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RISK AND RETURN OF THE MERGER ARBITRAGE STRATEGY IN THE EUROPEAN MARKET

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Abstract

In this thesis we have created a European merger arbitrage index consisting of 786 cash, stock, and combination deals from 2000 to 2022. Three portfolios have been created; equally-weighted, value-weighted, and a practitioner portfolio. The portfolios have been benchmarked against CAPM, Fama and French's (1993, 2015) three- and five-factor model. The monthly excess risk-adjusted returns range between 1.15% and 2.33%, while the market beta is between 0.1945 and 0.3843. Both alphas and market betas are statistically significant at any conventional levels. This implies that merger arbitrage is not a market-neutral strategy. A piecewise linear regression has also been conducted. We found some evidence suggesting that the strategy becomes highly correlated with the market during downturns, with a market beta between 1.1 and 1.56 while maintaining a market beta of 0.175 to 0.304 the rest of the time.

THIS THESIS IS A PART OF THE MSc IN BUSINESS, MAJOR IN FINANCE PROGRAMME AT BI NORWEGIAN BUSINESS SCHOOL. THE SCHOOL TAKES NO RESPONSIBILITY FOR THE METHODS USED, RESULTS FOUND, OR CONCLUSIONS DRAWN.

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Glossary

Acquiror	The company that tries to buy the target company
Alpha	Excess risk-adjusted return (Jensens alpha)
Arbitrageur	The investor trying to profit from the strategy
Arbitrage Spread	The spread between the bid price and the close price
Abnormal Return	Same as alpha
API	Application Programming Interface - In this thesis; application to access data directly from Eikon Refinitiv
Beta	Correlation coefficient with for example the market
Bid Price	Also known as offer price, the price the acquiror offers to pay for one target stock
Bid Premium	Premium offered by acquiror, is calculated using the close price one day before announcement
CAPM	Capital Asset Pricing Model
Completion Date	The date a deal is completed
EWAP	Equal Weighted Merger Arbitrage Portfolio
M&A	Mergers and Acquisitions
Market Neutral	Market beta = 0, No correlation with the market
Merger Arbitrage	Investment strategy where arbitrageur tries to profit from stock mispricing during M&A
Offer Price	Also known as bid price
PAP	Practitioner Arbitrage Portfolio
Premium	Spread
Risk Arbitrage	See Merger Arbitrage
Speculation Spread	Premium or spread one day after announcement
Target	The company that the acquiror tries to buy
Withdrawal Date	The date a bid is withdrawn
VWAP	Value Weighted Merger Arbitrage Portfolio

1 Introduction and Motivation

This thesis aims to investigate the profitability of the merger arbitrage strategy in the European market. Merger arbitrage, sometimes referred to as risk arbitrage, is an investment strategy where one invests in proceeding merger and acquisition deals in expectation of profiting on the deal’s potential upside.

The hedge fund industry is fast growing. In 1997 approximately \$118 bn of assets were managed under these funds. Moving forward to 2020, this number is now \$3,824 bn (figure 1). In other words, the asset under management has increased by 32 times. Merger arbitrage is a popular *event-driven* investment strategy among hedge funds. An event-driven strategy is an investment strategy in which an investor tries to profit from a stock mispricing that occurs during or after a corporate event (Kenton, 2021). Hedge Funds often use leverage to increase the returns on the strategy. There are two key players involved in a merger. The company that wants to buy the target is called the acquiror. The company bought or merged into the acquiror is called the target. This thesis is primarily interesting for individual and institutional investors, but it could also be interesting for the acquiring and target companies.

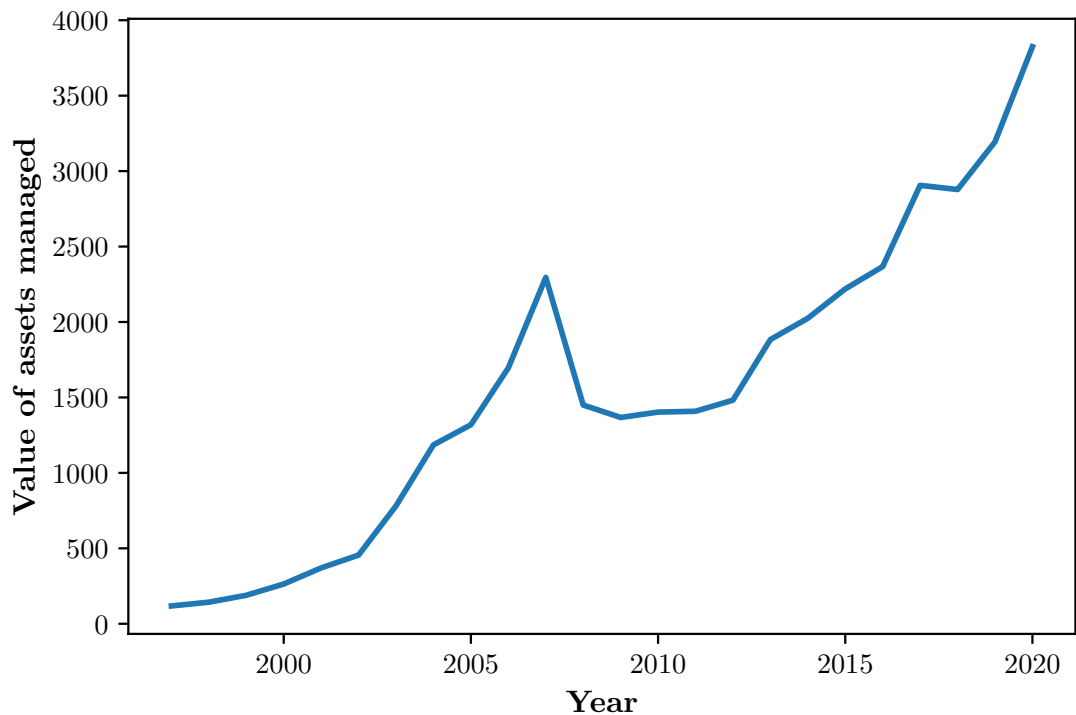


Figure 1: Value of assets under management by hedge funds worldwide from 1997 to 2020 (in billion U.S. dollars). Data from BarclayHedge retrieved from Statista (2022a).

Digging deeper into the subject, we found that merger arbitrage is the 10th most popular hedge fund strategy with 5.1% (\$ 195 bn) of all assets under management in these funds in Q1 2021 (Statista, 2021). Hence, we found it interesting to study whether the strategy of replicating a European merger arbitrage index generates excess risk-adjusted returns (alpha) or not. Most previous research has focused on the US market with few exceptions. However, if we look at the European market, we first and foremost find that the UK (Sudarsanam & Nguyen, 2008) and the German market (McDermott & Mulcahy, 2017) have been studied. As far as we know, no attention has been paid to the broader European market. We therefore find it interesting to see if we can find similar patterns in the European market as in US, UK, Germany and Australia.

1.1 Research Question

We will examine the risk and return of the merger arbitrage strategy in Europe between 2000 and until the end of 2021 using only cash, stock, and combination deals. The objective of this thesis is to answer our research question:

Does the merger arbitrage strategy generate excess risk-adjusted return in the European market?

The question will be addressed from an American investor's point of view, and we will therefore convert all prices to USD. First, we formulate a hypothesis, and then we try to reject the null hypothesis. Our null hypothesis states that the merger arbitrage portfolio does not generate excess risk-adjusted return. Several econometric models will be used, such as the CAPM and the Fama and French's (1993, 2015) three- and five-factor models. We will use data from publicly listed deals on 21 European stock exchanges between 2000 and 2021. Should the strategy generates excess risk-adjusted return, we will also if there is a non-linear relationship in the return pattern.

1.2 Contribution

To our knowledge, no previous research on merger arbitrage has been conducted on the entire European market. The deals in our study stretch over a time period of 22 years, longer than most previous studies. All previous research has focused on single markets like the US, UK, and Australian markets. The closest we get to our study is Sudarsanam and Nguyen (2008), who has written about the UK market, the biggest market in Europe (Sudarsanam, 2009). Further, we have included

cash, stock, and combination deals, whereas all the other articles have focused on cash deals or cash & stock deals. By adding combination deals, we think we get a more accurate, less biased view of the strategy's profitability. In addition, we also test a wide variety of portfolios: *Equal-weighted merger arbitrage portfolio* (EWAP), *Value-weighted merger arbitrage portfolio* (VWAP), and *Practitioner arbitrage portfolio* (PAP). Like most previous research, we have benchmarked our portfolios with CAPM and Fama and French (1993) three-factor model. In addition, we have also run a regression against Fama and French (2015) five-factor model, which has not been previously done. By adding two extra factors, we are interested to see if this changes the result in any significant way.

1.3 Outline

This thesis has the following outline. In part 2 we explain the merger arbitrage strategy and give an overview of the existing literature. In part 3 we will explain how the data is collected, the portfolios are constructed, and the methodology to benchmark them. In part 4 will we present and discuss our findings and in part 5 we conclude and suggest further research.

2 Literature Review and Theoretical Framework

2.1 Introduction to Merger Arbitrage

“After a merger or acquisition bid is announced, the target stock typically trades at a discount to the price offered by the bidder. The discount is termed arbitrage spread.” (Sudarsanam & Nguyen, 2008, p. 3)

This spread is what the merger arbitrageur tries to capture. According to our strategy, we invest in the deal one day after the bid is announced by the acquirer and holds the position until the deal is either completed or the bid is withdrawn. In this trading strategy, the arbitrageur tries to capture the arbitrage spread between $t+1$ and T as shown below in figure 2:

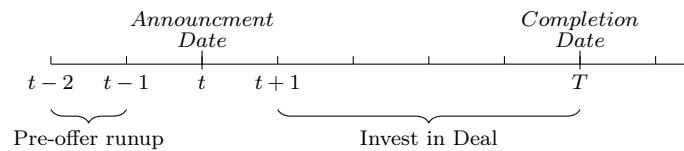


Figure 2: Deal Illustration.

In this simple example, the arbitrageur invests in the position one day after the announcement and keeps it until the transaction is finalized. If the bidder withdraws their bid, the arbitrageur will sell the position one day after this announcement.

A simplified example of this is when the *target* shareholders receives an offer of \$22 per share from an *acquirer* (buyer). Prior to the bid, the target share trades at \$16 before jumping up to \$20 a day after the bid. Buying the share after the announcement results in a potential \$2 gain or 10% upside. Should the deal break, the share will typically return to the pre-offer price or lower. This \$2 gap is referred to as the *arbitrage spread* and will narrow down to zero if the deal goes through. The potential gain on the deal is usually much smaller than the potential loss related to the deal, hence focusing on the downside is crucial, since the upside is capped by the offer price. In some ways, it is similar to a bond where the upside is known and often small to moderate, and the downside is significant. The big risk with the merger arbitrage strategy is hence, whether the deal is completed and the cost associated with the time value of money. A real-world example of a cash deal can be found in figure 3.

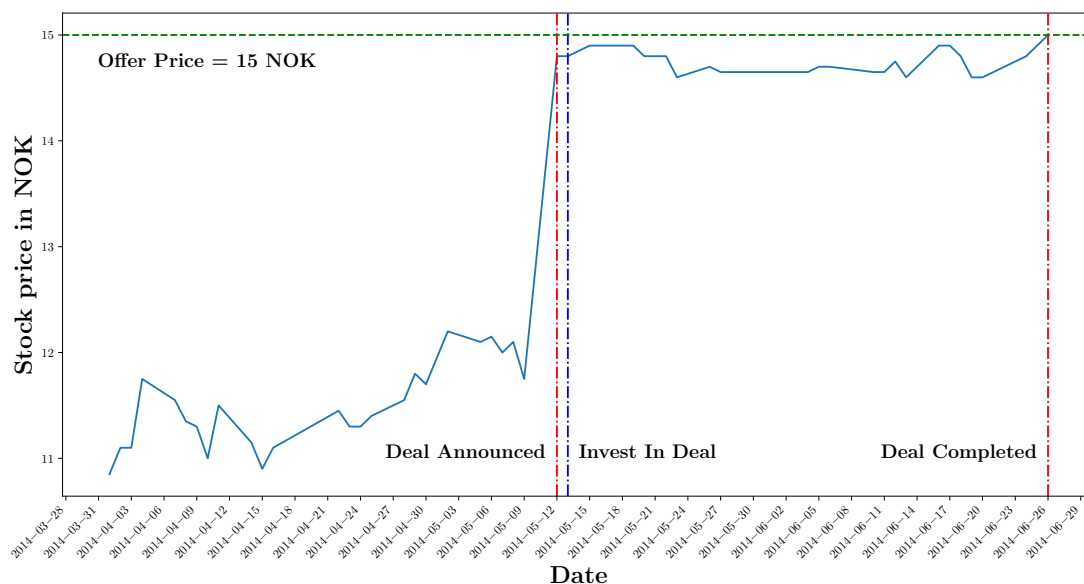


Figure 3: An Example Deal - OBOS buys BWG in 2014.

Obos BBL bought BWG Homes ASA. The deal was announced on 2014-05-12 and completed on 2014-06-26. The premium the arbitrageur received in this deal was approximately 1.4%.

Many consider “pure” arbitrage to be the process of “simultaneous purchase and sale of the same asset in different markets in order to profit from tiny differences in the asset’s listed price” (Rathburn, 2022). Moore (2018) defines *merger arbitrage* as “A buying of a large number of shares in a corporation in anticipation of and with the expectation of making a profit from a merger or takeover.” This quote is often extended with thorough research of the bid to try to estimate the risk-reward of the deal. Mitchell and Pulvino (2001) claims that there are three reasons for the arbitrage spread. The first one is inefficient financial markets, unable to price the deal correctly. The second is transaction costs that prevent the investors from getting these returns. The third is simply because the arbitrage spread is compensation for the risk involved with the strategy. We will discuss this further in section 2.3.

2.2 Transaction types in the Merger Arbitrage portfolio

There are endless ways to structure an offer for a target share. We have chosen to include three of the most frequent types of settlement; *cash deals*, *stock deals* and *combo deals*. More advanced forms of deal settlements which include elements of contingency, like options and earn-outs, make it much harder to calculate the return of the deal since the deal period might stretch over several years. These deals require a lot of manual work for each deal, making them almost impossible

to include in a portfolio. In addition, cash and stock deals are most commonly used in previous research articles, hence making it easier to compare our thesis results.

The simplest form of settlement is *cash deals*. Here the acquirer offers a certain amount of cash in return for the target's share. Since the target share often sells at a discount to the acquirer's offer, profits can be realized by purchasing the target's stock and holding it until the merger is completed. The arbitrageur then sells the target's stock to the acquirer at the offer price. The two sources of profits stem from the price difference between the purchase price and offer price, plus dividends paid out to target shareholders during the offer period.

Stock deals, also referred to as a stock swap, are slightly more complicated to perform because one needs to take a long- and a short position. Here the acquirer offers its stocks to the shareholders in the target company. The arbitrageur takes a long position in the target and a short position in the acquirer stock, equivalent to the stock conversion ratio between the companies. For instance, if the acquirer offers 0.4 shares of its share per share owned in the target, one will short 0.4 shares in acquirer per every share long one has in the target. If the stock deal is completed, these two positions are netted against each other, leaving nothing but the arbitrage spread to the investors. One needs to short the acquirer stock, otherwise, the target owner will only get the acquirer share if the deal is completed and not cash.

A *combination deal* is just an offer that consists of a part in cash and part in shares. The settlement type is calculated as a combination of cash and stock deals with the respective weights on each settlement type. According to Boone et al. (2014) this settlement form has increased in popularity since the 2000s in the US market compared to the other two types.

The biggest gains related to stockholders are those who own the stock pre-announcement. However, since we focus on capturing the arbitrage spread, we only buy the stock after the announcement, significantly reducing the risk of the transaction. According to Schwert (1996), if the deal breaks, the stock price would typically return to the value it had 40 days before the announcement. This is often referred to as the "clean" price, where rumors typically have not affected the stock price yet. The clean price might be below this if there were bid-rumors

prior to the bid or if the market is falling sharply over the life of the deal, hence pre-deal announcement price might get unrealistically high. In most cases, the acquirer offers a fixed exchange rate of shares in its company against the target company's shares. However, if the acquirer offers a certain exchange rate of a fixed amount in the acquirer's stocks, this is classified as a cash deal. For instance, if target owners are offered NOK 100 of equity in the acquirer stock for every stock they own in the target. This is because the stock owners of the target know the exact amount they will get if the deal is completed.

2.3 Deal and portfolio risks in Merger Arbitrage

“Individual positions held in a portfolio are generally uncorrelated with each other. The completion of most deals depends on factors that are usually unique to that particular transaction.” (Moore, 2018, p. 176)

The reason why the arbitrage spread exists is primarily due to the risk associated with the completion of the deal. Hence, the investors should expect the spread to be positive in order to compensate for this risk. There are, however, some deals with negative arbitrage spreads. A likely explanation of this is that the investor expects a higher offer. Some might wonder why an amateur investor would sell their shares to a professional investor after the bid is announced. The most common explanation is simply because he or she is not competent enough to calculate the probability of deal completion and has already made a significant gain on the shares, especially on the announcement day. Now we will be looking at some specific risks involved in merger arbitrage:

- **Time to completion.** The longer the deal is stretched out, the lower the returns will be when annualized. This will impact the return of the investor negatively. All things equal, a shorter deal means a higher return.
- **Type of settlements.** According to Jetley and Ji (2010), cash deals are considered the safest deal type in terms of success rate. This might be due to higher certainty in the bid price. However, in terms of overall position, cash deals are generally considered riskier because any single stock is subjected to market risk. The arbitrageur is left with an unhedged long position in the target if the deal fails. In a stock deal, you have a long-short position. This is close to market neutral for the average deal (Baker & Savasoglu, 2002).
- **Shareholder composition** of the company. Family firms are generally less involved in M&A activity than other kinds of shareholders, according to a Swiss study (Eugster, 2017). The same is found in the Brazilian market, which shows that a concentrated ownership structure is negatively related to

the number of M&A deals (Nogueira & Kabbach de Castro, 2019). Family and founders are generally more emotionally tied to the target than other shareholders. Apart from family ownership, activist investors play an important part in some M&A deals. Something called “bumpitriage,” where the activist investor enters a publicly listed target company in order to push up the bid price, poses a threat to the success of the deal (Bagot & Tierney, 2019). In other words, a more dispersed shareholder group makes it easier to conduct M&A.

- **Hostile or friendly bid.** Hostile offers are generally less likely to succeed. According to a study by Mitchell and Pulvino (2001), hostile takeovers are 12.8% more likely to fail compared to a friendly bid.
- **Deal synergies** could be considered a risk because if expectations are unrealistically high, there is a greater chance that the deal will fail, particularly if the acquirer shareholders believe that realizing these synergies is overly optimistic or highly unlikely. According to a study by McKinsey, acquiring companies tend to overestimate top-line synergies, the geographic overlap of customers and underestimate onetime costs, and so on (Christofferson et al., 2004).
- **Market- and sector performance.** Should the market conditions deteriorate rapidly, a bid given by the acquiror might suddenly seem very expensive. The opposite is true if market conditions strongly improve. The bid given a while ago might not be as attractive for the target shareholders as when the bid was announced. A more recent example is Sycamore Partners’ bid on Victoria’s secret. The bid was announced in February 2020, right before the outbreak of the Covid-19 pandemic. Sycamore Partners ended up getting cold feet due to stores closing and furloughing employees. In the end, the deal fell apart due to market conditions (Maheshwari, 2020).
- **Bid on acquiring company.** If the target company gets a new bid, this is generally received as good news. However, should the acquiring company get a bid, this is bad news, especially for stocks and combo deals. The reason is that one has a short position in a company, and if publicly traded, it should increase the stock price significantly.
- **Legal risk.** In some of the biggest deals, there is often an issue with anti-trust laws. Bureau’s like the US Federal Trading Commission and the European Commissioner for Trade monitor the anti-trust issues regarding acquisitions. When buying a company overseas, several permissions are often needed for the deal to go through. One of the biggest anti-trust cases more

recently, is Bayer AG's acquisition of Monsanto Co., beginning in 2016. Due to concern that the newly merged company would gain too much power in the agriculture industry, they had to get approval from the US and European regulators and sell some divisions for the deal to go through. The deal took a little less than two years to complete, showing how difficult the regulatory environment sometimes can be (Bloomberg, 2018).

- **Currency Risk.** This can be seen as portfolio risk. Most deals are denominated in another currency than the USD. Since we convert all deals to USD, we expose ourselves to currency risk. Should the local currency strengthen against the USD, the gain on the portfolio would be bigger than the gain on the individual deals seen in the local currency. To illustrate this example from a Norwegian point of view, one can look at the KLP Aksje Global Indeks V (without currency hedging) and KLP Aksje Global Indeks IV (with currency hedging). The unhedged fund delivered a return of 208%, compared to the hedged fund, which only delivered 111% in the period 2008-2018 (KLP, 2022). This was primarily because the Norwegian krone weakened significantly against most of the big currencies in that period, particularly the dollar. On the 1st of January 2008, the exchange rate was 5.42 kroner per dollar, while on the 1st of January 2018, the exchange ratio was 8.71 kroner per dollar (Yahoo, 2022). Should the opposite happen, that the local currency weakens, the opposite is true.

2.4 Previous Research

Some research have been done on merger arbitrage. The focus area has primarily been the US market. However, some research has focused on the UK, Australian and German markets. As far as we know, little focus has been directed toward the broader European market. In general, the studies are very hard to compare against each other due to different methodologies; countries, with or without transaction costs, time periods, deal settlement types, portfolio types, and so on. As a general rule, the old research articles use different methods to measure the returns generated by the strategy. We will therefore structure the literature review in chronological order. Key results have been summarized in the table 1 below.

2.4.1 Earlier Research

One of the earliest articles is written by Larcker and Lys (1987) containing 111 US cash tender offers from 1977-1983. They wanted to show that the cost of doing equity research is worth the price by looking at the return of a subset of merger arbitrage traders. According to the study, the excess risk-adjusted return over the

life of the deal is 5.32% or 51.9% annually. They claim that merger arbitrageurs are better informed than a regular investor and are therefore able to make a better judgment regarding the probability of success. In retrospect, some of the sources in the article are questionable. They keep referring to Ivan Boesky when talking about how profitable the strategy can be. Furthermore, they included deals he traded on in the sample used to calculate the return on the strategy. Boesky, a former stock trader, was later charged with insider trading (Twin, 2022). The article also uses event time to calculate the return of the strategy. In short, this tends to overestimate the return. We will discuss this further in section 2.4.3. Larcker and Lys (1987) conclude that investors involved in risk arbitrage generate superior returns (higher success rate than the implied market rate on equity purchase) that compensate for costly information search.

Dukes et al. (1992) also look at the US market. Their sample includes 761 US cash tender offers from 1971-1985. The article also uses event time and hence suffers from the same problem as Larcker and Lys (1987). They estimate that the average deal gave a return of 25% in 52 days. This is the same as 0.47% per day. However, the authors acknowledge that it is not possible to replicate this return and generate an annualized return of 172%. The success rate of the tender offers is 89%. Further findings in the article are that risk and return are related and that all levels of risk outperform the market returns. Also, amateur investors can profit from the strategy using only publicly available information.

2.4.2 Newer Research

One comprehensive and frequently cited study of merger arbitrage is written by Mitchell and Pulvino (2001). They looked at 4750 US cash and stock deals from 1981 to 1996. Unlike most other research conducted, they have created several portfolios; *value-weighted*, *risk arbitrage index manager* (a portfolio adjusted for transaction costs, etc.), and a contingent claim analysis. Unlike the two research articles mentioned above, the rest of the research articles have used a *calendar time approach* to calculate the returns from the strategy. In short, this tends to give a more precise picture of the portfolio's actual return. This will be discussed further in section 2.4.3. Both *value-weighted* and *risk arbitrage index manager* generate statistically significant alphas. The first is around 9%-10% annually, depending on a CAPM and a Fama French regression and the latter in excess of 3%. They also investigated the linearity of the returns by a piecewise linear regression. Merger arbitrage has previously been known to be a close to zero beta strategy (Brown & Raymond, 1986). Mitchell and Pulvino (2001) found that this is not

an accurate description of the US market. When the portfolio returns less, the risk-free rate is lower than -4% , the portfolio starts to get a positive market beta. That implies that the portfolio starts to correlate with the market, particularly in periods with severe market conditions. This might not be a favorable characteristic for an investor and is similar to selling an uncovered index put. The last type of portfolio, as mentioned above, is the contingent claim analysis. Here the authors try to replicate the merger arbitrage portfolio with a long position in a risk-free bond and a short position in an index put. Using the Black-Scholes formula, they estimate an alpha of 4% .

Baker and Savasoglu (2002) have a slightly different angle on their research and are more interested in why the return in merger arbitrage strategy is not arbitrated away. According to their research, investors that are undiversified sell to eliminate completion risk. I.e., the original holder of the target firm has an interest in selling their stock because they most likely have made a significant profit already. Furthermore, the arbitrageur demands a premium due to limited capital who is willing to bear the risk of the deal, and therefore the risk premium exists. Their research is conducted on US cash and stock deals from 1981-1996 and shows that the portfolio generates an excess risk-adjusted return of 0.6% - 0.9% per month. This is quite similar to what the previous research has shown.

Jindra and Walkling (2004) focus on the speculation spread. *Speculation spread* is defined as the percentage difference between the bid price and the market price one day after the initial announcement. Their sample consists of 362 US cash tender offers between 1981-1995. They found that in excess of 23% of the speculation spreads are negative. This is due to an expectation of a post-announcement bid larger than the initial bid. The spread can also be explained by various factors like bid premiums, the board's opinion about the bid (friendly or hostile), rumors before the bid is announced, and pre-offer runup. Baker and Savasoglu (2002) mentioned in their text that the best predictor of merger success is whether the deal is classified as friendly or hostile. A hostile board or executives can initiate several measures in order to make the deal difficult to complete. In Europe, hostile takeovers are stricter regulated than in the US. Some of the best-known defense strategies are differential voting rights (A and B shares), employee stock ownership program, crown jewel (bylaws preventing the acquirer from buying the most valuable assets), poison pill (issue new stocks at a discount), and Pac-Man defense (the target company starts to buy the acquirer) (Ganti, 2022b). Jindra and Walkling (2004) found that the monthly excess return on the strategy was

2.01%, which is distinctly higher than some of the other US research done by Mitchell and Pulvino (2001) and Baker and Savasoglu (2002).

One of the research articles that has focused on a different geographical area than the US is Maheswaran and Yeoh (2005). Here the Australian market has been investigated through 193 cash deals from 1991 to 2000. We note that the sample is quite small and are worried about biases in their samples. The same is true for Larcker and Lys (1987) as mentioned above, which only had 111 US deals. As done in many research articles, Maheswaran and Yeoh (2005) creates a value- and equally weighted portfolio and then runs a Fama French three-factor model and a CAPM regression. They argue that an equal-weighted portfolio outperforms a value-weighted portfolio with identical deals due to liquidity constraints. The articles find that merger arbitrage is a market-neutral strategy as opposed to what Mitchell and Pulvino (2001) found in the US market. The strategy does generate statistically significant excess returns before transaction costs are deducted, but not after. The statistically significant returns (before transaction costs) are between 0.84%-1.2% per month which is in line with what the strategy shows in the US market. Hall et al. (2013) also examine the Australian market in a more comprehensive study. They investigated 431 deals between 1985 to 2008 and found a yearly return of approximately 30% excluding transaction costs, compared to the market's 12%.

Returning to the US market, Branch and Yang (2006) has investigated 1,309 cash, stock and collar deals. They found out that the beta of the deal is decided by the settlement type. Interestingly stock swap and collar offers generate negative betas of -0.221 and -0.568 , while cash tender offer generates a positive beta of 0.121 . Further, they have found that the acquirer's stock use to have higher betas than the target's stock. Branch and Yang (2006) have also found a nonlinear relationship for the beta of cash tender offers and collar offers during down markets. This is not found in stock swaps. Another interesting thing found is that in successful deals, stock deals produce higher returns than cash deals. They suggest that this is due to information asymmetry. The estimated alpha of the strategy is 22.41% annually, slightly higher than other research done on the US market.

Sudarsanam and Nguyen (2008) have looked at 975 UK cash and stock deals between 1987-2006. The UK study shows some similar patterns as the US counterpart. The practitioner arbitrage portfolio generates a monthly alpha of 0.88% and 0.93% when running regressions against CAPM and Fama French's three-factor

model. As Mitchell and Pulvino (2001), they also find a non-linear relationship for beta in serious economic downturn. However, this non-linear relation is only valid for cash deals, not stock deals. When applying a contingent claim analysis, the alpha is 0.94% per month.

Another study conducted on a European market is McDermott and Mulcahy's (2017) study of the profitability of the merger arbitrage strategy on firms listed on the German stock exchange. They claim that compared to previously investigated markets, Germany's corporate governance structures and acquisition laws are likely to work together to reduce merger risk. Furthermore, they argue that German law is likely to favor a cash bid over a stock offer, creating a bias in the settlement type. However, they only found that the equally weighted portfolio generated a significant abnormal return of 0.2% per month. Therefore, they conclude that in Germany, the market has effectively priced the risk setting that is more favorable for merger arbitrage, preventing arbitrageurs from generating abnormal risk-adjusted returns under real-world circumstances.

2.4.3 Main differences in methodology

As pointed out earlier, one of the articles' main differences is how the portfolios' return is calculated, event-time or calendar-time. In the case of *event-time*, the return is calculated for each deal between the announcement and completion date (or withdrawal date). The return is then annualized. The return on the event-time merger portfolio is then the average of all mergers' annualized returns. Sudarsanam and Nguyen (2008) and Mitchell and Pulvino (2001) criticize this method and state that the event-time method has two flaws. To begin with, the annualizing return technique overestimates the real return of the merger arbitrage portfolio since it assumes that the return of the merger investment can be earned continuously. Second, mergers tend to cluster in time and industry. The other method is *calendar-time* which is preferred by Fama (1998) and Mitchell and Stafford (2000). It is preferred because it provides a more realistic assessment of the return. Using this process, we determine the daily return of each deal. To calculate the daily return of the portfolio, each deal is given a weight and then summed up to give the daily return of the portfolio.

2.5 Predictions and testable hypotheses

The fact that most of the previous articles show a positive return with a significant alpha indicates that we also can expect a positive excess return. Especially

Sudarsanam and Nguyen (2008) article, which is conducted in the UK, which is the second-largest M&A market in the world (Sudarsanam, 2009), makes us more confident that the European market as a whole should give a positive return. However, no earlier studies have studied multiple markets at once. Moreover, most of the earlier studies are made before 2010, and the fact that Jetley and Ji (2010) has shown that the arbitrage spread has narrowed in later years makes us less confident if we should expect a positive return or not. We formulate the following hypothesis (1) to test our research question:

H_0 : A European merger arbitrage portfolio does not generate excess risk-adjusted return ($\alpha = 0$) in the European market.

H_1 : A European merger arbitrage portfolio does generate excess risk-adjusted return ($\alpha > 0$) in the European market.

To test whether the portfolio has a linear return pattern or not, we formulate the following hypothesis (2):

H_0 : A European merger arbitrage portfolio has a linear risk-return pattern.

H_1 : A European merger arbitrage portfolio has a non linear risk-return pattern.

Table 1: Summary of previous research

		Annualized abnormal returns															
		VWAP				EWAP				PAP				Other		Unsuccessful deals	
Sample		CAPM	FF 3	PLR (Mkt low)	PLR (Mkt high)	CAPM	FF 3	PLR (Mkt low)	PLR (Mkt high)	CAPM	FF 3	PLR (Mkt low)	PLR (Mkt high)	CC, BS	CC, APP	Return (not al- pha)	
Event-time approach																	
Larcker & Lys (1987)	111 US cash tender offers from 1977 to 1983					5.32%										14.51%	18.89%
Dukes et al. (1992)	761 US cash tender offers from 1971 to 1985															172%	19%
Calender-time approach																	
Mitchell & Pulvino (2001)	4,750 US cash and stock deals from 1963 to 1998	9.25%	9.90%		12.82%					3.54%	3.29%		6.55%	4.00%	3.50%		
Baker & Savasoglu (2002)	1,901 US cash and stock deals from 1981 to 1996	9.77%	7.31%			10.56%	9.25%										22.70%
Jindra & Walkling (2004)	362 US cash tender offers from 1981 to 1995		26.97%													96.70%	
Maheswaran & Yeoh (2005)	193 Australian cash deals from 1991 to 2000	10.70%	10.57%		14.54%	15.40%											
Branch & Yang (2006)	1,309 US cash, stock and collar deals from 1990 to 2000	6.05%	5.96%		9.48%	10.35%	22.42%										10.16%
Sudarsanam & Nguyen (2008)	975 UK cash and stock deals from 1987 to 2006	6.93%	7.31%	204%	8.73%	15.80%	17.18%	283%	18.16%	11.08%	11.74%	99.18%	12.15%	11.88%			

This table shows a summary of previous research in the merger arbitrage field.

FF3: Fama French three-factor model

PLR: Piecewise Linear Regression,

CC, BS: Contingent Claim, Black & Scholes

CC, APP: Contingent Claim, Actual Put Prices

3 Methodology and Data

To test our first hypothesis in 2.5, we will benchmark our portfolios with three linear asset pricing models: CAPM, Fama and French (1993) three-factor model and Fama and French (2015) five-factor model. The first two models are commonly used in earlier studies of the profitability of merger arbitrage, but we also include Fama French five-factor model. Since it has not, to our knowledge, been done before, we find it interesting to see if the two extra factors of the Fama French five-factor will add any extra explanatory power. To test the second hypothesis in 2.5 we will estimate a piecewise linear regression similar to what Mitchell and Pulvino (2001) and Sudarsanam and Nguyen (2008) did.

3.1 Models to test excess return

3.1.1 CAPM

The main advantage of CAPM is that it is widely used in the industry and is a straightforward computation (Bodie et al., 2018). The regression that we will perform looks like this:

$$R_{\text{Merg Arb}} - R_f = \alpha + \beta_{Mkt}(R_{Mkt} - R_f) + \varepsilon \quad (1)$$

where,

$R_{\text{Merg Arb}}$	= Monthly return of the merger arbitrage portfolio
R_f	= Monthly risk-free rate
α	= Excess risk-adjusted return
R_{Mkt}	= Return to the market
ε	= Error term (idiosyncratic risk)

We purposely left out the subscripts to improve readability. We subtract the risk-free rate from the merger arbitrage return to get the portfolio's excess return. If the merger arbitrage strategy generates abnormal returns, we expect to see a positive and statistically significant alpha (α). The market beta (β_{Mkt}) is a measure of the portfolio's volatility (or systematic risk) in comparison to the market as a whole (Kenton, 2022). However, the model has several limitations and has endured some criticism. For example, Roll (1977) has criticized the CAPM model for being too theoretical since one needs to include every possible asset class in it. Some other important assumptions are that all relevant information is publicly available and all assets are publicly held and traded on open markets (Bodie et al., 2018). Another approach would be to run a regression against

the market portfolio like the broad European index STOXX Europe 600. Since CAPM is one of the most common regressions used in the other articles, we found it useful to compare with our results, despite all its drawbacks.

3.1.2 Fama French three- and five-factor model

Another, more prevalent method today is to use characteristics that appear to be empirically proxies for exposure to systemic risk. The variables considered have historically predicted average returns well and may therefore reflect risk premiums. The Fama French three-factor model and its modifications, which have come to dominate empirical research in security returns, are one example of this method (Boone et al., 2014).

The Fama and French (1993) three-factor model decomposes returns into three factors; *market risk*, *size risk*, and *value risk* while the extended five-factor model also includes factors for *investment* and *profitability*. The five-factor model explains 71 to 94 percent of the variance of a cross-section of expected returns for the size, value, profitability, and investment portfolios examined. Furthermore, the five-factor models performs better than the three-factor model (Fama & French, 2015). The factor models can be used to test the risk arbitrage strategy because it can help identify the factors driving the returns. In other words, it can tell us something about which market conditions the merger arbitrage strategy might perform better or worse. The Fama French three-factor model that we will employ is as follows:

$$R_{\text{Merg. Arb}} - R_f = \alpha + \beta_{Mkt}(R_{Mkt} - R_f) + \beta_{SMB}SMB + \beta_{HML}HML + \varepsilon \quad (2)$$

The Fama and French (2015) five-factor model that we will employ is as follows:

$$R_{\text{Merg. Arb}} - R_f = \alpha + \beta_{Mkt}(R_{Mkt} - R_f) + \beta_{SMB}SMB + \beta_{HML}HML + \beta_{RMW}RMW + \beta_{CMA}CMA + \varepsilon \quad (3)$$

Apart from the variables explained under CAPM (3.1.1), the Fama French models also includes:

SMB = Small Minus Big (Small vs. large stock portfolio returns)
HML = High Minus Low (Returns of high book-to-market vs. low book-to-market stocks)
RMW = Robust Minus Weak (Return on strong operating performance portfolios vs. return on weak)
CMA = Conservative Minus Aggressive (Conservative investment portfolios vs. aggressive investment portfolios)

We will make the same interpretation as in CAPM. A positive and statically significant α should be interpreted as evidence that we can reject the null hypothesis.

3.2 Model to test for non-linearity

3.2.1 Piecewise Linear Regression

We follow the methodology of Mitchell and Pulvino (2001) and Sudarsanam and Nguyen (2008) to test the second hypothesis in 2.5:

$$\begin{aligned}
 R_{\text{Merg. Arb}} - R_f = (1 - \delta)[\alpha_{MktLow} + \beta_{MktLow}(R_{Mkt} - R_f)] \\
 + \delta[\alpha_{MktHigh} + \beta_{MktHigh}(R_{Mkt} - R_f)] + \varepsilon
 \end{aligned} \tag{4}$$

where,

δ = dummy variable equal to one, if the excess market return ($Mkt - R_f$) is above a threshold and zero otherwise.

To ensure continuity, we impose the following restriction:

$$\alpha_{MktLow} + \beta_{MktLow}(R_{Mkt}^* - R_f) = \alpha_{MktHigh} + \beta_{MktHigh}(R_{Mkt}^* - R_f) \tag{5}$$

where,

R_{Mkt}^* = threshold for market high / low

Mitchell and Pulvino (2001) found an optimal threshold of -4.0 % while Sudarsanam and Nguyen (2008) found -11.90%. The optimal threshold is found by minimizing the sum of squared residuals which is the same as maximizing the models R^2 . If we find a non-linear pattern as Mitchell and Pulvino (2001) and Sudarsanam and Nguyen (2008), then the payoff structure is similar to writing uncovered index put option. An investor who writes a put option gives a promise to the buyer to purchase the underlying asset at a predetermined price if the

buyer chooses to exercise the option (also known as the strike price). Scott (2021) describes an uncovered position as a position where the investor does not own the underlying security. To be more specific, we anticipate finding a positive α_{MkHigh} in normal market conditions, reflecting the put premium. The correlation with the market (systematic risk) is reflected in the $\beta_{MktHigh}$ and should be close to zero. When the market is in a downturn, i.e., the $Mkt - R_f$ is close to zero or negative, we expect to see a β_{MktLow} greater than zero.

3.3 Data

Below we explain the procedure for how we have constructed and filtered out our sample. All decisions below are made to make the dataset as large as possible while being realistic to trade on.

3.3.1 Sources of data

We have gathered our data from Refinitiv Eikon (previously Thomson Reuters), one of the most comprehensive M&A databases (Refinitiv, 2022). The Eikon Refinitiv Mergers and Acquisitions Deals Database is used to collect all deal-specific information (for example, announcement dates, consideration information, completion date, and so on). Refinitiv Eikon Python API is then used to collect all stock returns and prices for both targets and acquirors. Kenneth French (2022) database is used to obtain the European Fama French factors and the risk-free rate.

3.3.2 Inclusion criteria

We have summarized our inclusion criteria in table 2. The rationale behind each assumption is also explained below.

Table 2: Inclusion Criteria Summary

Description	Sample Size
1 Refinitiv Eikon Deals Database where nation of primary stock exchange is Europe	46 847
2 Target status is public	45 200
3 Deals between 2000-01-01 to 2021-12-31	23 285
4 The deal is either classified as "completed" or "withdrawn"	22 793
5 M&A Type is Disclosed Dollar Value Deal	6 621
6 Percentage of shares Acquiror is seeking to purchase is greater than or equal to 10%	6 068
7 Consideration offered is cash or stocks or a combination of both	5 422
8 Deal Value greater than or equal to 100 M USD	2 711
9 Exclude deals with missing or incomplete information	1 761
10 Exclude deals shorter than 5 days or longer than 365 days	1 662
11 Exclude deals where less then 5 deals are made in that currency	1 598
12 Exclude deals where stock price or other relevant data is missing	1 177
13 Exclude deals with negative speculation spread or greater than 200%	786

First, the initial sample contains 46 847 transactions from 32 European countries as Refinitiv defines them.

Second, we require the target to be a publicly-traded company, as it is impossible to trade on non-listed companies. This is essential to get the data we need to calculate the returns.

Third, our goal was to get as long time series as possible so that we have the opportunity to study the portfolio in several economic cycles. We, therefore, tried to include as much data as possible. We started our sample in 2000 due to a lack of data from the 1990s. The primary problem we encountered was the lack of stock price time series from Eikon Refinitiv API for the deals made in the 1990s. If we had included deals from the 1990s, we would have been forced to exclude many deals due to missing data. We, therefore, suspect that this may rather distort than clarify our data.

Fourth, even though one does not know in advance how the deals will evolve, we need to add this restriction to avoid adding deals that, for some odd reason, do

not fall into one of these two categories. Rumored deals are one example of a deal type that is excluded.

Fifth, this requirement indicates that the deals have a disclosed dollar value, and the acquiror is intended to pass the 50 percent ownership threshold in a target. We chose a threshold of 50 percent because one becomes the majority owner and can influence many of the company's decisions. This is a similar requirement as for instance in the S&P (2022) Merger Arbitrage Index Methodology and Hall et al. (2013).

Sixth, in order to exclude tiny deals that are difficult to trade on due to liquidity, we only include deals in which the acquirer seeks a 10% stake or more in the transaction.

Seventh, we have chosen to analyze three of the most common types of deals; cash, stock, and combination deals. Including contingency, deals would make the automated calculation of the returns difficult. According to Mitchell and Pulvino (2001), the main benefit of including multiple types of deals is that it is more realistic and extends the tradable universe. A large dataset is also required to evaluate the systematic risk associated with merger arbitrage adequately.

Eighth, we only include deals with a deal value of \$ 100 million or more. In comparison S&P (2022) uses a deal value of \$ 500 million. When we tried to use a deal value of \$ 500 million in the European market, we barely found any deals. We suspect this has to do with the fact that Europe is characterized by many small countries where virtually every country has its own domestic stock exchange. Therefore, we decided to compare the market capitalizations of Europe's largest stock exchange (LSE) and the largest stock exchange in the United States (NYSE). We found the ratio to be approximately 13% which corresponds to a deal value of \$ 65 million (500×0.13) in Europe (see section B for details). We argue that deal value can be used as a proxy for liquidity, even though it is not a theoretically and practically correct measure of liquidity. If the deal value is large enough, we think it is reasonable that there at least is some trading volume in that stock. However, if we trade on deals with too low value, we face the risk of driving up the stock price. Therefore, we adjusted the minimum deal value upwards to \$ 100 million. For an overview of actual trading volume in dollars in our sample, please see table 14.

Ninth, we primarily excluded deals for two reasons: first, the bid had a complicated settlement structure, or second, other lacking data required to compute the return on investment. See section 3.4 for more information about calculations of returns.

Tenth, the theoretical minimum would be two trading days, but if we take weekends and holidays into account, five days seems reasonable. Deals lasting less than five days are therefore eliminated to avoid deals that are unrealistic to trade on, which we have seen a handful of in our dataset. Deals over 365 days in duration are rejected to avoid data inaccuracies like deals that were never completed or get withdrawn. This is also in line with how S&P (2022) construct their index.

Eleventh, a few transactions in the dataset used a currency only once or twice. Peruvian Sol and Kazakhstani Tenge are two examples. We removed these deals to prevent the possibility of outliers due to currency volatility.

Twelveth, for all targets, we require a stock price time series. In the case of a stock or combination transaction, we also require a time series of the acquiring company's stock price. We requested a share price from the Eikon API 90 days before the announcement and until ten days after withdrawal (or completion). We set a threshold of getting a new close price back for at least 30% of these days. The threshold is set to consider weekends and holidays when the stock exchange is closed. We rejected deals in which we could not obtain the requested time series due to liquidity concerns.

Thirteenth, we choose not to enter deals with negative speculation spread to mitigate the risk associated with the strategy. This is the same criteria as Credit Suisse (2022) Merger Arbitrage ETF has. We eliminated deals where the spread appeared unrealistic to avoid false outliers with extreme returns. The spread threshold has been set to 200%. Ultimately, we ended up with a dataset that, on average, contains 35 deals per year. Please, see figure 4 for distribution.

We define speculation spread as the percentage difference between the bid and market price one day after the initial announcement, as Jindra and Walkling

(2004) and Jetley and Ji (2010) do. We calculate this spread as:

$$\text{Speculation spread} = \frac{P_{offer} - P_{target,t+1}}{P_{target,t+1}} \quad (6)$$

where,

Speculation spread = the spread one day after a deal is announced
 P_{offer} = the price that the acquiring company offers to pay for each share of the target company's shares
 $P_{target,t+1}$ = the closing price of the target company's stock one day after announcement

In the case of a stock deal or combination deal, one must do some extra calculations. This formulas can be found in section D.

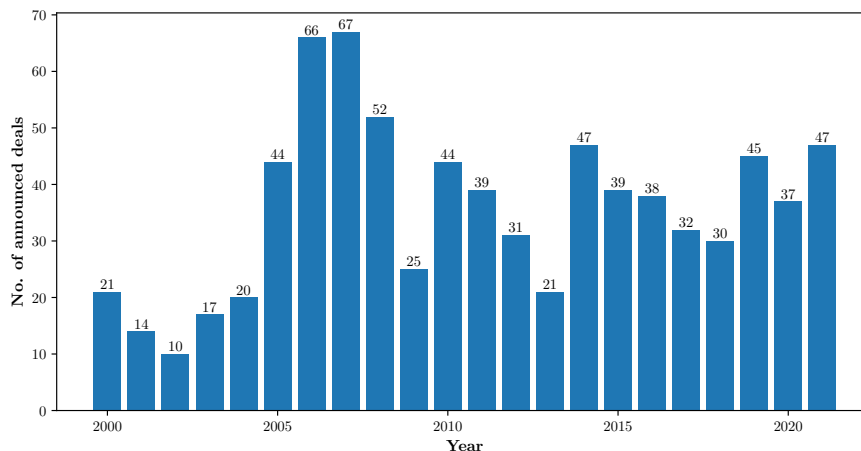


Figure 4: Histogram of deals announced per year.

3.4 Deal Calculations & Portfolio Construction

3.4.1 Currency

Euro was first introduced as a digital currency 1st of January 1999 and became a physical currency as late as the 1st of January 2002. (Ganti, 2022a). It was first used among 14 EU member states. Due to the late implementation of the Euro and, because only part of our sample uses it as their domestic currency, we thought it was most logical to convert all stock prices to dollar. In cases where bids are set in a currency other than USD, we converted them to USD using Refinitive's daily exchange rate. In addition, all returns calculated on Kenneth French's homepage where we downloaded the Fama-French factors are calculated in dollars (French, 2022). Therefore it will be most consistent if we calculate the

returns in dollars.

Maheswaran and Yeoh (2005) noted in their study that not all successful deals converged to the final bid price. They speculate this was due to bad liquidity when the deals get closer to completion. Because there may be insufficient liquidity as a deal nears completion, we have decided to replace the target stock price on the final day with $Bid\ in\ FC \times \frac{USD}{FC}$.

$\frac{USD}{FC}$ is the exchange rate of the USD to the foreign currency at the completion date. We have only done this with the completed deals, not the withdrawn ones. In stock and combo deals, we have replaced the final trading day's price with: $Acquiror\ stock\ price\ at\ completion \times Exchange\ rate\ ratio$

3.4.2 Holding period

If a deal is successful, we hold the position from one day after the announcement until the deal is completed. However, about 22% of the deals in our dataset fail. As discussed earlier, it could be for various reasons, but the bid is labeled as "withdrawn" in the database. If that is the case, we hold the position until one day after the withdrawal announcement. This means that we get the return from the announcement date +1 up to and including the day after the withdrawal date.

3.4.3 Construction of time series

To start with, we calculated the daily return of each deal using the *calendar time* approach (see section 2.4.3 for arguments). In the end, we merged all deals into a single data set. We utilize the same formulas, which appear to be standard in the merger arbitrage literature (see, for example, Sudarsanam and Nguyen (2008)). In the case of a *cash deal* (7), the payoff is calculated with the following equation:

$$R_{it} = \frac{P_{it}^T + D_{it}^T - P_{it-1}^T}{P_{it-1}^T} \quad (7)$$

Where the subscript refers to time t for deal i and the superscript refers to if it is T , a target or A , an acquiror. R_{it} is the daily return and P refers to stock price, and D is the dividend.

In the case of a *stock deal* (8), the investor takes a long position in the stock of the target and a short position in the acquiror, equivalent to the exchange rate between the two companies. The exchange rate is referred to as delta (Δ) in the

equation below and comes from the consideration offered by the acquiror. It is the ratio of how many shares of the acquirors stock the target holder receives per stock owned. When the stock deal is completed, the long position is netted against the short position, which completes the arbitrage. We assume that the short position payoff can compound at daily risk-free rate (r_f). The payoff can be expressed as follows:

$$R_{it} = \frac{P_{it}^T + D_{it}^T - P_{it-1}^T - \Delta(P_{it}^A + D_{it}^A - P_{it-1}^A - r_f P_{it-1}^A)}{P_{it-1}^T - \Delta[P_{it-1}^A - P_{it-2}^A(1 + r_{ft-2})]} \quad (8)$$

A *combination deal* (9) is when the acquiror offers both cash and stocks in exchange for the target stocks. To invest in this deal type, we use the same proportions of cash and shares as the acquiror offers. To do this, we combine the two formulas from above. Further, we let W_c denote the weight of the cash part and W_s denote the weight of the stock part. As a result, the payoff can be expressed as follows:

$$R_{it} = \left(\frac{P_{it}^T + D_{it}^T - P_{it-1}^T}{P_{it-1}^T} \times W_c \right) + \left(\frac{P_{it}^T + D_{it}^T - P_{it-1}^T - \Delta(P_{it}^A + D_{it}^A - P_{it-1}^A - r_f P_{it-1}^A)}{P_{it-1}^T - \Delta[P_{it-1}^A - P_{it-2}^A(1 + r_{ft-2})]} \times W_s \right) \quad (9)$$

3.4.4 Equal-weighted merger arbitrage portfolio (EWAP)

We have now calculated the payoff of all deals. What is left to do is to construct a portfolio. To build a portfolio, we need some scheme to determine how much weight to give each deal. The first portfolio we construct is equally weighted. It means one puts an equal amount of money in each active transaction. For instance, if there are four active deals, 25% of the portfolio would be placed in each deal. Each deal gets the weight as follows:

$$W_{it} = \frac{1}{N_t} \quad (10)$$

where,

W = Portfolio weight for deal i at time t

N = Number of active deals at time t

The advantage of this portfolio type is that one does not end up with almost all the money in one stock if that company's market capitalization is much higher compared to the others. However, one drawback is that it does not take into consideration that particularly small stocks might have poor liquidity. Poor liquidity

could make it hard to replicate the portfolio in the real world since one possibly does not get the number of shares one wants, or if one does, the order might push the stock price up, hurting the returns for the investors.

3.4.5 Value-weighted merger arbitrage portfolio (VWAP)

A more realistic portfolio construction is the value-weighted. In this portfolio type, the weight of each deal is determined by the market capitalization of the target company. So, first, one sums the total market capitalization of the companies currently active in deals and then calculates what percentage each company has of the total. For instance, if one company has 30% of the market capitalization of all the target companies in active deals, 30% of the capital should be allocated to that position. The weight for each deal can be expressed as follows:

$$W_{it} = \frac{v_i}{V_t} \quad (11)$$

where,

v_i = is the market value of company i , i.e. No of total outstanding stocks \times close price 4 weeks before announcement ("clean price")

V_t = is the sum of the market value of all ongoing deals at time t

Preferably we would have chosen to use free-float stocks instead of total outstanding stocks when calculating the value weights. This is because free-floating shares can be more freely traded than locked-in shares held by insiders and governments. The free-float method is usually considered to give a more accurate picture of market movement and shares available for trading. However, we chose to use total outstanding stocks instead because more data was available, which increased our sample size.

3.4.6 Practitioner arbitrage portfolio (PAP)

The practitioner arbitrage portfolio is very similar to the value-weighted portfolio. The only difference is that the practitioner portfolio sets a maximum limit for each position. Some other articles have set this cap to 10%, which we consider a reasonable level. If there are too few positions to invest in, one will have cash left over. The question is what to do with them. We think there are two options: invest the excess cash in a risk-free asset or a broader stock index. If one invests the potential excess cash in risk-free assets, the portfolio will get a market beta closer to zero. On the other hand, if one invests in a broad stock portfolio or index, the portfolio will get a beta closer to one. Since the risk arbitrage strategy,

according to some other researchers (for instance: Maheswaran and Yeoh (2005)), is a risk-neutral investment, we conclude that the potential excess cash should be invested in a risk-free asset. The weight for each deal can be expressed as follows:

$$W_{it} = \min\left(\frac{v_i}{V_t}, 0.1\right) \quad (12)$$

According to Moore (2018), the ideal strategy to deal with merger arbitrage risk is to utilize a maximum percentage of portfolio value, as well as a maximum % loss on each investment. He also claims that this method decreased risk and increased portfolio returns slightly. However, since we do not assess risk/reward on each deal individually prior to bid, we do not execute the technique described in Moore (2018) article.

3.4.7 Calculating monthly returns

We now have a dataset with each individual deal and its associated payoff. Furthermore, we also have three datasets, one for each portfolio type, with each deal and its associated weight. What is left to do now is simply to calculate the return as follows for all three portfolios:

$$R_{portfolio,t} = \sum_{i=1}^{N_t} W_{it} \times R_{it} \quad (13)$$

Where N is all the active deals on day i . Note that we rebalance the portfolio each time a deal is completed or when a new deal is announced. Each of the portfolios is then compounded into monthly return using formula (14), on which we then conduct our analysis.

$$R_{portfolio,monthly} = \prod_{t=1}^T (1 + R_{it}) - 1 \quad (14)$$

3.4.8 Further assumptions

No transaction costs are a simplification we made. However, Goldstein et al. (2009) has shown that transaction costs have decreased for a decade. We have seen the same trend in European Market. Jetley and Ji (2010) found that transaction costs have little effect on merger arbitrage spread from 1990 to 2007. Previous research has found a mixed picture of the relevance of transaction costs in merger arbitrage. Transaction costs would reduce portfolio returns, albeit less than in earlier studies. However, this should be considered for future studies.

4 Results and Analysis

In this section, we will first look at some summary statistics of our sample before moving on to regressions results, where we check if the strategy is profitable. Finally, we check if we can find a non-linear relationship in returns.

4.1 Summary of Data

A breakdown of all deals included in our portfolios is in table 3. Table 3 first shows a decline in M&A activity after the dot-com bubble in 2001. We then see some intense activity leading to the global financial crisis of 2007-2008. Finally, the activity seems to have stabilized somewhat from around 2014 until 2021. Figure 5 shows that most of the 786 deals we traded on are in the United Kingdom. We first thought of decomposing the dataset into each country, however, due to the limited number of deals in most countries, we did not find it sensible to do so. For example, France, the second-biggest market, only has approximately three deals per year which seems too little to draw any conclusion. Therefore, our dataset might be comparable to the UK study by Sudarsanam and Nguyen (2008) due to sample composition.

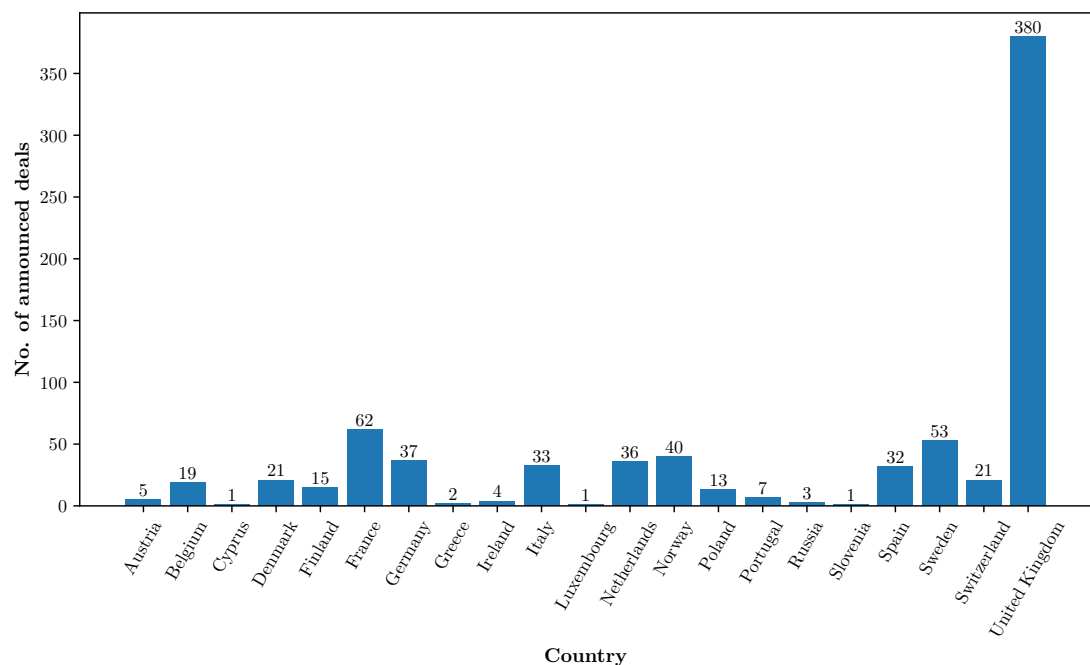


Figure 5: Histogram of deals announced per country.

Table 3: Sample overview

Year	Total Deals Traded On	Successful Deals	Successful Deals in %	Cash Deals Traded On	Stock Deals Traded On	Combo Deals Traded On
2000	21	13	62%	20	1	0
2001	14	12	86%	14	0	0
2002	10	9	90%	10	0	0
2003	17	12	71%	17	0	0
2004	20	13	65%	19	1	0
2005	44	37	84%	41	3	0
2006	66	49	74%	61	4	1
2007	67	56	84%	64	0	3
2008	52	39	75%	49	2	1
2009	25	22	88%	25	0	0
2010	44	36	82%	39	3	2
2011	39	33	85%	38	0	1
2012	31	27	87%	29	1	1
2013	21	16	76%	19	2	0
2014	47	33	70%	41	2	4
2015	39	32	82%	31	2	6
2016	38	24	63%	31	1	6
2017	32	22	69%	25	3	4
2018	30	26	87%	27	1	2
2019	45	37	82%	40	2	3
2020	37	32	86%	33	0	4
2021	47	35	74%	44	2	1
Sum	786	615		717	30	39
Average	35.7	28.0	78%	32.6	1.4	1.8

Cash deals are the most popular way of structuring a bid, with an average of 91.2% per year. The second most popular is the combination deals with an average of 5%, followed by stocks deals with 3.8%. However, one should be aware that we might have filtered out more stocks and combo deals due to missing data compared to the real-world composition. This is because one needs more data to calculate stocks or combo deals, so there are more possibilities of missing data. We note that this can lead to biases in the data. About 78% of all deals are successful. However, this is a little bit lower compared to most other studies (see table 1). We also note that the success rate fluctuates slightly, but we fail to see any clear pattern.

Table 4: Sample overview continue

Year	Target Average Market Value	Target Median Market Value	Average Deal Du- ration (Days)	Average Bid Premium	Average Speculation Spread
2000	366 336 144	176 418 811	62.29	26.98%	7.95%
2001	760 015 510	427 741 742	82.29	11.41%	7.65%
2002	1 184 512 444	260 684 055	59.90	19.95%	8.75%
2003	713 680 394	424 093 035	93.24	19.91%	11.41%
2004	2 039 557 902	505 295 722	89.80	20.56%	9.37%
2005	1 829 505 486	519 574 926	93.32	12.18%	5.83%
2006	1 658 732 567	398 627 434	91.44	21.19%	11.15%
2007	1 837 069 040	386 592 801	105.10	18.67%	7.66%
2008	1 492 080 170	363 247 237	94.31	40.08%	15.36%
2009	819 999 621	356 466 708	98.28	44.91%	21.62%
2010	926 849 820	270 384 942	108.86	30.77%	14.82%
2011	1 123 192 459	341 830 853	88.56	34.80%	14.68%
2012	605 262 419	408 644 102	105.68	31.10%	6.57%
2013	1 338 535 218	303 810 979	88.76	15.20%	4.92%
2014	1 269 255 481	463 237 346	117.79	28.45%	14.35%
2015	1 176 302 288	586 378 460	114.05	32.31%	12.72%
2016	654 378 796	315 046 902	121.45	36.25%	20.05%
2017	2 851 234 842	816 531 266	118.81	24.37%	9.78%
2018	1 236 526 556	721 817 019	138.27	33.23%	11.79%
2019	1 114 169 619	422 127 999	124.96	26.25%	6.47%
2020	1 168 787 975	518 482 713	121.81	36.03%	14.77%
2021	1 352 210 693	626 895 980	111.83	24.86%	10.24%
Average	1 250 827 065.55	436 996 865.10	101.40	26.79%	11.27%

A more detailed view of the spread can be found in table 15 in the appendix.

Regarding *Target average market value*, some of the same patterns we saw in table 3 is visible in table 4. The biggest deals were done in the period 2004-2008. In general, it seems that the deals are getting bigger. The same is true when looking at the average deal duration. The number of days has increased significantly in the last decade compared to the previous one. The average bid premium is 26.8%, while the average deal spread is 11.3%. As mentioned earlier, the target stock normally increases significantly on the announced date, and hence the spread will have narrowed the day after. Both the bid premium and the speculation spread peaked in 2009. This was probably a sign that the target investors required a bigger spread as compensation for the uncertain financial markets in that period.

4.2 Merger Arbitrage Returns

Table 5: Yearly Return of portfolios

Year	Equally Weighted	Value Weighted	Practitioner	STOXX Europe 600	S&P 500	R_f
2000	4.8%	-10.3%	11.7%	-5.0%	-9.0%	5.6%
2001	17.5%	8.4%	3.8%	-17.0%	-13.0%	3.5%
2002	40.6%	41.5%	12.7%	-32.0%	-23.0%	2.6%
2003	47.7%	63.8%	10.4%	13.0%	26.0%	0.0%
2004	51.6%	62.2%	17.7%	10.0%	9.0%	1.1%
2005	19.7%	14.7%	9.7%	23.0%	3.0%	2.6%
2006	53.5%	62.1%	38.5%	18.0%	14.0%	5.3%
2007	42.8%	37.1%	24.9%	0.0%	4.0%	4.9%
2008	3.7%	12.8%	15.2%	-46.0%	-38.0%	2.0%
2009	27.8%	16.6%	7.6%	28.0%	23.0%	0.0%
2010	38.5%	21.4%	13.8%	9.0%	13.0%	0.0%
2011	54.6%	31.5%	22.8%	-11.0%	0.0%	0.0%
2012	29.9%	34.0%	18.3%	14.0%	13.0%	0.0%
2013	26.3%	30.4%	8.9%	17.0%	30.0%	0.0%
2014	43.1%	34.7%	14.8%	4.0%	11.0%	0.0%
2015	39.7%	25.5%	20.8%	7.0%	-1.0%	0.0%
2016	49.6%	45.5%	33.2%	-1.0%	10.0%	0.0%
2017	54.5%	56.5%	30.7%	8.0%	19.0%	0.0%
2018	50.2%	68.2%	36.0%	-13.0%	-6.0%	2.4%
2019	22.5%	28.0%	16.0%	23.0%	29.0%	2.6%
2020	42.0%	35.4%	17.1%	-4.0%	16.0%	0.7%
2021	25.2%	24.2%	21.8%	22.0%	27.0%	0.0%
CAGR	34.8%	32.4%	18.1%	1.2%	5.6%	1.5%

CAGR: Compound Annual Growth Rate. Data for Stoxx Europe 600 and S&P 500 is retrieved from the Refinitiv Eikon API in June 2022.

Table 5 is consistent with our expectations. The equally weighted portfolio generates the highest annual return of 34.82%, followed by the value-weighted 32.35% and Practitioner portfolios 18.12% in the years 2000-2021. The reason is different risk profiles for each portfolio. As mentioned above, since the equally weighted portfolio has its money equally distributed between the active bids, smaller and probably riskier deals are included. On the other hand, the practitioner portfolio is limited to a maximum of 10% in each deal, hence reducing the overall risk of the portfolio. Apart from the value-weighted portfolio in 2000, every year delivered positive returns. In 2008, the broad European equity index, Stoxx Europe 600, fell 46%, while all our portfolios generated positive returns. In addition, the value-weighted and practitioner portfolios generated a considerable positive

return. This indicates that merger arbitrage has been a good investment strategy for the period we have looked at. A graphical representation of how the portfolios and STOXX Europe 600 have developed over time can be seen in figure 6.

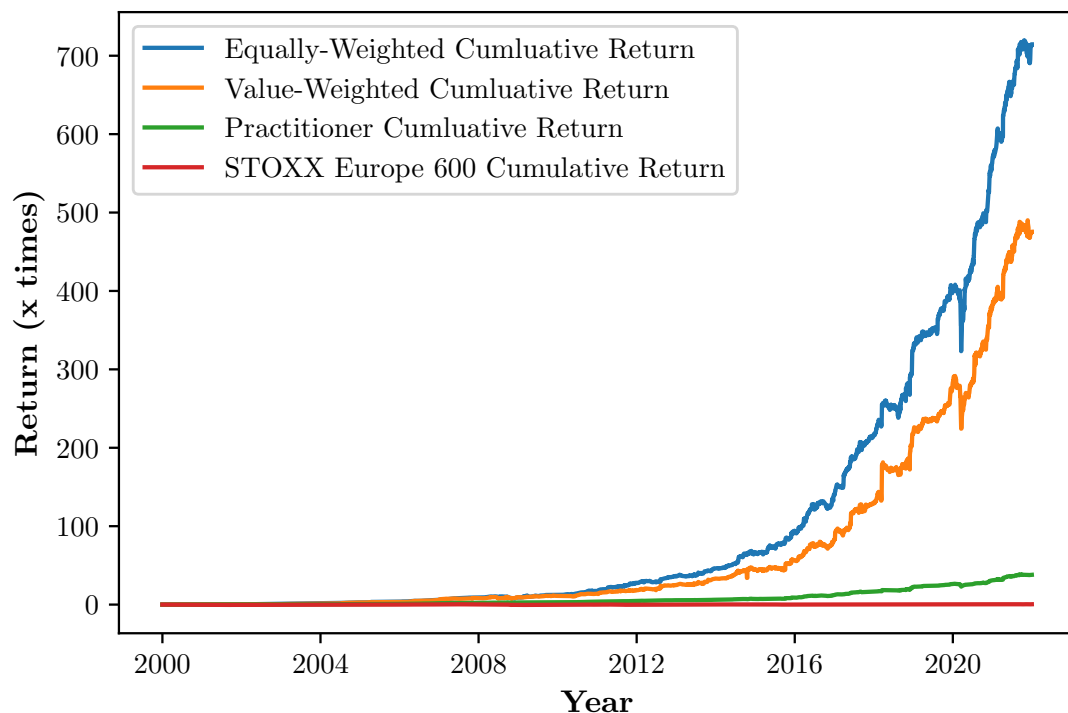


Figure 6: Cumulative return of the Merger Arbitrage portfolios.

4.3 Empirical analysis of the strategy

To analyze the different portfolios and the risk and return associated with them, we have conducted three regressions on the three portfolios. In total there has been conducted nine regressions. The portfolios are as mentioned before in section 3, the *equally-weighted* (EWAP), the *value-weighted* (VWAP) and the *practitioner arbitrage portfolio* (PAP). The regressions are Capital Asset Pricing Model (CAPM), the Fama and French (1993) three-factor model and the Fama and French (2015) five-factor model. All coefficients are obtained with ordinary least squares (OLS).

4.3.1 CAPM

Table 6: CAPM regression output

	(EWAP)	(VWAP)	(PAP)
α	0.0233*** (0.003)	0.0223*** (0.003)	0.0121*** (0.002)
β_{Mkt}	0.3287*** (0.058)	0.3312*** (0.069)	0.2023*** (0.042)
Adj. R-squared	0.156	0.097	0.162
N	264	264	264
Sample	Monthly	Monthly	Monthly

Standard Errors in parentheses are heteroscedasticity robust. If a p-value is less than 0.10, it is marked with one star (*). If a p-value is less than 0.05, it is marked with two stars (**). If a p-value is less than 0.01, it is marked with three stars (***).

The CAPM regressions on the three different portfolios all show statistically significant alphas on conventional confidence levels. According to CAPM, all portfolios generate an excess risk-adjusted return. In other words, it is a profitable investment strategy. The equally weighted portfolio generated the highest monthly alpha of 2.33%. The second highest was the value-weighted with 2.23%, followed by the practitioner portfolio with 1.21%. Interestingly, all portfolios show a market beta that is positive and statistically significant. This indicates that the merger arbitrage portfolio is not market neutral. The equally weighted and value-weighted market beta is in excess of 0.3, while the practitioner portfolio shows a lower of 0.2023. The lower market beta in the practitioner portfolio is due to excess cash being invested in a risk-free asset, which theoretically should have a market beta of zero. Mitchell and Pulvino (2001) found in their research on the US market a lower alpha and a lower market beta VWAP: 0.054 and PAP: 0.1232). Compared to Sudarsanam and Nguyen (2008) we find a higher alpha and also a slightly higher market beta (EWAP: 0.2475, VWAP, 0.2914 and PAP: 0.1475). Also, the adjusted R-squared, ranging from 0.097 to 0.162 is higher than Mitchell and Pulvino (2001) and Sudarsanam and Nguyen (2008). However, one should consider both numbers low, suggesting that CAPM might not be the best model to describe the returns for our portfolios and that idiosyncratic risk is present.

Table 7: Fama French regression output

	(EWAP)	(VWAP)	(PAP)	(EWAP)	(VWAP)	(PAP)
α	0.0231*** (0.002)	0.0217*** (0.003)	0.0118*** (0.002)	0.0219*** (0.003)	0.0215*** (0.004)	0.0115*** (0.002)
β_{Mkt}	0.3263*** (0.059)	0.3146*** (0.074)	0.1945*** (0.043)	0.3843*** (0.068)	0.3519*** (0.085)	0.218*** (0.045)
β_{SMB}	0.1179 (0.128)	0.1365 (0.159)	0.0636 (0.077)	0.1511 (0.129)	0.165 (0.162)	0.0778 (0.072)
β_{HML}	0.0264 (0.102)	0.1392 (0.121)	0.0648 (0.053)	-0.0836 (0.206)	-0.0087 (0.200)	0.0081 (0.103)
β_{RMW}				0.1564 (0.205)	-0.03 (0.262)	0.0429 (0.116)
β_{CMA}				0.3052 (0.286)	0.2646 (0.278)	0.1337 (0.158)
Adj. R-squared	0.152	0.097	0.161	0.156	0.093	0.159
N	264	264	264	264	264	264
Sample	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly

Standard Errors in parentheses are heteroscedasticity robust. If a p-value is less than 0.10, it is marked with one star (*). If a p-value is less than 0.05, it is marked with two stars (**). If a p-value is less than 0.01, it is marked with three stars (***).

4.3.2 Fama French Factor Models

As with the CAPM regressions, all the alphas in the Fama French three-factor regressions are statistically significant at all conventional confidence levels. The returns are slightly lower, with a monthly alpha of 2.31% for EWAP, 2.17% for VWAP, and 1.18% for PAP. The alphas from our regression is also higher than Mitchell and Pulvino's (2001) Fama French three-factor regression monthly alpha of 0.29% and 0.79%. Baker and Savasoglu (2002) found the returns to be 0.59% on VWAP and 0.74% on EWAP. The market betas for all regressions are statistically significant for all portfolios, matching the numbers we found in the CAPM regression, with a beta in excess of 0.3 for EWAP and VWAP and 0.1945 for PAP. This implies that the trading strategy is not market-neutral. Mitchell and Pulvino (2001) found betas that were lower than we found. However, the market betas of Baker and Savasoglu (2002) are more in line with our numbers. Neither the small minus big size (SMB) nor the high-minus-low book-to-market ratio (HML) factor is statistically significant for any Fama-French three-factor regressions. Baker and Savasoglu (2002) found all the SMB and HML factors to be statistically significant, while Mitchell and Pulvino (2001) only found one of the SMB factors to be statistically significant in the US market.

The Fama-French five-factor model is the same as the Fama-French three-factor model, with two added factors: RMW and CMA, as described in methodology 3. However, adding extra factors does not seem to affect the alpha much. Interestingly the market beta increases some, suggesting that the strategy is less market-neutral than what is found in the two previous regressions above. However, both are still statistically significant, and the numbers are approximately the same as above. As in the Fama-French three-factor model, none of the other factors are statistically significant. However, adding the two factors does not add any explanatory power (rather the opposite) if we look at the adjusted R^2 .

Table 8: Fama French 3 - Two sub-samples

	(a) Period 2000-2011			(b) Period 2011-2022			
	(EWAP)	(VWAP)	(PAP)		(EWAP)	(VWAP)	(PAP)
α	0.0203*** (0.004)	0.018*** (0.005)	0.0086*** (0.002)	α	0.026*** (0.004)	0.0249*** (0.004)	0.0148*** (0.002)
β_{Mkt}	0.2912*** (0.084)	0.2644*** (0.105)	0.1577*** (0.065)	β_{Mkt}	0.3655*** (0.100)	0.3806*** (0.101)	0.2381*** (0.066)
β_{SMB}	0.1298 (0.175)	0.0912 (0.219)	0.0253 (0.110)	β_{SMB}	0.0805 (0.184)	0.215 (0.232)	0.1341 (0.127)
β_{HML}	0.0093 (0.165)	0.1574 (0.168)	0.0781 (0.065)	β_{HML}	0.0749 (0.163)	0.1403 (0.190)	0.0789 (0.114)
Adj. R-squared	0.115	0.054	0.143	Adj. R-squared	0.186	0.144	0.178
N	132	132	132	N	132	132	132
Sample	Monthly	Monthly	Monthly	Sample	Monthly	Monthly	Monthly

To further examine the risk and return characteristics of the merger arbitrage portfolio, we have decomposed the sample into equal time periods. The first was from 2000-2011, and the second was from 2011-2022. Since the Fama and French (2015) five-factor model did not add any explanatory power to the model, we chose only to conduct the Fama and French (1993) three-factor model. As shown in table 8 above, the monthly alpha is higher in the second period than in the first. Interestingly, the correlation with the market also increases, indicating a higher portfolio risk. None of the other factors in the Fama and French (1993) three-factor model is statistically significant. One theory for the lower alpha in the first period, 2000-2011, comes from the bad returns in 2000 and 2008 in table 5. These years are known for the dot-com bubble and the financial crises. However, we do not see similar crises in the second period, hence the higher alpha.

4.4 Piecewise Linear Model

We want to check for non-linearity of the portfolio returns, something neither of the other regressions checks for. One model to check for non-linearity is the piecewise linear regression. The results from our piecewise linear regression can be found in table 9. Our estimated threshold value is -11.61% for the equally weighted portfolio and -15.07% for the other two portfolios. These thresholds are, in other words, the threshold that maximizes the R^2 of the piecewise linear model. For a clearer understanding of how to interpret the results, the $\alpha_{MktHigh}$ and the $\beta_{MktHigh}$ represent the majority of market conditions where the $(Mkt - R_f)$ is higher than the threshold. When the opposite is true, we should consider α_{MktLow} and β_{MktLow} . In the case of the *equally-weighted portfolio* (EWAP), we get 2.42% excess risk-adjusted return per month under normal market conditions (high). However, the beta correlates more with the market than Sudarsanam and Nguyen (2008) who finds a correlation of 0.0788 while we find 0.2857. In cases where the market excess return is below the threshold of -11.61%, the market beta increases to 1.1, which is four times higher than when the market is under normal conditions. This is higher than Sudarsanam and Nguyen (2008) who finds a market beta 0.92. However, we note that our R^2 is considerable higher than Sudarsanam and Nguyen (2008) of 0.054. The same pattern applies to the other two portfolios as well. In figure 7, we can see what this looks like graphically.

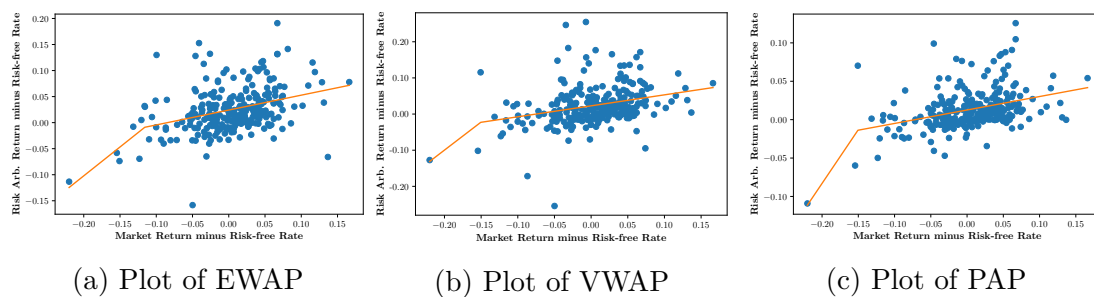


Figure 7: Graphical representation of the result of the estimation of the piecewise linear model

Table 9: Piecewise linear model

	(EWAP)	(VWAP)	(PAP)
Threshold $R_{Mkt} - R_f$	-0.1161	-0.1507	-0.1507
α_{MktLow}	0.1199*** (0.0369)	0.2117*** (0.0524)	0.1975*** (0.0237)
β_{MktLow}	1.1098*** (0.0045)	1.5572*** (0.0095)	1.4024*** (0.0043)
$\alpha_{MktHigh}$	0.0242*** (0.0045)	0.0228** (0.0095)	0.0126*** (0.0043)
$\beta_{MktHigh}$	0.2857*** (0.0257)	0.3036*** (0.0316)	0.1752*** (0.0146)
R-squared	0.1746	0.1096	0.2015
N	264	264	264
Sample	Monthly	Monthly	Monthly

Standard Errors in parentheses. If a p-value is less than 0.10, it is marked with one star (*). If a p-value is less than 0.05, it is marked with two stars (**). If a p-value is less than 0.01, it is marked with three stars (***). Note that the output from a

Piecewise linear regression can be presented in the form

$\hat{y} = \alpha + \beta_1 X_i + \beta_2 (X_i - X^{(K)}) \beta_{x(K)}$ where $X^{(K)}$ is the threshold as in Mitchell and Pulvino (2001) or through some algebra in the form that Sudarsanam and Nguyen (2008) presents, as two separate equations. We chose the latter.

It appears that there may be a non-linear relationship between risk and return based on the significant differences that exist between the coefficient estimates for market downturns and those for normal market conditions. To test the robustness of our results, we conduct an F-test. The unrestricted model is the model presented under 3.2.1. We test if the piecewise model can be transformed into the standard CAPM. In other words, we test:

$$\beta_{MktLow} = \beta_{MktHigh}$$

Only the practitioner portfolio is statistically significant (table 10). These findings make us question our results. Another point to take into consideration is the threshold we use. Mitchell and Pulvino (2001) finds a threshold of -4% and as

Table 10: F-test of the piecewise linear model against standard CAPM

	(EWAP)	(VWAP)	(PAP)
Threshold $R_{Mkt} - R_f$	-0.1161	-0.1507	-0.1507
F-statistic	1.8966 (0.1696)	1.4019 (0.2375)	8.4022 (0.0041)

our threshold is more than double that in absolute terms. This means that if we use the threshold of -11.61%, we only have six months of market downturn in our dataset of 22 years.

4.5 Concluding discussion

As we can see from the regressions above, the alphas are generally very high and statically significant. Therefore, we can reject the null hypothesis (1) and conclude that the merger arbitrage strategy generates an excess risk-adjusted return.

Compared to much of the market research conducted in the United States over the last 20 years, the alphas we find are at the upper end, and some are even higher. Compared to the UK market studied by Sudarsanam and Nguyen (2008) 1987-2006, we also get a slightly higher alpha. One theory we have for the difference is that when one looks at the returns on S&P 500 and compares it to the European counterpart STOXX Europe 600, the returns are different worlds apart. The STOXX Europe 600 is very overlapping in terms of countries the Fama-French factors are based on, so we assume STOXX Europe 600 is a valid comparison. The returns from 2000-2021 on the STOXX Europe 600 have been around 29% while the S&P 500 has around 233% (table 5). Hence, we can conclude that the market conditions in Europe and the United States have been very different. We also see that the portfolio performs well under different market conditions.

In regards to market neutrality, we find some evidence for a non-linear return pattern. However, we fail to reject the null hypothesis in two out of three portfolios, making it hard to reject the null hypothesis (2). We suspect this is partly due to few observations in the market-low state.

5 Conclusion

We have investigated the profitability of merger arbitrage in the European stock market. Our sample consists of 786 cash, stock, and combination deals from the European market between 2000-2021. Using three different portfolios; *equally-weighted* (EWAP), *value-weighted* (VWAP) and *practitioner arbitrage portfolio* (PAP), we have checked whether the strategy generates excess risk-adjusted returns. The portfolios have been benchmarked against three different regressions; CAPM, Fama-French three, and five-factor model. Furthermore, we checked for a non-linear relationship using a piecewise linear regression.

Overall, the strategy is proving to be very profitable. The EWAP generates an average CAGR of 34.82%, followed by the VWAP's 32.35% and, at last, the PAP's 18.12%. All portfolios delivered a positive return in all years, apart from the value-weighted portfolio in 2000. The return of the different portfolios reflects the risk inherent in the different portfolio criteria regarding weighting. The monthly excess risk-adjusted return (alpha) generated from the EWAP portfolio range from 2.19%-2.33%, the VWAP 2,15%-2,23% and the PAP 1,15%-1,21%, depending on the regressions run. All alphas and market betas are statistically significant at any conventional significance levels. However, neither of the other factors in the Fama-French three and five-factor model are significant. Unlike what some previous articles found on merger arbitrage in other countries (c.f. Maheswaran and Yeoh (2005)), the strategy is not a risk-neutral strategy in the European market. The market beta is between 0,1945-0,3843. The EWAP and VWAP show the highest market beta, while the PAP shows a lower one. This is due to that excess cash is invested in a risk-free asset that theoretically should have a zero beta.

Furthermore, we found a non-linear relationship in the returns, showing a higher market beta in market downturns. This characteristic implies that the strategy is riskier than the impression we got from the linear regressions. It is also in line with what Mitchell and Pulvino (2001) and Sudarsanam and Nguyen (2008) found in their research as well, showing that the broad European market share some of the same risk characteristics as in the US and the UK. We found the threshold between market high and low to be either -11.67% or -15.07%, depending on portfolio type. However, when testing if the piecewise linear model is statistically different from the linear CAPM, we only succeed in rejecting the null hypothesis for the PAP portfolio. Our threshold is notably lower than Mitchell and Pulvino (2001) but in line with Sudarsanam and Nguyen's (2008) UK study.

5.1 Implications and further research

The implications of our study show that merger arbitrage is a very profitable strategy. This should be interesting for both institutional investors as well as individual investors. In addition, we found some evidence that the return pattern might be non-linear and that the portfolios correlates notably more in down periods than the rest of the time. This is something the investors should take into consideration when investing according to the strategy.

For further research, we suggest looking closer at what characterizes successful deals from unsuccessful ones. Based on these characteristics, one can develop a trading strategy, improving the likelihood of success and returns. It would also be interesting to construct other portfolio types and see how they perform. For instance, one could create a portfolio with liquidity constraints. In addition, we would also recommend including transactions costs to make the results more realistic.

Appendices

A An overview of traded and tradeable deals

Table 11: An overview of traded and tradeable deals

Year	Total Deals Announced	Successful Deals	Cash Deals	Stock Deals	Combo Deals	Cash Deals Traded On	Stock Deals Traded On	Combo Deals Traded On
2000	37	23	29	4	4	17	1	0
2001	25	19	18	2	5	11	0	0
2002	14	11	12	0	2	8	0	0
2003	33	20	25	2	6	14	0	0
2004	34	21	28	3	3	18	1	0
2005	77	61	68	6	3	36	3	0
2006	106	71	88	12	6	55	4	1
2007	104	78	88	6	10	62	0	3
2008	69	49	63	3	3	46	2	1
2009	39	32	31	6	2	15	0	0
2010	62	46	52	8	2	33	3	2
2011	61	51	58	2	1	27	0	1
2012	41	33	37	3	1	20	1	1
2013	27	22	23	2	2	14	2	0
2014	66	47	55	5	6	35	2	4
2015	52	42	41	4	7	31	2	6
2016	56	38	44	4	8	30	1	6
2017	43	30	33	4	6	23	3	4
2018	50	43	44	2	4	26	1	2
2019	62	51	55	4	3	39	2	3
2020	55	48	50	0	5	29	0	4
2021	64	46	60	2	2	33	2	1
Sum	1177	882	1002	84	91	622	30	39

B European Stock Exchanges vs. US Stock Exchanges

Table 12: European stock exchanges ranked by market capitalization 2022

Largest stock exchanges in Europe as of March 2022, by domestic market capitalization (in billion U.S. dollars)	
Euronext	6 658.47
London Stock Exchange	3 565.35
Deutsche Börse	2 169.98
NASDAQ Nordic and Baltic Exchanges	2 180.25
SIX Swiss Exchange	2 133.33
BME Spanish Exchanges	726.72
Sum:	17 434.10

Euronext is Europe's largest stock exchange, combining five markets in Amsterdam, Brussels, Dublin, Lisbon, London, Oslo, and Paris.
Data from WFE retrived from Statista (2022c).

Table 13: Leading stock exchanges in the Americas 2022, by domestic market capitalization

Leading stock exchanges in the Americas as of Janaury 2022, by domestic market capitalization (in billion U.S. dollars)	
NYSE (US)	27 210.73
NASDAQ (US)	22 417.55
Sum:	49 628.28

Data from WFE retrived from Statista (2022b).

$$\frac{LSE(UK)}{NYSE(US)} = \frac{3565.35}{27210.73} \approx 13\%$$

$$\frac{Top\ 10\ Europe}{Top\ 2\ US} = \frac{17134.10}{49628.28} \approx 35\%$$

C Trading Volume in Dollars

Table 14: Trading Volume in Dollars - Final sample

n	786
mean	1 130 699
standard deviation	1 006 777
min	57 528
25th percentile	245 668
50th percentile	925 883
75th percentile	1 617 401
max	3 446 329

This table is calculated by taking the 90 days average close stock price and multiplying it with the 90 days average trading volume for each target.

D Extra formulas for Speculation Spread

In the case of a stock deal we first need to calculate an implied offer and the use that as P_{offer} :

$$\text{Implied offer} = P_{acquiror,t} \times \Delta$$

where,

Implied offer = the theoretical equivalent to the cash offer

$P_{acquiror,t}$ = the closing price of the acquiring company's stock on trading day t

Δ = stock conversation ratio, is the exchange ratio between 1 target stock and the acquiror's stock.

In the case of a combo deal we calculate the implied offer as follows:

$$\text{Implied offer} = \text{Cash offered} + P_{acquiror,t} \times \Delta$$

E Extra statistics: Spread

Table 15: Premiums and Spreads

Cash deals	
Average bid premium :	27.41%
Average speculation spread:	10.84%
Min bid premium :	-10.44%
Min speculation spread	0.00%
Max bid premium :	266.34%
Max speculation spread :	196.70%
Stock deals	
Average bid premium :	32.22%
Average speculation spread :	19.82%
Min bid premium :	-7.09%
Min speculation spread :	0.32%
Max bid premium :	214.96%
Max speculation spread :	153.78%
Combo deals	
Average bid premium :	40.51%
Average speculation spread :	24.46%
Min bid premium :	-0.07%
Min speculation spread :	0.20%
Max bid premium :	163.04%
Max speculation spread :	100.77%

F List of all deals in final sample

Table 16: List of all deals in final sample

Date Announced	Date Completed	Acquiror	Target	Target Nation of Primary Stock Ex- change	Currency
03/03/2000	16/06/2000	Linde AG	WA Hoek's Machi	Netherlands	NLG
13/03/2000	28/03/2000	TXU Europe Grou	Hydroelectrica	Spain	ESP
15/03/2000	12/05/2000	Scottish Radio	Border Televisi	United Kingdom	GBP
22/03/2000	01/06/2000	Halifax Group P	St James' Place	United Kingdom	GBP
24/03/2000	30/05/2000	Union Electrica	Hydroelectrica	Spain	ESP
05/04/2000	11/05/2000	GI Holding Srl(Gildemeister It	Italy	ITL
05/04/2000	27/04/2000	Skanska AB	Exbud SA	Poland	PLN
10/04/2000	28/09/2000	Industri Kapita	Perstorp AB	Sweden	SEK
13/04/2000	19/05/2000	Capital Radio P	Border Televisi	United Kingdom	GBP
12/05/2000	27/06/2000	Inhoco 2038 Ltd	Allied Textile	United Kingdom	GBP
18/05/2000	25/09/2000	John Swire & So	James Finlay PL	United Kingdom	GBP
18/05/2000	15/06/2000	Lindengruppen A	Monberg & Thors	Denmark	DKK
13/06/2000	27/07/2000	Citigroup Inc	Bank Handlowy w	Poland	PLN
30/06/2000	21/07/2000	Analog Devices	BCO Technologie	United Kingdom	GBP
30/06/2000	17/08/2000	QBE Insurance G	Limit PLC	United Kingdom	GBP
06/07/2000	22/08/2000	Arch Chemicals	Hickson Interna	United Kingdom	GBP
21/09/2000	18/12/2000	Macfarlane Grou	British Polythe	United Kingdom	GBP
25/10/2000	23/02/2001	Investor Group	Sommer Allibert	France	FRF
09/11/2000	24/01/2001	Scania AB	Beers NV	Netherlands	NLG
24/11/2000	05/01/2001	Pillar Property	Wates City of L	United Kingdom	GBP
21/12/2000	26/01/2001	General London	Fairview Holdin	United Kingdom	GBP
15/01/2001	14/03/2001	Perfetti SpA	Van Melle NV	Netherlands	NLG
25/01/2001	07/05/2001	E.ON Nordic AB	Sydskraft AB	Sweden	SEK
06/02/2001	05/04/2001	RWE AG	Hydroelectrica	Spain	ESP
12/02/2001	24/04/2001	Compass Group P	Selecta Group	Switzerland	CHF
12/02/2001	06/04/2001	Schlumberger In	Sema PLC	United Kingdom	GBP
08/03/2001	10/05/2001	British Airways	British Regiona	United Kingdom	GBP
08/03/2001	18/05/2001	Swan Capital In	Mid Kent Holdin	United Kingdom	GBP
22/03/2001	18/06/2001	Sydsvenska Kemi	Perstorp AB	Sweden	SEK
06/04/2001	29/05/2001	Tribeca UK PLC	Delancey Estate	United Kingdom	GBP
09/04/2001	20/09/2001	ABB Ltd	Entrelec Group	France	FRF
19/07/2001	24/08/2001	Kirkgate Group	Dewhirst Group	United Kingdom	GBP
10/09/2001	20/12/2001	Ina Holding-Sch	FAG Kugelfische	Germany	DEM
30/10/2001	04/04/2002	Cargill Inc	Cerestar	France	FRF
17/12/2001	05/03/2002	Accor Casinos(A	Europeenne de C	France	FRF
29/01/2002	19/04/2002	Smurfit Holding	Munksjo AB(Trel	Sweden	SEK
29/01/2002	05/04/2002	Bios SpA	Snia SpA	Italy	EUR
05/02/2002	10/04/2002	Dragados y Cons	Hollandsche Bet	Netherlands	EUR
12/03/2002	23/04/2002	DOOR Holding A/	Vest-Wood A/S	Denmark	DKK
10/05/2002	01/07/2002	GE Measurement	Druck Holdings	United Kingdom	GBP
23/05/2002	01/08/2002	Cie des Alpes S	Grevin & Cie	France	EUR
21/06/2002	30/07/2002	Musgrave Group	Budgens PLC	United Kingdom	GBP
21/08/2002	16/09/2002	Dundonald Holdi	Grantchester Ho	United Kingdom	GBP
02/11/2002	21/01/2003	Schemaventotto	Autostrade SpA	Italy	EUR
29/11/2002	17/02/2003	Rambridge Ltd	Dunloe Ewart PL	United Kingdom	EUR
20/01/2003	14/03/2003	Hertal Acquisit	Riverdeep Group	Ireland	EUR
13/03/2003	13/06/2003	Victor Rijssen	Koninklijke Vol	Netherlands	EUR
30/04/2003	19/06/2003	Nesbitt Acquisi	Arnotts PLC	Ireland	EUR
12/06/2003	07/07/2003	City & General	Compco Holdings	United Kingdom	GBP
12/08/2003	22/12/2003	BA Capital Mana	Janton Oyj	Finland	EUR
14/08/2003	04/11/2003	Sydskraft AB(NOW	Granninge AB	Sweden	SEK
04/09/2003	06/10/2003	Dansk Olie og N	NESA A/S	Denmark	DKK
05/10/2003	01/04/2004	Elsam A/S	NESA A/S	Denmark	DKK
10/10/2003	02/12/2003	Cidron Capital	Hackman Oyj	Finland	EUR
17/10/2003	11/02/2004	LRT Acquisition	Tornet Fastighe	Sweden	SEK
24/10/2003	05/04/2004	Trinitybrook PL	New Look Group	United Kingdom	GBP
29/10/2003	16/12/2003	Cardinal Health	Intercare Group	United Kingdom	GBP
29/10/2003	05/02/2004	Kayterm Ltd	Jarvis Hotels P	United Kingdom	GBP
07/11/2003	21/05/2004	CWG Acquisition	Canary Wharf Gr	United Kingdom	GBP
24/11/2003	19/02/2004	Rasmussengruppe	Avantor ASA	Norway	NOK
24/11/2003	12/03/2004	Alifin Oy	Hackman Oyj	Finland	EUR
19/12/2003	24/02/2004	Banco de Sabade	Banco Atlantico	Spain	EUR
27/01/2004	05/05/2004	MGM Mirage Inc	Wembley PLC	United Kingdom	GBP
12/02/2004	28/02/2004	Dr August Oetke	Brau und Brunne	Germany	EUR
23/03/2004	27/05/2004	Systeme Anwendu	SAP Systems Int	Germany	EUR
29/03/2004	02/11/2004	Continental AG	Phoenix AG	Germany	EUR
18/04/2004	22/06/2004	Permira Adviser	WH Smith PLC	United Kingdom	GBP
28/04/2004	24/06/2004	Safestore Acqui	Mentmore PLC	United Kingdom	GBP
06/05/2004	25/06/2004	Securitas AB	Bell Group PLC	United Kingdom	GBP
27/05/2004	14/07/2004	Revival Acquisi	Marks & Spencer	United Kingdom	GBP

01/06/2004	12/07/2004	Winten Ltd	Estates & Gener	United Kingdom	GBP
29/06/2004	10/08/2004	Stena Fastighet	Drott Bostads A	Sweden	SEK
17/08/2004	11/02/2005	Giant BidCo	Big Food Group	United Kingdom	GBP
14/09/2004	02/02/2005	Sistemi Tecnolo	Sirti SpA	Italy	EUR
27/09/2004	01/03/2005	CEMEX UK Ltd	RMC Group PLC	United Kingdom	GBP
20/10/2004	28/12/2004	Moet Hennessy I	Glenmorangie PL	United Kingdom	GBP
01/11/2004	07/03/2005	Getronics NV	PinkRoccade NV	Netherlands	EUR
18/11/2004	07/04/2005	CVC Capital Par	Forbo Internati	Switzerland	CHF
19/11/2004	20/12/2004	Cidron A/S	Falck A/S	Denmark	DKK
29/11/2004	09/02/2005	TBG Careco Ltd	NHP PLC	United Kingdom	GBP
14/12/2004	06/04/2005	Retos Cartera S	Recoletos Grupo	Spain	EUR
23/12/2004	03/03/2005	KBC Bank & Insu	Almanij NV	Belgium	EUR
08/02/2005	13/04/2005	Apax Partners W	Woolworths Grou	United Kingdom	GBP
22/03/2005	23/09/2005	Quiksilver Inc	Skis Rossignol	France	EUR
24/03/2005	15/04/2005	Gladedale Holdi	Country & Metro	United Kingdom	GBP
29/03/2005	09/05/2005	PurusCo AS	ISS A/S	Denmark	DKK
15/04/2005	26/05/2005	Prime Infrastru	International E	United Kingdom	GBP
25/04/2005	12/09/2005	Skandinaviska E	Privatbanken AS	Norway	NOK
28/04/2005	08/06/2005	For-side.com Co	iTouch PLC	United Kingdom	GBP
28/04/2005	05/07/2005	Kaupthing Holdi	Singer & Friedl	United Kingdom	GBP
29/04/2005	04/07/2005	Dyon UK Ltd	Edinburgh Oil &	United Kingdom	GBP
06/05/2005	15/06/2005	MOP Acquisition	LA Fitness PLC	United Kingdom	GBP
11/05/2005	09/08/2005	AP Moller-Maers	Koninklijke P&O	Netherlands	EUR
12/05/2005	09/11/2005	Agnico Eagle Mi	Riddarhyttan Re	Sweden	SEK
12/05/2005	14/06/2005	Red Football Lt	Manchester Unit	United Kingdom	GBP
23/05/2005	28/07/2005	The British Lan	Pillar Property	United Kingdom	GBP
02/06/2005	25/04/2006	Lawson Software	Intentia Intern	Sweden	SEK
14/06/2005	27/10/2005	Homburg Invest	DIM Vastgoed NV	Netherlands	EUR
19/06/2005	04/10/2005	Matrix Laborato	Docpharma NV	Belgium	EUR
20/06/2005	31/08/2005	Real Good Food	Napier Brown Fo	United Kingdom	GBP
21/06/2005	09/08/2005	Emap PLC	Scottish Radio	United Kingdom	GBP
28/06/2005	31/08/2005	House of Fraser	James Beattie	United Kingdom	GBP
07/07/2005	16/09/2005	Norfolk Acquisi	PHS Group PLC	United Kingdom	GBP
14/07/2005	29/09/2005	Cardpoint PLC	Moneybox PLC	United Kingdom	GBP
18/07/2005	09/02/2006	Unipol Assicura	Banca Nazionale	Italy	EUR
22/07/2005	26/09/2005	Starwood Capita	Societe du Louv	France	EUR
22/07/2005	02/12/2005	Cie de Saint-Go	BPB PLC	United Kingdom	GBP
02/08/2005	23/11/2005	Parker Hannifin	Domnick Hunter	United Kingdom	GBP
12/08/2005	18/10/2005	Lightflower Acq	Urbium PLC	United Kingdom	GBP
26/08/2005	13/09/2005	Book Store Acqu	Ottakar's PLC	United Kingdom	GBP
23/09/2005	14/10/2005	Publicis Groupe	Aegis Group PLC	United Kingdom	GBP
29/09/2005	21/02/2006	Belgacom SA	Telindus Group	Belgium	EUR
24/10/2005	14/12/2005	M&A Airports Lt	Kobenhavns Luft	Denmark	DKK
26/10/2005	24/01/2006	Fortum Oyj	Fortum Wroclaw	Poland	PLN
28/10/2005	25/11/2005	Genus PLC	Sygen Internati	United Kingdom	GBP
31/10/2005	16/06/2006	Nippon Sheet Gl	Pilkington PLC	United Kingdom	GBP
31/10/2005	17/01/2006	Henson No 1 Ltd	Peacock Group P	United Kingdom	GBP
14/11/2005	17/01/2006	Persimmon PLC	Westbury PLC	United Kingdom	GBP
16/11/2005	06/02/2006	Lookers PLC	Reg Vardy PLC	United Kingdom	GBP
30/11/2005	02/02/2006	Endeavour Ports	PD Ports PLC	United Kingdom	GBP
05/12/2005	04/07/2006	NTL Inc	Virgin Mobile H	United Kingdom	GBP
14/12/2005	09/03/2006	Vinci SA	Autoroutes du S	France	EUR
14/12/2005	25/04/2006	Investor Group	Societe des Aut	France	EUR
14/12/2005	10/03/2006	Vinci SA	Autoroutes du S	France	EUR
14/12/2005	15/02/2006	Investor Group	Societe des Aut	France	EUR
19/12/2005	24/03/2006	Honeywell Inter	First Technolog	United Kingdom	GBP
09/01/2006	27/03/2006	Adecco SA	DIS Deutscher I	Germany	EUR
13/01/2006	27/04/2006	Toeca MFG CV	McGregor Fashio	Netherlands	EUR
07/02/2006	20/03/2006	Permira Adviser	HMV Group PLC	United Kingdom	GBP
20/02/2006	24/10/2006	Foodco Pastries	Tele Pizza SA	Spain	EUR
23/02/2006	18/05/2006	Investor Group	Chorion PLC	United Kingdom	GBP
28/02/2006	28/03/2006	HIT Entertainme	Chorion PLC	United Kingdom	GBP
09/03/2006	12/05/2006	Forest Bidco Lt	Center Parcs(UK	United Kingdom	GBP
14/03/2006	01/06/2006	Posten AB	Stralfors AB	Sweden	SEK
17/03/2006	21/04/2006	PD Parks Ltd	Parkdean Holida	United Kingdom	GBP
21/03/2006	06/06/2006	Sage Group PLC	Visma ASA	Norway	NOK
22/03/2006	31/03/2006	Investor Group	ITV PLC	United Kingdom	GBP
28/03/2006	02/05/2006	Wolseley Bristo	Brandon Hire PL	United Kingdom	GBP
02/04/2006	08/05/2006	R20 Ltd	Mitchells & But	United Kingdom	GBP
27/04/2006	28/07/2006	Sugar Acquisito	Systems Union G	United Kingdom	GBP
02/05/2006	20/07/2006	Interserve Grou	MacLellan Group	United Kingdom	GBP
05/05/2006	30/06/2006	Ruby Acquisitio	Richmond Foods	United Kingdom	GBP
08/05/2006	06/07/2006	Pan Fish ASA	Fjord Seafood A	Norway	NOK
09/05/2006	22/12/2006	Cosmote Mobile	Germanos SA	Greece	EUR
15/05/2006	22/06/2006	AstraZeneca PLC	Cambridge Antib	United Kingdom	GBP
18/05/2006	29/06/2006	L-3 Communicati	TRL Electronics	United Kingdom	GBP
25/05/2006	17/07/2006	Jake Acquisitio	Mayborn Group P	United Kingdom	GBP
01/06/2006	28/07/2006	DP Acquisition	TTP Communicati	United Kingdom	GBP
05/06/2006	16/10/2006	ERG SpA	EnerTAD SpA	Italy	EUR

06/06/2006	28/09/2006	Grupo Inmocaral	Inmobiliaria Co	Spain	EUR
08/06/2006	30/06/2006	Highcross(Burga	BizSpace PLC	United Kingdom	GBP
08/06/2006	08/08/2006	The Manitowoc C	Enodis PLC	United Kingdom	GBP
09/06/2006	08/11/2006	Baugur Group hf	House of Fraser	United Kingdom	GBP
14/06/2006	27/07/2006	Warner Music Gr	EMI Group PLC	United Kingdom	GBP
15/06/2006	05/09/2006	Greene King Acq	Hardys & Hanson	United Kingdom	GBP
22/06/2006	14/11/2006	Investor Group	Europistas Conc	Spain	EUR
24/06/2006	05/09/2006	AHG Venice Ltd	De Vere Group P	United Kingdom	GBP
25/06/2006	05/04/2007	Assicurazioni G	Toro Assicurazi	Italy	EUR
25/06/2006	04/10/2006	Assicurazioni G	Toro Assicurazi	Italy	EUR
26/06/2006	31/08/2006	Stanley Leisure	London Clubs In	United Kingdom	GBP
26/06/2006	21/08/2006	Metal Bulletin	Wilmington PLC	United Kingdom	GBP
06/07/2006	18/09/2006	PCP 2006 Holdin	Color Print A/S	Denmark	DKK
17/07/2006	06/10/2006	Euromoney Insti	Metal Bulletin	United Kingdom	GBP
27/07/2006	22/12/2006	Missouri Bidco	Matalan PLC	United Kingdom	GBP
28/07/2006	15/12/2006	Construcciones	Inmobiliaria Ur	Germany	EUR
28/07/2006	09/01/2007	Udramed SLU	Parquesol Inmob	Spain	EUR
01/08/2006	06/10/2006	E-Tech UK Ltd	Radstone Techno	United Kingdom	GBP
04/08/2006	24/03/2007	Investor Group	Europistas Conc	Spain	EUR
14/08/2006	19/09/2006	Reform Acquisit	Aston Villa PLC	United Kingdom	GBP
29/08/2006	20/11/2006	Buhrmann NV	Andvord Tybring	Norway	NOK
10/09/2006	22/12/2006	Paternoster Acq	Gondola Holding	United Kingdom	GBP
11/09/2006	05/12/2006	Segulah Alfa AB	Narkes Elektris	Sweden	SEK
21/09/2006	05/01/2007	Merck KGaA	Serono Internat	Switzerland	CHF
29/09/2006	19/12/2006	RD Card Ltd	Retail Decision	United Kingdom	GBP
05/10/2006	23/11/2006	Bulldog Financi	Nord Anglia Edu	United Kingdom	GBP
19/10/2006	03/11/2006	Springer Scienc	Informa PLC	United Kingdom	GBP
20/10/2006	05/04/2007	Arla Foods UK H	Arla Foods UK P	United Kingdom	GBP
24/10/2006	31/03/2007	Intek SpA	Generale Indust	Italy	EUR
30/10/2006	28/03/2007	Camelia Partici	Prosodie SA	France	EUR
06/11/2006	20/02/2007	Newgate SA	Apem SA	France	EUR
15/11/2006	29/01/2007	Absolut Invest	Absolute Europe	Switzerland	CHF
16/11/2006	24/01/2007	British Telecom	Plusnet PLC	United Kingdom	GBP
17/11/2006	31/01/2007	Cia Siderurgica	Corus Group PLC	United Kingdom	GBP
20/11/2006	12/02/2007	CPST Sweden Hol	Protect Data AB	Sweden	SEK
22/11/2006	01/02/2007	European Gaming	Talarius PLC	United Kingdom	GBP
07/12/2006	27/02/2007	Liechtensteinis	Bank Linth LLB	Switzerland	CHF
08/12/2006	03/01/2007	Getinge Extende	Huntleigh Techn	United Kingdom	GBP
14/12/2006	06/03/2007	Lavena Holding	ProSiebenSat.1	Germany	EUR
18/12/2006	01/10/2007	Statoil Asa	Norsk Hydro ASA	Norway	NOK
21/12/2006	01/02/2007	Scamp Holdings	Teesland PLC	United Kingdom	GBP
22/12/2006	20/02/2007	IHM Technologie	Apem SA	France	EUR
30/12/2006	28/03/2007	Aban Internatio	Sinvest ASA	Norway	NOK
04/01/2007	02/04/2007	Hurriyet Invest	Trader Media Ea	United Kingdom	EUR
15/01/2007	30/03/2007	Pfleiderer Swed	Pergo AB	Sweden	SEK
15/01/2007	14/03/2007	Goldcup D 2389	Tradedoubler AB	Sweden	SEK
15/01/2007	15/06/2007	Gilde Equity Ma	Koninklijke Ned	Netherlands	EUR
18/01/2007	29/05/2007	Phoenix IT Grou	ICM Computer Gr	United Kingdom	GBP
19/01/2007	01/08/2007	Grupo Inmocaral	Riofisa SA	Spain	EUR
26/01/2007	20/03/2007	Warner Estate H	JS Real Estate	United Kingdom	GBP
06/02/2007	28/04/2007	Stockland UK De	Halladale Group	United Kingdom	GBP
14/02/2007	14/05/2007	Impala Platinum	African Platinu	United Kingdom	GBP
19/02/2007	30/04/2007	Kirk Newco PLC	Enterprise PLC	United Kingdom	GBP
20/02/2007	17/07/2007	Warner Music Gr	EMI Group PLC	United Kingdom	GBP
02/03/2007	27/04/2007	Sulzer Ltd	Bodycote Intern	United Kingdom	GBP
13/03/2007	26/07/2007	Stornoway Ltd	Calyx Group PLC	United Kingdom	EUR
16/03/2007	04/05/2007	Fawkes Group Lt	ICM Computer Gr	United Kingdom	GBP
29/03/2007	04/05/2007	Investor Group	La Tasca Group	United Kingdom	GBP
03/04/2007	20/07/2007	FIN Acquisition	Alea Group Hold	United Kingdom	BMD
05/04/2007	15/06/2007	Copart (UK) Ltd	Universal Salva	United Kingdom	GBP
26/04/2007	03/10/2007	Websense SC Ope	SurfControl PLC	United Kingdom	GBP
30/04/2007	30/10/2007	IBA Health Grou	iSOFT Group PLC	United Kingdom	GBP
03/05/2007	23/08/2007	Lehigh UK Ltd	Hanson PLC	United Kingdom	GBP
23/05/2007	15/06/2007	St James Holdin	Newcastle Unite	United Kingdom	GBP
13/06/2007	28/08/2007	Duke Street LLP	Oasis Healthcar	United Kingdom	GBP
15/06/2007	21/12/2007	Investor Group	Carpentryright PLC	United Kingdom	GBP
18/06/2007	02/01/2008	Akzo Nobel NV	Imperial Chemic	United Kingdom	GBP
21/06/2007	29/08/2007	Norwegian Energ	Altinex ASA	Norway	NOK
24/06/2007	15/04/2008	Norddeutsche Af	Cumerio NV/SA	Belgium	EUR
26/06/2007	13/11/2007	Axel Springer S	AuFeminin.com S	France	EUR
03/07/2007	20/03/2008	Hellenic Teleco	Cosmote Mobile	Greece	EUR
04/07/2007	26/10/2007	Financiere Rave	Nord-Est SA	France	EUR
05/07/2007	21/09/2007	Financiere de l	Trigano SA	France	EUR
16/07/2007	10/08/2007	Gladedale Holdi	Ben Bailey PLC	United Kingdom	GBP
18/07/2007	05/11/2007	Delta(Two)Ltd	J Sainsbury PLC	United Kingdom	GBP
20/07/2007	30/08/2007	Arden Holdings	Atrium Underwri	United Kingdom	GBP
20/07/2007	30/10/2007	CompuGROUP UK L	iSOFT Group PLC	United Kingdom	GBP
23/07/2007	02/10/2007	Hypo Real Estat	DEPFA Bank PLC	Germany	EUR
25/07/2007	15/04/2008	Intesa Sanpaolo	Banca CR Firenz	Italy	EUR

30/07/2007	23/10/2007	Koninklijke KPN	Getronics NV	Netherlands	EUR
30/07/2007	09/10/2007	Spice PLC	Revenue Assuran	United Kingdom	GBP
02/08/2007	09/08/2007	Esko NV	Artwork Systems	Belgium	EUR
13/08/2007	24/10/2007	Lite-On Technol	Perlos Corp	Finland	EUR
30/08/2007	17/09/2007	Altice B2B Fran	Completel Europ	France	EUR
30/08/2007	27/11/2007	Altice B2B Fran	Completel Europ	France	EUR
03/09/2007	26/10/2007	Drilling & Wire	Sondex PLC	United Kingdom	GBP
05/09/2007	04/10/2007	Concateno PLC	Cozart PLC	United Kingdom	GBP
07/09/2007	06/12/2007	AIDG Jersey Acq	Domestic & Gene	United Kingdom	GBP
20/09/2007	20/02/2008	Det Stavangersk	Tide ASA	Norway	NOK
01/10/2007	31/12/2007	Stockmann Oyj A	Lindex AB	Sweden	SEK
02/10/2007	14/12/2007	Groupe Norbert	Christian Salve	United Kingdom	GBP
02/10/2007	04/04/2008	Cookson Group P	Foseco PLC	United Kingdom	GBP
15/10/2007	16/11/2007	Parker Hannifin	Scan Subsea ASA	Norway	NOK
23/10/2007	08/01/2008	NTT Data Europe	Intelligence AG	Germany	EUR
23/10/2007	03/03/2008	Nike Vapor Ltd	Umbro PLC	United Kingdom	GBP
24/10/2007	06/03/2008	ENEL Investment	JSC The Fifth P	Russia	RUB
25/10/2007	25/03/2008	Kelium Acquisit	Hagemeyer NV	Netherlands	EUR
06/11/2007	23/05/2008	IEF Capital NV	Vastned Retail	Netherlands	EUR
08/11/2007	22/01/2008	Investor Group	Close Brothers	United Kingdom	GBP
15/11/2007	31/08/2008	Investor Group	Iberia Lineas A	Spain	EUR
22/11/2007	12/02/2008	Saltaire Water	Kelda Group PLC	United Kingdom	GBP
27/11/2007	21/12/2007	Towergate Partn	Broker Network	United Kingdom	GBP
10/12/2007	17/01/2008	Willmott Dixon	Inspace PLC	United Kingdom	GBP
10/12/2007	11/03/2008	Lam Research Co	SEZ Holding Ltd	Switzerland	CHF
12/12/2007	09/04/2008	NK Shacolas (Ho	Cyprus Trading	Cyprus	EUR
14/12/2007	11/03/2008	Tokio Marine In	Kiln PLC	United Kingdom	GBP
17/12/2007	07/02/2008	Epicor Retail S	NSB Retail Syst	United Kingdom	GBP
18/12/2007	07/03/2008	MIH Internet BV	Tradus PLC	United Kingdom	GBP
20/12/2007	18/06/2008	Promotora de In	Sociedad Genera	Spain	EUR
21/12/2007	05/03/2008	NIS Acquisition	Northgate Infor	United Kingdom	GBP
14/01/2008	08/04/2008	KENV Acquisitio	Koninklijke Eco	Netherlands	EUR
21/01/2008	18/04/2008	JC Flowers & Co	Friends Provide	United Kingdom	GBP
28/01/2008	09/06/2008	Nokia Oyj	TrollTech ASA	Norway	NOK
01/02/2008	03/03/2008	GEMed AB	Boss Media AB	Sweden	SEK
04/02/2008	25/04/2008	GE Healthcare L	Whatman PLC	United Kingdom	GBP
19/02/2008	23/04/2008	Oberthur Techno	XPonCard Group	Sweden	SEK
19/02/2008	19/12/2008	Performance Mot	Ducati Motor Ho	Italy	EUR
19/02/2008	01/07/2008	West Internatio	Genesys SA	France	EUR
21/02/2008	17/06/2008	KLA-Tencor Corp	ICOS Vision Sys	Belgium	EUR
28/03/2008	21/04/2008	Cornwall Bidco	Civica PLC	United Kingdom	GBP
09/04/2008	27/10/2008	MTW County Ltd	Enodis PLC	United Kingdom	GBP
12/04/2008	11/09/2008	Titan Internati	Titan Europe PL	United Kingdom	GBP
15/04/2008	23/07/2008	Pyramus Sarl	D+S europe AG	Germany	EUR
18/04/2008	20/06/2008	Halliburton Co	Expro Internati	United Kingdom	GBP
18/04/2008	30/06/2008	Avnet(Holdings)	Horizon Technol	United Kingdom	EUR
25/04/2008	12/12/2008	Solvay Pharmace	Innogenetics NV	Belgium	EUR
05/05/2008	28/05/2008	Vistula Group S	W Kruk SA	Poland	PLN
12/05/2008	04/06/2008	Emerson Electri	Chloride Group	United Kingdom	GBP
16/05/2008	12/12/2008	Stena Adactum A	Ballingslov Int	Sweden	SEK
26/05/2008	02/07/2008	Goldcup D3924 A	Zodiak Televisi	Sweden	SEK
28/05/2008	01/10/2008	BidCo Ltd	THUS Group PLC	United Kingdom	GBP
02/06/2008	13/08/2008	Robert Bosch Gm	ersol Solar Ene	Germany	EUR
05/06/2008	30/06/2008	France Telecom	TeliaSonera AB	Sweden	SEK
05/06/2008	27/06/2008	The Capita Grou	IBS OPENSystems	United Kingdom	GBP
11/06/2008	26/09/2008	Limitless LLC	Minerva PLC	United Kingdom	GBP
19/06/2008	19/09/2008	Informa PLC SPV	Informa PLC	United Kingdom	GBP
27/06/2008	28/07/2008	Newport Holding	Global Oceanic	United Kingdom	GBP
03/07/2008	16/12/2008	Maia Elfte Verm	Jerini AG	Germany	EUR
04/07/2008	18/08/2008	Premier Educati	Nord Anglia Edu	United Kingdom	GBP
11/07/2008	10/10/2008	Thales UK Ltd	nCipher PLC	United Kingdom	GBP
18/07/2008	30/09/2008	EAG Inc	EAG Ltd	United Kingdom	EUR
18/07/2008	04/09/2008	SVTC Bidco	EAG Ltd	United Kingdom	EUR
23/07/2008	24/09/2008	H&F Sensor Bidc	SSP Holdings PL	United Kingdom	GBP
23/07/2008	23/01/2009	SOTEG SA	Cie Grand-Ducal	Luxembourg	EUR
25/07/2008	25/09/2008	Sanofi Pasteur	Acambis PLC	United Kingdom	GBP
28/07/2008	01/10/2008	Sophos Holdings	Utimaco Safewar	Germany	EUR
01/08/2008	10/12/2008	Financiere Mont	GL Trade SA	France	EUR
12/08/2008	03/10/2008	2e2 Group Ltd	Netstore PLC	United Kingdom	GBP
22/08/2008	28/11/2008	Aon Corp	Benfield Group	United Kingdom	GBP
26/08/2008	31/12/2008	Jarpeno Ltd	Imperial Energy	United Kingdom	GBP
27/08/2008	27/02/2009	Maersk Tankers	Brostroem AB	Sweden	SEK
28/08/2008	09/10/2008	Liverpool Victo	Highway Insuran	United Kingdom	GBP
15/09/2008	04/12/2008	Royal Boskalis	Smit Internatio	Netherlands	EUR
15/09/2008	15/10/2008	Svenska Handels	Lokalbanken i N	Denmark	DKK
23/09/2008	18/11/2008	Oberthur Fiduci	Oberthur Techno	France	EUR
25/09/2008	10/11/2008	Banco Popular E	Banco de Credit	Spain	EUR
27/10/2008	18/12/2008	Wintershall Nor	Revus Energy AS	Norway	NOK
03/11/2008	11/12/2008	Ivytan AB	Q-Med AB	Sweden	SEK

01/12/2008	28/01/2009	Coinside Ltd	Aer Lingus Grou	United Kingdom	EUR
01/12/2008	26/06/2009	Pear Acquisitio	Itinere Infraes	Spain	EUR
01/12/2008	26/06/2009	Pear Acquisitio	Itinere Infraes	Spain	EUR
30/12/2008	19/02/2009	Investor Group	Shed Media PLC	United Kingdom	GBP
19/01/2009	16/02/2009	Star Healthcare	Terveystalo Hea	Finland	EUR
15/03/2009	15/07/2009	Banco Popolare	Banca Italease	Italy	EUR
24/03/2009	01/04/2009	CETP II Partici	Innovation Grou	United Kingdom	GBP
29/04/2009	30/07/2009	Apollo Global I	BPP Holdings PL	United Kingdom	GBP
20/05/2009	12/08/2009	SHV Holdings NV	ERIKS NV	Netherlands	EUR
05/06/2009	12/10/2009	Guanabara Holdi	EcoSecurities G	United Kingdom	EUR
26/06/2009	26/11/2009	Avalon Acquisit	Just Retirement	United Kingdom	GBP
10/07/2009	28/09/2009	Centrica Resour	Venture Product	United Kingdom	GBP
13/07/2009	23/10/2009	SAG Beteiligung	IDS Scheer AG	Germany	EUR
24/07/2009	16/10/2009	Investor Group	National Expres	United Kingdom	GBP
30/07/2009	21/10/2009	Dragados SA	Przedsiebiorstw	Poland	PLN
11/08/2009	19/10/2009	Adecco UK Holdc	Spring Group PL	United Kingdom	GBP
12/08/2009	07/10/2009	Sinochem Resour	Emerald Energy	United Kingdom	GBP
01/09/2009	02/03/2010	Cima Claddings	Permasteelisa S	Italy	EUR
16/09/2009	09/11/2009	Eurasian Natura	Central African	United Kingdom	GBP
21/09/2009	21/12/2009	Midas Bidco Ltd	Goldshield Grou	United Kingdom	GBP
29/09/2009	27/04/2010	Warwick Bidco L	Care UK PLC	United Kingdom	GBP
01/10/2009	19/04/2010	Cisco Systems I	Tandberg ASA	Norway	NOK
07/10/2009	30/11/2009	Infinis Energy	Novera Energy L	United Kingdom	GBP
12/10/2009	14/01/2010	One Equity Part	Constantia Pack	Germany	EUR
22/10/2009	07/06/2010	Suez Environnem	Sociedad Genera	Spain	EUR
23/10/2009	15/12/2009	e-Rewards Inc	Research Now PL	United Kingdom	GBP
16/11/2009	20/03/2010	Canon Inc	Oce NV	Netherlands	EUR
11/12/2009	26/01/2010	Superior Energy	Hallin Marine S	United Kingdom	GBP
21/12/2009	21/01/2010	R/C Europe Offs	Seajacks Intern	Norway	GBP
03/02/2010	20/07/2010	Jacquet Metals	International M	France	EUR
15/02/2010	08/07/2010	Babcock Interna	VT Group PLC	United Kingdom	GBP
26/02/2010	07/04/2010	Rolls-Royce Mar	ODIM ASA	Norway	NOK
05/03/2010	27/05/2010	Investor Group	Forth Ports PLC	United Kingdom	GBP
23/03/2010	10/05/2010	NPM Capital NV	Punch Graphix N	Netherlands	EUR
06/04/2010	10/03/2011	Veneto Banca Sp	Banca Intermobi	Italy	EUR
26/04/2010	03/09/2010	Rutherford Acqu	Chloride Group	United Kingdom	GBP
26/04/2010	21/06/2010	2e2 Ltd	Morse PLC	United Kingdom	GBP
30/04/2010	08/07/2010	Aether Ios Ltd	Climatex Exchang	United Kingdom	GBP
19/05/2010	07/07/2010	Pearson PLC	Melorio PLC	United Kingdom	GBP
02/06/2010	29/07/2010	Vector Capital	Trafficmaster P	United Kingdom	GBP
15/06/2010	02/08/2010	Conwert Immobil	Eco Business-Im	Austria	EUR
15/06/2010	02/12/2010	Cilantro Acquis	Spice PLC	United Kingdom	GBP
24/06/2010	04/04/2011	OAo "Mobil'nye	OAo "Komstar-Ob	United Kingdom	RUB
28/06/2010	10/09/2010	Universe Bidco	Scott Wilson Gr	United Kingdom	GBP
02/07/2010	24/09/2010	Korea National	Dana Petroleum	United Kingdom	GBP
07/07/2010	26/08/2010	DS Smith PLC	Otor SA	France	EUR
19/07/2010	24/09/2010	Pinafore Acquis	Tomkins PLC	United Kingdom	GBP
29/07/2010	30/03/2011	PartyGaming PLC	bwin Interactiv	Austria	EUR
03/08/2010	30/09/2010	Shire Holdings	Movetis NV	Belgium	EUR
05/08/2010	13/10/2010	WB Bidco plc	Shed Media PLC	United Kingdom	GBP
11/08/2010	01/02/2011	Saga Group Ltd	Nestor Healthca	United Kingdom	GBP
02/09/2010	05/11/2010	C1 Acquisitions	Carluccio's PLC	United Kingdom	GBP
06/09/2010	18/10/2010	Alfa Laval AB	Munters AB	Sweden	SEK
09/09/2010	23/03/2011	Axel Springer S	SeLogger.com SA	France	EUR
17/09/2010	12/04/2011	JJC Acquisition	Crucell NV	Netherlands	EUR
20/09/2010	14/12/2010	United Technolo	Clipper Windpow	United Kingdom	GBP
29/09/2010	12/11/2010	Cidron Intresse	Munters AB	Sweden	SEK
06/10/2010	08/03/2011	General Electri	Wellstream Hold	United Kingdom	GBP
18/10/2010	14/12/2010	Beazley PLC	Hardy Underwrit	United Kingdom	GBP
18/10/2010	17/12/2010	Royal Bank Of C	BlueBay Asset M	United Kingdom	GBP
25/10/2010	01/07/2011	Xella Internati	H+H Internation	Denmark	DKK
08/11/2010	26/08/2011	Guangdong Risin	Caledon Resourc	United Kingdom	GBP
10/11/2010	17/03/2011	Ares Life Scien	Stallergenes SA	France	EUR
19/11/2010	27/01/2011	BTG PLC	Biocompatibles	United Kingdom	GBP
22/11/2010	07/01/2011	Tianjin Xinmao	Draka Holding N	Netherlands	EUR
26/11/2010	01/02/2011	Forte Bidco 1 L	Chrysalis Group	United Kingdom	GBP
06/12/2010	20/05/2011	3M(Schweiz)AG	Winterthur Tech	Switzerland	CHF
06/12/2010	24/01/2011	Oberthur Fiduci	De La Rue PLC	United Kingdom	GBP
09/12/2010	25/01/2011	Azul Holding 2	Velosi Ltd	United Kingdom	GBP
13/12/2010	24/02/2011	Galderma Holdin	Q-Med AB	Sweden	SEK
13/12/2010	03/03/2011	Energees Manage	Regal Petroleum	United Kingdom	GBP
15/12/2010	11/01/2011	Simon Property	Capital Shoppin	United Kingdom	GBP
22/12/2010	23/03/2011	BH Acquisitions	Northern Foods	United Kingdom	GBP
04/03/2011	21/06/2011	Fingen SA	Cie Nationale a	Belgium	EUR
07/03/2011	02/06/2011	Otter Ports Hol	Forth Ports Ltd	United Kingdom	GBP
07/03/2011	10/06/2011	Pearson PLC	Education Devel	United Kingdom	GBP
09/03/2011	30/09/2011	Engine Holding	Tognum AG	Germany	EUR
30/03/2011	08/04/2011	Tridimension Ho	Metrologic Grou	France	EUR
08/04/2011	21/06/2011	Peel Holdings L	Pinewood Sheppe	United Kingdom	GBP

20/04/2011	22/06/2011	Cuba Bidco Ltd	Ideal Shopping	United Kingdom	GBP
26/04/2011	08/07/2011	Groupe Lactalis	Parmalat SpA	Italy	EUR
26/04/2011	13/09/2011	HarbourVest Acq	Absolute Privat	Switzerland	CHF
28/04/2011	20/07/2011	Bank VTB PAO	OAO "TransKredi	Russia	RUB
03/05/2011	29/06/2011	Investor Group	Lookers PLC	United Kingdom	GBP
05/05/2011	30/06/2011	Eagle Ice AB	Entraction Hold	Sweden	SEK
06/05/2011	12/08/2011	GWM Renewable E	Greentech Energ	Denmark	DKK
09/05/2011	07/07/2011	Trimble Finland	Tekla Oyj	Finland	EUR
17/05/2011	08/09/2011	Investor Group	Delachaux SA	France	EUR
23/05/2011	07/09/2011	BigBen Interact	ModeLabs Group	France	EUR
26/05/2011	29/07/2011	Jupiter Propert	Minerva PLC	United Kingdom	GBP
14/06/2011	03/10/2011	AE Consolidatio	Avis Europe PLC	United Kingdom	GBP
16/06/2011	01/08/2011	Cooper Industri	Laird PLC	United Kingdom	GBP
27/06/2011	14/10/2011	UK Water(2011)L	Northumbrian Wa	United Kingdom	GBP
29/06/2011	27/09/2011	Melrose PLC	Charter Interna	United Kingdom	EUR
19/07/2011	22/08/2011	Greene King PLC	The Capital Pub	United Kingdom	GBP
25/07/2011	27/09/2011	Prometheon Hold	Holidaybreak PL	United Kingdom	GBP
25/07/2011	16/11/2011	ZF Internationa	Hansen Transmis	United Kingdom	EUR
27/07/2011	29/09/2011	Airbus Denmark	Satair A/S	Denmark	DKK
18/08/2011	03/10/2011	Hewlett-Packard	Autonomy Corp P	United Kingdom	GBP
31/08/2011	13/09/2011	Bregal Capital	IFG Group PLC	United Kingdom	EUR
31/08/2011	12/09/2011	Koninklijke Bun	Elstar Oils SA	Poland	PLN
02/09/2011	03/02/2012	Couckinvest NV	Omega Pharma NV	Belgium	EUR
23/09/2011	25/11/2011	Newton Bidco Lt	Group NBT PLC	United Kingdom	GBP
24/10/2011	30/01/2012	SDL PLC	Alterian PLC	United Kingdom	GBP
08/11/2011	15/05/2012	Toyota Industri	Uster Technolog	Switzerland	CHF
17/11/2011	31/01/2012	Wartsila Oyj Ab	Hamworthy PLC	United Kingdom	GBP
22/11/2011	12/07/2012	Mexichem SAB de	Wavin NV	Netherlands	EUR
08/12/2011	13/02/2012	Metallic Invest	Inmeta Crayon A	Norway	NOK
12/12/2011	01/03/2012	ABB Ltd	Newave Energy H	Switzerland	CHF
14/12/2011	29/05/2012	Investor Group	Towarzystwo Ube	Poland	PLN
15/12/2011	21/03/2012	Canaccord Finan	Collins Stewart	United Kingdom	GBP
16/12/2011	20/01/2012	Kubota Norway H	Kverneland ASA	Norway	NOK
13/01/2012	06/02/2012	Muller Dairy (U	Robert Wiseman	United Kingdom	GBP
13/01/2012	30/03/2012	Aldersgate Inve	Arena Leisure P	United Kingdom	GBP
01/02/2012	27/06/2012	Geo 3 & Co SCA	GlobeOp Financi	United Kingdom	GBP
03/02/2012	12/03/2012	Misys PLC	Temenos Group A	Switzerland	CHF
08/03/2012	15/05/2012	Ss&C Technologi	GlobeOp Financi	United Kingdom	GBP
29/03/2012	08/08/2012	Tagus Holdings	Brisa-Auto-estr	Portugal	EUR
03/04/2012	19/07/2012	TKH Technologie	Augusta Technol	Germany	EUR
10/04/2012	20/06/2012	Vinci SA	Entrepose Contr	France	EUR
10/04/2012	29/10/2012	Lockman Electro	Thrane & Thrane	Denmark	DKK
23/04/2012	27/07/2012	Vodafone Europe	Cable & Wireles	United Kingdom	GBP
25/04/2012	22/08/2012	Canopus Group	Omega Insurance	United Kingdom	BMD
26/04/2012	29/06/2012	Fresenius SE &	Rhoen Klinikum	Germany	EUR
02/05/2012	05/07/2012	Kinetic Bidco L	Kewill PLC	United Kingdom	GBP
14/05/2012	06/07/2012	DOCOMO Deutschl	Buongiorno SpA	Italy	EUR
23/05/2012	03/08/2012	Seagate Singapo	LaCie SAS	France	EUR
07/06/2012	01/08/2012	Genivar Inc	WSP Group PLC	United Kingdom	GBP
08/06/2012	31/08/2012	Air Liquide SA	LVL Medical Gro	France	EUR
15/06/2012	13/09/2012	Motorola Soluti	Psion PLC	United Kingdom	GBP
22/06/2012	16/07/2012	Spolka Pracowni	Zaklady Azotowe	Poland	PLN
10/07/2012	27/09/2012	Vue Beteiligung	CinemaxX AG	Germany	EUR
25/07/2012	27/02/2013	Hera SpA	Acegas-APS SpA	Italy	EUR
26/07/2012	20/12/2012	Toyota Tsusho C	CFAO SA	France	EUR
20/08/2012	26/04/2013	Orkla Brands AS	Rieber & Son AS	Norway	NOK
10/09/2012	05/04/2013	Ecorse Investme	EKO Holding SA	Poland	PLN
24/09/2012	13/03/2013	Al Garden BV	Mediq NV	Netherlands	EUR
12/10/2012	19/03/2013	Investor Group	Duvel Moortgat	Belgium	EUR
15/10/2012	06/12/2012	Cristallo SpA	Marcolin SpA	Italy	EUR
14/11/2012	15/03/2013	BSH Sprzet Gosp	Zelmer SA	Poland	PLN
21/11/2012	31/01/2013	BASF AS	Pronova BioPhar	Norway	NOK
17/12/2012	26/02/2013	Marine Harvest	Morpol ASA	Norway	NOK
19/12/2012	16/05/2013	Investor Group	Metrovacesa SA	Spain	EUR
06/02/2013	24/04/2013	Salini Costrutt	Impregilo SpA	Italy	EUR
11/02/2013	18/10/2013	H Intressenter	Hoganas AB	Sweden	SEK
15/02/2013	21/03/2013	Pattington Ltd	FFastFill PLC	United Kingdom	GBP
22/04/2013	14/05/2013	CVC Capital Par	Befair Group P	United Kingdom	GBP
06/05/2013	15/07/2013	McAfee Suomi Fu	Stonesoft Oyj	Finland	EUR
14/05/2013	11/06/2013	LongRiver Partn	Severn Trent PL	United Kingdom	GBP
15/05/2013	19/07/2013	FS Africa Ltd	Lonrho PLC	United Kingdom	GBP
17/05/2013	28/05/2013	Medicx Fund Ltd	Assura Group Lt	United Kingdom	GBP
18/07/2013	20/09/2013	XBC BV	Zeikon NV	Netherlands	EUR
09/08/2013	16/10/2013	America Movil S	Koninklijke KPN	Netherlands	EUR
20/08/2013	15/11/2013	PGI Acquisition	Fiberweb PLC	United Kingdom	GBP
16/09/2013	17/12/2013	Spike Explorati	Bridge Energy A	Norway	NOK
11/10/2013	16/01/2014	Investor Group	KHD Humboldt We	Germany	EUR
14/10/2013	10/02/2014	Hexagon Acquisi	Veripos Inc	Norway	GBP
21/10/2013	17/02/2014	Investor Group	Henex SA	Belgium	EUR

07/11/2013	07/02/2014	Autodesk Inc	Delcam PLC	United Kingdom	GBP
12/11/2013	22/01/2014	Oxford Instrume	Andor Technolog	United Kingdom	GBP
15/11/2013	10/02/2014	Investor Group	Veripos Inc	Norway	GBP
18/11/2013	21/03/2014	Al Avocado BV	UNIT4 NV	Netherlands	EUR
18/11/2013	18/03/2014	Korian SA	Medica SA	France	EUR
05/12/2013	23/05/2014	Merck 15 Allgem	AZ Electronic M	United Kingdom	EUR
29/01/2014	16/09/2014	Societe Mutuell	Societe de la T	France	EUR
14/02/2014	25/04/2014	Blue Canyon Hol	Cision AB	Sweden	SEK
06/03/2014	15/07/2014	Italcementi Fab	Ciments Francai	France	EUR
16/03/2014	23/07/2014	Investor Group	Bourbon SA	France	EUR
21/03/2014	25/04/2014	Meltwater NV	Cision AB	Sweden	SEK
03/04/2014	30/03/2015	Kingfisher PLC	Mr Bricolage SA	France	EUR
07/04/2014	25/07/2014	Altice SA	Numericable Gro	France	EUR
08/04/2014	10/09/2014	Sopra Steria Gr	Groupe Steria S	France	EUR
10/04/2014	04/07/2014	Weidmueller Bet	R Stahl AG	Germany	EUR
30/04/2014	30/06/2014	Energy Investme	Heritage Oil PL	United Kingdom	GBP
06/05/2014	03/10/2014	Lexmark Interna	ReadSoft AB	Sweden	SEK
08/05/2014	24/07/2014	Belvedere Bidco	Brightside Grou	United Kingdom	GBP
12/05/2014	02/10/2014	Ramsay Sante SA	Generale de San	France	EUR
12/05/2014	26/06/2014	Obos BBL	BWG Homes ASA	Norway	NOK
16/05/2014	03/07/2014	Silver Holdings	Solvtrans ASA	Norway	NOK
20/05/2014	23/07/2014	Eurosic SA	SIIC de Paris S	France	EUR
04/06/2014	10/07/2014	Investor Group	Societe de la T	France	EUR
18/06/2014	03/10/2014	Hyland Software	ReadSoft AB	Sweden	SEK
19/06/2014	20/10/2014	AbbVie Inc	Shire PLC	United Kingdom	EUR
30/06/2014	16/02/2015	De Persgroep Pu	Mecom Group PLC	United Kingdom	GBP
01/07/2014	18/09/2014	Soluni SA	Constructions I	France	EUR
02/07/2014	28/07/2014	Destination Mat	Mothercare PLC	United Kingdom	GBP
24/07/2014	16/09/2014	Host Europe Gro	iomart Group PL	United Kingdom	GBP
29/07/2014	11/12/2014	Danaher Corp	Nobel Biocare H	Switzerland	CHF
31/07/2014	16/10/2014	ARCADIS UK Inve	Hyder Consultin	United Kingdom	GBP
19/08/2014	30/09/2014	Grupo Angeles S	Espirito Santo	Portugal	EUR
01/09/2014	10/10/2014	AI PG LLC	Perform Group P	United Kingdom	GBP
05/09/2014	01/03/2015	Fraport AG Fran	Aerodrom Ljublj	Slovenia	EUR
12/09/2014	15/05/2015	Oy Danfoss Ab	Vacon Oyj	Finland	EUR
15/09/2014	18/08/2015	Orange SA	Jazztel Plc	Spain	EUR
22/09/2014	14/10/2014	Fidelidade Comp	Espirito Santo	Portugal	EUR
23/09/2014	23/06/2015	Greene King PLC	Spirit Pub Co P	United Kingdom	GBP
25/09/2014	15/12/2014	KUKA AG	Swisslog Holdin	Switzerland	CHF
06/10/2014	01/12/2014	Dragon Oil PLC	Petroceltic Int	United Kingdom	EUR
07/10/2014	14/10/2014	UnitedHealth Gr	Espirito Santo	Portugal	EUR
09/10/2014	01/03/2015	Nordjyske Bank	A/S Norresundby	Denmark	DKK
14/10/2014	02/03/2015	Geberit AG	Sanitec Abp	Sweden	EUR
20/10/2014	16/04/2015	SHV Holdings NV	Nutreco NV	Netherlands	EUR
29/10/2014	13/03/2015	Nets A/S	DIBS Payment Se	Sweden	SEK
31/10/2014	13/01/2015	Joma Industrial	CAT oil AG	Germany	EUR
05/11/2014	23/12/2014	Terra Peregrin	Portugal Teleco	Portugal	EUR
06/11/2014	05/02/2015	Stork Holdco LP	Songbird Estate	United Kingdom	GBP
10/11/2014	19/03/2015	24 October Hold	Vizrt Ltd	Norway	NOK
10/11/2014	14/01/2015	Spar Nord Bank	A/S Norresundby	Denmark	DKK
21/11/2014	02/03/2015	Ophir Energy PL	Salamander Ener	United Kingdom	GBP
04/12/2014	09/02/2015	DealerTrack Tec	Incadea Plc	United Kingdom	GBP
08/12/2014	30/10/2015	Lyngen Bidco AS	EVERY ASA	Norway	NOK
22/01/2015	05/05/2015	DMG MORI GmbH	Dmg Mori Seiki	Germany	EUR
10/02/2015	08/05/2015	Canon Inc	Axis AB	Sweden	SEK
16/02/2015	23/06/2015	Adler Real Esta	Westgrund AG	Germany	EUR
17/02/2015	18/06/2015	CaixaBank SA	Banco BPI SA	Portugal	EUR
24/02/2015	22/04/2015	Ei Towers SpA	Rai Way SpA	Italy	EUR
12/03/2015	30/06/2015	Banco de Sabade	TSB Banking Gro	United Kingdom	GBP
28/03/2015	07/08/2015	Dufry Financial	World Duty Free	Italy	EUR
08/04/2015	11/09/2015	Infinera Corp	Transmode AB	Sweden	SEK
14/04/2015	16/07/2015	Asia Coal Energ	Asia Resource M	United Kingdom	GBP
07/05/2015	15/01/2016	Equinix Inc	Telecty Group	United Kingdom	GBP
15/05/2015	13/07/2015	Circassia Pharm	Aerocrine AB	Sweden	SEK
21/05/2015	16/07/2015	Investor Group	Phoenix IT Grou	United Kingdom	GBP
16/06/2015	17/09/2015	Digital Train L	Promethean Worl	United Kingdom	GBP
17/06/2015	23/09/2015	Middleby UK Res	Aga Rangemaster	United Kingdom	GBP
22/06/2015	14/07/2015	Ferholding UK L	Thorntons PLC	United Kingdom	GBP
25/06/2015	04/10/2015	Potash Corp Of	K+S AG	Germany	EUR
25/06/2015	03/07/2015	Eckoh PLC	Netcall PLC	United Kingdom	GBP
29/06/2015	05/08/2015	Shandong Offsho	Northern Offsho	Norway	BMD
20/07/2015	10/02/2016	Tennessee Acqui	Koninklijke Ten	Netherlands	EUR
28/07/2015	21/09/2015	Zurich Insuranc	RSA Insurance G	United Kingdom	GBP
29/07/2015	16/10/2015	Bell Bidder Ltd	Chime Communica	United Kingdom	GBP
29/07/2015	18/11/2015	Bailey Acquisit	Quintain Estate	United Kingdom	GBP
30/07/2015	18/12/2015	Delphi Automoti	HellermannTyton	United Kingdom	GBP
03/08/2015	30/11/2015	Tiwel Holding A	Sulzer Ltd	Switzerland	CHF
11/08/2015	16/12/2015	Capita PLC	Xchanging PLC	United Kingdom	GBP
27/08/2015	23/12/2015	Maurel et Prom	MPI SA	France	EUR

28/08/2015	18/11/2015	Axios Bidco Ltd	Innovation Grou	United Kingdom	GBP
01/09/2015	21/10/2015	MSA UK Holdings	Latchways PLC	United Kingdom	GBP
04/09/2015	22/12/2015	Saverco NV	Compagnie Marit	Belgium	EUR
08/09/2015	01/02/2016	Mitsui Sumitomo	Amlin PLC	United Kingdom	GBP
14/09/2015	29/10/2015	ENEA SA	Lubelski Wegiel	Poland	PLN
30/09/2015	19/07/2016	Groupe Fnac Sa	Darty PLC	United Kingdom	GBP
04/10/2015	04/11/2015	Apollo Global M	Xchanging PLC	United Kingdom	GBP
17/10/2015	15/08/2016	Diebold Nixdorf	Wincor Nixdorf	Germany	EUR
22/10/2015	17/12/2015	Monterey Capita	Infinis Energy	United Kingdom	GBP
12/11/2015	05/05/2016	CSC Computer Sc	Xchanging PLC	United Kingdom	GBP
02/12/2015	08/07/2016	MIC Bidco SpA	Engineering Ing	Italy	EUR
17/12/2015	08/03/2016	TDK Magnetic Fi	Micronas Semico	Switzerland	CHF
22/12/2015	27/06/2016	Recruit Holding	USG People NV	Netherlands	EUR
12/01/2016	07/04/2016	ATI Global Opti	KBC Advanced Te	United Kingdom	GBP
28/01/2016	10/11/2016	Kiwi Holding Iv	Kuoni Reisen Ho	Switzerland	CHF
08/02/2016	17/08/2016	River Acquisiti	Koninklijke Ree	Netherlands	EUR
10/02/2016	17/07/2016	Opera Software	Opera Software	Norway	NOK
12/02/2016	13/04/2016	McCormick & Co	Premier Foods P	United Kingdom	GBP
17/02/2016	07/04/2016	Yokogawa Electr	KBC Advanced Te	United Kingdom	GBP
19/02/2016	18/03/2016	Steinhoff Inter	Home Retail Gro	United Kingdom	GBP
26/02/2016	07/01/2017	MECCA Internati	KUKA AG	Germany	EUR
02/03/2016	17/08/2016	Conforama Inves	Darty PLC	United Kingdom	GBP
16/03/2016	10/06/2016	Vectura Group P	SkyePharma PLC	United Kingdom	GBP
29/03/2016	10/05/2016	Konica Minolta	Mobotix AG	Germany	EUR
08/04/2016	07/06/2016	Elector GmbH	Clere AG	Germany	EUR
08/04/2016	29/07/2016	Cairo Communica	Rizzoli Corrier	Italy	EUR
18/04/2016	08/02/2017	CaixaBank SA	Banco BPI SA	Portugal	EUR
16/05/2016	18/07/2016	International M	Rizzoli Corrier	Italy	EUR
23/05/2016	08/12/2016	Grand Chip Inve	Aixtron SE	Germany	EUR
29/05/2016	07/12/2016	Bpost SA	PostNL NV	Netherlands	EUR
31/05/2016	12/01/2017	Pixel Holding S	Tessi SA	France	EUR
14/06/2016	17/10/2016	Datwyler Techni	Premier Farnell	United Kingdom	GBP
15/06/2016	16/09/2016	Steinhoff Europ	Poundland Group	United Kingdom	GBP
17/06/2016	20/09/2016	LSREF4 ARIA Bet	ISARIA Wohnbau	Germany	EUR
30/06/2016	26/09/2016	News Corp UK &	Wireless Group	United Kingdom	GBP
25/07/2016	18/08/2016	888 Holdings PL	William Hill PL	United Kingdom	GBP
28/07/2016	04/10/2016	Venus Grafton S	Pinewood Group	United Kingdom	GBP
04/08/2016	05/10/2016	ZF Internationa	Haldex AB	Sweden	SEK
05/09/2016	27/03/2017	Vonovia SE	Conwert Immobil	Austria	EUR
06/09/2016	12/12/2016	GE Sweden Holdi	Arcam Ab	Sweden	SEK
15/09/2016	13/12/2016	AFG Arbonia-For	Looser Holding	Switzerland	CHF
15/09/2016	13/12/2016	Nordic Packagin	Powerflute Oyj	United Kingdom	EUR
28/09/2016	22/12/2016	Deutsche Post A	UK Mail Group P	United Kingdom	GBP
25/10/2016	17/02/2017	NNB Intressente	Nordnet AB	Sweden	SEK
25/10/2016	22/12/2016	KL-Kepong Inter	MP Evans Group	United Kingdom	GBP
21/11/2016	23/12/2016	Daisy Intermedi	Alternative Net	United Kingdom	GBP
22/11/2016	20/02/2017	Libra Bidco Ltd	Lavendon Group	United Kingdom	GBP
28/11/2016	14/02/2017	Loxam SAS	Lavendon Group	United Kingdom	GBP
29/11/2016	16/05/2017	Indra Sistemas	Tecnocom Teleco	Spain	EUR
22/12/2016	19/07/2017	Panasonic Holdi	Zetes Industrie	Belgium	EUR
22/12/2016	27/04/2017	Panasonic Holdi	Zetes Industrie	Belgium	EUR
19/01/2017	24/05/2017	Safran SA	Zodiac Aerospac	France	EUR
23/01/2017	09/08/2017	Talpa Holding N	Telegraaf Media	Netherlands	EUR
03/02/2017	28/03/2017	Bain Capital Fu	Resilux NV	Belgium	EUR
10/02/2017	19/06/2017	Investor Group	Euro Disney SCA	France	EUR
12/02/2017	08/09/2017	STADA Arzneimit	STADA Arzneimit	Germany	EUR
12/02/2017	08/09/2017	Nidda Healthcar	STADA Arzneimit	Germany	EUR
03/03/2017	07/07/2017	Marlin Bidco Lt	Shawbrook Group	United Kingdom	GBP
09/03/2017	01/06/2017	PPG Industries	Akzo Nobel NV	Netherlands	EUR
03/04/2017	03/07/2017	SNC-Lavalin (GB	WS Atkins PLC	United Kingdom	GBP
08/04/2017	04/08/2017	Aier Eye Intern	Clinica Baviera	Spain	EUR
21/04/2017	10/07/2017	LabTech Investm	Market Tech Hol	United Kingdom	GBP
15/05/2017	12/04/2018	Atlantia SpA	Abertis Infraes	Spain	EUR
15/05/2017	20/06/2017	Novacap SAS	PCAS SA	France	EUR
18/05/2017	12/09/2017	Elis SA	Berendsen PLC	United Kingdom	GBP
23/05/2017	18/10/2017	IP Group PLC	Touchstone Inno	United Kingdom	GBP
05/06/2017	05/12/2017	Investor Group	Sponda Oyj	Finland	EUR
13/06/2017	28/07/2017	Fosun Gold Hold	Gemfields PLC	United Kingdom	GBP
07/07/2017	08/09/2017	Altrad (UK) Ltd	Cape PLC	United Kingdom	GBP
21/07/2017	20/12/2017	Paysafe Group P	Paysafe Group P	United Kingdom	GBP
25/07/2017	01/11/2017	Jag Acquisition	Jimmy Choo PLC	United Kingdom	GBP
16/08/2017	01/11/2017	Clinigen Group	Quantum Pharma	United Kingdom	GBP
22/08/2017	21/02/2018	CGI Nordic Inve	Affecto Oyj	Finland	EUR
22/09/2017	02/11/2017	CBFI Investment	Imagination Tec	United Kingdom	GBP
25/09/2017	12/02/2018	Evergood 5 AS	Nets A/S	Denmark	DKK
04/10/2017	01/12/2017	Globalworth Ass	Griffin Premium	Poland	PLN
09/10/2017	26/01/2018	Agapier Investm	Millennium & Co	United Kingdom	GBP
13/10/2017	14/03/2018	FirstRand Ltd	Aldermore Group	United Kingdom	GBP
18/10/2017	14/03/2018	Hochtief AG	Abertis Infraes	Spain	EUR

14/11/2017	23/11/2017	ZPG PLC	Gocompare.Com G	United Kingdom	GBP
27/11/2017	02/05/2018	Allianz SE	Euler Hermes Gr	France	EUR
15/12/2017	20/02/2018	Assystem Servic	SQS Software Qu	United Kingdom	EUR
20/12/2017	26/02/2018	Investor Group	Taliesin Proper	United Kingdom	GBP
15/01/2018	03/07/2018	Milford Channel	Saeta Yield SA	Spain	EUR
16/01/2018	15/06/2018	Informa PLC	UBM PLC	United Kingdom	GBP
07/02/2018	04/06/2018	DK Telekomunik	TDC A/S	Denmark	DKK
08/02/2018	06/04/2018	NDX Intressente	Nordax Group AB	Sweden	SEK
13/03/2018	08/06/2018	Jyske Bank A/S	Nordjyske Bank	Denmark	DKK
26/03/2018	19/09/2018	Givaudan SA	Naturex SA	France	EUR
18/04/2018	08/06/2018	Ringkjøbing Lan	Nordjyske Bank	Denmark	DKK
20/04/2018	31/12/2018	Fonciere des Re	Beni Stabili Sp	Italy	EUR
24/04/2018	21/06/2018	Connect Infrac	Cityfibre Infra	United Kingdom	GBP
16/05/2018	10/10/2018	Vittoria Capita	Vittoria Assicu	Italy	EUR
23/05/2018	18/09/2018	Qumei Investmen	Ekornes ASA	Norway	NOK
05/06/2018	31/10/2018	MHG Continental	NH Hotel Group	Spain	EUR
05/07/2018	05/11/2018	Huadong Medicin	Sinclair IS Pha	United Kingdom	GBP
06/07/2018	03/09/2018	PAI Partners SA	Ontex Group NV	Belgium	EUR
13/07/2018	11/11/2018	Ramsay Generale	Capio AB	Sweden	SEK
09/08/2018	22/03/2019	Aplite Holdings	Radisson Hospit	Sweden	EUR
13/08/2018	19/12/2018	Blue (BC) Bidco	Esure Group PLC	United Kingdom	GBP
11/09/2018	05/09/2019	Mascot Bidco Oy	Amer Sports Oyj	Finland	EUR
17/09/2018	21/12/2018	Tropic Real Est	Testa Residenci	Spain	EUR
04/10/2018	29/11/2018	Investor Group	Intu Properties	United Kingdom	GBP
11/10/2018	23/10/2018	Dsv As	Ceva Logistics	Switzerland	CHF
11/10/2018	10/10/2019	CMA CGM SA	Ceva Logistics	Switzerland	CHF
29/10/2018	14/02/2019	Karo Intressent	Karo Pharma AB	Sweden	SEK
22/11/2018	27/06/2019	Orkla ASA	Kotipizza Group	Finland	EUR
26/11/2018	21/03/2019	DNO ASA	Faroe Petroleum	United Kingdom	GBP
30/11/2018	16/01/2019	Ecolab U.S. 2 I	Bioquell PLC	United Kingdom	GBP
10/12/2018	21/02/2019	AF AB	Povyry Oyj	Finland	EUR
11/12/2018	06/03/2019	Quimper AB	Ahlsell AB	Sweden	SEK
14/12/2018	26/09/2019	Star BidCo BV	BinckBank NV	Netherlands	EUR
31/12/2018	21/05/2019	Medco Energi GI	Ophir Energy PL	United Kingdom	GBP
16/01/2019	19/08/2019	Dsv As	Panalpina Weltt	Switzerland	CHF
18/01/2019	14/05/2019	Pulver BidCo Gm	Scout24 AG	Germany	EUR
23/01/2019	12/04/2019	Rome UK Bidco L	RPC Group PLC	United Kingdom	GBP
31/01/2019	01/07/2019	Berry Global In	RPC Group PLC	United Kingdom	GBP
25/02/2019	06/11/2019	CACEIS Bank SA	Kas Bank NV	Netherlands	EUR
01/03/2019	26/03/2019	Spar Nord Bank	Danske Andelska	Denmark	DKK
13/03/2019	27/08/2019	Edmond de Roths	Edmond De Roths	Switzerland	CHF
19/03/2019	04/12/2019	Triton Bidco (G	Inmarsat PLC	United Kingdom	GBP
21/03/2019	16/05/2019	Ares Life Scien	Stallergenes Gr	France	GBP
25/03/2019	28/08/2019	Saintmichelco L	IFG Group PLC	United Kingdom	EUR
01/04/2019	04/06/2019	Severgroup OOO	Lenta Ltd	United Kingdom	RUB
05/04/2019	30/04/2019	Magnit PJSC	Lenta Ltd	United Kingdom	RUB
24/04/2019	01/08/2019	Humber Bidco Lt	KCOM Group PLC	United Kingdom	GBP
30/04/2019	31/07/2019	Mediahuis NV	Independent New	United Kingdom	EUR
02/05/2019	14/08/2019	TGS-NOPEC Geoph	Spectrum ASA	Norway	NOK
22/05/2019	29/07/2019	Amgen Inc	Nuevolution AB	Sweden	DKK
26/05/2019	12/03/2020	TE Connectivity	First Sensor AG	Germany	EUR
31/05/2019	04/10/2019	Rank Bidco	Stride Gaming P	United Kingdom	GBP
03/06/2019	01/08/2019	MEIF 6 Fibre Lt	KCOM Group PLC	United Kingdom	GBP
18/06/2019	05/12/2019	Tieto Oyj	EVRY ASA	Norway	NOK
20/06/2019	06/11/2019	BBD Bidco Ltd	BCA Marketplace	United Kingdom	GBP
20/06/2019	31/07/2019	Bernard Bidco L	Premier Technic	United Kingdom	GBP
28/06/2019	04/11/2019	Berkeley Bidco	Merlin Entertai	United Kingdom	GBP
28/06/2019	23/12/2019	SCP SKN Holding	Latecoere SA	France	EUR
15/07/2019	09/07/2020	Blitz F19-566 G	OSRAM Licht AG	Germany	EUR
29/07/2019	30/10/2019	Mellby Gard AB	KappAhl AB	Sweden	SEK
01/08/2019	09/09/2019	Aptean Ltd	Sanderson Group	United Kingdom	GBP
04/08/2019	23/08/2019	Citrus UK Bidco	Easyhotel PLC	United Kingdom	GBP
14/08/2019	14/11/2019	HPREF Dublin Of	Green REIT PLC	Ireland	EUR
19/08/2019	30/10/2019	CK Noble (UK) L	Greene King PLC	United Kingdom	GBP
19/09/2019	21/01/2020	Jewel Bidco Ltd	Charles Taylor	United Kingdom	GBP
20/09/2019	30/10/2019	Ceres Bidco Ltd	Statpro Group P	United Kingdom	GBP
20/09/2019	12/05/2020	FV Beteiligungs	Low & Bonar PLC	United Kingdom	GBP
25/09/2019	08/10/2019	P/F Bakkafrost	The Scottish Sa	Norway	GBP
25/09/2019	31/12/2019	P/F Bakkafrost	The Scottish Sa	Norway	GBP
22/10/2019	31/01/2020	MIH Food Delive	Just Eat PLC	United Kingdom	GBP
04/11/2019	15/05/2020	Aureit Holding	Hoivatilat Oyj	Finland	EUR
05/11/2019	03/06/2020	Boels Topholdin	Cramo Oyj	Finland	EUR
11/11/2019	20/04/2020	Momentum Group	Swedol AB	Sweden	SEK
15/11/2019	16/01/2020	GeoPark Colombi	Amerisur Resour	United Kingdom	GBP
18/11/2019	02/07/2020	Georgia Capital	Georgia Healthc	United Kingdom	GBP
02/12/2019	14/02/2020	Ograi BidCo AB	Opus Group AB	Sweden	SEK
09/12/2019	28/07/2020	Guangdong Wenca	Le Belier SA	France	EUR
18/12/2019	06/02/2020	Potter UK Bidco	Hansteen Holdin	United Kingdom	GBP
19/12/2019	21/02/2020	Akka Technologi	Data Respons AS	Norway	NOK

08/01/2020	17/03/2020	Anglo American	Sirius Minerals	United Kingdom	GBP
15/01/2020	13/08/2020	Delo-Tsentr OOO	TransContainer	Russia	RUB
22/01/2020	14/07/2020	Tencent Cloud E	Funcom SE	Norway	EUR
13/02/2020	10/07/2020	Schneider Elect	RIB Software SE	Germany	EUR
17/02/2020	05/10/2020	Intesa Sanpaolo	Unione di Banch	Italy	EUR
21/02/2020	06/05/2020	Dock Newco Ltd	Daejan Holdings	United Kingdom	GBP
17/03/2020	21/09/2020	AGC Biologics I	Molecular Medic	Italy	EUR
29/06/2020	08/09/2020	Envea Global SA	Envea SA	France	EUR
06/07/2020	02/09/2020	Viaro Energy Lt	RockRose Energy	United Kingdom	GBP
09/07/2020	17/12/2020	Castillon SAS	Devoteam SA	France	EUR
20/07/2020	14/08/2020	M&G Investment	UK Mortgages Lt	United Kingdom	GBP
22/07/2020	09/09/2020	Cubitt Trade Ho	HWISI Realisatio	United Kingdom	GBP
27/07/2020	28/01/2021	IMA BidCo SpA	IMA Industria M	Italy	EUR
30/07/2020	28/01/2021	Rainbow Holding	Satimo SA	France	EUR
26/08/2020	13/11/2020	Trisall AB	HiQ Internation	Sweden	SEK
14/09/2020	05/04/2021	Garda World Sec	G4S PLC	United Kingdom	GBP
21/09/2020	06/04/2021	Iliad Purple SA	PLAY Communicat	Poland	EUR
21/09/2020	04/01/2021	Fortiana Holdin	Highland Gold M	United Kingdom	RUB
22/09/2020	03/11/2020	Lorca Telecom B	Masmovil Iberco	Spain	EUR
09/10/2020	05/04/2021	Atlas UK Bidco	G4S PLC	United Kingdom	GBP
23/10/2020	01/02/2021	Mastiff Bidco L	McCarthy & Ston	United Kingdom	GBP
28/10/2020	09/04/2021	Nova Resources	KAZ Minerals PL	United Kingdom	GBP
29/10/2020	31/05/2021	Sihold NV	Sioen Industrie	Belgium	EUR
02/11/2020	16/04/2021	Sanofi SA	Kiadis Pharma N	Belgium	EUR
03/11/2020	15/12/2020	Dbay Advisors L	Telit Communica	United Kingdom	GBP
05/11/2020	01/06/2021	Regent Bidco Lt	RSA Insurance G	United Kingdom	GBP
06/11/2020	21/01/2021	Wellcome Trust	Urban&Civic PLC	United Kingdom	GBP
09/11/2020	08/03/2021	Connells Ltd	Countrywide PLC	United Kingdom	GBP
12/11/2020	10/12/2020	Minerals Techno	Elementis PLC	United Kingdom	GBP
23/11/2020	04/06/2021	Credit Agricole	Banca Piccolo C	Italy	EUR
25/11/2020	17/02/2021	Future PLC	GoCo Group PLC	United Kingdom	GBP
25/11/2020	09/03/2021	Basing Bidco Lt	AA PLC	United Kingdom	GBP
25/11/2020	08/02/2021	Castellum AB	Entra ASA	Norway	NOK
26/11/2020	14/01/2021	Vestjysk Bank A	Den Jyske Spare	Denmark	DKK
07/12/2020	19/02/2021	Cisco Systems H	IMImobile PLC	United Kingdom	GBP
10/12/2020	10/03/2021	Causeway Consor	Applegreen PLC	Ireland	EUR
11/12/2020	12/03/2021	Coyote Bidco Lt	Calisen PLC	United Kingdom	GBP
08/01/2021	16/07/2021	SOF-11 Klimt CA	CA Immobilien A	Austria	EUR
18/01/2021	29/04/2021	Novagerm SASU	Eurogerm SA	France	EUR
22/01/2021	06/05/2021	Atrys Health SA	Aspy Global Ser	Spain	EUR
25/01/2021	17/06/2021	Cortina Bidco L	AFH Financial G	United Kingdom	GBP
27/01/2021	26/03/2021	Savaria Corp	Handicare Group	Sweden	SEK
29/01/2021	11/02/2021	Platinum Equity	Marston's PLC	United Kingdom	GBP
05/02/2021	10/08/2021	Albion Acquisit	Aggreko PLC	United Kingdom	GBP
08/02/2021	11/10/2021	Sherwood Acquis	Arrow Global Gr	United Kingdom	GBP
09/02/2021	05/08/2021	James Hay Partn	Nucleus Financi	United Kingdom	GBP
15/02/2021	29/07/2021	Kerry Iberia Ta	Biosearch SA	Spain	EUR
19/02/2021	19/03/2021	Dye & Durham Lt	Idox PLC	United Kingdom	GBP
20/02/2021	04/06/2021	NAF 2 SpA	ASTM SpA	Italy	EUR
04/03/2021	15/11/2021	Nordax Bank AB	Norwegian Finan	Norway	NOK
05/03/2021	09/08/2021	Investor Group	ICT Group NV	Netherlands	EUR
08/03/2021	04/05/2021	Larus Holding L	Hoegh LNG Holdi	Norway	BMD
08/03/2021	14/09/2021	Castor Bidco Sp	Cerved Group Sp	Italy	EUR
14/03/2021	28/06/2021	Immofinanz AG	S IMMO AG	Austria	EUR
15/03/2021	01/08/2021	Webuild SpA	Astaldi SpA	Italy	EUR
18/03/2021	31/08/2021	Trieste Acquisi	Telit Communica	United Kingdom	GBP
28/03/2021	01/09/2021	Kaixo Telecom S	Euskaltel SA	Spain	EUR
13/04/2021	16/06/2021	LSTH Svenska Ha	Tre Kronor Prop	Sweden	SEK
19/04/2021	09/12/2021	Earth Private H	Equiniti Group	United Kingdom	GBP
19/04/2021	20/07/2021	Taiwan Cement E	Engie Eps SA	France	EUR
04/05/2021	11/05/2021	Trophie Fastighe	Tre Kronor Prop	Sweden	SEK
06/05/2021	17/12/2021	Ganfeng Lithium	Bacanora Lithiu	United Kingdom	GBP
06/05/2021	22/09/2021	Aqueduct Bidco	John Laing Grou	United Kingdom	GBP
12/05/2021	16/08/2021	Nenelite Ltd	UDG Healthcare	United Kingdom	EUR
14/05/2021	03/09/2021	Cinven Ltd	Sanne Group PLC	United Kingdom	GBP
17/05/2021	12/07/2021	Perkinelmer (UK	Immunodiagnosti	United Kingdom	GBP
28/05/2021	24/06/2021	LSF XI Investme	Senior PLC	United Kingdom	GBP
11/06/2021	09/08/2021	Six Bidco Ltd	Sigma Capital G	United Kingdom	GBP
16/06/2021	28/12/2021	Veleta BidCo Sa	Solarpack Corp	Spain	EUR
19/06/2021	27/10/2021	Market Bidco Lt	Wm Morrison Sup	United Kingdom	GBP
02/07/2021	20/12/2021	Gemini Jersey J	GCP Student Liv	United Kingdom	GBP
03/07/2021	04/10/2021	Oppidum Bidco L	Wm Morrison Sup	United Kingdom	GBP
05/07/2021	26/09/2021	Rimini Bidco Sr	Reno de Medici	Spain	EUR
09/07/2021	16/09/2021	PMI Global Serv	Vectura Group P	United Kingdom	GBP
16/07/2021	26/08/2021	NTS ASA	Norway Royal Sa	Norway	NOK
26/07/2021	21/12/2021	Bidsky SAS	Artefact SA	France	EUR
26/07/2021	29/09/2021	Bidsky SAS	Artefact SA	France	EUR
30/07/2021	14/10/2021	Holdco II SAS	Iliad SA	France	EUR
30/07/2021	04/10/2021	Antwerp Managem	Augean PLC	United Kingdom	GBP

02/08/2021	03/12/2021	Castellum AB	Kungsleden AB	Sweden	SEK
11/08/2021	07/09/2021	TransDigm Group	Meggitt PLC	United Kingdom	GBP
25/08/2021	20/10/2021	Eleia Ltd	Augean PLC	United Kingdom	GBP
01/11/2021	14/12/2021	LS Development	U & I Group PLC	United Kingdom	GBP
12/11/2021	01/12/2021	CVC Capital Par	Intertrust NV	Netherlands	EUR

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