

Universität Hohenheim

Institut für Financial Management

Fachgebiet für Unternehmensfinanzierung

Frau Prof. Dr. Tereza Tykvová



## **Empirical Essays on Acquisitions**

DISSERTATION

zur Erlangung des akademischen Grades

Doktor der Wirtschaftswissenschaften (**Dr. oec.**)

an der Fakultät für Wirtschafts- und Sozialwissenschaften

vorgelegt von:

Johannes Sebastian Kolb

Erstgutachter: Prof. Dr. Tereza Tykvová

Zweitgutachter: Prof. Dr. Monika Gehde-Trapp

Stuttgart, 2017

Date of Disputation: June 22, 2017

Faculty Dean: Univ.-Prof. Dr. Dirk Hachmeister

Supervisor: Univ.-Prof. Dr. Tereza Tykvová

Second Reviewer: Univ.-Prof. Dr. Monika Gehde-Trapp

# Contents

Acknowledgements .....	vi
List of tables .....	vii
List of figures .....	ix
List of formulas .....	x
List of abbreviations .....	xi
1 Introduction .....	1
1.1 Motivation .....	1
1.2 Structure of the thesis .....	4
2 Do investment banks create value for their clients? Empirical evidence from European acquisitions .....	9
2.1 Introduction .....	9
2.2 The role of advisors, Europe and the European takeover directive.....	14
2.2.1 Advisors.....	14
2.2.2 Corporate governance and regulatory characteristics.....	16
2.2.3 The role of advisors in the UK and CE .....	17
2.2.4 European Takeover Directive.....	18
2.3 Sample and summary statistics.....	21
2.4 Results .....	29
2.4.1 Bidder value creation in the UK and CE .....	29
2.4.2 The role of advisors in UK and CE acquisitions .....	32
2.4.3 Endogeneity in advisor-bidder matching .....	35
2.4.4 Robustness.....	40
2.4.5 Difference in difference analysis.....	45
2.5 Discussion .....	52

2.6	Conclusion.....	53
3	Superstar financial advisors: Do they deliver superior value to their clients? .....	57
3.1	Introduction .....	57
3.2	Advisor value creation and measures of advisor quality.....	62
3.3	Data and descriptive statistics .....	64
3.3.1	Advisor quality .....	64
3.3.2	Acquisition sample .....	66
3.3.3	Descriptive statistics .....	67
3.4	Short-term effects .....	73
3.4.1	Announcement returns .....	73
3.4.2	Endogeneity in advisor-bidder matching .....	74
3.5	Sources of value creation, fees and reputational exposure.....	78
3.5.1	Synergies and acquisition execution .....	78
3.5.2	Advisor fees.....	81
3.5.3	Reputational exposure and value creation.....	82
3.6	Choice of the winner .....	85
3.7	Long-term effects .....	88
3.8	Robustness tests.....	90
3.9	Summary and conclusion .....	92
4	Going public via special purpose acquisition companies: Frogs do not turn into princes .....	97
4.1	Introduction .....	97
4.2	IPOs versus SPACs .....	102
4.2.1	Market characteristics.....	106
4.2.2	Deal characteristics.....	106
4.2.3	Firm characteristics .....	107
4.3	Sample and descriptive statistics .....	109
4.3.1	SPAC and IPO sample .....	109
4.3.2	Market, deal and firm characteristics .....	111
4.4	Likelihood of a SPAC acquisition.....	115

4.4.1	The model and its specifications .....	115
4.4.2	Main results .....	116
4.4.3	Announcement date data .....	118
4.4.4	Expected cash out and expected time to resolution.....	119
4.4.5	Matching.....	120
4.4.6	Regulation .....	121
4.5	Long-term performance.....	124
4.5.1	Event-time buy and hold abnormal returns .....	125
4.5.2	Calendar-time five-factor model analysis .....	129
4.6	Summary and conclusion .....	132
5	Conclusion.....	135
	Bibliography.....	xiii
	Declaration of co-authorship .....	xxv

# Acknowledgements

First and foremost, I would like to thank my Ph.D. advisor Prof. Tereza Tykvová. I am very grateful for her permanent support, which motivated me and led to a steep learning curve. Despite her busy schedule, she found time for regular and insightful discussions about the topics of this thesis. Working with her was a great pleasure. Moreover, I am grateful that she encouraged me to present at conferences at quite an early stage and that she supported my research visit to Texas A&M University.

I also thank the members of the Ph.D. committee, Prof. Monika Gehde-Trapp and Prof. Sibylle Lehmann-Hasemeyer, for showing interest in my work. I am grateful for the many helpful comments I received from them during presentations at Ph.D. Finance Seminars in Hohenheim.

I acknowledge access to several databases such as SDC Platinum, CRSP, Compustat, Capital IQ and Datastream provided by Datenlabor Hohenheim from the University of Hohenheim. These databases provided me with most of the data I needed for the empirical analyses. Without the data, I would not have been able to work on the research topics of this thesis.

I thank my family for their enduring support over the last years and their loving care throughout my educational journey.

Finally – Sandra: Thank you so much for the understanding, stability and encouragement I could count on while writing this thesis.

# List of tables

Table 2.1: Sample composition .....	23
Table 2.2: Summary statistics .....	27
Table 2.3: Bidder location and CARs .....	31
Table 2.4: Advisor involvement and bidder CARs .....	34
Table 2.5: Endogeneity in advisor-bidder matching .....	38
Table 2.6: Robustness tests .....	43
Table 2.7: Sample composition of the treated and control sample .....	47
Table 2.8: Summary statistics of the treated and control sample .....	48
Table 2.9: Difference in difference research design.....	51
Table 2.10: Variable definitions .....	55
Table 3.1: Top-tier advisors and winners .....	66
Table 3.2: Descriptive statistics.....	70
Table 3.3: Correlation matrix .....	72
Table 3.4: Advisor quality and announcement returns.....	76
Table 3.5: Advisor quality and synergies .....	80
Table 3.6: Advisor quality, reputational exposure and short-term effects .....	84
Table 3.7: Choice of the winner .....	87
Table 3.8: Winners and long-term returns.....	90
Table 3.9: Robustness tests .....	91
Table 3.10: Variable definitions and sources .....	94
Table 4.1: Sample overview .....	111
Table 4.2: Variable definitions and sources .....	112
Table 4.3: Summary statistics for SPAC acquisitions and IPOs .....	114
Table 4.4: Correlation matrix .....	115
Table 4.5: Likelihood of a SPAC acquisition.....	123
Table 4.6: Buy and hold abnormal returns .....	128
Table 4.7: Factor regressions - market portfolio .....	131

Table 4.8: Factor regressions - hedged portfolio.....	132
---	-----



# List of figures

Figure 1.1: Acquisition volume.....	3
Figure 1.2: Acquisition volume in percent of GDP.....	4
Figure 2.1: European and US acquisition volume.....	13
Figure 3.1: Winner vs. non-winner BHARs.....	88
Figure 4.1: Number of non-SPAC IPOs, SPAC IPOs and SPAC acquisitions.....	98
Figure 4.2: SPAC lifecycle.....	105

## List of formulas

Formula 3.1: Monthly calendar-time portfolio excess returns .....	89
Formula 4.1: Likelihood of a SPAC acquisition .....	116
Formula 4.2: Alternative cash out variable .....	119
Formula 4.3: Alternative time to resolution variable .....	120
Formula 4.4: Buy and hold abnormal returns.....	126
Formula 4.5: Monthly calendar-time portfolio excess returns .....	129

# List of abbreviations

ADRI	<i>Anti-Director Rights Index</i>
Amex	<i>American Stock Exchange</i>
BHAR	<i>Buy and Hold Abnormal Return</i>
CAR	<i>Cumulative Abnormal Return</i>
CB	<i>Cross-border</i>
CE	<i>Continental Europe</i>
CEO	<i>Chief Executive Officer</i>
CEPS	<i>Centre for European Policy Studies</i>
CG	<i>Corporate Governance</i>
DiD	<i>Difference in Difference</i>
DO	<i>Domestic</i>
EBIT	<i>Earnings Before Interest and Taxes</i>
EDGAR	<i>Electronic Data Gathering and Retrieval</i>
EU	<i>European Union</i>
FDI	<i>Foreign Direct Investment</i>
FE	<i>Fixed Effect</i>
FMA	<i>Financial Management Association</i>
FRED	<i>Federal Reserve Bank of St. Louis</i>
GDP	<i>Gross Domestic Product</i>
GNI	<i>Gross National Income</i>
IB	<i>Investment Bank</i>
IMF	<i>International Monetary Fund</i>
IPACs	<i>Innovated Public Acquisition Company</i>
IPO	<i>Initial Public Offering</i>
JOBS	<i>Jumpstart Our Business Startups</i>
LLP	<i>Limited Liability Partnership</i>
LO	<i>Law Origin</i>

MSCI *Morgan Stanley Capital International*  
Nasdaq *National Association of Securities Dealers Automated Quotations*  
NPV *Net Present Value*  
NYSE *New York Stock Exchange*  
OLS *Ordinary Least Squares*  
PE *Private Equity*  
Ph.D. *Doctor of Philosophy*  
PSM *Propensity Score Matching*  
SEC *Securities and Exchange Commission*  
SIC *Standard Industrial Classification*  
SPAC *Special Purpose Acquisition Company*  
UK *United Kingdom*  
US *United States*  
US\$ *United States dollars*  
VC *Venture Capital*  
WB *World Bank*  
WHU *Wissenschaftliche Hochschule für Unternehmensführung*  
WMW *Wilcoxon–Mann–Whitney*

# Chapter 1

## Introduction

### 1.1 Motivation

Acquisitions are one of the most studied areas in corporate finance research. Still, many questions about acquisitions are unanswered and regularly debated in the literature. One of these questions is whether acquisitions create bidder shareholder value and what factors are related to value creation (Golubov et al., 2015). Value creation was already discussed as early as 1983 when Jensen and Ruback state in their seminal article: “Finally, knowledge of the sources of takeover gains still eludes us” (Jensen and Ruback, 1983, p. 47), and it remains largely unexplained until today. Researchers usually evaluate value creation from a shareholder perspective by measuring cumulative abnormal returns (CARs) during the acquisition announcement (Martynova and Renneboog, 2011b). However, to date, the literature can explain only a small part of the variation in bidder CARs. Using a list of different deal and firm characteristics, researchers such as Moeller et al. (2004), Masulis et al. (2007), Harford et al. (2012) and Golubov et al. (2015) show that these commonly used factors explain less than 10% of the variation in bidder returns. Although Golubov et al. (2015) find that unobserved, time-invariant, firm-specific factors alone explain as much of the variation as the traditionally used factors, value creation seems not to be related to Chief Executive Officer (CEO) changes, characteristics of the management team or industry membership.

Not only do the sources of value creation remain a puzzle, but there is also the widespread belief that many acquisitions destroy shareholder value (see, e.g., Moeller et al., 2005; Malmendier and Tate, 2008). In corporate finance, acquisitions are among the most important events for a firm (Fuller et al., 2002). Although acquisitions that destroy shareholder value might

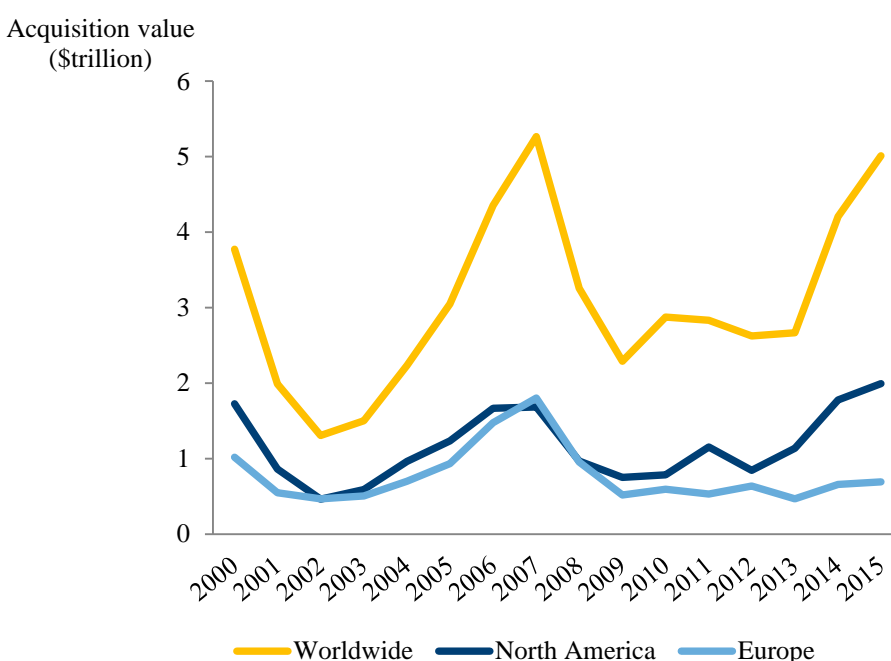
harm the firm and its shareholders, successful acquisitions can translate into higher sustainable shareholder value, better operating performance and higher synergies (Schwert, 2000; Bao and Edmans, 2011; Golubov et al., 2012; Harford et al., 2012). Therefore, acquisitions belong to the group of the most important decisions a CEO makes (Bao and Edmans, 2011). Lehn and Zhao (2006) even show that CEOs that make value reducing acquisitions are more likely to be replaced after the acquisition than CEOs that were responsible for value creating acquisitions or CEOs that cancelled potential value reducing acquisitions.

Value destruction in acquisitions might be due to irrationalities of the bidder management and agency costs between managers and shareholders: Managers, who are actively involved in the selection of targets and day-to-day operations of the firm, tend to be better informed than shareholders about the acquisition. Shareholders usually care about the value of their shares, while value creation is not always the main goal of managers (Shleifer and Vishny, 1989). Value destruction that is motivated by agency costs is related to concepts such as the free cash flow hypothesis (Jensen, 1986), managerial envy (Goel and Thakor, 2010) and management entrenchment (Shleifer and Vishny, 1989). Jensen (1986) argues that managers of firms with excess free cash flow tend to invest in negative NPV acquisitions instead of paying out the cash to shareholders. Lang et al. (1991) find support for Jensen's free cash flow hypothesis, as their study shows that managers personally profit from value-destroying acquisitions. Such acquisitions increase power, compensation and prestige of managers. Goel and Thakor (2010) argue that the managers of smaller firms envy their peers who get paid more because they are in charge of larger firms. Therefore, managers of smaller firms want to increase the size of their firms by acquisitions that might not increase shareholder value. Masulis et al. (2007) demonstrate that in firms with strong anti-takeover provisions, the managers, who are protected from the market of corporate control, are likely to engage in empire building. Shleifer and Vishny (1989) argue that managers entrench themselves in an attempt to reduce the likelihood of being replaced and to extract higher wages by making manager-specific acquisitions. Harford et al. (2012) find that entrenched managers choose targets with low synergy potential and overpay for their targets.

The interest of researchers in acquisitions is understandable considering not only the elusive nature of sources of value creation, the importance of acquisitions in corporate finance

and the relevance of agency conflicts but also the sheer volume of acquisition activity. Figure 1.1 depicts worldwide, North American and European acquisition activity during the period from 2000 to 2015. Worldwide acquisition activity has its peaks in 2007 and 2015 with US\$ 5.3 trillion and US\$ 5.0 trillion, respectively. North American activity fluctuates between US\$ 0.5 trillion and US\$ 1.9 trillion. There has been a massive increase in European acquisition activity in terms of volume. Compared to the 1980s and 1990s, the European acquisition volume has come close to North American levels. In 2007, acquisition activity reached even higher levels in Europe than in North America.

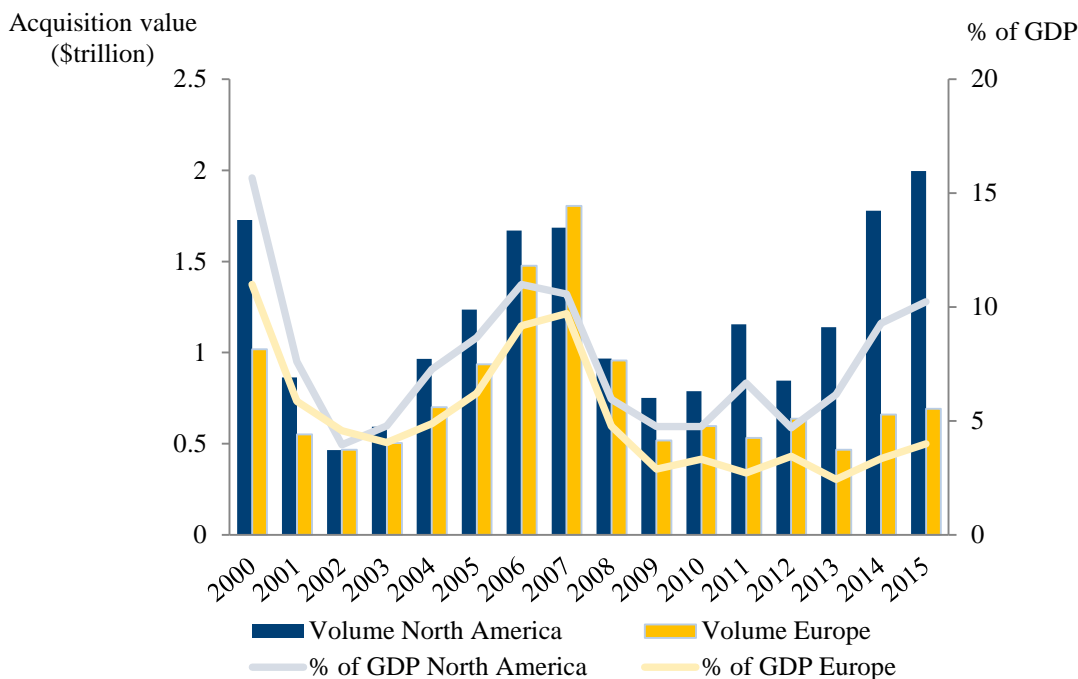
Figure 1.1: Acquisition volume



This figure presents acquisition volume of worldwide, North American and European acquisitions between 2000 and 2015. Source: SDC Platinum.

Figure 1.2 depicts North American and European acquisition activity in relation to the respective GDP. On average, acquisition volume equals 7.6% and 5.2% of GDP for North America and Europe, respectively. Thus, in the field of corporate finance, acquisitions are a crucial source of resource redistribution within an economy (Golubov et al., 2012).

Figure 1.2: Acquisition volume in percent of GDP



This figure presents acquisition volume in percent of GDP for North America and Europe between 2000 and 2015. Source: SDC Platinum and the World Bank.

## 1.2 Structure of the thesis

The first article, presented in Chapter 2, builds on the question outlined above regarding the factors that contribute to shareholder value creation in acquisitions and asks whether financial advisors (investment banks that give advice to their clients in acquisitions) are related to bidder value creation. Early theoretical models suggest that advisors, which act as financial intermediaries, are able to reduce transaction costs (Benston and Smith, 1976), asymmetric information costs (Leland and Pyle, 1977) and agency costs (Easterbrook, 1984; Titman and Trueman, 1986) as well as to produce valuable information (Campbel and Kracaw, 1980). To date, researchers have focused only on the US market, and empirical evidence yields inconclusive results on the question of whether advisors help bidders to create shareholder value. The United Kingdom (UK) market tends to have better developed stock markets, better protection of minority



and majority shareholders, higher disclosure rules, higher market and regulatory transparency and higher competition for potential targets than the Continental European (CE) market. Although US data require that corporate governance and regulatory characteristics remain relatively fixed, the European market provides the opportunity to study how advisors are related to bidder value creation in different regimes. I find that advisors create value only in acquisitions in which both the bidder and the target are located in the UK. The results are economically relevant, as bidders using advisors appear to create 1.1 percentage points higher CARs in UK–UK acquisitions than bidders with advisors in CE–CE acquisitions. Differences in corporate governance and regulatory regimes across European countries cannot explain this result.

Moreover, I use the European Takeover Directive (ETD) as an exogenous shock to the acquisition market in a difference-in-difference (DiD) research design to address the question whether advisors matter for bidder value creation. The ETD should harmonize European acquisition regulation and increase acquisition bid efficiency (McCahery and Renneboog, 2003), but it is criticized for being vague and discretionary (Humphery-Jenner, 2012). Indeed, my findings support the conjecture that the ETD decreases shareholder value after its implementation. The results of the DiD analysis indicate that advisors are valuable to European bidders. It appears that bidders profit from advisor advice in environments that increase acquisition complexity and legal uncertainty. The results are robust to country-level legal and corporate governance (CG) controls.

The article “Do investment banks create value for their clients? Empirical evidence from European acquisitions” is single-authored. It was presented at the Finance Seminar in Hohenheim, Germany (2016) and at the Research Seminar Series at Texas A&M University, United States (2016). The article currently has a revise and resubmit at the journal *European Financial Management*.

Chapter 3 presents an article that also addresses the role that advisors play in acquisitions, but it focuses on the North American market. Because of the convincing theoretical evidence that argues that advisors should matter for bidder value creation and the fact that Servaes and Zenner (1996) do not document this expected association empirically, researchers have started to focus

on advisor quality. This leads to the question of whether high-quality advisors create more shareholder value than lower quality advisors.

Specifically, in this article we ask whether high-quality advisors are associated with higher acquisition announcement returns, long-term returns and synergies. The results of existing empirical studies that address the relation between advisor quality and value creation are mixed. Kale et al. (2003) and Golubov et al. (2012) provide evidence of a positive relation for tender offers and public targets, respectively. Most other studies, however, rather document a negative or insignificant relation between advisor quality and value creation (Bowers and Miller, 1990; Michel et al., 1991; Rau, 2000; Hunter and Jagtiani, 2003; Ismail, 2010). What most of these studies have in common is that they rely on advisors' occurrences in the financial press or advisor market share to capture advisor quality. However, Bao and Edmans (2011) show that market share is not a good predictor of advisor quality. We develop a novel measure of advisor quality, which captures whether an advisor has won an award of excellence and shed some light into the inconclusive empirical evidence for the relationship between advisor quality and value creation. Because the awards are given to those investment banks that are supposed to provide the highest quality services, it is plausible to expect that they are positively related to value creation. Despite their popularity in the investment banking industry, these awards have been ignored by academic researchers.

Using this novel measure, we consistently find a positive relationship between advisor quality and value creation. Bidders advised by high-quality advisors tend to realize three percentage points higher CARs than other bidders. They also seem to outperform in the long term by reaching 0.4 percentage points higher monthly alphas in the 60-month period that follows the acquisition. Moreover, they are associated with higher synergies, and winners are also able to capture a larger part of the total synergies for their clients. Our results hold when we control for the endogeneity of advisor-bidder matching. We also find results that support the view that high-quality advisors put more effort into acquisitions in which they face high reputational exposure. We do not find such consistent results when we employ the commonly used quality measure based on the league table position.

The article “Superstar financial advisors: Do they deliver superior value to their clients?” is co-authored with Tereza Tykvová. The initial idea and research question comes from Johannes Kolb, who also collected the required data and executed most of the empirical analysis. Both authors presented at various conferences, and Johannes Kolb prepared the initial version of the paper. Tereza Tykvová supported the entire process and contributed substantially to improving the working paper version and incorporating the feedback received during conferences and from journal submissions. The article was presented at conferences such as the International Conference of the French Finance Association in Liège, Belgium (2016), the FMA Annual Meeting in Las Vegas, United States (2016) and the Finance Seminar in Hohenheim, Germany (2015).

Chapter 4 looks from a different angle on the value of acquisitions. The article focuses on a financial innovation — the Special Purpose Acquisition Company (SPAC) — that combines acquisitions with initial public offerings (IPOs) to enable firms a fast and cheap listing at a public stock exchange.

SPACs are cash shells that buy private operating firms to which they confer a public-listing status. The purpose of this article is to shed light on SPACs from the perspective of their potential targets, i.e., private companies aiming to achieve a public listing. We find that private operating firms indeed tend to use SPACs as an alternative way to get listed, particularly in years with weak IPO activity and volatile markets, such as 2008 and 2009. In these two years, approximately 31% of firms went public through an SPAC acquisition rather than through an IPO. Our results from the analysis of 127 SPAC acquisitions and 1,128 IPOs during the wave of “new-generation” SPACs starting in 2003 lend support to the conjecture that in particular small and levered firms with low growth opportunities tend to use this vehicle. SPAC acquisitions also may be fueled by the cash-out motives of existing shareholders. Venture capitalists and private equity investors tend to refrain from using SPAC acquisitions as an exit route.

Moreover, we examine whether SPAC sponsors pick firms that appear to be of low quality but have hidden potential. Tracking long-term abnormal returns, we find that SPAC firms are

associated with severe underperformance in comparison to the market, the industry and (comparable) IPO firms. Thus, the results do not support the “hidden potential” proposition.

The article “Going public via special purpose acquisition companies: Frogs do not turn into princes” is co-authored with Tereza Tykvová. Although the initial idea for the research project comes from Tereza Tykvová, the research question was developed jointly by the authors. Data collection and empirical analyses were done by Johannes Kolb, who presented at various conferences and prepared the initial version of the paper. Tereza Tykvová supported the entire process and contributed substantially to joint revisions and to the preparation of the published version. The article was presented at several conferences such as the Annual Meeting of the German Finance Association in Wuppertal, Germany (2013), the Financial Management Association European Conference in Maastricht, the Netherlands (2014), the Annual Meeting of the European Financial Management Association in Rome, Italy (2014) and the WHU Research Seminar in Finance and Accounting in Vallendar, Germany (2015). It is published in the *Journal of Corporate Finance* (see, Kolb and Tykvová, 2016).

Finally, Chapter 5 concludes, gives a brief summary and outlines avenues for further fruitful research.

## Chapter 2

# Do investment banks create value for their clients?

## Empirical evidence from European acquisitions

### 2.1 Introduction

Most firms are not frequent bidders, and many managers may lack the skills that are necessary to initiate and execute value-creating acquisitions. Moreover, executives who decide to acquire another firm are under high pressure, as this choice is important for the future of the firm, the shareholders and for the executive's career. In a successful acquisition synergies might be created, whereas in an unsuccessful acquisition, the firm is lead into financial, operative and strategic difficulties, which might eventually lead to bankruptcy (Bao and Edmans, 2011).

Little acquisition know-how might be one of the reasons why many managers rely on intermediaries that are experienced and skilled in executing acquisitions; namely, investment banks that act as financial advisors. In terms of value, advisors are involved in approximately 75% of all European acquisitions between 2000 and 2015, which equals a fee income of about US\$ 85 billion because fees are approximately 1% of the acquisition value<sup>1</sup> (see, e.g., McLaughlin, 1990; McLaughlin, 1992). Servaes and Zenner (1996) argue that advisors provide valuable services to their clients because they reduce transaction costs, information asymmetries and agency costs. Advisors might be able to screen the market, identify promising targets, negotiate favorable terms at a lower cost and more efficiently than bidders that execute an acquisition without an advisor (in-house acquisition). Furthermore, as repeated players in the acquisition market, advisors might

---

<sup>1</sup> Source: SDC Platinum

be able to build up and maintain their reputation by offering consistently high-quality services (Golubov et al., 2012). In opposition to this theoretical proposition, there is an ongoing debate in the empirical literature on the question of whether advisors help bidders to create shareholder value and whether they are worth their money. While the bulk of the literature documents an insignificant or even negative association between bidder value creation and either advisor involvement (Servaes and Zenner, 1996; Wang and Whyte, 2010) or advisor quality (Bowers and Miller, 1990; Michel et al., 1991; Rau, 2000; Hunter and Jagtiani, 2003; Ismail, 2010), only two studies document a positive relation between bidder value creation and advisor quality (Kale et al., 2003; Golubov et al., 2012).

Motivated by the conflicting empirical evidence, I investigate the role that bidder advisors play in Europe. Europe seems to be an interesting testing ground for this question for two main reasons. First, I analyze whether the value that advisors offer to their clients differs between the UK<sup>2</sup> and CE. Whereas US data require that corporate governance and regulatory characteristics remain relatively fixed, the European market provides the opportunity to study how advisors are related to bidder value creation in different regimes. The UK is characterized by a market-based system that relies on case law and focuses on the effective protection of shareholder rights. In CE, the blockholder-based system, which is based on codified law and focuses on the protection of stakeholders such as creditors and employees, is prevalent (Martynova and Renneboog, 2011b). This leads, *inter alia*, to better developed stock markets, to better protection of minority and majority shareholders, to higher disclosure rules, to higher market and regulatory transparency and to higher competition for potential targets in the UK compared to CE (Goergen and Renneboog, 2004). Indeed, Alexandridis et al. (2010) show that, due to intense competition for targets in the UK, bidders have to pay higher premiums, which makes it challenging for them to create shareholder value.

Second, the implementation of a major regulatory reform in Europe in 2006 – namely, the ETD – offers the opportunity to assess whether advisors matter for bidder value creation using a DiD research design. The ETD was implemented to harmonize European acquisition regulation,

---

<sup>2</sup> UK includes Great Britain and Ireland.

to foster consolidation among European firms (Clarke, 2009) and to increase acquisition bid efficiency (McCahery and Renneboog, 2003). The main goal was to stimulate acquisition activity that creates shareholder value. In contrast to regulators' aims, the ETD is criticized for being vague and discretionary (Humphery-Jenner, 2012). Because EU member states can decide to opt-out during the implementation process and to maintain current national practices (Moschier and Campa, 2009), harmonization of acquisition regulation did not take place. The lack of harmonization and the vague character of the regulatory framework increase legal uncertainty. Due to the mandatory bid rule and the minimum price rule, the ETD makes it more difficult, costly and time-consuming to acquire European targets (Humphery-Jenner, 2012). It seems that acquisition complexity increases as a result of the ETD. Empirical evidence suggests that the ETD decreases shareholder wealth after its implementation (Humphery-Jenner, 2012; Drobetz and Momtaz, 2016). Because theory predicts that advisors reduce information asymmetries, transaction costs and agency costs (Servaes and Zenner, 1996), they might be particularly valuable to bidders that are highly affected by the consequences of the ETD in the period after its implementation.

In my sample of 2969 inter-European acquisitions from 2001 to the third quarter of 2015, bidders create shareholder value on average, as the mean 3-day bidder CAR is significantly different from zero at the 1% level. It seems that the corporate governance and regulatory characteristics of the bidder country explain differences in shareholder value creation between UK and CE bidders. Without controlling for these characteristics, CE bidders appear to create more value in domestic and in cross-border acquisitions than UK bidders.

The results suggest that advisors create shareholder value for their clients when the bidder and the target are both located in the UK but not when either party is located in CE. The results are economically nontrivial, as bidders using advisors appear to create 1.14 percentage points higher CARs in UK-UK acquisitions than bidders with advisors in CE-CE acquisitions. The difference translates into a higher bidder CAR of US\$ 25.4 million for a mean-sized bidder. The results seem to be robust towards different variable definitions and sample specifications and towards potential endogeneity and causation concerns. To address issues related to the

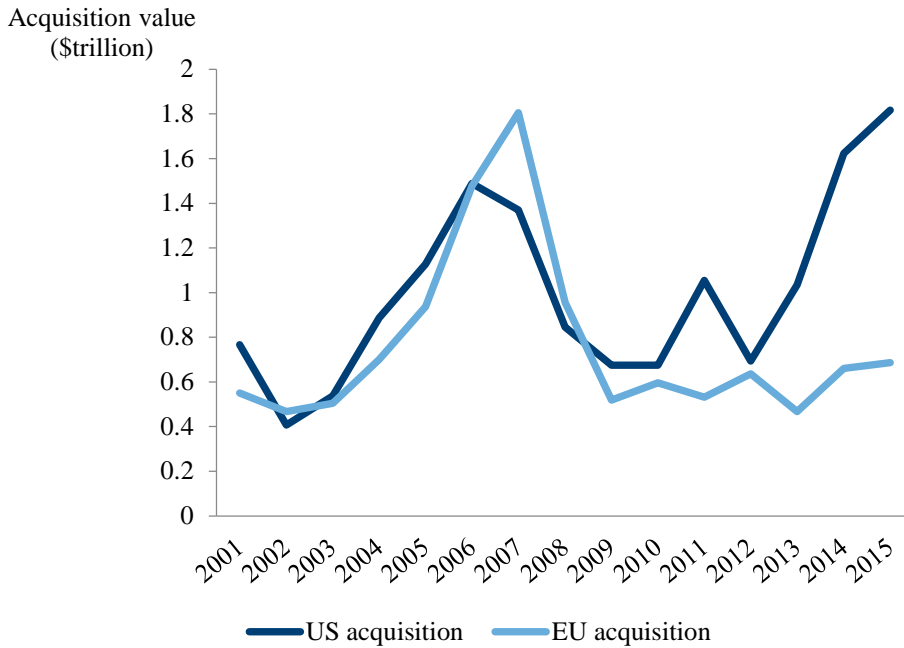
endogenous choice to use an advisor in an acquisition, I use a propensity score matching (PSM) approach.

Further results support the conjecture that the ETD decreases shareholder value after its implementation. For the DiD analysis, I divide EU member states into two different samples. The treated sample includes EU member states that made significant changes to their acquisition regulation in response to the ETD. The control sample includes EU member states that opted-out of the most important statutes and therefore did not make any significant changes. In line with my expectations, the results suggest that treated bidders that use an advisor do not experience losses in shareholder value, whereas treated bidders that do not use an advisor do experience significant losses in comparison to the control sample. A mean-sized bidder seems to realize US\$ 26.50 million lower shareholder value due to the ETD, in comparison to a control sample. As the introduction of the ETD is an exogenous shock to the European acquisition market, the DiD research design in combination with a PSM should alleviate potential endogeneity and selection bias concerns.

I contribute to the literature in several ways. Empirical evidence on European acquisition activity is limited, despite a massive increase in this activity during recent years. I extend the limited amount of research that examines the European market after the end of the 5<sup>th</sup> takeover wave. To my knowledge, no other studies – besides those of Humphery-Jenner (2012), Dissanaïke et al. (2016) and Drobetz and Momtaz (2016) – examine the European acquisition market after the 5<sup>th</sup> takeover wave. Over the last 15 years, the European market has become equally important than the US market in terms of volume. In Figure 2.1, I depict yearly volumes of US and European acquisitions. Aggregated acquisition activity in the US between 2001 and 2015, with US\$ 15.01 trillion, is higher than that in Europe, with US\$ 12.52 trillion. However, compared to the 1980s and 1990s, the European acquisition volume has come close to US levels. In 2007, acquisition activity reached even higher levels in Europe than in the US.



Figure 2.1: European and US acquisition volume



This figure presents the volume of acquisitions announced in Europe and the US during 2001–2015. The data come from SDC Platinum.

This is the first study to examine the question of whether advisors help bidders to create shareholder value in European acquisitions. Whether advisors matter for bidder value creation in acquisitions has been analyzed only for the US market to date (Bowers and Miller, 1990; Michel et al., 1991; Servaes and Zenner, 1996; Rau, 2000; Hunter and Jagtiani, 2003; Kale et al., 2003; Ismail, 2010; Golubov et al., 2012). I use the fact that Europe is divided into different corporate governance and regulatory regimes in order to learn more about the role that advisors play in acquisitions. All the existing studies, with the exception of Servaes and Zenner (1996) and Wang and Whyte (2010), look at advisor quality instead of advisor involvement. Research that looks at advisor quality has to be viewed with the restriction that it is unclear how to measure advisor quality appropriately (Bao and Edmans, 2011; Sibilkov and McConnell, 2014). Therefore, I consider only the choice to use an advisor or to execute an acquisition without an advisor.

Finally, focusing on the time period between 2001 and the third quarter of 2015, I include the effects of a recent major European regulation. The ETD has been discussed since the 1980s, but due to large differences in national regulations across EU member states, agreement on a final statute was not reached until April 2004 (Clarke, 2009). The implementation deadline was set to May 2006. In the law literature, an extensive discussion on the pros and cons of the ETD takes place (Goergen et al., 2005; Clarke, 2009; Davies et al., 2010; McCahery and Vermeulen, 2010) but empirical evidence on the question of whether and how this reform creates shareholder value has received only minor attention (Humphery-Jenner, 2012; Dissanaïke et al., 2016; Drobetz and Momtaz, 2016). With this article, I intend to add to this literature.

This article proceeds in the following way. Chapter 2.2 develops the theoretical basis for the empirical analysis and reviews the literature. Chapter 2.3 describes the data screening procedure, the sample and gives summary statistics. Chapter 2.4 presents the results on the role that advisors play in European acquisitions by comparing the UK with CE and executing a DiD analysis. In Chapter 2.5, I discuss the results, and Chapter 2.6 concludes.

## **2.2 The role of advisors, Europe and the European takeover directive**

### **2.2.1 Advisors**

According to Servaes and Zenner (1996), advisors play an important role in acquisitions, and their services can be split into three main tasks. First, advisors reduce transaction costs, as they may be able to select and value targets and structure acquisitions at a lower cost than bidders without advisors. If acquisitions are of a complicated nature, such as large, cross-border, hostile and stock acquisitions, one would expect that bidders rely on the services of an advisor. Second, advisors alleviate information asymmetries between bidders and targets. Servaes and Zenner (1996) argue that bidders that acquire diversified targets acquire only assets and not the entire firm or are not the only bidder for a specific target are more likely to use an advisor. Third, advisors mitigate agency conflicts between corporate insiders (managers) and outsiders (shareholders). Due to managers' behavioral biases, such as empire building (Jensen, 1986; Lang

et al., 1991), entrenchment (Shleifer and Vishny, 1989) or hubris (Roll, 1986), shareholders might not trust the decisions of the management team. In these situations, managers would rather increase their own private benefits instead of maximizing shareholder wealth. Managers may profit from a third party that certifies the value of an acquisition. Since advisors are repeated players in the acquisition market, they should be able to build up and protect their reputation over time by consistently offering high-quality services (Bao and Edmans, 2011; Golubov et al., 2012). Advisors might fulfill a signaling role and provide third-party certification (see, e.g., Allen et al., 2004) if they accept acquisitions that create value and reject acquisitions that are motivated by dubious motives. Thomas (1995) shows that as agency conflicts increase, the need for certification through advisors in acquisitions increases.

However, empirical literature that analyzes the relation between advisor involvement and shareholder value creation is scarce, and the results of existing research are counterintuitive. Servaes and Zenner (1996) do not find evidence that the involvement of advisors increases shareholder value in US acquisitions. Wang and Whyte (2010) even find a negative relation between advisor involvement and bidder value creation when managerial rights are relatively strong. Another related stream of literature considers not only the involvement of advisors in acquisitions but also looks at the quality of the advisor, distinguishing between high-quality and lower-quality advisors. Earlier studies measure quality according to the prestige of the advisor name (Bowers and Miller, 1990; Michel et al., 1991; Servaes and Zenner, 1996), and in more recent studies, authors use measures that are related to advisor market shares to assess their quality (Rau, 2000; Hunter and Jagtiani, 2003; Kale et al., 2003; Ismail, 2010; Golubov et al., 2012).

It seems that empirical evidence on the relation between bidder CARs and advisor quality is mixed at best. Two studies suggest that high-quality advisors offer more value to their clients than lower-quality advisors. Kale et al. (2003) argue that high-quality advisors are associated with higher bidder CARs in tender offers than are lower-quality advisors. Golubov et al. (2012) indicate that high-quality advisors help their clients to create more shareholder value and higher synergies than lower-quality advisors in public acquisitions. However, many studies document that there is either a negative (Michel et al., 1991; Rau, 2000; Hunter and Jagtiani, 2003; Ismail, 2010) or no association (Bowers and Miller, 1990; Servaes and Zenner, 1996) between proxies

for advisor market shares or advisor prestige and bidder value creation. A challenge in this literature stream is to measure advisor quality correctly, which might also explain the mixed findings, as most studies rely on some measure of advisor market shares. The results of Bao and Edmans (2011) suggest that some advisors might consistently outperform others, but market share seems to be a poor measure of advisor quality.

Hence, in this article, I focus only on whether the bidder hires any advisor for an acquisition or executes the acquisition in-house without using an advisor.

### **2.2.2 Corporate governance and regulatory characteristics**

A broad stream of literature suggests not only that bidder value creation is influenced by deal and bidder characteristics but also that corporate governance and regulatory characteristics play a role (Goergen and Renneboog, 2004; Rossi and Volpin, 2004; Alexandridis et al., 2010; Martynova and Renneboog, 2011b). These characteristics differ between the UK and CE.

La Porta et al. (1998) report that, for well-functioning and well-developed financial markets, strong legal investor protection is crucial. The UK market is characterized by high disclosure and a well-developed and liquid equity market (La Porta et al., 1998; Martynova and Renneboog, 2011b), as well as has a high degree of shareholder protection compared to CE (La Porta et al., 1997). Not only majority shareholders but also minority shareholders are better protected (Martynova and Renneboog, 2008). The ownership structure of the typical UK firm is more dispersed than of the typical CE firm, where ownership and control are more concentrated (Faccio and Lang, 2002; Goergen and Renneboog, 2004). Indeed, Faccio and Masulis (2005) show that 63% of CE public firms have one large shareholder that controls more than 20% of the votes. The UK seems to have a higher transparency of legal regulations (Goergen and Renneboog, 2004; Martynova and Renneboog, 2011a) and higher accounting standards than CE. Rossi and Volpin (2004) argue that an investor-friendly legal environment featuring such aspects as stronger shareholder protection and high accounting standards, which increase disclosure and make it easier to identify targets, lead to high M&A volumes.

### 2.2.3 The role of advisors in the UK and CE

Alexandridis et al. (2010) argue that, in the UK, where acquisition volume is high, bidders must bid aggressively and pay high premiums. Due to the competition between bidders for targets and potential overpayment, bidder value creation is limited. Identifying synergetic targets in such an environment requires good screening and valuation skills. Moreover, Goergen et al. (2005) argue that, due to stricter UK acquisition regulation, target shareholders are better protected from expropriation by the bidder and are able to extract higher premiums. In order to negotiate favorable acquisition terms for the bidder, negotiation power is crucial in such an environment. Empirical results from Goergen and Renneboog (2004), Rossi and Volpin (2004) and Martynova and Renneboog (2011b) indicate that bidders indeed have to pay higher premiums when they acquire targets located in the UK than when they acquire targets in CE and that UK bidders realize lower CARs than CE bidders. Since theory and some empirical evidence predict that advisors are good at identifying, valuing and negotiating favorable acquisition terms (Servaes and Zenner, 1996; Golubov et al., 2012), they might be more valuable in the UK. Alternatively, advisors might be more valuable in CE, as synergetic targets in CE are difficult to identify and value due to lower transparency, lower accounting standards and lower disclosure rules. Moreover, Bebchuk and Roe (1999) show that acquisitions in regimes with concentrated ownership, such as those in CE, are less successful because negotiations with blockholders are required. Blockholders might demand high premiums in order to be compensated for their loss of private benefits. Thus, advisors might provide valuable support in these negotiations.

According to Servaes and Zenner (1996), advisors are expected to reduce asymmetric information costs. Forte et al. (2010) examine the probability of European targets to hire an advisor and find that complexity plays a role. Since information asymmetries might be particularly high in acquisitions across different regimes, advisors could be more valuable in cross-regime acquisitions than in acquisitions within one regime. Alternatively, asymmetric information might be more costly when the (uninformed) bidder and the target operate both in a competitive regime due to (too) high premiums that have to be paid in order to successfully acquire a target. Therefore, advisors could create more value in acquisitions by reducing asymmetric information costs involving both parties from the UK instead of one UK and one CE party.

Finally, Servaes and Zenner (1996) argue that advisors reduce agency costs. However, it is unclear in which regime advisors are more valuable to bidders. On one hand, they might create more value in the UK because agency costs are especially expensive in a competitive environment in which (empire building) bidders tend to overpay. However, the involvement of advisors could also be more valuable in CE, as shareholders are less protected and are in need of a third party that certifies the value of an acquisition.

Overall, whether advisors are more valuable to bidders in acquisitions in the UK, in CE or across both regimes must be determined by the empirical analysis.

#### **2.2.4 European Takeover Directive**

In Europe, different national systems of acquisition regulation hinder the development of a common acquisition market, and policy makers have felt the need to harmonize legislation within the EU member states (Moschier and Campa, 2009) to stimulate acquisition activity that increases shareholder value.

The ETD, also known as “directive 2004/25/EC”, was introduced on April 21, 2004, and EU member states had until May 20, 2006, to implement it. In fact, EU member states waited until the deadline to implement the new rules.<sup>3</sup> By introducing minimum standards for acquisition regulation, the ETD intends to establish a consistent regulatory framework within the EU member states. The ETD applies for all (public target) firms that are incorporated in a member state and/or that securities are traded on the stock exchange of a member state. The most important concepts of the ETD are as follows (see, e.g., European parliament and the council, 2006; Slaughter and May, 2006; Gleiss Lutz, 2014):

- (a) Minority shareholders should be protected and all shareholders should be treated equally during a bid. To prevent creeping acquisitions, the bidder is required to make a bid for all outstanding shares if its share ownership exceeds a certain threshold (mandatory

---

<sup>3</sup> <http://eur-lex.europa.eu/legal-content/en/NIM/?uri=CELEX:32004L0025>

bid rule). Moreover, based on the minimum price rule, the bidder has to offer minority shareholders an “equitable price” for their shares (the price has to be equal to the highest price that the bidder paid for target shares over a six- to twelve-month period).

(b) Target shareholders should have enough information about the bid and sufficient time after the bid to make an informed decision.

(c) The target board should publicly react to the bid and illustrate its opinion about it and its consequences for employment and the location of the target.

(d) The target board shall act in the interest of all shareholders and the company as a whole.

(e) The target board shall be neutral and should allow shareholders to decide on a bid.

(f) The bid must not create false markets in the securities for any of the involved parties, i.e., artificial increases or decreases in share prices.

(g) Before making a bid, the bidder must make sure that it is able to pay any cash considerations and that it has enough financial means to implement the acquisition.

(h) The target should not be distracted from its day-to-day operations due to the bid for longer than reasonable.

(i) When the bidder reaches a certain ownership threshold, i.e., between 90% and 95%, it is allowed to squeeze-out minority shareholders.

Each bid has to be supervised by a competent authority that is appointed by each EU member state individually and that has considerable scope for decision making. Moreover, the minimum standards are undermined by the opt-out and national derogation clauses. EU member states are given the possibility to opt-out of certain provisions and are granted flexibility when implementing the minimum requirements to maintain the current national practices (Gatti, 2005; Slaughter and May, 2006; Moschier and Campa, 2009).

Since its introduction, the ETD has been subject to criticism by academics and practitioners. For a detailed and extensive overview, see Gatti (2005), Clarke (2009), Moschier and Campa (2009), Davies et al. (2010) and McCahery and Vermeulen (2010). The main points

include the following: First, because there are different interest groups among EU member states, political compromises had to be made, which led to a dilution of the original intention of the ETD (McCahery and Vermeulen, 2010). Second, many expressions are problematic because they are too vaguely defined and are discretionary (Humphery-Jenner, 2012). For example, the concept of “acting in concert” determines whether several parties are associated in regard to calculating the control threshold for the mandatory bid rule (see (a) above). However, the definition of “acting in concert” is not harmonized across different EU member states (European commission, 2012). Third, because of the opt-out clause, regulators missed the opportunity to establish a level playing field for European acquisitions (Gleiss Lutz, 2014) and failed to reach harmonization across EU member states. This might lead to increased acquisition complexity and uncertainty regarding the rules that apply, especially when targets underlie different jurisdictions because they are incorporated and listed in different countries (Slaughter and May, 2006). Fourth, the decision power of the supervisory authority on the actual terms of the bid and a too great ownership threshold for squeeze-out increase uncertainty regarding the acquisition process and outcome. The supervisory authority has discretion over how to interpret takeover rules on a case-to-case basis. Additionally, published documents related to the bid underlie clearance by the supervisory authority (European parliament and the council, 2006; Law360, 2013). Moreover, the ownership threshold to squeeze-out minority shareholders is not harmonized across EU member states and might be too high in some EU member states for the bidder to achieve full control over the target. Fifth, the mandatory bid rule provides targets with an effective defense against bidders that do not have the intention to acquire full control of the target, and the rule might therefore hinder bids (Marccus Partners and Centre for European Policy Studies, 2012). The mandatory bid rule in combination with the minimum price rule might make it more costly and time-consuming to acquire a European target (see (a) above).

Overall, the outlined criticism can be interpreted in such a way that argues that the ETD increases legal uncertainty and acquisition complexity and makes it more difficult, costly and time-consuming to acquire targets in EU member states. Existing evidence indeed suggests that the ETD negatively influences bidder value creation (see, e.g., Humphery-Jenner, 2012; Drobetz and Momtaz, 2016), instead of increasing shareholder wealth.



Due to the opt-out clause, some EU member states are more strongly affected by the ETD than others (Marccus Partners and Centre for European Policy Studies, 2012). Based on the location of the target, this circumstance can be used for the DiD analysis to classify acquisitions into a treated sample and a control sample. Bidders that acquire targets located in an EU member state that is highly affected by the ETD might profit from advisors.

## 2.3 Sample and summary statistics

From SDC Platinum, I gather inter-European acquisitions announced between January 1<sup>st</sup> 2001, and October 31<sup>st</sup> 2015. Similar to Martynova and Renneboog (2011b), I include all 28 EU member countries, Iceland, Norway and Switzerland. Bidders have to be publicly listed at a European stock exchange, and targets may have a public, private or subsidiary status. I consider completed and withdrawn acquisitions with an acquisition value larger than US\$ 1 million in which a change of control takes place. I exclude bankruptcy acquisitions, divestitures, going private transactions, leveraged buyouts, management buyouts, liquidations, repurchases, restructuring transactions, reverse takeovers and privatizations. These screening criteria are common in this stream of literature (see, e.g., Masulis et al., 2007; Golubov et al., 2012; Harford et al., 2012; Golubov et al., 2015). I complement my sample with bidder characteristics from Compustat Global and retrieve stock prices and indices, which are adjusted for stock splits and dividends, from Datastream. Further, I drop all acquisitions that involve financial institutions (SIC codes between 6000 and 6999). I do this because financial institutions have different characteristics than corporate firms.<sup>4</sup> I require that the acquisition value exceeds 1% of the bidder market capitalization 11 days prior to the announcement and drop all acquisitions in which the same bidder acquires several firms on the same day (see, e.g., Golubov et al., 2015). This is important because otherwise, it is difficult to isolate the bidder returns for a specific acquisition (Fuller et al., 2002). After having dropped all acquisitions for which deal or bidder characteristics

---

<sup>4</sup> In the robustness tests in Table 2.6, I show that the exclusion or inclusion of financial institutions does not matter. The results are similar in both cases.

are not available, I end up with a final sample of 2969 acquisitions. The (country-level) corporate governance characteristics come from Martynova and Renneboog (2011a) and are based on the seminal research of La Porta et al. (1998) but are more broadly defined and updated. These indices vary over time and are adjusted in the years 2000 and 2005. Martynova and Renneboog (2011a) construct these indices with the help of 150 lawyers from over 32 European countries. These indices reflect the quality of a country's corporate governance regulation and quantify the regulation mitigating the conflicts of interest between (1) management and shareholders, (2) majority and minority shareholders and (3) creditors and shareholders. To be consistent with prior research, I scale the indices within the [1;10] interval (see, e.g., Martynova and Renneboog, 2008). Since the enforcement of regulation also depends on the power of courts, I use the rule of law index from the World Bank (WB), which is rescaled within the [0;1] interval, and multiply it with each (country-level) corporate governance index. Further (country-level) corporate governance and country characteristics, such as anti-corruption, financial development, competition, GDP growth, and GNI per capita, come from the International Monetary Fund (IMF) and the World Bank. These indices vary on a yearly basis. Information on the involvement of advisors in an acquisition comes from SDC Platinum.

Table 2.1 illustrates the sample composition. Overall, the sample includes bidders and targets from 28 and 29 different countries, respectively. Most of the bidders are located in the UK (1741), followed by Sweden (240), France (161) and Norway (119). Similarly, most targets are from the UK (1604), Sweden (194), Germany (178) and France (164). UK bidders (targets) make up 61% (56%) and CE bidders 39% (44%) of the sample. Advisors are used by 30% of all UK bidders and 34% of all CE bidders. In terms of acquisition volume, 60% of UK bidders and 76% of CE bidders hire advisors for their acquisitions.

Table 2.1: Sample composition

Country	Bidder		Target		Bidder advisor		
	N	%	N	%	N	% (number)	% (value)
United Kingdom	1741	58.6	1604	54.0	533	30.6	81.2
Austria	13	0.4	11	0.4	4	30.8	65.8
Belgium	32	1.1	34	1.1	12	37.5	94.6
Bulgaria			1	0.0			
Croatia	1	0.0	3	0.1	1	100.0	100.0
Cyprus	2	0.1	4	0.1			
Czech Republic			10	0.3			
Denmark	40	1.3	58	2.0	16	40.0	98.4
Estonia	1	0.0		0.0			
Finland	85	2.9	79	2.7	23	27.1	81.1
France	161	5.4	164	5.5	73	45.3	91.0
Germany	104	3.5	178	6.0	34	32.7	87.1
Greece	14	0.5	16	0.5	3	21.4	62.1
Hungary	1	0.0	4	0.1	1	100.0	100.0
Iceland	7	0.2	2	0.1	4	57.1	87.9
Italy	104	3.5	109	3.7	36	34.6	86.5
Latvia	1	0.0	6	0.2			
Lithuania	4	0.1	6	0.2	2	50.0	45.1
Luxembourg	8	0.3	5	0.2	1	12.5	0.1
Netherlands	64	2.2	95	3.2	33	51.6	91.4
Norway	119	4.0	119	4.0	30	25.2	93.1
Poland	51	1.7	53	1.8	16	31.4	45.5
Portugal	13	0.4	19	0.6	4	30.8	96.9
Republic of Ireland	63	2.1	50	1.7	13	20.6	39.7
Romania	1	0.0	4	0.1			
Slovak Republic	1	0.0	3	0.1			
Slovenia	4	0.1	3	0.1	1	25.0	6.6
Spain	66	2.2	91	3.1	29	43.9	94.2
Sweden	240	8.1	194	6.5	57	23.8	78.5
Switzerland	28	0.9	44	1.5	11	39.3	94.7
UK and Ireland (UK)	1804	60.8	1654	55.7	546	30.3	60.4
Continental Europe (CE)	1165	39.2	1315	44.3	391	33.6	76.2
Total	2969		2969		937	31.6	74.8

This table depicts absolute and relative numbers of bidders and targets by country. It shows the share of acquisitions in which a bidder advisor is involved in terms of number and value by country.

Table 2.2 presents sample summary statistics (medians and means) for the full sample, UK bidders and CE bidders. I use t-tests to compare differences in means between UK and CE bidders for advisor, corporate governance, country, regulation, deal and bidder characteristics, which are all defined in Table 2.10. The variable *advisor* indicates whether a bidder uses the services of an advisor during an acquisition. The dummy takes the value of 1 if SDC Platinum reports the involvement of at least one advisor. One might be concerned that the involvement of advisors could be wrongly reported and missed by the database provider. Discussions with representatives of Thomson Reuters make me, however, confident that it is in the interest of not only Thomson Reuters but also the advisor to report correctly. Advisors want to make sure that they get credit for the acquisitions they advise and that the league tables are constructed in a way that correctly reflects their involvement. League tables are advisor rankings based on market shares. Additionally, Derrien and Dessaint (2017) report that advisors follow the construction of league tables closely and on a regular basis. It seems that bidders from CE are more likely to use advisors (34%) than bidders from the UK (30%). The difference is significant at the 10% level.

Corporate governance characteristics appear to vary between CE and UK bidders, as differences in means for all of these variables are significant at the 1% level and support the conjecture that the UK market is better developed than the CE market. Shareholders and minority shareholders seem to be better protected in the UK than in CE. The mean protection indices equal 7.02 and 6.08 for the UK and only 3.81 and 4.30 for CE, respectively. Additionally, creditors with a mean index value of 3.13 appear to be better protected in the UK than in CE, with an index value of 2.88. The quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence, seem to be higher in the UK than in CE, as the mean rule of law index equals 1.68 and 1.53, respectively. In terms of country characteristics, it appears that the UK has better control of corruption than CE. The financial development variable explicitly proxies for the development of financial markets and financial institutions in a country (Svirydzenka, 2016). The UK market seems to be significantly better developed than the CE market. The competition variable indicates that, in the UK, the competition for targets is greater than in CE. The difference in means is significant at the 1% level. It appears that the mean GDP growth in the UK is 2.21% and that of CE is only 1.84%. The mean GNI per capita in the full

sample equals US\$ 10.57 thousand, and there seem to be no significant differences between both regimes. In terms of regulation, 59% (53%) of all acquisitions are executed in CE (the UK) after the effective date of the ETD.

The corporate finance literature usually evaluates the value creation of acquisitions from a shareholder perspective by measuring abnormal returns during the acquisition announcement (Martynova and Renneboog, 2011b). I rely on the standard event study framework and use the market model to calculate CARs using an event window of 3 days (Brown and Warner, 1985; MacKinlay, 1997). In line with Alexandridis et al. (2010), I apply the corresponding country value-weighted market index return from Datastream. If this market index is not available, I use the S&P 350 Europe instead. Positive 3-day CARs with a mean of 1.50% suggest that European acquisitions create bidder value on average. These CARs are significantly different from zero at the 1% level. This is supported by existing literature (see, e.g., Goergen and Renneboog, 2004; Martynova and Renneboog, 2011b; Humphery-Jenner, 2012; Drobetz and Momtaz, 2016). It seems that, since the dot.com bubble, returns to European bidder shareholders increased because studies that focus on the period prior to 2001 report generally lower but still positive CARs (see, e.g., Campa and Hernando, 2004; Goergen and Renneboog, 2004; Martynova and Renneboog, 2011b). With a mean 3-day CAR of 1.76%, CE bidders seem to create more shareholder value than UK bidders, with a mean CAR of 1.33%. However, the difference is not significant. Eighty-two percent of UK bidders execute domestic rather than cross-border acquisitions. CE bidders acquire a target within their country in only 55% of all cases. This difference is significant at the 1% level. In the UK, 98% of all acquisitions are of a friendly nature and are successful, whereas in CE, 95% of all acquisitions are of a friendly nature and successful. Means are significantly different at the 1% level. UK (CE) bidders pay for 28% (24%) of all acquisitions in cash only, 5% (12%) of all acquisitions in stock only and 34% (26%) of all acquisitions in stock and other means of payment. Differences in means are significant at least at the 5% level. Twelve percent of all acquisition targets in the sample are public, and CE bidders acquire more public targets and execute more tender offers than UK bidders. The average acquisition value equals US\$ 243.92 million, where CE bidders acquire larger firms (US\$ 492.01 million) than UK bidders (US\$ 83.71

million). The difference is significant at the 1% level. There are no significant differences regarding both focused vs. diversifying acquisitions and relative acquisition value.

With a mean size of US\$ 4819.97 million, the average CE bidder is significantly larger than the average UK bidder, with a mean size of US\$ 551.93 million. Compared to CE bidders, UK bidders seem to have a significantly lower sigma, which tends to be used as a proxy for information asymmetry (Dierkens, 1991). With a book-to-market ratio of 3.00, CE bidders seem to be lower valued than UK bidders, with a book-to-market ratio of 0.88. The difference in means is significant at the 1% level. It appears that CE bidders are higher-levered than UK bidders. In the full sample, the mean leverage equals 19.89%, and the average leverage of UK bidders and CE bidders equals 18.37% and 22.23%, respectively. The difference in means is significant at the 1% level. In order to control for managerial empire building behavior (see, e.g., Jensen, 1986), I include the variable free cash-flow-to-assets. However, the difference in means between UK and CE bidders is not significant, which is similar for the runup variable.

The results in Table 2.2 indicate that the characteristics of UK bidders are different than those of CE bidders, and thus, the univariate results should be noted with care. Evidence suggests that size, complexity and other deal and bidder characteristics influence shareholder value creation (Fuller et al., 2002; Moeller et al., 2004; Masulis et al., 2007); therefore, it is important to control for these characteristics in multivariate regressions.

Table 2.2: Summary statistics

Variable	Unit	Full sample (1)			UK (2)			CE (3)			t-test (2)-(3)
		median	mean	N	median	mean	N	median	mean	N	t-value
Advisor characteristics											
Advisor	dummy	0.00	0.32	2969	0.00	0.30	1804	0.00	0.34	1165	1.88*
Corporate governance characteristics											
Shareholder rights	ratio	6.96	5.76	2969	6.96	7.02	1804	3.72	3.81	1165	-87.80***
Minority shareholder rights	ratio	5.98	5.38	2969	5.98	6.08	1804	4.15	4.30	1165	-59.31***
Creditor rights	ratio	3.08	3.03	2969	3.08	3.13	1804	1.90	2.88	1165	-4.68***
Rule of law	ratio	1.67	1.62	2969	1.66	1.68	1804	1.76	1.53	1165	-10.21***
Country characteristics											
Anti-corruption	ratio	0.76	0.75	2969	0.76	0.77	1804	0.81	0.72	1165	-7.97***
Financial development	ratio	0.89	0.85	2969	0.91	0.91	1804	0.76	0.75	1165	-52.63***
Competition	US\$ million(ln)	5.00	5.06	2969	5.78	5.53	1804	4.22	4.33	1165	-14.82***
GDP growth	%	2.59	2.07	2969	2.59	2.21	1804	2.16	1.84	1165	-4.88***
GNI per capita	US\$ thousand	10.63	10.57	2969	10.63	10.56	1804	10.67	10.57	1165	0.62
Regulation characteristics											
ETD	dummy	1.00	0.56	2969	1.00	0.53	1804	1.00	0.59	1165	3.42***
Deal characteristics											
CAR country [-1;+1]	%	0.75	1.50	2969	0.64	1.33	1804	0.98	1.76	1165	1.61
Domestic	dummy	1.00	0.72	2969	1.00	0.82	1804	1.00	0.55	1165	-15.51***
Friendly acquisition	dummy	1.00	0.97	2969	1.00	0.98	1804	1.00	0.95	1165	-3.16***
Completed acquisition	dummy	1.00	0.97	2969	1.00	0.98	1804	1.00	0.95	1165	-4.43***
Cash only acquisition	dummy	0.00	0.27	2969	0.00	0.28	1804	0.00	0.24	1165	-2.58**
Stock only acquisition	dummy	0.00	0.08	2969	0.00	0.05	1804	0.00	0.12	1165	6.43***
Partial stock acquisition	dummy	0.00	0.31	2969	0.00	0.34	1804	0.00	0.26	1165	-4.99***
Public status	dummy	0.00	0.12	2969	0.00	0.09	1804	0.00	0.16	1165	5.14***
Tender offer	dummy	0.00	0.08	2969	0.00	0.07	1804	0.00	0.10	1165	2.56**
Focused acquisition	dummy	1.00	0.59	2969	1.00	0.58	1804	1.00	0.60	1165	0.99

Table 2.2 (continued): Summary statistics

Acquisition value	US\$ million	13.48	243.92	2969	11.97	83.71	1804	16.86	492.01	1165	2.93***
Relative acquisition value	ratio	0.09	0.37	2969	0.08	0.38	1804	0.09	0.34	1165	-0.49
<b>Bidder characteristics</b>											
Size	US\$ million	201.15	2226.66	2969	113.78	551.93	1804	489.10	4819.97	1165	6.00***
Runup	%	0.94	4.89	2969	1.60	5.70	1804	0.27	3.64	1165	-1.22
Sigma	%	2.09	2.52	2969	2.04	2.40	1804	2.18	2.71	1165	4.45***
Book-to-market	ratio	0.42	1.71	2969	0.34	0.88	1804	0.70	3.00	1165	5.54***
Leverage	%	17.70	19.89	2969	16.46	18.37	1804	20.07	22.23	1165	5.49***
Free cash-flow-to-assets	%	2.49	-5.66	2969	2.64	-8.30	1804	2.27	-1.58	1165	0.94

This table presents sample summary statistics and the results of the t-tests I run to compare advisor, corporate governance, country, regulation, deal and bidder characteristics between UK and CE bidders. All variables are defined in Table 2.10. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.



## 2.4 Results

### 2.4.1 Bidder value creation in the UK and CE

Based on the discussion in Chapter 2.2, I expect that bidder value creation differs between the UK and CE. In Table 2.3, I regress 3-day bidder CARs on the UK bidder variable (a dummy that equals 1 if the bidder is incorporated in the UK and 0 otherwise) and further corporate governance, country, regulation, deal and bidder characteristics, from which I expect that they influence bidder value creation. Because I am interested in the value creation of the bidder, corporate governance and country characteristics are included for the country in which the bidder is incorporated. An exception is the competition variable, which reflects the competition for targets in the country in which the target is incorporated. I include year and industry fixed effects (FE) in all specifications and cluster standard errors at the bidder level.

In Specification 1, the coefficient on UK bidder is negative and significant at the 5% level and supports the conjecture that UK bidders realize 0.67 percentage points lower CARs than CE bidders. The coefficient on the ETD variable is significant and negative, which indicates that, after the implementation of the ETD, bidders create less shareholder value than before the implementation.<sup>5</sup> In line with Humphery-Jenner (2012) and Drobetz and Momtaz (2016), the results indicate that the ETD comes at the cost of bidder shareholders. As reported by Conn et al. (2005) and Moeller et al. (2005), domestic acquisitions seem to be associated with higher CARs, which might contribute to the difficulties in realizing expected synergies in cross-border acquisition. The market might discount the CARs at the announcement due to cultural differences (Martynova and Renneboog, 2011b). The coefficient on the interaction term between public and partial stock is negative and significant and indicates that bidders that acquire public targets using stock as payment method realize lower CARs than bidders that acquire subsidiary targets in a partially stock financed acquisition (reference category). This effect is in line with previous

---

<sup>5</sup> The results regarding the ETD in this and subsequent analyses are robust to the choice of a different reference category and the exclusion of two years in the year fixed effects.

findings (Golubov et al., 2015). In contrast, private acquisitions that are partially stock financed seem to be positively related to bidder value creation. In line with Rosen (2006), it seems that runup is negatively related to bidder CARs. Sigma appears to have a positive effect on bidder value creation, which is in line with the findings of Golubov et al. (2015).

In Specifications 2 to 4, I present stepwise regressions in which I include corporate governance indices for shareholder rights, minority shareholder rights and creditor rights separately. None of these variables are significant, but the variables, shareholder rights and minority shareholder rights turn the main variable of interest – UK bidder – insignificant. This suggests that the difference in CARs between UK and CE bidders from Specification 1 is due to the varying levels of shareholder protection in both regimes. Once the different levels of shareholder protection are incorporated into the analysis, the difference in CARs seems to disappear. In Specification 5, I include all corporate governance characteristics at the same time and include further country variables that might explain differences in bidder value creation between the UK and CE (see, e.g., Martynova and Renneboog, 2008; Humphery-Jenner, 2012). The positive and significant coefficient on the anti-corruption variable shows that bidders that are incorporated in countries with better protection against corruption tend to realize more shareholder value. Financial development and competition seem to be unrelated to bidder value creation, and the main result remains similar.

Table 2.3: Bidder location and CARs

Dependent variable	(1)	(2)	(3)	(4)	(5)
	Bidder CAR [-1;+1]				
UK bidder	-0.6669** (0.3091)	-0.5654 (0.5000)	-0.3688 (0.4079)	-0.6612** (0.3090)	-0.1856 (0.5610)
UK target	0.1360 (0.3255)	0.1389 (0.3262)	0.1549 (0.3261)	0.1403 (0.3260)	0.2291 (0.3505)
Shareholder rights		-0.0330 (0.1334)			0.0158 (0.1483)
Minority shareholder rights			-0.1779 (0.1574)		-0.2766 (0.1800)
Creditor rights				-0.0481 (0.1026)	-0.1181 (0.1201)
Anti-corruption					4.1873*** (1.1809)
Financial development					-1.0583 (1.9786)
Competition					-0.0394 (0.0645)
GDP growth	0.0596 (0.0947)	0.0576 (0.0948)	0.0608 (0.0946)	0.0626 (0.0956)	-0.0542 (0.1066)
GNI per capita	0.5077 (0.3932)	0.5464 (0.4234)	0.6748 (0.4169)	0.5987 (0.4324)	-0.4856 (0.6763)
ETD	-1.7554** (0.7003)	-1.7544** (0.7010)	-1.7762** (0.7015)	-1.7514** (0.7013)	-1.7697** (0.7067)
Domestic	0.7836*** (0.2634)	0.7840*** (0.2634)	0.7673*** (0.2638)	0.7788*** (0.2629)	0.7745*** (0.2623)
Public x Cash	-0.2060 (0.6231)	-0.2045 (0.6230)	-0.1749 (0.6212)	-0.2063 (0.6237)	-0.1598 (0.6176)
Public x Part. stock	-3.1259*** (0.6514)	-3.1325*** (0.6536)	-3.1590*** (0.6516)	-3.1349*** (0.6533)	-3.1311*** (0.6532)
Private x Cash	0.1209 (0.2771)	0.1200 (0.2770)	0.1111 (0.2775)	0.1165 (0.2770)	0.1036 (0.2788)
Private x Part. stock	1.0298*** (0.3378)	1.0288*** (0.3376)	1.0211*** (0.3376)	1.0245*** (0.3377)	0.9527*** (0.3381)
Subsidiary x Cash	0.5545 (0.7955)	0.5504 (0.7962)	0.5689 (0.7965)	0.5528 (0.7962)	0.4627 (0.7908)
Focused acquisition	0.0435 (0.2241)	0.0441 (0.2242)	0.0424 (0.2241)	0.0428 (0.2240)	0.0708 (0.2277)
Tender offer	-0.5186 (0.5766)	-0.5186 (0.5766)	-0.5146 (0.5755)	-0.5194 (0.5772)	-0.5374 (0.5753)
Friendly acquisition	-0.0152 (0.6272)	-0.0161 (0.6274)	0.0133 (0.6294)	-0.0210 (0.6265)	-0.1021 (0.6324)
Completed acquisition	1.1639	1.1651	1.1655	1.1560	1.2000*

Table 2.3 (continued): Bidder location and CARs

	(0.7197)	(0.7195)	(0.7196)	(0.7207)	(0.7212)
Relative acquisition value	0.0470	0.0488	0.0516	0.0485	0.0713
	(0.0947)	(0.0951)	(0.0948)	(0.0946)	(0.0966)
Size	-0.0048	-0.0048	-0.0044	-0.0047	-0.0036
	(0.0051)	(0.0052)	(0.0052)	(0.0052)	(0.0054)
Book-to-market	0.0166	0.0160	0.0150	0.0161	0.0084
	(0.0212)	(0.0213)	(0.0212)	(0.0212)	(0.0212)
Leverage	0.7909	0.7875	0.7683	0.7953	0.8795
	(0.7339)	(0.7341)	(0.7309)	(0.7336)	(0.7350)
Runup	-0.9283**	-0.9266**	-0.9230**	-0.9250**	-0.9354**
	(0.3756)	(0.3757)	(0.3758)	(0.3761)	(0.3724)
Sigma	31.7551**	31.6775**	31.6253**	31.6753**	29.5757**
	(12.5387)	(12.5617)	(12.5176)	(12.5308)	(12.4509)
Free cash-flow-to-assets	0.0086	0.0085	0.0084	0.0085	0.0094
	(0.0147)	(0.0147)	(0.0147)	(0.0147)	(0.0150)
Constant	-6.7100	-6.9629	-7.6273*	-7.4704*	2.8053
	(4.1643)	(4.2804)	(4.2124)	(4.4308)	(5.8448)
Year and industry FE	YES	YES	YES	YES	YES
N	2969	2969	2969	2969	2969
R-sq	0.07	0.07	0.07	0.07	0.07

This table presents coefficients from OLS regressions with the dependent variable bidder announcement CAR [-1;+1]. In addition to dummies for the bidder and target location, Specification (1) includes country, regulation, deal, and bidder characteristics. In Specifications (2) to (4), I add corporate governance variables in stepwise regressions. Specification (5) includes all variables. All variables are defined in Table 2.10. Standard errors clustered on the bidder level are provided in parentheses. I winsorize CARs at the 1% level. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively

#### 2.4.2 The role of advisors in UK and CE acquisitions

Table 2.4 presents the first part of the main results. I include the advisor variable (a dummy that equals 1 if at least one bidder advisor is reported and 0 otherwise) in the multivariate regressions to evaluate whether the involvement of advisors matters (Specification 1) and whether the value of bidder advisors differs between the UK and CE (Specifications 2 to 6). Moreover, I construct variables that capture possible combinations between bidders, targets and the different regimes. The dummy UK-UK (CE-CE) equals one for acquisitions that involve targets and bidders from the UK (CE) and zero otherwise. The UK-CE variable captures the combination of a UK target and a CE bidder and the CE-UK variable the combination of a CE target and a UK bidder. The reference category in all the regressions is CE-CE.

In Specification 1, the coefficient on the advisor variable is positive and significant at the 10% level, which indicates that advisors help their clients to create more shareholder value than acquisitions that are executed in-house. This effect is also economically important, as advisor involvement leads to a higher bidder CAR of 0.53 percentage points (given a mean CAR of 1.50%). This stands in contrast to evidence from the US market, where Servaes and Zenner (1996) and Wang and Whyte (2010) find no relation between bidder value creation and the involvement of an advisor. Moreover, it seems that acquisitions involving targets and bidders from the UK create lower CARs than when both the bidder and the target are from CE. Additionally, the CE-UK variable appears to be negatively related to bidder CARs. In the following specifications, I use interaction terms between the advisor dummy and target-bidder-regime combinations in order to better understand the role of advisors and to utilize the differences across European regimes. Specification 2 is the base regression. In Specifications 3 to 5, similar to Table 2.3, I include corporate governance characteristics one-by-one and all the variables together with additional country characteristics in Specification 6. Across all specifications, it seems that advisors are particularly important in acquisitions that involve UK targets and UK bidders, as the coefficient on the interaction term ‘advisor x UK-UK’ is positive and significant. The economic effect is also nontrivial: for a mean-sized bidder, advisors seem to create 1.14 percentage points higher CARs in UK-UK acquisitions than in CE-CE acquisitions, which translates into a higher bidder CAR of US\$ 25.38 million. Moreover, the results suggest that advisors do not matter when one party is based in CE or when both the target and bidder are based in CE. According to the negative and significant signs of the UK-UK and CE-UK variables in Specification 2, acquisitions involving bidders from the UK realize lower CARs than acquisitions that involve bidders from CE, when both do not use advisors. As expected, once I control for differences in corporate governance in Specifications 3 to 6, the differences in CARs between the different regimes disappear when no advisor is involved. However, the interaction term ‘advisor x UK-UK’ remains significant.

Table 2.4: Advisor involvement and bidder CARs

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
	Bidder CAR [-1;+1]					
Advisor	0.5349*	-0.0707	-0.0657	-0.0374	-0.0678	0.0582
	(0.2810)	(0.4143)	(0.4156)	(0.4156)	(0.4154)	(0.4208)
Advisor x UK-UK		1.1417**	1.1389**	1.1132**	1.1405**	1.0178*
		(0.5336)	(0.5340)	(0.5344)	(0.5341)	(0.5393)
UK-UK	-0.5067*	-0.8636**	-0.7482	-0.5323	-0.8528**	-0.2492
	(0.2896)	(0.3351)	(0.5341)	(0.4384)	(0.3364)	(0.5993)
Advisor x UK-CE		-0.1801	-0.1817	-0.2610	-0.1850	-0.2378
		(0.9890)	(0.9896)	(0.9898)	(0.9900)	(0.9889)
UK-CE	-0.1639	-0.0849	-0.0738	-0.0235	-0.0774	0.1137
	(0.5378)	(0.7354)	(0.7398)	(0.7396)	(0.7378)	(0.7577)
Advisor x CE-UK		0.1715	0.1686	0.1379	0.1669	0.0779
		(0.8233)	(0.8241)	(0.8245)	(0.8242)	(0.8258)
CE-UK	-0.8297*	-0.9244*	-0.8068	-0.6018	-0.9163*	-0.3525
	(0.4310)	(0.5223)	(0.6910)	(0.5974)	(0.5243)	(0.7381)
Shareholder rights			-0.0364			0.0095
			(0.1347)			(0.1492)
Minority shareholder rights				-0.1817		-0.2824
				(0.1580)		(0.1803)
Creditor rights					-0.0510	-0.1162
					(0.1027)	(0.1203)
Anti-corruption						4.1608***
						(1.1879)
Financial development						-0.9203
						(1.9999)
Competition						-0.0411
						(0.0649)
GDP growth	0.0631	0.0553	0.0531	0.0569	0.0584	-0.0555
	(0.0951)	(0.0951)	(0.0951)	(0.0950)	(0.0960)	(0.1068)
GNI per capita	0.5482	0.5175	0.5607	0.6905*	0.6143	-0.4630
	(0.3968)	(0.3945)	(0.4261)	(0.4182)	(0.4358)	(0.6786)
ETD	-1.7434**	-1.7919**	-1.7906**	-1.8116***	-1.7876**	-1.7988**
	(0.7011)	(0.6990)	(0.6998)	(0.7002)	(0.7001)	(0.7053)
Domestic	0.6916**	0.6733**	0.6768**	0.6624**	0.6688**	0.6997**
	(0.3330)	(0.3325)	(0.3334)	(0.3322)	(0.3314)	(0.3328)
Public x Cash	-0.3901	-0.3285	-0.3284	-0.3008	-0.3295	-0.3068
	(0.6318)	(0.6293)	(0.6293)	(0.6272)	(0.6298)	(0.6243)
Public x Part. stock	-3.3490***	-3.4254***	-3.4338***	-3.4645***	-3.4358***	-3.4458***
	(0.6579)	(0.6576)	(0.6603)	(0.6575)	(0.6599)	(0.6609)
Private x Cash	0.1387	0.1579	0.1568	0.1479	0.1533	0.1376
	(0.2781)	(0.2780)	(0.2779)	(0.2785)	(0.2779)	(0.2797)
Private x Part. stock	1.0133***	1.0254***	1.0241***	1.0163***	1.0197***	0.9470***

Table 2.4 (continued): Advisor involvement and bidder CARs

	(0.3374)	(0.3368)	(0.3365)	(0.3366)	(0.3367)	(0.3371)
Subsidiary x Cash	0.5681	0.5994	0.5942	0.6105	0.5974	0.4987
	(0.7990)	(0.8006)	(0.8015)	(0.8014)	(0.8014)	(0.7964)
Focused acquisition	0.0347	0.0511	0.0515	0.0494	0.0503	0.0756
	(0.2247)	(0.2245)	(0.2246)	(0.2245)	(0.2244)	(0.2275)
Tender offer	-0.6594	-0.6542	-0.6554	-0.6533	-0.6556	-0.6899
	(0.5863)	(0.5842)	(0.5842)	(0.5830)	(0.5849)	(0.5826)
Friendly acquisition	0.0680	0.0075	0.0070	0.0390	0.0016	-0.0653
	(0.6308)	(0.6281)	(0.6284)	(0.6307)	(0.6274)	(0.6324)
Completed acquisition	1.1307	1.1602	1.1615	1.1588	1.1517	1.1899
	(0.7247)	(0.7270)	(0.7268)	(0.7275)	(0.7281)	(0.7304)
Relative acquisition value	0.0416	0.0502	0.0521	0.0546	0.0517	0.0734
	(0.0940)	(0.0938)	(0.0940)	(0.0938)	(0.0937)	(0.0952)
Size	-0.0061	-0.0039	-0.0039	-0.0035	-0.0037	-0.0030
	(0.0053)	(0.0050)	(0.0050)	(0.0050)	(0.0050)	(0.0053)
Book-to-market	0.0177	0.0157	0.0151	0.0142	0.0152	0.0077
	(0.0211)	(0.0212)	(0.0213)	(0.0211)	(0.0211)	(0.0211)
Leverage	0.7114	0.7184	0.7144	0.6943	0.7230	0.8005
	(0.7383)	(0.7383)	(0.7385)	(0.7351)	(0.7380)	(0.7385)
Runup	-0.9288**	-0.9128**	-0.9109**	-0.9079**	-0.9093**	-0.9209**
	(0.3767)	(0.3754)	(0.3755)	(0.3757)	(0.3759)	(0.3727)
Sigma	32.6118**	31.8814**	31.8002**	31.7756**	31.7992**	29.8324**
	(12.6561)	(12.5600)	(12.5780)	(12.5405)	(12.5506)	(12.4677)
Free cash-flow-to-assets	0.0078	0.0061	0.0060	0.0059	0.0060	0.0070
	(0.0148)	(0.0149)	(0.0149)	(0.0149)	(0.0149)	(0.0152)
Constant	-7.2837*	-6.7271	-7.0152	-7.7025*	-7.5374*	2.5510
	(4.2202)	(4.1925)	(4.3241)	(4.2418)	(4.4898)	(5.8733)
Year and industry FE	YES	YES	YES	YES	YES	YES
N	2969	2969	2969	2969	2969	2969
R-sq	0.07	0.07	0.07	0.07	0.07	0.07

This table presents coefficients from OLS regressions with the dependent variable bidder announcement CAR  $[-1;+1]$ . The main independent variable is a dummy that captures whether a bidder uses an advisor in an acquisition (Specification (1)). Specifications (2) to (6) include interaction terms between the advisor dummy and target-bidder-regime variables. In Specifications (2) to (5), I include corporate governance variables in stepwise regressions, and Specification (6) includes all variables. All variables are defined in Table 2.10. Standard errors clustered on the bidder level are provided in parentheses. I winsorize CARs at the 1% level. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

### 2.4.3 Endogeneity in advisor-bidder matching

It may be that the matching between advisors and bidders is non-random and, thus, OLS estimations will be inconsistent and biased. Authors of similar studies that examine the effects of

advisors on bidder value creation suggest using a Heckman two-stage regression approach to address this problem (Fang, 2005; Golubov et al., 2012). This method is based on the seminal paper by Heckman (1979). However, the implementation of a two-stage regression in my setup is complicated because I use three different interaction terms. This would require at least three valid exclusion criteria, which are very hard to identify. Alternatively, one can use a PSM (Li and Prabhala, 2007), which is the approach I follow. Although PSM is a very popular approach to address endogeneity, its drawback is that the matching can be done only on observable characteristics.

In Table 2.5, I evaluate the probability of hiring an advisor (Specifications 1 to 4) and present the results for the matched sample (Specification 5). I use a logit regression to regress the advisor variable on corporate governance, country, regulation, deal and bidder characteristics and show marginal effects for better interpretation. In Specification 1, I use only characteristics as controls, which are likely to be determined not by the advisor but rather by the bidder before the acquisition. In Specification 2, I add the domestic variable, and in Specification 3, I use the whole set of controls. The results enforce the notion of the descriptive statistics, as the UK-UK and CE-UK variables are negative and significant. It seems that UK bidders are less likely to hire advisors than CE bidders, irrespective of the location of the target. If a UK bidder acquires a UK target, the bidder is 14.62% less likely to use an advisor than a CE bidder that acquires a CE target. If the UK bidder acquires a target in CE, it is even less likely (19.82%) to use an advisor. A potential explanation for this surprising finding could be that CE bidders are less experienced since they operate in a market that is less developed and, thus, rely more on the expertise of specialized agents. Therefore, in Specification 4, I include the experience variable, which reflects the acquisition experience the bidder has accumulated over the five years prior to the acquisition announcement. The negative and significant coefficient on the experience variable indicates that bidders with more acquisition experience are less likely to hire an advisor for the acquisition. However, it does not explain the differences between UK and CE bidders, as the coefficients on the UK-UK and CE-UK variables remain negative and significant. Other results indicate that bidders are more likely to hire advisors for acquisitions that appear to be more complex if one interprets certain factors as proxies for complexity, such as high minority shareholder protection



in the bidder country, large bidder size, high bidder leverage, public target status, stock payment, tender offer and a hostile attitude. Due to cultural differences and a time-consuming process, cross-border/domestic, which is also used as proxy for acquisition complexity, (see, e.g., Conn et al., 2005), is surprisingly not significant.

I use a probit regression to estimate the probability that an advisor is hired by the bidder using bidder characteristics identified as important based on the results in Specification 4; this process allows me to calculate the propensity score needed for the matching procedure. I use size, leverage, sigma, experience, industry and the year of the acquisition announcement to calculate the propensity score and match acquisitions that involve no bidder advisor to acquisitions that involve bidder advisors based on this score (without replacement). This reduces the sample size to 1872 acquisitions. The variables I use for matching are excluded from the final regression. The results are depicted in Specification 5 of Table 2.5. The ‘advisor x UK-UK’ variable remains significant and positive, which indicates that the results shown in Table 2.4 are reliable.<sup>6</sup>

---

<sup>6</sup> When I use all bidder characteristics during the matching procedure, the main result is similar.

Table 2.5: Endogeneity in advisor-bidder matching

Dependent variable	(1)	(2)	(3)	(4)	(5)
	Advisor				Bidder CAR [-1;+1]
Advisor					0.0959 (0.4484)
Advisor x UK-UK					1.3713** (0.5917)
UK-UK	-0.1462*** (0.0490)	-0.1476*** (0.0496)	-0.1499*** (0.0457)	-0.1538*** (0.0457)	-0.9366 (0.7352)
Advisor x UK-CE					-0.4577 (1.1045)
UK-CE	0.0082 (0.0472)	0.0113 (0.0491)	-0.0518 (0.0429)	-0.0479 (0.0426)	0.5977 (0.9014)
Advisor x CE-UK					0.2590 (0.9037)
CE-UK	-0.1982*** (0.0567)	-0.1947*** (0.0592)	-0.1466*** (0.0533)	-0.1473*** (0.0532)	-0.7269 (0.8551)
Shareholder rights	0.0250* (0.0142)	0.0248* (0.0143)	0.0232* (0.0132)	0.0242* (0.0131)	0.1424 (0.1710)
Minority shareholder rights	0.0280* (0.0159)	0.0283* (0.0160)	0.0253* (0.0151)	0.0254* (0.0153)	-0.3794* (0.2225)
Creditor rights	0.0031 (0.0107)	0.0031 (0.0107)	0.0006 (0.0102)	0.0013 (0.0101)	-0.1470 (0.1413)
Anti-corruption	-0.1002 (0.1070)	-0.1001 (0.1070)	-0.1228 (0.0970)	-0.1180 (0.0960)	2.3443* (1.2855)
Financial development	0.2887* (0.1705)	0.2860* (0.1699)	0.1144 (0.1469)	0.1220 (0.1468)	-1.4592 (2.0501)
Competition			0.0286*** (0.0047)	0.0289*** (0.0047)	-0.0765 (0.0763)
GDP growth	-0.0044 (0.0078)	-0.0044 (0.0077)	-0.0030 (0.0070)	-0.0025 (0.0069)	0.0548 (0.0796)
GNI per capita	-0.1491*** (0.0570)	-0.1481*** (0.0570)	-0.1168** (0.0532)	-0.1176** (0.0525)	0.6291 (0.6351)
ETD	0.0051 (0.0517)	0.0053 (0.0517)	-0.0125 (0.0482)	-0.0149 (0.0480)	-0.3064 (0.3436)
Domestic		0.0052 (0.0266)	-0.0429* (0.0239)	-0.0441* (0.0239)	1.1582*** (0.3584)
Public x Cash			0.2502*** (0.0494)	0.2511*** (0.0497)	-0.6695 (0.5998)
Public x Part. stock			0.3260*** (0.0418)	0.3271*** (0.0418)	-3.2015*** (0.6698)
Private x Cash			-0.0168 (0.0199)	-0.0156 (0.0199)	0.2521 (0.3610)
Private x Part. stock			0.0313	0.0297	0.7279*

Table 2.5 (continued): Endogeneity in advisor-bidder matching

			(0.0217)	(0.0216)	(0.4072)
Subsidiary x Cash			0.0247	0.0206	0.3681
			(0.0614)	(0.0610)	(1.0950)
Focused acquisition			0.0122	0.0121	-0.1380
			(0.0173)	(0.0173)	(0.2739)
Tender offer			0.2754***	0.2745***	-0.9958*
			(0.0433)	(0.0437)	(0.5391)
Friendly acquisition			-0.1303**	-0.1365**	-0.2319
			(0.0532)	(0.0534)	(0.7108)
Completed acquisition			0.0780	0.0784	1.3069*
			(0.0546)	(0.0547)	(0.7398)
Relative acquisition value			0.0040	0.0028	0.2588
			(0.0044)	(0.0043)	(0.1977)
Log(size)	0.0163***	0.0163***	0.0052**	0.0054**	
	(0.0041)	(0.0041)	(0.0023)	(0.0024)	
Book-to-market	0.0006*	0.0006*	-0.0000	0.0002	-0.0124
	(0.0003)	(0.0003)	(0.0011)	(0.0011)	(0.0389)
Leverage	0.1233**	0.1235**	0.1182**	0.1215**	
	(0.0580)	(0.0580)	(0.0582)	(0.0617)	
Runup	0.0022	0.0022	-0.0008	-0.0023	-1.0556***
	(0.0184)	(0.0184)	(0.0169)	(0.0172)	(0.3939)
Sigma	-1.8110**	-1.8212**	-1.4835*	-1.7069**	
	(0.8419)	(0.8495)	(0.7578)	(0.7856)	
Free cash-flow-to-assets	0.0031	0.0031	0.0018	0.0017	0.4729
	(0.0022)	(0.0022)	(0.0020)	(0.0021)	(0.9312)
Experience				-0.0731***	
				(0.0225)	
Constant					-5.1386
					(5.6374)
Year and industry FE	YES	YES	YES	YES	NO
N	2969	2969	2969	2966	1872
Pseudo R-sq / R-sq	0.06	0.06	0.18	0.19	0.07

In Specifications (1) to (4), this table presents marginal effects from logit regressions. The dependent variable is a dummy that equals 1 for acquisitions in which a bidder hires an advisor and 0 otherwise. Specification (5) depicts the results of an OLS regression using a propensity score matched sample, where the dependent variable is bidder announcement CAR [-1;+1]. All variables are defined in Table 2.10. Standard errors clustered on the bidder level are provided in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

#### 2.4.4 Robustness

In order to strengthen the previously shown results, I provide several robustness checks in this chapter and show the results in Table 2.6. First, I test the robustness to different methods to calculate CARs. In Specification 1, I use CARs, which are calculated using the MSCI Europe index instead of country indices, and in Specification 2, I use a binary classification for bidder value creation. I define a dummy variable that equals 1 if the bidder CAR is positive and equals 0 otherwise. In both specifications, the ‘advisor x UK-UK’ interaction term is positive and significant. In Specification 3, I cluster standard errors based on 4-digit SIC codes instead of using bidder-level clustering. In Specification 4, I include acquisitions that involve financial firms, which might be particularly important in the UK. This increases the sample size to 3149 observations. The results in Specifications 3 and 4 remain similar.

In Chapter 2.2, I argue that both regimes – UK and CE – are different regarding corporate governance and regulatory characteristics, which might influence bidder value creation and the value that advisors offer in acquisitions. Thus, the use of the appropriate variables that proxy for corporate governance is crucial. In Specifications 5 to 7, I use alternative corporate governance and country variables, which are similar to those used by Humphery-Jenner (2012). In Specification 5, I use a governance index from the World Bank. I calculate this equally weighted index based on six different governance measures retrieved from the World Bank – namely, governance effectiveness, regulatory quality, rule of law, political stability, corruption and voice and accountability. The index is positive but not significant. The interaction term ‘advisor UK-UK’ remains positive and significant. In Specification 6, in addition to the World Bank governance index, I use alternative country variables, which I also retrieve from the World Bank. In particular, I use market capitalization to GDP, market turnover, unemployment rate, FDI to GDP and trade imbalance. In Specification 7, I use the Anti-Director Rights Index (ADRI) compiled by Spamann (2010) instead of the corporate governance indices from Martynova and Renneboog (2011a). Still, the results are similar to the main regression. Since the World Bank governance and country indices and the Spamann index are not available for all of my sample countries, the sample size decreases to 2637, 1886 and 1828 observations in Specifications 5 to 7, respectively.

The previously used target-bidder-regime variable combinations can be decomposed further, which might provide more insights on the role that advisors play in acquisitions. The literature reports that the distinction between domestic and cross-border acquisition might be important regarding bidder value creation and acquisition motives (Martynova and Renneboog, 2008; Kuipers et al., 2009). So far, my classifications capture only acquisitions within and across regimes, but it might be that acquisitions within one regime are also cross-border acquisitions. To account for that, I create the following variables and include them and their interactions with the advisor variable in Specification 8: domestic acquisitions with a UK target and a UK bidder (DO-UK-UK), cross-border acquisitions with a UK target and a UK bidder (CB-UK-UK)<sup>7</sup>, cross-border acquisitions with a UK target and a CE bidder (UK-CE), cross-border acquisitions with a CE target and a UK bidder (CE-UK), and cross-border acquisitions with a CE target and a CE bidder (CB-CE-CE). Domestic acquisitions with a CE target and a CE bidder (DO-CE-CE) represent the reference category. The only significant interaction term is ‘advisor x DO-UK-UK’, which is positive. This might suggest that advisors are indeed helpful in acquisitions that involve UK targets and UK bidders and that the cross-border vs. domestic factor does not matter regarding the additional value that advisors provide.

In addition, there is substantial heterogeneity across CE countries. In all previous analyses, corporate governance and country characteristics vary on a country level, but I subsumed these countries into one category (CE). To account for the above-mentioned heterogeneity, I include dummy variables that reflect the legal origin of the respective bidder and target countries in the regression specification. CE countries can be categorized into the French, German and Scandinavian legal origins, whereas the new succession countries make up another group and are the reference category in the regression (see, e.g., La Porta et al., 1997, 1998; Drobetz and Momtaz, 2016).<sup>8</sup> The results are shown in Specification 9 and remain similar.

---

<sup>7</sup> UK includes Great Britain and Ireland.

<sup>8</sup> French legal origin countries: Belgium, France, Greece, Italy, Luxembourg, Netherlands, Portugal, Spain; German legal origin countries: Austria, Germany, Switzerland; Scandinavian legal origin countries: Denmark, Finland,

Overall, the results in Table 2.6 suggest that the main findings are robust to different sample adjustments and alternative variables.

---

Iceland, Norway, Sweden; new succession countries: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia.

Table 2.6: Robustness tests

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	CAR alt.	Cluster alt.	Sample alt.		Country / CG alt.			Regions alt.	
Advisor	-0.0738 (0.4168)	0.0029 (0.0340)	0.0582 (0.3724)	-0.0291 (0.4110)	0.0774 (0.4304)	-0.0874 (0.4582)	0.1553 (0.4822)	-0.0584 (0.5425)	0.0984 (0.4261)
Advisor x UK-UK	1.1207** (0.5363)	0.0739* (0.0424)	1.0178** (0.4935)	0.9224* (0.5281)	1.1688** (0.5547)	1.6666*** (0.6444)	1.4944** (0.6609)		0.9814* (0.5441)
UK-UK	-0.2597 (0.6012)	-0.1352** (0.0548)	-0.2492 (0.4960)	-0.2422 (0.5853)	-0.2222 (0.6393)	0.1741 (1.0076)	-1.0168* (0.5357)		0.1925 (1.7876)
Advisor x DO-UK-UK								1.1777* (0.6411)	
DO-UK-UK								-0.5146 (0.6420)	
Advisor x CB-UK-UK								0.3323 (1.7144)	
CB-UK-UK								-0.1258 (1.0509)	
Advisor x UK-CE	-0.0937 (1.0054)	-0.0769 (0.0943)	-0.2378 (1.0102)	-0.0971 (0.9789)	0.2013 (0.9930)	-0.1360 (1.0301)	-0.5287 (1.0514)	-0.1368 (1.0356)	-0.3106 (0.9912)
UK-CE	0.1033 (0.7787)	0.0779 (0.0598)	0.1137 (0.6778)	-0.0048 (0.7479)	-0.2892 (0.7576)	-0.0363 (0.8472)	0.0706 (0.8639)	-0.7222 (0.7589)	0.5036 (0.9972)
Advisor x CE-UK	0.2353 (0.8338)	0.0684 (0.0695)	0.0779 (0.8546)	0.3358 (0.8152)	0.1021 (0.8718)	-0.0274 (0.9588)	-0.2580 (0.9717)	0.1804 (0.8938)	0.0051 (0.8324)
CE-UK	-0.3992 (0.7374)	-0.1594** (0.0666)	-0.3525 (0.6610)	-0.4355 (0.7273)	-0.5358 (0.7936)	-0.1189 (1.1041)	-1.4033* (0.7673)	-1.2505* (0.7379)	-0.2555 (1.9148)
Advisor x CB-CE-CE								0.2925 (0.7551)	
CB-CE-CE								-1.0018** (0.4559)	
Bidder French LO									-0.0042 (1.4727)
Bidder German LO									0.2204 (1.6815)
Bidder Scandinavian LO									-0.1073 (1.6250)
Target French LO									0.1213 (0.7647)
Target German LO									0.4438 (0.7554)
Target Scandinavian LO									0.7178 (0.7825)
Shareholder rights	0.0165	0.0375***	0.0095	0.0032	-0.0347	-0.5421		0.0305	-0.0045

Table 2.6 (continued): Robustness tests

	(0.1514)	(0.0139)	(0.1352)	(0.1470)	(0.1614)	(0.3528)	(0.1518)	(0.1549)
Minority shareholder rights	-0.3253*	-0.0123	-0.2824	-0.2871	-0.1714	0.1991	-0.2979	-0.3059
	(0.1819)	(0.0186)	(0.1724)	(0.1807)	(0.1906)	(0.3081)	(0.1811)	(0.2132)
Creditor rights	-0.0958	-0.0231**	-0.1162	-0.0758	-0.0556	0.0758	-0.1171	-0.1019
	(0.1220)	(0.0105)	(0.1359)	(0.1182)	(0.1314)	(0.2151)	(0.1207)	(0.1272)
Governance index (WB)					2.0857	-14.4117*	-2.0276	
					(6.1922)	(7.9179)	(4.1413)	
ADRI (Spamann)							0.1040	
							(0.2648)	
Anti-corruption	4.0110***	0.2707**	4.1608***	4.2512***	2.7477	6.4034*	4.3649***	3.7336**
	(1.1786)	(0.1072)	(1.2260)	(1.1656)	(2.5741)	(3.5931)	(1.2099)	(1.5363)
Financial development	-0.8059	-0.1129	-0.9203	-0.5060	-0.6443		-0.6663	-0.6647
	(2.0006)	(0.1960)	(1.8677)	(1.9886)	(2.3715)		(2.0231)	(2.3738)
Competition	-0.0292	0.0022	-0.0411	-0.0669	-0.0482		-0.0353	-0.0389
	(0.0656)	(0.0052)	(0.0637)	(0.0624)	(0.0664)		(0.0647)	(0.0654)
GDP growth	-0.0400	0.0093	-0.0555	-0.0617	-0.0215		-0.0699	-0.0592
	(0.1079)	(0.0082)	(0.0964)	(0.1045)	(0.1088)		(0.1082)	(0.1074)
GNI per capita	-0.5213	-0.0470	-0.4630	-0.7298	-0.5647		-0.5627	-0.6369
	(0.6885)	(0.0594)	(0.6194)	(0.6533)	(0.7829)		(0.6912)	(0.8855)
Market cap to GDP						0.0038	0.0037	
						(0.0059)	(0.0050)	
Market turnover						-0.0049	-0.0086*	
						(0.0047)	(0.0050)	
Unemployment rate						-0.0321	-0.0467	
						(0.0847)	(0.0900)	
FDI to GDP						3.6635	5.3813	
						(3.6557)	(3.7387)	
Trade Imbalance						-3.1574	-2.0244	
						(3.4122)	(3.5495)	
ETD	-1.9078***	-0.0616	-1.7988***	-1.9589***	-1.8033**	-2.0393***	-2.0600***	-1.8056**
	(0.7135)	(0.0559)	(0.6685)	(0.6796)	(0.7027)	(0.7756)	(0.7917)	(0.7048)
Domestic	0.7291**	0.0455	0.6997**	0.5786*	0.6524*	0.5211	0.4133	0.0000
	(0.3322)	(0.0292)	(0.3339)	(0.3237)	(0.3507)	(0.4238)	(0.4454)	(.)
Public x Cash	-0.3637	-0.0757	-0.3068	-0.2942	-0.3649	-0.8005	-0.7442	-0.3095
	(0.6280)	(0.0587)	(0.6252)	(0.6187)	(0.6402)	(0.7065)	(0.7264)	(0.6250)
Public x Part. stock	-3.4035***	-0.2179***	-3.4458***	-3.4051***	-3.0818***	-2.8996***	-2.9360***	-3.4530***
	(0.6556)	(0.0547)	(0.5623)	(0.6603)	(0.6960)	(0.8109)	(0.8256)	(0.6597)
Private x Cash	0.1455	0.0011	0.1376	0.1072	0.2660	0.3345	0.5053	0.1578
	(0.2824)	(0.0243)	(0.2789)	(0.2770)	(0.2900)	(0.3302)	(0.3395)	(0.2805)
Private x Part. stock	0.9438***	0.0450*	0.9470***	0.8804***	1.1416***	1.0534***	1.1328***	0.9475***
	(0.3401)	(0.0231)	(0.3095)	(0.3228)	(0.3466)	(0.4035)	(0.4077)	(0.3385)
Subsidiary x Cash	0.4674	-0.0460	0.4987	0.7537	0.5727	0.1969	-0.0429	0.5221
								0.4980



Table 2.6 (continued): Robustness tests

	(0.7717)	(0.0839)	(0.8520)	(0.8209)	(0.8851)	(1.0917)	(1.1770)	(0.7998)	(0.7978)
Focused acquisition	0.0860	0.0031	0.0756	0.0698	0.0627	0.0188	-0.0697	0.0780	0.0708
	(0.2291)	(0.0186)	(0.2212)	(0.2213)	(0.2391)	(0.2831)	(0.2893)	(0.2276)	(0.2288)
Tender offer	-0.7394	-0.0484	-0.6899	-0.7638	-0.6951	-0.4840	-0.5168	-0.6870	-0.6945
	(0.5789)	(0.0501)	(0.5655)	(0.5841)	(0.6085)	(0.6863)	(0.7029)	(0.5814)	(0.5810)
Friendly acquisition	-0.1862	0.0780	-0.0653	-0.2166	0.0905	0.4035	0.3589	-0.0610	-0.0865
	(0.6378)	(0.0529)	(0.5234)	(0.6209)	(0.6325)	(0.6904)	(0.7083)	(0.6288)	(0.6343)
Completed acquisition	0.9576	0.0310	1.1899*	1.2799*	1.4566*	1.2248	1.3183	1.2065*	1.2172*
	(0.7376)	(0.0574)	(0.7049)	(0.7321)	(0.7753)	(0.8977)	(0.9132)	(0.7293)	(0.7313)
Relative acquisition value	0.0800	-0.0059	0.0734	0.0647	0.0999	0.0924	0.1349	0.0756	0.0785
	(0.0954)	(0.0051)	(0.0994)	(0.0874)	(0.0995)	(0.1480)	(0.1713)	(0.0951)	(0.0957)
Log(size)	-0.0025	-0.0000	-0.0030	-0.0022	-0.0025	-0.0042	-0.0137**	-0.0028	-0.0033
	(0.0046)	(0.0004)	(0.0055)	(0.0049)	(0.0059)	(0.0067)	(0.0054)	(0.0053)	(0.0053)
Book-to-market	0.0048	0.0027**	0.0077	0.0067	-0.0002	-0.0011	-0.0115	0.0071	0.0066
	(0.0206)	(0.0011)	(0.0228)	(0.0194)	(0.0218)	(0.0330)	(0.0382)	(0.0211)	(0.0210)
Leverage	0.8988	0.0807	0.8005	0.9264	1.3505*	0.9087	0.4452	0.7709	0.8415
	(0.7576)	(0.0504)	(0.6670)	(0.7181)	(0.7953)	(1.0689)	(1.0679)	(0.7377)	(0.7401)
Runup	-0.9192**	-0.0775***	-0.9209***	-0.9825***	-0.8739**	-1.1873***	-1.1600**	-0.9223**	-0.9166**
	(0.3752)	(0.0189)	(0.3492)	(0.3667)	(0.4116)	(0.4406)	(0.4538)	(0.3733)	(0.3727)
Sigma	28.5607**	-0.7009	29.8324**	34.1085***	48.7027***	55.3974**	55.0842**	29.9675**	29.2042**
	(12.2220)	(0.4450)	(12.4428)	(12.5843)	(15.6327)	(22.2950)	(22.9587)	(12.5428)	(12.5421)
Free cash-flow-to-assets	-0.0039	-0.0021***	0.0070	0.0072	1.5023*	1.5361	1.5984	0.0064	0.0067
	(0.0157)	(0.0008)	(0.0131)	(0.0145)	(0.8795)	(1.2070)	(1.2154)	(0.0151)	(0.0152)
Constant	3.4965	0.7407	2.5510	4.9192	1.1156	7.1021	0.2174	3.9946	4.2942
	(5.9929)	(0.5222)	(5.4591)	(5.6544)	(6.4637)	(5.4513)	(4.1790)	(5.8957)	(7.8032)
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	NO	YES	YES	YES	YES	YES	YES
N	2969	2969	2969	3149	2637	1886	1828	2969	2969
R-sq	0.07	0.05	0.07	0.07	0.08	0.09	0.09	0.07	0.07

This table presents coefficients from OLS regressions with the dependent variable bidder announcement CAR  $[-1; +1]$ . Specifications (1) and (2) use different variables and methods to calculate CARs. In Specification (3), I cluster standard errors differently, and in Specification (4), I extend the sample to include financial firms. In Specifications (5) to (7), I use alternative corporate governance and country characteristics. Specification (8) further breaks down the target-bidder-regime variables, and Specification (9) accounts for the heterogeneity of CE countries. All variables are defined in Table 2.10. Standard errors clustered on the bidder level are provided in parentheses. I winsorize CARs at the 1% level. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

### 2.4.5 Difference in difference analysis

Humphery-Jenner (2012) finds that EU bidders, in comparison to a control sample of non-EU bidders, realize lower bidder returns after the implementation of the ETD. I expect to find

similar results for my sample. However, if advisors are able to reduce transaction, asymmetric information and agency costs in acquisitions (as suggested by Servaes and Zenner (1996)), I expect that bidders that are highly affected by the ETD and that use an advisor create more shareholder value than bidders that are highly affected by the ETD but do not use an advisor.

In the spirit of Humphery-Jenner (2012), I execute a DiD analysis using the ETD as an exogenous shock to the acquisition market. The ETD seems to qualify as an exogenous shock because the ETD was not driven by market pressure but rather by the idea of “European integration” (Dissanaïke et al., 2016). As the parallel trend assumption is crucial for the validity of a DiD research design, there might be concerns that the parallel trend assumption does not hold when one compares bidders located in the EU with bidders located in non-EU countries. Therefore, I divide European countries into a treated and a control sample. This is based on a report, which was asked for by the European Commission and was executed by a consortium of law firms and the Center for European Policy studies (CEPS) to evaluate the effectiveness of the ETD in 2012. Since EU member states could decide which rules to implement and could use the opt-out clause, some EU member states made significant changes (treated sample) and others made not significant changes (control sample) to the national acquisition regulation (Marccus Partners and Centre for European Policy Studies, 2012). The 2007 EU accession countries (Bulgaria, Romania) are excluded from the analysis. Because the ETD is aimed mostly at the target’s shareholders and stakeholders, a bidder is classified as treated based on the country in which the target is located (see Chapter 2.2.4). The breakdown into both samples with the average bidder CARs per country before and after the implementation of the ETD are depicted in Table 2.7. The parallel trend assumption postulates that the outcome variable in the treated and control sample would follow the same trend, had the treatment been absent. In my sample, this would mean that the bidder CARs of the treated and control sample would have followed similar trends in absence of the ETD. I argue that, in my research design, this is likely to be the case, as only bidders and targets that are located in developed European countries are included in the analysis. Second, because there might be corporate governance, country and industry characteristics that drive differing trends (Humphery-Jenner, 2012) and might be correlated with both the bidder CAR and ETD implementation intensity, I include corporate governance, country, year and industry

characteristics into the regression. Finally, I execute the DiD analysis using propensity score matching to make sure that the treated and control samples are as similar as possible.

Table 2.7: Sample composition of the treated and control sample

	Total			Before			After		
	N	%	CAR (%)	N	%	CAR (%)	N	%	CAR (%)
<b>Treated sample</b>									
Belgium	34	37.36	0.71	15	30.61	0.40	19	45.24	0.95
Cyprus	4	4.40	-2.40		0.00		4	9.52	-2.40
Czech Republic	10	10.99	-0.32	4	8.16	-0.83	6	14.29	0.02
Finland	79	86.81	1.97	41	83.67	1.30	38	90.48	2.71
France	164	180.22	0.91	72	146.94	2.27	92	219.05	-0.16
Greece	16	17.58	2.69	4	8.16	1.20	12	28.57	3.18
Hungary	4	4.40	0.01	1	2.04	-1.28	3	7.14	0.44
Ireland-Rep	50	54.95	1.27	29	59.18	2.87	21	50.00	-0.93
Italy	109	119.78	0.24	45	91.84	-0.08	64	152.38	0.47
Luxembourg	5	5.49	-0.92		0.00		5	11.90	-0.92
Netherlands	95	104.40	1.33	44	89.80	1.75	51	121.43	0.97
Poland	53	58.24	2.75	6	12.24	4.21	47	111.90	2.56
Portugal	19	20.88	0.53	12	24.49	1.49	7	16.67	-1.13
Slovak Rep	3	3.30	0.41	1	2.04	2.10	2	4.76	-0.43
Spain	91	3.09	1.28	49	3.74	2.28	42	2.57	0.12
Total treated	736	24.97	1.15	323	24.64	1.66	413	25.23	0.75
<b>Control sample</b>									
Austria	11	0.50	0.30	3	0.30	1.53	8	0.65	-0.17
Denmark	58	2.62	2.80	23	2.33	4.61	35	2.86	1.61
Germany	178	8.05	1.28	73	7.39	0.70	105	8.58	1.68
Norway	119	5.38	2.57	46	4.66	3.52	73	5.96	1.97
Romania	4	0.18	-0.37	2	0.20	3.94	2	0.16	-4.67
Sweden	194	8.77	2.90	76	7.69	2.71	118	9.64	3.02
Switzerland	44	1.99	0.86	18	1.82	-1.15	26	2.12	2.26
United Kingdom	1604	72.51	1.43	747	75.61	1.37	857	70.02	1.48
Total control	2212	75.03	1.62	988	75.36	1.56	1224	74.77	1.67
Total sample	2948		1.50	1311		1.58	1637		1.44

This table presents the sample composition of treated bidders and non-treated bidders. I show absolute and relative numbers of bidders and their CARs by country for the period before and after the ETD's implementation deadline.

In Table 2.8, I provide the results of univariate analyses comparing the means of the treated sample and the control sample to determine whether they are different from zero and whether the

means of both samples differ between the pre- and post-implementation periods. I show 3-day bidder CARs for the entire period, for the period before the implementation and that after the implementation of the ETD. Treated bidder CARs are significantly lower after the implementation of the ETD (0.74%) than before implementation (1.66%). This is similar for the subsample of treated bidders that do not use an advisor. In both cases, differences are significant at the 5% level. However, treated bidders that use an advisor do not seem to realize significantly lower CARs after the implementation than in the time period before implementation. Additionally, bidders from the control sample (and subsamples thereof) seem not to realize significantly different CARs between the period before the implementation and the period after the implementation of the ETD.

This analysis provides initial evidence that the ETD influences bidder value creation of treated bidders negatively compared to the control sample. Moreover, it appears that treated bidders that use advisors are not as strongly influenced by the negative consequences of the ETD than treated bidders that do not use advisors. These initial results call for a closer investigation using a DiD research design.

Table 2.8: Summary statistics of the treated and control sample

	Total	Treated sample			Control sample		
		Total	With advisor	Without advisor	Total	With advisor	Without advisor
All	1.50***	1.15***	0.57*	1.45***	1.62***	1.56***	1.65***
Before	1.59***	1.66***	0.80	2.12***	1.56***	1.57***	1.55***
After	1.43***	0.74***	0.39	0.93***	1.67***	1.56***	1.72***
Before-after	0.16	0.91**	0.41	0.59**	-0.11	0.01	-0.17

This table presents sample summary statistics and the results of the t-tests I run to compare mean CARs (in %) of the total, treated and control samples and subsamples thereof. I test whether the mean CARs of the treated and the control sample are different from zero and whether the means of both samples differ between the pre- and post-ETD implementation period. All variables are defined in Table 2.10. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

In Table 2.9, I regress the dependent variable – 3-day bidder CAR – on the main variable of interest, which is an interaction term between treated and ETD. Treated is a dummy variable that equals one if the target is incorporated in an EU member state that made significant changes

in acquisition regulations due to the ETD and zero otherwise. ETD is a dummy variable equaling one for the time period after the implementation of the ETD and 0 for the time period before the implementation of the ETD. I add further control variables, such as corporate governance, country, deal and bidder characteristics, to the regression. I use year and industry fixed effects and cluster standard errors on 4-digit SIC codes.

In Specification 1, I show the results for the total sample. The interaction term ‘treated x ETD’ is significant and negative, which indicates that treated bidders<sup>9</sup> create less shareholder value than non-treated bidders. This effect is also economically significant, as a mean-sized bidder, in comparison to the control sample, seems to realize a US\$ 26.50 million lower shareholder value. In Specification 2, I use treated bidders that hire an advisor to construct the interaction term. As conjectured previously in this chapter, it appears that advisors matter for bidder value creation because the interaction term ‘advisor treated x ETD’ is not significant. It seems that treated bidders that hire advisors do not create less shareholder value than the control sample. This is again different for treated bidders that do not use advisors, as these bidders create less shareholder value compared to the control sample (see Specification 3).

Again, endogeneity due to (1) non-random advisor bidder matching and (2) differences between treated bidders and non-treated bidders might influence the results. Thus, I execute a PSM to account for both possibilities. First, I use a similar approach as Humphery-Jenner (2012) and ensure that non-treated bidders are as similar as possible to treated bidders by executing a radius type matching. With a probit model, I estimate the probability that a bidder is a treated firm and receives treatment using the bidder characteristics of size, book-to-market ratio, leverage and relative transaction value (Humphery-Jenner, 2012). Next, I calculate the propensity score and drop all observations of the control sample, which are in the top and bottom 5%. I do this for the periods before and after the ETD implementation separately. Second, I ensure that the bidders that use advisors are similar to bidders that do not use advisors and follow the matching approach outlined in Chapter 2.4.3. I again match on size, leverage, sigma, experience, industry and year of the acquisition announcement and use one-to-one matching without replacement of the treated

---

<sup>9</sup> Treated bidders are bidders that acquire targets in treated countries.

bidders that do not use advisors with treated bidders that hire advisors.<sup>10</sup> This process reduces the sample to 1716 observations. Specifications 4 to 6 show the results that are similar to the results in Specifications 1 to 3.

---

<sup>10</sup> When I use all bidder characteristics during the matching procedure, the main result is similar.

Table 2.9: Difference in difference research design

	(1)	(2)	(3)	(4)	(5)	(6)
	Total sample			Matched sample		
Treated	0.3973			0.5700		
	(0.4523)			(0.6067)		
ETD	-1.5100**	-1.7184**	-1.5698**	0.5484	0.2116	0.3071
	(0.7010)	(0.6937)	(0.6938)	(0.4426)	(0.4017)	(0.4064)
Treated x ETD	-1.1950**			-1.7468***		
	(0.5112)			(0.6599)		
Advisor treated		0.0364			-0.0658	
		(0.6113)			(0.6583)	
Advisor treated x ETD		-0.7905			-1.1197	
		(0.7174)			(0.7569)	
Non-advisor treated			0.6070			1.1602
			(0.5075)			(0.7353)
Non-advisor treated x ETD			-1.1468*			-1.6830*
			(0.6071)			(0.8635)
Shareholder rights	0.0215	-0.0028	0.0074	0.1100	0.0665	0.0937
	(0.1322)	(0.1322)	(0.1309)	(0.1789)	(0.1823)	(0.1770)
Minority shareholder rights	-0.2900	-0.2443	-0.2601	-0.5995***	-0.5286**	-0.5331**
	(0.1847)	(0.1806)	(0.1849)	(0.2285)	(0.2208)	(0.2288)
Creditor rights	-0.1305	-0.1254	-0.1194	-0.1933	-0.1779	-0.1795
	(0.1235)	(0.1247)	(0.1224)	(0.1856)	(0.1902)	(0.1850)
Anti-corruption	3.8723***	4.0083***	4.0523***	2.6326	2.7521*	2.9624*
	(1.2437)	(1.2369)	(1.2345)	(1.6571)	(1.6611)	(1.6681)
Financial development	-1.8573	-1.6123	-1.5997	-1.4547	-1.1212	-1.1659
	(1.9973)	(2.0013)	(1.9902)	(2.4305)	(2.4615)	(2.4005)
Competition	-0.0319	-0.0276	-0.0268	-0.0916	-0.0861	-0.0768
	(0.0611)	(0.0602)	(0.0611)	(0.0900)	(0.0887)	(0.0896)
GDP growth	-0.0530	-0.0679	-0.0511	0.0716	0.0565	0.0661
	(0.1014)	(0.1021)	(0.1012)	(0.0915)	(0.0924)	(0.0919)
GNI per capita	-0.5315	-0.4725	-0.5066	0.4856	0.5085	0.5607
	(0.6814)	(0.6789)	(0.6800)	(0.7642)	(0.7661)	(0.7523)
Domestic	0.7639***	0.7667***	0.8111***	1.1751***	1.1551***	1.2828***
	(0.2622)	(0.2600)	(0.2584)	(0.3523)	(0.3400)	(0.3394)
Public x Cash	-0.1490	-0.1215	-0.1724	-0.1774	-0.1027	-0.1947
	(0.6272)	(0.6286)	(0.6328)	(0.6990)	(0.6960)	(0.7037)
Public x Part. stock	-3.1535***	-3.1277***	-3.1589***	-3.0312***	-2.9907***	-2.9992***
	(0.6326)	(0.6349)	(0.6362)	(0.7156)	(0.7184)	(0.7209)
Private x Cash	0.1392	0.1286	0.1451	0.2527	0.2471	0.2697
	(0.2731)	(0.2739)	(0.2731)	(0.3722)	(0.3733)	(0.3716)
Private x Part. stock	0.9713***	0.9741***	0.9626***	0.9636*	0.9813*	0.9606*
	(0.3328)	(0.3330)	(0.3331)	(0.5418)	(0.5417)	(0.5452)
Subsidiary x Cash	0.4454	0.4327	0.4935	-0.0508	-0.0690	0.0301

Table 2.9 (continued): Difference in difference research design

	(0.7667)	(0.7742)	(0.7661)	(0.9581)	(0.9683)	(0.9538)
Focused acquisition	0.0370	0.0453	0.0329	-0.2666	-0.2501	-0.2737
	(0.2340)	(0.2341)	(0.2341)	(0.3695)	(0.3702)	(0.3706)
Tender offer	-0.5248	-0.5065	-0.5089	-0.9562	-0.9351	-0.9255
	(0.5964)	(0.5976)	(0.5999)	(0.6379)	(0.6365)	(0.6447)
Friendly acquisition	-0.0764	-0.1144	-0.0543	-0.3522	-0.4286	-0.2980
	(0.6467)	(0.6455)	(0.6408)	(1.1397)	(1.1291)	(1.1202)
Completed acquisition	1.1385	1.1655	1.1260	1.2601	1.3550	1.2265
	(0.7267)	(0.7274)	(0.7334)	(0.8847)	(0.8779)	(0.8844)
Relative acquisition value	0.0753	0.0752	0.0704	0.0916	0.0881	0.0704
	(0.0990)	(0.0989)	(0.0982)	(0.2651)	(0.2681)	(0.2663)
Size	-0.0042	-0.0038	-0.0043			
	(0.0053)	(0.0053)	(0.0055)			
Book-to-market	0.0073	0.0078	0.0077	-0.0028	-0.0010	0.0001
	(0.0217)	(0.0216)	(0.0216)	(0.0586)	(0.0592)	(0.0590)
Leverage	0.8383	0.8558	0.7949			
	(0.7527)	(0.7536)	(0.7534)			
Runup	-0.9411**	-0.9405**	-0.9455**	-1.2016*	-1.1814*	-1.2188*
	(0.3666)	(0.3683)	(0.3673)	(0.6430)	(0.6454)	(0.6462)
Sigma	28.7705**	29.0978**	29.2679**			
	(12.8237)	(12.7473)	(12.8274)			
Free cash-flow-to-assets	0.0077	0.0086	0.0079	1.2971	1.2740	1.2370
	(0.0149)	(0.0148)	(0.0146)	(1.2731)	(1.2471)	(1.2491)
Constant	4.2079	3.2946	3.3769	-2.4104	-3.0606	-4.1751
	(6.1476)	(5.9939)	(6.0709)	(7.2392)	(7.0698)	(6.9582)
Year and industry FE	YES	YES	YES	NO	NO	NO
N	2948	2948	2948	1716	1716	1716
R-sq	0.07	0.07	0.07	0.05	0.05	0.05

This table presents DiD analyses with the dependent variable bidder announcement CAR [-1;+1]. The main independent variable is an interaction term between the treated and ETD variables, and I control for corporate governance, country, deal and bidder characteristics in all specifications. The specifications show the results for the total sample and a matched sample in Specifications (1) to (3) and (4) to (6), respectively. All variables are defined in Table 2.10. Standard errors clustered on the 4-digit SIC code level are provided in parentheses. I winsorize CARs at the 1% level in Specifications (1) to (3). \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

## 2.5 Discussion

Chapter 2.2 left the question open to the empirics of whether advisors are more valuable in the UK, in CE or across both regimes. Although in all regressions, I control for differences in corporate governance and regulatory characteristics, the results suggest that advisors provide



value to UK bidders that acquire UK targets only. Potential explanations could be related to the fact that the UK market has a higher (regulatory) transparency than the CE market (Martynova and Renneboog, 2011a), which motivates advisors to work harder because their performance is relatively more visible. Indeed, Rhee and Valdez (2009) report a strong link between external visibility and reputational exposure. Golubov et al. (2012) and Liu et al. (2014) show that advisors apply more resources and create more bidder value in acquisitions that potentially help to increase the advisors' reputational exposure and future fee income.

The results of the DiD research design indicate that advisors' skills are valuable to bidders that acquire targets that are highly affected by the ETD. Table 2.9 shows that, once a treated bidder hires an advisor, it does not create less shareholder value after the ETD implementation than the control sample. However, if the treated bidder does not use an advisor, the acquisition creates less shareholder value after the implementation of the ETD. As laid out in Chapter 2.2, it seems that the ETD increases legal uncertainty and acquisition complexity and makes acquisitions more costly, difficult and time-consuming. In such a situation, advisor skills appear to be valuable to their clients.

## **2.6 Conclusion**

In the empirical corporate finance literature, an intensely debated question is whether advisors are worth their money and whether they help bidders to create shareholder value in corporate acquisitions. Theoretical argumentation supports these notions, as advisors should reduce transaction, asymmetric information and agency costs (Servaes and Zenner, 1996). However, empirical evidence from the US market yields contrasting results.

In order to advance that discussion, I analyze the role that advisors play in Europe and whether they help bidders in European acquisitions to create shareholder value. Moschier and Campa (2009) argue that differences between the US and Europe exist not only because of a better harmonization of law in the US but also because European firms are different regarding institutional characteristics and corporate structures. This suggests that research results from the US might not be generalizable to Europe. Moreover, Europe is characterized by two distinct

regimes (UK vs. CE), which have different corporate governance and regulatory characteristics. Thus, focusing on Europe might add another dimension to the discussion on whether advisors provide value to their clients.

My results suggest that advisors help to create shareholder value only when the bidder and the target are both located in the UK. It seems that advisors' services are particularly valuable in a transparent environment in which the service quality of advisors is highly visible. Moreover, using the ETD as an exogenous shock to the acquisition market in a difference-in-difference research design, my results suggest that advisors are helpful in a complex and legally uncertain environment.

The study also contributes to the ongoing discussion in the media that criticizes bankers for being compensated too extensively (The Economist, 2012) and to claims from inside the banking system that profits for investment banks are more important than the interests of the bank clients (The New York Times, 2012). My results, however, seem to support the conjecture that investment banks play an important and valuable role in the acquisition market.

Table 2.10: Variable definitions

Variable name	Unit	Definition	Source
<b>Advisor characteristics</b>			
Advisor	dummy	1 for acquisitions in which the bidder is advised by an advisor and 0 otherwise.	SDC Platinum
<b>Region</b>			
UK bidder (target)	dummy	1 for bidders (targets) which are incorporated in the UK or Ireland and whose primary stock exchange is UK or Ireland and 0 otherwise.	SDC Platinum, Datastream
UK-UK (CE-CE)	dummy	1 for acquisitions that involve targets and bidders both from the UK (CE) and 0 otherwise.	SDC Platinum, Datastream
UK-CE (CE-UK)	dummy	1 for acquisitions that involve targets from the UK (CE) and bidders from CE (the UK) and 0 otherwise.	SDC Platinum, Datastream
DO-UK-UK (CE-CE)	dummy	1 for domestic acquisitions in the UK (CE) and 0 otherwise.	SDC Platinum, Datastream
CB-UK-UK (CE-CE)	dummy	1 for cross-border acquisitions in the UK (CE) and 0 otherwise.	SDC Platinum, Datastream
Bidder French (German, Scandinavian) LO	dummy	1 for bidders that are located in a country that has a French (German, Scandinavian) law origin and 0 otherwise.	SDC Platinum, Datastream
Target French (German, Scandinavian) LO	dummy	1 for targets that are located in a country that has a French (German, Scandinavian) law origin and 0 otherwise.	SDC Platinum, Datastream
<b>Corporate governance characteristics</b>			
Shareholder rights	#	Shareholder rights protection index (re-scaled between 1 and 10) multiplied by rule of law (re-scaled between 0 and 1).	Martynova and Renneboog (2011b)
Minority shareholder rights	#	Minority shareholder rights protection index (re-scaled between 1 and 10) multiplied by rule of law (re-scaled between 0 and 1).	Martynova and Renneboog (2011b)
Creditor rights	#	Creditor rights protection index (re-scaled between 1 and 10) multiplied by rule of law (re-scaled between 0 and 1).	Martynova and Renneboog (2011b)
Rule of law	#	Captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	The World Bank
Governance index (WB)	#	Equally weighted index based on six different governance measures (governance effectiveness, regulatory quality, rule of law, political stability, corruption and voice & accountability).	The World Bank
ADRI (Spamann)		Anti-director rights index.	Spamann (2010)
<b>Country characteristics</b>			
Anti-corruption	#	Captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.	The World Bank
Financial development	#	Captures the development of the financial markets and financial institutions in the bidder country. The index ranges from 0 to 1, is calculated by Katsiaryna Svirydzenka and published in a IMF working paper (see, Svirydzenka, 2016).	International Monetary Fund
Competition	US\$ (log)	Natural logarithm of the acquisition volume in the target 2-digit SIC industry in the target country per year (see, e.g., Humphery-Jenner, 2012).	SDC Platinum
GDP growth	%	Bidder country annual gross domestic product (GDP) growth.	The World Bank
GNI per capita	US\$	Bidder country gross national income (GNI) per capita.	The World Bank
Market cap to GDP	#	Bidder country market capitalization of all firms divided by the GDP.	The World Bank
Market turnover	#	Bidder country average turnover of all stocks.	The World Bank
Unemployment rate	%	Bidder country unemployment rate.	The World Bank
FDI to GDP	#	Bidder country amount of foreign direct investments divided by the GDP.	The World Bank

Table 2.10 (continued): Variable definitions

Trade imbalance	#	Bidder country amount of imports minus the amount of exports divided by the sum of imports and exports.	The World Bank
<b>Regulation characteristics</b>			
ETD	dummy	1 for acquisitions announced after the implementation deadline (May 20, 2006) of the ETD (European Takeover Directive) and 0 otherwise.	<a href="http://eurlex.europa.eu/legal-content/EN/TXT/?uri=celex:32004L0025">http://eurlex.europa.eu/legal-content/EN/TXT/?uri=celex:32004L0025</a>
Treated	dummy	1 for bidders that acquire targets from a country that made significant changes to their national acquisition regulation due to the ETD and 0 otherwise.	Marccus Partners and Centre for European Policy Studies (2012)
(Non-)advisor treated	dummy	1 for bidders that do (not) use an advisor and acquire targets from a country that made significant changes to their national acquisition regulation due to the ETD and 0 otherwise.	Marccus Partners and Centre for European Policy Studies (2012) and SDC Platinum
<b>Deal characteristics</b>			
CAR country [-1;+1]	%	Cumulative abnormal announcement return of the bidder stock during a 3-day event window. I calculate CARs using the market model. Market returns come from the corresponding country's Datastream value-weighted market index return (see, e.g., Alexandris et al, 2010).	Datastream
Domestic	dummy	1 for acquisitions within a country and 0 for cross-border acquisitions.	SDC Platinum
Friendly acquisition	dummy	1 for friendly acquisitions and 0 for hostile acquisitions.	SDC Platinum
Completed acquisition	dummy	1 for completed acquisitions and 0 for withdrawn acquisitions.	SDC Platinum
Cash only acquisition	dummy	1 for cash only acquisitions and 0 for all other acquisitions.	SDC Platinum
Stock only acquisition	dummy	1 for stock only acquisitions and 0 for all other acquisitions.	SDC Platinum
Partial stock acquisition	dummy	1 for partial stock acquisitions and 0 for all other acquisitions.	SDC Platinum
Public status	dummy	1 for public targets and 0 otherwise.	SDC Platinum
Tender offer	dummy	1 for tender offers and 0 otherwise.	SDC Platinum
Focused acquisition	dummy	1 if the bidder and the target are in the same industry according to the 2-digit SIC code and 0 otherwise.	SDC Platinum
Acquisition value	US\$ million	Total value of the acquisition.	SDC Platinum
Relative acquisition value	%	Total acquisition value divided by the bidder market value of equity 88 trading days prior to the acquisition announcement.	SDC Platinum, Datastream
<b>Bidder characteristics</b>			
Size	US\$ million	Bidder market value of equity 88 trading days prior to the acquisition announcement.	Datastream
Runup	%	Market-adjusted buy-and-hold return of the bidder stock from 205 to 6 days prior to the acquisition announcement. I use the S&P 350 value-weighted index.	SDC Platinum, Datastream
Sigma	#	Standard deviation of market-adjusted daily bidder stock returns from 205 to 6 days prior to the acquisition announcement. I use the S&P 350 value-weighted index.	SDC Platinum, Datastream
Book-to-market	#	Bidder book value of total equity at the end of the fiscal year prior to the acquisition announcement divided by the bidder market value of equity 88 trading days prior to the acquisition announcement.	Datastream, Compustat
Leverage	%	Sum of the bidder long-term debt and the bidder debt in current liabilities (total financial debt) divided by the bidder book value of total assets at the end of the fiscal year prior to the acquisition announcement.	Compustat
Free cash-flow-to-assets	#	Bidder free cash flow (Compustat item) divided by bidder total assets.	Compustat
Experience	dummy	1 if the bidder successfully acquired at least one other firm during the last five years prior to the current acquisition announcement and 0 otherwise.	SDC Platinum

In this table, I define the variables I use and provide the sources from which I derive them.

## Chapter 3

# Superstar financial advisors: Do they deliver superior value to their clients?

*“Awarding best global house on the basis of league table position is like awarding restaurant of the year to McDonald’s.” (Euromoney, 2011a)*

### 3.1 Introduction

Between 2000 and 2013, North American acquisition activity reached annual volumes between 4% and 15% of the GDP, and its total volume amounted to more than US\$ 15 trillion. Investment banks are important intermediaries in the acquisitions market. They advised bidders which made up 82% of the acquisition volume during this period.<sup>11</sup> Servaes and Zenner (1996) argue that investment banks may create value as advisors by reducing transaction costs, asymmetric information costs and agency costs. This article investigates whether high-quality advisors are associated with a higher value creation for bidders than lower-quality advisors. We compare announcement and long-term returns as well as synergies. In addition, we are interested in how the value that is created by high-quality advisors in acquisitions is related to their reputational exposure.

---

<sup>11</sup> Source: SDC Platinum

Our contribution to the literature is threefold. First, we shed light onto the inconclusive empirical evidence for the relationship between bidder value creation and bidder advisor quality. Bowers and Miller (1990) and Servaes and Zenner (1996) do not find any relationship between advisor quality and value creation. Michel et al. (1991), Rau (2000), Hunter and Jagtiani (2003) and Ismail (2010) results indicate that if there is a relationship between advisor quality and the value that they create, it is negative rather than positive. Contrary to this, the findings of Golubov et al. (2012) indicate that high-quality advisors create more value than lower quality advisors. However, this is only the case in public acquisitions, not in private and subsidiary ones. Finally, Kale et al. (2003) find a positive link between the creation of value through tender offers and advisor quality.

Second, we contribute to the discussion on how advisor quality should be measured. The early research (Bowers and Miller, 1990; Michel et al., 1991; Servaes and Zenner, 1996) related advisor quality to frequent occurrences in the financial press. Since 2000, empirical studies typically employ league tables, which rank advisors on the basis of their market shares to construct proxies for advisor quality (Rau, 2000; Hunter and Jagtiani, 2003; Kale et al., 2003; Ismail, 2010; Golubov et al., 2012). Bao and Edmans (2011) argue that advisor market share is not a good predictor of value creation, and they demonstrate that the relationship between advisor market share and bidder CARs at the announcement is negative.

There is empirical evidence that casts serious doubt about whether advisor market share is related to value creation, and we believe that it is worth looking for an alternative measure of advisor quality. We propose a quality measure that indicates whether an advisor has won an award of excellence from one of the two world leading financial market magazines, *Euromoney* or *GlobalFinance*, in the period preceding an acquisition. These magazines claim that when they choose winners, they not only consider market shares, but they also include other quality criteria (GlobalFinance, 2014).

According to Clive Horwood, *Euromoney* editor, these awards “remain the benchmark for the industry” (Euromoney, 2011b). The recipients—investment banks—publicize the distinction. For example, they state that “the recognition we have received from leading publications in the

financial industry speaks volumes for our track record as a global business,”<sup>12</sup> “our passion to perform has been rewarded internationally,”<sup>13</sup> “we have achieved leadership positions”<sup>14</sup> and “these awards are a testament to our fully integrated global platform and world-class talent.”<sup>15</sup> Winners are periodically announced in press releases and in magazines with large circulation. The awards are widely regarded as “the most prestigious awards in global financing publishing,” (DailyNation, 2015), while the award ceremonies, where high-profile executives collect the awards personally as representatives of the winners, are viewed as “Oscar night for banks” (FinBuzz, 2015).

Despite their popularity in the investment banking industry, these awards have thus far been ignored by academic researchers. To the best of our knowledge, we are the first to introduce this measure and to investigate whether bidders realize greater synergies and a more favorable stock market reaction at the acquisition announcement when they involve winners and, if so, whether the outperformance endures in the long term.

Third, we add to the literature that argues that advisors allocate different levels of effort to different acquisitions. Liu et al. (2014) claim that advisors channel their resources into acquisitions that are more likely to generate future fee income. These are acquisitions that involve bidders which have a high probability of becoming serial acquirers. Derrien and Dessaint (2017) conclude that investment banks actively manage their league table position and therefore put more effort into acquisitions that more strongly affect their league table position. Golubov et al. (2012) argue that advisors focus on generating value in public acquisitions (and less so in private or subsidiary ones) because such acquisitions are associated with greater reputational exposure. We follow a similar line of argumentation as Golubov et al. (2012) but capture differences in

---

<sup>12</sup> <http://www.gbm.hsbc.com/about-us/awards/2015> (accessed July 20, 2016)

<sup>13</sup> <https://www.db.com/en/content/company/Current-Awards.htm> (accessed July 20, 2016)

<sup>14</sup> <https://www.jpmorgan.com/pages/jpmorgan/gcb/awards> (accessed July 20, 2016)

<sup>15</sup> <http://newsroom.bankofamerica.com/press-releases/awards-and-recognition/bank-america-merrill-lynch-earns-top-honors-euromoney-awards> (accessed July 20, 2016)

reputational exposure by the differences in bidder analyst coverage instead of target company status. We expect that advisors exert more effort when their clients are covered by analysts because such clients' deals are associated with greater reputational exposure. If greater effort results in greater value creation, we should expect greater value creation for bidders with analyst coverage compared to their counterparts that are not covered by analysts.

The results of our investigations, which are based on a sample of 2674 North American acquisitions, show that there is a positive relationship between advisor quality, which is captured by a time-varying winner dummy, and shareholder value creation around the announcement of an acquisition. The magnitude of the coefficient is economically nontrivial, as the CARs of bidders which are advised by winners are on average three percentage points higher than the CARs of bidders which are advised by non-winners; hereby, we control for the time invariant unobserved heterogeneity among winners by employing winner fixed effects. Our results further indicate that winners are associated with greater total synergies and that winner clients are able to capture a larger part of these synergies compared to the clients of non-winners. We also find that winners tend to create more shareholder value and greater total synergies in acquisitions in which they face greater reputational exposure.

Our findings also hold when we take into account endogeneity with regard to advisor–bidder matching. Endogenous switching models indicate that bidders which are advised by non-winners would have improved their CARs by almost four percentage points had they used the advice of winners. As an exclusion restriction, we use the variable scope, which was proposed by Golubov et al. (2012), that reflects whether a bidder had used advice of a winner in acquisitions, equity issues or debt issues during the previous five years. This variable does not consider the relationship between a bidder and a specific advisor but between a bidder and any winner. It seems unlikely that this relationship could be linked to the bidder CAR in a particular acquisition. At the same time, we expect the variable scope to be positively related to the probability that a bidder chooses a winner. In the robustness section, we use propensity score matching as an alternative approach to deal with a non-random match between bidders and advisors. The results are not driven by outliers since we winsorize CARs at the 1% level.



The new quality measure that captures whether an advisor won an award in the period preceding the acquisition seems to reflect the quality of advisors better than measures that are based exclusively on the advisor's market share. When we replicate our models with a quality measure that is based on market share, we do not find any positive relationship between this measure and value creation. This brings into question the common practice of using the advisor market share or the appearance of the advisor name in the financial press as a proxy for advisor quality, and it brings to the fore other relevant factors that should be considered. Our results that are related to the likelihood that an advisor wins an award are in line with the claims of the awarding institutions. We find that this likelihood is not only associated with advisor market share but that the creation of synergies, the fraction of acquisitions that are successfully completed and acquisition premia during the pre-nomination period all play a role.

In the long term, our results from a calendar-time approach indicate that bidders which are advised by winners outperform bidders which are advised by non-winners 12, 36 and 60 months after the acquisition. In these three periods, a hedged portfolio, which consists of a long position in a portfolio that contains the clients of winners and of a short position in a portfolio that contains the clients of non-winners, realizes a statistically significant monthly alpha of 0.60, 0.57 and 0.40 percentage points.

The remainder of the article is structured as follows: in Chapter 3.2 we describe the role of advisors in acquisitions and measures of advisor quality that were used in the prior literature. Chapter 3.3 presents our data and summary statistics. In Chapter 3.4 we analyze the relationship between advisor quality and short-term reaction, and in Chapter 3.5 we discuss sources of value creation, fees and differences in reputational exposure. Chapter 3.6 analyzes how winners are chosen. In Chapter 3.7 we examine the relationship between advisor quality and long-term bidder value creation. Chapter 3.8 summarizes various robustness tests and Chapter 3.9 presents our conclusions.

### **3.2 Advisor value creation and measures of advisor quality**

Servaes and Zenner (1996) suggest that investment banks may create value as financial advisors in acquisitions by providing three types of services to bidders. First, advisors help in selecting appropriate targets and structuring an acquisition, which decreases bidder transaction costs. Second, advisors may mitigate information asymmetries between bidders and targets. Third, advisors can alleviate agency conflicts that may arise between bidder management and shareholders, by providing third-party certification.

Transaction costs arise for bidders during the identification and valuation process of potential targets as well as during the process of structuring and negotiating an acquisition. Information asymmetries exist because bidders are usually less informed about the quality of potential targets than the targets themselves. As specialized agents, advisors (and high-quality advisors in particular) tend to possess skills to screen the market, to collect information and to structure acquisitions at lower costs than bidders. Advisors thus tend to add value, especially in acquisitions that are characterized by large transaction costs and information asymmetries (Servaes and Zenner, 1996).

Agency conflicts arise because the goals of bidder management, and shareholders tend to differ: while shareholders care about the value of their shares, value creation is not always the criterion on which managers base their decisions (Shleifer and Vishny, 1989). Jensen (1986) argues that free cash flow entails agency conflicts because the managers of firms with large free cash flow tend to “build empires”, i.e., to invest in negative NPV acquisitions. Lang et al. (1991) find empirical evidence that supports Jensen’s free cash flow hypothesis in tender offers. While most bidders are not repeat players in the acquisition markets, investment banks are. As investment banks’ future income depends on their reputation, they are interested in protecting it. Allen et al. (2004) conclude that the reputation of investment banks can serve as a certification device in acquisitions. When investment banks as advisors repeatedly offer high-quality services by executing value-creating acquisitions, they build up reputation and are able to certify value (Bao and Edmans, 2011; Golubov et al., 2012).

Do high-quality advisors reduce transaction costs, asymmetric information costs and agency costs that are more than those of lower quality advisors? Do we, in turn, observe a higher value added in acquisitions in which bidders engage high-quality advisors? While the existing empirical evidence supports the view that advisors add value in acquisitions (see, e.g., Bao and Edmans, 2011), it fails to deliver clear conclusions about the link between advisor quality and value added.

An important challenge that is faced by researchers is the identification of an appropriate measure of advisor quality. Early studies use measures that are related to the prestige of the advisor name (based on advisor appearance in tombstones in the financial press). Bowers and Miller (1990) do not find any relationship between a prestigious name and changes in bidder shareholder value, but they note that prestigious advisors are better at identifying synergetic acquisitions. In a related study, Michel et al. (1991) find, against their expectations, that a less prestigious advisor (Drexel Burnham Lambert Inc.) outperforms the most prestigious advisors. Building on the prior research, Servaes and Zenner (1996) sort advisors into quality tiers based on the prestige of their names, but they fail to demonstrate a relationship between tier rank and value creation.

Rau (2000) is the first to use a variable that is based on advisor market share as a quality measure in acquisitions. Since then, ranking advisors on the basis of their market share has become standard in the assessment of their quality in the empirical research on acquisitions. Rau (2000) classifies the five advisors with highest market shares as “top-tier” and documents that they are associated not with higher but with lower CARs. Tender offers seem to be an exception. In such cases, he finds a positive link between top-tier advisors and CARs. Hunter and Jagtiani (2003) use both acquisition volumes and counts to sort advisors into different tiers. However, they are not able to document a positive relationship between top-tier advisors and value creation. Rather, they conclude that synergies decline when top-tier advisors are in play. Ismail (2010) shows that bidders with top-tier advisors lost over US\$ 42 billion in shareholder value between 1985 and 2004. In contrast, lower tier advisors seem to generate about US\$ 13.5 billion in shareholder value. Wang and Whyte (2010) find that bidders that have strong managerial rights and that use investment banks are associated with lower value creation. However, it seems that

advisor market share alleviates this relationship. Golubov et al. (2012) demonstrate that there is a positive relationship between top-tier advisors and value creation in acquisitions that involve public targets. However, they do not find any relationship between top-tier advisors and CARs for bidders which acquire private or subsidiary targets. They explain the difference with the relatively larger reputational exposure that public compared to private and subsidiary targets might entail. In tender offers, Kale et al. (2003) find a positive relationship between bidder gains and bidder advisor quality relative to target advisor quality, proxied by their market share.

It is clear from this overview that the evidence for the relationship between value creation and advisor name prestige or advisor market share is mixed. This raises the question of whether one can find another measure to assess the quality of advisors that would lead to more consistent results. In response to this question, we investigate whether advisor awards, which are broadly accepted by market participants and that aim to honor the highest-quality advisors, can serve as an alternative measure of advisor quality.

### **3.3 Data and descriptive statistics**

We start this chapter by describing the data on advisor quality (3.3.1.) and follow with the presentation of the acquisition sample that we use in the study (3.3.2.). In the final part (3.3.3.), we provide descriptive statistics. We track the short-term and long-term performance of the bidders in North American acquisitions that were announced during the period from July 1st, 2001 and December 31st, 2008, and we follow these bidders until December 31st, 2013.

#### **3.3.1 Advisor quality**

Two major advisor awards, the “Award for excellence” and the “World’s best investment bank”, are granted to the best financial firms in various categories and regions by *Euromoney* and *GlobalFinance*, two of the leading financial market magazines with a circulation of 63000 and 50050 readers, respectively (Euromoney, 2015; GlobalFinance, 2015). In our analyses, we use the *Euromoney* award for the “best M&A house in the United States and Canada” and the

*GlobalFinance* award for the “best M&A bank in North America.” Both of the magazines choose winners annually, usually in April. The winners are announced in press releases as soon as the committee has come to a decision. We collect the relevant data and define an advisor as a winner as soon as a press statement is released about the final decision. This advisor retains the status of winner until the next winner is announced through a new press statement. We have obtained the winner data since 2001 for *Euromoney* and since 2003 for *GlobalFinance* from the magazines’ websites and from LexisNexis. Five investment banks have won one of these awards at least once: Bear Stearns, Goldman Sachs, JP Morgan, Merrill Lynch and Morgan Stanley.

*GlobalFinance* chooses winners on the basis of the opinions of its own journalists and those of industry experts. The *GlobalFinance* committee considers each candidate’s market share, number and size of acquisitions, service quality, structuring capabilities, distribution network, innovation, and after-market performance (GlobalFinance, 2014). *Euromoney* does not disclose details about the relevant criteria. It only states that a team of *Euromoney* journalists conduct interviews with representatives of the candidates and perform their analyses. The final decision is made by the magazine’s editor, Clive Horwood.

We contrast our quality measure, which is a dummy variable winner, with the commonly used measure, which is a dummy variable top-tier advisor. To obtain advisor market share and rank position we retrieve quarterly league tables from SDC Platinum. For each advisor, we calculate, on a rolling basis, its quarterly changing market share as the cumulated value of acquisitions in which that advisor is involved relative to the total acquisition value. The market share determines the advisor rank position in the relevant quarter. In line with Golubov et al. (2012), we classify the advisors in the top eight positions as top-tier.<sup>16</sup> Table 3.1 depicts a list of winners and top-tier advisors during our sample period.

---

<sup>16</sup> Fang (2005) employs a top-eight classification to capture high versus low quality in the market for bond underwriting. Rau (2000) uses a top-five classification. However, Golubov et al. (2012) show that their results are robust towards using a top-five, a top-eight or a top-ten classification.

Table 3.1: Top-tier advisors and winners

Financial advisor	Top-tier	Euromoney	GlobalFinance
Bank of America	YES	NO	NO
Barclays	YES	YES	NO
Bear Stearns	YES	YES	NO
Blackstone Group	YES	NO	NO
Citi	YES	NO	NO
Credit Suisse First Boston	YES	NO	NO
Evercore Partners	YES	NO	NO
Goldman Sachs	YES	YES	YES
JPMorgan	YES	NO	YES
Lazard	YES	NO	NO
Lehman Brothers	YES	NO	NO
Merrill Lynch	YES	YES	NO
Moelis & Co	YES	NO	NO
Morgan Stanley	YES	YES	NO
Quadrangle Group	YES	NO	NO
Salomon Smith Barney	YES	NO	NO
UBS	YES	NO	NO

This table presents a list of award winners, which were chosen by the magazines *Euromoney* and *GlobalFinance* at least once during our acquisition sample period, and a list of top-tier advisors in the same period. The data on top-tier advisors comes from SDC Platinum and winner data is hand-collected from *Euromoney* and *GlobalFinance* websites and from Lexis Nexis.

### 3.3.2 Acquisition sample

Our sample of acquisitions and their characteristics comes from SDC Platinum. To draw our sample, we apply the commonly used screening criteria (e.g., Rau, 2000; Bao and Edmans, 2011; Golubov et al., 2012): we consider all (successful and unsuccessful) acquisitions that involve public bidders and public, private or subsidiary targets. We only include acquisitions that entail a change in control; that is, cases in which the bidder intends to hold more than 50% of the shares after the acquisition and does not hold more than 10% prior to the acquisition. We exclude from our sample all repurchases, liquidations, restructurings, leveraged buyouts, reverse takeovers, privatizations, bankruptcy acquisitions, and going-private acquisitions, as well as all acquisitions with an acquisition value that is smaller than US\$ 1 million. We only consider acquisitions for which we obtain the acquisition value and payment method as well as the name of the advisor(s).

One problem with SDC Platinum is that it does not track mergers between advisors appropriately and reports merged advisors as separate entities even after a merger. To account for this problem, we track mergers between advisors during the period of interest. For merged advisors, we add the market shares of both entities and recalculate their ranking. Whenever we come across subsidiaries of advisors, we incorporate their market share in the parent firm market share.

We complement the SDC Platinum data with bidder characteristics from Compustat. In addition, we add data on stock prices and indices, which are adjusted for dividends and stock splits, from CRSP for US bidders and from Datastream for Canadian bidders.

### **3.3.3 Descriptive statistics**

Table 3.2 displays the full sample of 2674 acquisitions, the subsample of 206 acquisitions for which the winners offered their services and the subsample of 2468 acquisitions in which non-winners were involved. The table also includes the results of the Wilcoxon–Mann–Whitney (WMW) tests and t-tests that we run to compare differences in the dependent and independent variables across both of the subsamples. All of the variables are defined in Table 3.10.

To capture the short-term performance of bidders, we calculate their CARs around the acquisition announcements. We execute an event study using the market model that was introduced by Fama et al. (1969). Panel A in Table 3.2 reveals that the mean  $CAR[-2;+2]$  in our sample equals -0.22%. The median is -0.34%, which indicates that the majority of acquisitions do not create bidder shareholder value, which is in line with the findings of the previous studies (e.g., Roll, 1986; Lang et al., 1991; Moeller et al., 2005; Malmendier and Tate, 2008). The CARs of bidders who use the services of winners do not appear to be significantly different from the CARs in acquisitions in which bidders employ non-winners at conventional levels.

We also compare total and bidder synergies. Kale et al. (2003) and Golubov et al. (2012) suggest that total synergies may indicate how good bidder advisors are in structuring an acquisition and identifying a good business combination (the better merger hypothesis). In

addition, these works suggest that the part of total synergies that accrues to the bidder captures the negotiation skill of the bidder's advisor (the skilled negotiation hypothesis). We do not find any univariate differences in means or medians with regard to total synergies. Winners seem to be slightly better than non-winners in creating bidder synergies. The difference between the two groups in bidder synergies is significant at the 1% level, but only for means.

In panel B we group the independent variables that we expect to be related to bidder shareholder value creation (see, e.g., Rau, 2000; Fuller et al., 2002; Hunter and Jagtiani, 2003; Moeller et al., 2004; Masulis et al., 2007; Ismail, 2010; Golubov et al., 2012; Harford et al., 2012) into three categories: advisor characteristics, deal characteristics and bidder characteristics. The mean advisor market share in our sample is 13.42%, and the median is 7.50%. Unsurprisingly, winners have significantly higher market shares with a mean of 42.41% and a median of 46.48% compared to non-winners, whose mean and median are 11.01% and 5.73%, respectively.

Winners seem to be involved in cash only acquisitions more often than non-winners. Public firms make 41% of all acquisition targets, and their acquirers are more likely to be advised by winners than by non-winners. The mean and median acquisition values equal US\$ 959.78 million and US\$ 166.98 million, respectively.

We find that winners tend to advise larger bidders with mean and median sizes of US\$ 15.39 billion and US\$ 5.62 billion, while the mean and median sizes are US\$ 7.60 billion and US\$ 0.80 billion when the bidder is advised by a non-winner. The mean sigma of the total sample equals 2.48%, whereas bidders that are advised by winners seem to have a lower sigma than bidders that are advised by non-winners. According to the WMW-test, bidders which are advised by winners seem to have a significantly lower book-to-market ratio than bidders who are advised by non-winners, and bidders which are advised by winners appear to be significantly higher levered than bidders which are advised by non-winners. We use the cash-flow-to-equity ratio, which equals 2.41 on average in our sample, to proxy for the empire-building behavior that managers may exhibit (see, e.g., Jensen, 1986). Bidders which are advised by winners seem to have a higher cash-flow-to-equity ratio than bidders which are advised by non-winners. The mean defense score, which reflects the strength of anti-takeover provisions, of companies that are



advised by winners amounts to 0.31, while that of companies that are advised by non-winners is 0.29. The variable IB relationship indicates that winners tend to have stronger prior relationships with their clients than non-winners. A total of 84% of bidders which are advised by winners have analyst coverage, whereas only 62% of bidders which are advised by non-winners are covered by analysts, which indicates that winners focus on acquisitions with higher reputational exposure.

In addition to short-term performance, we are also interested in bidder long-term performance. In panel C, we present the bidders' buy-and-hold abnormal returns (BHARs) that announced an acquisition between July 2001 and December 2008, within the period between July 2001 and December 2013. As benchmarks, we use the CRSP value-weighted market index return for the US bidders and the MSCI Canada value-weighted market return for the Canadian bidders. The period that we use to calculate BHARs starts on the second day after the acquisition announcement and ends either 12, 36 or 60 months later or on the earlier delisting date. Over all three periods, the bidders seem to underperform the market. For example, the mean and median 60-months BHARs are highly negative at -36.42% and -48.51%, respectively. The bidders which used non-winners tend to underperform the bidders which employed winners. The difference in medians is significant for all three time horizons.

Table 3.3 depicts pairwise correlations between all independent variables we use in the main analysis. It allows us to conclude that our regressions are not affected by multicollinearity. Only the correlation coefficients between advisor market share and winner as well as between advisor market share and log(size) are greater than 50%. We pay attention to this potential multicollinearity problem in Table 3.9, where we exclude the variable advisor market share from the main regression. This robustness check delivers qualitatively similar results as the main regression.

Table 3.2: Descriptive statistics

(2) - (3)															
Variable	Unit	Full sample (1)				Winner (2)				Non-winner (3)				WMW test	t-test
		median	mean	stdev	N	median	mean	stdev	N	median	mean	stdev	N	z-value	t-value
Panel A: Short-term effects: Dependent variables															
CAR [-2;+2]	%	-0.34	-0.22	8.83	2674	-0.64	-0.46	7.86	206	-0.31	-0.21	8.91	2468	1.00	0.44
Advisor fees	%	0.55	0.69	0.57	254	0.52	0.54	0.43	35	0.56	0.71	0.58	219	1.49	2.05*
Total synergies	US\$ million	1.35	-111.21	1778.89	842	18.90	-313.07	2671.57	93	1.28	-86.14	1635.35	749	-0.33	0.80
Bidder synergies	%	-8.17	-136.08	849.12	842	-6.97	-47.39	172.88	93	-8.40	-147.09	897.71	749	-2.67	-0.19***
Panel B: Short-term effects: Independent variables															
Advisor characteristics															
Advisor market share	%	7.50	13.42	14.67	2674	46.48	42.41	11.01	206	5.73	11.01	12.13	2468	-21.72***	-39.02***
Deal characteristics															
Friendly acquisition	dummy	1.00	0.99	0.10	2674	1.00	0.98	0.14	206	1.00	0.99	0.10	2468	1.31	0.99
Cash only acquisition	dummy	0.00	0.31	0.46	2674	0.00	0.36	0.48	206	0.00	0.30	0.46	2468	-1.77*	-1.70*
Stock only acquisition	dummy	0.00	0.16	0.37	2674	0.00	0.15	0.36	206	0.00	0.16	0.37	2468	0.44	0.45
Partial stock acquisition	dummy	0.00	0.45	0.50	2674	0.00	0.43	0.50	206	0.00	0.45	0.50	2468	0.57	0.57
Public status	dummy	0.00	0.41	0.49	2674	1.00	0.52	0.50	206	0.00	0.40	0.49	2468	-3.53***	-3.48***
Tender offer	dummy	0.00	0.07	0.25	2674	0.00	0.09	0.29	206	0.00	0.06	0.24	2468	-1.62	-1.40
Focused acquisition	dummy	1.00	0.64	0.48	2674	1.00	0.67	0.47	206	1.00	0.64	0.48	2468	-0.78	-0.79
Acquisition value	US\$ million	166.98	959.78	3883.09	2674	745.00	3037.10	6127.89	206	146.87	786.38	3581.44	2468	-13.65***	-5.20***
Relative acquisition value	ratio	0.19	0.87	20.83	2674	0.19	0.43	0.74	206	0.19	0.91	21.68	2468	0.09	1.10
Bidder characteristics															
Size	US\$ billion	0.95	8.20	27.35	2674	5.62	15.39	26.55	206	0.80	7.60	27.33	2468	-4.04***	-12.92***
Runup	%	-2.35	1.78	42.71	2674	-0.23	2.44	30.14	206	-2.49	1.72	43.60	2468	-1.00	-0.31
Sigma	%	2.04	2.48	1.50	2674	1.64	1.89	1.10	206	2.09	2.52	1.52	2468	6.87***	7.71***
Book-to-market	ratio	0.47	1.12	22.52	2531	0.41	0.48	0.43	204	0.48	1.18	23.48	2327	4.04***	1.44
Leverage	%	17.06	20.60	19.28	2523	19.54	23.09	19.67	202	16.99	20.38	19.23	2321	-2.18**	-1.88*
Cash-flow-to-equity	ratio	5.23	2.41	40.18	2146	6.32	6.09	9.90	167	5.14	2.10	41.72	1979	-3.85***	-3.30***
Defense score	ratio	0.28	0.29	0.12	2533	0.28	0.31	0.10	200	0.28	0.29	0.12	2333	-2.71**	-2.23**
Experience	ratio	1.00	0.80	0.40	2674	1.00	0.84	0.37	206	1.00	0.80	0.40	2468	-1.15	-1.22

Table 3.2 (continued): Descriptive statistics

IB relation	ratio	0.00	0.17	0.28	2674	0.01	0.19	0.28	206	0.00	0.16	0.28	2468	-2.80**	-1.34
Analyst coverage	dummy	1.00	0.64	0.48	2674	1.00	0.84	0.37	206	1.00	0.62	0.49	2468	-6.35***	-8.09***
<b>Panel C: Long-term effects</b>															
12-month BHAR	%	-11.75	-10.72	40.79	2674	-7.03	-6.85	27.52	206	-12.47	-11.04	41.70	2468	-2.61***	-2.00**
36-month BHAR	%	-33.41	-25.55	64.25	2674	-27.23	-19.91	49.71	206	-34.09	-26.02	65.30	2468	-2.30**	-1.65
60-month BHAR	%	-48.51	-36.42	81.23	2674	-40.83	-30.77	57.57	206	-48.77	-36.89	82.89	2468	-2.36**	-1.41

This table presents sample summary statistics and the results of the Wilcoxon–Mann–Whitney (WMW) test and t-test that we run to compare dependent variables related to short-term effects (panel A), independent variables related to short-term effects (panel B) and variables related to long-term effects (panel C) between winners and non-winners. All of the variables that are defined in Table 3.10. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 3.3: Correlation matrix

	Winner	Advisor market share	Friendly acqui- sition	Cash only acqui- sition	Stock only acquisition	Public status	Tender offer	Focused acquisition	Log (Size)	Runup	Sigma	Book-to- market	Leverage	Cash- flow-to- equity	Defense score	Ex- perience	IB relation
Winner	1.00																
Advisor market share	0.57***	1.00															
Friendly acquisition	-0.03	-0.04**	1.00														
Cash only acquisition	0.03*	0.08***	-0.03*	1.00													
Stock only acquisition	-0.01	-0.05***	0.02	-0.29***	1.00												
Public status	0.07***	0.11***	-0.12***	-0.06***	0.31***	1.00											
Tender offer	0.03	0.07***	-0.28***	0.17***	-0.04**	0.31***	1.00										
Focused acquisition	0.02	-0.00	-0.03	-0.07***	0.07***	0.10***	-0.02	1.00									
Log(Size)	0.24***	0.52***	-0.07***	0.20***	-0.13***	0.15***	0.13***	-0.08***	1.00								
Runup	0.00	0.01	0.01	-0.01	0.02	0.04*	0.01	-0.01	0.04**	1.00							
Sigma	-0.11***	-0.21***	0.01	-0.15***	0.21***	-0.09***	-0.03*	0.04**	-0.50***	-0.04**	1.00						
Book-to-market	-0.01	-0.01	0.00	0.02	0.00	0.02	0.07***	-0.03	-0.09***	-0.02	0.01	1.00					
Leverage	0.04*	0.14***	-0.00	-0.03	-0.06***	-0.04**	-0.03	-0.09***	0.13***	0.04**	-0.21***	-0.02	1.00				
Cash-flow-to-equity	0.03	0.03	-0.01	0.01	-0.04*	0.03	0.02	0.02	0.12***	0.07***	-0.24***	0.00	-0.01	1.00			
Defense score	0.04**	0.04*	0.02	0.02	-0.07***	0.01	-0.06***	-0.02	0.02	0.00	-0.09***	-0.02	0.02	0.02	1.00		
Experience	0.02	0.13***	-0.00	0.09***	-0.07***	0.04**	0.05**	-0.04**	0.30***	0.03	-0.15***	0.01	0.03	0.04*	-0.00	1.00	
IB relation	0.03	0.08***	0.02	-0.04*	0.07***	-0.01	-0.02	0.00	0.05**	-0.02	-0.01	-0.01	0.02	0.03	-0.04**	0.06***	1.00

This table presents a pairwise correlation matrix of the independent variables that we use in our main analysis. All variables are defined in Table 3.10. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

### 3.4 Short-term effects

In this chapter we investigate whether winners are associated with higher acquisition announcement returns than non-winners (3.4.1.). We then consider the non-randomness in advisor-bidder matching (3.4.2.). We also contrast our new quality measure “winner” with the commonly-used quality measure “top-tier advisor.”

#### 3.4.1 Announcement returns

In Table 3.4 panel A, we first regress the bidder announcement  $CAR[-2;+2]$  on the winner dummy and on several advisor, deal and bidder characteristics that we expect to be related to shareholder value creation. All of the announcement return specifications include year and industry fixed effects. Overall, our results suggest that, compared to non-winners, winners create more shareholder value for their clients.<sup>17</sup> This effect is not rooted in the larger market shares of winners, which might partly reflect their quality, because we controlled for the advisor market share in all four regressions. Interestingly, we do not find a similar positive relationship between top-tier advisor and bidder shareholder value.

In Specification 1 we include the winner dummy and all of the deal characteristics in the regression. In Specifications 2, we add bidder characteristics. The coefficient on winner is positive and highly significant in both specifications. In Specification 3, we include time-invariant dummies for advisors that won an award at least once during our sample period. This may be crucial, considering that Bao and Edmans (2011) demonstrate the importance of unobserved advisor fixed effects for acquisition announcement returns. The magnitude of the winner effect increases and is economically important: the CARs of bidders which are advised by winners are

---

<sup>17</sup> The results are similar for subsamples that include only private and subsidiary targets or only public targets. We obtain qualitatively similar results for regressions with alternative event windows (three and eleven days) and with the S&P500 market index instead of the CRSP market index.

3 percentage points higher than those of bidders which are advised by non-winners. In Specification 4, we investigate whether the clients of winners outperform the clients of top-tier advisors. For that purpose, we perform the same regression as in Specification 3, but we restrict the sample to top-tier advisors and winners. We find that, even within a sample of top-tier advisors, winners are associated with a higher value creation.

In Specifications 5 and 6, we regress bidder CARs on top-tier advisor (instead on winner) using the same control variables as in previous specifications. The coefficient on top-tier advisor is insignificant. When we include both quality measures in one regression at the same time, the winner dummy remains significant, and top-tier advisor is insignificant (the results are not presented here, but they are available upon request). These results suggest that our measure might capture the quality of advisors more accurately than the top-tier advisor variable does. We should note that control variables have similar effects across all Specifications 1 to 6.

### **3.4.2 Endogeneity in advisor-bidder matching**

When bidders do not pick advisors randomly, the OLS results may be biased and inconsistent. To address the non-random matching between advisors and bidders, we use a Heckman two-stage regression approach (Heckman, 1979) and extend it with a switching regression model. Fang (2005) and Golubov et al. (2012) employ a similar model to analyze how advisor quality affects performance. The model allows the estimation of the unobserved outcome on the counterfactual and answers a “what-if” question: What would the (hypothetical) bidder CAR have been if a bidder had been advised by a winner instead of a non-winner? In the first-stage (selection) regression, we estimate the probability of a bidder choosing a winner by running a probit regression where the dependent variable is a dummy that equals 1 for acquisitions in which winners provide advice and zero for acquisitions in which non-winners provide advice. In the second stage, we estimate two linear regressions with the dependent variable  $CAR[-2;+2]$  for winners and non-winners separately. In both of these second-stage regressions, we correct for the non-random matching by incorporating the inverse of the Mills ratio obtained from the first stage as an additional independent variable. The two-equation system offers the possibility of specifying

the outcome separately for bidders which are advised by winners and for bidders which are advised by non-winners (Li and Prabhala, 2007). This approach has the advantage that of allowing us to relax the assumption of equality of the regression coefficients in the second-stage regression (e.g., Fang, 2005).

As an exclusion restriction, we construct the variable *scope*, which captures the intensity of the relationship between a bidder and (any) winner. A similar variable has been used in related studies. For example, Golubov et al. (2012) employ the *scope* variable to capture the intensity of the relationships between bidders and top-tier advisors over a five-year period prior to a specific acquisition. Our *scope* variable reflects whether a bidder had relied on the services of any winner in the form of advice on acquisitions, equity issues or debt issues during the previous five years. We construct this variable on a rolling basis. For that purpose, we collect data on all acquisitions, debt and equity issues from SDC Platinum since 1995. *Scope* equals 1, 2 and 3, respectively, if a bidder employed a winner for one, two, or all three of the three types of services that are listed above. Finally, *scope* equals 0 if the bidder had no dealings with a winner over the previous five years.

We expect that this variable is linked to the probability of a bidder choosing a winner because a bidder which has already used the services of a winner in the past is more likely to choose to work with a winner again than a bidder which has never worked with a winner before. At the same time, because we do not consider the relationship between a bidder and a specific advisor but between a bidder and any winner, it seems unlikely that this relationship could be linked to the bidder CAR in a particular acquisition.

The results of the first-stage regression are displayed in Specification 7 of Table 3.4. The variable *scope* is highly significant and positive. This means that a bidder which has hired a winner once is likely to do so again in the future. Specifications 8 and 9 depict the results of the second-stage regressions for winners and non-winners, respectively. Based on these results, panel B provides answer to the “what-if” question by showing the actual and the hypothetical bidder CARs for the winners and non-winners as well as the difference between the two and their t-values. Technically, we plug in the deal and bidder characteristics of acquisitions that were advised by

non-winners in the winner equation and vice versa (see, e.g., Golubov et al., 2012). For bidders which engaged winners, the hypothetical CAR shows what the CAR would be when these bidders hired a non-winner. If the bidders had been advised by non-winners instead of winners in the same acquisition, there would have been a significant deterioration of 1.40 percentage points in the CARs. In the opposite case, specifically if the bidders which had used non-winners had instead employed winners, their CAR would be significantly improved by 3.99 percentage points.<sup>18</sup>

Table 3.4: Advisor quality and announcement returns

Panel A	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable	CAR [-2;+2]						Winner	CAR [-2;+2]	
								Winner	Non-winner
Winner	0.0122** (0.0048)	0.0169*** (0.0064)	0.0296** (0.0145)	0.0243** (0.0090)					
Top-tier advisor					-0.0059 (0.0054)	-0.0055 (0.0054)			
Advisor market share	-0.0003*** (0.0001)	-0.0001 (0.0002)	-0.0000 (0.0003)	-0.0005* (0.0002)	0.0002 (0.0002)	0.0002 (0.0002)		-0.0012** (0.0004)	-0.0001 (0.0002)
Scope							0.2379*** (0.0544)		
Friendly acquisition	0.0209 (0.0141)	0.0131 (0.0154)	0.0182 (0.0184)	0.0080 (0.0163)	0.0113 (0.0140)	0.0130 (0.0153)	-0.0046 (0.3673)	0.0140 (0.0422)	0.0160 (0.0159)
Cash only acquisition	0.0045 (0.0038)	0.0070 (0.0047)	0.0073 (0.0047)	0.0030 (0.0079)	0.0058 (0.0045)	0.0071 (0.0046)	-0.0481 (0.0893)	-0.0340** (0.0115)	0.0125** (0.0049)
Stock only acquisition	-0.0068 (0.0071)	-0.0127 (0.0078)	-0.0129 (0.0078)	-0.0237 (0.0146)	-0.0080 (0.0078)	-0.0124 (0.0078)	0.0259 (0.0851)	-0.0798*** (0.0170)	-0.0076 (0.0085)
Public status	-0.0402*** (0.0037)	-0.0397*** (0.0045)	-0.0397*** (0.0046)	-0.0363*** (0.0068)	-0.0409*** (0.0043)	-0.0397*** (0.0045)	0.1134 (0.1326)	-0.0434*** (0.0124)	-0.0427*** (0.0052)
Tender offer	0.0192** (0.0077)	0.0186** (0.0081)	0.0185** (0.0084)	0.0208* (0.0119)	0.0190** (0.0078)	0.0186** (0.0080)	-0.0035 (0.1230)	0.0105 (0.0237)	0.0186** (0.0088)
Focused acquisition	0.0015 (0.0032)	-0.0011 (0.0043)	-0.0012 (0.0044)	0.0069 (0.0078)	-0.0012 (0.0041)	-0.0011 (0.0042)	0.2157*** (0.0706)	-0.0106 (0.0094)	-0.0060 (0.0050)
Log(size)		-0.0038***	-0.0040***	-0.0020	-0.0037**	-0.0038***	0.2275***	-0.0219**	-0.0099***

<sup>18</sup> An alternative scope variable leads to qualitatively similar results. The alternative scope variable is binary and equals 1 for each case in which a bidder has used the services of a winner in the previous five years at least once, independently of the type of the transaction (acquisition, debt offering, equity offering, or any combination of those) and 0 otherwise.



Table 3.4 (continued): Advisor quality and announcement returns

	(0.0014)	(0.0014)	(0.0023)	(0.0015)	(0.0013)	(0.0281)	(0.0074)	(0.0034)
Runup	-0.0244***	-0.0245***	-0.0256***	-0.0241***	-0.0245***	0.0372	-0.0134	-0.0261***
	(0.0059)	(0.0059)	(0.0087)	(0.0058)	(0.0059)	(0.0759)	(0.0118)	(0.0062)
Sigma	-0.3803	-0.3574	-0.4065	-0.2164	-0.3801	0.7690	-0.1207	-0.5369*
	(0.2918)	(0.2920)	(0.5631)	(0.2683)	(0.2913)	(2.9969)	(0.5564)	(0.3122)
Book-to-market	-0.0002***	-0.0002***	-0.0054	-0.0002***	-0.0002***	-0.0425	-0.0242	0.0007
	(0.0000)	(0.0000)	(0.0082)	(0.0000)	(0.0000)	(0.1103)	(0.0179)	(0.0005)
Leverage	0.0307**	0.0301**	0.0449*	0.0314**	0.0297**	-0.2967*	0.0581	0.0241*
	(0.0151)	(0.0150)	(0.0229)	(0.0150)	(0.0149)	(0.1584)	(0.0745)	(0.0138)
Cash-flow-to-equity	0.0022	0.0034	0.0000	0.0026	0.0023	0.1045	0.0712**	-0.0001
	(0.0058)	(0.0057)	(0.0039)	(0.0057)	(0.0058)	(0.1438)	(0.0304)	(0.0058)
Defense score	-0.0360**	-0.0365**	-0.0585**		-0.0351**	0.9343***	0.0032	-0.0567***
	(0.0160)	(0.0161)	(0.0263)		(0.0160)	(0.1958)	(0.0756)	(0.0207)
Experience	-0.0020	-0.0014	0.0085		-0.0024	-0.4285***	0.0000	0.0061
	(0.0072)	(0.0072)	(0.0104)		(0.0072)	(0.0820)	(0.0243)	(0.0084)
IB relation	-0.0050	-0.0054	-0.0087		-0.0053	0.1260	-0.0174	-0.0061
	(0.0066)	(0.0066)	(0.0108)		(0.0066)	(0.1430)	(0.0297)	(0.0070)
Inverse Mills ratio							-0.0849***	-0.0221*
							(0.0236)	(0.0129)
Constant	0.0186	0.0668***	0.0610**	0.0502	0.0465**	0.0663***	-3.5063***	0.4259***
	(0.0175)	(0.0235)	(0.0254)	(0.0340)	(0.0201)	(0.0233)	(0.4408)	(0.1045)
Winner dummies	NO	NO	YES	NO	NO	NO	NO	NO
Year and industry FE	YES	YES	YES	YES	YES	YES	NO	YES
N	2674	2034	2034	783	2138	2034	2051	159
R-sq/pseudo R-sq	0.07	0.10	0.10	0.13	0.10	0.10	0.15	0.37

Table 3.4 (continued): Advisor quality and announcement returns

Panel B	Winner			Non-winner		
	mean	N	t-value	mean	N	t-value
CAR [-2;+2]						
Actual	0.06%	159	0.13	-0.46%	1874	-6.85***
Hypothetical	-1.33%	160	-5.54***	3.54%	1891	11.49***
Improvement	-1.40%	159	-3.57***	3.99%	1874	13.00***

Panel A of this table presents coefficients from OLS regressions with the dependent variable bidder announcement CAR [-2;+2]). In addition to the winner dummy, Specification (1) includes deal characteristics. In Specifications (2), we add bidder characteristics. In Specification (3), we include winner dummies for advisors that have won an award during the sample period at least once. In Specification (4), we drop all acquisitions where neither top-tier advisors nor winners are involved. In Specifications (5) and (6), we use the top-tier advisor dummy instead of the winner dummy as our main variable of interest. We then execute a two-stage Heckman regression with an endogenous switching regression model. The first stage (Specification (7)) is a probit regression with the winner dummy as the dependent variable. In the second stage, we include the endogeneity correction from the first stage and run two separate OLS regressions with bidder announcement CAR [-2;+2] as the dependent variable for winners (Specifications (8)) and non-winners (Specifications (9)); panel B shows the results of the what-if analysis based on these estimates. All variables are defined in Table 3.10. Standard errors clustered on advisor level are provided in parentheses. We winsorize CARs at the 1% level. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

### 3.5 Sources of value creation, fees and reputational exposure

We start by analyzing the channels through which winners may create value (3.5.1.) The previous studies suggest that advisor quality may be related to the level of total and bidder synergies that result from an acquisition (Kale et al., 2003; Golubov et al., 2012), including the speed (Rau, 2000), the premium and the probability of deal completion (Kale et al., 2003). Then, we investigate whether hiring a winner comes at a higher cost than hiring a non-winner (3.5.2.). Finally, we investigate whether value creation differs in acquisitions with different levels of reputational exposure (3.5.3.).

#### 3.5.1 Synergies and acquisition execution

Table 3.5 sheds light on the relationship between advisor quality and the synergies that emerge in acquisitions. We find that winners are associated with greater total and greater bidder synergies. In Specification 1, we investigate whether high-quality advisors are associated with a greater amount of total synergies than their lower-quality counterparts. We regress the total amount of synergies on our main variable of interest, the winner, and a number of advisor, deal

and bidder characteristics. Moreover, we include year and industry fixed effects. In Specification 2, we analyze whether winners are able to transfer a greater part of these synergies to their clients than non-winners, by regressing the bidder synergies on the same independent variables that we use in Specification 1.

The results of Specification 1 suggest that winners are associated with a greater amount of synergies in the acquisitions in which they act as advisors. This indicates that winners may be able to screen the market more efficiently and pick better targets than non-winners. This finding supports the “better merger hypothesis”. The results of Specification 2 lend support to the conclusion that winners are able to capture a larger part of the total synergies on behalf of the bidder, which supports the view that they are more skilled in acquisition execution than non-winners. This is in line with the “skilled negotiation hypothesis”. To examine whether this also applies to top-tier advisors, we perform the same regressions, but we replace the winner dummy with the top-tier advisor dummy. We present the results in Specifications 3 and 4. Top-tier advisors do not seem to identify more synergetic acquisitions than non-winners, although they appear to be associated with greater bidder synergies (significant only at the 10% level). However, when we include both quality measures in one regression at the same time, the winner dummy remains significant and the top-tier advisor dummy becomes insignificant in both regressions (results available upon request).

In the remaining Specifications in Table 3.5, we execute Heckman two-stage regressions to control for non-random matching between advisor and bidder. The first-stage regression is the same as that in Chapter 3.4.2 (see Specification 7 in Table 3.4). We depict second-stage regressions for total synergies in Specifications 5 and 6 and for bidder synergies in Specifications 7 and 8 for winner and non-winner, respectively. As the inverse Mills ratios are not significant, the results of the OLS regressions seem to be reliable.

Table 3.5: Advisor quality and synergies

Dependent variable	(1)	(2)	(3)	(4)	(5)		(6)	(7)		(8)
	Total	Bidder	Total	Bidder	Total synergies		Non-winner	Bidder synergies		Non-winner
	synergies	synergies	synergies	synergies	Winner	Non-winner		Winner	Non-winner	
Winner	384.0211** (152.8454)	270.0087*** (98.8912)								
Top-tier advisor			-302.4296 (242.2135)	250.3763* (132.9259)						
Advisor market share	-4.8842 (4.6480)	-5.1104** (2.0244)	6.8311 (7.7222)	-6.4314* (3.3807)	-48.2310** (13.7966)	-1.6756 (4.6493)		-1.4743 (2.2389)	-4.4568** (1.7018)	
Friendly acquisition	-192.7633 (197.0762)	59.6169 (70.3743)	-208.9304 (187.6234)	67.8971 (77.4125)	5.6458 (820.1730)	-217.7885 (243.8955)		94.7250** (33.9993)	73.9012 (91.3166)	
Cash only acquisition	244.4207* (142.8438)	41.2854 (101.0627)	246.5976* (138.4968)	56.1497 (105.4250)	288.5333 (181.0178)	308.8653* (161.4889)		98.0333 (118.3747)	48.8607 (114.5480)	
Stock only acquisition	-411.1671** (179.2684)	85.3580 (59.6887)	-392.9592** (173.2685)	94.4514 (62.9660)	-1.19e+03*** (254.3720)	-321.1191* (174.5544)		77.0186 (103.6736)	105.8779 (71.2945)	
Public status	-820.5301* (438.4469)	-200.7032* (105.1473)	-775.2987* (455.8500)	-224.6897* (124.1166)	-2.82e+03*** (577.7899)	-389.4948* (208.7069)		-299.2941* (146.8715)	-200.2881* (107.6129)	
Tender offer	59.4104 (221.2301)	76.1449 (72.3424)	49.5485 (216.8061)	78.7588 (71.3915)	182.3613 (181.0407)	107.0776 (255.8503)		153.9528*** (10.8063)	78.9621 (83.5820)	
Focused acquisition	267.2747 (212.8820)	71.3209 (61.4060)	268.5309 (214.0721)	73.4827 (61.9864)	-733.5311* (362.7571)	286.7215 (238.9457)		50.9546 (48.2212)	42.5630 (58.7490)	
Log(size)	-190.0254* (111.5142)	27.1689 (18.8456)	-188.7845* (108.0480)	14.6244 (19.1207)	-727.4544* (335.7064)	-288.4672** (139.7449)		-62.1858 (52.8724)	8.6777 (36.5499)	
Runup	-4.2288 (75.8039)	11.4257 (59.3149)	-6.1388 (75.3392)	17.6474 (61.9430)	-125.9627 (277.9222)	-4.6670 (99.9515)		34.9397 (52.0814)	20.2636 (65.6681)	
Sigma	-12307.5600 (12273.5100)	4801.8192** (2125.9392)	-13199.2700 (12461.6000)	4589.9046** (2105.4930)	-8.88e+03 (1.30e+04)	-1.44e+04 (1.50e+04)		3187.7646** (1099.1483)	4985.3522** (2380.3583)	
Book-to-market	-1.3420** (0.5583)	0.4807** (0.1965)	-1.4002** (0.5682)	0.4030** (0.1930)	-39.6236 (688.2188)	-124.5779 (84.5432)		-73.4597 (91.8257)	19.3353 (42.4850)	
Leverage	-679.4750 (527.9756)	183.7992 (156.1515)	-692.0305 (516.0640)	126.9896 (147.9416)	-4.19e+03*** (1133.3643)	-637.4912 (569.2476)		-382.0387* (177.1917)	238.4980 (172.7475)	
Cash-flow-to-equity	74.2776 (142.1465)	2.5821 (60.2063)	69.6708 (143.2212)	-24.5301 (56.9414)	976.3046** (379.8214)	28.6709 (146.1027)		252.5734 (146.4342)	4.1327 (64.8372)	
Defense score	381.3399 (497.4220)	456.7921* (252.0775)	442.1123 (517.3581)	439.5052* (232.9519)	-2.81e+03* (1361.9192)	16.2712 (507.7675)		-344.7642 (200.6308)	422.9875 (271.0704)	
Experience	89.6216 (85.5308)	146.4063 (197.2337)	97.1035 (84.0492)	136.3924 (187.7947)	-569.2381 (625.7089)	183.5981* (107.8384)		-122.5397*** (31.2503)	177.3152 (201.8006)	
IB relation	671.1373 (411.5242)	212.4835*** (67.1615)	646.1813 (406.7348)	181.6285*** (67.8600)	314.7644 (1377.1919)	512.9557 (399.9372)		-223.9580 (314.3903)	230.9938*** (72.5612)	
Inverse Mills ratio					-2.72e+03 (1463.6994)	-298.7532 (229.5361)		-301.9939 (270.2068)	-82.0582 (161.7272)	
Constant	2471.8550** (1207.2554)	-637.1717** (249.2914)	2465.3264** (1196.8157)	-574.1854** (230.4892)	1.90e+04** (5927.8868)	3506.0898** (1659.7349)		1385.1140 (1016.2614)	-419.5724 (606.9430)	

Table 3.5 (continued): Advisor quality and synergies

Year and industry FE	YES	YES	YES	YES	YES	YES	YES	YES
N	634	634	634	634	74	559	74	559
R-sq/ps.R-sq	0.08	0.06	0.08	0.06	0.52	0.08	0.44	0.07

This table presents coefficients from OLS regressions with the dependent variables total synergies Specifications (1), (3), (5) and (6)) and bidder synergies (Specifications (2), (4), (7) and (8)). In addition to the winner dummy, Specifications (1) and (2) include deal and bidder characteristics. In Specifications (3) and (4), we use the top-tier advisor dummy instead of the winner dummy. In Specifications (5) and (6), we show the second-stage results from Heckman regressions for total synergies for winners and non-winners, respectively, and in Specifications (7) and (8), we depict the second-stage results from Heckman regressions for bidder synergies for winners and non-winners, respectively. For the first stage see Specification (7) in Table 3.4. All variables are defined in Table 3.10. Standard errors clustered on advisor level appear in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

To test whether winners are associated with faster, cheaper and more successfully completed acquisitions, we additionally regress (a) the time between announcement and completion, (b) the premium paid and (c) the success dummy (which reflects whether an acquisition was successfully completed) on our main variable winner and control variables. The results (available upon request) indicate that bidders who use the services of winners do not complete their acquisitions faster than other bidders. Furthermore, we do not find any differences in the premium paid or in the probability of success. We conclude that winner value creation comes mainly from greater synergy creation.

### 3.5.2 Advisor fees

Acquisition activity is an important source of income for investment banks. According to Thomson Reuters (2014), the advisor fees for acquisitions that involved either a North American bidder, a North American target or both equaled US\$ 19.4 billion in 2014. Kolasinski and Kothari (2008) report that advisor fees from acquisitions by far exceeded advisor fees from underwriting services in every year between 1995 and 2002. Kale et al. (2003) suggest that quality, CARs and advisor fees are positively related. To investigate whether winners receive higher fees for their value-increasing advisory services compared to non-winners, we regress the advisor fees on the

winner dummy and several deal and bidder characteristics that have been used in the previous studies (e.g., Golubov et al., 2012).

The fees (relative to acquisition value) that the winners charge their clients are higher by 0.15–0.17 percentage points than the fees of the non-winners (results not depicted but available upon request). This is economically important because the median fee is 0.55 in our sample. We further test whether top-tier advisors also charge higher fees by replacing the variable winner with the variable top-tier advisor. The fees that the top-tier advisors obtain are higher by 0.35 percentage points than the fees that are charged by the lower-ranking advisors although, as the findings that are presented above suggest, the top-tier advisors do not create more shareholder value for the bidders on average. Because neither bidders nor advisors are obliged to report their fees to the SEC (McLaughlin, 1990; Golubov et al., 2012), the number of observations in this analysis is far lower than in the previous analyses (35 for winners, 219 for non-winners). Therefore, we do not place much emphasis on these results.

### **3.5.3 Reputational exposure and value creation**

The recent research suggests that advisors tend to put different levels of effort into different acquisitions (Golubov et al., 2012; Liu et al., 2014; Derrien and Dessaint, 2017). We expect that advisors channel resources to more visible acquisitions because the potential reputational gains are larger than they are in less visible acquisitions. Conversely, visible acquisitions involve the risk of severe reputational damage for advisors if they perform poorly (Rhee and Valdez, 2009).

As a proxy for visibility and reputational exposure, we employ the variable analyst coverage, a dummy that equals 1 for bidders with analyst coverage at the time of the acquisition and 0 otherwise. Firms that are covered by analysts are exposed to the market due to regular analyst reports and news statements more than firms without analyst coverage. Therefore, we expect advisors to put more effort into acquisitions that involve bidders which are covered by analysts. Because we cannot observe advisor effort directly, we focus on shareholder value and synergy creation, and we expect higher effort to result in higher CARs and greater synergies. To

investigate whether high-quality advisors are associated with higher levels of CARs and synergies, particularly in acquisitions with higher reputational exposure, we interact the variable analyst coverage with the winner dummy and, alternatively, with the top-tier advisor dummy.

Table 3.6 shows the results, which support the hypothesis that high-quality advisors tend to create larger CARs and greater total synergies in acquisitions with high reputational exposure. The interaction term between the winner variable and the variable analyst coverage in Specifications 1 and 3 has a positive and significant coefficient. In comparison, the effect of the interaction term between the top-tier variable and the variable analyst coverage, which we show in Specifications 2 and 4, becomes insignificant. We do not find differences in bidder synergies between acquisitions in which winner (or top-tier advisor) faces higher reputational exposure and other winner (or top-tier advisor) acquisitions (see Specifications 5 and 6).

In Specification 7, we use fees as a dependent variable to obtain an indication as to whether the reputational gain is valuable to winners. The interaction term is significant and negative. This indicates that winners are willing to accept lower fees from more visible clients. In Specification 8, we replace winner with top-tier advisor. The coefficient is again significant and negative, which also indicates that top-tier advisors may trade-off current fee income against an increase in their reputation, which might ensure them higher deal flow (and fees) in the future. However, because we lose many observations in these regressions, the results should be interpreted with care.

Table 3.6: Advisor quality, reputational exposure and short-term effects

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CAR [-2;+2]		Total synergies		Bidder synergies		Advisor fees	
Winner	-0.0069 (0.0130)		-1.0974 (153.3978)		299.8221* (153.9576)		0.0045*** (0.0007)	
Top-tier advisor		-0.0145 (0.0132)		-39.9791 (178.5626)		200.2705** (100.5902)		0.0055*** (0.0010)
Analyst coverage	0.0007 (0.0050)	-0.0004 (0.0058)	-92.5492 (75.5235)	68.9060 (95.2630)	-1.4647 (43.9995)	-50.9794 (72.6168)	0.0003 (0.0007)	0.0009 (0.0010)
Winner*analyst coverage	0.0407*** (0.0080)		429.9187* (233.3549)		-33.5055 (90.3473)		-0.0035*** (0.0009)	
Top-tier*analyst coverage		0.0121 (0.0127)		-336.1695 (219.2867)		69.3113 (89.0160)		-0.0031** (0.0014)
Advisor market share	0.0000 (0.0003)	0.0002 (0.0002)	-4.5594 (4.6952)	6.8246 (7.7121)	-5.1145** (2.0292)	-6.4347* (3.3859)		
Friendly acquisition	0.0188 (0.0184)	0.0134 (0.0153)	-199.7989 (198.4585)	-232.4920 (186.5000)	59.2198 (70.2420)	68.9261 (79.0220)	0.0011 (0.0012)	0.0003 (0.0013)
Cash only acquisition	0.0072 (0.0048)	0.0071 (0.0046)	245.9148* (142.3855)	256.9131* (136.8676)	41.1490 (101.2843)	54.0295 (105.5848)		
Stock only acquisition	-0.0129* (0.0078)	-0.0123 (0.0078)	-408.6076** (178.2910)	-395.7801** (174.1545)	85.2291 (59.5913)	95.2651 (63.6767)		
Public status	-0.0396*** (0.0047)	-0.0399*** (0.0045)	-822.8056* (426.5172)	-759.5686 (464.4742)	-201.8763* (106.6849)	-234.1578* (130.5278)		
Tender offer	0.0183** (0.0084)	0.0188** (0.0080)	55.3413 (222.1869)	39.6832 (214.1277)	76.4150 (72.7485)	80.6845 (70.9407)	0.0022 (0.0014)	-0.0004 (0.0014)
Focused acquisition	-0.0010 (0.0045)	-0.0009 (0.0043)	274.0467 (213.6009)	264.9582 (215.7925)	71.0174 (62.2381)	75.1761 (62.5386)	-0.0008 (0.0007)	-0.0009 (0.0007)
Log(size)	-0.0043*** (0.0014)	-0.0041*** (0.0013)	-186.0092* (111.8503)	-184.0032* (108.7137)	27.6086 (19.5195)	16.7290 (19.1052)		
Runup	-0.0247*** (0.0059)	-0.0248*** (0.0059)	-7.9287 (75.0776)	5.3936 (76.9751)	11.6827 (59.3074)	15.1954 (62.1098)		
Sigma	-0.3674 (0.2920)	-0.3743 (0.2907)	-1.29e+04 (1.25e+04)	-1.29e+04 (1.24e+04)	4818.6509** (2174.0075)	4420.3373** (2018.0218)	0.1299*** (0.0349)	0.1222*** (0.0339)
Book-to-market	-0.0002*** (0.0000)	-0.0002*** (0.0000)	-1.3012** (0.5604)	-1.3827** (0.5750)	0.4857** (0.2077)	0.4340** (0.2072)		
Leverage	0.0296** (0.0147)	0.0298** (0.0149)	-683.0069 (527.4697)	-715.0445 (518.5611)	182.5886 (156.4280)	125.1199 (150.3070)		
Cash-flow-to-equity	0.0035 (0.0057)	0.0026 (0.0058)	91.4474 (140.1888)	37.5305 (132.8401)	2.7373 (61.0700)	-11.7374 (59.5098)		
Defense score	-0.0381** (0.0162)	-0.0367** (0.0162)	392.6236 (504.0249)	469.2018 (521.3217)	459.9254* (257.5263)	450.3573* (240.9581)		
Experience	-0.0015 (0.0072)	-0.0022 (0.0072)	89.3826 (84.0085)	90.6365 (82.9751)	145.6023 (197.2037)	134.1132 (188.0006)		
IB relation	-0.0055	-0.0053	661.4500	635.8111	212.8450***	182.0582***		



Table 3.6 (continued): Advisor quality, reputational exposure and short-term effects

	(0.0066)	(0.0066)	(409.3418)	(408.0207)	(67.0765)	(68.1465)		
Log(acquisition value)							-0.0011***	-0.0015***
							(0.0002)	(0.0002)
Relative acquisition value							-0.0008***	-0.0007***
							(0.0002)	(0.0002)
Partial stock acquisition							-0.0004	-0.0009
							(0.0015)	(0.0015)
Constant	0.0628**	0.0678***	2508.4512**	2407.2274**	-638.0547**	-553.3605**	0.0083***	0.0113***
	(0.0255)	(0.0239)	(1220.0044)	(1186.5700)	(252.8495)	(225.2396)	(0.0024)	(0.0026)
Winner dummies	YES	NO	NO	NO	NO	NO	NO	NO
Year FE / industry FE	YES / YES	YES / YES	YES / YES	YES / YES	YES / YES	YES / YES	YES / NO	YES / NO
N	2034	2034	634	634	634	634	254	254
R-sq	0.11	0.10	0.08	0.08	0.06	0.06	0.34	0.39

This table presents coefficients from OLS regressions with the dependent variable bidder announcement CAR [-2;+2] in Specifications (1) and (2), total synergies in Specifications (3) and (4), bidder synergies in Specifications (5) and (6) and advisor fees in Specifications (7) and (8). All variables are defined in Table 3.10. Standard errors clustered on advisor level are provided in parentheses. We winsorize CARs at the 1% level. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

### 3.6 Choice of the winner

Our results indicate that winners, not top-tier advisors, are associated with greater shareholder value and greater synergies. In other words, the league table position alone is not related to value creation. This calls for a closer look at how the performance and characteristics of advisors relate to the likelihood of winning an award. For this analysis, we aggregate our sample on the advisor–period level. For each advisor and period, we calculate the mean CAR, the share of bidders which are covered by analysts, the mean market share, the share of successfully completed acquisitions, the mean time that elapses between the announcement and completion of an acquisition, the mean synergy gain (for the bidder and the target) as well as the mean acquisition premium during the period that precedes the decision. The variables are defined in panel C of Table 3.10.

In Table 3.7 we employ logit regressions and regress the variable winner choice on these advisor-period characteristics one at a time (Specifications 1 to 7). We control for mean deal characteristics as well as year fixed effects. The share of bidders which are covered by analysts,

mean advisor market share, share of completed acquisitions and mean synergies are positively related to the probability of an advisor receiving an award. Mean CARs and mean completion time do not seem to matter for winner choice. In addition, advisors that help their clients to pay lower premiums are more likely to become winners. In Specification 8, we include all of the advisor-period characteristics except for mean premium. We include this variable in Specification 9.<sup>19</sup> Except for mean completion time in Specification 8, which becomes significant, the results correspond to those from Specifications 1 to 7.

Overall, it seems that the committees that choose winners do not base their choice only on advisor market shares but, in line with the guidelines of *GlobalFinance*, they consider a broader list of factors and performance measures.

---

<sup>19</sup> We cannot include all of the variables in one specification because the model does not converge.

Table 3.7: Choice of the winner

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Winner choice								
Ø CAR [-2;+2]	0.4509 (0.7763)							-19.9801 (12.6469)	-13.0742 (12.5686)
Ø analyst coverage		1.8487*** (0.1433)						17.7227** (7.8686)	2.7014** (1.3326)
Ø advisor market share			0.4302* (0.2252)					0.9126*** (0.2813)	0.4981** (0.2355)
Ø compl. acquisition				1.6696*** (0.4961)				122.4048*** (30.6720)	51.9877*** (19.5189)
Ø compl. time					0.0006 (0.0011)			0.1047** (0.0409)	0.0207 (0.0164)
Ø bidder synergies						0.0004*** (0.0001)		0.0087*** (0.0025)	
Ø target synergies						0.0004*** (0.0001)		0.0060*** (0.0020)	
Ø premium							-0.0282*** (0.0041)		-0.1244* (0.0729)
Ø friendly acquisition	0.8700* (0.4721)	1.4704*** (0.5033)	9.6712 (11.7894)	-0.3676 (0.5708)	-0.6197 (0.8942)	1.6824* (0.9037)	0.9023 (0.5891)	-33.2556** (14.5154)	-29.5685 (19.2075)
Ø cash only acquisition	0.2828 (0.2647)	0.2556 (0.2898)	-0.3784 (1.2132)	0.3386 (0.2320)	0.3873 (0.2509)	0.4083 (0.5364)	0.2780 (0.4092)	5.1376 (4.9450)	1.6470 (2.4095)
Ø stock only acquisition	-1.0942*** (0.2969)	-0.9706** (0.4232)	-24.0882 (16.5182)	-1.1586*** (0.3257)	-1.2090*** (0.3331)	-1.6971*** (0.6034)	-1.9048*** (0.4903)	-38.4444** (17.1148)	-26.8175 (20.8249)
Ø public status	1.0506*** (0.1578)	1.0544*** (0.2659)	0.0038 (1.4622)	1.1568*** (0.2056)	0.9929*** (0.2089)	-1.2303*** (0.3559)	-1.2595*** (0.4137)	-3.2335 (3.4661)	1.7381 (1.7437)
Ø tender offer	0.1849 (0.3734)	-0.0529 (0.4310)	-37.8068* (21.2051)	0.0400 (0.4194)	0.0281 (0.4165)	-0.2934 (0.5385)	0.1000 (0.3654)	-81.7674*** (24.0853)	-46.3830** (22.1185)
Ø focused acquisition	-0.0060 (0.2461)	-0.0290 (0.2697)	-4.4075 (5.0639)	-0.0306 (0.2745)	-0.0224 (0.2952)	0.2440 (0.5578)	-0.1389 (0.5862)	-16.5742** (6.4401)	-6.6637 (5.1163)
Constant	-5.3758*** (1.2255)	-6.8212*** (1.1854)	-15.6828 (13.2336)	-5.7122*** (1.0438)	-3.7530*** (1.1329)	-4.5281*** (1.7223)	-2.6382** (1.2469)	-117.9001*** (26.3036)	-29.1408*** (10.2613)
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	769	769	769	769	679	392	434	376	416
Pseudo R-sq	0.03	0.07	0.76	0.04	0.03	0.05	0.07	0.84	0.82

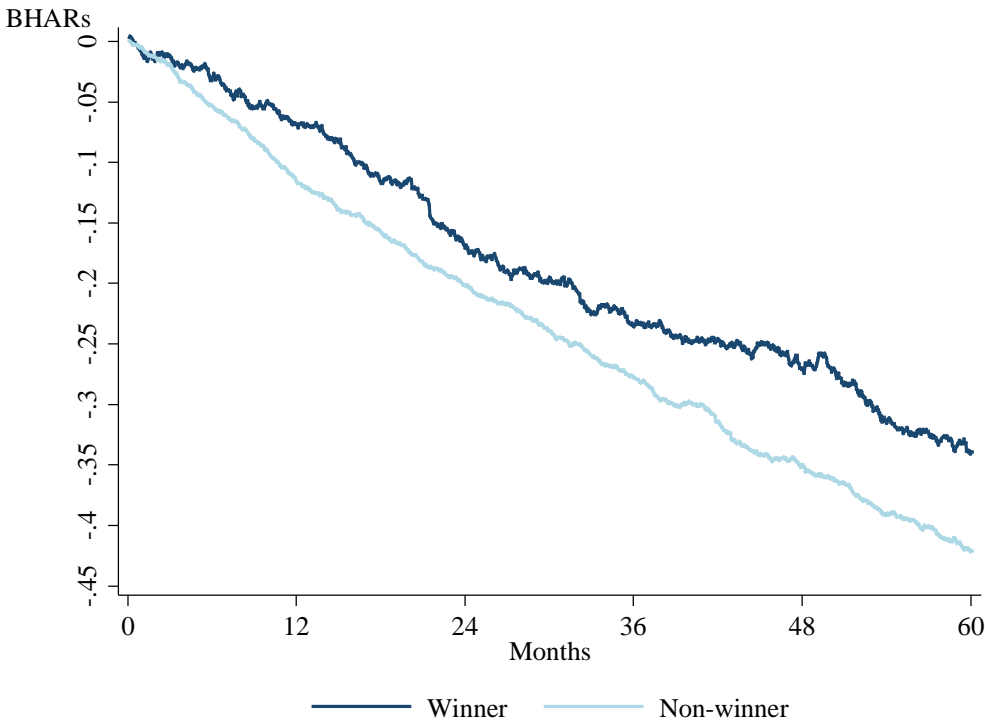
This table presents coefficients from logit regressions with the dependent variable winner choice. We employ an advisor panel data set. The independent variables are aggregated advisor and deal characteristics per advisor over the period that is relevant for the choice of the winner. All variables are defined in Table 3.10 and standard errors clustered on advisor level are provided in parentheses. We winsorize CARs at the 1% level. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

### 3.7 Long-term effects

Thus far, we have established a positive short-term reaction of bidders which are advised by winners. Next we test whether a positive “winner effect” also exists in the long term.

Figure 3.1 displays the BHARs for bidders that employed winners and those that used non-winners, cumulated over a five-year period beginning on the second day after the acquisition announcement. The figure shows that, in line with the results from prior literature, bidders underperform the market in the long term. However, the clients of winners underperform less than those of non-winners.

Figure 3.1: Winner vs. non-winner BHARs



This figure depicts bidder buy-and-hold abnormal returns (market-adjusted using the CRSP index return) during the sample period 2000–2013. The subsamples consist of bidders advised by winners and bidders advised by non-winners. The period for which we cumulate buy-and-hold abnormal returns (BHARs) starts on the second day after the acquisition announcement.

As BHARs are prone to poorly specified test statistics due to cross-sectional dependence problems within sample returns (Fama, 1998; Mitchell and Stafford, 2000), we use a calendar-time analysis as our main approach. We regress monthly calendar-time portfolio equal-weighted excess returns on four risk factors (Fama, 1998; Lyon et al., 1999; Fama and French, 2012):

Formula 3.1: Monthly calendar-time portfolio excess returns

$$R_{it}-R_{ft} = \alpha_i + \beta_i(R_{mt}-R_{ft}) + s_iSMB_t + h_iHML_t + w_iWML_t + e_{it}.$$

All of the variables are defined in panel D of Table 3.10. Table 3.8 shows the results that we obtain for the periods spanning 12, 36 and 60 months after an acquisition. Specifications 1 to 3 show the outcomes for portfolios that consist of bidders which employed winners. Specifications 4 to 6 show the results for portfolios of bidders which employed non-winners. Both groups of bidders underperform significantly in all three of the periods that we examine. However, the bidders which used the services of winners do better. The clients of winners have monthly alphas of -0.0075, -0.0067 and -0.0083 over the horizons of 12 months, 36 months and 60 months, while the clients of non-winners have alphas of -0.0135, -0.0129 and -0.0125, respectively. To assess whether the difference between the clients of winners and non-winners is significant, we build hedged portfolios. These consist of a long position in a portfolio that contains the clients of winners and of a short position in a portfolio that contains the clients of non-winners. We display the results with hedged portfolios in Specifications 7 to 9. The results support our conjecture that the clients of winners perform better in the long term than the clients of non-winners. The alphas equal 0.0060, 0.0057 and 0.0040 for periods of 12, 36 and 60 months, respectively, and they are all significant.

Table 3.8: Winners and long-term returns

	Winner			Non-winner			Hedged portfolios		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	12 months	36 months	60 months	12 months	36 months	60 months	12 months	36 months	60 months
Intercept ( $\alpha$ )	-0.0075** (0.0033)	-0.0067*** (0.0023)	-0.0083*** (0.0017)	-0.0135*** (0.0018)	-0.0129*** (0.0014)	-0.0125*** (0.0011)	0.0060** (0.0027)	0.0057*** (0.0022)	0.0040** (0.0017)
RMRF	1.1860*** (0.0867)	1.2004*** (0.0592)	1.2279*** (0.0439)	1.1430*** (0.0474)	1.1087*** (0.0351)	1.1229*** (0.0284)	0.0481 (0.0718)	0.0635 (0.0550)	0.1014** (0.0446)
SMB	0.2403* (0.1403)	0.3497*** (0.1047)	0.3745*** (0.0799)	0.5879*** (0.0774)	0.6292*** (0.0632)	0.6512*** (0.0519)	-0.3511*** (0.1162)	-0.2870*** (0.0972)	-0.2697*** (0.0813)
HML	0.0886 (0.1299)	0.2679*** (0.0967)	0.3623*** (0.0739)	0.1266* (0.0719)	0.2342*** (0.0577)	0.2377*** (0.0483)	-0.0391 (0.1076)	0.0550 (0.0897)	0.1250* (0.0752)
WML	-0.1174 (0.0719)	-0.1422*** (0.0523)	-0.1212*** (0.0403)	-0.0628 (0.0393)	-0.1249*** (0.0314)	-0.1156*** (0.0263)	-0.0507 (0.0595)	-0.0244 (0.0486)	-0.0063 (0.0410)
Adjusted R-sq	0.78	0.87	0.91	0.92	0.95	0.96	0.06	0.05	0.08

This table presents a calendar-time analysis based on a four-factor model with monthly equal-weighted portfolio excess returns for 12, 36 and 60 months. Specifications (1) to (3) display the abnormal returns for the portfolio of acquisitions where winners acted as advisors, while (4) to (6) relate to a portfolio where non-winners were involved. In Specifications (7) to (9) the dependent variable is the return for acquisitions in which winners were involved minus the return for acquisitions where non-winners were involved. All variables are defined in Table 3.10 and standard errors are provided in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

### 3.8 Robustness tests

Table 3.9 shows the results of the further analyses that we perform to check whether our main results are robust towards alterations. We first make various adjustments to our sample. In Specification 1, we check whether the results are influenced by withdrawn acquisitions, which might have different characteristics. To do that, we exclude the acquisitions that have been withdrawn from the sample. In Specification 2, we only include the US bidders and the US targets because the US market may be more indicative of the trends that we are investigating due to its large volume. In Specifications 3 and 4, we exclude the variable advisor market share, which is highly correlated with the variable winner and top-tier advisor, to investigate how the exclusion of this variable affects the winner and top-tier advisor variables.

To further address potential endogeneity concerns, in Specification 5, we use propensity score matching. For each of the 159 bidders which are advised by winners, we find the most similar bidders that are advised by a non-winner. To match the bidders, we consider size, industry and year of the acquisition announcement, and we match the bidders on a one-to-one basis without replacement. The coefficient on the variable winner remains statistically significant. The magnitude is within 2.8 percentage points, which is comparable to the result in the regression with advisor fixed effects.

The results in Specifications 1 to 5 do not alter our main conclusion, and they support the view that winners are associated with significantly higher CARs.

Table 3.9: Robustness tests

	(1)	(2)	(3)	(4)	(5)
Dependent variable	CAR [-2;+2]				
Winner	0.0346** (0.0143)	0.0280* (0.0149)	0.0297** (0.0143)		0.0278* (0.0146)
Top-tier advisor				-0.0037 (0.0054)	
Advisor market share	0.0000 (0.0003)	0.0001 (0.0003)			-0.0005 (0.0003)
Friendly acquisition	0.0041 (0.0365)	0.0096 (0.0295)	0.0182 (0.0184)	0.0171 (0.0179)	-0.0005 (0.0312)
Cash only acquisition	0.0070 (0.0047)	0.0056 (0.0050)	0.0073 (0.0047)	0.0071 (0.0047)	-0.0141 (0.0084)
Stock only acquisition	-0.0119 (0.0078)	-0.0143 (0.0089)	-0.0129 (0.0078)	-0.0127 (0.0078)	-0.0415*** (0.0143)
Public status	-0.0373*** (0.0042)	-0.0403*** (0.0049)	-0.0397*** (0.0046)	-0.0396*** (0.0046)	-0.0308*** (0.0098)
Tender offer	0.0161* (0.0088)	0.0201** (0.0086)	0.0185** (0.0083)	0.0178** (0.0081)	0.0146 (0.0160)
Focused acquisition	-0.0017 (0.0044)	0.0004 (0.0044)	-0.0012 (0.0044)	-0.0013 (0.0043)	-0.0074 (0.0088)
Log(size)	-0.0046*** (0.0014)	-0.0034** (0.0015)	-0.0041*** (0.0013)	-0.0037*** (0.0013)	
Runup	-0.0257*** (0.0060)	-0.0237*** (0.0060)	-0.0245*** (0.0059)	-0.0243*** (0.0059)	-0.0325** (0.0133)

Table 3.9 (continued): Robustness tests

Sigma	-0.4555 (0.2961)	-0.3742 (0.3035)	-0.3572 (0.2920)	-0.3642 (0.2910)	0.5059* (0.2807)
Book-to-market	-0.0002*** (0.0000)	-0.0002*** (0.0000)	-0.0002*** (0.0000)	-0.0002*** (0.0000)	-0.0179 (0.0117)
Leverage	0.0319** (0.0161)	0.0301* (0.0157)	0.0300** (0.0148)	0.0299** (0.0150)	0.0589* (0.0335)
Cash-flow-to-equity	0.0042 (0.0059)	0.0040 (0.0059)	0.0034 (0.0058)	0.0032 (0.0058)	0.1284** (0.0551)
Defense score	-0.0354** (0.0159)	-0.0366** (0.0159)	-0.0365** (0.0161)	-0.0354** (0.0160)	0.0256 (0.0353)
Experience	-0.0041 (0.0072)	0.0002 (0.0062)	-0.0014 (0.0072)	-0.0018 (0.0072)	-0.0162 (0.0127)
IB relation	-0.0066 (0.0072)	-0.0085 (0.0077)	-0.0054 (0.0065)	-0.0050 (0.0066)	-0.0062 (0.0231)
Constant	0.0821** (0.0341)	0.0689* (0.0385)	0.0611** (0.0252)	0.0606** (0.0244)	0.0115 (0.0320)
Winner dummies	YES	YES	YES	YES	NO
Year FE	YES	YES	YES	YES	NO
Industry FE	YES	YES	YES	YES	NO
N	1948	1780	2034	2034	318
R-sq/pseudo R-sq	0.10	0.11	0.10	0.10	0.17

This table presents coefficients from OLS regressions with the dependent variable bidder announcement CAR[-2;+2]. In Specifications (1) and (2), we restrict the sample to completed acquisitions and US acquisitions respectively. In Specifications (3) and (4), we exclude advisor market share. In Specification (5), we use all acquisitions that involve a winner and a matched control sample of non-winner acquisitions. All variables are defined in Table 3.10. Standard errors clustered on advisor level are provided in parentheses. We winsorize CARs at the 1% level. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

### 3.9 Summary and conclusion

Is there a positive relationship between the quality of advisors and the value that they create for bidders in acquisitions? This question has recurred in the acquisitions literature for over two decades. However, researchers continue to struggle to find a clear answer. Indeed, the existing literature shows mixed results. What most of the existing studies have in common is that they rely on the advisor market share to proxy for advisor quality. We propose an alternative measure of quality that captures whether an advisor has won an award. We believe that this measure may assess advisor quality more accurately because it is not exclusively based on advisor market



shares. Rather, it considers more advisor characteristics that may be beneficial to bidders, such as the ability to identify more synergetic acquisitions and to negotiate and structure an acquisition.

We test this measure and obtain consistent results, which support the view that advisors that have won an award add value to the acquisitions in which they are involved. We find that winners are associated with higher bidder returns, both in the short and the long term. We further show that value creation comes from greater amounts of total synergies in the acquisitions in which winners not only act as advisors but also are able to capture a greater part of the total synergies for their clients. Our results are in line with the conjecture that winners tend to put more effort into acquisitions with higher reputational exposure. In addition to our main tests, we perform the same analyses for the commonly used quality measure, which identifies top-tier advisors on the basis of their market shares. We do not find a positive relationship between top-tier advisors and value creation.

We caution researchers, practitioners and policy makers to be careful when they assess the quality of an advisor. Rather than relying exclusively on league tables, which are based on market shares, they might consider taking into account additional advisor characteristics. In conclusion, we believe that our results support the practice of distinguishing the best advisors publicly with an award because this process seems to identify high-quality advisors.

Table 3.10: Variable definitions and sources

Variable name	Unit	Definition	Source
<b>Panel A: Short-term effects: Dependent variables</b>			
CAR [-2;+2]	%	Cumulative abnormal announcement return of the bidder stock during a 5-day event window. We employ an estimation window of 240 to 41 trading days before the acquisition announcement and calculate CARs using the market model. Market returns come from the CRSP value-weighted index for US firms and the MSCI Canada value-weighted index for Canadian firms.	CRSP for US and Datastream for Canada
Advisor fees	%	Total bidder advisor fees divided by the total acquisition value.	SDC Platinum
Total synergies	US\$ million	Sum of the expected bidder and target synergies that were created during an acquisition. The synergies are calculated as the product of the bidder (target) market value of equity 88 days prior to the acquisition announcement and the bidder (target) 5-day event window CAR.	SDC Platinum, CRSP for US and Datastream for Canada
Bidder synergies	%	Bidder synergies divided by the total synergies when the total synergies are > 0, and divided by 1-total synergies when the total synergies are <= 0. The ratio is multiplied by 100 in both cases.	SDC Platinum, CRSP for US and Datastream for Canada
<b>Panel B: Short-term effects: Independent variables</b>			
<b>Advisor characteristics</b>			
Winner	dummy	1 for acquisitions in which the bidder is advised by a winner and 0 otherwise.	Euromoney, Global-Finance, LexisNexis
Top-tier advisor	dummy	1 for acquisitions in which the bidder is advised by an advisor which is among the top eight advisors of a league table and 0 otherwise.	Euromoney, Global-Finance, LexisNexis
Advisor market share	%	Market share of the bidder advisor with the highest market share of all advisors listed for an acquisition. The advisor market share is the cumulated value of acquisitions in which that advisor is involved relatively to the total acquisition value and is calculated based on the three quarters preceding the quarter of the acquisition announcement and on the quarter of the acquisition announcement.	SDC Platinum
<b>Deal characteristics</b>			
Friendly acquisition	dummy	1 for friendly acquisitions and 0 for hostile acquisitions.	SDC Platinum
Cash only acquisition	dummy	1 for cash only acquisitions and 0 for all other acquisitions.	SDC Platinum
Stock only acquisition	dummy	1 for stock only acquisitions and 0 for all other acquisitions.	SDC Platinum
Partial stock acquisition	dummy	1 for partial stock acquisitions and 0 for all other acquisitions.	SDC Platinum
Public status	dummy	1 for public targets and 0 otherwise.	SDC Platinum
Tender offer	dummy	1 for tender offers and 0 otherwise.	SDC Platinum
Focused acquisition	dummy	1 if the bidder and the target are in the same industry according to the 2-digit SIC code and 0 otherwise.	SDC Platinum
Acquisition value	US\$ million	Total value of the acquisition.	SDC Platinum
Relative acquisition value	%	Total acquisition value divided by the bidder market value of equity 88 trading days prior to the acquisition announcement.	SDC Platinum, CRSP for US and Datastream for Canada
<b>Bidder characteristics</b>			
Size	US\$ billion	Bidder market value of equity 88 trading days prior to the acquisition announcement.	CRSP for US and Datastream for Canada
Runup	%	Market-adjusted buy-and-hold return of the bidder stock from 205 to 6 days prior to the acquisition announcement. We use the CRSP value-weighted index for US firms and the MSCI Canada value-weighted index for Canadian firms.	SDC Platinum, CRSP for US and Datastream for Canada

Table 3.10 (continued): Variable definitions and sources

Sigma	#	Standard deviation of market-adjusted daily bidder stock returns from 205 to 6 days prior to the acquisition announcement. We use the CRSP value-weighted index for US firms and the MSCI Canada value-weighted index for Canadian firms.	SDC Platinum, CRSP for US and Datastream for Canada
Book-to-market	#	Bidder book value of total equity at the end of the fiscal year prior to the acquisition announcement divided by the bidder market value of equity 88 trading days prior to the acquisition announcement.	CRSP for US and Datastream for Canada, Compustat
Leverage	%	Sum of the bidder long-term debt and the bidder debt in current liabilities (total financial debt) divided by the bidder book value of total assets at the end of the fiscal year prior to the acquisition announcement.	Compustat
Cash-flow-to-equity	#	Numerator equals the bidder income before extraordinary items and depreciation minus dividends on common stock minus dividends on preferred stock. Denominator equals the bidder number of shares outstanding times the stock closing price. The ratio is calculated at the end of the fiscal year prior to the acquisition announcement.	Compustat
Defense score	#	Defense score measures the strength of a firm's takeover defense which is determined by assigning values to various aspects of the anti-takeover provisions it has implemented. The accumulation of all of these points is averaged into weighted points with the resulting score ranging between 0 and 1, where a higher number indicates stronger takeover defenses.	Capital IQ
Experience	#	1 for bidders that have successfully completed an acquisition in the previous 5 years and 0 otherwise.	SDC Platinum
IB relation	#	Reflects the intensity of the relationship between the bidder and the advisor of the current acquisition over the previous 5 years. The numerator is the sum of the transaction value of equity transactions and debt transactions and acquisitions in which the bidder used the current advisor over the previous 5 years. The denominator is the sum of the transaction value of all equity transactions and debt transactions and acquisitions the bidder was involved in the previous 5 years.	SDC Platinum
Scope	#	1 if a bidder used the services of a winner for one of the three advisory services (either an acquisition or a debt issue or an equity issue) in the previous 5 years. The variable equals 2 if a bidder used a winner for two of the three services and 3 if a bidder used a winner for all three services. The variable equals 0 otherwise (the alternative scope variable is binary and equals 1 for each case where a bidder has used the services of a winner in the previous five years at least once, independently of the type of the transaction, and equals 0 otherwise).	SDC Platinum
Analyst coverage	dummy	1 for bidders that are covered by one or more analysts at the time of the acquisition and 0 for all other bidders.	Capital IQ
<b>Panel C: Choice of winners (advisor-period level; during the period prior to the choice of the winner)</b>			
Winner choice	dummy	1 for advisors which were chosen as winners and 0 otherwise.	Euromoney, Global-Finance, LexisNexis
Ø CAR [-2;+2]	%	Mean cumulative abnormal announcement return of the bidder.	CRSP for US and Datastream for Canada
Ø analyst coverage	ratio	Ratio of bidders covered by at least one analyst to all bidders.	Capital IQ
Ø advisor market share	%	Mean advisor market share.	SDC Platinum
Ø compl. acquisition	ratio	Ratio of completed to all acquisitions.	SDC Platinum
Ø compl. time	days	Mean time to resolution for all completed acquisitions.	SDC Platinum
Ø bidder synergies	US\$ million	Mean bidder synergies.	SDC Platinum, CRSP for US and Datastream for Canada
Ø target synergies	US\$ million	Mean target synergies. The target synergies are calculated as the product of the target market value of equity 88 days prior to the acquisition announcement and the target 5-day event window CAR.	SDC Platinum, CRSP for US and Datastream for Canada

Table 3.10 (continued): Variable definitions and sources

$\emptyset$ premium	%	Mean acquisition premium. The premium is calculated as the difference between the offer price and the target stock price 1 week prior to the acquisition announcement divided by the latter. We winsorize the variable at the 10% level.	SDC Platinum
$\emptyset$ friendly acquisition	ratio	Ratio of friendly to all acquisitions.	SDC Platinum
$\emptyset$ cash only acquisition	ratio	Ratio of cash only to all acquisitions.	SDC Platinum
$\emptyset$ stock only acquisition	ratio	Ratio of stock only to all acquisitions.	SDC Platinum
$\emptyset$ public status	ratio	Ratio of public to all acquisitions.	SDC Platinum
$\emptyset$ tender offer	ratio	Ratio of tender offers to all acquisitions.	SDC Platinum
$\emptyset$ focused acquisition	ratio	Ratio of focused to all acquisitions.	SDC Platinum
<b>Panel D: Long-term effects</b>			
12, 36 and 60-month BHAR	%	Buy-and-hold abnormal return of the bidder stock, calculated on the basis of the CRSP value-weighted index for US firms and the MSCI Canada value-weighted index for Canadian firms. We calculated BHARs over a 12, 36 and 60-month window, starting on the second day after the acquisition announcement.	CRSP for US and Datastream for Canada
$\alpha_i$	#	Captures the equal-weighted excess return for portfolio i in the calendar time analysis.	-
$R_{it}$	#	Equal-weighted excess return for portfolio i in month t of bidders that are advised by winners or bidders that are advised by non-winners.	Kenneth R. French website~
$R_{ft}$	#	Risk-free rate in month t.	Kenneth R. French website~
$R_{mt}$	#	Return on the market on all firms which are covered in CRSP for the North American market in month t.	Kenneth R. French website~
$SMB_t$	#	Monthly difference between the equal-weighted return on three small stock portfolios and the equal-weighted return on three big stock portfolios for the North American market in month t.	Kenneth R. French website~
$HML_t$	#	Monthly difference between the equal-weighted return on two high B/M portfolios and the equally weighted return on two low B/M portfolios for the North American market in month t.	Kenneth R. French website~
$WML_t$	#	Monthly difference between the equal-weighted return on two winner stock portfolios and the equal-weighted return on two loser stock portfolios for the North American market in month t.	Kenneth R. French website~

~[http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html).

In this table we define dependent (panel A) and independent (panel B) variables that relate to the short-term effects and sources of value creation, variables on advisor-period level (panel C) and variables that relate to the long-term effects (panel D) and provide the sources from which we derive them.

# Chapter 4

## Going public via special purpose acquisition companies: Frogs do not turn into princes

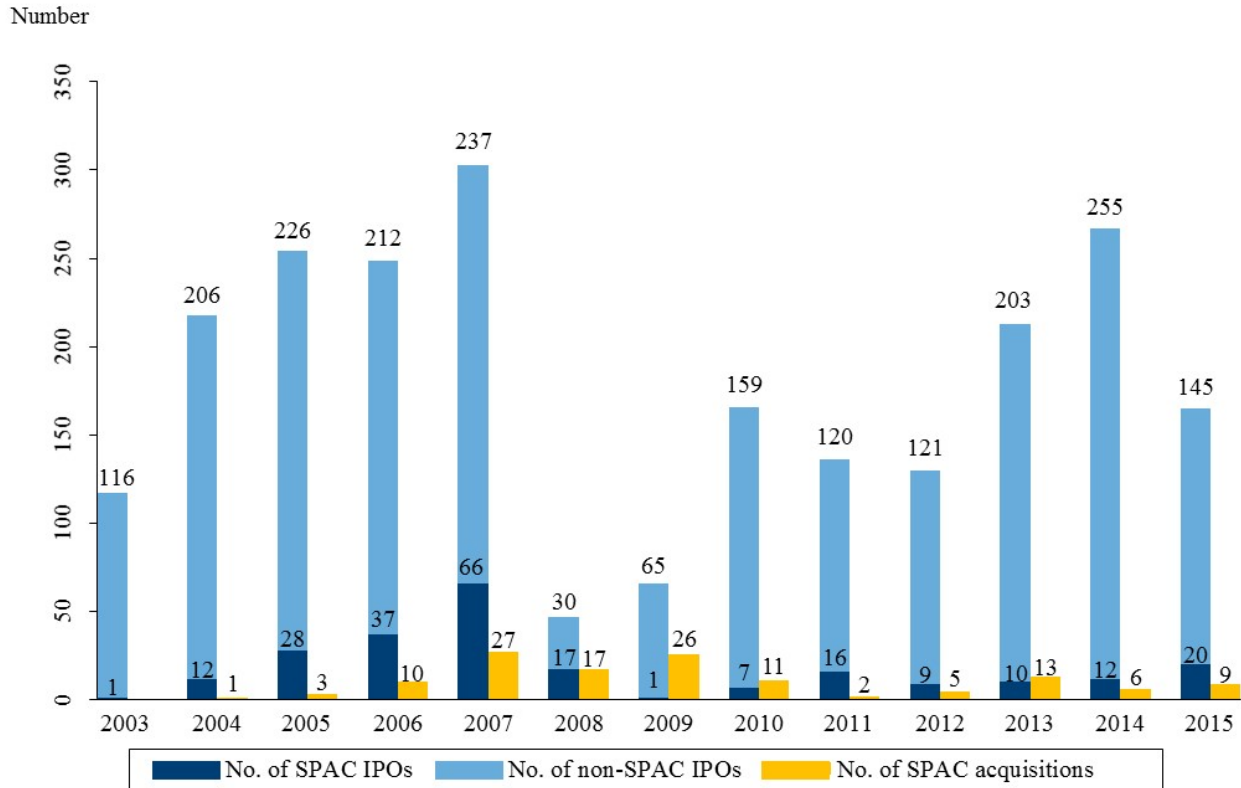
### 4.1 Introduction

The external capital that firms raise when they go public is of major interest to many growing businesses. Going public is also an important event for existing firm shareholders who may want to sell their holdings. Apart from the conventional method of IPOs, firms may access public markets via a non-traditional route. The most popular non-traditional route is a reverse merger. As a result of this, private firms get listed not through their own IPO but because they are acquired by publicly listed natural- or cash-shell companies (Feldman, 2010). Natural shells are listed companies that have either gone bankrupt or sold a large part of their assets. In contrast, cash shells raise funds when they go public via a traditional IPO. Their sole intention is to acquire an operating firm, which obtains a public listing through this acquisition.

Before the recent financial crisis, a type of cash shell called a SPAC became popular in the US (Cumming et al., 2014). 161 SPACs went public in the US between 2003 and 2008, raising a total of more than US\$ 22 billion in the course of their IPOs (Jenkinson and Sousa, 2011) and representing more than 13% of all IPOs (see Figure 4.1). In the peak year, 2007, 66 SPACs reached a public listing (almost 22% of all IPOs). SPAC IPO activity dropped in 2009 and 2010, but has started to recover again since 2011. In 2015, we observed 20 SPAC IPOs (and 145 non-SPAC IPOs) in the US. SPACs, which are founded and managed by SPAC sponsors, are firms with “no or nominal operations and either no or nominal assets, assets consisting solely of cash and cash equivalents, or assets consisting of any amount of cash and cash equivalents and nominal

other assets” (SEC, 2005). It is worth noting that they are the only form of shell companies that Ritter (2016) mentions in his latest IPO report. Within the sample period (2003-2015), we identify 236 SPAC IPOs with stronger SPAC IPO activity in bull than in bear markets.

Figure 4.1: Number of non-SPAC IPOs, SPAC IPOs and SPAC acquisitions



This figure presents the number of non-SPAC IPOs, SPAC IPOs and the number of SPAC acquisitions that were executed in the period 01/2003–12/2015. Source: Morgan Josef TriArtisan, EDGAR, Ellenoff Grossman & Schole, Capital IQ.

In this article, we examine private operating firms that SPACs acquire after their own IPO and compare them to IPO firms. We identify 130 such acquisitions within our sample period. The number of SPAC acquisitions is much lower than the number of SPAC IPOs because some SPACs fail in finding an appropriate target and some of the recently listed SPACs are still in the process

of searching at the end of 2015. In 2008, the peak year of SPAC acquisition activity (relative to IPO activity), 36% of firms went public via a SPAC acquisition rather than via an IPO. We focus on understanding why SPACs reach popularity among private firms that target a public listing as an alternative to traditional IPOs. We first investigate in what way market, deal and firm characteristics are related to the route through which firms go public. Second, we analyze how firms that are acquired by SPACs (“SPAC firms” hereafter) and IPO firms perform in the long term.

For private firms that target a public listing, SPACs offer numerous advantages over IPOs. At the time that they confer the public listing status to a private firm, SPACs have money at their disposal. Therefore, it is likely that SPAC acquisitions will depend less on the current market environment than IPOs. The readily available liquidity may also provide existing SPAC firm shareholders the possibility of cashing out their holdings immediately at the SPAC acquisition. In addition, this route is expected to be relatively fast and cheap because SPAC firms do not have to undergo the lengthy and costly process of SEC registration; the SPAC vehicle has already gone through this process. Moreover, SPAC firms do not have to organize road shows and they usually face lower underpricing (Rodrigues and Stegemoller, 2014).

However, going public via a SPAC acquisition also has disadvantages for private firms. Although these firms do not have to convince a large group of investors (as it would be the case with an IPO), the shareholders of the SPAC vehicle have to approve the SPAC acquisition, which attaches uncertainty to SPAC acquisitions. Moreover, private firms’ existing shareholders might fear a dilution of their holdings when using a SPAC acquisition due to the use of “in the money” warrants held by SPAC sponsors (Lakicevic et al., 2014). Investors might distrust SPACs and SPAC firms because they lack transparency (see, e.g., Cumming et al., 2014). As Arthur Levitt, a former SEC Chairman states, *“I have never found any blank-check investment vehicle attractive. No matter what the reputation or what the sponsor might be. [ . . . ] They are the ultimate in terms of lack of transparency.”*<sup>20</sup>

---

<sup>20</sup> <http://www.investingdaily.com/10914/special-purpose-acquisition-companies-spacs-will-investors-live-long-and-prosper/>.

Our findings contribute to the emerging, but still limited, research on SPACs and their acquisitions. First, we add to the literature that addresses the drivers behind SPAC acquisitions. Recent research on SPACs, which helps to better understand the SPAC structure and its underlying mechanisms, is conducted by Cumming et al. (2014).<sup>21</sup> They analyze factors which affect the shareholder approval probability of SPAC acquisitions. To the best of our knowledge, we are the first to consider the relation between the attractiveness of a SPAC acquisition (compared to an IPO) and the market environment as well as the cash-out opportunities of existing SPAC firm shareholders. We also examine further firm characteristics, such as venture capital (VC) and private equity (PE) backing,<sup>22</sup> which are not investigated in prior literature that addresses SPAC acquisitions vs. IPOs (e.g., Datar et al., 2012). Our results lend support to the conjecture that SPAC acquisitions tend to occur more often in volatile markets and that they offer existing SPAC firm shareholders the option to convert a larger fraction of their shares into cash immediately. Our findings furthermore indicate that SPACs provide smaller, more levered and low-growth firms, which may not succeed in IPOs, with the opportunity to enter public markets. These findings are robust towards alternative variable definitions, sample adjustments and towards matching.

Second, we enhance the literature on the performance of SPACs by analyzing the long-term performance of SPAC firms. We focus on the long-term wealth effects of up to 60 months following the SPAC acquisition, whereas prior SPAC research only analyzes SPAC acquisition announcement returns, SPAC acquisition completion returns or post-deal performance of SPACs for shorter time periods (Lewellen, 2009; Floros and Sapp, 2011; Jenkinson and Sousa, 2011; Datar et al., 2012; Lakicevic and Vulcanovic, 2013; Rodrigues and Stegemoller, 2014). In addition, besides buy and hold abnormal returns, which are employed in prior literature, we use factor regressions to account for the exposure to risk factors and to address the cross-sectional dependence problem. The aim of these analyses is to discover whether SPAC sponsors are able to detect some hidden qualities in the firms they acquire that are not reflected in their financial

---

<sup>21</sup> Older studies in this area include Berger (2008) and Lakicevic and Vulcanovic (2011).

<sup>22</sup> We thank an anonymous referee for making us aware of the importance of PE backing in firms acquired by SPACs.



characteristics at the time of the acquisition. We posit that if SPAC sponsors “kiss frogs” that “turn into princes,” then SPAC firms should show a superior stock-market performance as soon as their qualities become visible to the market. Our results indicate that firms that go public via a SPAC acquisition are associated with severe long-term underperformance vis-à-vis the market, industry and firms of similar sizes and book-to-market ratios. Long-term underperformance is also documented for IPO firms in many studies, starting with the seminal paper by Ritter (1991) and including this study. However, we find that SPAC firms do significantly worse than IPO firms.

Third, we add to the existing SPAC literature by extending the investigation period and increasing the number of observations. While prior studies, such as Lewellen (2009), Floros and Sapp (2011), Jenkinson and Sousa (2011), Datar et al. (2012) and Cumming et al. (2014) mostly focus on the period between 2003 and 2010, we also add data from the period between 2011 and 2015. We complement our SPAC sample (we include 127 SPAC acquisitions in our main regression) with a sample of 1128 IPOs. Compared to that, Datar et al. (2012), the study that is most closely related to our investigations, employ only 35 SPAC acquisitions and 389 IPOs in their main analysis. Including more recent SPACs and their acquisitions is important because the SPAC market underwent substantial changes during our sample period (Lakicevic et al., 2014). Cumming et al. (2014) suggest that moves in market liquidity and investor needs during the financial crisis transformed the SPAC market. In addition, the “tender offer regulation” in 2009/2010 might influence the attractiveness of SPAC acquisitions relative to IPOs. The reform changes the structure of SPACs (see, e.g., Rodrigues and Stegemoller, 2011; Lakicevic et al., 2014) and may contribute to the resurrection of SPAC activity. Figure 4.1 shows that there is only one SPAC IPO in 2009, but 74 SPAC IPOs between 2010 and 2015. Our results indicate that SPAC firms receive venture capital backing more often and that it takes less time to complete a public listing via a SPAC acquisition after the reform than before.

Fourth, we provide a contribution to the venture capital literature. We are not aware of any other study that considers SPAC acquisitions in the light of VC exits. VCs are repeated players in the IPO market, and the question arises whether VCs accept alternative vehicles and benefit from their potential advantages. On the one hand, SPAC acquisitions may offer VCs the possibility to

convert a larger part of their holdings into cash immediately. On the other hand, VCs might want to increase their reputational capital in the new issue market and therefore would prefer the traditional IPO route. Additionally, VCs may serve as a credible signal of firm quality and thus reduce agency costs that arise in IPOs, making IPOs more likely. Our results suggest that VCs prefer IPOs to SPAC acquisitions and thus lend support to the latter argumentation.

The remainder of this article is structured as follows: in Chapter 4.2, we discuss the literature on IPOs and SPACs as well as factors that may be related to the route through which firms go public. In Chapter 4.3, we present our data and descriptive statistics. In Chapter 4.4, we investigate in what way market, deal and firm characteristics are related to the route that firms take in going public. In Chapter 4.5, we analyze the long-term performance of SPAC and IPO firms. We conclude in Chapter 4.6.

## **4.2 IPOs versus SPACs**

The common method of going public for most firms is through an IPO, which involves selling new and existing shares. IPO activity is cyclical and depends on market conditions (Ritter, 1991). In the course of an IPO, existing shareholders usually realize only a partial exit, while a large fraction of their shares remains locked up (Brau et al., 2003). Indeed, Brav and Gompers (2003) report that most existing shareholders do not sell their holdings at the IPO. Firms that go public have to fulfill stringent legal requirements to become registered with the SEC.<sup>23</sup> Furthermore, the IPO process involves various direct and indirect costs. The direct costs include an underwriting spread and other types of fees. The indirect costs arise from underpricing and from the fact that the top management has to spend time on marketing the IPO, organizing a roadshow, completing the book-building process and allocating the shares (Benveniste and Spindt, 1989; Ritter and Welch, 2002) at the expense of the daily operations and core activities of the business.

---

<sup>23</sup> Since April 2012, the JOBS Act has relaxed some requirements, making IPOs easier. We turn to this issue later.

According to Gleason et al. (2005), reverse mergers, in which a publicly listed natural or cash shell acquires a private firm, are independent of market conditions and can be executed in both hot and cold IPO markets because the firms that are acquired by that method do not have to convince a large number of external investors. Aydogdu et al. (2007) note that reverse mergers may offer the firm they acquire a faster public listing at lower costs than an IPO would. Because shell companies are already listed on a stock exchange, their private targets obtain a public listing without having to go through the lengthy process of SEC registration. In addition, a reverse merger does not involve time-consuming procedures, such as marketing the shares, book-building or share allocation. For these reasons, shell companies and their private targets need to meet relatively low legal requirements and face lower costs. Gleason et al. (2005) note that the reverse merger fees equal only 2.7% of the transaction value on average, while Lee et al. (1996) find that the gross spreads for IPOs are 7.2%. Furthermore, Gleason et al. (2008) note that underpricing is substantially lower for reverse mergers than for IPOs. Greene (2016), however, shows that the wealth of private firm owners is larger when they exit through an IPO instead of a reverse merger because firms which choose an IPO tend to have a higher growth potential.

This article focuses on “new-generation” SPACs, which went public in the US in the period from 2003 until 2015, and their acquisitions. The first of these SPACs went public in August 2003 and performed its acquisition in August 2004. SPACs have several features that make them more transparent vehicles than natural-shell companies. While natural-shell companies typically arise from firms that are without assets or have gone bankrupt, SPACs are cash shell companies that are founded and equipped with funds for a single purpose: to acquire a private firm within a specified period. Moreover, SPACs undergo the listing process during their IPO. In addition to fulfilling the standard listing requirements for firms that go public, SPACs have to comply with additional regulations that were introduced after several cases of fraud involving shell vehicles during the 1980s. New-generation SPACs arose after the introduction of the Rule 419 Blank Check Offering Terms (Cumming et al., 2014), which aims to improve transparency, shareholder protection and the alignment of interests between shareholders and SPAC sponsors. Whereas in the 1980s SPACs were often classified as “penny stock” shell

companies, all new-generation SPAC offerings are larger than US\$ 5 million, which exempts them from the penny stock rule (SEC Rule 3a-51-1).

We depict the SPAC structure in Figure 4.2. To found a SPAC, the SPAC sponsors make a private placement for a nominal fee of US\$ 25000—the so-called sponsors' promote (Lakicevic et al., 2014). If an acquisition is successful, the sponsors' promote is worth approximately 20% of the SPAC's equity (Cumming et al., 2014). In addition, the sponsors usually provide 3% of the total SPAC funds to obtain warrants in exchange (Berger, 2008). Warrants carry the right to buy shares in the firm at a predetermined price after a successful acquisition. These warrants are, in general, "in the money". If the SPAC is liquidated, the sponsors lose their invested funds (e.g., Jog and Sun, 2007). The reason for placing the sponsors' capital at risk is to strengthen their incentives to look for promising targets.

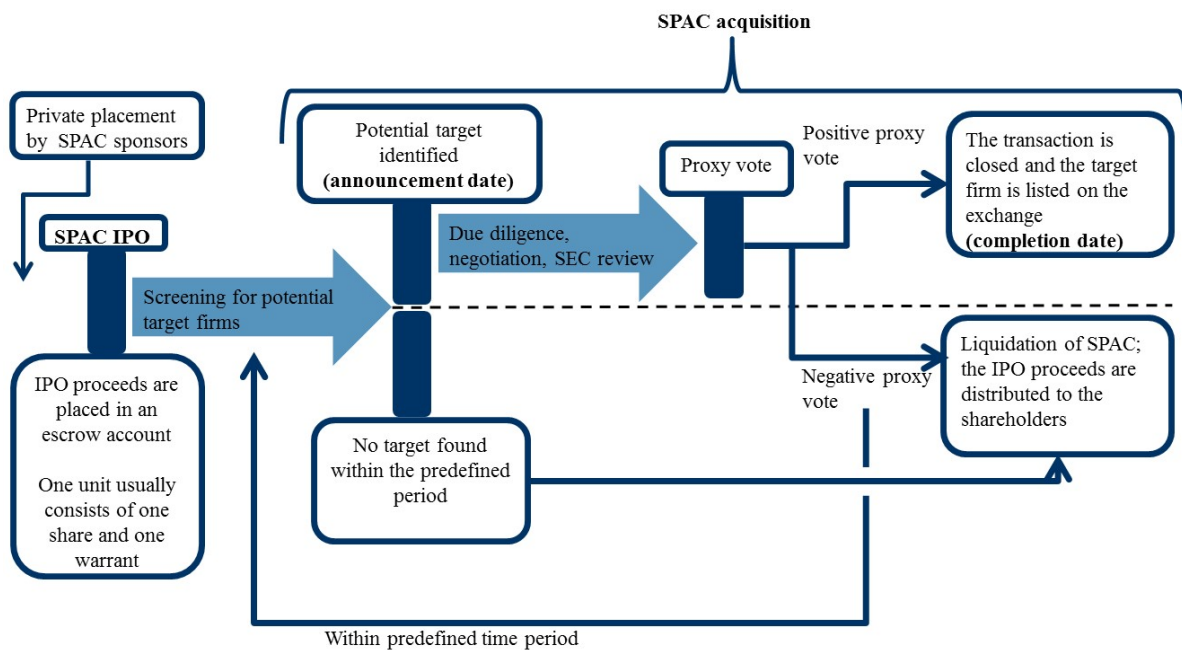
The private placement is followed by an IPO of the SPAC, during which it raises the majority of the funds that are necessary for a future acquisition. At the IPO, the SPAC typically issues units that can be traded and consist of public shares (common shares that carry voting rights) and warrants. At least 85% of the proceeds from a SPAC IPO must be placed in a trust account (which is invested in risk-free securities) and can only be released if the SPAC acquires a firm or is liquidated. According to Rodrigues and Stegemoller (2013), the proportion of the proceeds that is kept in the trust account increased from 85% in 2003 to 97% in 2010 and 100% in 2011.

Following the SPAC listing, the SPAC sponsors have a fixed amount of time, during which they do not obtain a salary or any other type of compensation, to find an appropriate acquisition target. The "screening for a target" period usually lasts between 18 and 24 months and is defined in the S-1 filing (Hale, 2007). Normally, SPACs focus on a specific region or industry in which the SPAC sponsors, who are often high-profile business persons with established networks, have a high degree of expertise (Lewellen, 2009). The expertise of the SPAC sponsors, which is an important SPAC asset, is disclosed in the SPAC IPO prospectus.

As soon as SPAC sponsors identify a potential target firm, they make an announcement to shareholders who own SPAC shares. In the period after the acquisition announcement date,

SPAC sponsors perform an extensive due diligence, negotiate the structuring of the acquisition and wait for the SEC review of the disclosure documents relating to the SPAC acquisition. This process ends with the proxy vote in which the shareholders vote for or against the acquisition. A few days later, usually an 8K filing is issued that confirms the SPAC acquisition. On this date, the public listing of the SPAC firm is completed. If the shareholders reject the acquisition, the SPAC sponsors have the right to look for another acquisition target. If the SPAC sponsors are not successful in acquiring a firm within the set time frame, the SPAC is liquidated and the proceeds and accrued interest from the trust account are distributed among the shareholders (Rodrigues and Stegemoller, 2013).

Figure 4.2: SPAC lifecycle



This figure shows the structure and the lifecycle of a SPAC.

In the following, we discuss the market, deal and firm characteristics that are likely to be relevant to the route through which firms go public.

#### **4.2.1 Market characteristics**

The first variable we examine is market volatility. Previous research on IPOs shows that market timing is key to the successful execution of an IPO (Ritter, 1991) and that high volatility decreases its chances of success. For example, Schill (2004) finds that above-average market volatility reduces the frequency of IPOs by 13% and IPO proceeds by 21%. We assume that SPAC acquisitions are less vulnerable to turbulent market conditions than IPOs because SPACs already possess liquidity at the time of the acquisition. Thus, in turbulent market environments, firms may increase their chances of becoming publicly listed by looking for an appropriate SPAC instead of aiming at an IPO.

The second variable that may be related to the route through which firms go public is cost of debt. As Lewellen (2009) observes, SPACs sometimes use not only the cash from the trust account but also raise debt to acquire firm shares. For that reason, he calls them “single-shot private equity funds” (see also Cumming et al., 2014). As long as SPACs raise debt to finance their acquisitions, one might expect that SPAC acquisitions are more frequent during periods characterized by cheap debt than during periods characterized by expensive debt because debt does not play a major role in IPOs.

#### **4.2.2 Deal characteristics**

Existing shareholders might see the going-public event as a chance to reduce their stake in the firm and to cash out some of their holdings (Barry et al., 1990). Liquidating holdings in IPOs often entails difficulties that are related to lock-up agreements and negative signaling (Bradley et al., 2001). Therefore, the existing shareholders usually only realize partial exits (Brau et al., 2003). By contrast, SPACs have cash available in the trust account, which they use to pay out the existing SPAC firm shareholders. We expect that, compared to IPOs, SPAC acquisitions offer the existing shareholders the option to convert a larger fraction of their shares into cash immediately in the course of the going-public event.

We conjecture that SPAC and IPO firms differ in time to resolution, i.e., the time they need to complete the transaction after its announcement date. For IPOs, we take the date of the

going public announcement. For SPAC acquisitions, we use the date when the SPAC announces the prospective target to SPAC shareholders. We do not use the SPAC IPO date because we are not interested in measuring how long a SPAC needs to identify an appropriate target firm. Instead, we take the viewpoint of an operating firm that wants to go public. For this firm, the date that it matches with the SPAC is relevant. Floros and Sapp (2011) suggest that reverse mergers are executed faster than IPOs. However, traditional reverse mergers do not require a proxy vote as SPACs do, which may slow down the acquisition process. Moreover, SPAC acquisition documents are subject to SEC review. Therefore, it is unclear whether executing an IPO is more or less time-consuming than executing a SPAC acquisition. Interestingly, with the “tender offer regulation” many SPACs abandoned the proxy vote in favor of a tender offer. This structural change might reduce time to resolution for SPACs in recent years.

#### **4.2.3 Firm characteristics**

The first two variables we employ help to assess the question of whether low-quality firms use SPACs as a “back door” (e.g., Brown et al., 2013) to enter public markets. To capture the quality, we look at the current profitability and at growth opportunities. We use return on assets as a measure for current profitability. To proxy for growth opportunities, we employ Tobin’s  $q$ , which we approximate with the market-to-book asset ratio, as suggested by Chung and Pruitt (1994). Chung and Pruitt (1994) show that their approximate Tobin’s  $q$ , which requires only basic accounting information, is highly correlated to a Tobin’s  $q$  calculated with a theoretically more exact technique. Given our data limitations, we stick to Chung and Pruitt (1994) measure in our analysis.

Our third variable in this category is debt ratio. On the one hand, highly levered firms may be too risky for IPO investors, so these firms may have to use the SPAC route. On the other hand, highly levered firms are unattractive for SPAC sponsors who want to use debt for the acquisition because this debt would further increase the firm’s debt ratio. If the target firm already has a high debt level, additional debt could substantially increase the risk of bankruptcy and the cost of

capital. This makes it difficult to predict how debt ratio is related to the likelihood of a firm choosing the SPAC route.

Fourth, we employ size. We expect that smaller firms prefer to employ SPAC acquisitions because, for these firms, it will be difficult to find a high-quality underwriter willing to manage the process of going public and to increase the chances of a successful listing (Fang, 2005). Even if such firms find an underwriter, the IPO will still be prohibitively costly due to the high (fixed) direct costs (Lee et al., 1996). Moreover, small firms may be too obscure and thus attract little interest from investors (Adjei et al., 2008).

Finally, we conjecture that VC involvement is also related to the route through which firms go public. IPOs are considered by VCs to be an important exit channel (Bascha and Walz, 2001; Bayar and Chemmanur, 2011). Due to the limited lifetime of their funds, VCs tend to be under pressure to cash out and realize returns quickly (Gompers, 1996; Giot and Schwienbacher, 2007).<sup>24</sup> Because they want to avoid sending negative signals about the value of a portfolio firm to potential investors, VCs typically keep most of their holdings during an IPO and their shares remain locked for a specified period after the IPO (Gompers and Lerner, 2001). By contrast, due to readily available liquidity, SPAC acquisitions make it possible for VCs to cash out immediately. On these grounds, we would expect that VCs prefer SPAC acquisitions over IPOs. However, VCs may prefer using the IPO route over the SPAC route despite the cash out advantage that SPAC acquisitions offer for at least two reasons. The first reason might be VC reputation, which is a crucial factor in the business model of VCs (Megginson and Weiss, 1991). VCs might prefer to maintain or extend their reputation through successful IPOs (Nahata, 2008) over cashing out. The second reason might be VC ability to signal. If VCs are able to send creditable signals, they can effectively reduce information asymmetries between an IPO firm and new investors and thus decrease costs and increase the likelihood of a successful IPO (Megginson and Weiss, 1991). We

---

<sup>24</sup> The pressure to cash out, to which VCs are exposed, is not the same across all portfolio firms, but will depend, for example, on the length of the holding period or the number of financing rounds. In our investigations, however, we capture the average effect and do not distinguish for the heterogeneity within the subsample of VC-backed firms.



expect that similar arguments hold for PE involvement because PEs also are under pressure for fast cash outs, are repeated players and profit from a good reputation. As PEs do not tend to exit via IPOs as often as VCs (Phalippou and Gottschalg, 2009), we expect the PE effect to be weaker than the VC effect.

## **4.3 Sample and descriptive statistics**

### **4.3.1 SPAC and IPO sample**

We gather our data on SPAC IPOs and SPAC acquisitions during the new-generation SPAC wave from the report issued by Morgan Joseph TriArtisan (SPAC market update March 2014),<sup>25</sup> from the Electronic Data Gathering and Retrieval (EDGAR) database maintained by the US Securities and Exchange Commission, from press statements issued by Ellenoff Grossman & Schole LLP and from Capital IQ. Between 2003 and 2015, we identify 236 SPAC IPOs and 130 SPAC acquisitions in the US. The first recorded SPAC IPO, which started this wave, is that of the Millstream Acquisition Corporation in August 2003. The first SPAC acquisition—in which Millstream Acquisition Corporation acquired NationsHealth Inc.—took place in August 2004. Our final sample, which we restrict to firms for which deal and firm characteristics are available, contains 127 SPAC firms. Although all SPACs are traded in the US, they acquired firms incorporated worldwide.

To retrieve the control sample of non-SPAC IPOs, we use Capital IQ. A query for all public offerings on US exchanges that are closed, effective or successful and larger than US\$ 5 million in the sample period yields 3149 IPO firms. Because we want to compare SPAC acquisitions of operating firms with IPOs of operating firms, we exclude shell companies, carve-outs, demutualizations, direct listings, mutual funds, bank conversions, best-effort basis agreements, unit offerings and offerings including warrants from the control sample. As in the case of SPAC firms, it does not matter whether some of the IPO firms in the control sample are

---

<sup>25</sup> [http://mjta.com/i/SPAC\\_Monthly.pdf](http://mjta.com/i/SPAC_Monthly.pdf)

incorporated in other countries; however, we do not consider firms that are incorporated in continents where no SPAC firms exist. We also exclude IPO firms from industries in which no SPAC acquisitions occur. Having filtered the original IPO sample and only kept IPOs for which we have deal and firm characteristics, we are left with a final control sample of 1128 IPO firms.

Figure 4.1 indicates that after the first SPAC acquisition in August 2004, the number of SPAC IPOs and SPAC acquisitions increased dramatically. In the peak year, 2007, SPAC IPOs accounted for approximately 22% of all US IPOs. These SPACs led to increased acquisition activity in subsequent years with SPACs becoming very popular as a vehicle for going public between 2007 and 2009. When we compare the SPAC acquisitions to the number of IPOs, we find a peak year in 2008. In this year, 36% of firms went public through this route. A year later, the share of SPAC acquisitions remained high at almost 29%, while only one SPAC went public. The SPAC IPOs started to recover in 2011. In 2015, we register 20 SPAC IPOs and 9 SPAC acquisitions compared to 145 non-SPAC IPOs.

Table 4.1 shows the composition of our sample of SPAC firms and IPO firms in different regions and industries. Although all SPACs are traded in the US, they acquire firms incorporated worldwide. Of the 127 SPAC firms, 83% are located in North America (of which 96% are located in the US), 13% in Asia and 4% in Europe. Similarly, 82% of all IPO firms are incorporated in North America (of which 99% are located in the US), 12% in Asia and 5% in Europe. Moreover, based on 2-digit SIC codes, 30% of all SPAC firms operate in the manufacturing industry, 24% in the services industry and 16% in the transportation and utilities industries. Manufacturing firms account for 33% of IPO firms in our sample, while 27% are involved in the service industry and 17% belong to the finance, insurance and real estate industries.

Table 4.1: Sample overview

Category	Subcategory	SPAC acquisitions		IPOs		Total	
		frequency	percent	frequency	percent	frequency	percent
Regions (no. of transactions)	North America	105	82.68	923	81.83	1028	81.91
	Europe	5	3.94	58	5.14	63	5.02
	Asia	16	12.60	132	11.70	148	11.79
	Latin America / Caribbean	1	0.79	15	1.33	16	1.27
	<b>Total</b>	<b>127</b>		<b>1128</b>		<b>1255</b>	
Industries (no. of transactions)	Manufacturing	38	29.92	371	32.89	409	32.59
	Transportation & Public Utilities	20	15.75	86	7.62	106	8.45
	Retail Trade	9	7.09	69	6.12	78	6.22
	Finance, Insurance, Real Estate	13	10.24	194	17.20	207	16.49
	Services	30	23.62	305	27.04	335	26.69
	Other	17	13.39	103	9.13	120	9.56
	<b>Total</b>	<b>127</b>		<b>1128</b>		<b>1255</b>	

This table provides information on the sample composition of SPAC acquisitions and IPOs executed in the period 01/2004–12/2015 by region and industry.

#### 4.3.2 Market, deal and firm characteristics

We complement our data on IPOs and SPAC acquisitions with market, deal and firm characteristics drawn primarily from Capital IQ, Compustat US and SDC Platinum. We obtain additional data from the EDGAR database and from the websites of individual firms. Table 4.2 presents the definitions of variables we use in the main regression and the sources from which we derive them.

Table 4.2: Variable definitions and sources

Variable name	Unit	Definition	Source
<b>Market characteristics</b>			
Market volatility	Thousand US\$	Average lagged six-month variance on S&P 500 index on the announcement date*.	Capital IQ
Cost of debt	%	10 year T-bill rate on the announcement date*.	Federal Reserve Bank of St. Louis (FRED)
<b>Deal characteristics</b>			
Cashout	%	Cash as the percentage of the total SPAC acquisition value; IPO proceeds that went to existing shareholders as percentage of the market equity value.	SDC Platinum, Capital IQ, EDGAR
Time to resolution	Months	Time period from the announcement date* to the completion date (for SPACs) or to the pricing date (for IPOs).	Capital IQ, EDGAR, firm websites
<b>Firm characteristics (end of quarter after the completion date)</b>			
Return on assets	%	EBIT divided by total assets (quarter values).	Compustat US, Capital IQ
Market to book asset ratio	Ratio	Market value of equity plus book value of total liabilities divided by the book value of equity and book value of total liabilities (quarter values).	Compustat US, SDC Platinum, Capital IQ
Debt ratio	%	Total liabilities divided by total assets. Total liabilities contain accounts payable, accrued expenses, short-term borrowings, current portion of long-term debt, long-term debt, minority interest and other liabilities (quarter values).	Compustat US, Capital IQ
Size	Million US\$	Total assets (quarter values).	Compustat US, Capital IQ
VC involvement	Dummy	The variable equals 1 if a VC is involved and 0 otherwise on the completion date.	Capital IQ, EDGAR, Thomson One Private Equity
PE involvement	Dummy	The variable equals 1 if a private equity fund is involved and 0 otherwise on the completion date.	Capital IQ, EDGAR, Thomson One Private Equity

\*for SPACs: the date when the SPAC sponsors announce a potential private target to their shareholders; for IPOs: the date of the going public announcement.

In this table we define the market, deal and firm characteristics we use and provide the sources from which we derive these variables.

Table 4.3 presents summary statistics for our variables. To see if there are any differences between the characteristics of SPAC acquisitions and IPOs, we run Wilcoxon–Mann–Whitney tests and t-tests. With respect to the market characteristics, we note that in turbulent market environments firms tend to use SPAC acquisitions rather than IPOs to go public. The variance of the S&P 500 total return index during the six months preceding the deal announcement, which serves as a proxy for market volatility, is significantly higher for SPAC acquisitions than for IPOs at the 1% level. In non-tabulated results, we find a positive correlation between the monthly number of SPAC IPOs and the lagged market return, suggesting that investors are willing to

provide their money to these vehicles in bull rather than bear markets. Cost of debt does not seem to be related to the route through which firms go public.

While looking at deal characteristics, we observe that, in general, the existing firm shareholders realize a larger cash out ratio through SPAC acquisitions than through IPOs. The difference is significant at the 1% level. Generally, SPAC acquisitions take an average of 6.7 months from the announcement of the potential target firm to the completion of the SPAC acquisition, while the time to resolution from the going-public announcement to IPO completion amounts to only 3.9 months. This difference is significant at the 1% level.

The first firm characteristic is return on assets: the mean SPAC firm return on assets equals 1.4% and the mean IPO firm return on assets equals 3.2% on average. However, only the Wilcoxon–Mann–Whitney test is significant at the 1% level. Growth opportunities of SPAC firms seems to be lower than those of IPO firms; in our sample the mean market to book asset ratio for SPAC firms equals 1.8 while for IPO firms it is 3.3. The difference is significant at the 1% level. At 60.7%, the debt ratio is significantly higher for SPAC firms compared to 46.6% for IPO firms at end of the quarter after the effective date. Both the Wilcoxon–Mann–Whitney test and the t-test are significant at the 1% level. As expected, SPAC firms are substantially smaller: the mean size (measured as total assets) amounts to US\$ 334.9 million, compared to US\$ 923.1 million in the case of IPO firms. This difference is also significant at the 1% level. When we examine VC involvement, we find that VCs have stakes in 33.1% of all IPO firms but only in 14.2% of all SPAC firms. This difference is highly significant at the 1% level, suggesting that when VCs take their portfolio firms public they prefer the traditional IPO route to the SPAC route. In line with our expectations, PE involvement seems to be less important than venture capital backing in our sample. 12.6% of SPACs are backed by PEs, whereas 20.8% of IPOs obtain private equity.

Table 4.3: Summary statistics for SPAC acquisitions and IPOs

Variable	Full sample				SPAC acquisitions/SPAC firms				IPOs/IPO firms				WMW test	t-test
	median	mean	stdev	N	median	mean	stdev	N	median	mean	stdev	N	z-value	t-value
<b>Market characteristics</b>														
Market volatility	5.33	6.86	7.72	1255	6.06	10.37	14.98	127	5.26	6.47	6.31	1128	2.66***	2.90***
Cost of debt	3.83	3.63	1.01	1255	3.83	3.68	1.07	127	3.82	3.62	1.00	1128	0.81	0.58
<b>Deal characteristics</b>														
Cashout	1.48	7.97	15.89	1255	15.11	29.96	34.43	127	1.26	5.50	9.37	1128	5.54***	7.98***
Time to resolution	3.30	4.21	3.50	1255	6.13	6.65	3.79	127	3.17	3.94	3.35	1128	9.03***	7.72***
<b>Firm characteristics (end of quarter after the effective date)</b>														
Return on assets	6.40	2.99	24.79	1255	2.74	1.40	23.12	127	6.71	3.17	24.98	1128	-2.44***	-0.81
Market to book asset ratio	2.20	3.16	2.85	1255	1.21	1.76	1.75	127	2.36	3.31	2.91	1128	-9.30***	-8.76***
Debt ratio	42.27	48.05	31.85	1255	58.93	60.68	30.90	127	40.84	46.63	31.65	1128	4.87***	4.85***
Size	230.56	863.54	1857.06	1255	143.94	334.86	941.21	127	242.68	923.06	1924.37	1128	-4.65***	-5.81***
VC involvement	0.00	0.31	-	1255	0.00	0.14	-	127	0.00	0.33	-	1128	-4.36***	-5.54***
PE involvement	0.00	0.20	-	1255	0.00	0.13	-	127	0.00	0.21	-	1128	-2.20**	-2.58**

This table presents sample summary statistics, the values of the Wilcoxon–Mann–Whitney (WMW) test and t-test that we run to compare the market, deal and firm characteristics between SPAC acquisitions and IPOs executed in the period 01/2004–12/2015. All variables are defined in Table 4.2. We winsorize all deal and firm characteristics at the 2% level. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Table 4.4 shows pairwise correlation coefficients between each pair of variables that we use in the main analysis. The highest correlation of -40% is between the variables market volatility and cost of debt, so multicollinearity should not destroy our multivariate tests. In this context, it might be interesting to note that if we excluded market volatility from our multivariate regressions, the results would not change much.

Table 4.4: Correlation matrix

	Market volatility	Cost of debt	Cashout	Time to resolution	Return on assets	Market to book asset ratio	Debt ratio	Log(size)	VC involvement	PE involvement
Market volatility	1.00									
Cost of debt	-0.40***	1.00								
Cashout	-0.02	0.10***	1.00							
Time to resolution	0.01	0.14***	0.12***	1.00						
Return on assets	-0.01	0.14***	0.14***	-0.02	1.00					
Market to book asset ratio	-0.01	-0.05*	-0.15***	-0.13***	0.01	1.00				
Debt ratio	0.02	-0.05*	0.15***	0.15***	0.14***	-0.01	1.00			
Log(size)	0.03	-0.07**	0.07**	0.01	0.27***	-0.37***	0.33***	1.00		
VC involvement	-0.00	0.08***	0.00	0.00	-0.03	0.00	-0.03	0.10***	1.00	
PE involvement	-0.06**	0.07***	0.08***	0.06**	0.20***	-0.09***	0.28***	0.26***	0.06*	1.00

This table presents a pairwise correlation matrix of the variables that we use in the analysis of the SPAC acquisitions and IPOs that were executed in the period 01/2004–12/2015. All variables are defined in Table 4.2. We winsorize all deal and firm characteristics at the 2% level. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

## 4.4 Likelihood of a SPAC acquisition

### 4.4.1 The model and its specifications

To model the likelihood of a SPAC acquisition, we employ a logistic regression model with the dependent variable  $P(\text{SPAC})_i$ , which is binary and equals 1 for SPAC firms and 0 for IPO firms.<sup>26</sup>

<sup>26</sup> Most existing studies use a maximum likelihood estimator and a simple binary regression model for similar problem settings. To measure the relative attractiveness of IPOs in comparison to mergers and sellouts, Brau

The main specification is:

Formula 4.1: Likelihood of a SPAC acquisition

$$P(SPAC)_i = 1 / (1 + e^{-(\alpha + \beta_1 \text{Market volatility}_i + \beta_2 \text{Cost of debt}_i + \beta_3 \text{Cashout}_i + \beta_4 \text{Time to resolution}_i + \beta_5 \text{Return on assets}_i + \beta_6 \text{Market to book asset ratio}_i + \beta_7 \text{Debt ratio}_i + \beta_8 \text{Log(size)}_i + \beta_9 \text{VC involvement}_i + \beta_{10} \text{PE involvement}_i + \sum_{j=11}^{21} \beta_j \text{Year fixed effects}_{i,j} + \sum_{k=22}^{24} \beta_k \text{Region fixed effects}_{i,k} + \sum_{l=25}^{27} \beta_l \text{Industry fixed effects}_{i,l} + u_i))),$$

where individual firms are indexed by  $i$ . We present the definitions of all variables of interest in Table 4.2. In addition, we use year fixed effects, which capture the year in which the deal is executed, to control for any unobservable time-specific developments that may be related to some of the regressors and to the route through which firms go public. We also include region fixed effects to control for potential unobservable differences in market, deal and firm characteristics due to regional factors that may affect the method of going public. To generate these variables, we aggregate SPAC firms and IPO firms on the basis of four different world regions, namely, Asia, Europe, North America and Latin America (Caribbean). Finally, industry fixed effects reflect potential differences across industries that may be related to the route through which firms go public. We include fixed effects for the three largest industries (i) manufacturing, (ii) services and (iii) finance, insurance and real estate. The remaining industry classifications represent the reference category.

#### 4.4.2 Main results

In Table 4.5, we present the average marginal effects and their standard errors, which we cluster by year and country to adjust for possible correlations within the clusters. We present our main results in Specification 1. Examining the market characteristics, we note that in turbulent

---

et al. (2003) and Poulsen and Stegemoller (2008) use a logistic regression model. Brown et al. (2013) employ a probit model and Adjei et al. (2008) a logistic model to distinguish between firms that decide to go public via an IPO and firms that choose a reverse merger.



market environments firms tend to prefer SPAC acquisitions to IPOs. The variable market volatility is positive and significant at the 5% level, which suggests that, compared to SPAC acquisitions, it may be more difficult to access the public market through IPOs when market conditions are harsh. With a one-standard-deviation increase in market volatility, the probability of going public through a SPAC acquisition increases by 0.77 percentage points. In contrast to the univariate test, the regression analysis indicates that the variable cost of debt matters. More expensive debt is associated with a lower likelihood of SPAC acquisitions (significant at the 5% level), which supports the view that SPAC firms consider current debt terms when they choose the way that they access the public market.

The first deal characteristic, cash out, is significantly higher (at the 1% level) when firms use SPAC acquisitions. This suggests that the existing firm shareholders who want to cash out some of their holdings can do this more easily through SPAC acquisitions. The variable time to resolution is positive and significant (at the 1% level), which indicates that SPAC acquisitions take longer to be executed than IPOs. We suppose that this is because proxy voting causes substantial delays in the process of acquiring a firm. Both of these deal characteristics are also economically important: with a one-standard-deviation increase in cash out and time to resolution, the probability of going public through a SPAC acquisition increases by 4.04 percentage points and 2.38 percentage points, respectively.

Firm characteristics show, in line with prior studies (e.g., Datar et al., 2012), that SPAC firms tend to be firms of lower quality. Return on assets, which reflects the current profitability, is negative but insignificant. The variable market-to-book asset ratio has a negative sign, which supports the view that SPAC firms are associated with relatively weak growth opportunities. The positive marginal effect of the debt ratio variable suggests that more levered firms are more likely to use the SPAC route than the IPO route. Additionally, in line with our expectations, the size of SPAC firms is smaller than that of firms involved in IPOs. The dummy variable VC involvement is negatively related to the probability of a SPAC acquisition. This result supports the argument that VCs might prefer the IPO route over the SPAC route for reputational and signaling reasons, even though the latter route may allow them to cash out faster. The weakly significant negative coefficient on PE involvement suggests that PEs prefer IPOs over SPAC acquisitions to sell their

stakes as well. Firm characteristics have an economically important relation to the route through which firms go public. With a one-standard-deviation increase in debt ratio, the probability of going public through a SPAC acquisition increases by 4.37 percentage points. It decreases by 9.35 percentage points and by 7.34 percentage points with a one-standard-deviation increase in the market-to-book asset ratio and size, respectively. The likelihood of a SPAC acquisition is 4.38 percentage points lower with VC involvement and 3.64 percentage points lower with PE involvement. In line with our expectations, the PE effect is significantly smaller than the VC effect.

To sum up, our analysis in Specification 1 shows that SPAC acquisitions are a viable alternative to IPOs for firms that wish to access the public markets in turbulent times when IPOs may be difficult to accomplish. Although there is a cash out advantage associated with SPAC acquisitions, they do not seem to attract profitable and prestigious firms. Rather, our results support the conjecture that firms of lower quality are more likely to use SPAC acquisitions than IPOs. More precisely, our findings indicate that small firms that have lower growth opportunities and high leverage and in which VCs and PEs are not involved are more likely to access the public market through the SPAC route.

#### **4.4.3 Announcement date data**

One problem with our first regression is that we generate firm characteristics from the first data that became available after the completion date. The advantage of this procedure is that we are able to obtain all relevant firm-specific information for almost all sample firms. However, as we are interested in comparing the firm characteristics of potential SPAC firms and IPO firms before they use a particular going-public route, we would prefer using data available at the announcement date. Because most SPAC firms and some IPO firms are not covered by commercial databases before they go public, we have to hand collect the firm characteristics at the announcement date from individual SEC (proxy statement) filings. We obtain full information for only 81% of our SPAC firms. The IPO sample size drops by 10%.

In Specification 2, we perform the same regression as in Specification 1 but with the announcement date data (and, consequently, a smaller sample). The results on market and deal characteristics do not differ much. The magnitude of firm characteristics changes, but they all keep their signs and remain, with one exception (PE involvement), statistically significant. Already in Specification 1, PE involvement was only significant at the 10% level. Thus, we have to be careful in our interpretations of how PE involvement is related to the likelihood of a SPAC acquisition. All in all, the results make us confident that using completion date data in the main analysis is a reasonable decision.

#### 4.4.4 Expected cash out and expected time to resolution

So far, we use the realized values of the cash out ratio and time to resolution. However, firms may build their preferences regarding the exit route based on expected values of these variables. In Specification 3, we therefore employ a proxy for expected ratios for both deal characteristics. To model the firm expectations, we use a simple setting where firms base their expectations on historical values. We construct the alternative cash out variable (exp. diff. cash out) for each firm  $i$  as the difference in the mean cash out ratio (relative to total assets) between  $n$  SPAC acquisitions and  $m$  IPOs during the year preceding the particular transaction:

Formula 4.2: Alternative cash out variable

$$Exp. \text{ diff. cashout}_i = \frac{1}{n} \sum_{j=1}^n \left( \frac{SPAC_{cashout}}{SPAC_{log\_total\_assets}} \right)_j - \frac{1}{m} \sum_{k=1}^m \left( \frac{IPO_{cashout}}{IPO_{log\_total\_assets}} \right)_k.$$

We calculate the alternative time to resolution variable (exp. diff. time to resol.) for each firm  $i$  as the difference in time to resolution between  $n$  SPAC acquisitions and  $m$  IPOs during the year preceding the particular transaction:

Formula 4.3: Alternative time to resolution variable

$$Exp. \text{ diff. time to resol. }_i = \frac{1}{n} \sum_{j=1}^n (SPAC_{time \text{ to resol. }})_j - \frac{1}{m} \sum_{k=1}^m (IPO_{time \text{ to resol. }})_k.$$

The positive effect of exp. diff. cash out indicates existing shareholders favor SPAC acquisitions over IPOs because they expect to sell their holdings more easily. Exp. diff. time to resol. has a positive sign, which suggests that existing firm shareholders expect SPAC acquisitions to take more time until completion in comparison to IPOs. All key variables, except one, have similar effects as in the main regression. Cost of debt, the only exception, becomes insignificant, which suggests that the effect of this variable on the likelihood of a SPAC acquisition should be interpreted with care.

#### 4.4.5 Matching

In our main analysis, we use all SPAC firms and all IPO firms with available data. As we can see in Table 4.3, an average IPO firm is not comparable to an average SPAC firm. The characteristics of many IPO firms are very different from those of SPAC firms.<sup>27</sup> We address this concern in Specification 4.

We select those IPO firms that are most similar to our SPAC firms in terms of size, age and industry. More specifically, to each of our 127 SPAC firms, we match the closest IPO firm using a propensity score matching model (without replacement).

Within the SPAC sample and the matched IPO sample, we are able to examine differences in the relevant variables (on which we do not match) while addressing the concerns regarding comparability of IPO firms and SPAC firms. We do not use the matching approach in our main analysis because we are interested, among other things, in firm characteristics (such as size, industry and age) that are related to the way that firms enter public markets. When we match on

---

<sup>27</sup> We thank an anonymous referee for raising this concern.

these variables, we eliminate these effects. This is also the reason that these variables are not included in Specification 4.

We find our results confirmed: all effects we show in the main analysis remain significant. In addition, the variable return on assets, which was insignificant, turns significant at the 5% level. When we compare firms of similar size and age and within same industries, more profitable firms tend to prefer IPOs.

#### 4.4.6 Regulation

The “tender offer regulation” which influences SPACs became effective after the financial crisis and the near dry-out of the SPAC IPO market. SPACs under this reform may choose to abandon the proxy vote in favor of a tender offer. SPAC shareholders who are not satisfied with the acquisition proposal can redeem their shares using the tender offer mechanism. However, there is a certain limit, stated in the SPAC IPO filing, on how many shares can be redeemed during the tender offer (e.g., in the first SPAC under the new structure, 57<sup>th</sup> Street Acquisition Company, a maximum of 88% could be redeemed). This reform led to a higher certainty for potential SPAC firms regarding the acquisition outcome. The “tender offer regulation” may speed up the SPAC acquisition process (i.e., reduce time to resolution). For this reason and because the “tender offer regulation” mitigated the uncertainty regarding the acquisition outcome, SPACs might become more attractive to VCs and PEs. To investigate these issues, we interact VC involvement, PE involvement and time to resolution with a regulation dummy. This dummy equals one for the period in which the “tender offer regulation” is effective and zero for the period before. The cut-off date is November 16<sup>th</sup> 2009, which is the filing date of the first SPAC IPO (57<sup>th</sup> Street Acquisition Company) that used a tender offer instead of a proxy vote.<sup>28</sup>

We include the interaction terms one-by-one into our main regression and show the results in Specifications 5 to 7. To calculate marginal effects of the interaction terms, we use the

---

<sup>28</sup> Results are similar when we use different cut-off dates, such as: the IPO date of the first SPAC using a tender offer (05/2010), the date when NASDAQ accepted the change to tender offers (12/2011) and the date when AMEX accepted the change to tender offers (01/2011).

technique Ai and Norton (2003) suggest for non-linear models. The VC interaction term in Specification 5 indicates that, after the “tender offer regulation”, VCs might consider SPAC acquisitions as a more attractive cash out opportunity than before, albeit this effect is only significant at the 10% level. For PEs this effect is insignificant (Specification 6). Specification 7 suggests that, in line with our expectations, abandoning the proxy vote in favor of a tender offer speeds up the SPAC acquisition process. Again, this interaction term is only significant at the 10% level.

Table 4.5: Likelihood of a SPAC acquisition

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Main specification	Announcement date	Expected ratios	Matching (size, industry, age)	Regulation VC	Regulation PE	Regulation time
Market volatility	0.0010** (0.0005)	0.0013** (0.0006)	0.0027*** (0.0010)	0.0094* (0.0055)	0.0013* (0.0007)	0.0013* (0.0007)	0.0015*** (0.0006)
Cost of debt	-0.0305** (0.0124)	-0.0463*** (0.0139)	-0.0177 (0.0127)	-0.1154* (0.0639)	-0.0616*** (0.0174)	-0.0612*** (0.0174)	-0.0572*** (0.0177)
Cashout	0.2543*** (0.0204)	0.2760*** (0.0171)		0.7121*** (0.1438)	0.2601*** (0.0265)	0.2602*** (0.0263)	0.2545*** (0.0258)
Time to resolution	0.0068*** (0.0025)	0.0079*** (0.0027)		0.0105** (0.0051)	0.0083*** (0.0022)	0.0083*** (0.0022)	0.0104*** (0.0030)
Return on assets	-0.0071 (0.0188)	0.0125 (0.0175)	0.0307 (0.0208)	-0.2107** (0.0830)	-0.0214 (0.0178)	-0.0203 (0.0188)	-0.0239 (0.0210)
Market to book asset ratio	-0.0328*** (0.0089)	-0.0059** (0.0024)	-0.0719*** (0.0143)	-0.0369*** (0.0102)	-0.0328*** (0.0097)	-0.0329*** (0.0099)	-0.0319*** (0.0096)
Debt ratio	0.1371*** (0.0221)	0.0277** (0.0115)	0.2219*** (0.0306)	0.3978*** (0.0679)	0.1276*** (0.0228)	0.1283*** (0.0233)	0.1305*** (0.0235)
Log(size)	-0.0528*** (0.0085)	-0.0351*** (0.0070)	-0.0703*** (0.0094)		-0.0491*** (0.0094)	-0.0492*** (0.0094)	-0.0478*** (0.0097)
VC involvement	-0.0438*** (0.0137)	-0.0680*** (0.0174)	-0.0367** (0.0179)	-0.1492*** (0.0513)	-0.0537*** (0.0167)	-0.0505*** (0.0154)	-0.0505*** (0.0166)
PE involvement	-0.0364* (0.0207)	-0.0049 (0.0240)	-0.0518*** (0.0186)	-0.1766*** (0.0612)	-0.0304* (0.0177)	-0.0271* (0.0157)	-0.0281* (0.0170)
Exp. diff. cashout			1.2154*** (0.3058)				
Exp. diff. time to resol.			0.0141* (0.0081)				
Regulation					-0.1388*** (0.0427)	-0.1346*** (0.0427)	-0.0883* (0.0528)
VC involvement*regulation					0.0748* (0.0547)		
PE involvement*regulation						0.0304 (0.0438)	
Time to resolution*regulation							-0.0179* (0.01053)
Year fixed effects	YES	YES	NO	YES	NO	NO	NO
Region fixed effects	YES	YES	YES	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	NO	YES	YES	YES
N	1255	1125	1131	254	1255	1255	1255
N (SPAC acquisitions)	127	103	126	127	127	127	127
N (IPOs)	1128	1022	1005	127	1128	1128	1128
Pseudo R-sq	0.59	0.51	0.40	0.58	0.55	0.55	0.56
Chi-sq	4817.30	3418.69	154.91	203.16	810.74	1420.43	1531.58

Table 4.5 (continued): Likelihood of a SPAC acquisition

This table presents the average marginal effects of logistic regressions. We use a sample of SPAC acquisitions and IPOs that were executed in the period 01/2004–12/2015. The dependent variable is a binary variable which equals 1 for SPAC acquisitions and 0 for IPOs. Specification (1) includes our main specification. In Specification (2), we use data derived on the announcement date instead of data after the completion date. In Specification (3), we input expected values for the deal characteristics. In Specification (4), we match IPO firms to SPAC firms based on size, industry and founding date. In Specifications (5) to (7), we include a dummy for the period after the “tender offer regulation” and its interaction term with VC involvement, PE involvement and time to resolution. All variables are defined in Table 4.2 and standard errors clustered by country and year are provided in parentheses. We winsorize all deal and firm characteristics at the 2% level. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Another important regulatory reform during the sample period that affects IPOs and SPACs is the JOBS act. The JOBS act is designed to make it easier and cheaper for young firms (classified as emerging growth companies) to access the public markets through IPOs by relaxing filing and reporting requirements. However, the JOBS act not only made non-SPAC IPOs easier; it also provides SPACs with advantages. SPACs can classify themselves as emerging growth companies and use the advantages that the JOBS act offers. SPACs can not only reduce IPO costs due to lower filing requirements before the SPAC IPO, but they are also burdened with less reporting requirements after the SPAC acquisition (see, e.g., Rodrigues, 2012). Because the JOBS act influences non-SPAC IPOs, SPAC IPOs and SPAC acquisitions in a positive way, the resulting effect on the likelihood of an IPO vs. a SPAC acquisition is unclear.

## 4.5 Long-term performance

In this chapter, we investigate how SPAC firms and IPO firms perform in the long term. The evidence so far is consistent with the view that lower-quality firms tend to use SPAC acquisitions to enter the public market, while high-quality firms usually tend to go public via an IPO. Sponsors may push for low-quality firms because if the SPAC becomes liquidated, they lose their promote and their warrants become worthless. It should be noted that SPAC sponsors are allowed to buy SPAC shares with voting rights in the open market prior to the proxy vote, so they may be able to directly influence the outcome of the proxy vote (Jenkinson and Sousa, 2011). The large amount of at-risk capital and the large financial gains in case of a successful acquisition



make this a profitable strategy for SPAC sponsors. According to Jog and Sun (2007), SPAC sponsors earn an average of 1900 percent annualized returns with SPACs for which the outcome is known (success or failure) during the period 2003 to 2006. Jenkinson and Sousa (2011) show that low-quality acquisitions are approved on a regular basis because some SPAC shareholders, such as hedge funds, promise a positive proxy vote in exchange for additional consideration (Rodrigues and Stegemoller, 2013), particularly before the “tender offer regulation”. Finally, some short-term investors may not care about the quality of the target firm, but be only interested in potential profits from bets on the differences between the value of common shares and the value of funds deposited in the trust account.

In general, if low-quality firms enter the public market via a SPAC acquisition, we expect SPAC firms to underperform. Alternatively, it could be the case that SPAC sponsors identify promising targets thanks to their extensive knowledge of the industry, professional experience and valuable business networks (Lewellen, 2009) despite the fact that the selected firms have a poor financial profile at the time of the acquisition. If sponsors can indeed identify firms with hidden potential, i.e., “frogs” that will turn into “princes” in the future, these firms should show superior performance as soon as investors recognize their true quality.

We use two alternative methods to measure long-term performance: event-time analysis and calendar-time analysis. For the event-time analysis, we use buy and hold abnormal returns (Kothari and Warner, 1997). For the calendar-time portfolio analysis, we employ five-factor regression models, which overcome the cross-sectional dependence problem that the event-time approach may entail (Fama, 1998; Mitchell and Stafford, 2000; Datta et al., 2015).

#### **4.5.1 Event-time buy and hold abnormal returns**

We calculate buy and hold abnormal returns (BHARs) of SPAC firms and of IPO firms adjusted (i) for the market (Russell 2000 index), (ii) for size and book-to-market and (iii) for the industry. We employ equal-weighted portfolios but value weighting leads to qualitatively similar results. We draw end-of-day stock prices and indices, which include dividends and are adjusted

for stock splits, from Capital IQ. We retrieve the return data of 100 size and book-to-market portfolios, 49 industry portfolios and data on book equity and market equity breakpoints from Kenneth R. French's website.<sup>29</sup> To match our data to these portfolios, we sort SPAC firms, as well as IPO firms, either into 100 different portfolios according to their size and book-to-market breakpoint data or into 49 different portfolios according to their four-digit SIC codes. For size and market equity, we use the month-end market capitalization, and for book-to-market we use the quarter-end book equity after the SPAC acquisition completion or IPO pricing date.

We measure BHARs for periods of 6, 12, 24 and 60 months using the following formula:

Formula 4.4: Buy and hold abnormal returns

$$BHAR(t_1, t_2) = \prod_{t=t_1}^{t_2} [(1 + R_{it})] - \prod_{t=t_1}^{t_2} [(1 + R_{bt})],$$

where  $R_{it}$  is the return on a SPAC firm or an IPO firm and  $R_{bt}$  is the return on the benchmark portfolio in  $t$ . We start calculating BHARs at  $t_1$ , which is the first day of trading for IPO firms or the first day after the completion date for SPAC acquisitions. We only include in the analysis SPAC firms or IPO firms for which return data are available in  $t_1$ . We calculate BHARs until  $t_2$ , which is either the end of our measurement period or the earlier delisting date. In addition to the whole IPO sample, we calculate BHARs for the matched IPO sample, which we describe in Chapter 4.4.5.

We depict the BHARs for SPAC firms, all IPO firms and matched IPO firms in Table 4.6. As it is commonly reported in the literature, we also find that the IPO firms significantly underperform the market, the size and book-to-market as well as the industry-matched portfolios (Ritter, 1991; Loughran and Ritter, 1995) in all reported periods. This also holds for firms that go public via a SPAC acquisition. For example, over a 24-month period, SPAC firms underperform the benchmark portfolios by 59%, 96% and 85% on average. Interestingly, the underperformance of SPAC firms is even stronger than that of IPO firms, and the differences are statistically and

---

<sup>29</sup> [http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html).

economically significant. Over a 24-month period, matched IPO firms underperform their respective portfolios by “only” 34%, 43% and 45%. Moreover, we observe that performance deteriorates over time: for SPAC firms, the six-month market-adjusted BHAR equals -29% while the 60-month market-adjusted BHAR amounts to -102%.

The “tender offer regulation” and the JOBS act that we describe in Chapter 4.4.6 might have a positive influence on the long-term performance of SPAC firms. The JOBS act could decrease operating costs due to reduced reporting requirements, which in turn might positively influence the long-term performance of SPAC firms. In non-tabulated tests, we compare pre-regulation SPAC BHARs with post-regulation SPAC BHARs but do not find any significant differences for periods of 6, 12 and 24 months. We cannot compare the performance over 60 months because the first SPAC acquisition in the post-regulation subsample occurs on May 5<sup>th</sup> 2011.

Table 4.6: Buy and hold abnormal returns

	Whole sample								Matched sample				
	SPAC BHARs			IPO BHARs		WMW test		t-test	IPO BHARs		WMW test		t-test
	median	mean	N	median	mean	N	z-value	t-value	median	mean	N	z-value	t-value
<b>6 months</b>													
Market adjusted	-0.28***	-0.29***	109	-0.07***	-0.06***	1112	5.89***	6.48***	-0.13***	-0.06	113	3.92***	4.50***
Size & btm adjusted	-0.30***	-0.32***	92	-0.10***	-0.07***	1046	5.56***	5.57***	-0.16***	-0.09*	104	3.49***	3.96***
Industry adjusted	-0.31***	-0.34***	109	-0.10***	-0.08***	1100	6.36***	6.66***	-0.17***	-0.09*	111	4.04***	4.64***
<b>12 months</b>													
Market adjusted	-0.46***	-0.46***	109	-0.15***	-0.08***	1082	7.40***	8.29***	-0.17***	-0.12**	110	4.75***	4.96***
Size & btm adjusted	-0.58***	-0.57***	92	-0.16***	0.10***	1021	7.53***	7.59***	-0.18***	-0.14**	101	4.88***	5.14***
Industry adjusted	-0.51***	-0.57***	109	-0.18***	-0.13***	1070	7.91***	8.59***	-0.23***	-0.15*	108	5.13***	5.59***
<b>24 months</b>													
Market adjusted	-0.56***	-0.59***	104	-0.30***	-0.21***	969	6.22***	7.11***	-0.35***	-0.34***	108	3.36***	3.23***
Size & btm adjusted	-0.92***	-0.96***	87	-0.39***	-0.30***	914	7.27***	6.88***	-0.43***	-0.43***	99	4.71***	4.77***
Industry adjusted	-0.88***	-0.85***	104	-0.44***	-0.36***	958	7.01***	7.17***	-0.54***	-0.45***	106	4.29***	4.34***
<b>60 months</b>													
Market adjusted	-0.90***	-1.02***	88	-0.58***	-0.20	704	7.47***	4.01***	-0.69***	-0.37*	84	4.87***	3.82***
Size & btm adjusted	-2.07***	-2.48***	76	-1.05***	-0.79*	666	9.14***	5.88***	-1.29***	-1.01**	78	6.01***	5.56***
Industry adjusted	-1.72***	-1.80***	88	-1.25***	-0.98**	695	5.62***	3.75***	-1.25***	-1.13***	83	3.79***	3.58***

This table presents median and mean (log) BHARs of SPAC acquisitions and IPOs executed in the period 01/2004–12/2015 over 6, 12, 24 and 60 months and their significances. It also shows the values and significances of the Wilcoxon–Mann–Whitney (WMW) test and t-test we run to compare BHARs between SPAC acquisitions and all as well as matched IPOs. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

### 4.5.2 Calendar-time five-factor model analysis

To apply the calendar-time approach, we download monthly values of the three Fama–French factors (Fama and French, 1993) and a momentum factor (Carhart, 1997) from Kenneth R. French’s website.<sup>30</sup> We supplement these data with an aggregated liquidity factor (Pastor and Stambaugh, 2003; Gao and Jain, 2011) retrieved from Lubos Pastor’s website.<sup>31</sup> We then regress monthly calendar-time portfolio excess returns on these five risk factors according to the following specification:

Formula 4.5: Monthly calendar-time portfolio excess returns

$$R_{it} - R_{ft} = \alpha_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + m_i MOM_t + l_i LIQ_t + e_{it},$$

where  $R_{it}$  is the return on a portfolio comprising SPAC firms and  $R_{ft}$  is the T-bill return,  $\alpha_i$  captures the portfolio excess return,  $R_{mt}$  is the market return on all NYSE/Amex/Nasdaq firms,  $SMB_t$  is the difference between the return on a portfolio of small firms and a portfolio of large firms,  $HML_t$  is the difference between the return on high book-to-market and low book-to-market stocks,  $MOM_t$  is the difference between the return on high-prior-return portfolios and low-prior-return portfolios and  $LIQ_t$  is the difference between the return on low-turnover portfolios and high-turnover portfolios. We use equal-weighted returns. A three-factor model and/or value-weighted returns yield qualitatively similar results. The results for periods of 6, 12, 24 and 60 months are depicted in Table 4.7 in Specifications 1 to 4. Consistent with the BHAR analyses, these results show that SPAC firms underperform the market after going public. They have significant and negative alphas in all periods under consideration.

We perform the same analyses for both all and matched IPO firms and present the results in Specifications 5 to 8 and 9 to 12, respectively. Both all and matched IPO firms underperform as well, but the underperformance of SPAC firms is again larger. For example, over a 24-month

<sup>30</sup> [http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html).

<sup>31</sup> <http://faculty.chicagobooth.edu/lubos.pastor/research>.

period, SPAC firms have a monthly alpha of -5.2%, whereas the monthly alphas for all and matched IPO firms reach -1.2% and -1.7%, respectively.

Finally, in Table 4.8 we present results for hedged portfolios. A hedged portfolio consists of a long position in an IPO equal-weighted portfolio and a short position in a SPAC equal-weighted portfolio. Specifications 1 to 4 depict the results for the whole IPO sample and Specifications 5 to 8 for the matched IPO sample. The results confirm that SPAC firms significantly underperform IPO firms in all periods.

Looking at the long-term performance of SPAC firms appears to confirm the picture that emerges during the first part of our empirical analysis; namely, that SPACs attract lower-quality firms. In the months and years following the SPAC acquisition, investors seem to recognize the lower quality of SPAC firms and punish these firms in the long term. Consequently, long-term investors that put their money in SPACs at the completion date systematically underperform the market, industry and similar non-SPAC firms as well as IPO firms.

Table 4.7: Factor regressions - market portfolio

	All SPACs				All IPOs				Matched IPOs			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	6 months	12 months	24 months	60 months	6 months	12 months	24 months	60 months	6 months	12 months	24 months	60 months
Intercept ( $\alpha$ )	-0.0510*** (0.0096)	-0.0533*** (0.0076)	-0.0521*** (0.0067)	-0.0416*** (0.0056)	-0.0116*** (0.0035)	-0.0114*** (0.0028)	-0.0120*** (0.0027)	-0.0134*** (0.0024)	-0.0071 (0.0071)	-0.0102* (0.0054)	-0.0169*** (0.0051)	-0.0195*** (0.0044)
RMRF	1.3087*** (0.2471)	0.8408*** (0.1999)	0.7596*** (0.1749)	1.0636*** (0.1479)	0.9823*** (0.0908)	1.0016*** (0.0746)	1.1291*** (0.0710)	1.1523*** (0.0624)	0.9892*** (0.2003)	0.8990*** (0.1444)	1.2216*** (0.1333)	1.2840*** (0.1160)
SMB	0.3655 (0.4241)	0.1291 (0.3384)	-0.0828 (0.2950)	-0.1603 (0.2495)	0.8377*** (0.1532)	0.8407*** (0.1258)	0.7723*** (0.1197)	0.8164*** (0.1052)	0.9201*** (0.3204)	0.8999*** (0.2419)	0.7117*** (0.2249)	0.6651*** (0.1956)
HML	-0.2819 (0.4160)	-0.0858 (0.3345)	-0.1562 (0.2933)	-0.2774 (0.2481)	-0.5898*** (0.1523)	-0.4749*** (0.1251)	-0.5020*** (0.1191)	-0.1960* (0.1046)	-0.4745 (0.3477)	-0.5642** (0.2415)	-0.0503 (0.2236)	0.0449 (0.1945)
MOM	0.1516 (0.2085)	-0.1551 (0.1683)	-0.1471 (0.1474)	-0.2561** (0.1246)	0.1028 (0.0765)	-0.0108 (0.0629)	-0.1467** (0.0598)	-0.1728*** (0.0526)	0.1365 (0.2016)	0.0126 (0.1530)	-0.0899 (0.1123)	-0.2357** (0.0977)
LIQ	-0.0175 (0.1366)	0.1535 (0.1096)	0.1095 (0.0960)	0.1072 (0.0812)	0.1595*** (0.0499)	0.1444*** (0.0409)	0.1145*** (0.0390)	0.1003*** (0.0342)	0.2066* (0.1081)	0.1209 (0.0778)	0.1146 (0.0732)	0.0231 (0.0637)
Adjusted R-sq	0.23	0.19	0.17	0.38	0.66	0.75	0.80	0.85	0.32	0.41	0.57	0.66

This table presents calendar-time analysis of SPAC acquisitions and IPOs that were executed in the period 01/2004–12/2015 using a five-factor model. The dependent variable is the monthly equal-weighted portfolio excess return for SPAC acquisitions in Specifications (1) to (4), IPOs (whole sample) in Specifications (5) to (8) or IPOs (matched sample) in Specifications (9) to (12) for calendar-time periods of 6, 12, 24 and 60 months. Independent variables include the monthly market premium on all NYSE/Amex/Nasdaq firms (RMRF), the difference between the monthly return on small firms and large firms (SMB), the difference between the monthly return on a portfolio of high book-to-market stocks and low book-to-market stocks (HML), the difference between the return on high prior return portfolios and low prior return portfolios (MOM) and the difference between the return of low-turnover portfolios and high-turnover portfolios (LIQ). Standard errors are provided in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Table 4.8: Factor regressions - hedged portfolio

	All IPOs - All SPACs				Matched IPOs - All SPACs			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	6 months	12 months	24 months	60 months	6 months	12 months	24 months	60 months
Intercept ( $\alpha$ )	0.0395*** (0.0094)	0.0422*** (0.0075)	0.0400*** (0.0059)	0.0281*** (0.0049)	0.0422*** (0.0115)	0.0414*** (0.0089)	0.0352*** (0.0071)	0.0221*** (0.0059)
RMRF	-0.3596 (0.2414)	0.1650 (0.1954)	0.3695** (0.1547)	0.0887 (0.1279)	-0.2092 (0.3210)	0.0921 (0.2368)	0.4620** (0.1879)	0.2204 (0.1559)
SMB	0.5190 (0.4144)	0.7004** (0.3308)	0.8550*** (0.2609)	0.9767*** (0.2156)	0.2277 (0.5249)	0.7026* (0.3987)	0.7945** (0.3168)	0.8254*** (0.2629)
HML	-0.3219 (0.4065)	-0.3867 (0.3270)	-0.3458 (0.2595)	0.0814 (0.2144)	-0.2713 (0.5644)	-0.3847 (0.3950)	0.1059 (0.3151)	0.3223 (0.2615)
MOM	-0.0492 (0.2037)	0.1473 (0.1645)	0.0005 (0.1304)	0.0834 (0.1077)	0.0574 (0.3362)	0.2334 (0.2511)	0.0572 (0.1583)	0.0204 (0.1314)
LIQ	0.1921 (0.1335)	-0.0076 (0.1071)	0.0050 (0.0849)	-0.0069 (0.0702)	0.1694 (0.1750)	-0.0341 (0.1274)	0.0051 (0.1031)	-0.0841 (0.0856)
R-sq	0.04	0.07	0.17	0.18	0.02	0.05	0.15	0.15

This table presents calendar-time analysis of SPAC acquisitions and IPOs that were executed in the period 01/2004–12/2015 using a five-factor model. The dependent variable is the monthly equal-weighted portfolio return for IPOs minus the monthly equal-weighted portfolio return for SPAC acquisitions. In Specifications (1) to (4), we use the whole IPO sample and in Specifications (5) to (8) we use the matched IPO sample. Independent variables include the monthly market premium on all NYSE/Amex/Nasdaq firms (RMRF), the difference between the monthly return on small firms and large firms (SMB), the difference between the monthly return on a portfolio of high book-to-market stocks and low book-to-market stocks (HML), the difference between the return on high prior return portfolios and low prior return portfolios (MOM) and the difference between the return of low-turnover portfolios and high-turnover portfolios (LIQ). Standard errors are provided in parentheses. \*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels respectively.

## 4.6 Summary and conclusion

Cash-shell companies suffered a poor reputation after several cases of fraud involving these vehicles during the 1980s. This led to the introduction of new legislation that aimed to increase the transparency of cash-shell companies, improve their shareholder rights and motivate their sponsors to act in the interests of the shareholders. These changes might contribute to a wave of new-generation SPACs, which started in the second half of 2003. The purpose of this article is to shed light on these new-generation SPACs, to investigate whether SPAC acquisitions are a viable alternative to IPOs for private firms aiming to achieve a public listing and to assess their performance.



Our findings indicate that SPAC acquisitions allow firms to enter public markets in difficult times when it is hard to access the IPO channel. They also turn out to be beneficial to the existing SPAC firm shareholders that realize higher cash out ratios than they would obtain through an IPO. However, the results support the view that the firms that SPACs attract are not as appealing as those that chose an IPO. More specifically, our results lend support to the hypothesis that firms that enter public markets via a SPAC acquisition have lower growth opportunities, are more highly levered and smaller than IPO firms. They are also less likely to receive investments from VCs and private equity funds. Moreover, our findings suggest that SPAC acquisitions may take longer to execute than IPOs—at least, this seems to be the case until the SPAC structure was modified in 2010.

Looking at the long-term performance of SPAC firms, we find that they severely underperform the market, industry and firms of similar sizes and book-to-market ratios as well as IPO firms. This result is consistent over different methodologies and time horizons. On that basis, we therefore conclude that the “frog turned prince” scenario does not apply in the case of SPAC firms: these firms remain “frogs” in the long term.

Over the last few years, SPAC activity has caught up again and, in April 2016, Ellenoff Grossman & Schole, a law firm that specializes in this vehicle, stated, “SPACs are back”.<sup>32</sup> In the first three months in 2016, three SPACs with a total volume of US\$ 569 million went public, whereas the total IPO volume only equaled US\$ 444 million.<sup>33</sup> In April 2016, CF Corporation filed for a US\$ 600 million SPAC IPO, which would make it the largest SPAC IPO since 2008. Major investment banks show interest in SPACs. As an example, Goldman Sachs advised its first SPAC IPO, Silver Run Acquisition Corporation, in February 2016, which is also Goldman’s largest IPO assignment in 2016 by end of March.<sup>34</sup> These developments are astonishing given the poor long-term performance and the relatively low quality of SPAC firms, which we document in this article. We therefore believe that further research is needed to understand why SPACs are

---

<sup>32</sup> <http://www.egsllp.com/news/resources/spacs>.

<sup>33</sup> Source: Capital IQ.

<sup>34</sup> <http://www.reuters.com/article/us-banks-spacs-dealtalk-idUSKCN0WQ0C0>.

getting popular again. Such research would, for example, investigate the role of intermediaries, such as investment banks or law firms.

# Chapter 5

## Conclusion

The introduction to this thesis notes the importance of acquisitions for corporate finance research and for the overall economy. Moreover, I argue that shareholder value creation in acquisitions is still a puzzle and that the sources of value creation are debated and of elusive nature. The overarching question raised in this thesis is whether and how financial stakeholders and shareholders profit from acquisitions in different scenarios, i.e.:

- Do bidder shareholders profit when financial advisors are involved in corporate acquisitions, and does the quality of financial advisors matter? Does the variable advisor help to explain value creation? Do high-quality advisors create more bidder shareholder value than lower quality advisors?
- Do firms and SPAC shareholders profit from SPAC acquisitions? How do these firms (SPAC target firms) perform in comparison to firms that use an IPO to go public?

The first article, which is presented in Chapter 2, focuses on the European market and asks whether the involvement of advisors in corporate acquisitions matters for bidder value creation. Although theoretical frameworks predict a positive relationship between advisor involvement and shareholder value creation, empirical evidence (from the US market) struggles to confirm it (see, e.g., Servaes and Zenner, 1996; Wang and Whyte, 2010). My results suggest that advisors provide value to their clients only when both the bidder and the target are located in the UK. Moreover, a DiD analysis, using a major European regulatory reform, indicates that advisors matter for shareholder value creation in acquisitions.

Chapter 3 presents the second article, which builds on the first one and focuses not only on the question of whether an advisor is involved in an acquisition but also on whether the quality of

the advisor plays a role. The theoretical and empirical situation is similar to that described regarding the first article. In theory, high-quality advisors should be able to create more shareholder value for their clients than lower-quality advisors (see, e.g., Golubov et al., 2012). However, different authors find an insignificant, negative or positive relationship between advisor quality and value creation. Since these studies rely on advisor market shares or related measures to assess advisor quality and since evidence suggests that advisor market shares are not a good predictor of advisor performance (Bao and Edmans, 2011), we develop a new proxy to capture advisor quality. We define high-quality advisors as advisors that won an award of excellence (i.e., best M&A house) and focus on the North American market. The results suggest that there is a positive relationship between award winners and value creation. Moreover, clients of award winners seem to outperform clients of non-award winners in the long term and seem to realize greater synergies. The results hold when we consider the endogenous choice of an advisor. Finally, it seems that award winners put more effort into acquisitions that are more visible.

The last article, which is presented in Chapter 4, focuses on SPAC acquisitions and compares firms that use SPAC acquisitions to access the public market to firms that use IPOs to access the public market. Analyzing SPAC acquisitions more closely is important for several reasons. First, external capital plays a crucial role for growing firms, and the IPO route is not always available to some of these. Second, initial investors such as venture capital or private equity investors have a high interest to cash out their holdings after a certain period of time, for which IPOs offer many restrictions. Third, SPACs are popular and equaled about one-third of the IPO market in 2008 and in the first three months of 2016 SPAC activity even exceeded IPO activity. Finally, SPACs are criticized for being non-transparent and costly for long-term shareholders. The results of our study suggest that SPAC acquisitions profit firms that are small, highly levered and have low growth opportunities in times with turbulent market environments. It seems that venture capital and private equity investors rather stick to the traditional way, the IPO, to bring their portfolio firms to the public market. Furthermore, firms that access the market via SPAC acquisitions underperform the market and similar IPO firms in the long run.

There are certain limitations to this thesis that are at the same time potential avenues for future research. First, the analyses in Chapters 2 and 3 rely on bidders that are publicly listed firms.

---

However, in acquisitions that involve private targets and private bidders, asymmetric information costs between the target and the bidder as well as transaction costs might be even greater. Thus, it could be worth developing an alternative measure to CARs to capture the value that advisors create in private–private acquisitions.

Second, Chapters 2 and 3 mostly focus on domestic acquisitions or cross-border acquisitions between bidders and targets from countries that are similarly developed. In the stream of literature that looks at cross-border acquisitions that include bidders and targets from countries with different economic development as well as corporate governance regimes (Rossi and Volpin, 2004; Goergen et al., 2005; Bris and Cabolis, 2008; Martynova and Renneboog, 2008), results suggest that differences between the bidder's and target's corporate governance have an effect on shareholder returns. Martynova and Renneboog (2008) analyze international acquisitions and find that the party with the better governance regime imposes the poorer governance regime on the other party, which results in large improvements for shareholders. It seems that the larger the distance in corporate governance between the bidder and the target, the larger are the synergetic gains for the party with the previously poorer governance regime. Thus, it might be interesting to study what role advisors play in acquisitions that are executed between parties with different economic development and corporate governance.

Third, this thesis focuses only on financial advisors. It would be interesting to examine the role that legal advisors or auditors play in acquisitions and whether they help their clients to create shareholder value. In SPAC acquisitions, for example, legal advisors are crucial because SPACs have a relatively new corporate and governance structure, which requires constant legal advice. The results of Louis (2005), DeMong et al. (2011), Krishnan and Masulis (2013), Xie et al. (2013), Karsten et al. (2015) and Cai et al. (2016) support the view that legal advisors and auditors play an important role in corporate acquisitions in general, but whether their involvement is directly associated to value creation remains inconclusive. To provide further evidence, it might be worth using, similar to this thesis, legal advisor or auditor awards to assess their quality in a more accurate manner.

Fourth, SPACs are becoming more and more popular internationally, especially in Europe and Canada. This thesis, however, focuses only on US SPACs, and it might be worthwhile to study SPAC markets in other countries, as participants in non-US markets might have learned lessons from the US. The comparison between US SPACs and non-US SPACs therefore might help researchers to better understand the SPAC phenomenon, i.e., why SPACs remain popular although their long-term performance hurts shareholders.

Fifth, the “new-generation” SPACs are a quite recent phenomenon, and the article in Chapter 4 is limited to a time period of eleven years. For the future, it will be interesting to see how the SPAC market develops and whether during the next years market participants change their view regarding SPACs. Moreover, investment banks that act as financial and legal advisors and as underwriters continue to innovate the SPAC structure. The underwriter Loeb & Loeb, for example, has updated the SPAC structure and called the new vehicle the Innovated Public Acquisition Company (IPACs). Loeb & Loeb argues that the new structure helps to close SPAC acquisitions in a shorter period of time. It could be interesting to examine how that vehicle compares to the SPACs analyzed in this thesis and whether the improved structure results in better performance for shareholders.

Finally, this thesis relies mainly on performance measures related to stock prices such as CARs, BHARs and Fama-and-French alphas and therefore assumes that markets are (semi-strong) efficient. Another way to measure performance that is somewhat independent of the market efficiency assumption and could be interesting for future research might be to concentrate on profitability ratios such as return on assets and EBIT to sales.

In the introduction, I raise the question about factors that contribute to value creation in acquisitions. This thesis provides some evidence that financial advisors do play a crucial role and that shareholders might profit from their involvement. Moreover, innovations in financial markets that promise to improve the protection of shareholder interests, i.e., SPAC acquisitions, should be analyzed by the market participants with great care. On the one hand, they might provide value for certain firms (that are not able to access the public markets via an IPO); on the other hand, they seem to hurt shareholders that are interested in long-term gains.

# Bibliography

- Adjei, F., Cyree, K.B., Walker, M.M., 2008. The determinants and survival of reverse mergers vs. IPOs. *Journal of Economics and Finance* 32, 176-194.
- Ai, C., Norton, E.C., 2003. Interaction terms in logit and probit models. *Economics Letters* 80, 123-129.
- Alexandridis, G., Petmezas, D., Travlos, N.G., 2010. Gains from mergers and acquisitions around the world: New evidence. *Financial Management* 39, 1671-1695.
- Allen, L., Jagtiani, J., Peristiani, S., Saunders, A., 2004. The role of bank advisors in mergers and acquisitions. *Journal of Money, Credit & Banking* 36, 197-224.
- Aydogdu, M., Shekhar, C., Torbey, V., 2007. Shell companies as IPO alternatives: An analysis of trading activity around reverse mergers. *Applied Financial Economics* 17, 1335-1347.
- Bao, J., Edmans, A., 2011. Do investment banks matter for M&A returns? *Review of Financial Studies* 24, 2286-2315.
- Barry, C.B., Muscarella, C.J., Peavy III, J.W., Vetsuypens, M.R., 1990. The role of venture capital in the creation of public companies: Evidence from the going-public process. *Journal of Financial Economics* 27, 447-471.
- Bascha, A., Walz, U., 2001. Convertible securities and optimal exit decisions in venture capital finance. *Journal of Corporate Finance* 7, 285-306.
- Bayar, O., Chemmanur, T.J., 2011. IPOs versus acquisitions and the valuation premium puzzle: A theory of exit choice by entrepreneurs and venture capitalists. *Journal of Financial and Quantitative Analysis* 46, 1755-1793.
- Bebchuk, L.A., Roe, M.J., 1999. A theory of path dependence in corporate ownership and governance. *Stanford Law Review* 52, 127-170.
- Benston, G.J., Smith, C.W., 1976. A transactions cost approach to the theory of financial intermediation. *Journal of Finance* 31, 215-231.
- Benveniste, L.M., Spindt, P.A., 1989. How investment bankers determine the offer price and allocation of new issues. *Journal of Financial Economics* 24, 343-361.

- Berger, R., 2008. SPACs: An alternative way to access the public markets. *Journal of Applied Corporate Finance* 20, 68-75.
- Bowers, H.M., Miller, R.E., 1990. Choice of investment banker and shareholders' wealth of firms involved in acquisitions. *Financial Management* 19, 34-44.
- Bradley, D.J., Jordan, B.D., Yi, H.-C., Roten, I.C., 2001. Venture capital and IPO lockup expiration: An empirical analysis. *Journal of Financial Research* 24, 465-494.
- Brau, J.C., Francis, B., Kohers, N., 2003. The choice of IPO versus takeover: Empirical evidence. *Journal of Business* 76, 583-612.
- Brav, A., Gompers, P.A., 2003. The role of lockups in initial public offerings. *Review of Financial Studies* 16, 1-29.
- Bris, A., Cabolis, C., 2008. The value of investor protection: Firm evidence from cross-border mergers. *Review of Financial Studies* 21, 605-648.
- Brown, P.R., Ferguson, A., Lam, P., 2013. Choice between alternative routes to go public: Backdoor listing versus IPO, *Handbook of Research on IPO*. Cheltenham, UK; Northampton, USA: Edward Elgar Publishing.
- Brown, S.J., Warner, J.B., 1985. Using daily stock returns: The case of event studies. *Journal of Financial Economics* 14, 3-31.
- Cai, Y., Kim, Y., Park, J.C., White, H.D., 2016. Common auditors in M&A transactions. *Journal of Accounting and Economics* 61, 77-99.
- Campa, J.M., Hernando, I., 2004. Shareholder value creation in European M&As. *European Financial Management* 10, 47-81.
- Campbel, T.S., Kracaw, W.A., 1980. Information production, market signalling, and the theory of financial intermediation. *Journal of Finance* 35, 863-882.
- Carhart, M.M., 1997. On persistence in mutual fund performance. *Journal of Finance* 52, 57-82.
- Chung, K.H., Pruitt, S.W., 1994. A simple approximation of Tobin's q. *Financial Management* 23, 70-74.
- Clarke, B., 2009. The takeover directive: Is a little regulation better than no regulation? *European Law Journal* 15, 174-197.



- Conn, R.L., Cosh, A., Guest, P.M., Hughes, A., 2005. The impact on UK acquirers of domestic, cross-border, public and private acquisitions. *Journal of Business Finance & Accounting* 32, 815-870.
- Cumming, D., Haß, L.H., Schweizer, D., 2014. The fast track IPO – success factors for taking firms public with SPACs. *Journal of Banking & Finance* 47, 198-213.
- DailyNation, 2015. US banks dominate Euromoney awards, Available at: <http://www.nation.co.ke/business/US-banks-dominate-Euromoney-awards/-/996/2789952/-/15e1a66z/-/index.html> (accessed July 20, 2016).
- Datar, V., Emm, E., Ince, U., 2012. Going public through the back door: A comparative analysis of SPACs and IPOs. *Banking and Finance Review* 4, 17-36.
- Datta, S., Gruskin, M., Iskandar-Datta, M., 2015. On post-IPO stock price performance: A comparative analysis of RLBOs and IPOs. *Journal of Banking & Finance* 55, 187-203.
- Davies, P.L., Schuster, E.P., van de Walle de Ghelcke, E., 2010. The takeover directive as a protectionist tool? ECGI Law Working Paper, 141.
- DeMong, R.F., Harris, I.C., Williams, S.P., 2011. Financial and legal advisors in merger and acquisition transactions. *International Journal of Business, Humanities and Technology* 1, 1-13.
- Derrien, F., Dessaint, O., 2017. The effects of investment bank rankings: Evidence from M&A league tables. *Review of Finance*, forthcoming.
- Dierkens, N., 1991. Information asymmetry and equity issues. *Journal of Financial and Quantitative Analysis* 26, 181-199.
- Dissanaike, G., Drobetz, W., Momtaz, P., 2016. Legal shareholder rights and acquirer returns. Unpublished working paper. Available at SSRN 2786409.
- Drobetz, W., Momtaz, P., 2016. Corporate governance convergence in the European M&A market. Unpublished working paper. Available at SSRN 2642487.
- Easterbrook, F.H., 1984. Two agency-cost explanations of dividends. *American Economic Review* 74, 650-659.

- Euromoney, 2011a. Awards for excellence 2011: Off the record, Available at: <http://www.euromoney.com/Article/2862999/Awards-for-Excellence-2011-Off-the-Record.html> (accessed July 20, 2016).
- Euromoney, 2011b. Euromoney awards for excellence 2011, Available at: <http://www.euromoney.com/Article/2860648/Category/17/ChannelPage/0/Euromoney-Awards-for-Excellence-2011.html> (accessed July 20, 2016).
- Euromoney, 2015. More about our content, Available at: <http://www.euromoney.com/stub.aspx?StubID=2352> (accessed July 20, 2016).
- European commission, 2012. Report from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions: Application of Directive 2004/25/EC on takeover bids. Brussels.
- European parliament and the council, 2006. Directive 2009/65/EC of the European parliament and of the council. Official Journal of the European Union.
- Faccio, M., Lang, L.H.P., 2002. The ultimate ownership of Western European corporations. *Journal of Financial Economics* 65, 365-395.
- Faccio, M., Masulis, R.W., 2005. The choice of payment method in European mergers and acquisitions. *Journal of Finance* 60, 1345-1388.
- Fama, E.F., 1998. Market efficiency, long-term returns, and behavioral finance. *Journal of Financial Economics* 49, 283-306.
- Fama, E.F., Fisher, L., Jensen, M.C., Roll, R., 1969. The adjustment of stock prices to new information. *International Economic Review* 10, 1-21.
- Fama, E.F., French, K.R., 1993. Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics* 33, 3-56.
- Fama, E.F., French, K.R., 2012. Size, value, and momentum in international stock returns. *Journal of Financial Economics* 105, 457-472.
- Fang, L.H., 2005. Investment bank reputation and the price and quality of underwriting services. *Journal of Finance* 60, 2729-2761.
- Feldman, D.N., 2010. Reverse mergers: And other alternatives to traditional IPOs. New York: Bloomberg Press.

- FinBuzz, 2015. Citi and Morgan Stanley storm Euromoney awards for excellence 2015, Available at: <http://www.finbuzz.com/citi-and-morgan-stanley-storm-euromoney-awards-for-excellence-2015/> (accessed July 20, 2016).
- Floros, I.V., Sapp, T.R., 2011. Shell games: On the value of shell companies. *Journal of Corporate Finance* 17, 850-867.
- Forte, G., Iannotta, G., Navone, M., 2010. The banking relationship's role in the choice of the target's advisor in mergers and acquisitions. *European Financial Management* 16, 686-701.
- Fuller, K., Netter, J., Stegemoller, M., 2002. What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *Journal of Finance* 57, 1763-1793.
- Gao, N., Jain, B.A., 2011. Founder CEO management and the long-run investment performance of IPO firms. *Journal of Banking & Finance* 35, 1669-1682.
- Gatti, M., 2005. Optionality arrangements and reciprocity in the European Takeover Directive. *European Business Organization Law Review* 6, 553-579.
- Giot, P., Schwienbacher, A., 2007. IPOs, trade sales and liquidations: Modelling venture capital exits using survival analysis. *Journal of Banking & Finance* 31, 679-702.
- Gleason, K.C., Jain, R., Rosenthal, L., 2008. Alternatives for going public: Evidence from reverse takeovers, self-underwritten IPOs, and traditional IPOs. *Journal of Financial and Strategic Decisions* 1, 1-24.
- Gleason, K.C., Rosenthal, L., Wiggins III, R.A., 2005. Backing into being public: An exploratory analysis of reverse takeovers. *Journal of Corporate Finance* 12, 54-79.
- Gleiss Lutz, 2014. *European Directive Takeover Guide*. Berlin.
- GlobalFinance, 2014. World's best investment banks 2014, Available at: <http://www.gfmag.com/awards-rankings/best-banks-and-financial-rankings/worlds-best-investment-banks-2014> (accessed July 20, 2016).
- GlobalFinance, 2015. About us, Available at: <http://www.gfmag.com/about-us/> (accessed July 20, 2016).
- Goel, A.M., Thakor, A.V., 2010. Do envious CEOs cause merger waves? *Review of Financial Studies* 23, 487-517.

- Goergen, M., Martynova, M., Renneboog, L., 2005. Corporate governance convergence: Evidence from takeover regulation reforms in Europe. *Oxford Review of Economic Policy* 21, 243-268.
- Goergen, M., Renneboog, L., 2004. Shareholder wealth effects of European domestic and cross-border takeover bids. *European Financial Management* 10, 9-45.
- Golubov, A., Petmezas, D., Travlos, N.G., 2012. When it pays to pay your investment banker: New evidence on the role of financial advisors in M&As. *Journal of Finance* 67, 271-311.
- Golubov, A., Yawson, A., Zhang, H., 2015. Extraordinary acquirers. *Journal of Financial Economics* 116, 314-330.
- Gompers, P., Lerner, J., 2001. The venture capital revolution. *Journal of Economic Perspectives* 15, 145-168.
- Gompers, P.A., 1996. Grandstanding in the venture capital industry. *Journal of Financial Economics* 42, 133-156.
- Greene, D., 2016. The wealth of private firm owners following reverse mergers. *Journal of Corporate Finance* 37, 56-75.
- Hale, L.M., 2007. SPAC: A financing tool with something for everyone. *Journal of Corporate Accounting & Finance* 18, 67-74.
- Harford, J., Humphery-Jenner, M., Powell, R., 2012. The sources of value destruction in acquisitions by entrenched managers. *Journal of Financial Economics* 106, 247-261.
- Heckman, J.J., 1979. Sample selection bias as a specification error. *Econometrica* 47, 153-161.
- Humphery-Jenner, M., 2012. The impact of the EU takeover directive on takeover performance and empire building. *Journal of Corporate Finance* 18, 254-272.
- Hunter, W.C., Jagtiani, J., 2003. An analysis of advisor choice, fees, and effort in mergers and acquisitions. *Review of Financial Economics* 12, 65-81.
- Ismail, A., 2010. Are good financial advisors really good? The performance of investment banks in the M&A market. *Review of Quantitative Finance and Accounting* 35, 411-429.
- Jenkinson, T., Sousa, M., 2011. Why SPAC investors should listen to the market. *Journal of Applied Finance* 21, 38-57.

- Jensen, M.C., 1986. Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review* 76, 323-329.
- Jensen, M.C., Ruback, R.S., 1983. The market for corporate control: The scientific evidence. *Journal of Financial Economics* 11, 5-50.
- Jog, V., Sun, C., 2007. Blank check IPOs: A home run for management. Unpublished working paper. Available at SSRN 1018242.
- Kale, J.R., Kini, O., Ryan, H.E., 2003. Financial advisors and shareholder wealth gains in corporate takeovers. *Journal of Financial and Quantitative Analysis* 38, 475-501.
- Karsten, C., Malmendier, U., Sautner, Z., 2015. M&A negotiations and lawyer expertise. Unpublished working paper. Available at SSRN 2576866.
- Kolasinski, A.C., Kothari, S.P., 2008. Investment banking and analyst objectivity: Evidence from analysts affiliated with mergers and acquisitions advisors. *Journal of Financial and Quantitative Analysis* 43, 817-842.
- Kolb, J., Tykvová, T., 2016. Going public via special purpose acquisition companies: Frogs do not turn into princes. *Journal of Corporate Finance* 40, 80-96.
- Kothari, S.P., Warner, J.B., 1997. Measuring long-horizon security price performance. *Journal of Financial Economics* 43, 301-339.
- Krishnan, C.N.V., Masulis, R.W., 2013. Law firm expertise and merger and acquisition outcomes. *The Journal of Law & Economics* 56, 189-226.
- Kuipers, D.R., Miller, D.P., Patel, A., 2009. The legal environment and corporate valuation: Evidence from cross-border takeovers. *International Review of Economics & Finance* 18, 552-567.
- La Porta, R., Lopez de Silanes, F., Shleifer, A., Vishny, R., 1997. Legal determinants of external finance. *Journal of Finance* 52, 1131-1150.
- La Porta, R., Lopez de Silanes, F., Shleifer, A., Vishny, R., 1998. Law and finance. *Journal of Political Economy* 106, 1113-1155.
- Lakicevic, M., Shachmurove, Y., Vulanovic, M., 2014. Institutional changes of specified purpose acquisition companies (SPACs). *North American Journal of Economics and Finance* 28, 149-169.

- Lakicevic, M., Vulcanovic, M., 2013. A story on SPACs. *Managerial Finance* 39, 384-403.
- Lang, L.H.P., Stulz, R., Walkling, R.A., 1991. A test of the free cash flow hypothesis: The case of bidder returns. *Journal of Financial Economics* 29, 315-335.
- Law360, 2013. Europe M&A: The evolving takeover landscape. New York.
- Lee, I., Lochhead, S., Ritter, J., Zhao, Q., 1996. The costs of raising capital. *Journal of Financial Research* 19, 59-74.
- Lehn, K.M., Zhao, M., 2006. CEO turnover after acquisitions: Are bad bidders fired? *Journal of Finance* 61, 1759-1811.
- Leland, H.E., Pyle, D.H., 1977. Information asymmetries, financial structure, and financial intermediation. *Journal of Finance* 32, 371-387.
- Lewellen, S., 2009. SPACs as an asset class. Unpublished working paper. Available at SSRN 1284999.
- Li, K., Prabhala, N.R., 2007. Self-selection models in corporate finance, in: Eckbo, B.E. (Ed.), *Handbook of Empirical Corporate Finance*. Elsevier, San Diego, pp. 37-86.
- Liu, Q., Sun, X., Wu, H., 2014. Are you a VIP? Premier financial advisory service in M&As, Unpublished working paper. Peking University, Johns Hopkins University, and University of Pittsburgh, Beijing, Baltimore, and Pittsburgh.
- Loughran, T., Ritter, J.R., 1995. The new issues puzzle. *Journal of Finance* 50, 23-51.
- Louis, H., 2005. Acquirers' abnormal returns and the non-Big 4 auditor clientele effect. *Journal of Accounting and Economics* 40, 75-99.
- Lyon, J.D., Barber, B.M., Tsai, C.-L., 1999. Improved methods for tests of long-run abnormal stock returns. *Journal of Finance* 54, 165-201.
- MacKinlay, A.C., 1997. Event studies in economics and finance. *Journal of Economic Literature* 35, 13-39.
- Malmendier, U., Tate, G., 2008. Who makes acquisitions? CEO overconfidence and the market's reaction. *Journal of Financial Economics* 89, 20-43.
- Marccus Partners and Centre for European Policy Studies, 2012. The takeover bids directive assessment report. Brussels.

- Martynova, M., Renneboog, L., 2008. Spillover of corporate governance standards in cross-border mergers and acquisitions. *Journal of Corporate Finance* 14, 200-223.
- Martynova, M., Renneboog, L., 2011a. Evidence on the international evolution and convergence of corporate governance regulations. *Journal of Corporate Finance* 17, 1531-1557.
- Martynova, M., Renneboog, L., 2011b. The performance of the European market for corporate control: Evidence from the fifth takeover wave. *European Financial Management* 17, 208-259.
- Masulis, R.W., Wang, C., Xie, F.E.I., 2007. Corporate governance and acquirer returns. *Journal of Finance* 62, 1851-1889.
- McCahery, J.A., Renneboog, L., 2003. The economics of the proposed European takeover directive. Centre for European Policy Studies, Brussels.
- McCahery, J.A., Vermeulen, E.P.M., 2010. Does the takeover bids directive need revision? TILEC Discussion Paper, 2010-006.
- McLaughlin, R.M., 1990. Investment-banking contracts in tender offers: An empirical analysis. *Journal of Financial Economics* 28, 209-232.
- McLaughlin, R.M., 1992. Does the form of compensation matter? Investment banker fee contracts in tender offers. *Journal of Financial Economics* 32, 223-260.
- Meggison, W.L., Weiss, K.A., 1991. Venture capitalist certification in initial public offerings. *Journal of Finance* 46, 879-903.
- Michel, A., Shaked, I., Lee, Y.-T., 1991. An evaluation of investment banker acquisition advice: The shareholders' perspective. *Financial Management* 20, 40-49.
- Mitchell, M.L., Stafford, E., 2000. Managerial decisions and long-term stock price performance. *Journal of Business* 73, 287-329.
- Moeller, S.B., Schlingemann, F.P., Stulz, R.M., 2004. Firm size and the gains from acquisitions. *Journal of Financial Economics* 73, 201-228.
- Moeller, S.B., Schlingemann, F.P., Stulz, R.M., 2005. Wealth destruction on a massive scale? A study of acquiring-firm returns in the recent merger wave. *Journal of Finance* 60, 757-782.
- Moschier, C., Campa, J.M., 2009. The European M&A industry: A market in the process of construction. *Academy of Management Perspectives* 23, 71-87.

- Nahata, R., 2008. Venture capital reputation and investment performance. *Journal of Financial Economics* 90, 127-151.
- Pastor, L., Stambaugh, Robert F., 2003. Liquidity risk and expected stock returns. *Journal of Political Economy* 111, 642-685.
- Phalippou, L., Gottschalg, O., 2009. The performance of private equity funds. *Review of Financial Studies* 22, 1747-1776.
- Poulsen, A.B., Stegemoller, M., 2008. Moving from private to public ownership: Selling out to public firms versus initial public offerings. *Financial Management* 37, 81-101.
- Rau, R., 2000. Investment bank market share, contingent fee payments, and the performance of acquiring firms. *Journal of Financial Economics* 56, 293-324.
- Rhee, M., Valdez, M.E., 2009. Contextual factors surrounding reputation damage with potential implications for reputation repair. *Academy of Management Review* 34, 146-168.
- Ritter, J.R., 1991. The long-run performance of initial public offerings. *Journal of Finance* 46, 3-27.
- Ritter, J.R., 2016. Initial public offerings: Updated statistics, University of Florida.
- Ritter, J.R., Welch, I., 2002. A review of IPO activity, pricing, and allocations. *Journal of Finance* 57, 1795-1828.
- Rodrigues, U., 2012. SPACs and the JOBS Act. *Harvard Business Law Review*, 17-21.
- Rodrigues, U., Stegemoller, M., 2011. Special purpose acquisition corporations: A public view of private equity. *UGA Legal Studies Research Paper*, 11-12.
- Rodrigues, U., Stegemoller, M., 2013. Exit, voice, and reputation: The evolution of SPACs. *Delaware Journal of Corporate Law* 37, 849-929.
- Rodrigues, U., Stegemoller, M., 2014. What all-cash companies tell us about IPOs and acquisitions. *Journal of Corporate Finance* 29, 111-121.
- Roll, R., 1986. Hubris hypothesis of corporate takeovers. *Journal of Business* 59, 197-216.
- Rosen, R., 2006. Merger momentum and investor sentiment: The stock market reaction to merger announcements. *Journal of Business* 79, 987-1017.
- Rossi, S., Volpin, P.F., 2004. Cross-country determinants of mergers and acquisitions. *Journal of Financial Economics* 74, 277-304.



- Schill, M.J., 2004. Sailing in rough water: Market volatility and corporate finance. *Journal of Corporate Finance* 10, 659-681.
- Schwert, G.W., 2000. Hostility in takeovers: In the eyes of the beholder? *Journal of Finance* 55, 2599-2640.
- SEC, 2005. Use of form S-8, form 8-K, and form 20-F by shell companies, Available at <http://sec.gov/rules/final/33-8587.pdf> (accessed July 20, 2016).
- Servaes, H., Zenner, M., 1996. The role of investment banks in acquisitions. *Review of Financial Studies* 9, 787-815.
- Shleifer, A., Vishny, R.W., 1989. Management entrenchment - the case of manager-specific investments. *Journal of Financial Economics* 25, 123-139.
- Sibilkov, V., McConnell, J.J., 2014. Prior client performance and the choice of investment bank advisors in corporate acquisitions. *Review of Financial Studies* 27, 2474-2503.
- Slaughter and May, 2006. *The European takeovers directive - an overview*. London.
- Spamann, H., 2010. The “antidirector rights index” revisited. *Review of Financial Studies* 23, 467-486.
- Svirydzenka, K., 2016. Introducing a new broad-based index of financial development. IMF working papers, WP/16/5.
- The Economist, 2012. Does it pay to hire top banks?, Available at: <http://economist.com/blogs/freeexchange/2012/03/investment-banking> (accessed July 20, 2016).
- The New York Times, 2012. Why I am leaving Goldman Sachs, Available at: [http://nytimes.com/2012/03/14/opinion/why-i-am-leaving-goldman-sachs.html?\\_r=1](http://nytimes.com/2012/03/14/opinion/why-i-am-leaving-goldman-sachs.html?_r=1) (accessed July 20, 2016).
- Thomas, H., 1995. Effects of firm ownership structure on hiring of M&A advisors. *Journal of Financial Services Research* 9, 159-175.
- Thomson Reuters, 2014. Mergers & acquisitions review. Available at: [http://share.thomsonreuters.com/general/PR/MA-4Q14-\(E\).pdf](http://share.thomsonreuters.com/general/PR/MA-4Q14-(E).pdf) (accessed July 20, 2016).
- Titman, S., Trueman, B., 1986. Information quality and the valuation of new issues. *Journal of Accounting and Economics* 8, 159-172.

- Wang, W., Whyte, A.M., 2010. Managerial rights, use of investment banks, and the wealth effects for acquiring firms' shareholders. *Journal of Banking & Finance* 34, 44-54.
- Xie, Y., Yi, H.S., Zhang, Y., 2013. The value of big N target auditors in corporate takeovers. *AUDITING: A Journal of Practice & Theory* 32, 141-169.

# Declaration of co-authorship

## KO-AUTORENERKLÄRUNG DECLARATION OF CO-AUTHORSHIP (Für kumulative Dissertationen)

Name des Kandidaten:  
(Name of the candidate)

Johannes Kolb

Titel des Artikels (Title of the article):

Superstar financial advisors: Do they deliver superior value to their clients?

- ☒ nicht eingereicht (not submitted)  
☐ eingereicht bei (submitted to):  
☐ Zur Veröffentlichung angenommen oder veröffentlicht in (accepted for publication or published in):

Arbeitsanteil des Kandidaten an vorgenanntem Artikel Quantification of candidates contribution to the article (overall):

- ☐ hat zur Arbeit beigetragen/has contributed to the work (<1/3)  
☐ hat wesentlich zur Arbeit beigetragen/has made a substantial contribution (1/3 to 2/3)  
☒ hat einen Großteil der Arbeit allein erledigt/did the majority of the work independently (>2/3)

Ko-Autoren Co-authors (Name und Kontaktdaten/full name; contact):

1. Prof. Tereza Tykvová, Universität Hohenheim Fachgebiet für Unternehmensfinanzierung, Raum 38, Wollgrasweg 49, 70599 Stuttgart

2.

3.

4.

Hiermit bestätige ich die Richtigkeit des oben beschriebenen Arbeitsanteils des Kandidaten.  
I hereby confirm the candidate's contribution as quantified above.

Stuttgart, den 11.1.17  
Ort, Datum Place, Date

Unterschrift Ko-Autor Signature (Co-Author)

## KO-AUTORENERKLÄRUNG DECLARATION OF CO-AUTHORSHIP (Für kumulative Dissertationen)

Name des Kandidaten:  
(Name of the candidate)

Johannes Kolb

Titel des Artikels (Title of the article):

Going public via special purpose acquisition companies: Frogs do not turn into princes

- ☐ nicht eingereicht (not submitted)  
☐ eingereicht bei (submitted to):  
☒ Zur Veröffentlichung angenommen oder veröffentlicht in (accepted for publication or published in):

Journal of Corporate Finance 40, 80-96

Arbeitsanteil des Kandidaten an vorgenanntem Artikel Quantification of candidates contribution to the article (overall):

- ☐ hat zur Arbeit beigetragen/has contributed to the work (<1/3)  
☒ hat wesentlich zur Arbeit beigetragen/has made a substantial contribution (1/3 to 2/3)  
☐ hat einen Großteil der Arbeit allein erledigt/did the majority of the work independently (>2/3)

Ko-Autoren Co-authors (Name und Kontaktdaten/full name; contact):

1. Prof. Tereza Tykvová, Universität Hohenheim Fachgebiet für Unternehmensfinanzierung, Raum 38, Wollgrasweg 49, 70599 Stuttgart

2.

3.

4.

Hiermit bestätige ich die Richtigkeit des oben beschriebenen Arbeitsanteils des Kandidaten.  
I hereby confirm the candidate's contribution as quantified above.

Stuttgart, den 11.1.17  
Ort, Datum Place, Date

Unterschrift Ko-Autor Signature (Co-Author)