

acquirers performance persistence in acquisitions -  
european evidence

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Yu Chen  
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# Acquirers Performance Persistence in Acquisitions European Evidence

Master's Thesis

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ABSTRACT

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## **ABSTRACT**

### **Objective of the study**

The purpose of this thesis is to study acquirers performance persistence issue in merger and acquisition (M&A) market based on empirical evidence from EU 15 countries. This study provides an overview of different factors affecting serial acquirers' performance in M&A market as measured by excess stock returns. Focus of this thesis is to test the existence of acquirers performance persistence and factors contributing to this possible persistence effect.

### **Academic background and methodology**

An overview of existing theories and analysis framework regarding M&A market and acquirers' performance behaviors is obtained through literature research. Empirical data regarding M&A market in EU 15 countries are obtained from various data sources available from Aalto University School of Business. Data are processed by using statistical package EViews. The purpose of the statistical analysis is to discover relations between various variables and acquirers' performance persistence in M&A deals. The regression results are analyzed using established theories on M&A performance, as well as by comparing with relevant study from other scholars.

### **Findings and conclusions**

This thesis uses a statistical analysis model in which different variables pertinent to M&A deals, together with acquirers' prior performance, are analyzed for detecting their impacts on acquirers' performance. This study reveals that depending on different model specifications, acquirers' performance persistence can be identified in terms of value creation for own companies, value creation for both acquirers and targets, and acquirers' bargaining power in acquisition deals.

### **Key words**

M&A, Performance persistence, Cumulative abnormal return

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# 1. INTRODUCTION

## 1.1 BACKGROUND AND MOTIVATION

As one of the most popular forms of corporate growth, mergers and acquisitions (M&A) have attracted academic research interest from a broad range of angles (Cartwright et al, 2006). M&A are usually regarded as very critical decisions made by a company, and successful M&A deals in theory create value for both the acquirers and the target companies by combining complementary assets, as well as through economies of scale and scope, while unsuccessful M&A deals are expected to have reverse effects (Bao et al, 2009).

In recognition of this potentially significant value-creation power that M&A have, a large amount of research effort is dedicated to studying the impact of M&A on company's performance, from both acquirers and target companies perspectives. Existing literatures reveal that target companies usually gain from acquisitions (Jaffe, Pedersen and Voetmann (JPV), 2008), while the conclusion for acquirers is less clear (Cartwright et al, 2006). Agrawal and Jaffe (2000) point out that in the months following the acquisition investors of acquiring companies usually see share price underperformance, and in an earlier study, Agrawal, Jaffe and Mandelker (1992) find that shareholders of acquiring companies experience about 10% loss over the five-year period after the acquisition. From shorter term perspective, the most popular measurement for acquirers' acquisition performance has been the excess stock returns to acquirers around the deal announcement date. Excess stock returns can be calculated using cumulative abnormal return (CAR) method. Using CAR as a measurement, academics have found evidence for both value-creating and value-destroying in short term from acquirers' perspective. Also in an attempt to better understand the performance dynamics in short term, scholars have related an acquirer's CARs with various characteristics that are pertinent to the deal. Most widely used explanatory factors in this regard include methods of payment by the acquirers, private or public status of the target companies, size of the target companies, etc. (Chang (2000), Asquith, Bruner and Mullins (1983), Hansen and Robert G (1987), Servaes (1991), Travlos (1987), Wansley, Lane and Yang (1987)).

If acquirers' short term performance is indeed influenced by characteristics pertinent to acquisition deals, one immediate question that can be asked from acquirers' perspective is: For serial acquirers whose deal characteristics can be tracked back over a long period of time, do they exhibit performance persistence measured by excess stock returns in each acquisition deal? Although some scholars have attempted to address this question from managers' acquisition skills

perspective (Crocì and Petmezas, 2009, Aktas, Bodt and Roll, 2009), relatively little research has been done to directly analyze acquirers' performance persistence measured by excess stock returns on company level. Using CARs as a measurement for acquisition performance, JPV (2008) made one of the first studies to systematically analyze whether acquirers in M&A exhibit persistence in performance, based on the analysis of potential relations between acquirers' performance in previous acquisition deals and the same acquirers' performance in following deals. Their study provides good methodology framework for tackling acquirers' performance persistence.

As this study is based on empirical data from the U.S. market, one natural extension from empirical research perspective is to test whether acquirers exhibit similar performance patterns in the European market. Also one potential limitation of this study, as is the case with a few other studies that follows, is that M&A advisors' role in acquirers' performance is not studied. In reality M&A advisors (usually investment banks) do exert significant influence on acquirers' performance, and this is also supported by the empirical study by Bao and Edmans (2011), in which they have systematically analyzed M&A advisors' performance persistence in acquisition deals.

Motivated by existing research in both acquirers' performance persistence and M&A advisors' performance persistence, I want to conduct a comprehensive study to see whether acquirers exhibit performance persistence in European market, and if such persistence exists, is it robust after factoring the potential influence from M&A advisors.

## 1.2 CONTRIBUTION TO EXISTING LITERATURE

As stated in the motivation part, I will try to provide the missing link between M&A advisors' skills and acquirers' performance. Also tests carried out in the U.S. market on acquirers' M&A performance are applied to the European market, which could give insights into how the two markets differ in terms of acquirers' performance persistence. Besides, I use a new measurement for acquirers' performance persistence in term of bargaining power. I measure this potential effect by analyzing the relation between acquisition premiums same acquirers pay to different target companies in a serial of deals.

## 1.3 STRUCTURE OF THESIS

The rest of the paper is organized as follows. I first give a review of existing research literature on acquirers' performance and performance persistence. Then I introduce main hypotheses for my thesis. After that I describe the methodology and data used in this study. Then I present the main



regression results, followed by analysis of the results, robustness test and conclusion. At the end, some suggestion for further research on this topic is given.

## **2. LITERATURE REVIEW**

### **2.1 ACQUIRERS' ACQUISITION PERFORMANCE**

#### *2.1.1 Acquirers' acquisition performance from long-term perspective*

Evaluation of acquirers' acquisition performance includes both long-term and short-term perspective. Long-term perspective essentially focuses on acquirers' post-acquisition operating performance, and acquirers' profitability metrics, most notably pre-tax operating cash flow adjusted by acquirers' size and industry, are often used to measure post-acquisition performance (Martynova, Oosting and Renneboog, 2006). Research on this topic has been predominantly based on US market data, together with a few studies focusing on UK market and continental Europe. Such work tries to relate corporate operating performance after the acquisition with various characteristics pertinent to acquisition deals and have reached inconsistent conclusions. Regarding the method of payment used in acquisitions, Linn and Switzer (2001) report that the impact on post-acquisition operating performance is significantly larger if the acquirer offers cash payment. Also they find that such impact does not depend on deal size, level of similarity between the acquirer's and the target company's industry, or the acquirer's leverage. Heron and Lie (2002) also find acquirers tend to outperform peer companies both prior to and after the acquisition, however their study shows no evidence that the method of payment in acquisition affects the acquirer's future operating performance. On the other hand, Ghosh (2001) uses firm-specific data matched by pre-acquisition performance and size as a benchmark to analyze how operating performance might have been improved following a corporate acquisition, and he finds such improvement effect does not exist for acquirers. Using evidence from Australia, Sharma and Ho reach (2002) similar conclusion that corporate acquisition does not lead to significant operating performance improvement for acquirers. Furthermore, some other studies, some of which use empirical evidence from other part of the world than the US market, have found negative impact of acquisition on acquirers' ex post operating performance. Based on Japanese corporate M&A deals from 1970 to 1994, Yeh and Hoshino (2002) find that companies actually register performance deterioration following the deal, although their study focuses specifically on merger rather than acquisition cases, and the metrics they use to measure companies' operating performance are net income and operating income, instead of operating cash flow. In a slightly earlier study, Dickerson, Gibson and Tsakalotos (1997)

discover that for large UK-based public companies, acquisitions have significant negative impact on acquirers in terms of return on assets (ROA).

### *2.1.2 Acquirers' acquisition performance from short-term perspective*

The basic and most used approach to gauge acquirers' acquisition performance in short-term has been measuring the abnormal return to acquirers' stock around the date of acquisition deal announcement (JPV, 2008). Similar to the case in evaluation of acquirers' post-acquisition performance from long-term perspective, academics are divided regarding whether acquisitions create value for acquirers over short term. Some early empirical evidence shows that acquirers' CARs around the deal announcement date are essentially zero, or even negative (Jensen and Ruback, 1983). Based on acquisition and divestiture deals from 1990 to 1999, Mulherin and Boone (2000) find slightly negative stock price return for acquirers in the three-day window around the acquisition. Controlling for deal size, payment method and other relevant variables, studies using data from earlier time also report similar results supporting negative share price returns assumption for acquirers (Jarrell, Brickley and Netter, 1988; Bradley, Desai and Kim, 1988; Andrade, Mitchell, and Stafford, 2001). Agrawal et al. (1992) include a comprehensive sample of mergers between NYSE acquirers and NYSE/AMEX target companies in their analysis and find a statistically significant 10% loss in share price return to acquirers. This study, however, uses a different model specification as it focuses on stock returns to acquirers over five years after the acquisition.

On the contrary side, Asquith, Bruner and Mullins find statistically significant positive abnormal return to acquirers by using acquisition information in the US from 1955-1979. An interesting point raised up in their study is that many acquirers tend to have a M&A programme, meaning that the same acquirer makes more than one acquisitions during a certain period of time as part of its M&A plan. By arguing this they suggest that it's necessary to consider an acquirer's acquisitions together, instead of separately.

Some others scholars argue because in M&A many target companies are small compared to the acquirers, the impact of the acquisition is too small to be meaningfully reflected in acquirers' share price movement (Eckbo, Maksimovic and Williams, 1990). This argument is supported by Bruner (2002), who points out in his work that acquisitions do create value for acquirers and target companies together, however the returns to acquirers are essentially evenly scattered around zero.

## **2.2 ACQUIRERS' PERFORMANCE PERSISTENCE**

Although academics haven't reached a universal agreement regarding the impact of acquisitions on acquirers' stock return around deal announcement date, this is clear that on individual company

level, acquirers show significantly different level of performance (JPV, 2008). As a result it will be very interesting to see whether acquirers exhibit performance persistence in a series of deals, and how an acquirer's performance in previous acquisitions might influence the same acquirer's performance in following deals.

### *2.2.1 Management motivations, skills and hubris*

Within the limited amount of study that is devoted to directly address the issue on acquirers' performance persistence, some scholars have focused on management motivations and skills to explain acquirers' performance persistence. Croci and Petmezas (2009) have studied the rationales for acquirers to make serial acquisitions. They find that overall for serial acquirers as a group it does not show any performance persistence or reversal, while acquirers who achieve positive return in a deal do continue to generate positive returns in following deals.

Management hubris is the overconfidence of acquirers' management that they are able to better manage assets in the target company, and it usually leads to overvaluing the target company in the bidding process (Roll (1986), Hayward and Hambrick, (1997)). Management hubris has often been considered as one of the main reasons why serial acquirers realize declining CARs in their deals. Ismail (2008) finds in his study that single acquirers outperform multiple acquirers by 1.66% in terms of stock price returns, and he explains this result by arguing that successful first-deal acquirers usually suffer from hubris behavior in following acquisition attempts.

Aktas, Bodt and Roll (2009) study how CEOs hubris and learning process may have contributed to serial acquirers' acquisition performance. They argue that contrary to common belief, declining CAR for serial acquirers cannot be reliably attributed to acquirers' CEOs hubris. Instead, they find that management learning process leads risk adverse rational CEOs to adapt their acquisition behaviors, which will result in lowered CAR in following deals. Also, they predict that for rational CEOs in the acquiring company, learning process should shorten the time between consecutive deals, while for CEOs with hubris, the time between two consecutive deals tend to get longer.

### *2.2.2 Performance persistence and deal characteristics*

From a wider perspective, some other scholars try to explain serial acquirers' performance persistence using a range of deal characteristics pertinent to each acquisition. Fuller, Netter and Stegemoller (2002) study the stock returns to companies that make five or more acquisitions within a short period of time. From their research they recognize the public status of the target company, and the method of payment used in the deal as factors that affect the most returns to acquirers. Although their study is based on performance of serial acquirers, how an acquirer's prior deal

performance might affect the same acquirer's following deal performance is not included in their study. Also, their study suffers from a potential selection bias, as only acquirers that have made at least five deals would enter into the sample.

By controlling for a comprehensive set of acquisition deals characteristics variables that are known to impact acquisition performance, Jaffe, Pedersen and Voetmann (2008) have studied whether acquirers demonstrate performance persistence. Their basic approach is analyzing the relation between successive deals CAR to the same acquirer, and based on U.S. data, they find that a successful acquirer in last deal on average earns 0.44% more on next deal than a previously-unsuccessful acquirer.

The work by JPV (2008) represents one of the first comprehensive studies devoted to serial acquirers' performance persistence. In addition to their work, some other scholars have also analyzed this topic by using specific deal characteristics as explanation factors for acquirers' performance persistence. Ahern (2008) studies the abnormal returns to repeat acquirers' and finds that as repeat acquirers get larger, they tend to choose target companies of smaller relative size in an attempt to optimize integration and transaction costs. As a result, the decrease in relative deal size leads to declining returns to acquirers. Conn, Cosh, Guest and Hughes (2004) in their study have briefly discussed the impact of acquirers' first deal success on its subsequent deals and they find declining acquirers' performance in subsequent deals following successful first deal. However, no detailed analysis on this finding is provided in their study. I list below factors commonly recognized by academics as alternative explanations for acquirers' performance persistence. Also I provide prevailing academic arguments for them regarding their impacts on acquirers' performance. Many of these factors are first used by scholar in the study of acquirers' performance in stand-alone deals, and afterwards they are also applied to the analysis of serial acquirers' performance persistence.

### *Managerial skills*

In their analysis of the impact of managerial performance on tender offer results, Lang, Stulz and Walkling (1989) find a low Tobin's q reduces acquirers' returns. They further argue that as Tobin's q measures managerial performance, this finding shows that acquirers under good management can benefit more from tender offers, and this benefit is enhanced if the target company has a low Tobin's q, indicating poor management in the target company. In another paper published two years later, Lang, Stulz and Walkling (1991) use Tobin's q to indentify agency problems faced by different acquirers and they show that as the cash flow of acquirers with low Tobin's q increase, the abnormal returns for acquirers with low Tobin's q actually decrease compared to the abnormal

returns for acquirers with high Tobin's  $q$ . This result holds true after controlling for other characteristics pertinent to acquisition deals. The authors explain this phenomenon by arguing that underperforming management of acquirers, as indicated by the low Tobin's  $q$ , lacks the capability to capitalize on the synergy from the acquisition deals. Based on a sample of over 700 mergers and tender offers between 1972 and 1987, Servaes (1991) confirms the findings from Lang et al. by arguing that the announcement abnormal returns are larger for both acquirers and target companies when acquirers have high Tobin's  $q$  and target companies have low Tobin's  $q$ .

#### *Public status of the target company*

By examining more than 12000 completed acquisitions from US market, Bradley and Sundaram (2006) find that the organizational form of the target, namely whether the target is public or not, exert the most significant influence on excess stock returns to acquirers around the deal announcement date. Fuller, Netter and Stegemoller (2002) find that after controlling for method of payment, the stock return measured by CAR for frequent acquirers is significantly negative if the target company is public, while the return is significantly positive when they buy a private firm or a subsidiary. They conclude this is because the characteristics of a public target and its relation with the acquirer are different than if the target is a private or subsidiary company. They further argue that the lack of liquidity makes private or subsidiary companies less attractive, which drives down their value and leads to higher CAR for acquirers.

This result is consistent with the study by Faccio, McConnell and Stolin (2006). Based on the abnormal returns to acquirers around announcement period in 17 Western European countries between 1996 and 2001, they find persistent difference between average abnormal return to acquirers of unlisted targets and acquirers of listed targets, with the former one being significantly higher than the latter one.

#### *Size effect*

Size effect on acquirers' CAR is two-folded. First of all, if the size of an acquirer and the size of the deal are disparate, then the excess stock returns to the acquirer measured by CAR will be dwindled to minimal even if the dollar value of the abnormal return is significant (Asquith, Bruner and Mullins, 1983). Secondly, some scholars also argue that as deals get bigger in size relative to acquirers, the relation between acquirers and target companies, most notably the bargaining power between acquirers and target companies, may also change, which affect the value creation and distribution dynamics of the acquisition process.

Asquith, Bruner and Mullins (1983) find in their study that acquirers' abnormal returns are positively related to the relative size of target companies. They report that on average an acquirer's CAR from an acquisition of a target half the size of the acquirer is 1.8% higher than the CAR from an acquisition of a target one-tenth the size of the acquirer. This can potentially be explained both by the higher expectation the market has towards a large acquisition deal, as well as by the fact that a larger deal usually is related with more prudent target screening and decision-making process from the acquirers' management side, which helps to identify better targets and produce higher acquisition performance.

Fuller, Netter and Stegemoller (2002) explain that the larger the target is, the stronger negotiation position the target has in the acquisition process, which hinders acquirers from extracting more value from the deal. Correspondingly they find a negative relation between the size of public targets and acquirers' CAR, although the effect regarding the size of private or subsidiary companies is less clear.

Moeller, Schlingemann and Stulz (2004) offer analysis on the effect of acquirers' size on acquirers' CAR. Based on 12000 deals by public companies from 1980 to 2001, they document that the abnormal return to acquirers is about 2% higher for small acquirers, and the result is robust when controlling for other deal characteristics. They attribute this result to the fact that large acquirers tend to pay higher premiums in the acquisition, and they usually realize negative dollar synergy gains. Deeper-level explanation for such phenomena traces back managerial hubris issues which are supposed to be more prominent in large companies.

#### *Domestic/international target*

Some scholars have looked at the impact of different national cultures on acquirers' performance. We can expect the issue related with national culture difference to be most prominent if the acquirer and the target company are from two different countries. Most existing studies analyze this topic from a long-term performance perspective and use operational metrics to measure acquirers' post-acquisition performance. According to most previous theoretical research, different national cultures incur higher post-acquisition integration cost which hinders acquirers' performance. Contrarily, Morosini, Shane and Singh (1998) use statistical regression to analyze the impact of cross-border acquisition and find acquirers actually improve their performance by benefiting from diverse set of skills and routines embedded in the target company. Their study however, is also based on long-term perspective and uses acquirers' sales growth for the two years following the acquisition to measure acquirers' performance.

Short-term evidence on this issue is found in Moeller and Schlingemann's work (2005), where they report significantly lower announcement returns for U.S. acquirers buying overseas targets than acquirers making domestic acquisitions.

On the other hand, Dewenter (1995) finds no significant difference in returns to acquirers between domestic and international deals, although his findings are based on two specific industry sectors (chemical and retail) in the US market.

One related study that focuses on the European market is done by Conn et al. (2006). Based on the UK market they find that if the target company is public and located abroad, the acquirer realizes zero announcement return while if the target company is either private or a subsidiary, cross-border acquisition generates positive announcement return for the acquirers.

#### *Method of payment*

Asquith, Bruner and Mullins (1990) show that acquirers' CAR is positive with cash payment and it is negative when the deal is financed by equity. This result is supported by the general findings regarding the negative announcement effect of equity financing on stock price. This result is also consistent with an earlier study by Travlos (1987), in which he finds acquirers' stocks experience significant loss at the deal announcement date if the deal is purely equity financed, while acquirers' stocks realize "normal" rate of return if the deal is financed by cash. Shleifer and Vishny (2003) back this assumption by arguing that if acquirers' management have better information about the acquirers' prospect than the market, they will finance acquisitions with stock when stock is overpriced and with cash otherwise.

Some scholars have analyzed the impact on acquirers' CAR by relating method of payment to the public status of the target company. Chang (1998) has specifically studied the effect of payment method when the target is a privately held company. Findings from the study show that compared with the negative CAR for acquirers when the target company is public, acquirers gain positive CAR in stock offers, while offers financed by cash do not generate any abnormal returns for acquirers. Fuller, Netter and Stegemoller (2002) find that when the target is a public company, paying with stock will generate significantly negative returns for the acquirer. When it comes to acquisition of a private company or a subsidiary, however, stock payment is associated with higher acquirers' CAR when compared with cash or other forms of payment. In addition, Franks, Harris and Mayer (1988) report that acquisitions which are all equity financed exhibit significantly

negative return for the acquirers, which they explain as the possible result of the signaling effect to the market and consequently the triggering of downward revaluation of the acquirers' equity.

### *Industrial diversification*

It is commonly accepted that companies can benefit from focusing on operating in one specific industry or a few selected business sectors, instead of spreading out into too many different battlefields. From company management perspective, this can be explained by more focused industry-specific expertise, more coherent strategy making and implementation process, as well as potentially less conflicts of interest arising from different internal business lines inside the company. From external investors and market point of view, it is also easier to give fair valuation to such companies because of more transparent company structure.

From a sample of 326 acquisitions in US market between 1975 and 1987, Morck, Shleifer and Vishny (1990) find in 1980s when acquirers make unrelated acquisitions they typically experience negative announcement period returns, although no such empirical evidence is found for deals occurred in 1970s.

In the same study where they analyze the cross-border effect on acquirers' performance, Moeller and Schlingemann (2005) also find that acquirers' announcement stock returns are negatively related with an increase in industrial diversification.

Despite such empirical evidence showing penalty for acquirers who diversify, Fuller, Netter and Stegemoller (2002) find no statistically significant difference in return to acquirers between same-industry and cross-industry mergers.

### *Time lag between two consecutive deals*

Fuller, Netter and Stegemoller (2002) document that if an acquirer makes multiple targets within a short period of time, the acquirer's CAR shows deterioration in later deals. They attribute this phenomenon partly to the possibility that acquirers tend to negotiate less efficient and creates less synergy out of the acquisition if its deals are concentrated in a short period of time. As a result, stock market reaction to its deals becomes less favorable.

This finding resonates with the study by Aktas, de Bodt and Roll (2008). Their work shows that companies who report longer time lag between two consecutive acquisition deals appear to generate higher CARs. This finding is further supported by the theory that it takes time to identify a good



deal which can generate significantly positive return, and thus hasty acquisition decisions on average lead to poor market reaction.

### *Competing bidders*

In the existence of competing bidders, meaning that more than one potential acquirer are pursuing a target company, we can expect target's bargaining position to be significantly enhanced, which in return can damage the value created for acquirers.

Chang (1990) has shown that the entry of additional potential acquirers reduces the winning acquirer's market value by 10% measured by the dollar value paid for the target company. Bradley, Desai and Kim (1988) also find empirical evidence showing if there is competition among potential acquirers of a same target company, the acquirer's return is decreased while the return to the target company is increased.

Under competition pressure acquirers may take hasty decisions regarding the acquisition deal, which also could on the acquirer's acquisition performance.

## 2.3 M&A ADVISOR' PERFORMANCE PERSISTENCE

The skilled advice hypothesis argues that as M&A is not a very frequent activity for most companies, managers typically lack experience to conduct M&A deals alone. M&A advisors provide advice to parties involved in M&A and such advice is generally considered to be value-adding. As a result, the skills level and historical performance of M&A advisors could affect acquirers' performance level. By measuring acquirers' CAR around deals announcement, Bao and Edmans (2009) document significant persistence in the average announcement returns to acquisitions advised by investment banks. They find that M&A advisors in the top quintile based on acquirers' acquisition announcement returns over the past two years generate on average 1.04% more returns than advisors in the bottom quintile do over the next two years. Although this study analyzes acquirers' returns related with a particular investment bank rather than with a particular acquirer, it provides valuable insights to an often-overlooked factor that could exert influence on acquirers' performance, namely the skills of M&A advisors.

On a more general level, Ertugrul and Krishnan (2011) find statistically and economically significant relation between investment bankers' performance and total announcement period returns, acquirers' operating performance as well as long-term stock returns. These findings set a good theoretical foundation for studying the impact of M&A advisors' historical performance on acquirers' performance persistence.

### 3. HYPOTHESES

In this part I will introduce and elaborate on my hypotheses. Although on average acquirers abnormal returns around the deal announcement measured by CAR are usually small or even negative, historically the return variations among individual acquirers are very big (Fuller, Netter and Stegemoller, 2002). This phenomenon makes it both academically interesting and economically meaningful to analyze the following question: Do some acquirers continue outperforming other acquirers in terms of stock price returns surrounding deal announcement? In other words, do acquirers exhibit performance persistence in M&A?

The main purpose of my thesis is to study serial acquirers' performance persistence. Also, my thesis tries to analyze the potential impacts of M&A advisors on acquirers' performance. In addition, I will also analyze whether the impact of previous unsuccessful deals on following deals is materially different from that of previous successful deals.

According to Jaffe, Pedersen and Voetmann (2008), acquirers' performance in acquisition deals can be best measured from three perspectives, namely the ability to create value for their own company, the ability to create combined value for their own company and the target company as a whole, and the ability to extract value from the combined value created. All these three perspectives have their theoretical foundation in management expertise and learning process hypothesis, although the first two perspectives appear to be more related with management's skills in target selection and analyzing, while the last perspective can be better explained by management's bargaining power in acquisitions. Based on this I hypothesize the following:

*Hypothesis 1: Acquirers exhibit performance persistence in creating value for their own company*

*Hypothesis 2: Acquirers exhibit performance persistence in creating combined value for both the acquirer and the target company*

*Hypothesis 3: Acquirers exhibit performance persistence in extracting value from the total value created*

In addition to these three approaches for measuring acquirers' performance, some scholars also measure acquirers' performance in terms of the premiums they pay to target companies. These scholars argue that successful serial acquirers tend to pay lower premium to target companies (Huang and Walkling, 1987, Wansley, Lane and Yang, 1983). To test whether acquirers' performance persistence also exists in this form, I have hypothesis 4:

*Hypothesis 4: Acquirers exhibit performance persistence in terms of premiums paid to target companies*

A few scholars have studied the performance persistence of M&A advisors in a stand-alone fashion (Bao and Edmans, 2009) and results are found suggesting M&A advisors performance persistence in terms of generating extra value for the deal. As M&A advisors are working closely with both acquirers and targets companies in many areas covering not only the financing function but also legal and wider strategy aspects, I hypothesize that the skills of M&A advisors is partly transferrable to acquirers and thus helps enhance acquirers' performance persistence

*Hypothesis 5: M&A advisors' performance improves acquirers' performance*

## **4. DATA**

### **4.1 DATA SOURCE AND SELECTION CRITERIA**

Following the work by JPV (2008), the sample for this study includes all mergers and acquisitions from Securities Data Corporation's (SDC) Mergers and Acquisitions Database based on following criteria:

- The announcement data occurred between 1 January, 1991 and 31 December, 2010;
- The deal went through successfully and the deal value was disclosed;
- The value of the deal was at least 10 million EUR. Initially in the study by JPV (2008), the deal value threshold is set at 1 million USD. As the acquirers included in the sample are all publicly-listed companies whose size are significantly larger than 1 million USD, I raise the selection threshold to 10 million EUR in order to include only acquisition deals that have a meaningful impact on acquirers' stock return rather than market noise;
- The acquirer acquired more than 50% of the target company in the deal;
- The acquirer was a public company listed in EU 15 countries;
- The target can be a private company, public company or subsidiary of a public company. Geographical location of the target is not restricted in the selection process;
- The acquisition did not occur within two trading days of another takeover by the same bidder. This requirement is set with the main purpose to limiting overlapping announcement effects from the same acquirer's two acquisitions deals that occur very close with each other in time.

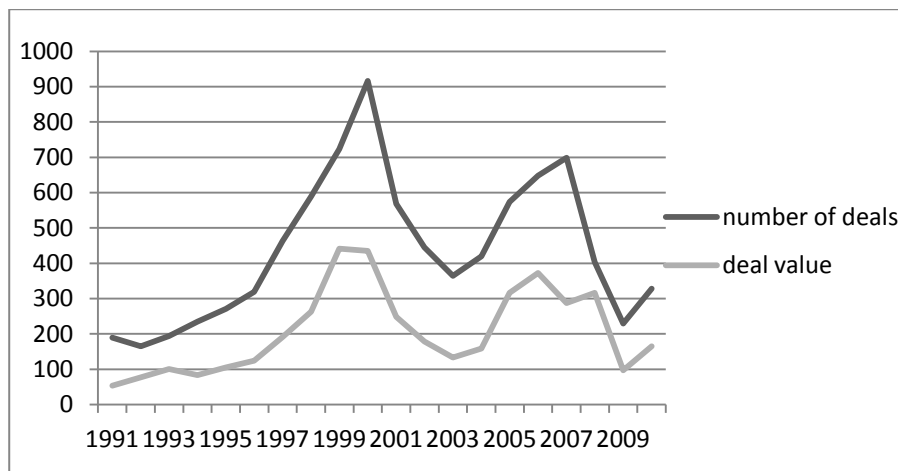
Using this set of criteria I include 9251 deals in the initial sample. Matching the observations with both announcement dates and Datastream identifiers, 131 duplicated deals reported by Datastream are excluded from the sample. Also there are 378 deals in which the acquirer are Datastream as public company but no historical share price information is provided. By subtracting these observations, 8742 observations are included in the final sample set for analysis.

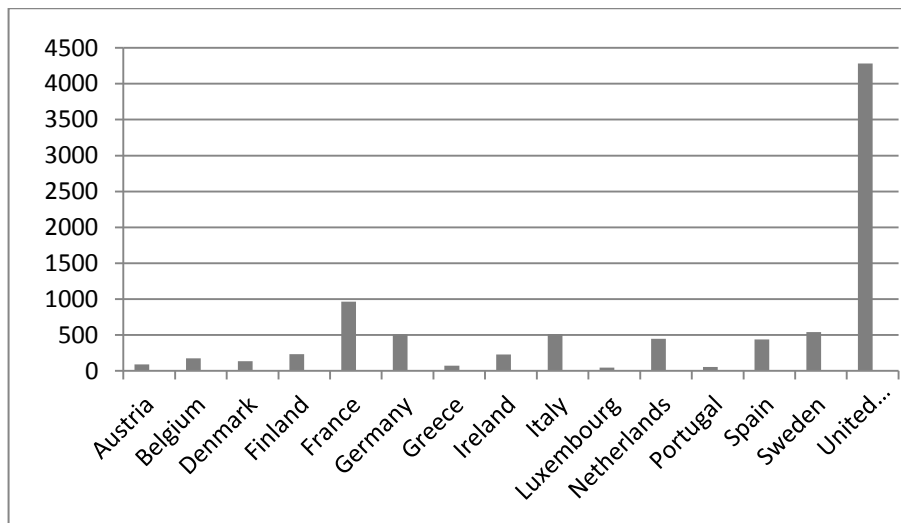
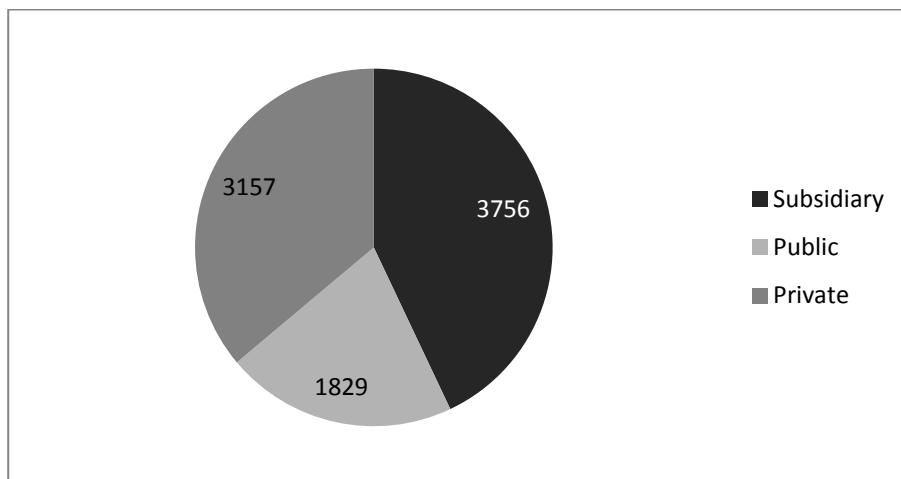
All stock price data are from Datastream. Individual companies' stock price is matched with acquisition deal-specific information using Datastream codes provided by SDC. For target companies whose Datastream codes are not available from SDC, Sedol codes from SDC are used as identifiers to extract companies' stock price information from Datastream.

## 4.2 SAMPLE DESCRIPTIVE SUMMARY

Table 1 provides information on the number of deals in each calendar year in the sample. There are two peak periods with high acquisition frequency: Around Year 1999 and Year 2007. This result is hardly surprising as 1999 saw the dot-com bubble and the years around 2007 were accompanied by the upsurge of leveraged buyout (LBOs) activities. Table 2 presents breakdown of all deals included in the sample by acquirers' nation. As we can see acquisitions are dominated by acquirers based in the UK, comprising about half of the total deals. Acquirers from France, Germany, Italy, Netherland, Spain and Sweden also contribute to a significant portion of total deals. When it comes

**Table 1 Total Deals Break-down by Calendar Year**



**Table 2 Total Deals Break-down by Acquirers' nation****Table 3 Total Deals Break-down by Target Public Status**

to the public status of target companies, Table 3 shows that about 36% of the deals are acquisition of private companies. This figure represents lower portion of private target companies compared with the one reported by JPV (2008), in which they document about 60% of the targets in their sample as private companies. This can be attributed to the fundamental difference between US and European M&A market, while a more direct reason might be that in my thesis a higher deal value threshold is used when selecting the sample. When targets are private companies the deal value on average tends to be lower. As a result the portion of private company acquisitions are lower in the sample.

Table 4 provides a detailed view on the number of acquirers, number of deals and value of deals in each calendar year. The second column shows the number of acquirers in each year, and the third column shows the number of deals in each year. As indicated in table 1, both the number of acquirers and the number of deals peaked around Year 1999 as well as Year 2007. Also it is noticeable that on average both the number of acquirers and the number of deals are higher after Year 2000 than before Year 1996. The fourth column reports the total deal value in each year, and it follows a similar pattern across years compared with the number of acquirers and the number of deals.

From the fifth column through the twelfth column categorization of deals in each year by method of payment is reported. Following Jaffe, Pedersen and Voetmann (2008), I define deals where the consideration is all cash or equity as “Cash” and “Stock”, respectively. For acquisitions that are financed partly by cash and partly by equity or other types of consideration, I define them as “Combined”. Deals for which no information is available regarding the type of payment are categorized as “Unknown”. All method of payment information comes from SDC.

The last row in the fifth column shows that in total 2818 deals, or about one third of the total deals are fully financed by cash. The last row in the seventh column shows that only 651 deals, or less than 8% of the total deals are fully paid using equity. This result is significantly different from Jaffe, Pedersen and Voetmann’s work (2008), in which they report similar numbers of deals fully funded by cash and deals fully funded by equity over 1981-2007. This difference can be an indication that the value size of a large number of deals in EU 15 countries during 1991-2010 is small, as acquirers tend to use more cash financing in small-sized deals. Other explanations for this difference can be derived from possible difference in market fundamentals between the U.S. and EU 15 countries, because empirical evidence shows that acquirers with higher growth opportunities

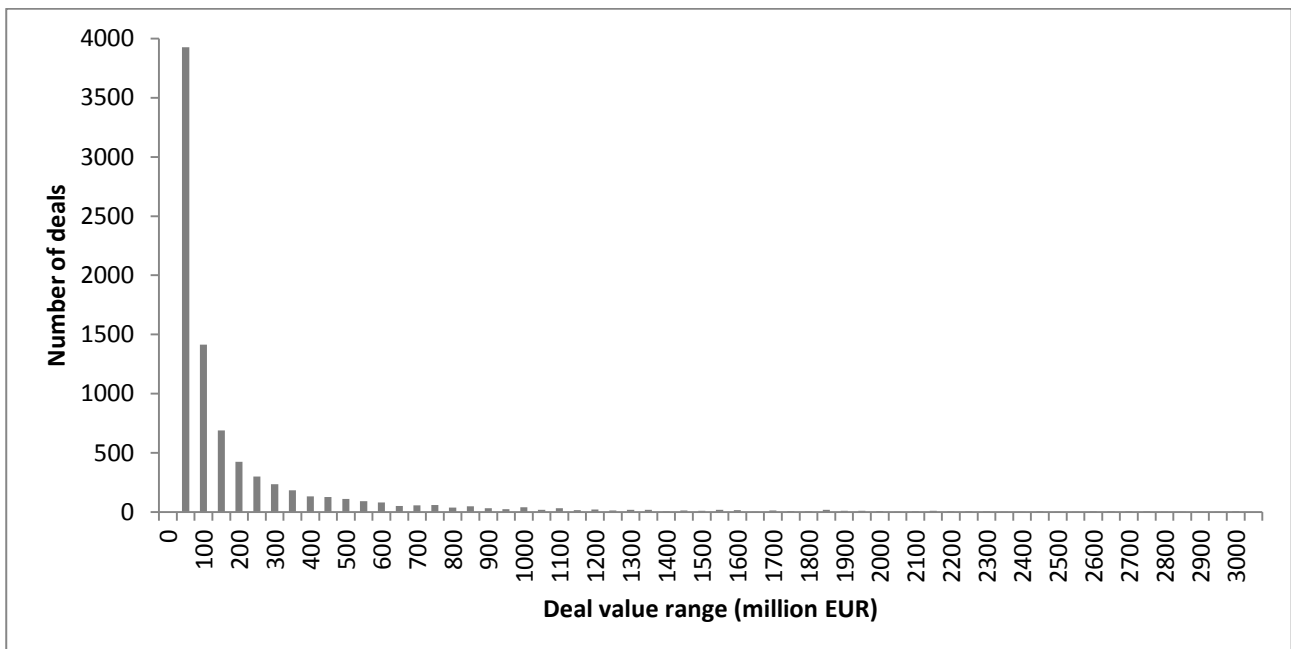
**Table 4** This table reports all sample deals categorized by calendar years and method of payment. Deal value is reported in billion Euros

Years	Number of Acquirers	Deals	Total deal value	Method of payment used in acquisition							
				Cash		Stock		Combined		Unknown	
				Number of deals	Deal value	Number of deals	Deal value	Number of deals	Deal value	Number of deals	Deal value
1991	157	189	53.4	38	8.3	12	8.2	46	10.1	93	26.8
1992	137	165	76.6	39	10.7	15	4.5	35	44.6	76	16.8
1993	162	194	100.6	60	16.4	15	33.6	60	32.3	59	18.3
1994	186	235	83.5	74	19.6	22	3.3	64	23.6	75	37
1995	224	271	104.8	85	28.5	22	5	77	29.6	87	41.7
1996	253	319	124.0	94	35.3	32	7.3	89	44.8	98	36.6
1997	354	463	191.0	131	68.8	45	16.5	125	53.3	162	52.4
1998	428	589	262.9	184	66.8	51	35.1	138	29.6	213	131.4
1999	498	723	441.1	260	169.3	48	101.5	183	93.0	232	77.3
2000	595	916	435.4	280	161.7	132	70.2	268	137.7	245	65.8
2001	407	568	248.5	179	93.6	44	23.7	163	65.0	182	66.2
2002	338	445	178.6	172	109.1	32	8.6	99	19.9	142	41
2003	280	364	133.0	108	33.5	34	40.9	72	27.9	150	30.7
2004	325	420	159.0	116	56.3	20	10.6	108	17.2	176	74.9
2005	426	574	316.6	182	104	34	42	142	105.5	216	65.1
2006	463	648	372.5	223	100.4	32	33.7	140	98.1	253	140.3
2007	498	699	287.4	229	96.2	27	15.7	164	52.7	279	122.8
2008	306	403	316.5	139	58.2	15	3.01	90	15.7	159	239.6
2009	185	229	97.3	86	37.6	19	16.6	45	7.4	79	35.7
2010	254	328	164.6	139	85.2	9	2.7	67	37.0	113	39.7
<b>Total</b>	<b>6476</b>	<b>8742</b>	<b>4147.2</b>	<b>2818</b>	<b>1359.5</b>	<b>660</b>	<b>482.71</b>	<b>2175</b>	<b>944.9</b>	<b>3089</b>	<b>1360.1</b>

are more likely to use stock to finance an acquisition, and stock financing also becomes more likely when acquirers' pre-acquisition stock returns are higher (Martin, 1996). Also Martin (1996) argues that the higher institutional shareholdings and blockholdings there are in acquirer companies, the less likely acquisition deals are will be financed with stock. However, as the main purpose of my purpose is not to discussing motivations underlying the method of payment used in acquisitions, I do not further analyze the difference in method of payment down this road. To see whether such difference is caused by the existence of a large number of small-sized deals, I make a histogram categorizing all sample deals according to their deal size. As shown in Table 5, over 60% (5341) of total deals in the sample have a deal value no higher than 100 million Euros. This to some extent justifies why deals fully financed by cash take a much higher portion in total the sample when compared with the findings by JPV (2008).

The ninth column and the eleventh column in Table 4 show that the number of deals financed by combined consideration and unknown consideration also make a substantial part of the total deals each year. In terms of value of deals in different categories, cash acquisition has the highest total deal value. Stock acquisition and unknown acquisition have similar total deal value, and combined acquisition has the lowest total deal value.

**Table 5 Deal Breakdown by Deal Value**





## 5. METHODOLOGY

### 5.1 UNIVARIATE ANALYSIS

Before correlating CAR returns against various independent variables, I first use univariate analysis to test whether acquirers' level of acquisition performance is persistent in consecutive acquisition deal in terms of CAR. The univariate analysis is conducted for Acquirer CAR (-1, +1), Combined CAR (-1, +1) as well as Acquirer share (-1, +1)

To test the persistence of Acquirer CAR (-1, +1), I place every acquirer's first acquisition deal into 10 deciles according to its Acquirer CAR (-1, +1). Then I calculate Acquirer CAR (-1, +1) for each acquisition's next acquisition and place them into 10 deciles according to the ranking of their Acquirer CAR (-1, +1) in the prior deal. Afterwards I calculate the average Acquirer CAR (-1, +1) in each decile and test whether the average Acquirer CAR (-1, +1) between different deciles are statistically different.

The test for Combined CAR (-1, +1) persistence and Acquirer share (-1, +1) persistence follows similar logic as mentioned above, although in the case of testing for Acquirer share (-1, +1) persistence, the sample size is much smaller because we have excluded all observations where either Acquirer CAR (-1, +1) or Combined CAR (-1, +1) is negative.

### 5.2 MULTIVARIATE ANALYSIS

In this part I will introduce the methodology and variables used in the multivariate regression analysis.

#### 5.2.1 *Dependent variables*

I use four variables as different measure for acquirers' performance. They are: Acquirer CAR (-1, +1), Target CAR (-1, +1), Acquirer share (-1, +1) and Combined CAR (-1, +1). I give detailed explanation for each of these four variables as follows.

Acquirers' performance is measured by market reaction to an acquisition announcement using daily stock return to calculate average cumulative abnormal return (CAR). CAR is defined as the difference between the actual stock return and the value-weighted market index return over a certain period centered on the acquisition announcement date. I denote Acquirer CAR (-1, +1) as measurement for acquirers' ability to creating value for their own company. Acquirer CAR (-1, +1) is calculated over 3-day period centered on the acquisition announcement date.

$$\text{Acquirer CAR } (-1, +1) = (r_{a(0,-1)} - R_{0,-1}) + (r_{a(1,0)} - R_{1,0}) \quad (1)$$

Where

$r_{a(0,-1)}$  = the acquirer's stock return from -1 day to the deal announcement date

$R_{0,-1}$  = value-weighted index return of the acquirer's main listing market from -1 day to the deal announcement date

$r_{a(1,0)}$  = the acquirer's stock return from the deal announcement date to +1 day

$R_{1,0}$  = value-weighted index return of the acquirer's main listing market from the deal announcement date to +1 day

Acquirers' performance can also be measured by their ability to bargain in acquisition. Strong bargain power usually enables acquirers to pay lower premium in the deal. Scholars have been using abnormal stock returns to target companies as a measurement for premium paid to target companies (Huang and Walkling, 1987, Wansley, Lane and Yang, 1983). To this end I denote Target CAR (-1, +1). It measures excess stock returns to target companies, which I consider as the premium paid by acquirers in acquisitions. Target CAR (-1, +1) is calculated over 3-day period centered on the acquisition announcement date. For a target company that is a subsidiary of a public company, I use the three-day period CAR of the parent company as Target CAR (-1, +1). For a target company that is private, Target CAR (-1, +1) is cannot be calculated.

$$\text{Target CAR } (-1, +1) = (r_{t(0,-1)} - R_{0,-1}) + (r_{t(1,0)} - R_{1,0}) \quad (2)$$

Where

$r_{t(0,-1)}$  = the target company's stock return from -1 day to the deal announcement date

$R_{0,-1}$  = value-weighted index return of the target company's main listing market from -1 day to the deal announcement date

$r_{t(1,0)}$  = the target company's stock return from the deal announcement date to +1 day

$R_{1,0}$  = value-weighted index return of the target company's main listing market from the deal announcement date to +1 day

Another approach to measure acquirers' bargaining power is acquirers' ability to extracting value from acquisition deals. I denote Acquirer's share (-1, +1) to for this purpose. Acquirer's share (-1, +1) is calculated as:

Acquirer Share (-1, +1) =

$$\frac{MV(\text{acquirer}) * \text{Acquirer CAR}(-1, +1)}{MV(\text{acquirer}) * \text{Acquirer CAR}(-1, +1) + MV(\text{target}) * \text{Target CAR}(-1, +1)} \quad (3)$$

In some cases the Acquirer CAR (-1, +1) or the Combined CAR (-1, +1) is negative. This can lead to either a negative Acquirer's share (-1, +1) (when Acquirer CAR (-1, +1) is positive and Combined CAR (-1, +1) is negative) or a positive Acquirer's share (-1, +1) which does not make economic sense (when both Acquirer CAR (-1, +1) is positive and Combined CAR (-1, +1) are negative). Following JPV (2008) I exclude all observations where either the Acquirer CAR (-1, +1) or the Combined CAR (-1, +1) is negative. In this way I only focus on deals that create value for both the acquirers and the acquirers and the target companies as a whole when analyzing the acquirer's ability to extracting value. This leads to a smaller sample size for this part of analysis, and might also affect the analysis results as part of the observations are arbitrarily excluded.

To measure the total value created for both an acquirer and a target company in a deal, I define Combined CAR (-1, +1). Combined CAR (-1, +1) is calculated as the total of Acquirer CAR (-1, +1) and Target CAR (-1, +1) in a deal, weighted by the market value of the acquirer and the target company two days prior to the deal announcement. For a target company that is a subsidiary of a public company, I use the market value of the parent company two days prior to the deal announcement as MV (target). For a target company that is private, MV (target) is not available so Combined CAR (-1, +1) cannot be calculated.

Combined CAR (-1, +1) =

$$\frac{MV(\text{acquirer}) * \text{Acquirer CAR}(-1, +1) + MV(\text{target}) * \text{Target CAR}(-1, +1)}{MV(\text{acquirer}) + MV(\text{target})} \quad (4)$$

Where

MV (acquirer) = market value of the acquirer two day prior to the deal announcement

MV (target) = market value of the target company two day prior to the deal announcement

Descriptive statistics for dependent variables are presented in Table 6. Sample A includes all 8742 deals. As expected, acquisitions seem to have bigger impacts on target CAR than on acquirer CAR. The average Acquirer CAR (-1, +1) in Sample A is 0.71%, while the average Target CAR (-1, +1) is significantly higher at 5.73%. In Sample A 1505 observations for Combined CAR (-1, +1) are obtained. For Acquirer share (-1, +1), since we exclude all observations whenever the Acquirer

CAR (-1, +1) or the Combined CAR (-1, +1) is negative, we have a much smaller sample size for Acquirer share (-1, +1). The total number of observations for Acquirer share (-1, +1) is 651.

From Sample B to Sample D, descriptive statistics are presented according to the public status of target companies. Sample B contains all deals when the targets are private companies. Sample C includes all deals when the targets are public companies, and Sample D includes all deals when the targets are subsidiaries. We can see from the third column of Table 6 that average Acquirer CAR (-1, +1) is higher when the target is a private company than when the target is either a public company or a subsidiary, resonating theoretical arguments that higher stock returns when an acquirer buys a private company. Target CAR (-1, +1), Combined CAR (-1, +1) and Acquirer share (-1, +1) are not reported in Sample B since we cannot calculate them for private companies.

One very interesting observation in the third column is that in all sample groups except Sample C, average Acquirer CAR (-1, +1) is positive. When the targets are public companies, however, average Acquirer CAR (-1, +1) becomes negative. This observation is consistent with JPV's work (2008), where they find average Acquirer CAR (-1, +1) significantly negative for public targets based on evidence in the US market. This observation also resonates with most existing literatures that report negative stock returns for acquirers that buy public companies. Officer (2007) explains this by arguing that compared with similar publicly traded targets, stand-alone private target companies or subsidiaries of other companies are usually in greater need for liquidity prior to acquisition. As a result of this greater need for liquidity, they are sold at discounts compared to publicly traded targets, which yields higher excess stock return to acquirers.

In the seventh column, we can see average acquirer's size is rather constant across different sample groups, although the median acquirer's size is smaller when target companies are private. Also, the eighth column shows that average deal size is biggest when acquirers buy public targets.

**Table 6 Acquirers and targets performance under different categorization of acquisitions** This table reports the acquirers and targets performance categorized by the public status of target companies. Also, acquirer's size, deal size and deal size relative to acquirers' size are reported.

Period		Acquirer CAR (-1, +1)	Target CAR (-1, +1)	Combined CAR (-1, +1)	Acquirer share (-1, +1)	Acquirer size (millions Euros)	Deal size (millions Euros)	Relative size (%)
Sample A: Total deals								
1991-2010	Mean	0.69%	5.73%	1.90%	51.82%	7437	474	25.82%
	Median	0.26%	0.99%	0.76%	50.52%	724	62	8.97%
	N	8742	3075	1505	651			
Sample B: Private								
1991-2010	Mean	1.61%				7462	443	15.21%
	Median	0.28%				812	60	7.31%
	N	3157						
Sample C: Public								
1991-2010	Mean	-1.02%	10.45%	3.65%	56.71%	7553	580	31.78%
	Median	0.23%	3.76%	1.56%	52.32%	757	75	11.82%
	N	1829	1373	436	138			
Sample D: Subsidiary								
1991-2010	Mean	0.75%	1.90%	1.19%	50.50%	7360	448	31.81%
	Median	0.38%	0.43%	0.39%	47.21%	650	62	9.83%
	N	3756	1702	1069	513			

### 5.2.2 *Control variables*

Most control variables are based on characteristics pertinent to acquisition deals. Theoretical background and detailed explanation for these characteristics are provided in the literature review part of my thesis. Here I will go through how control variables corresponding to these characteristics are selected and calculated.

#### **MANAGERIAL SKILLS**

Tobin's Q are widely used as a measurement for managerial skills (Anderson and Reeb, 2003; Barontini and Caprio, 2006). Servaes (1991) also finds significant relations between Tobin's Q and excess stock returns to acquirers and target companies in acquisitions. Datastream reports companies' market value of equity / book value of net assets ratio on a daily basis. I use this ratio as a proxy for Tobin's Q and I use in my thesis Tobin's Q reported two days before the deal announcement date.

#### **PUBLIC STATUS OF THE TARGET COMPANY**

Public status of the target company is reported by SDC in each acquisition deal. I create a dummy variable which takes the value of 1 if the target company is private and zero otherwise.

#### **SIZE EFFECT**

Two variables are created to capture the size effect. First I use the ratio between the value of an acquisition deal and market value of the acquirer to measure the relative size effect. Also I include the natural log of acquirers' market value (in million Euros). Acquirers' market value is taken as reported by Datastream two days before the deal announcement date.

#### **DOMESTIC/INTERNATIONAL TARGET**

SDC reports the country where the headquarter or the main business activities of a company are located. I create a dummy variable and it is set to one if an acquirer and a target company are located in the same country and zero otherwise.

#### **METHOD OF PAYMENT**

As discussed in the literature review part, more conclusive research regarding the impact of method of payment on acquirers' performance is often conducted in connection with the public status of the target company. I create a set of dummy variables. Each of the dummy variables is set to 1 if a specific combination of public status of the target company / method of payment is met. For

example, the dummy variable private / cash is set to 1 if in a deal the target is a private company and the deal is fully financed by cash.

### **INDUSTRIAL DIVERSIFICATION**

To control for the potential effect, a dummy variable is created which equals to 1 if the target company and the acquirer are in the same industry, and equals to 0 otherwise. Categorization of the target company and the acquirer industry is based on primary SIC codes reported by SDC and they are matched with the industry classification developed by Fama and French (1997).

### **TIME LAG BETWEEN TWO CONSECUTIVE DEALS**

For the same acquirer, I calculate the natural log of time lag (in year) between two consecutive deals. Time lag is calculated by the deal announcement date for two consecutive deals reported by SDC.

### **COMPETING BIDDERS**

SDC also reports whether more than one potential acquirer are competing for a target company. I create a dummy variable and set it to 1 if SDC returns “Yes” in the “Competing bidder” cell. The dummy variable is set to zero other wise.

### **M&A ADVISOR’ PERFORMANCE PERSISTENCE**

As mentioned in my literature review, based on US market data Bao and Edmans (2009) find that previously well-performing advisors continue to outperform in current acquisition deals, as measured by the Acquirer CAR (-1, +1).

Bao and Edmans (2009) attribute all acquirers’ CAR to the advisors skills. In my thesis the purpose is to analyze the performance persistence of the acquirers instead of that of the advisors. In order to capture the impacts of advisors’ skills on the CAR to acquirers, I use the market share of each advisor in the M&A market as a proxy for the advisors’ market reputation and thus skills. I calculate an M&A advisor’s market share as the ratio between total Euro value of deals advised by the advisor in one year and the total Euro value of all acquisition deals in the same year. Then based on the calculated market share I place M&A advisors into ten deciles, which decile 1 containing advisors that have highest market share and decile 10 containing advisors that have lowest market share. I then create a set of dummy variables. Each of the variables is set to 1 if the M&A advisor of a deal belongs to a specific decile. The dummy variables are assigned to both the acquirer and the

target company in a deal. For acquirers or target companies that have more than one M&A advisors, the dummy variable is set according to the M&A advisor with the highest market share.

### **YEAR DUMMIES**

I create a set of year dummy and each of them is set to 1 if an acquisition occurred in a specific year. I identify 1999, 2000, 2001, 2006 and 2007 as years with high frequency of acquisition activities in my sample and I use the year dummies to control for these years.

### **INDUSTRY DUMMIES**

Many scholars in finance research have excluded data from certain industries in their analysis. These industries usually include finance companies and utilities. I create a set of dummy variables and each of them is set to 1 if either the acquirer or the target company in a deal is from one of the two industry sectors.

#### *5.2.3 Regression model*

The ordinary least square (OLS) regression is used to analyze the relation between acquirers' prior performance and current performance. I use the following four regression models and run them in EViews:

$$\text{Acquirer CAR } (-1, +1) = \beta_0 + \beta_1 * \text{Acquirer prior CAR } (-1, +1) + \beta_i * K_i + \varepsilon \quad (5)$$

Where

$\beta_0$  = intercept coefficient

$\beta_1$  = coefficient for Acquirer Prior CAR (-1, +1)

Acquirer prior CAR (-1, +1) = the same acquirer's CAR (-1, +1) in prior deal

$\beta_i$  = coefficient for control variable  $K_i$ ,  $i \geq 2$

$K_i$  = control variable based on deal characteristics,  $i \geq 2$

$\varepsilon$  = disturbance term

$$\text{Target CAR } (-1, +1) = \beta_0 + \beta_1 * \text{Prior Target CAR } (-1, +1) + \beta_i * K_i + \varepsilon \quad (6)$$

Where



$\beta_0$  = intercept coefficient

$\beta_1$  = coefficient for Prior Target CAR (-1, +1)

Prior Target CAR (-1, +1) = Target CAR (-1, +1) in the same acquirer's prior deal

$\beta_i$  = coefficient for control variable  $K_i$ ,  $i \geq 2$

$K_i$  = control variable based on deal characteristics,  $i \geq 2$

$\varepsilon$  = disturbance term

$$\text{Combined CAR} (-1, +1) = \beta_0 + \beta_1 * \text{Prior Combined CAR} (-1, +1) + \beta_i * K_i + \varepsilon \quad (7)$$

Where

$\beta_0$  = intercept coefficient

$\beta_1$  = coefficient for Prior Combined CAR (-1, +1)

Prior Combined CAR (-1, +1) = Combined CAR (-1, +1) in the same acquirer's prior deal

$\beta_i$  = coefficient for control variable  $K_i$ ,  $i \geq 2$

$K_i$  = control variable based on deal characteristics,  $i \geq 2$

$\varepsilon$  = disturbance term

$$\text{Acquirer share CAR} (-1, +1) = \beta_0 + \beta_1 * \text{Prior Acquirer share CAR} (-1, +1) + \beta_i * K_i + \varepsilon \quad (8)$$

Where

$\beta_0$  = intercept coefficient

$\beta_1$  = coefficient for Prior Acquirer CAR (-1, +1)

Prior Acquirer share CAR (-1, +1) = Acquirer share CAR (-1, +1) in the same acquirer's prior deal

$\beta_i$  = coefficient for control variable  $K_i$ ,  $i \geq 2$

$K_i$  = control variable based on deal characteristics,  $i \geq 2$

$\varepsilon$  = disturbance term

## 6. RESULTS AND ANALYSIS

### 6.1 UNIVARIATE ANALYSIS

In Table 7 univariate analysis results are presented. Column 1, 3, 5, and 7 show acquirers' average performance in prior deals and Column 2, 4, 6, 8 summarize same acquirers' average performance in current deals. In the second column the difference between average Prior Acquirer CAR (-1, +1) in two extreme decile is 16.93%, indicating that even though the conclusion regarding acquirers' excess stock returns following acquisitions is less clear on an overall level, on individual level acquirers do obtain very different levels of excess stock return. Cross-column comparison between the third and the fifth column shows that in each decile group, Target CAR (-1, +1) is larger than Acquirer CAR (-1, +1), confirming the empirical evidence that target companies typically enjoy more uplift in share price following a deal announcement than acquirers do. The similar pattern can be observed between the third column and the fifth column, although, except in the tenth decile.

The main purpose of the univariate analysis is to test whether acquirers' from two extreme decile groups exhibit significantly different performance level measured by CARs, as they do in prior deals. In the third column the difference in mean Acquirer CAR (-1, +1) between the first decile and the tenth decile is 0.35%. This is an economically significant difference as it show acquirers in the first decile outperformance acquirers in the last decile by more than 50% ( $0.35\%/0.67\% = 52.23\%$ ). However, this difference is not statistically significant, which is a different result as reported in JPV's work (2008). Also, if acquirers do exhibit perfect performance persistence measured by Acquirer CAR (-1, +1), one would expected the Mean Acquirer CAR (-1, +1) value in the third column decrease monotonically from Decile 1 through Decile 10, which is not observed in the results presented here.

In the fifth column, Mean Target CAR (-1, +1) in Decile 1 is 4.63% higher than the value in Decile 2, and the difference is statistically significant, although the values in the column do not change monotonically. Since I consider Target CAR (-1, +1) as a measurement for the premium paid to target companies by acquirers, which reflects acquirers' bargaining power, this result seems to indicate that acquirers who pay high premium in prior deals tend to continue paying more in following deals, and the reverse holds for acquirers who pay less premium in prior deals. However, this can easily be a false allegation, mostly notably because if different acquirers focus on different industries to make serial acquisitions, the persistence in Target CAR (-1, +1) may result from

**Table 7 Univariate analysis results on acquirers' performance persistence**

This table reports acquirers' performance in deciles ranked by acquirers' prior acquisition performance. All acquisitions where the same acquirer makes a following deal are placed into ten decile groups according to Acquirer CAR (-1, +1), Acquirer CAR (-1, +1), Combined CAR (-1, +1) and Acquirer Share (-1, +1) in prior deals. Deals with highest CARs are placed in Decile 1 and deals with lowest CARs are grouped in Decile 10. Then I calculate CARs for each prior deal's following deal. The mean values are calculated for Acquirer CAR (-1, +1), Acquirer CAR (-1, +1), Combined CAR (-1, +1) and Acquirer Share (-1, +1) in following deals, denoted as Mean Acquirer CAR (-1, +1), Mean Acquirer CAR (-1, +1), Mean Combined CAR (-1, +1) and Mean Acquirer Share (-1, +1) in Column 2, Column 4, Column 6 and Column 8, respectively. Similarly, acquirers' average performance in prior deals is presented in Column 1, Column 3, Column 5 and Column 7. T-values are reported below each difference between decile 1 mean value and decile 10 mean value. \*\*\*, \*\* and \* represents the statistical significance at 1%, 5% and 10% confidence level, respectively.

Decile (Prior Deal)	Mean Prior Acquirer CAR (-1,+1)	Mean Acquirer CAR (-1,+1)	Mean Prior Target CAR (-1,+1)	Mean Target CAR (-1,+1)	Mean Prior Combined CAR (-1,+1)	Mean Combined CAR (-1,+1)	Mean Prior Acquirer Share (-1,+1)	Mean Acquirer Share (-1,+1)
1	10.26%	1.02%	37.09%	6.67%	17.42%	3.60%	98.50%	74.90%
2	3.89%	0.71%	11.23%	7.39%	5.45%	2.74%	96.21%	68.75%
3	2.25%	1.15%	5.08%	4.60%	3.15%	1.85%	95.32%	90.36%
4	1.27%	0.68%	2.63%	3.36%	2.11%	2.74%	94.15%	81.74%
5	0.58%	0.47%	1.46%	6.18%	1.30%	2.50%	93.38%	92.46%
6	0.00%	0.76%	0.63%	3.86%	0.63%	2.09%	76.78%	85.31%
7	-0.57%	0.59%	-0.18%	3.13%	-0.04%	1.40%	49.36%	73.64%
8	-1.28%	0.71%	-1.07%	4.67%	-0.78%	0.52%	20.00%	65.81%
9	-2.41%	0.55%	-2.18%	4.27%	-1.89%	1.35%	6.91%	68.68%
10	-6.67%	0.67%	-7.75%	2.04%	-5.90%	1.51%	1.34%	51.01%
<b>Diff. of Means Dec. 1 v. Dec. 10</b>	16.93%	0.35%	44.84%	4.63%**	23.32%	2.09%*	97.16%	23.89%*
		(-1.20)		(-2.95)		(-1.63)		(-1.79)
<b>N</b>	6869	6869	1101	1101	489	489	283	283

different business fundamentals and dynamics in different industry sectors. In multivariate analysis part I introduce independent variables to control for this potential industry effect.

In the seventh column, the difference in Mean Combined CAR (-1, +1) between the two extreme deciles is 2.09% and it is barely significant at 10% confidence level. This result offers first evidence that acquirers exhibit performance persistence in terms of creating combined value for both the acquirer's company and the target company.

In the last column which reports acquirers' share of total stock returns following a deal announcement, the difference between the first decile and the last decile 23.89% and it is statistically significant, supporting the hypothesis that acquirers show performance persistence in extracting value for deal. However, when conducting univariate analysis for Mean Acquirer Share (-1, +1), I detect several observation in the sample with extraordinarily high value, which distorts the statistical features of the sample. This issue arises from the formula used for calculating Acquirer Share (-1, +1) (see formula 3). Although I have removed from the sample all observations where either the Acquirer CAR (-1, +1) or the Combined CAR (-1, +1) is negative, it does not exclude the case when a target company has significantly large negative Target CAR (-1, +1), which could essentially reduce the denominator  $MV(\text{acquirer}) * \text{Acquirer CAR}(-1, +1) + MV(\text{target}) * \text{Target CAR}(-1, +1)$  close to zero. This will result in an inflated Acquirer Share (-1, +1) which does not carry much economic meaning. To avoid this distortion, I exclude these large observations from univariate analysis. In multivariate analysis part I test whether inclusion of these observations in the sample cause significant changes to regression result.

## 6.2 MULTIVARIATE ANALYSIS RESULTS

In this section I present multivariate analysis results of my study. I start with testing acquirers' performance persistence hypothesis measured by acquirers' own excess stock return, and then I move on to test all other hypotheses stated in the beginning part of my thesis. The hypothesis regarding M&A advisors' influence on acquirers' performance is not tested separately. Instead, it is incorporated into the analysis of each of the other hypotheses.

### 6.2.1 *Acquirers' performance persistence in creating value for their own company*

I match acquirers' excess stock returns in current deals with their excess stock returns in prior deals, together with other control variables that capture characteristics pertinent to current deals. The purpose is to see whether excess stock returns in prior deals exert any measurable influence on acquirers' excess stock returns in current deals. Also, if such influence does exist, I would like to

see its robustness in different model specifications. Following JPV (2008), I use Acquirer CAR (-1, +1) to measure acquirers' excess stock returns. Results of the regression are presented in Table 8.

I use six different model specifications to run the regression. The specifications are denoted in Table 8 from Model 1 through Model 6. In the second column of Table 8, I list out expected effect of most independent variables. In Model 1 I run a simple analysis by regression Acquirer CAR (-1, +1) on Acquirer CAR (-1, +1) in prior deals, denoted as Prior Acquirer CAR (-1, +1). The positive coefficient indicates the existence of performance persistence for Prior Acquirer CAR (-1, +1). However, this coefficient is not statistically significant. This result is not in consistence with the study by JPV (2008), in which they report statistical significance when regressing Acquirer CAR (-1, +1) on Prior Acquirer CAR (-1, +1) using simple regression.

In order to see whether it is model specifications that has caused the insignificant coefficient of Prior Acquirer CAR (-1, +1), I introduce a set of control variables in Model 2. These control variables are all measurement for characteristics pertinent to acquisition deals. After the multivariate regression, it shows that introducing control variables for deal characteristics does not improve statistical acceptance level of the hypothesis: Coefficient of Prior Acquirer CAR (-1, +1) becomes even less significant on statistical level, supporting the null hypothesis that acquirers' do not exhibit performance persistence in terms of creating value for their own company.

Although in Model 2 the coefficient for Prior Acquirer CAR (-1, +1) does not support my hypothesis, it is worth noticing coefficients for three control variables are statistically significant. It shows the existence of competing bids reduce acquirers' excess stock return, which is consistent with empirical evidence and theoretical predication (Chang, 1990; Bradley, Desai and Kim, 1988). It also indicates that acquirers' excess stock returns decrease as acquirers increase in size. This finding supports the work by Moeller, Schlingemann and Stulz (2004), in which they find a negative relation between acquirers' size and abnormal returns to acquirers. Further explanations for this phenomenon can be found in management hubris theory which states that due to overconfidence, management in big companies are more likely to pay high premiums in acquisitions. Regarding the effect of industry diversification, some scholars argue that when acquirers by companies from unrelated industry sectors, they experience negative announcement period return (Morck, Shleifer and Vishny, 1990; Moeller and Schlingemann, 2005). In Model 2, however, it shows that if acquirers and target companies are from the same industry, the excess stock returns to acquirers are actually lower, as indicated by the negative coefficient. This can be due to model specification reasons, and it can also result from the fact that previous studies

**Table 8 Regression analysis result on acquirers' performance persistence measured by Acquirer CAR (-1, +1)** This table reports regression results on acquirers' performance measured by Acquirer CAR (-1, +1). Acquirer CAR (-1, +1) is calculated as the acquirer's excess stock returns over three-day period centered on the deal announcement date. T-values are reported in parentheses. \*\*\*, \*\* and \* represents the statistical significance at 1%, 5% and 10% confidence level, respectively.

	Expected Effect	Simple Regressions		Multiple Regressions			
		Acquirer CAR (-1, +1)					
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept		0.0072*** (11.71)	0.0264*** (10.26)	0.0279*** (6.31)	0.0026*** (5.78)	0.0232*** (4.80)	0.0243*** (4.97)
Prior Acquirer CAR (-1, +1)	+	0.0152 (1.25)	0.0139 (1.14)	0.0054 (0.27)	0.0067 (0.34)	0.0049 (0.25)	0.0036 (0.19)
Acquirer/target same industry	+		-0.0005 (-0.35)	-0.0036* (-1.64)	-0.0039* (-1.77)	-0.0038* (-1.71)	-0.0036* (-1.61)
Acquirer/target same nation	+		-0.0017 (-1.40)	-0.0018 (-0.90)	-0.0013 (-0.65)	-0.0011 (-0.57)	-0.0013 (-0.65)
Ln (acquirer MV)	-		-0.0025*** (-8.0)	-0.0025*** (-5.00)	-0.0023*** (-4.70)	-0.0023*** (-4.65)	-0.0023*** (-4.67)
Deal relative size	+		0.0001* (1.80)	-1.92E-05 (-0.54)	-1.15E-05 (-0.33)	-1.04E-05 (-0.30)	-1.01E-05 (0.27)
Same industry prior deal	+		0.0001 (0.08)	0.0010 (0.44)	0.0006 (0.27)	0.0005 (0.24)	0.0006 (0.26)
Ln (time since last deal)	+		-0.0002 (-0.44)	0.0002 (0.31)	0.0005 (0.68)	0.0005 (0.66)	0.0005 (0.65)
Competing bids	-		-0.0117** (-2.07)	-0.0153** (-2.24)	-0.0118* (-1.75)	-0.0121* (-1.79)	-0.0121* (-1.80)

	Expected Effect	Simple Regressions		Multiple Regressions			
		Acquirer CAR (-1, +1)					
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Acquirer's advisor's skills	+			0.0002 (0.52)	0.0001 (0.41)	0.0001 (0.39)	9.56E-05 (0.27)
Acquirer Tobin's Q	+				0.0003 (1.43)	0.0004 (1.44)	0.0003 (1.42)
Private/cash	-					0.0011 (0.27)	0.0013 (0.35)
Private/stock	+					0.0051 (0.59)	0.0052 (0.60)
Private/combination	+					0.0032 (0.73)	0.0041 (0.73)
Private/unknown						0.0049 (1.38)	0.0050 (1.43)
Public/cash	+					0.0029 (0.78)	0.0031 (0.84)
Public/stock	-					0.0027 (0.50)	0.0022 (0.42)
Public/combination	+					0.0021 (0.52)	0.0056 (0.61)
Public/unknown						0.0060 (1.05)	0.0060 (1.07)
Subsidiary/cash	-					0.0038 (1.20)	0.0037 (1.17)

	Expected Effect	Simple Regressions		Multiple Regressions			
		Acquirer CAR (-1, +1)					
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Subsidiary/stock	+					0.0124 (1.39)	0.0121 (1.35)
Subsidiary/combination	+					0.0132 (1.25)	0.0112 (0.89)
Subsidiary/unknown						0.0014 (0.48)	0.0016 (0.55)
Year1999							-0.0041 (-1.09)
Year2000							0.0021 (0.65)
Year2001							-0.0062 (-1.49)
Year2006							-0.0043 (-1.17)
Year2007							-0.0034 (-0.97)
<b>Adjusted R-squared</b>		<b>0.0113</b>	<b>0.0111</b>	<b>0.0089</b>	<b>0.0083</b>	<b>0.0069</b>	<b>0.0071</b>
<b>N</b>		<b>6879</b>	<b>6745</b>	<b>3259</b>	<b>3123</b>	<b>3123</b>	<b>3123</b>



regarding impact of industry diversification on acquirers' excess stock returns are predominantly based on empirical data from 1970s and 1980s, and market sentiment has altered since which favors acquirers' diversification strategy through inorganic growth.

In Model 3 I introduce the variable “acquirer’s advisor’s skills” to test whether M&A advisors’ help enhance acquirers’ performance. The coefficient from regression is both economically and statistically insignificant. This result is not surprising, though. In initial data preparation, I use M&A advisors’ market share as a proxy for their performance level. Bao and Edmans (2007) point out that although past market share has been frequently used as a measurement for M&A advisor’s performance, there is in fact a significant negative relation between an advisor’s past market share and it’s future performance as measured by creating excess stock returns to acquirers. Regression results from my Model 3 have verified this argument. However, it also means the measurement I use does not capture M&A advisor’s real performance level. This leaves improvement work for the future.

In Model 4 I include acquirer’s Tobin’s Q in the regression to see whether managerial skills in general provide indication for acquirers’ deal performance. However, the coefficient from the regression is not statistically significant.

In Model 5 and Model 6, I include a set of dummy variable to control for the effect of a specific combination of target company public status and method of payment used in the deal. The sign of the coefficients of these dummy variables are consistent with empirical evidence, expect for the public/stock, private/cash and subsidiary/cash combinations. However, none of the coefficients is statistically significant. I also introduce year dummy variable into the regression, to control for the effect of certain calendar years which have seen high level of M&A activities. Except for Year 2000, the coefficients for all other four years seem to suggest that conducting acquisitions in a year with overall high level of M&A activities will decrease excess stock returns to acquirers.

### *6.2.2 Acquirers’ performance persistence in creating total value for acquirers and target companies*

I match acquirers and target companies’ total excess stock returns in current deals with the total excess stock returns in prior deals by same acquirers. Following similar approach, I use six different regression models to test for the hypothesis. Results of the regression are reported in Table 9.

As shown in Model 1, simple regression results in a statistically significant coefficient for

**Table 9 Regression analysis result on acquirers' performance persistence measured by Combined CAR (-1, +1)** This table reports regression results on acquirers' performance measured by Combined CAR (-1, +1). Combined CAR (-1, +1) is calculated as the acquirer and the target company's total excess stock returns over three-day period centered on the deal announcement date. T-values are reported in parentheses. \*\*\*, \*\* and \* represents the statistical significance at 1%, 5% and 10% confidence level, respectively.

	Expected Effect	Simple Regressions	Multiple Regressions				
		Combined CAR (-1, +1)					
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept		0.0187*** (6.71)	0.0929*** (8.03)	0.1160*** (5.68)	0.1221*** (5.62)	0.1198*** (5.34)	
Prior Combined CAR (-1, +1)	+	0.0758* (1.92)	0.0561 (1.48)	0.1388** (2.19)	0.1516** (2.18)	0.1411** (1.98)	
Acquirer/target same industry	+		-0.0062 (-1.09)	0.0013 (0.15)	0.0009 (0.09)	0.0012* (0.13)	
Acquirer/target same nation	+		-0.0158** (-3.01)	-0.0190** (-2.39)	-0.0194** (-2.26)	-0.0201** (-2.23)	
Ln (acquirer MV)	-		-0.0089*** (-6.41)	-0.0122*** (-5.22)	-0.0125*** (-5.27)	-0.0122*** (-4.99)	
Deal relative size	+		-0.0004** (-2.06)	-0.0027* (-2.72)	-0.0027* (-2.70)	-0.0027*** (-2.68)	
Same industry prior deal	+		0.0051 (0.91)	0.0046 (0.52)	0.0046 (0.50)	0.0056 (0.61)	
Ln (time since last deal)	+		0.0007 (0.38)	-0.0040 (-1.33)	-0.0042 (-1.36)	-0.0046 (-1.41)	
Competing bids	-		-0.0298 (-0.75)	-0.0284** (-0.82)	-0.0294* (-0.84)	-0.267 (-0.74)	

	Expected Effect	Simple Regressions		Multiple Regressions			
		Combined CAR (-1, +1)					
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Acquirer's advisor's skills	+			-0.0019 (-1.24)	-0.0019 (-1.17)	-0.0020 (-1.19)	
Target's advisor's skills	+			0.0006 (0.42)	0.0007 (0.49)	0.0010 (0.65)	
Acquirer Tobin's Q	+				-0.0021 (-0.71)	-0.0022 (-0.73)	
Private/cash	-						
Private/stock	+						
Private/combination	+						
Private/unknown							
Public/cash	+						
Public/stock	-						
Public/combination	+						
Public/unknown							
Subsidiary/cash	-						

	Expected Effect	Simple Regressions		Multiple Regressions			
		Combined CAR (-1, +1)					
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Subsidiary/stock	+						
Subsidiary/combination	+						
Subsidiary/unknown							
Year1999						-0.0118 (-0.95)	
Year2000						0.0057 (0.40)	
Year2001						0.0177 (0.84)	
Year2006						0.0066 (0.28)	
Year2007						-0.0066 (-0.40)	
<b>Adjusted R-squared</b>		<b>0.0055</b>	<b>0.0926</b>	<b>0.1659</b>	<b>0.1663</b>	<b>0.1501</b>	
<b>N</b>		<b>489</b>	<b>484</b>	<b>154</b>	<b>151</b>	<b>151</b>	

Prior Combined CAR (-1, +1), indicating that acquirers' performance exists when it come to creating combined value for both acquirers and target companies. In Model 2 I include common control variables that are based on deal characteristics. The coefficient for Prior Combined CAR (-1, +1) becomes statistically insignificant but remains economically significant at 0.0561. One interesting point in Model 2 is that the coefficient for the control variable "Competing bids" becomes insignificant. This could result from model specification reasons. Another explanation is that the existence of competing bids typically enhances target companies' bargaining position, which causes value transfer from acquirers to target companies. However, as we now measure acquirers' performance by measuring acquirers' total value creation capability for both acquirers and targets companies, the value transfer between acquirers and target companies does not affect this measure, which reduces the explanatory power of the variable "Competing bids".

From Model 3 through Model 5 I include M&A advisors' skills, Acquirers' Tobin's Q and year dummies in the regression. Because of the smaller sample size, the inclusion of dummy variables specifying the combination of target companies' public status / method of payment causes co-linearity problems. As a result, they are excluded from the model.

In Model 3, Model 4 and Model 5, the coefficient for Prior Combined CAR (-1, +1) remains both economically and statistically significant, providing evidence that acquirers' performance persistence does exist in term of creating combined value for acquirers and target companies.

From Model 3 through Model 5 the coefficients for both Acquirer's advisor's skills and Taregt's advisor's skills are statistically insignificant, suggesting no performance-enhancing effect from M&A advisors. Also the coefficient for Acquirer Tobin's Q is statistically not significant, offering now evidence that acquirers' managerial skills drive performance in acquisitions.

### 6.2.3 *Acquirers' performance persistence in extracting value from deals*

I test this hypothesis by analyzing whether the same acquirers can continue extracting more values from acquisition deals. In order to see this I regress Acquirer Share (-1, +1) on Prior Acquirer Share (-1, +1), together with other independent variables. Results of the regression are reported in Table 10. From Model 1 through Model 5, most independent variables' coefficient is statistically insignificant, expect for one variable in Model 4 and two variables in Model 5. Also, the sign and economic significance of most control variables' coefficients also differs greatly from regression results obtained from the first and second hypothesis. This indicates the need to improve model specification. Also when selecting observations for the Acquirer Share (-1, +1) sample group, I have excluded all observations where either the Acquirer CAR (-1. +1) or the Combined CAR (-1,

+1) is negative. The exclusion of observations may have caused disruption to the sample quality. Overall, using existing model specification there is no evidence support acquirers' performance persistence in terms of extracting value from deals. Also, multiple regressions do not suggest either the skills of acquirers' advisors or the skills of targets' advisors are transferrable to enhance acquirers' deal performance.

#### 6.2.4 *Acquirers' performance persistence in bargaining power*

I measure acquirers' bargaining power by calculating the excess stock returns to target companies following deal announcement. To test whether acquirers show performance persistence in their bargaining power, I regress Target CAR (-1, +1) on Target CAR (-1, +1) in prior deals by the same acquirer. Regression results are shown in Table 11.

Through Model 1 to Model 5, coefficient of Prior Target CAR (-1, +1) is statistically significant. This can be interpreted as acquirers' performance persistence in term of their bargaining power, which means acquirers who pay less premiums in prior deals tend to continue paying less in following deals, while for acquirers who pay high premiums in prior deals, their overpay behavior may continue in future deals. This result is consistent from the univariate analysis, where mean Target CAR (-1, +1) in the first decile group is statistically different from Target CAR (-1, +1) in the last decile group. However, as mentioned in the univariate analysis part, potential industry-specific effect needs to be controlled to verify whether this statistically significant relation between Prior Target CAR (-1, +1) and Target CAR (-1, +1) is actually due to acquirers' performance persistence in bargaining power, or it should be attributed to the fundamental difference in acquisition market among different industry sectors.

The target public status / method of payment dummy set is not included in the model due to potential co-linearity problem.

#### 6.2.5 *Analysis results summary*

In Table 12 I present the summary result from both univariate analysis and multivariate analysis. Based on univariate analysis, evidence is found supporting the hypotheses of acquirers performance persistence in term of bargaining power, creating combined value for acquirers and target companies, as well as extracting value from the deal. In multivariate analysis part, no statistically significant evidence is found supporting acquirers performance persistence in terms of creating value for their own company. The result holds the same under both simple regression and multiple

**Table 10 Regression analysis result on acquirers' performance persistence measured by Acquirer Share (-1, +1)** This table reports regression results on acquirers' performance measured by Acquirer Share (-1, +1). Acquirer Share (-1, +1) is calculated as the share of an acquirer's CAR (-1, +1) in the market value-weighted sum of the acquirer's CAR (-1, +1) and the target's CAR (-1, +1). T-values are reported in parentheses. \*\*\*, \*\* and \* represents the statistical significance at 1%, 5% and 10% confidence level, respectively.

	Expected Effect	Simple Regressions		Multiple Regressions			
		Acquirer Share (-1, +1)					
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept		15.4085 (1.06)	-8.9122 (-0.45)	0.4360 (0.53)	1.5540 (0.19)	3.2571 (0.38)	
Prior Acquirer Share (-1, +1)	+	-0.3667 (-0.09)	-0.0358 (-0.01)	-0.1128 (-0.15)	-0.0704 (-0.19)	-0.0061 (-0.02)	
Acquirer/target same industry	+		5.8361 (1.21)	5.312 (1.62)	5.9246 (1.72)	6.2487* (1.76)	
Acquirer/target same nation	+		-2.56 (-1.15)	-2.1183 (-1.38)	-3.4622 (-1.07)	-4.3934 (-1.29)	
Ln (acquirer MV)	-		2.1619 (0.27)	0.5213 (0.46)	0.4057 (0.45)	0.3853 (0.41)	
Deal relative size	+		-0.1398 (-0.15)	0.1673 (0.43)	0.0919 (0.22)	0.0428 (0.01)	
Same industry prior deal	+		6.015 (0.63)	-5.216 (-1.58)	-5.5386 (-1.59)	-5.6498 (-1.60)	
Ln (time since last deal)	+		3.562 (1.45)	1.8449 (1.63)	1.9615* (1.69)	2.2211* (1.78)	
Competing bids	-		-8.1513 (-0.56)	-3.7519 (-0.29)	-4.2363 (-0.32)	-3.3708 (-0.25)	

	Expected Effect	Simple Regressions		Multiple Regressions			
		Model 1	Model 2	Acquirer Share (-1, +1)			
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Acquirer's advisor's skills	+			0.1185 (0.20)	-0.0157 (0.03)	-0.0585 (-0.09)	
Target's advisor's skills	+			-0.3151 (-0.60)	-0.2594 (-0.48)	-0.2827 (-0.51)	
Acquirer Tobin's Q	+				-0.4959 (-0.45)	-0.60 (-0.53)	
Private/cash	-						
Private/stock	+						
Private/combination	+						
Private/unknown							
Public/cash	+						
Public/stock	-						
Public/combination	+						
Public/unknown							
Subsidiary/cash	-						



	Expected Effect	Simple Regressions		Multiple Regressions			
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Subsidiary/stock	+						
Subsidiary/combination	+						
Subsidiary/unknown							
Year1999						0.1203 (0.03)	
Year2000						-0.8365 (-0.16)	
Year2001						-1.2329 (-0.15)	
Year2006						-9.9445 (-1.11)	
Year2007						-5.0585 (-0.80)	
<b>Adjusted R-squared</b>		<b>0.0055</b>	<b>0.0101</b>	<b>0.0461</b>	<b>0.0391</b>	<b>0.0516</b>	
<b>N</b>		<b>489</b>	<b>484</b>	<b>154</b>	<b>151</b>	<b>151</b>	

**Table 11 Regression analysis result on acquirers' performance persistence measured by Target CAR (-1, +1)** This table reports regression results on acquirers' bargaining power measured by Target CAR (-1, +1). Target CAR (-1, +1) is calculated as the acquirer's excess stock returns over three-day period centered on the deal announcement date. T-values are reported in parentheses. \*\*\*, \*\* and \* represents the statistical significance at 1%, 5% and 10% confidence level, respectively.

	Expected Effect	Simple Regressions		Multiple Regressions			
		Target CAR (-1, +1)					
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept		0.0433*** (10.30)	0.0741*** (4.22)	0.0859*** (3.23)	0.0796** (2.24)	0.0815** (2.25)	
Prior Target CAR (-1, +1)	+	0.0608** (2.08)	0.0582** (1.96)	0.0690 (1.61)	0.1282** (2.48)	0.1278** (2.45)	
Acquirer/target same industry	+		-0.0081 (-0.91)	-0.0016 (-0.13)	0.0042 (0.29)	0.0048 (0.32)	
Acquirer/target same nation	+		-0.0283*** (-3.55)	-0.0309** (-2.78)	-0.0288** (-2.12)	-0.0290** (-2.11)	
Ln (acquirer MV)	-		-0.0009 (-0.44)	-0.0028 (-1.03)	-0.0015 (-0.42)	-0.0017 (-0.47)	
Deal relative size	+		-0.0001 (-0.39)	-0.0005 (-1.26)	-0.0003 (-0.13)	-0.0003 (-0.12)	
Same industry prior deal	+		-0.0080 (-0.91)	-0.0083 (-0.68)	-0.0069 (-0.48)	-0.0081 (-0.55)	
Ln (time since last deal)	+		0.0098*** (3.33)	0.0062 (1.49)	0.0022 (0.45)	0.0027 (0.51)	
Competing bids	-		-0.0295 (-0.71)	-0.0285 (-0.68)	-0.0316 (-0.76)	-0.0283 (-0.69)	

	Expected Effect	Simple Regressions		Multiple Regressions			
		Target CAR (-1, +1)					
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Acquirer's advisor's skills	+			0.0028 (1.41)	0.2465 (0.51)	0.1310 (0.01)	
Target's advisor's skills	+			-0.0030 (-0.61)	-0.0019 (-0.01)	-0.0019 (-0.79)	
Acquirer Tobin's Q	+				-0.0064 (-1.00)	-0.0071 (-1.08)	
Private/cash	-						
Private/stock	+						
Private/combination	+						
Private/unknown							
Public/cash	+						
Public/stock	-						
Public/combination	+						
Public/unknown							
Subsidiary/cash	-						

	Expected Effect	Simple Regressions		Multiple Regressions			
		Target CAR (-1, +1)					
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Subsidiary/stock	+						
Subsidiary/combination	+						
Subsidiary/unknown							
Year1999						0.0149 (0.64)	
Year2000						-0.0089 (-0.37)	
Year2001						0.0059 (0.20)	
Year2006						0.0065 (0.27)	
Year2007						-0.0095 (-0.36)	
<b>Adjusted R-squared</b>		<b>0.0055</b>	<b>0.0279</b>	<b>0.0025</b>	<b>0.0069</b>	<b>0.0325</b>	
<b>N</b>		<b>489</b>	<b>1086</b>	<b>541</b>	<b>334</b>	<b>334</b>	

**Table 12 Summary results of univariate analysis and multivariate analysis** This table reports the test results for performance persistence hypotheses. In univariate analysis, for each of the four measurements of acquirers performance persistence the existence of performance persistence is determined by whether the mean value from two extreme deciles are significantly different. In multivariate analysis, for each of the four measurements of acquirers performance persistence, the existence of performance persistence is determined by regressing the observed value of the measurement in current acquisition on the observed value of the measurement in prior acquisition by the same acquirer.

	<b>Univariate Analysis</b>	<b>Multivariate Analysis</b>
	<b>Performance Persistence</b>	<b>Performance Persistence</b>
Acquirer CAR (-1, +1)	No	No
Target CAR (-1, +1)	Yes	Yes
Combined CAR (-1, +1)	Yes	Yes
Acquirer Share (-1, +1)	Yes	No

regressions under different model specifications. This result contradicts the work by JPV, where they report statistically significant results supporting acquirers performance persistence in terms of creating value for their own company.

For acquirers performance persistence measured by Target CAR (-1, +1), the coefficient of Prior Target CAR (-1, +1) is statistically significant in all model specifications except in Model 3, where the t-value of the coefficient is close to the edge of statistical significance at 10% confidence level. Without controlling for industry specific effects, this result supports the hypothesis that acquirers possess performance persistence in terms of bargaining power.

For acquirers' capability to create combined value for both acquirers and target companies, statistically significant and positive relation is found between Prior Combined CAR (-1, +1) and Combined CAR (-1, +1), suggesting acquirers that create combined value in prior deals do tend to continue generating combined excess stock returns in following deals. This result can be an indication for the consistency of managerial skills in selecting acquisition targets and executing acquisition plans.

Regarding acquirers performance persistence measured by their ability to extracting value from acquisition deals, multivariate regressions do not yield any statistically significant results. Besides, the low t-value for most of the control variables indicates the model specification need to be improved. Also part of the reasons for the insignificant regression results can be attributed to the small sample size and the observations with extraordinarily high Acquirer Share (-1, +1) value in the sample, as mentioned in previous part of my thesis.

## 7. ROBUSTNESS TEST

In this part I provide robustness test to see how initial results regarding acquirers performance persistence will hold.

JPV (2008) mention in their work that due to the methodology SDC uses in defining the deal announcement date, the date of deal announcement reported by SDC can be different from the date when a deal is first disclosed to the market. As a result, excess stock returns measured surround three-day period centered on the deal announcement date might not capture the total stock price effect caused by the deal announcement. To capture the potential effect of this, I use CAR (-2, +2) and CAR (-3, +3) to substitute all measures of acquirers' performance and use them in the multivariate analysis. I report all analysis results using CAR (-2, +2) in Table 14, and all analysis results using CAR (-3, +3) in Table 15. Each hypothesis is tested using six different model specifications. Only coefficients for intercept, Prior CAR are reported. Table 13 lists out control variables included in each model specification.

In Table 14 the statistical significance of all Prior CAR measures' coefficients are improved, except for Acquirer Share (-2, +2). Results from Table 14 support the hypotheses that acquirers exhibit performance persistence in terms of creating value for their own company, creating combined value for acquirers and target companies, as well as in terms of their bargaining power. The fact that substituting CAR (-1, +1) with CAR (-2, +2) significantly improves the statistical significance of multivariate regression partly support the assumption that CAR (-1, +1) might not have captures all price effect brought by the deal announcements.

In Table 15 the statistical significance of Prior CAR measures' coefficients are also improved, but to a less extent compared with results from Table 14. I interpret this improvement as showing CAR (-3, +3) also captures more price effect brought by the deal announcements than CAR (-1, +1) does, however at the same time CAR (-3, +3) introduces more market noise in the price fluctuation compared with CAR (-2, +2)

**Table 13 Detailed model specifications** This table reports all control variables included in each of the six model specifications. A variable with a “\*” means it is included in the corresponding regression model.

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Prior CAR	*	*	*	*	*	*
Acquirer/target same industry		*	*	*	*	*
Acquirer/target same nation		*	*	*	*	*
Ln (acquirer MV)		*	*	*	*	*
Deal relative size		*	*	*	*	*
Same industry prior deal		*	*	*	*	*
Ln (time since last deal)		*	*	*	*	*
Competing bids		*	*	*	*	*
Acquirer's advisor's skills			*	*	*	*
Target's advisor's skills			*	*	*	*
Acquirer Tobin's Q				*	*	*
Dummy set "public status of target company/method of payment					*	*
Year dummy						*

**Table 14 Multivariate analysis using CAR (-2, +2)** This table reports multivariate analysis results using CAR (-2, +2) in all measures of acquirers performance persistence. Acquirer CAR (-2, +2) refers to acquirers' five-day excess stock returns following deal announcement centered on the deal announcement date. Target CAR (-2, +2) refers to target companies' five-day excess stock returns following deal announcement centered on the deal announcement date. Combined CAR (-2, +2) is the sum of Acquirer CAR (-2, +2) and Target CAR (-2, +2) weighted by acquirers' market value and targets' market value two-days prior to the deal announcement date. Acquirer Share (-2, +2) is the market value-weighted share of Acquirer CAR (-2, +2) in the sum of Acquirer CAR (-2, +2) and Target CAR (-2, +2). For the multivariate analysis with Target CAR (-2, +2), Combined CAR (-2, +2) and Acquirer Share (-2, +2), dummy set "public status of target company / method of payment" is not included in Model 6 due to co-linearity problem. Excluding this set of dummy variables, Model 5 has the same model specification as Model 4. So Model 5 in all three cases is not used. T-values are reported in parentheses. \*\*\*, \*\* and \* represents the statistical significance at 1%, 5% and 10% confidence level, respectively.

**Test of acquirers performance persistence as measured by Acquirer CAR (-2, +2)**

	Simple Regressions		Multiple Regressions			
	Model 1	Model 2	Acquirer CAR (-2, +2)			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.0102*** (13.19)	0.0370*** (11.57)	0.0480*** (6.59)	0.3720*** (11.17)	0.0354*** (9.47)	0.0363 (9.74)
Prior Acquirer CAR (-2, +2)	0.0280** (2.31)	0.0238** (1.95)	0.0015 (0.07)	0.0027** (2.19)	0.0273** (2.18)	0.0270** (2.15)
<b>Adjusted R-squared</b>	0.0008	0.0142	0.01641	0.0157	0.0167	0.0137
<b>N</b>	6865	6743	2117	6457	6457	6457



**Test of acquirers performance persistence as measured by Target CAR (-2, +2)**

	Simple Regressions		Multiple Regressions			
	Target CAR (-2, +2)					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.0554*** (10.80)	0.0856*** (4.01)	0.0435 (1.08)	0.0830*** (3.56)		0.0828*** (3.51)
Prior Target CAR (-2, +2)	0.0791*** (2.81)	0.0814*** (2.86)	0.2048*** (3.68)	0.0780*** (2.73)		0.0747*** (2.56)
<b>Adjusted R-squared</b>	0.0071	0.0265	0.0540	0.0354		0.0296
<b>N</b>	1101	1086	345	345		342

**Test of acquirers performance persistence as measured by Combined Share (-2, +2)**

	Simple Regressions		Multiple Regressions			
	Combined CAR (-2, +2)					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.0226*** (6.90)	0.1103*** (7.99)	0.1121*** (4.48)	0.1181*** (4.46)		0.1154*** (4.26)
Prior Combined CAR (-2, +2)	0.1652** (4.00)	0.1327** (3.30)	0.2435*** (3.48)	0.2831*** (3.78)		0.2800*** (3.66)
<b>Adjusted R-squared</b>	0.0297	0.1063	0.1549	0.1659		0.1598
<b>N</b>	489	484	154	151		151

**Test of acquirers performance persistence as measured by Acquirer Share (-2, +2)**

	<b>Simple Regressions</b>		<b>Multiple Regressions</b>			
	Acquirer Share (-2, +2)					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.6195*** (7.38)	-0.0735*** (-2.15)	-0.7270** (-1.91)	-0.7489* (-1.80)		-0.6650 (-1.58)
Prior Acquirer Share (-2, +2)	-0.0003 (-0.46)	-0.0005 (-0.85)	-0.0004 (-0.62)	-0.0004 (-0.63)		-0.0004 (-0.72)
<b>Adjusted R-squared</b>	0.0003	0.0132	0.0168	0.0133		0.0136
<b>N</b>	489	484	484	468		468

**Table 15 Multivariate analysis using CAR (-3, +3)** This table reports multivariate analysis results using CAR (-3, +3) in all measures of acquirers performance persistence. Acquirer CAR (-3, +3) refers to acquirers' five-day excess stock returns following deal announcement centered on the deal announcement date. Target CAR (-3, +3) refers to target companies' five-day excess stock returns following deal announcement centered on the deal announcement date. Combined CAR (-3, +3) is the sum of Acquirer CAR (-3, +3) and Target CAR (-3, +3) weighted by acquirers' market value and targets' market value two-days prior to the deal announcement date. Acquirer Share (-3, +3) is the market value-weighted share of Acquirer CAR (-3, +3) in the sum of Acquirer CAR (-3, +3) and Target CAR (-3, +3). For the multivariate analysis with Target CAR (-3, +3), Combined CAR (-3, +3) and Acquirer Share (-3, +3), dummy set "public status of target company / method of payment" is not included in Model 6 due to co-linearity problem. Excluding this set of dummy variables, Model 5 has the same model specification as Model 4. So Model 5 in all three cases is not used. T-values are reported in parentheses. \*\*\*, \*\* and \* represents the statistical significance at 1%, 5% and 10% confidence level, respectively.

**Test of acquirers performance persistence as measured by Acquirer CAR (-3, +3)**

	Simple Regressions		Multiple Regressions			
	Model 1	Model 2	Acquirer CAR (-3, +3)			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.0118*** (13.42)	0.0410*** (11.19)	0.0410*** (11.21)	0.0421*** (11.10)	0.0477*** (5.02)	0.0508*** (5.30)
Prior Acquirer CAR (-3, +3)	0.0154 (1.33)	0.0128 (1.10)	0.0127 (1.09)	0.0144 (1.21)	0.0083 (0.36)	0.0059 (0.26)
<b>Adjusted R-squared</b>	0.0008	0.0110	0.0111	0.0117	0.0109	0.0120
<b>N</b>	6865	6743	6743	6457	2020	2020

**Test of acquirers performance persistence as measured by Target CAR (-3, +3)**

	<b>Simple Regressions</b>		<b>Multiple Regressions</b>			
	Target CAR (-3, +3)					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.0102*** (13.19)	0.0370*** (11.57)	0.0480*** (6.50)	0.0450*** (5.87)		0.0482*** (6.21)
Prior Target CAR (-3, +3)	0.0280** (2.31)	0.0238** (1.95)	0.0015 (0.07)	0.0100 (0.43)		0.0079 (0.34)
<b>Adjusted R-squared</b>	0.0006	0.0142	0.0117	0.0096		0.0115
<b>N</b>	6865	6743	2117	2020		2020

**Test of acquirers performance persistence as measured by Combined CAR (-3, +3)**

	<b>Simple Regressions</b>		<b>Multiple Regressions</b>			
	Combined CAR (-3, +3)					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.0226*** (6.90)	0.1103*** (7.99)	0.1121*** (4.48)	0.1181*** (4.46)		0.1154*** (4.26)
Prior Combined CAR (-3, +3)	0.1652** (4.00)	0.1327*** (3.30)	0.2435*** (3.48)	0.2831*** (3.78)		0.2800*** (3.66)
<b>Adjusted R-squared</b>	0.0297	0.1063	0.1549	0.1659		0.1598
<b>N</b>	489	484	154	151		151

**Test of acquirers performance persistence as measured by Acquirer Share (-3, +3)**

	<b>Simple Regressions</b>		<b>Multiple Regressions</b>			
	Acquirer Share (-3, +3)					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.0102*** (13.19)	0.0370*** (11.57)	0.0048*** (6.50)	0.0450*** (5.87)		0.0482*** (6.21)
Prior Acquirer Share (-3, +3)	0.0280** (2.31)	0.0238** (1.95)	0.0015 (0.07)	0.0100 (0.43)		0.0079 (0.34)
<b>Adjusted R-squared</b>	0.0006	0.0142	0.0117	0.0096		0.01146
<b>N</b>	6865	6743	2117	2020		2020

## 8. LIMITATIONS

The limitation of this thesis includes following:

- The measures for M&A advisors' skills does not really capture advisors' performance level. As a result it offers only limited explanation as to how M&A advisors can help boost acquirers performance in acquisitions
- The exclusion of extraordinarily large value when calculating Acquirer Share CAR (-1, +1) lacks theoretical foundation
- More robustness tests can be conducted to see the resilience of analysis results using other different measures for acquirers performance

## 9. CONCLUSIONS

In this thesis I examine whether serial acquirers exhibit performance persistence in terms of creating value for their own company, creating combined value for both acquirers, extracting value for acquisition deals, as well as acquirers' bargaining power. Based on M&A data in EU 15 countries from 1991-2010, I use cumulative abnormal returns (CAR) as the main approach to measure acquirers' performance. initially based on CAR (-1, +1), I find in univariate analysis evidence of acquirers performance persistence in terms of creating combined value for both acquirers, extracting value for acquisition deals, as well as acquirers' bargaining power. Multivariate analysis based on CAR (-1, +1) does not support the hypothesis of acquirers performance persistence in terms of either creating value for their own company or extracting value for acquisition deals. Performance persistence hypotheses using the other two performance measures yield statistically and economically significant results in certain model specifications. By substituting CAR (-1, +1) with CAR (-2, +2) and CAR (-3, +3) I found evidence supporting all performance persistence hypotheses except for the acquirers' ability to extracting value from acquisition deals. In addition, empirical test does not support the hypotheses that M&A advisors transfer their skills by enhancing acquirers performance, however this result may largely be due to imperfect measure for M&A advisors' skills.

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