on how well the target utilises its assets in order to achieve its revenues. An asset-based control for operating efficiency is selected since these assets are taken over, and could be redundant, or not, which potentially influences long-run performances. The last control variable for targets is the price-earnings ratio (TPE), which measures the target's stock price relative to the target's earnings per share, and therefore controls for high earning targets. The data for each control is retrieved from the Refinitive Thompson Reuters database (Eikon) for each ISIN code. In case of a missing value, the dummy variable adjustment method is applied in which the mean value for that particular missing value is used. By using the mean, at least some weight of the controls' influence is carried over to the observations which have missing values. Furthermore, in order to exclude merged financial statements and differences in years applicable to the deals, the data is consulted from disclosed financial statements one year prior to the year in which the deal was completed.

### 3.2.4 Model

Since all relevant variables, dependent, explanatory and control, are discussed, the model can be written which is utilised in the regression. Model 1 is used if the dependent variable is the cumulative abnormal return (CAR) and model 2 is used if the dependent variable is the buy-and-hold abnormal return (BHAR). Equation 5 shows the regression model for CAR, where equation 6 refers to the model for BHAR.

$$CAR_{it} = \beta_0 + \beta_1 MOP_{it} + \beta_2 SAMEIND_{it} + \beta_3 SAMECON_{it} + \beta_4 MTBV_{it} + \beta_5 TMTBV_{it} + \beta_6 MKTCAP_{it} + \beta_7 REV_{it} + \beta_8 EBITDA_{it} + \beta_9 TTAT_{it} + \beta_{10} TPE_{it} + \beta_{11} DE_{it} + \varepsilon_{it} \quad (5)$$

$$BHAR_{it} = \beta_0 + \beta_1 MOP_{it} + \beta_2 SAMEIND_{it} + \beta_3 SAMECON_{it} + \beta_4 MTBV_{it} + \beta_5 TMTBV_{it} + \beta_6 MKTCAP_{it} + \beta_7 REV_{it} + \beta_8 EBITDA_{it} + \beta_9 TTAT_{it} + \beta_{10} TPE_{it} + \beta_{11} DE_{it} + \varepsilon_{it} \quad (6)$$

### 3.3 Data

The data required for the variables included are retrieved from two databases, and can be seen as two separate stages. At first, a selection of filters is applied in Zephyr, a database on M&A activities. The study considers only mergers and acquisitions, which are characterised as hostile. Furthermore, since stock data is required, each acquirer is obligated to have an ISIN (International Securities Identification Number) in order to retrieve stock prices and returns. Lastly, the time frame is set on 1997-2017 in order to include the highly technological economic environment and its run-up, and being able to measure a minimum of three-year returns post-takeover. Stage two is conducted with the Eikon database, which connects the ISIN's retrieved from Zephyr with the required stock- and accounting data. The selected filters in stage one resulted in 77 deals (Zephyr, 2021), which were reduced to 63 due to troubled ISIN data (Eikon, 2021). Comparing the sample size with Schoenberg & Thornton (2006) and Cosh & Guest (2001) who analysed 56 and 63 hostile bids respectively in a similar study, 63 deals is considered a reasonable sample size. Moreover, the Zephyr database is consulted as well in order to retrieve the method of payment, industry- and country specifications of the deals (Zephyr, 2021), where the Eikon database retrieved the data required for the controls as well (Eikon, 2021).

### 3.4 Descriptive statistics

The section regarding the summary statistics provides a brief and concise overview of which data formats each variable relates, how the observations are distributed in the dataset and if correlations between and/or among variables exist. Table 3.1 shows a summary of the dataset, in which the mean and standard deviation values are discussed, as well as the minimum and maximum percentile are shown, as well as the number of observations. Table 3.2 shows the correlation matrix, showing how all variables move compared to all others.

Table 3.1 – Dataset summary

VARIABLES	(1) N	(2) mean	(3) St. Dev	(4) Min	(5) Max
Actual return	47,312	0.0262	2.794	-46.15	102.0
Expected return	47,312	0.0310	1.181	-12.34	11.96
Abnormal return	47,312	-0.00488	2.698	-45.03	103.3
CAR	47,312	0.0541	0.453	-2.278	2.327
BHAR	47,312	0.0262	0.449	-0.929	4.657
All-cash payment	47,312	0.556	0.497	0	1
All-stock payment	47,312	0.190	0.393	0	1
Mixed payment	47,312	0.254	0.435	0	1
Same country	47,312	0.730	0.444	0	1
Same industry	47,312	0.698	0.459	0	1
Market to book ratio	47,312	1.975	6.629	-42.24	18.49
Debt to equity ratio	47,312	184.4	633.0	-668.4	4,808
Current ratio	47,312	4.200	7.757	0.0500	47.94
Targets' market to book ratio	47,312	2.835	4.257	-0.570	27.32
Targets' price/earnings ratio	47,312	13.57	22.11	-86.69	106.2
Targets' total asset turnover	47,312	0.811	0.539	-0.230	2.320
Market capitalisation	47,312	7.929	52.30	0.000416	419.3
Revenue	47,312	7.842	49.38	-0.00453	396.0
EBITDA	47,312	3.552	23.16	-0.00140	185.7

Considering the results in table 3.1, the first observation is column 1, which shows the number of observations, shows the dataset has two missing observations in terms of time periods.

Furthermore, since abnormal returns are not relevant pre-takeover, the CAR and BHAR observations cover a timespan of completion data  $t$  to  $t+750$ . Secondly, CAR and BHAR values show hostile takeovers on average earns positive abnormal returns, where CAR's are higher than BHAR values, which are in line with expectations. Lastly, the dummy variables show that cash payments are most often used where stock payments are least often used. Also, most takeovers take place within the same industry and the same country, implying less diversification and internationalisation.

Table 3.2 – Correlation matrix

VARIABLES	CAR	BHAR	Market to book ratio	Debt to equity ratio	Targets' market to book ratio	Targets' price/earnings ratio	Targets' total asset turnover
CAR	1.000						
BHAR	0.902***	1.000					
Market to book ratio	0.133***	0.078***	1.000				
Debt to equity ratio	-0.007	-0.037***	0.340***	1.000			
Targets' market to book ratio	-0.021***	-0.048***	0.251***	0.075***	1.000		
Targets' price earnings ratio	-0.022***	-0.050***	0.154***	0.502***	0.187***	1.000	
Targets' total asset turnover	-0.092***	-0.042***	-0.039***	-0.083***	-0.056***	0.052***	1.000

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Taking into account the number of variables, only particular correlations between variables are included into the matrix. Besides obvious observations such as a high positive correlation (0.902) between cumulative abnormal returns and buy-and-hold abnormal returns, the magnitude of the correlations of the control variables on cumulative abnormal returns and buy-and-hold abnormal returns show to be slightly different. In addition, the magnitudes in general show not to correlate strongly, varying between 0.19 and -0.09. However, the correlation between the debt-to-equity ratio and targets' P/E ratio (0.502), the debt-to-equity ratio and market-to-book ratio (0.340) and the bidders' market to book ratio and the targets' market to book ratio (0.251) are an exception on this finding.

Lastly, the dataset's noteworthy characteristics provides additional descriptive insights. Of the 63 deals, 77.7% involved a takeover stake that went from a minority holding to controlling interest. Of those 77.7% (49 deals), 43% of the deals were 100%-share transactions. Only six takeovers involved transactions in which the remainder of shares outstanding were purchased, increasing the holdings from majority to 100% ownership. All other deals involved either additional percentages or non-disclosed transactions. In addition, all deals mounted to a total deal value of 167 million euros, which is 2.8 million on average per deal, noted that four transactions did not disclose a deal value.

## CHAPTER 4 – Results

The fourth chapter analyses the methodological output from various perspectives. At first, the sample size compares CAR and BHAR results with one another. Secondly, each hypothesized explanatory variable is analysed in-depth. Moreover, a comparison to previous studies is made in order to show replications or differences in the found results.

### 4.1 CAR and BHAR comparison

Table 4.1 Cumulative Abnormal Returns & Buy-and-Hold Abnormal Returns

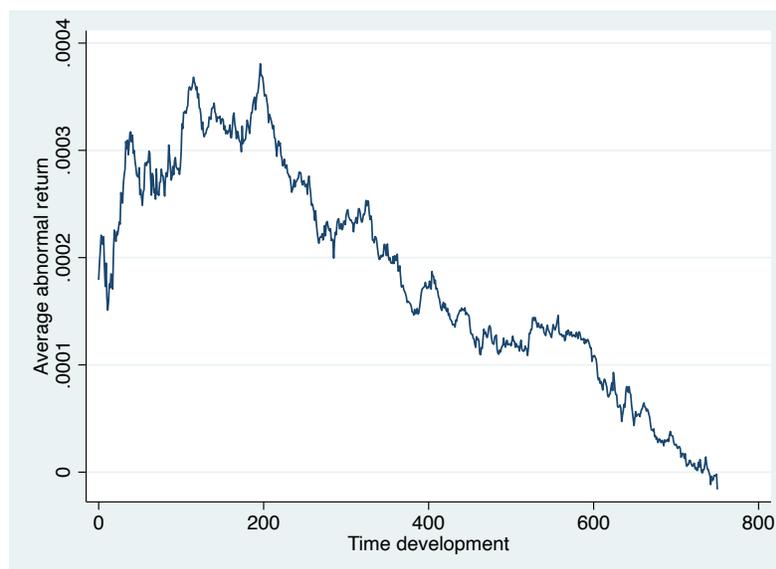
VARIABLES	(1) CAR	(2) BHAR
All-stock payment	-0.0365*** (0.00590)	-0.0249*** (0.00582)
Mixed payment	0.0761*** (0.00539)	0.0578*** (0.00531)
Same country	0.0236*** (0.00491)	0.0201*** (0.00484)
Same industry	-0.000894 (0.00479)	-0.00516 (0.00473)
Market to book ratio	0.0125*** (0.000343)	0.00967*** (0.000339)
Debt to equity ratio	-6.12e-05*** (4.08e-06)	-5.85e-05*** (4.02e-06)
Market capitalisation	-0.0119*** (0.00103)	-0.0160*** (0.00102)
Revenue	0.0231*** (0.000931)	0.0326*** (0.000918)
EBITDA	-0.0200*** (0.00163)	-0.0312*** (0.00161)
Current ratio	-0.00725*** (0.000302)	-0.0113*** (0.000298)
Targets' market to book ratio	-0.00446*** (0.000525)	-0.00595*** (0.000518)
Targets' price/earnings ratio	-0.000598*** (0.000114)	-0.00107*** (0.000112)
Targets' total asset turnover	-0.0775*** (0.00394)	-0.0428*** (0.00389)
Constant	0.111*** (0.00666)	0.0930*** (0.00657)
Observations	47,312	47,312
R-squared	0.071	0.078

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

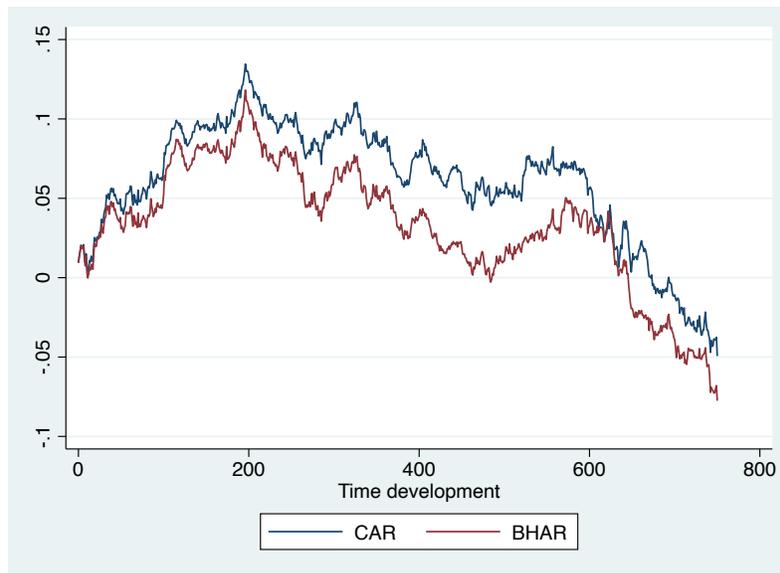
Considering table 4.1, the regression output for cumulative abnormal returns (CAR) and buy-and-hold abnormal returns (BHAR) shows which effect each explanatory variable has on the both dependent variables. First of all, an adjusted R-squared, which for simplicity from now on is

referred to as ‘R-squared’, shows a low coefficient, indicating a low explanatory power of the model. Usually, studies on economics show R-squared coefficient around 0.3. Therefore, the general results indicate that a considerable large part of the effect is shifted to the error term. This finding was predicted in terms of confounding effects which may have steered the abnormal returns. On the other hand, previous studies showed that the explanatory variables did play a significant role, which points to caution interpreting explanatory power of the overall regression output. Secondly, three of the four explanatory variables show significance levels a 0.01 level, only the industry variable for CAR shows a five-percent significance level. Only the same-country variable (internationalisation hypothesis) results not to be significant. In addition, the methods of payment show a positive and negative effect on cumulative- and buy-and-hold abnormal returns, where their coefficient magnitude on BHAR is slightly stronger. Note, that all-cash payments are used as the reference based on their dominant position in the existing literature. Moreover, only the non-significant variable (same country) is the one variable that has a positive effect on CAR and BHAR. Lastly, examining the control variables briefly, the accounting measures (revenues and EBITDA) are significant for CAR as opposed to BHAR, where security measures (targets’ market-to-book ratio and targets’ price/earnings ratio) are significant for BHAR in contrast to CAR. These findings are in line with the expectations, given the intuition of cumulative abnormal returns and buy-and-hold abnormal returns (investor-aimed).

Graph 4.1 – Average abnormal return



Graph 4.2 – Average CAR and BHAR



In addition, graph 4.1 and graph 4.2 show the average return trajectories. Taking graph 4.1, the plain abnormal returns are graphed from completion date  $t$  to  $t+750$  (three years after takeover). The most striking observation is the return path, which increases up to around 4% during the first three-fourths of year one. This contradicts the majority of findings presented various studies on short-term abnormal returns of hostile takeovers, which concluded they return negatively. Moreover, the trajectory declines to around zero, meaning the acquirer has integrated the takeover, since it does not outperform its expected return anymore. Graph 4.2 shows return trajectories of CAR and BHAR, which result in 0.10 for CAR and 0.075 BHAR in year one. Moving along, the returns for both dependent variables decline and become negative, on average, in year three.

In summary, the overall results suggest the mixed payment and industry explanatory variables have a positive effect on CAR's and BHAR's. Furthermore, the average abnormal returns show short-term positive returns, declining to full-integration. In addition, CAR's and BHAR's show similar return trajectories, in line with average abnormal returns, but decline to become negative during the third year. These preliminary implications contradict the short-term and long-run hypotheses. However, the results require in-depth examination considering the effects of the explanatory variables.

## 4.2 Method of payment analysis

Table 4.2 – CAR and BHAR controlled for methods of payment

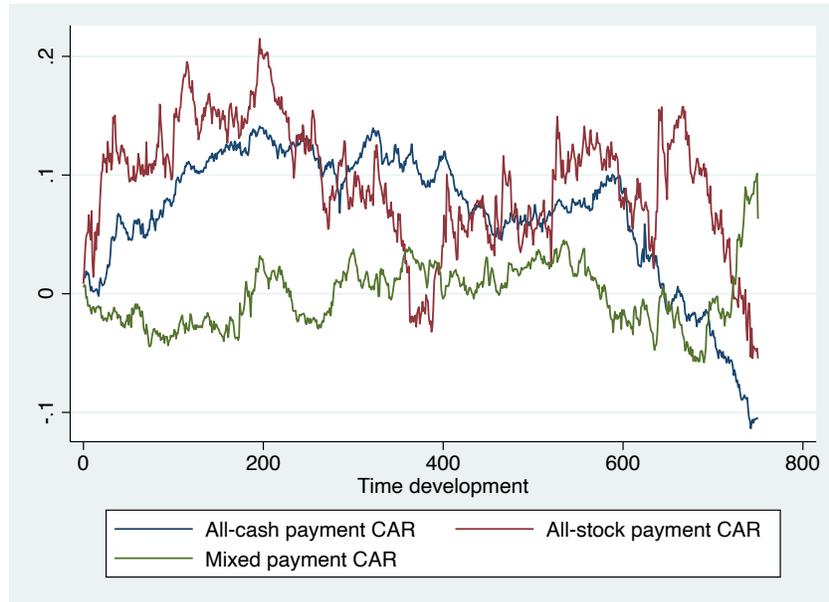
VARIABLES	(1) CAR	(2) BHAR	(3) CAR	(4) BHAR	(5) CAR	(6) BHAR
Same country	-0.0904*** (0.00551)	-0.0600*** (0.00494)	4.174*** (0.0611)	4.892*** (0.0772)	0.772*** (0.00858)	0.447*** (0.00844)
Same industry	0.0254*** (0.00569)	-0.00956* (0.00510)	-0.301*** (0.0239)	-0.175*** (0.0302)	-1.225*** (0.0150)	-1.137*** (0.0148)
Market to book ratio	-0.0319*** (0.00140)	-0.0244*** (0.00126)	0.256*** (0.00751)	0.282*** (0.00948)	-0.106*** (0.00297)	-0.104*** (0.00293)
Debt to equity ratio	3.93e-06 (2.24e-05)	0.000144*** (2.01e-05)	-0.0159*** (0.000485)	-0.0177*** (0.000613)	0.000102*** (8.12e-06)	9.37e-05*** (7.99e-06)
Market capitalisation	0.00473** (0.00188)	0.0119*** (0.00169)	-0.301*** (0.00761)	-0.328*** (0.00961)	-0.238*** (0.00681)	-0.254*** (0.00671)
Revenue	-0.00193 (0.00150)	0.000258 (0.00134)	0.519*** (0.00944)	0.609*** (0.0119)	0.214*** (0.00691)	0.206*** (0.00680)
EBITDA	-0.00415 (0.00284)	-0.0251*** (0.00255)	0.627*** (0.0171)	0.706*** (0.0216)	0.329*** (0.00374)	0.204*** (0.00368)
Current ratio	0.00150*** (0.000415)	-0.00268*** (0.000373)	-0.107*** (0.00166)	-0.129*** (0.00210)	-0.0548*** (0.000772)	-0.0544*** (0.000760)
Targets' market to book ratio	-0.000410 (0.000603)	-1.40e-05 (0.000541)	-0.183*** (0.00572)	-0.210*** (0.00722)	-0.200*** (0.00272)	-0.146*** (0.00268)
Targets' price/earnings ratio	-0.00161*** (0.000136)	-0.00220*** (0.000122)	0.0229*** (0.000547)	0.0201*** (0.000690)	0.0168*** (0.000194)	0.0133*** (0.000191)
Targets' total asset turnover	-0.0640*** (0.00547)	-0.0207*** (0.00491)	0.0326*** (0.00896)	0.0623*** (0.0113)	0.0317*** (0.00562)	0.0606*** (0.00553)
Constant	0.214*** (0.00870)	0.147*** (0.00780)	-3.839*** (0.0507)	-4.589*** (0.0640)	0.860*** (0.0232)	1.024*** (0.0228)
Observations	26,285	26,285	9,012	9,012	12,015	12,015
R-squared	0.078	0.081	0.672	0.645	0.635	0.529

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

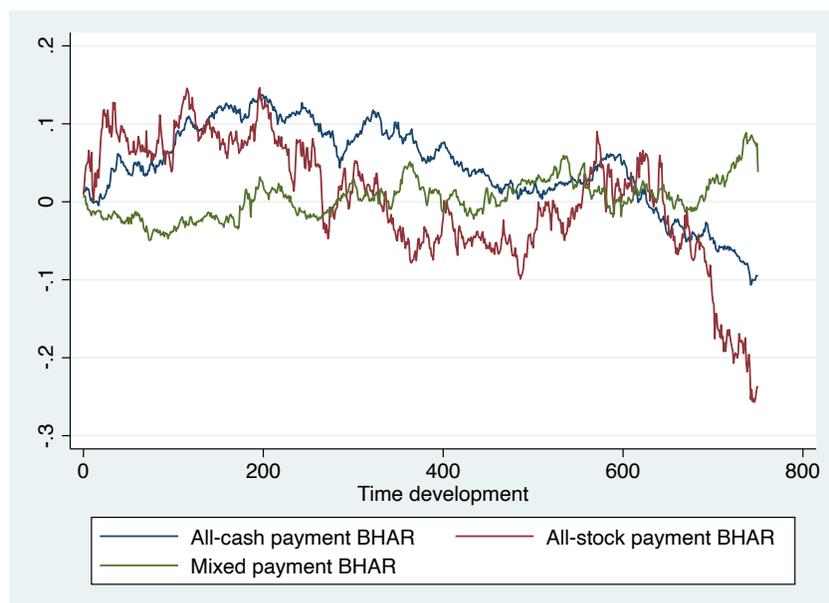
Table 4.2 shows the regression results for CAR and BHAR, specifying for method of payment. Column 1 and 2 show CAR- and BHAR results for only all-cash payment takeovers, column 3 and 4 show CAR- and BHAR results for all-stock payment only transactions, and column 5 and 6 show CAR- and BHAR results for only mixed payment deals. Firstly, the R-squared has improved considerably compared to the regression output in section 4.1. BHAR results are explained less by the model in comparison to CAR, which was the other way around in table 4.1. Moreover, the all-stock and mixed payment methods show, relative to economic studies, a high r-squared, probably due to a smaller sample size of all-equity and mixed payments compared to all-cash payments. Secondly, most coefficient signs have flipped. Where in the original regression, the mixed payment and industry-variable had a positive effect, differences are observed comparing methods of payment. Except for all-cash payments, show all-stock and mixed payments consistent coefficient signs, where all-stock shows relatively strong magnitudes. Indicating that the all-cash paid takeovers have a strong influence on the overall results given the

change in coefficient sign. Lastly, the country-variable shows varying coefficient signs. For all-cash, the sign for CAR is positive, and negative for BHAR; the signs are positive for all-stock payments and for mixed payments. Hence, the effect of internationalisation differs among payment strategies. Again, the magnitude of the country-coefficient on CAR and BHAR is relatively strong for all-stock payments compared to all-cash and mixed payments.

Graph 4.3 – CAR's specified for methods of payments



Graph 4.4 –BHAR's specified for methods of payments



Taking into account graph 4.3 and 4.4, the return trajectories of average CAR's and average BHAR's, respectively, are specified for method of payment. 55% of the sample size is paid with all-cash and shows a similar trajectory as shown in graph 4.2, the overall CAR and BHAR. However, the magnitudes are slightly higher, considering a higher peak and an end CAR and BHAR in year-three of -10%, compared of -5% overall. All-stock payment takeovers result in higher gains in year-one, around 20% for CAR and 15% for BHAR, but falling returns towards and during the third year are of a lower magnitude for CAR, around -5%, and a much higher magnitude for BHAR, around -25%. The comparison between all-cash payments with all-stock payments replicates the academic literature, which provided evidence that all-cash takeovers outperform all-stock deals in the long-run. Lastly, the return development of mixed payment takeovers, using all-cash and all-stock as a benchmark, show a trajectory that is completely different and for the first time shows positive abnormal returns for both the CAR and BHAR in the long-run. In addition, mixed payments result in negative abnormal returns in the short-run, even out in the second year, and become positive in year three. Moreover, the magnitudes relative to all-cash and all-stock payments are lower, and move around -5% and 5% during the first two years post-takeover. Also, the trajectory does point to treat the implications with caution, as the abnormal returns become positive around two-years and one-third, and have steep line towards positive CAR's and BHAR's.

In summary, selecting one style of payment, either all-cash or all-stock, seems to result in negative abnormal returns in the long-run in both measurements. However, all-stock show higher volatility in their abnormal return trajectory, this could point to difficulties of capital restructurings as opposed to a relatively simple buyout of shareholders with excess cash. What is most striking is the fact that mixed payment deals show positive abnormal returns. Even though the abnormal returns rise in the beginning of year three, the late spike towards abnormal return is consistent with the intuition on takeovers such as the duration of integrating assets, market segments and business culture. Nevertheless, the sample size of mixed payment takeovers is moderate, sixteen, compared to 35 all-cash and twelve all-stock takeovers.

### 4.3 Industry analysis

Table 4.3 – CAR and BHAR controlled for diversification

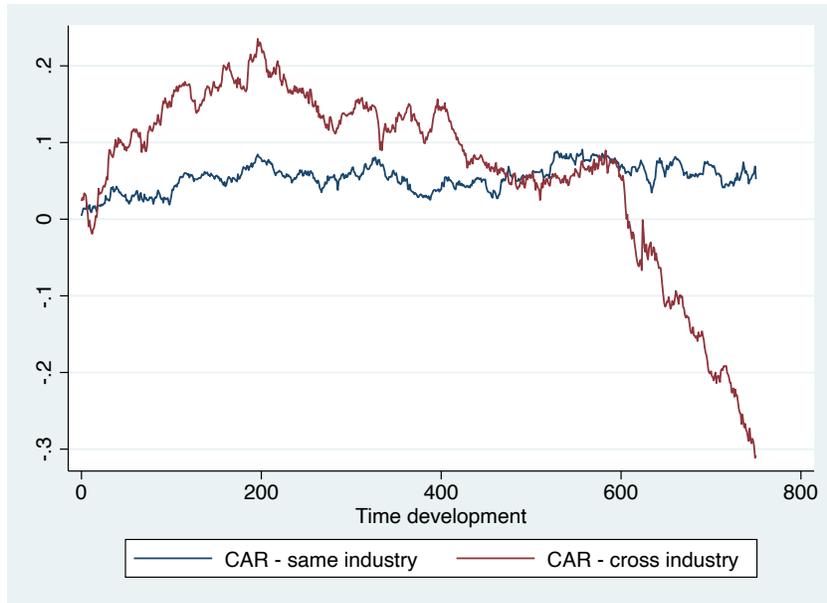
VARIABLES	(1) CAR	(2) BHAR	(3) CAR	(4) BHAR
All-stock payment	0.0871*** (0.00754)	0.161*** (0.00752)	-0.181*** (0.0230)	-0.617*** (0.0212)
Mixed payment	0.0590*** (0.00608)	0.0424*** (0.00606)	0.272*** (0.0153)	0.219*** (0.0141)
Same country	-0.0830*** (0.00629)	-0.111*** (0.00627)	0.279*** (0.0163)	0.503*** (0.0150)
Market to book ratio	0.0115*** (0.000351)	0.0100*** (0.000350)	0.162*** (0.00873)	0.114*** (0.00805)
Debt to equity ratio	-1.94e-05*** (4.18e-06)	-1.73e-05*** (4.16e-06)	-0.000853*** (8.99e-05)	0.000318*** (8.29e-05)
Market capitalisation	-0.0133*** (0.00126)	-0.0297*** (0.00126)	-0.0647*** (0.00379)	-0.108*** (0.00349)
Revenue	0.0533*** (0.00119)	0.0592*** (0.00119)	0.0533*** (0.00340)	0.105*** (0.00314)
EBITDA	0.0130*** (0.00258)	-0.0330*** (0.00257)	0.0333*** (0.00328)	0.0210*** (0.00303)
Current ratio	-0.0211*** (0.000614)	-0.0224*** (0.000612)	-0.0177*** (0.000682)	-0.0221*** (0.000629)
Targets' market to book ratio	-0.00326*** (0.000552)	-0.00628*** (0.000550)	-0.0164*** (0.00489)	0.0210*** (0.00451)
Targets' price/earnings ratio	-0.00123*** (0.000119)	-0.00163*** (0.000119)	0.0105*** (0.000632)	0.0183*** (0.000583)
Targets' total asset turnover	-0.0522*** (0.00492)	-0.0202*** (0.00490)	-0.154*** (0.00763)	-0.162*** (0.00704)
Constant	0.126*** (0.00709)	0.148*** (0.00707)	-0.294*** (0.0279)	-0.619*** (0.0258)
Observations	33,043	33,043	14,269	14,269
R-squared	0.120	0.124	0.222	0.292

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

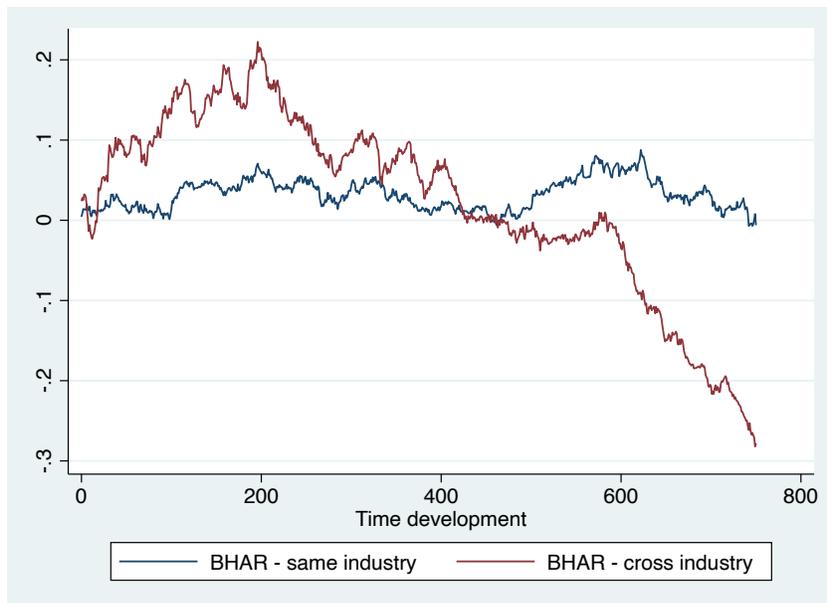
Consulting table 4.3, a regression is made specifying for same- or cross-industry takeovers. Column 1 and 2 show CAR- and BHAR results for takeovers that took place within the same industry, where column 3 and 4 show CAR- and BHAR results for cross-industry takeovers. First, the R-squared of the model shows to be low for same-industry and reasonable for cross-industry takeovers. The effect of the method of payment coefficients show mixed signs and magnitude compared to section 4.1, where all-stock payments does have a positive effect for same-industry takeovers and a negative effect for cross-industry ones. Mixed payments show to be positive in either specification. Considering the internationalisation aspect, one observes that the same-country variable has a negative effect on CAR and BHAR if takeovers are within the same industry, where internationalisation has a positive effect if the deal involves a cross-

industry takeover. In other words, diversification (cross-industry) as a motive benefits CAR's and BHAR's if executed internationally, where synergy-motivated takeovers, aiming to benefit from economies of scale and/or scope, affects CAR's and BHAR's positively if the takeover is nationally.

Graph 4.5 – CAR's for same- and cross-industry takeovers



Graph 4.6 – BHAR's for same- and cross-industry takeovers



Eye-balling graph 4.5 and graph 4.6, showing the average CAR and BHAR for industry specification, a preliminary conclusion might be that diversification dilutes acquirers' abnormal returns. Graph 4.5 shows the cumulative abnormal return for same- and cross-industry takeovers. Same-industry hostile deals show a steady trajectory and result in around a 6% return. Where, cross-industry takeovers show a strong positive drift in the short-run but result in a negative CAR of around -30%. Graph 4.6 plots the BHAR developments for same- and cross-industry takeovers. The same-industry BHAR resembles the CAR trajectory, but results in a -0.5% abnormal return. Contrary, after a three-year period, cross-industry BHAR's end up around minus 28%, however a less steep fall compared to CAR cross-industry takeovers.

In summary, the results on industry specification, whether a firm within the same industry or cross-industry is taken over plays an important role in earning abnormal returns. Synergies positively affect abnormal returns, especially cumulative abnormal returns but less so for buy-and-hold abnormal returns. Cross-industry hostile takeovers earn abnormal returns in the short-run, contradicting the short-run hypothesis, but decline strongly over time.

#### 4.4 Country analysis

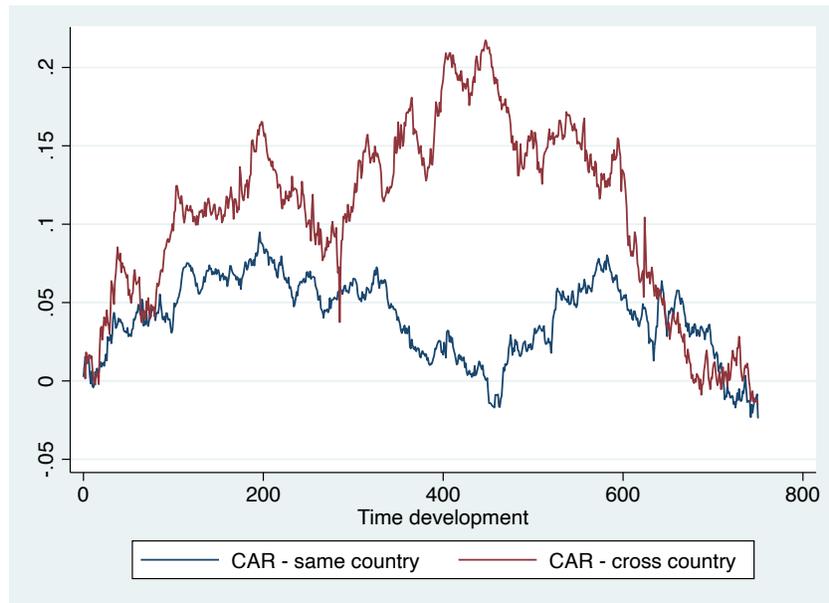
Table 4.4 – CAR and BHAR controlled for internationalisation

VARIABLES	(1) CAR	(2) BHAR	(3) CAR	(4) BHAR
All-stock payment	0.117*** (0.00636)	0.110*** (0.00662)	1.365*** (0.101)	-0.821*** (0.0966)
Mixed payment	0.220*** (0.00588)	0.136*** (0.00612)	-0.847*** (0.0115)	-0.387*** (0.0109)
Same industry	-0.146*** (0.00538)	-0.147*** (0.00560)	0.170*** (0.0111)	0.103*** (0.0106)
Market to book ratio	0.0112*** (0.000327)	0.00838*** (0.000341)	0.233*** (0.00637)	0.230*** (0.00608)
Debt to equity ratio	-2.67e-05*** (5.31e-06)	-1.23e-05** (5.53e-06)	0.000121 (9.41e-05)	-0.000346*** (8.98e-05)
Market capitalisation	-0.0128*** (0.00111)	-0.0197*** (0.00116)	0.282*** (0.00857)	0.207*** (0.00817)
Revenue	0.0375*** (0.00103)	0.0487*** (0.00107)	-0.242*** (0.0107)	-0.0188* (0.0102)
EBITDA	-0.0487*** (0.00197)	-0.0574*** (0.00205)	-0.0253*** (0.00349)	-0.0496*** (0.00333)
Current ratio	-0.0150*** (0.000417)	-0.0172*** (0.000434)	0.0270*** (0.00190)	-0.0144*** (0.00181)
Targets' market to book ratio	0.000916* (0.000508)	-0.000866 (0.000529)	-0.390*** (0.00411)	-0.291*** (0.00392)
Targets' price/earnings ratio	-0.00246*** (0.000228)	-0.00303*** (0.000238)	0.00589*** (0.000146)	0.00352*** (0.000139)
Targets' total asset turnover	-0.0855*** (0.00408)	-0.0481*** (0.00425)	0.491*** (0.0158)	0.187*** (0.0150)
Constant	0.198*** (0.00617)	0.188*** (0.00642)	-0.148*** (0.0275)	-0.0558** (0.0263)
Observations	34,545	34,545	12,767	12,767
R-squared	0.161	0.143	0.573	0.511

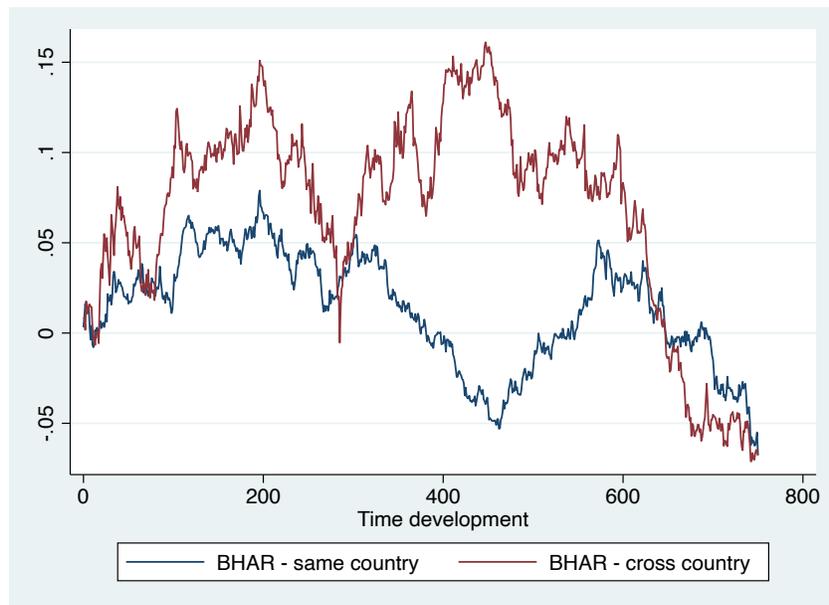
Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Reviewing the results on internationalisation, hostile takeovers taken place within the same- or cross-country. Column 1 and 2 show CAR- and BHAR same-country results, where column 3 and 4 show CAR- and BHAR results for cross-country hostile takeovers. The results show inconsistencies compared to the previous results. Especially the effect of mixed payments plays is extremely different between same- and cross-country hostile takeovers. However, the significance levels are again 1% and consistent with previous tables. Similar to the industry regression output, the R-squared for same-country takeovers is low compared to slightly high for cross-country hostile deals. Furthermore, the industry-variable is consistent with the results presented in section 4.3.

Graph 4.7 – CAR's for same- and cross-country takeovers



Graph 4.8 – BHAR's for same and cross-country takeovers



Taking graph 4.7 and 4.8, the average CAR and BHAR paths over time are shown, differentiating between same- and cross-country hostile deals. Both within- and cross-country takeovers show positive CAR and BHAR developments. However, cross-country CAR's and

BHAR's have higher magnitudes and therefore a larger decline in the third-year, which causes the abnormal return to end negatively. On the other hand, within-country BHAR fluctuates between 5% and -5%, and ends around -6% after three years. The cross-country CAR moves steadily between 5% and zero, and results in a -1.5% return. Internationalisation shows to have a larger positive effect, peaking at around 20% in the second year. However, comparisons among payment methods and industry specification showed different trajectories within the comparison. This is not the case for same- and cross-country deals, which in general show similar effects and trajectories, only differing in the second-year post-takeover.

In summary, same- and cross-country variable affects cumulative- and buy-and-hold abnormal returns negatively in the long-run. However, they do show a different trajectory in terms of within-country takeovers result in a (just) negative abnormal return with a lower magnitude compared to cross-country hostile deals.

#### 4.5 Time period analysis

Table 4.5 – CAR and BHAR controlled for time period

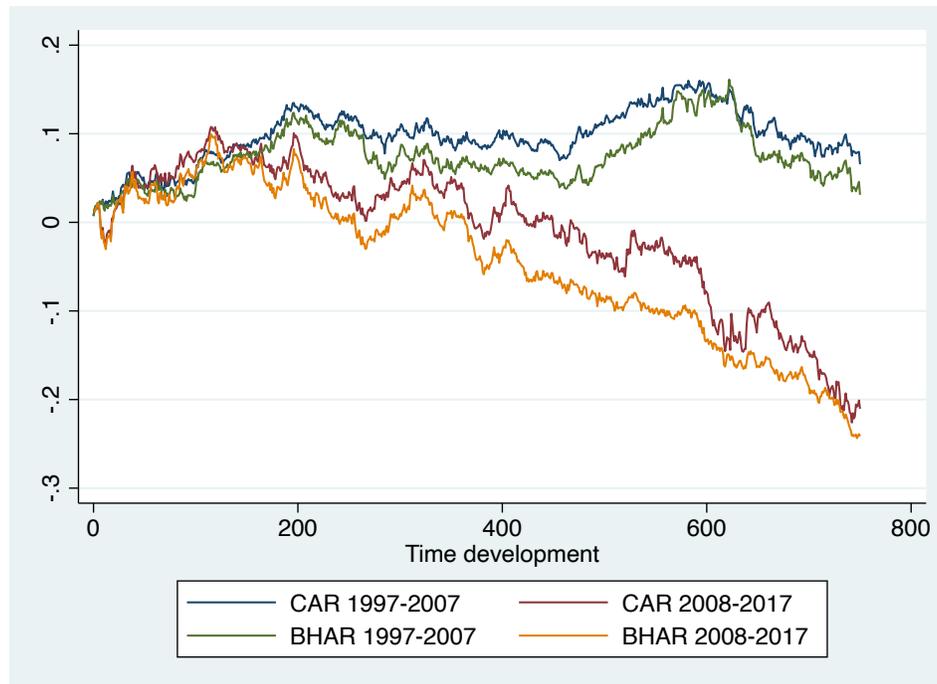
VARIABLES	(1) CAR	(2) BHAR	(3) CAR	(4) BHAR
All-stock payment	0.145*** (0.00887)	0.140*** (0.00903)	-0.398*** (0.00979)	-0.371*** (0.00838)
Mixed payment	0.0919*** (0.00696)	0.00698 (0.00708)	0.00198 (0.00694)	0.0588*** (0.00593)
Same country	-0.359*** (0.00659)	-0.326*** (0.00671)	0.505*** (0.00735)	0.400*** (0.00629)
Same industry	0.151*** (0.00656)	0.160*** (0.00668)	-0.404*** (0.00735)	-0.354*** (0.00628)
Market to book ratio	0.00854*** (0.000331)	0.00585*** (0.000337)	0.0790*** (0.00518)	0.122*** (0.00443)
Debt to equity ratio	7.36e-05*** (9.02e-06)	8.71e-05*** (9.18e-06)	-0.000142*** (1.31e-05)	-0.000321*** (1.12e-05)
Market capitalisation	-0.00512*** (0.00137)	-0.0143*** (0.00140)	-0.0638*** (0.00249)	-0.0793*** (0.00213)
Revenue	0.0399*** (0.00125)	0.0665*** (0.00127)	0.0460*** (0.00146)	0.0481*** (0.00125)
EBITDA	-0.0704*** (0.00250)	-0.107*** (0.00255)	0.0372*** (0.00397)	0.0470*** (0.00339)
Current ratio	0.0738*** (0.00193)	0.0730*** (0.00196)	-0.0156*** (0.000477)	-0.0214*** (0.000408)
Targets' market to book ratio	-0.00790*** (0.000517)	-0.0120*** (0.000526)	0.00351 (0.00232)	0.0122*** (0.00198)
Targets' price/earnings ratio	-0.00168*** (0.000118)	-0.00202*** (0.000120)	-0.00630*** (0.000319)	-0.00529*** (0.000273)
Targets' total asset turnover	-0.169*** (0.00434)	-0.142*** (0.00441)	-0.145*** (0.00784)	-0.0992*** (0.00670)
Constant	0.146*** (0.00820)	0.126*** (0.00834)	0.0452*** (0.0132)	-0.0203* (0.0113)
Observations	28,537	28,537	18,775	18,775
R-squared	0.296	0.311	0.343	0.418

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Reviewing table 4.5, the model to explain average cumulative abnormal return and average buy-and-hold abnormal returns shows a sufficient R-squared, which is slightly better for 2008 to 2017 takeover deals (column 2) compared to takeovers during 1997-2007 (column 1). The coefficient signs and magnitudes for the variables for the methods of payment are not similar for all-stock payments and are less significant for mixed payments to the previous results, the effect of the industry specification and country specification are reversed. The effect of non-diversification is negative for takeovers taken place in 2008 to 2017, while this effect is positive in the 1997-2007 period. Furthermore, the effect of same-country takeovers differs over the two

timeframes as well. Hostile takeovers which took place within the same country had a negative effect on CAR's and BHAR's for 1997-2007 deals, but changed in coefficient sign for hostile takeovers during 2008-2017. Moreover, all explanatory variables, both time periods show 0.01 significance levels.

Graph 4.9 – CAR and BHAR over time periods



Consulting graph 4.9, which shows average CAR and BHAR movements in distinguished time periods, 1997-2007 and 2008-2017. The hostile takeovers which were completed during 2008 and 2017 show a brief positive abnormal return trajectory and decline thereafter to around -20% at the end of the third year. Contrary to the 2008-2017 takeovers, hostile deals from 1997 to 2007 do result in positive abnormal returns, averaging between 5% (BHAR) and 7.5% (CAR). Interestingly, both time periods cover a financial crisis which do not result in similar effects on abnormal returns. The dot-com bubble, covering the 1997-2000 period, shows no negative effect on CAR's and BHAR's, however, a slight decline is observed in second year's averages, as well as a decline at the end of year-3 but remain positive. On the other hand, 2008-2017 hostile deals, facing the bankruptcy of Lehman Brothers including its aftermath, earn only in the short-run abnormal returns, but decrease through a strong drift to around -20% at the end of the last year. Revisiting the in-depth analyses regarding payment methods, industry- and country-

specification, these findings could help explaining the differences in performance between the two time periods. Economic theory has suggested to use all-equity payments in case of over- and undervaluation of businesses. During the crises, both scenarios could be applicable considering all-time highs on stock indices and bursting bubbles resulting in sharp declines. However, the ‘market share’ of all-stock payments is similar to the overall tendency of utilising this payment strategy. However, around 60% of the all-equity payments take place in 2008-2017, which implies a small advantage on the latest period but remains inconclusive that the all-stock payment has a distinctive influence on CAR and BHAR between the time periods. Furthermore, the influence of same-industry takeovers shows to be important, considering graph 4.6. In the 1997-2007 period, around 87% of the takeovers involved a same-industry deal, which decreased to 54% during 2008-2017. This implies that the industry effect is again relevant, the larger share of same-industry takeovers, the higher CAR and BHAR are shown. Lastly, the country specification showed less influence on CAR’s and BHAR’s. However, the share of within-country deals increased from 63% in 1997-2007 to 77% in 2008-2017. Nevertheless, the effect on CAR and BHAR remains marginal.

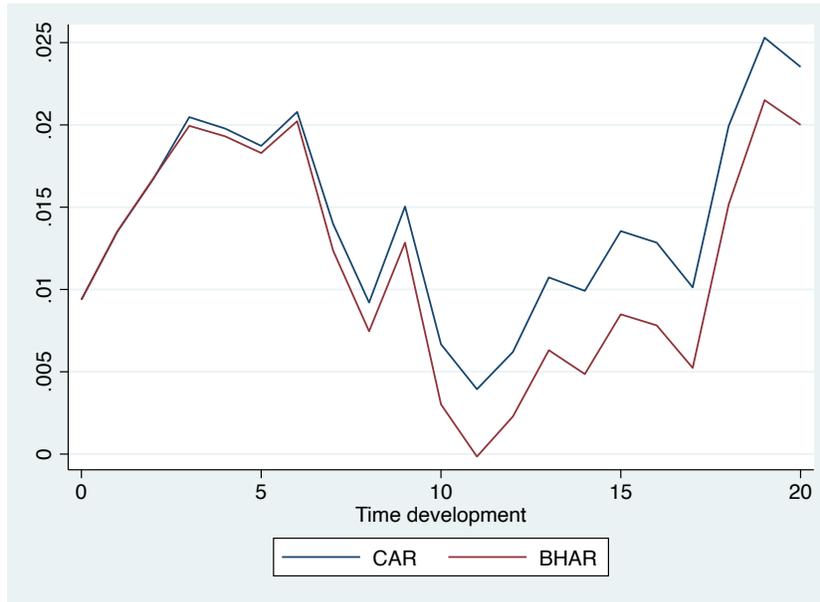
In summary, large differences are observed when both ‘decades’ are compared to one another. The first period, 1997-2007, shows a positive abnormal return for both CAR and BHAR observations. The 2008-2017 timeframe, however, shows a strong decreasing trajectory after a brief positive peak in the first year. Furthermore, the effects of payment methods as well as country-specification are marginal. The influence of diversification, or rather non-diversification does play a role in order to earn positive abnormal returns in the long-run. The 1997-2007 has far more same-industry takeovers in comparison to 2008-2017, exceeding by 33%. Hence, the industry has a significant positive effect on abnormal returns.

#### *4.6 Comparison analysis*

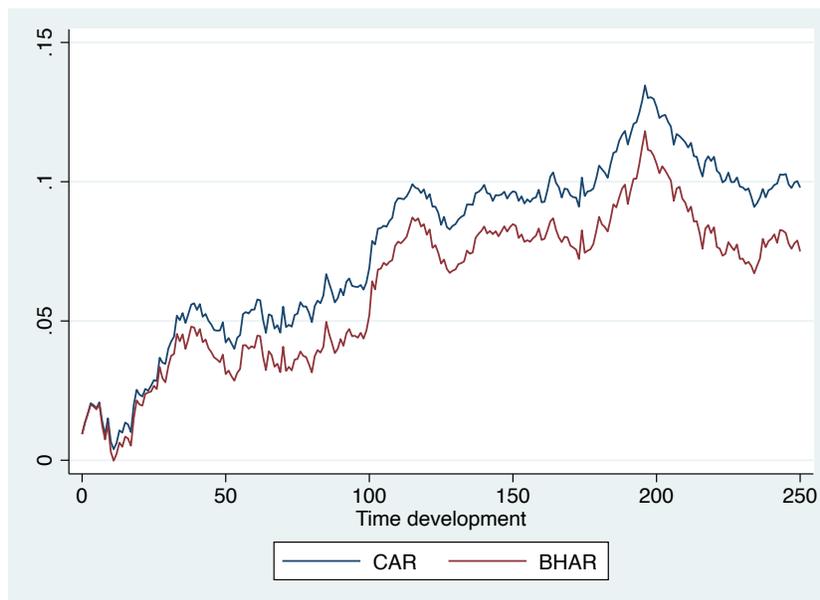
The findings presented in section 4.1 to 4.5 are in this section compared to some cited studies described in the theoretical framework. As mentioned, a significant part of academics has devoted efforts in researching if short-run abnormal returns for hostile bidders are earned, and came in most cases to the conclusion they do not. In order to either replicate this statement or

contradict previous findings, graph 4.10 and 4.11 show short-run CAR's and BHAR's for twenty trading days (one month) and 250 trading days (one year).

Graph 4.10 – CAR and BHAR for a 20-day period



Graph 4.11 – CAR and BHAR for a 250-day period.



What could be observed in previous shown graphs, CAR's and BHAR's show positive trajectories, which is confirmed more visually in graph 4.10 and 4.11. Hence, the sample size of hostile takeovers contradicts various previous studies which stated hostile acquirers end up with negative abnormal returns in the short-run. After twenty trading days, hostile bidders yield a 2.4% CAR and a 2% BHAR, while they yield after a one-year period a 10% CAR and 7.5% BHAR. In addition, the findings, long-run performances, are compared to the findings presented by Schwert (2000), Cosh & Guest (2001), Sudarsanam & Mahate (2006) and Giannopoulos, et al. (2017). The overall tendency is replication. Schwert (2000) found a negative long-run performance of -4.7% on hostility coefficient, where Cosh & Guest (2001) found a general -4.1% abnormal return for hostile bidders and -7.4% return to shareholders caused by a hostile attitude. Sudarsanam & Mahate (2006) found that hostile acquirers realised a -1% to -6% abnormal return, even though they outperformed friendly bidders. Giannopoulos, et al. (2017) on the other hand found positive abnormal returns for hostile bidding firms, resulting in a three-year 20.4% abnormal return. However, Giannopoulos, et al. (2017) did not have a large sample size of hostile deals, which requires to treat the results with caution. The results presented in section 4.1 show a cumulative abnormal return -4.93% three years after takeover and a -7.76% buy-and-hold abnormal return at the end of year-3. These returns are similar to Schwert (2000), Cosh & Guest (2001) and Giannopoulos, et al. (2017). Furthermore, Schwert (2000) and Sudarsanam & Mahate (2006) showed that the hostile bidders prefer all-cash payments, Schwert (2000) reported even a positive correlation. However, as shown in section 4.2, selecting a combination of cash and stocks as payment method yielded positive abnormal returns in the long-run, where all-cash or all-stocks did not. The results therefore contradict the findings reported by Schwert (2000) and Sudarsanam & Mahate (2006) on payment methods. Lastly, Giannopoulos, et al. (2017) showed that horizontal takeovers outperformed vertical takeovers by a land slide. Their findings suggested integrating cross-industry takes longer than the examined period. Hence, diversification leads to negative abnormal returns. This is replicated by the results in section 4.3, where cross-industry takeovers yielded negative abnormal returns and same-industry deals provided positive abnormal returns. In summary, most aspects on hostility are replicated, where the method of payment is an exception on this statement.

## *CHAPTER 5 – Conclusion & discussion*

The last chapter presents the conclusions on the stated hypotheses and provides a discussion on the subject matter.

### *5.1 Conclusion*

As already briefly stated in the comparison analysis in the fourth chapter, most results of the study do replicate findings of various previous studies. Long-run performances, defined as a three-year period abnormal return, are hypothesized to result in positive abnormal returns. Shown in section 4.1, both cumulative- and buy-and-hold abnormal returns are not positive, measured by the complete sample size. Hence, the first hypothesis, stated that hostile takeovers earn positive abnormal returns in the long-run is rejected. Various studies concluded that hostile takeovers also do not earn abnormal returns in the short-run, defined as one-month post-takeover. Independent of any specification, payment methods or industry-specification, results in positive short-run abnormal returns. Therefore, hypothesis two, stating that hostile bidders earn negative abnormal returns in the short-run, is rejected. The third hypothesis covered the intuition of payment methods, which stated that all-cash payments outperform all-stock and mixed payment methods after a three-year period for hostile acquirers. Where previous studies found positive correlations between hostile abnormal returns and all-cash payments, showed the results in section 4.2 that mixed payment methods outperformed all-cash and all-stock payments methods. All-cash CAR and BHAR trajectories result in around -5%, which is also true for all-stock CAR's. The buy-and-hold abnormal returns for all-stock payments show a -20% at the end of year-3. These results are surprising, given the reported results in previous academic papers. Therefore, hypothesis three cannot be accepted. The theoretical framework extensively covered motives for a corporate operational restructuring, among others, diversification is one of the arguments for a takeover. Studies have showed that vertical takeovers, which implies cross-industry mergers and/or acquisitions, are value diluting. Shown in section 4.3, these findings are replicated and therefore accepts hypothesis 4. Most academic literature on hostile takeovers, has not incorporated the internationalised aspect of modern-day business practice. Therefore, the fifth hypothesis is not based on previous presented results, but rather on accepted business practice, that cross-border companies face challenges such cultural differences, legislation, politics and/or exchange rate fluctuations in order to integrate properly. Therefore, it is

hypothesized that cross-country hostile takeovers earn lower abnormal returns than within-country hostile deals. The results showed similar trajectories, however a slightly different magnitude. Therefore, hypothesis 5, stating that within-country hostile takeovers outperform cross-country ones is rejected. Lastly, the sixth hypothesis argues that abnormal returns have similar characteristics over time, and therefore show similar return development over time. Since recent studies have not compared different time periods to one another and found abnormal returns of different decades are similar, there is no reason to argue that abnormal returns between 1997-2007 and 2008-2017 are different. Shown in section 4.5, cumulative- and buy-and-hold abnormal returns are different between those time periods. Therefore, hypothesis six is rejected. This result points to the influence of confounding effects, did the dot.com bubble affect abnormal returns less than the financial crisis?

## *5.2 Discussion*

Does being hostile pay-off in the long-run? Intuitively the answer would be no. However, in some circumstances, think of the industry-specification or combining cash and stock as payment method, which inclines to change this answer into, depends... The diversification argument is quite straight forward, integration issues almost always arise and take time in order to benefit from the takeover in an efficient manner. What is a surprising finding is that cumulative- and buy-and-hold abnormal returns are positive in the long-run if the transaction is completed with a mixed payment method. Where Schwert (2000) found a positive correlation between all-cash payments and hostile bidders' abnormal returns, this study finds the opposite. Why would businesses with excess cash risk liquidity issues or lack capital for unforeseen investments? In that light, it makes sense hostile acquirers earn abnormal returns in the long-run paid with cash and equity. Therefore, hostility could pay off if the takeover involves a same-industry deal paid with a combination of cash and equity. Future research questions could aim to find stronger relationships between hostile bidders' abnormal returns and mixed payment methods and non-diversification. Nevertheless, in general hostility does not pay off in the long-run. Despite specific deal characteristics, the overall tendency answers the research question, do hostile acquirers earn abnormal returns in the long-run? which is no. In other words, make love, not war.

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*APPENDIX 2 – List of abbreviations*

BHAR – Buy-and-hold abnormal return

CAAR – Cumulative average abnormal return

CAPM – Capital asset pricing model

CAR – Cumulative abnormal return

EBITDA – Earnings before interest taxed depreciation amortization

ISIN – International Stock Identification Number

M&A – Mergers and acquisitions

OLS – Ordinary least square

P/E ratio – price/earnings ratio

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*APPENDIX 4 – List of hostile takeovers*

<u>Deal ID</u>	<u>Acquirer name</u>	<u>Acquirer country</u>	<u>Acquirer sector</u>
1	FAIREY GROUP PLC UNDERVALUED ASSETS TRUST	GB	Machinery, equipment, furniture, recycling
2	PLC	GB	Other services
3	GULF CANADA RESOURCES LTD	CA	n.a.
4	FRONTLINE LTD	BM	Transport
5	SLOUGH ESTATES PLC GARTMORE EUROPEAN	GB	Construction
6	INVESTMENT TRUST PLC	GB	Other services
7	FORTIS NV	BE	Banks
8	ENTERPRISE INNS PLC	GB	Hotels & restaurants
9	CABLE & WIRELESS PLC BANQUE NATIONALE DE PARIS	GB	Post and telecommunications
10	SA	FR	Banks
11	BA - FABRICA DE VIDROS BARBOSA & ALMEIDA SA	PT	Chemicals, rubber, plastics, non- metallic products
12	TYUMENSKAYA NEFTYANAYA KOMPANIYA	RU	Primary Sector (agriculture, mining, etc.)
13	ASSICURAZIONI GENERALI SPA	IT	Insurance companies
14	PFIZER INC.	US	Chemicals, rubber, plastics, non- metallic products
15	QBE INSURANCE GROUP LTD	AU	Insurance companies
16	RIO TINTO PLC	GB	Metals & metal products
17	SPAR NORD BANK A/S	DK	Banks
18	COMPANIA MINERA MILPO SAA COMPAGNIE GENERALE DES ETABLISSEMENTS MICHELIN	PE	Metals & metal products
19	SCA	FR	Chemicals, rubber, plastics, non- metallic products
20	DATAMIRROR CORPORATION	CA	Other services
21	ACESA INFRAESTRUCTURAS SA	ES	Transport
22	KINGFISHER PLC	GB	Wholesale & retail trade
23	KONE OYJ (OLD)	FI	Machinery, equipment, furniture, recycling
24	OMNICARE INC.	US	Wholesale & retail trade
25	BUNGE LTD	BM	Primary Sector (agriculture, mining, etc.)
26	JARVIS PORTER GROUP PLC	GB	Publishing, printing
27	KINGFISHER PLC DAIRY BRANDS NEW ZEALAND	GB	Wholesale & retail trade
28	LTD	NZ	n.a.
29	DENDRITE INTERNATIONAL INC.	US	Other services
30	COCA-COLA AMATIL LTD	AU	Food, beverages, tobacco
31	INVESTA PROPERTY GROUP	AU	Other services
32	ALPINE SELECT AG MEDCO ENERGI INTERNASIONAL	CH	Other services
33	TBK, PT	ID	Primary Sector (agriculture, mining, etc.)
34	TABCORP HOLDINGS LTD	AU	Other services

35	CHEYENNE ENERGY INC.	CA	Primary Sector (agriculture, mining, etc.)
36	COPPERCO LTD	AU	Metals & metal products
37	HARMONY GOLD MINING COMPANY LTD	ZA	Metals & metal products
38	OMNICARE INC.	US	Wholesale & retail trade
39	HEXAGON AB	SE	Machinery, equipment, furniture, recycling
40	SEVEN-ELEVEN JAPAN CO., LTD	JP	Wholesale & retail trade
41	OSIM INTERNATIONAL LTD	SG	Wholesale & retail trade
42	ARCELOR SA	LU	Metals & metal products
43	OLD MUTUAL PLC	GB	Other services
44	CAMILLO EITZEN & CO ASA	NO	Transport
45	MAMUT ASA	NO	Other services
46	SUN INTERNATIONAL LTD	ZA	Hotels & restaurants
47	PALADIN RESOURCES LTD	AU	Metals & metal products
48	GUNNS LTD	AU	Wood, cork, paper
49	VILLAGE ROADSHOW LTD	AU	Other services
50	AUSTEVOLL SEAFOOD ASA	NO	Primary Sector (agriculture, mining, etc.)
51	EVOLVE CAPITAL PLC	GB	Other services
52	PEAB AB	SE	Construction
53	INTERNATIONAL GOLD EXPLORATION IGE AB	SE	Metals & metal products
54	HAKON INVEST AB	SE	Other services
55	LEGEND INTERNATIONAL HOLDINGS INC.	US	Metals & metal products
56	TERRITORIALNAYA GENERIRUYUSHCHAYA KOMPANIYA N 1 OAO	RU	Gas, Water, Electricity
57	PORSCHE AUTOMOBIL HOLDING SE	DE	Machinery, equipment, furniture, recycling
58	ARENDALS FOSSEKOMPANI ASA	NO	Other services
59	CF INDUSTRIES HOLDINGS INC.	US	Chemicals, rubber, plastics, non-metallic products
60	CONQUEST MINING LTD	AU	Metals & metal products
61	ORASCOM DEVELOPMENT HOLDING AG	CH	Construction
62	HKN INC.	US	Primary Sector (agriculture, mining, etc.)
63	VOLKSWAGEN AG	DE	Machinery, equipment, furniture, recycling
64	INTERNATIONAL PAPER COMPANY	US	Wood, cork, paper
65	SCHIBSTED ASA	NO	Publishing, printing
66	ZAKLADY AZOTOWE W TARNOWIE - MOSCICACH SA	PL	Chemicals, rubber, plastics, non-metallic products
67	FIRST QUANTUM MINERALS LIMITED	CA	Metals & metal products
68	BUSHVELD MINERALS LTD	GB	Metals & metal products
69	VOLKSWAGEN AG	DE	Machinery, equipment, furniture, recycling

70	PODRAVKA DD	HR	Food, beverages, tobacco
71	TENAGA NASIONAL BHD AL-AHLIA HOLDING COMPANY	MY	Gas, Water, Electricity
72	KSCC	KW	Other services
73	SPROTT PHYSICAL GOLD TRUST	CA	Other services
74	VIVENDI SA	FR	Other services
75	AL-QURAIN PETROCHEMICAL INDUSTRIES COMPANY	KW	Chemicals, rubber, plastics, non- metallic products
76	TOTAL ENERGY SERVICES INC.	CA	Primary Sector (agriculture, mining, etc.)
77	PALLINGHURST RESOURCES LTD	GB	Other services

<u>Deal ID</u>	<u>Target name</u>	<u>Target country</u>	<u>Target sector</u>
1	BURNFIELD PLC	GB	Machinery, equipment, furniture, recycling
2	PILOT INVESTMENT TRUST PLC	GB	Other services
3	CLYDE PETROLEUM PLC	GB	Primary Sector (agriculture, mining, etc.)
4	ICB SHIPPING AB	SE	Transport
5	BILTON PLC	GB	Construction
6	ABERDEEN EUROPEAN INVESTMENT TRUST	GB	Other services
7	GENERALE DE BANQUE SA	BE	Banks
8	CENTURY INNS PLC	GB	Hotels & restaurants
9	INTERNATIONAL DIGITAL COMMUNICATIONS INC.	JP	Post and telecommunications
10	PARIBAS SA	FR	Banks
11	VIDRIERA LEONESA SA	ES	Chemicals, rubber, plastics, non-metallic products
12	KONDPETROLEUM	RU	Primary Sector (agriculture, mining, etc.)
13	INA - ISTITUTO NAZIONALE DELLE ASSICURAZIONI SPA	IT	Insurance companies
14	WARNER-LAMBERT COMPANY	US	Chemicals, rubber, plastics, non-metallic products
15	LIMIT PLC	GB	Insurance companies
16	NORTH LTD	AU	Metals & metal products
17	AARS BANK AS	DK	Banks
18	COMPAÑÍA MINERA ATACOCHA SAA	PE	Metals & metal products
19	STOMIL OLSZTYN SA	PL	Chemicals, rubber, plastics, non-metallic products
20	IDION TECHNOLOGY HOLDINGS LTD	ZA	Other services
21	IBERICA DE AUTOPISTAS SA	ES	Transport
22	CASTORAMA DUBOIS	FR	Wholesale & retail trade
23	INVESTISSEMENTS SCA	FR	Wholesale & retail trade
24	PARTEK OYJ ABP	FI	Machinery, equipment, furniture, recycling
25	NCS HEALTHCARE INC.	US	Wholesale & retail trade
26	CEREOL SA	FR	Food, beverages, tobacco
27	DARBY GROUP PLC	GB	Other services

27	CASTORAMA DUBOIS INVESTISSEMENTS SCA	FR	Wholesale & retail trade
28	HEMSCOTT PLC	GB	
29	SYNAVANT INC.	US	Other services
30	NEVERFAIL SPRINGWATER LTD	AU	Other services
31	PRINCIPAL OFFICE FUND A&A EIC ELECTRICITY	AU	Other services
32	INVESTMENT COMPANY	CH	
33	NOVUS PETROLEUM LTD	AU	Primary Sector (agriculture, mining, etc.)
34	TAB LTD PRAIRIE PACIFIC ENERGY	AU	Other services
35	CORPORATION	CA	Primary Sector (agriculture, mining, etc.)
36	UNIVERSAL RESOURCES LTD	AU	Metals & metal products
37	GOLD FIELDS LTD	ZA	Metals & metal products
38	NEIGHBORCARE INC. LEICA GEOSYSTEMS HOLDING	US	Wholesale & retail trade
39	AG	CH	Machinery, equipment, furniture, recycling
40	7-ELEVEN INC.	US	Wholesale & retail trade
41	GLOBAL ACTIVE LTD	SG	Wholesale & retail trade
42	DOFASCO INC. FORSKRINGSAKTIEBOLAGET	CA	Metals & metal products
43	SKANDIA AB EITZEN MARITIME SERVICES	SE	Insurance companies
44	ASA	NO	Machinery, equipment, furniture, recycling
45	ACTIVE 24 ASA	NO	Other services
46	REAL AFRICA HOLDINGS LTD	ZA	Other services
47	SUMMIT RESOURCES LTD	AU	Metals & metal products
48	AUSPINE LTD SYDNEY ATTRACTIONS GROUP	AU	Primary Sector (agriculture, mining, etc.)
49	LTD	AU	Other services
50	LEROY SEAFOOD GROUP ASA	NO	Food, beverages, tobacco
51	BLUE OAR PLC	GB	Other services
52	PEAB INDUSTRI AB	SE	Chemicals, rubber, plastics, non-metallic products
53	IGE NORDIC AB	SE	Metals & metal products
54	HEMTEX AB NORTH AUSTRALIAN DIAMONDS	SE	Wholesale & retail trade
55	LTD	AU	Primary Sector (agriculture, mining, etc.)
56	MURMANSKAYA TETS OAO	RU	Gas, Water, Electricity
57	SCANIA AB	SE	Machinery, equipment, furniture, recycling
58	POWEL ASA	NO	Other services
59	TERRA INDUSTRIES INC. NORTH QUEENSLAND METALS	US	
60	LTD ORASCOM HOTELS AND	AU	
61	DEVELOPMENT SAE GLOBAL ENERGY	EG	Construction
62	DEVELOPMENT PLC	GB	Primary Sector (agriculture, mining, etc.)

63	MAN AG	DE	Machinery, equipment, furniture, recycling
64	TEMPLE-INLAND INC.	US	Wood, cork, paper
65	ASPIRO AB	SE	Other services
66	ZAKLADY AZOTOWE PULAWY SA	PL	Chemicals, rubber, plastics, non-metallic products
67	INMET MINING CORPORATION	CA	Metals & metal products
68	LEMUR RESOURCES LTD	AU	Primary Sector (agriculture, mining, etc.)
69	SCANIA AB	SE	Machinery, equipment, furniture, recycling
70	MIRNA DD	HR	Food, beverages, tobacco
71	INTEGRAX BHD	MY	Transport
72	KUWAIT REINSURANCE COMPANY	KW	Insurance companies
73	CENTRAL GOLD-TRUST	CA	Other services
74	GAMELOFT SE	FR	Other services
75	NATIONAL PETROLEUM SERVICES COMPANY KSCC	KW	Primary Sector (agriculture, mining, etc.)
76	SAVANNA ENERGY SERVICES CORPORATION	CA	Primary Sector (agriculture, mining, etc.)
77	GEMFIELDS PLC	GB	Primary Sector (agriculture, mining, etc.)

<u>Deal ID</u>	<u>Completion date</u>	<u>Method of payment</u>	<u>Deal value</u>
1	24/01/1997	Shares	€ 80'629.96
2	31/03/1997	mixed	€ 66'881.08
3	29/04/1997	Cash	€ 689'876.85
4	09/01/1998	Cash	€ 98'132.44
5	13/11/1998	Mixed	€ 393'906.35
6	21/12/1998	Mixed	€ 61'509.29
7	31/12/1998	Cash	€ 12'962'963.00
8	04/05/1999	Liabilities	€ 119'697.00
9	17/06/1999	Mixed	€ 692'605.15
10	14/08/1999	Mixed	€ 20'700'000.00
11	23/09/1999	Cash	€ 27'400.00
12	22/10/1999	n.a.	€ 48'598.10
13	16/12/1999	Mixed	€ 11'802'897.20
14	19/06/2000	Shares	€ 93'409'444.71
15	17/08/2000	Cash	€ 613'446.75
16	10/10/2000	Cash	€ 1'835'121.05
17	15/11/2000	Cash	n.a.
18	09/07/2001	Cash	€ 21'825.14
19	15/10/2001	Cash	€ 1'012.02
20	11/07/2002	Cash	€ 16'832.84
21	22/07/2002	Mixed	€ 362'000.00
22	15/11/2002	Cash	€ 5'100'000.00

23	18/12/2002	Mixed	€ 1'420'000.00
24	15/01/2003	Mixed	€ 415'559.36
25	09/04/2003	Cash	€ 21'500.00
26	22/04/2003	Cash	€ 7'063.11
27	23/05/2003	Cash	€ 41'025.00
28	30/05/2003	Mixed	€ 1'255.97
29	19/06/2003	Cash	€ 41'873.06
30	26/09/2003	Cash	€ 107'488.30
31	14/10/2003	Mixed	€ 865'566.99
32	22/10/2003	Cash	€ 3'586.44
33	06/07/2004	Cash	€ 202'922.75
34	31/08/2004	Mixed	€ 1'176'321.33
35	15/10/2004	Shares	€ 2'588.74
36	13/05/2005	Shares	€ 12'488.05
37	23/05/2005	Shares	n.a.
38	28/07/2005	Mixed	€ 1'485'970.20
39	17/10/2005	Mixed	€ 963'837.77
40	10/11/2005	Cash	€ 1'004'463.60
41	30/12/2005	Cash	€ 16'756.65
42	09/03/2006	Cash	€ 4'009'969.60
43	06/06/2006	Mixed	€ 4'883'196.55
44	26/06/2006	Cash	€ 12'727.96
45	24/08/2006	Cash	n.a.
46	15/09/2006	Cash	€ 206'749.29
47	01/06/2007	Shares	€ 643'249.22
48	31/08/2007	Mixed	€ 69'596.58
49	05/05/2008	Mixed	€ 101'147.06
50	01/12/2008	Cash	€ 112'015.18
51	14/01/2009	Shares	€ 12'943.46
52	05/02/2009	Shares	€ 268'612.29
53	23/02/2009	Shares	€ 2'249.04
54	08/07/2009	Cash	€ 23'241.35
55	06/08/2009	Cash	€ 6'947.61
56	30/09/2009	Cash	n.a.
57	26/10/2009	Cash	€ 426'429.29
58	25/01/2010	Cash	€ 17'779.25
59	15/04/2010	Mixed	€ 3'480'603.28
60	10/12/2010	Mixed	€ 37'438.58
61	24/01/2011	Mixed	€ 21'474.02
62	03/10/2011	Cash	€ 197.10

63	09/11/2011	Cash	€ 2'083'363.00
64	13/02/2012	Mixed	€ 3'399'222.87
65	06/03/2012	Cash	€ 28'226.84
66	11/04/2013	Cash	€ 75'385.75
67	23/04/2013	Mixed	€ 2'388'186.65
68	01/11/2013	Shares	€ 7'213.61
69	12/06/2014	Cash	€ 6'596'029.94
70	17/11/2014	Cash	€ 184.26
71	12/05/2015	Cash	€ 189'070.93
72	01/09/2015	Cash	€ 54'210.66
73	18/01/2016	Shares	€ 468'951.91
74	20/07/2016	Cash	€ 477'339.00
75	01/04/2017	Cash	€ 29'050.78
76	20/06/2017	Shares	€ 146'058.74
77	07/12/2017	Shares	€ 134'153.67

*APPENDIX 5 – Syntax- and data file*

- Stata syntax-file available for the regressions and graphs
- Stata data-file available for the regressions and graphs